
Land South of Holt Road, Wrexham

Environmental Impact Assessment Screening Report

December 2017

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Prepared on behalf of Bloor Homes North West and Barratt Homes

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1 INTRODUCTION

- 1.1 This report has been prepared by Barton Willmore, Institute of Environmental Management and Assessment (IEMA) qualified assessors and Environmental Impact Assessment (EIA) Quality Mark registrants, on behalf of Bloor Homes North West and Barratt Homes (the Applicants). The report accompanies a request to Wrexham County Borough Council (WCBC) to adopt a screening opinion to determine whether the proposed development of up to 600 dwellings on land to the south of Holt Road, east of Wrexham, constitutes EIA development. This report updates a screening report submitted to WBC on 10th November 2017 as further information on minerals has been identified in the intervening period.
- 1.2 This report reflects the requirements of the *Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017*¹ (the “EIA Regulations”) and in accordance with Regulation 6 of the EIA Regulations, this report contains:
- *A plan sufficient to identify the land;*
 - *a description of the development, including in particular:*
 - (i) *a description of the physical characteristics of the development and, where relevant, of demolition works;*
 - (ii) *a description of the location of the development, with particular regard to the environmental sensitivity of geographical areas likely to be affected;*
 - *a description of the aspects of the environment likely to be significantly affected by the development;*
 - *a description of any likely significant effects. to the extent the information is available on those effects, of the proposed development on the environment resulting from—*
 - (i) *the expected residues and emissions and the production of waste, where relevant; and*
 - (ii) *the use of natural resources, in particular soil, land, water and biodiversity; and*
 - *such other information or representations as the person making the request may wish to provide or make, including any features of the proposed development or any measures envisaged to avoid or prevent what might otherwise have been significant adverse effects on the environment.*

Requirement for EIA

- 1.3 In order to determine whether the proposed development is ‘EIA development’, regard must be had for the EIA Regulations. EIA development is defined by the EIA Regulations as

¹ SI 2017/567 (W.136)

development:

“likely to have significant effects on the environment by virtue of factors such as its nature, size or location”.

- 1.4 EIA development falls into two Schedules of the EIA Regulations. EIA is mandatory for developments listed within Schedule 1. Schedule 2 developments require EIA if they would lead to likely significant effects on the environment.

- 1.5 In deciding whether a Schedule 2 development is EIA development, Regulation 5(8) states:

Where a local planning authority or the Welsh Ministers have to decide under these Regulations whether Schedule 2 development is EIA development, the authority or the Welsh Ministers must take into account in making that decision—

- (a) any information provided by the person minded to carry out development;*
- (b) the available results of other environmental assessments carried out pursuant to Union legislation other than legislation implementing the requirements of the Directive; and*
- (c) such of the selection criteria set out in Schedule 3 as are relevant to the development.*

- 1.6 In order to allow WCBC to determine the need for EIA this report provides a description of the site and proposed development, a completed EIA Screening Checklist, and a site location plan at Appendix 1.

2 SITE AND PROPOSED DEVELOPMENT

Site Context

- 2.1 The site is located north-east of the town of Wrexham, within the administrative boundary of WCBC. The northern boundary of the site is Holt Road (A534), which provides direct access to the centre of Wrexham. Beyond this, lies Wrexham Golf Course and then a large quarry area and extensive agricultural land. The eastern boundary of the site borders arable fields beyond which lies Sandy Lane and Clays Touring and Leisure Park and Clays Golf Course. The northern section of the eastern boundary consists of a Ready Mixed Concrete plant located in an historic quarry area. Bryn Estyn Road forms the southern boundary of the site, beyond which is Wrexham Rugby Club, a single residence, the Erilas Victorian Garden, and the Erilas Centre with agricultural land beyond. Established residential properties form the western boundary of the site which can be accessed from the A534.
- 2.2 In the north-west corner of the site is Tyn-twill Farm which is located adjacent to the western site boundary. In addition, Bryn Estyn Court lies immediately adjacent to the southern boundary, on the north site of Bryn Estyn Road.
- 2.3 Along the southern boundary of the site are field entry points accessed from Bryn Estyn Road.

Site Description

- 2.4 The site (Appendix 1) extends to 28.42 hectares (ha) and is approximately rectangular in shape. The site is currently in agricultural use and consists of seven separate fields. Internal field boundaries are mainly hedgerows or tree-lined. Four separate and interconnecting electricity lines cut across the site.
- 2.5 A drainage ditch enters the site from the north-west corner and runs along in an eastern direction across the north-western section of the site. The drainage ditch ends at a wooded area at a junction of three field boundaries, just south of the A534 roundabout. Another drainage ditch enters the site from the north-east corner and runs along the northern boundary of the site for a short distance.
- 2.6 The topography of the site overall, is undulating and falls towards the north-east boundary by approximately 10m.

Proposed Development

- 2.7 The proposed development comprises up to 600 new homes across 28.42ha, located north-east of the town of Wrexham. The north-east corner of the site will be designated to open space and a play area will be constructed in the centre of the site. The existing pond in the north-western section of the site shall be retained. The primary access for the proposed development will be from the south side of A534/A5156 roundabout.

Mitigation

- 2.8 A number of mitigation measures have been considered to be part of the proposed development. This includes adherence to best practice measures during the construction phase, such as through a Construction Environmental Management Plan (CEMP).

3 SCREENING ASSESSMENT

Introduction

- 3.1 In determining whether the proposed development constitutes EIA development, consideration should be had to the following:
- If the proposed development is of a type listed in Schedule 1;
 - If not, whether it is listed in Schedule 2;
 - Is it located within a sensitive area;
 - It meets any of the relevant thresholds and criteria set out in Schedule 2; and/or
 - Would it lead to likely significant effects on the environment.
- 3.2 These points are explored further in this section with reference to the EIA Regulations.

Schedule 1 Projects

- 3.3 EIA is mandatory for projects listed in Schedule 1 of the EIA Regulations. Schedule 1 developments are large scale projects for which significant effects would be expected and comprise developments such as new airports and power stations. The proposed development is not of a type listed in Schedule 1.

Schedule 2 Projects

- 3.4 EIA is discretionary for projects listed in Schedule 2. If the development proposed is of a type listed in Schedule 2 then it may be classified as EIA development depending on the location of the development (i.e. if it is within a sensitive area) and/or whether it meets any of the relevant thresholds or criteria in Column 2.
- 3.5 Sensitive Areas are defined in the EIA Regulations as:
- Sites of Special Scientific Interest and European Sites;
 - National Parks, the Broads, and Areas of Outstanding Natural Beauty;
 - World Heritage Sites and Scheduled Monuments.
- 3.6 In certain cases, local designations which are not included in the definition of sensitive areas, but which are nonetheless environmentally sensitive, may also be relevant in determining whether an assessment is required. Furthermore, in considering the sensitivity of a particular location, regard should also be had to whether any national or internationally agreed

environmental standards (e.g. air quality) are already being approached or exceeded.

- 3.7 The proposed development falls within category 10 of Schedule 2, 'Infrastructure Projects', sub-section (b) 'Urban Development Projects'. The site is not located in a sensitive area and therefore the thresholds should be applied. The thresholds for residential developments as set out in Schedule 2 relate to developments that "*include more than 150 dwellings or the overall area of the development exceeds 5 hectares*". The proposed development at Holt Road, Wrexham is for up to 600 units, which exceeds the threshold, as does the area of development at 28.42ha. Accordingly, this screening assessment has been prepared to determine whether the proposed development would be likely to result in significant environmental effects. In order to achieve this Schedule 3 of the EIA Regulations need to be taken into account.

Schedule 3

- 3.8 Schedule 3 of the EIA Regulations sets out selection criteria which relate to specific matters including: the characteristics of the development; the location of the development; and the characteristics of the potential impact. These factors should be taken into account as part of the screening process and are set out below:

Characteristics:

- the size and design of the whole development;
- cumulation with other existing development and/or approved development;
- the use of natural resources, in particular land, soil, water and biodiversity;
- the production of waste;
- pollution and nuisances;
- the risk of major accidents and/or disasters relevant to the development concerned, including those caused by climate change, in accordance with scientific knowledge;
- the risks to human health (for example, due to water contamination or air pollution).

Location:

- The existing and approved land use;
- the relative abundance, availability, quality and regenerative capacity of natural resources (including soil, land, water and biodiversity) in the area and its underground; and
- The absorption capacity of the natural environment.

Potential Impact:

- the magnitude and spatial extent of the impact (for example geographical area and size of the population likely to be affected);
- the nature of the impact;
- the transboundary nature of the impact;
- the intensity and complexity of the impact;
- the probability of the impact;
- the expected onset, duration, frequency and reversibility of the impact;
- the cumulation of the impact with the impact of other existing and/or approved development;
- the possibility of effectively reducing the impact.

Consideration of Cumulative Effects

- 3.9 Schedule 4 of the EIA Regulations requires consideration of a proposed development cumulatively with other existing and/or approved development. Guidance on the consideration of cumulative effects in the EIA screening process is set out in the PPG, which echoes the requirements of the EIA Regulations:

“each application (or request for a screening opinion) should be considered on its own merits. There are occasions where other existing or approved development may be relevant in determining whether significant effects are likely as a consequence of a proposed development. The local planning authorities should always have regard to the possible cumulative effects arising from any existing or approved development.”

- 3.10 The Applicants are not aware of any current planning applications within the surrounding area which could result in the potential for cumulative effects with the proposed development.

Welsh Office Circular 11/99 EIA

- 3.11 Paragraphs 043 and 044 of Welsh Office Circular 11/99 EIA, provide guidance to help determine whether significant effects are likely. In general, the more environmentally sensitive the location, the lower the threshold will be at which significant effects are likely.
- 3.12 Table 2 sets out a review of all of the above criteria and requirements and specifically addresses the proposed development at the site.

Table 2: Screening Assessment for Development on Land south of Holt Road Wrexham

SCREENING CRITERIA	PROPOSED DEVELOPMENT
1. CHARACTERISTICS OF THE DEVELOPMENT	
(a) Size of the development	
Will the development as a whole be out of scale with the existing environment?	The site is a currently undeveloped, agricultural site located north-east of the town of Wrexham, adjacent to land with established residential development. The proposed development would provide up to 600 new dwellings. In light of this context the development, while a change of land use, would not be out of context with existing development.
Will the design of the development as a whole fit in with the existing environment?	The proposed development would be expected to be developed in a similar context to the surrounding established dwellings to the west of the site. As the land is currently in agricultural use, the development will include a robust scheme of landscaping to minimise visual impacts.
Will it lead to further consequential development or works?	No. The proposed development is a discrete proposal and includes all necessary works, including access.
(b) Accumulation with other development	
Are there potential cumulative impacts with other existing development or development not yet begun but for which planning permission exists?	No committed developments have been identified in the vicinity of the proposed development which could give rise to likely significant cumulative effects.
Should the application for this development be regarded as an integral part of a more substantial project? If so, can related developments which are subject to separate applications proceed independently?	No. The proposed development is a discrete project and could proceed independently.
(c) Use of natural resources	
Will construction or operation of the development use natural resources such as land, water, material or energy, especially any resources which are non-renewable or in short supply?	The proposed construction and operational phases of the development will use resources in terms of land, water and energy as would be expected for a residential development.
(d) Production of waste	
Will the development produce wastes during construction or operation or decommissioning?	Construction waste would be reused and recycled where possible. Operational waste would be disposed of in line with WDC requirements and managed in accordance with all applicable legislation.
(e) Pollution and nuisances	
Will the development release any pollutants or any hazardous, toxic or noxious substances to air?	During the construction phase of the proposed development, dust would be generated. Dust generation would be managed in accordance with standard best practice measures, enforced through a construction environmental management plan (CEMP) and is not anticipated to generate significant adverse effects. There would be emissions associated with plant and vehicles during the construction phase and from vehicles during the operation of the proposed development. The number of vehicles travelling to and from the site during the operational phase would be associated with up to 600 dwellings. The proposed development is of residential use which is not associated with hazardous substances or toxic emissions to air. There is not anticipated to be a requirement to store large volumes of hazardous

SCREENING CRITERIA	PROPOSED DEVELOPMENT
	materials. Any such materials would be stored and handled in accordance with relevant legislation.
Is there a potential risk from leachates or escape of wastes or other products/by-products that may constitute a contaminant in the environment?	Appropriate measures, in accordance with all relevant legislation, would be used to prevent accidental spillages of contaminants during the construction or operational phases of the proposed development. The land uses proposed are not highly contaminative and it is not expected that there is a high risk of contaminants being released into the environment.
Will the development cause noise and vibration or release of light, heat, energy or electromagnetic radiation?	The potential exists for noise effects to result from the construction processes associated with the proposed development. These effects will be managed in accordance with best practice measures, implemented through the CEMP and are not anticipated to generate significant adverse effects. Lighting would be designed carefully in accordance with relevant British Standards and Institute of Lighting Professionals (ILP) (2011) Guidance Notes for the Reduction of Obtrusive Light. No electromagnetic radiation, heat or energy releases are expected other than those associated with normal residential development.
Will the development lead to risks of contamination of land or water from releases of pollutants onto the ground or into surface waters, groundwater, coastal waters or the sea?	Hydrocarbons will be used as part of the construction phases of the development. This would involve plant and vehicle fuel and lubricants. Surface water run-off and foul water drainage will be managed on-site during the construction and operational phases. Sustainable drainage would be considered and appropriate drainage design would be included within the planning application documents including the Flood Risk and Surface Water Drainage Assessment.
(f) Risk of major accidents and/or disasters, including those caused by climate change and also having regard in particular to substances or technologies used	
Will there be a risk of accidents during construction or operation of the development which would have effects on people or the environment?	During the construction phase, the contractor(s) would implement measures in accordance with Health and Safety legislation/requirements, and best practice to minimise the risks of accidents that would have effects on people or the environment. All such measures would form part of the CEMP. There are no anticipated significant risks of accidents during operation because the proposed development does not involve users dealing with hazardous substances.
Will the development involve use, storage, transport, handling or production of substances or materials which could be harmful to people or the environment (flora, fauna, water supplies)?	During the construction phase, certain materials may be present on the site which may be harmful to the environment. However, it is considered that through the implementation of appropriate environmental control measures in line with the relevant legislation there will be no significant environmental effects. The operational development is not expected to involve the use, transport or production of substances or materials which could be harmful to the environment.
(g) Risks to human health	
What are the risks to human health such as from water contamination or air pollution?	During the construction phase of the proposed development, dust would be generated. However, dust generation would be managed in accordance with standard best practice measures, enforced through a

SCREENING CRITERIA	PROPOSED DEVELOPMENT
	CEMP and is not anticipated to generate adverse effects to human health. Surface water run-off and foul water drainage will be managed on-site during the construction and operational phases, as detailed further in the Flood Risk and Surface Water Drainage Assessment.
Other characteristics	
Potential physical changes (topography, land use, changes in water bodies etc) from construction, operation or decommissioning of the development?	The principal land use will change from undeveloped agricultural land to land used for residential purposes. There would be changes to the site during the construction phase. There are currently two ditches and a pond (currently dry) on the site and these will be incorporated into the drainage design proposals.
2. LOCATION OF THE DEVELOPMENT	
(a) Existing and approved land use	
Are there existing land uses on or around the location which could be affected by the development, e.g. residential, industry, commerce, recreation, public open space, community facilities, agriculture, forestry, tourism, mining or quarrying?	The site is currently in agricultural use. The land to the west comprises residential development with the remaining land predominantly open agricultural land with road infrastructure. There are golf courses to the north and south of the site, and a concrete batching works to the east however the proposals would not be expected to significantly affect these features.
Is the development located in a previously undeveloped area where there will be loss of greenfield land?	The site comprises agricultural land.
(b) Relative abundance, availability, quality and regenerative capacity of natural resources in the area and its underground*	
Are there any areas on or around the location which contain important, high quality or scarce resources which could be affected by the development? • soil • land • groundwater resources • surface waters • biodiversity • forestry • agriculture • fisheries • tourism • minerals	The site is currently used for agricultural purposes. The majority of the site would be built on for up to 600 dwellings, the remainder of the development will be open space and landscaping. According to the Natural Resources Wales website, the site is located within Flood Zone 1 and is at low risk of flooding from rivers and the sea. The site is not located within a groundwater Source Protection Zone (SPZ). Immediately adjacent to the eastern boundary of the site, the agricultural land is within a Zone 3 SPZ. The site is within a mineral safeguarding area for sand and gravel extraction for commercial use. It should be noted that the safeguarding area covers a significant land area around Wrexham town and the wider county borough and the site represents a minor proportion of the safeguarding area. The sand at the site is not considered to be 'important, high quality, or scarce'. With regard to importance and quality: assessment undertaken by the Applicants has concluded that the mineral is not of commercial value/use. In order to be of value to the construction industry the gravel content, of commercially viable sand and gravel extraction, is generally over 40% of the sand/gravel mix, which is similar to the mix found at the nearby Borrás Quarry; whereas the mix on this site is 91% sand and 2% gravel (as demonstrated by the borehole logs attached at Appendix 2 of this Screening Report). With regard to scarcity: paragraph 11.10 of the Wrexham Unitary Development Plan (UDP) 1996-

SCREENING CRITERIA	PROPOSED DEVELOPMENT
	2011² states "<i>Sand and Gravel extraction is the principal mineral working activity within the County Borough with output contributing significantly to the total regional output of North Wales</i>". Furthermore, sand and gravel extraction is currently undertaken at Borrass Quarry 1km to the north east of the site, and it has been identified that sand and gravel does not travel far from the point of extraction site due to the high costs of haulage compared to the cost of the mineral itself. Therefore, whilst the site is located in a minerals safeguarding area the minerals in question are not of importance, scarce or of high quality, therefore no significant effects would result from sterilisation of this resource through construction of the proposed development. It should also be noted that the area of the site that would theoretically be sterilised by development, is not considered to be significant in scale when compared to the extent of the wider mineral safeguarding area around Wrexham town and beyond. Policy MW9 of the Wrexham UDP provides for the assessment of non-mineral development on safeguarded sites. The policy is not a blanket objection to non-mineral development in safeguarded areas and also makes clear that safeguarding is <u>not a presumption in favour of the working of any deposits</u>. The policy is clear that in order for the development site to be considered for protection there needs to be an existing <u>exploitable</u> reserve present. Furthermore, the policy does allow for the development of safeguarded sites for non-mineral development where provision is made for prior extraction (if it is the case that the reserve is exploitable). The UDP therefore has a mechanism in place for assessing such development proposals. As outlined above, the mineral in this case is not considered to be important, scarce or of high quality; which suggests that it is not exploitable. Furthermore, the Applicants will confirm at the planning application stage, through appropriate assessment, that, notwithstanding the low quality of the mineral, prior extraction is in any event impractical and inappropriate in this location. The planning application process, and the application of the evidence-based planning balance, is considered to be the appropriate platform for assessing the implications of the minerals safeguarding issue, rather than through the process of EIA. None of the other features listed are present in or adjacent to the site.
(c) Absorption capacity of the natural environment**	
Are there any areas on or around the location which are protected under international or national or local legislation for their ecological, landscape, cultural or other value, which could be affected by the development?	There are no statutory designations within or adjacent to the site i.e. there are no Scheduled Monuments, Areas of Outstanding Natural Beauty, Sites of Special Scientific Interest (SSSI), National Parks, Registered Battlefields, Registered Historic Parks and Gardens, Special Areas of Conservation, Special Protection Areas, or Ramsar Sites.

² https://www.wrexham.gov.uk/assets/pdfs/planning/udp/written_statement_e.pdf

SCREENING CRITERIA	PROPOSED DEVELOPMENT
	Shropshire Hills AONB is 45km to the south of the site, which is a significant distance and would not be affected directly or indirectly by the proposed development. The nearest protected feature is a listed building at 93 Dear Road to the north east. Wat's dyke is the closest Scheduled Monument, located 2.8km west of the site boundary. Another 4 Scheduled monuments are located within 5km of the site boundary. The closest SSSI is located 2.6km north of the site boundary. A further 4 SSSI lie within 5km of the site boundary. Midland Meres and Mosses Phase 2 is the closest Ramsar site to the development boundary; 1.9km north of the site, along with Vicarage Moss SSSI. The nearest Special Areas of Conservation (SAC) is the River Dee and Bala Lake which is found 6km east of the site. Another two SACs are located within 10km of the site. The closest Conservation Area is in the centre of Wrexham, 3km west of the site boundary. There is a World Heritage Site; Pontcysyllte Aqueduct and Canal located 12.7km south-west of the site boundary. A registered battlefield is located 2.6km south-west of the site boundary at Wrexham Church, in the centre of the town.
Are there any other areas on or around the location which are important or sensitive for reasons of: • Wetlands, riparian areas, river mouths; • coastal zones and the marine environment; • mountains and forest areas; • nature reserves and parks; • European sites and other areas classified or protected under national legislation; • Areas in which there has already been a failure to meet the environmental quality standards laid down in Union legislation and relevant to the project, or in which it is considered that there is such a failure; • Densely populated areas; • Landscapes and sites of historical, cultural or archaeological significance.	None identified, see row above. The site is not located within, or in proximity to any Air Quality Management Area.
Are there any areas on or around the location which are used by protected, important or sensitive species of fauna or flora e.g. for breeding, nesting, foraging, resting, overwintering, migration, which could be affected?	As agricultural land the biodiversity of the site is expected to be low with the exception of hedgerows and trees around the site. An Ecological Assessment has been undertaken and will be submitted with the planning application. The conclusions of the ecological appraisal identified that that development could be accommodated with respect to ecological

SCREENING CRITERIA	PROPOSED DEVELOPMENT
	matters by adopting relatively simple design principles and providing mitigation/compensation for great crested newts.
Are there any inland, coastal, marine or underground waters on or around the location which could be affected?	According to the Natural Resources Wales website, the site is located within Flood Zone 1 and at low risk of flooding. The site is not located within a groundwater SPZ. Immediately adjacent to the eastern boundary of the site, the agricultural land is within a Zone 3 SPZ. No other water bodies would be expected to be significantly affected by the proposed development.
Are there any groundwater source protection zones or areas that contribute to the recharge of groundwater resources?	The site is not located within a groundwater SPZ. Immediately adjacent to the eastern boundary of the site, the agricultural land is within a Zone 3 SPZ.
Are there any areas or features of high landscape or scenic value on or around the location which could be affected?	The site is not located within an AONB and is 45km to the north of the Shropshire hills AONB. This is a significant distance away from the site so that the new development would not directly affect the AONB. The closest Local Nature Reserve is Alyn Waters which is located 4.4km north-west of the site boundary. There are no other features of landscape importance on or adjacent to the Site.
Are there any routes or facilities on or around the location which are used by the public for access to recreation or other facilities, which could be affected?	The A534 Holt Road is located immediately north of the site which provides an important route for vehicles to gain access into the centre of Wrexham and Wrexham Industrial Estate. Sandy Lane is located to the east of the site which provides access to Clays Golf course. Bryn Estyn Road runs immediately south of the site and provides another access route into the centre of Wrexham. There is a shared footway/cycleway which runs east to west just north of the northern site boundary. There is a pedestrian/cycle connection from the existing residential estate to the west of the site to Bryn Estyn Road.
Are there any transport routes on or around the location which are susceptible to congestion or which cause environmental problems, which could be affected?	The construction phases of the proposed development would involve changes to traffic movements (e.g. use of HGVs). There is likely to be an increased number of vehicles using the local road network once the proposed development is operational. A Transport Assessment would be submitted in support of the planning application.
Is the development in a location where it is likely to be highly visible to many people?	The potential for local views of the site exists from adjacent and nearby roads and public rights of way, and, on completion, will be visible to residents of the consented development immediately to the west of the site. A landscape assessment will be submitted with the planning application which will address local and, where appropriate, long distance views.
Are there any areas or features of historic or cultural importance on or around the location which could be affected?	The closest feature is a listed building at 93 Dean Road. The nearest Scheduled Monument is Wat's Dyke located 2.8km west of the site boundary.

SCREENING CRITERIA	PROPOSED DEVELOPMENT
	A registered battlefield is located 2.6km south-west of the site boundary at Wrexham Church, in the centre of the town. There is a World Heritage Site; Pontcysyllte Aqueduct and Canal located 12.7km south-west of the site boundary. However, this is a significant distance away and this proposed development will not impact this historical importance. It is expected therefore that no features of historic importance will be significantly affected by the proposed development. However, an archaeological desk based assessment will be prepared and submitted with the application.
Are there any areas on or around the location which are densely populated or built up, which could be affected?	Wrexham, a town of approximately 61,600 people is located to the west of the site. Noise from the development is likely to arise during the construction stage from construction plant; however this would be managed in accordance with standard procedures. On completion of the development the main source of noise would be from traffic from residential and users of the development; however this will be small scale and where necessary will be addressed at the detailed design stage to mitigate any potential effects. A Noise Assessment will accompany the planning application.
Are there any areas on or around the location which are already subject to pollution or environmental damage e.g. where existing legal environmental standards are exceeded, which could be affected?	The site is not located within an Air Quality Management Area (AQMA).
Is the location of the development susceptible to earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions e.g. temperature inversions, fogs, severe winds, which could cause the development to present environmental problems?	According to the Natural Resources Wales website, the site is located within Flood Zone 1 and at low risk of flooding. A Flood Risk and Surface Water Drainage Assessment will be submitted in support of the planning application. The site is not located within a groundwater SPZ. Immediately adjacent to the eastern boundary of the site, the agricultural land is within a Zone 3 SPZ. The site is not located within an AQMA. The site is not considered susceptible to any other hazards.
CHARACTERISTICS OF THE POTENTIAL IMPACT	
(a) Extent and nature of the impact	
Will the effect extend over a large area?	No. This is confined to the site (approximately 28.42ha) and the land immediately adjacent.
Will many people be affected?	Residents adjacent to the site will be affected by the proposed development during the construction phase. Adverse effects would be minimised through the implementation of a CEMP. It is considered that people would not be significantly affected by the proposed development once operational.

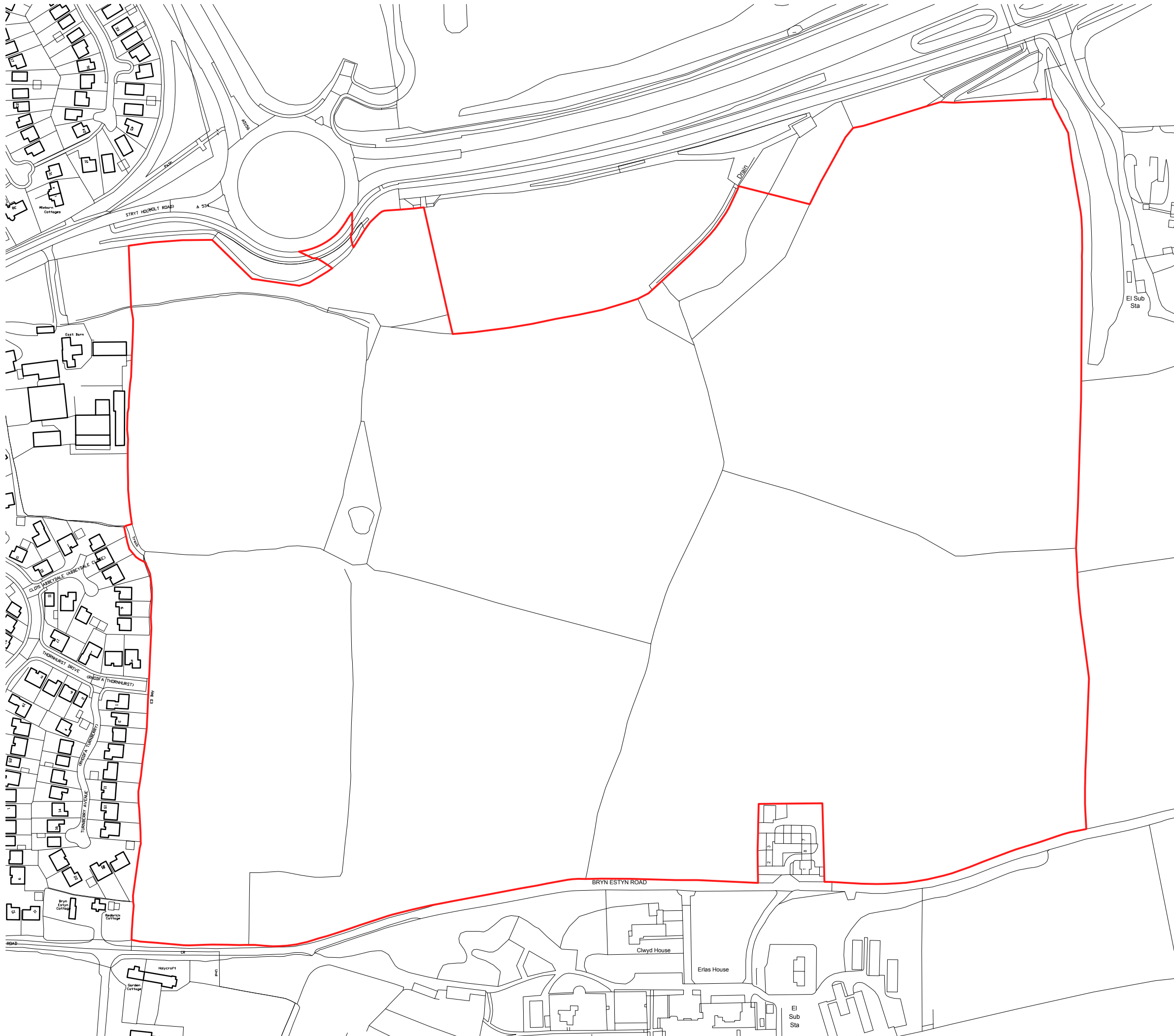
SCREENING CRITERIA	PROPOSED DEVELOPMENT
What will be the nature of the impact?	Short term visual impact; increase in HGV traffic movements and increase in noise, particularly during site construction; minor impacts upon air quality from additional traffic movements and upon biodiversity.
(b) Transboundary nature of the impact	
Will there be any potential for transboundary impact? (n.b. Development which has a significant effect on the environment in another Member State is likely to be very rare. It is for the Secretary of State to check Environmental Statements to decide whether there is likely to be such an effect in each case).	No.
(c) Magnitude and complexity of the impact	
Will there be a large change in environmental conditions?	No.
Will the effect be unusual in the area or particularly complex?	No.
Will many receptors other than people (fauna and flora, businesses, facilities) be affected?	This is considered to be unlikely. An ecological appraisal will accompany the planning application.
Will valuable or scarce features or resources be affected?	The site is within a mineral safeguarding area for sand and gravel extraction for commercial use. Assessment undertaken by the Applicants has concluded that the mineral is not of commercial value/use as set out above and in Appendix 2 to this Screening Report.
Is there a risk that environmental standards will be breached?	No.
Is there a risk that protected sites, areas, and features will be affected?	No.
(d) Probability of the impact	
Is there a high probability of the effect occurring?	The effects of the proposed development can be clearly established, and the probability of any effects determined with reasonable confidence.
Is there a low probability of a potentially highly significant effect?	As above.
(e) Expected onset, Duration, frequency and reversibility of the impact	
What will result in the onset of the impact?	Development will commence following the discharge of pre-commencement conditions attached to the planning permission and the issue of any environmental permitting.
Will the effect continue for a long time?	Construction effects would be short term in duration and the operational effects would be long term.
Will the effect be permanent rather than temporary?	Construction effects would be temporary and the operational effects would be permanent.
Will the impact be continuous rather than intermittent?	Construction – intermittent Operation – continuous
If intermittent, will it be frequent rather than rare?	Frequent.
Will the impact be irreversible?	Construction – Yes Operation – No
Will it be difficult to avoid or reduce or repair or compensate for the effect?	No.
(f) Possibility of effectively reducing the impact	
What is the possibility of the likely impacts arising from the Proposed Development being effectively reduced?	Well understood, standard mitigation measures will be incorporated into the proposed development and a high level of confidence can be placed in the mitigation measures proposed.

4 CONCLUSION

- 4.1 The screening assessment has considered whether the proposed development of up to 600 residential dwellings and open space on land south of Holt Road, Wrexham, would result in likely significant effects on the environment.
- 4.2 The proposed development falls within Schedule 2, 10 (b) of the EIA Regulations, as an urban development project. The site is not located within a sensitive area as defined by the EIA Regulations but it falls above the indicative criteria and screening thresholds at more than 5 hectares in area. The Applicants are not aware of any current planning applications within the surrounding area which could result in the potential for cumulative effects with the proposed development.
- 4.3 The screening assessment has identified that significant effects on the environment are not considered likely either alone or in combination with other development. The effects of the development could be managed in accordance with standard methods. The proposed development is therefore not considered to be formal EIA development as defined by the EIA Regulations.
- 4.4 The planning application will be supported by a suite of environmental reports, including the following:
- Flood Risk and Surface Water Drainage Assessment;
 - Ecological Assessment;
 - Land Contamination Assessment;
 - Archaeological & Heritage Assessment;
 - Transport Assessment;
 - Noise Assessment;
 - Landscape and Visual Impact Assessment and Landscaping Scheme;
 - Planning Statement;
 - Minerals Resource Assessment;
 - Agricultural Land Quality Report;
 - Welsh Language Impact Assessment
 - Air Quality Report; and
 - Statement of Community Involvement.

APPENDIX 1

SITE LOCATION PLAN



KEY:

Site boundary

Bloor Homes | Barratt Homes
Holt Road, Wrexham

Site location

Drwg No: 661B 03
Drawn by: MP
Rev by: -
QM Status: Checked
Scale: 1:2500 @ A3

Date: 09-11-17
Checker: JF
Rev checker: -
Product Status: Issue

APPENDIX 2

MINERALS RESOURCE ASSESSMENT

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ENERGY AND CLIMATE CHANGE
ENVIRONMENT AND SUSTAINABILITY
INFRASTRUCTURE AND UTILITIES
LAND AND PROPERTY
MINING, QUARRYING AND MINERAL ESTATES
WASTE RESOURCE MANAGEMENT



BLOOR HOMES NORTH WEST

PROPOSED DEVELOPMENT AT LAND OFF HOLT ROAD, WREXHAM

MINERAL RESOURCE ASSESSMENT

MAY 2017

your earth our world



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DATE ISSUED: May 2017
JOB NUMBER: ST16134
REPORT NUMBER: J01
STATUS: Final

BLOOR HOMES NORTH WEST

PROPOSED DEVELOPMENT AT LAND OFF HOLT ROAD, WREXHAM

MINERAL RESOURCE ASSESSMENT

MAY 2017

PREPARED BY:

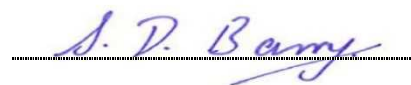
Ashley Yates Senior Minerals Surveyor



APPROVED BY:

Stephen Barry Technical Director

Chartered Minerals Surveyor &
Chartered Geologist



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ENERGY AND CLIMATE CHANGE
ENVIRONMENT AND SUSTAINABILITY
INFRASTRUCTURE AND UTILITIES
LAND AND PROPERTY
MINING AND MINERAL PROCESSING
MINERAL ESTATES AND QUARRYING
WASTE RESOURCE MANAGEMENT

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EXECUTIVE SUMMARY	1
1 INTRODUCTION	2
2 GEOLOGY.....	2
3 MINERAL PLANNING	4
4 COMPLIANCE WITH MINERAL SAFEGUARDING POLICY (MW9).....	5
5 CONCLUSION.....	7

APPENDICES

Appendix 1	Drawing No. WREX-HR-TITLE - Location Plan
Appendix 2	Borehole Log BGS Ref. SJ35SE-26
Appendix 3	Site Investigation - Borehole Logs & Borehole Location Plan
Appendix 4	Borehole Logs BGS Refs. SJ35SE-98, 101 & 119
Appendix 5	Extract from Wrexham County Borough Council Report dated 5 th December 2005
Appendix 6	Policy MW9 – Wrexham Unitary Development Plan 1996 - 2001
Appendix 7	Extract from Appeal Decision APP/Z1510/W/16/3146968

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EXECUTIVE SUMMARY

This report has been prepared to support a planning application by Bloor Homes North West for a proposed development on land off Holt Road, Wrexham. The proposed development site is in an area which has been designated as a mineral resource area for sand and gravel resources. Mineral resource areas are designated to safeguard deposits of sand and gravel and clay from other types of permanent development which would either sterilise them completely or hinder future extraction. As a consequence of this designation, the applicant has prepared this mineral resource assessment in order to determine whether the proposed development in a mineral resource area would be compatible with the relevant mineral safeguarding policies.

The published geological plans for the area show the site to be underlain by glacial sand and gravel deposits.

This report provides evidence that “no exploitable reserves exist within the development site”, because the mineral is primarily sand with almost no gravel content and therefore is not suitable for commercial use.

Even if the mineral resource could be worked, there is no realistic prospect of being able to infill the site following prior extraction to an elevation which would be acceptable for the proposed residential development.

Policy MW9 of the Wrexham Unitary Development Plan states that development will be strongly resisted unless a resource assessment is provided to demonstrate that no exploitable reserves exist within the development site. This Mineral Resource Assessment gives due consideration to Policy MW9 and demonstrates that no commercially exploitable reserves exist on the site. Consideration having been duly given, the application is shown to meet the criteria for development to be acceptable in a Mineral Safeguarding Area, as specified in Policy MW9.

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1 INTRODUCTION

- 1.1 This report has been prepared in accordance with instructions from Bloor Homes North West to prepare a mineral resource assessment report in support of a planning application for a proposed development at land off Holt Road, Wrexham. We understand that the site is currently in agricultural use. The site is shown edged red on drawing No. WREX-HR-TITLE at Appendix 1.
- 1.2 The site is located to the north east of Wrexham. The site is bounded by Holt Road (A534) to the north, Bryn Estyn Road to the south and existing residential development to the west. Wrexham Golf Club is located beyond Holt Road to the north of the site.
- 1.3 The site is located within a mineral resource area as identified by Wrexham County Borough Council, the mineral planning authority (MPA) for the area. In these circumstances, the MPA will require a mineral resource assessment in order to determine whether the proposed development in a mineral resource area would be compatible with the relevant mineral safeguarding policies.

2 GEOLOGY

- 2.1 Geologically, a distinction is made between “superficial deposits” and “solid geology”. Superficial deposits such as sand and gravel are found at, or close to, the surface. The solid bedrock beneath the superficial deposits is called the “solid geology.”

Superficial deposits

- 2.2 An assessment of the British Geological Survey (BGS) records indicates that superficial deposits on the site are glaciofluvial sand and gravel.
- 2.3 The BGS has published the log of a borehole which was drilled in the centre of the site. An extract of the log is attached at Appendix 2 and it shows the presence of 0.3 metres of soil above 1.5 metres of clayey sand at the surface, followed by 23.2 metres of sand to the end of the borehole at 25 metres. The borehole log shows that the deposit is 91% sand, 2% gravel and 7% fines.
- 2.4 A preliminary site investigation was undertaken between 30 and 31 March 2017, comprising 12 windowless sample boreholes. The boreholes were drilled to 5m depth or refusal. A borehole location plan and the borehole logs are attached at Appendix 3.

- 2.5 The ground conditions encountered in the boreholes generally confirmed the published mapping and comprised topsoil to a depth of between c.0.28m – 0.40m overlying generally loose to medium dense, slightly silty, slightly gravelly sands. The site investigation also reported that there are some areas of looser sand where the material contains more silt and clay. Water was encountered in three locations towards the south west corner of the site at depths of between 1m and 2m.
- 2.6 Glacial sand and gravel is of commercial interest in some circumstances, providing that it has a high proportion of gravel, with a low proportion of silt. This is because concrete (the principal use of sand and gravel) requires about twice as much gravel as sand. However, the deposit on this site contains only 2% gravel. It is apparent that the requisite ratio of 2 gravel to 1 sand means that there is usually an oversupply of sand in sand and gravel pits. As a consequence, the very high proportion of sand on this site means that the deposit on this site is not of commercial use.
- 2.7 Sand and gravel is worked locally at Borrás Quarry which is located approximately 1km to the north of the site. The BGS has published the logs of several boreholes that have been drilled within the quarry which show the sand and gravel deposit contains a high proportion of gravel. A selection of those borehole logs are attached at Appendix 4 and they all show an average gravel content in excess of 40%.
- 2.8 Furthermore, in a Wrexham County Borough Council report to the Planning Committee dated 5th December 2005 (see Appendix 5), on page 5 the Chief Planning Officer acknowledges that fine sands are too fine grained to be used for the manufacture of high quality aggregate products and require blending with coarser sands and gravels. It states that without the coarser materials the working of fine sands is unlikely to be economic.

Solid geology

- 2.9 The solid geology of the site beneath the superficial deposits is shown on the geological plans published by the BGS as being interbedded mudstones, sandstones and conglomerate of the Salop Formation, of Permian age. These beds are not considered to be of commercial interest.

3 MINERAL PLANNING

- 3.1 The current Development Plan for the area is the Wrexham Unitary Development Plan (UDP) 1996 - 2011, which was adopted in February 2005. The Plan covers the administrative area of the Wrexham County Borough Council. The Wrexham UDP 1996-2011 states at Policy MW9 (see Appendix 6):

“Protection of Mineral Resources: Policy MW9

Resources of sand and gravel, and clay, will be safeguarded from non-mineral development in order to prevent the sterilisation of unworked mineral deposits. The identification of mineral resource areas gives no presumption in favour of the working of any deposits. Within such areas, non-mineral development will be strongly resisted unless a resource assessment (or other information) is provided to demonstrate that no exploitable reserves exist within the development site. Where non-mineral development which materially prejudices mineral resources is granted planning permission on land holding mineral deposits, provision should be made for the prior removal of mineral deposits.”

- 3.2 The site is located within a sand and gravel mineral resource protection area as identified by Wrexham County Borough Council. The mineral resource areas are based on mineral resource mapping completed by the British Geological Survey (BGS). However, this report demonstrates that ‘no exploitable reserves exist within the development site’ because the mineral deposit is of no commercial interest and is unlikely to be so in the future. We therefore consider that the proposed development at this site does not conflict with Policy MW9.
- 3.3 The Welsh Government introduced a new development plan system in 2004, and the existing UDP is due to be replaced by the Wrexham Local Development Plan 2 (LDP2) 2013-2028 and will become part of the Development Plan for Wrexham.
- 3.4 The development of the Wrexham LDP2 is in its early stages and Wrexham County Borough Council currently states that, dependent upon the Planning Inspectorate, adoption of the Wrexham LDP2 will be in early 2018. At present, the Wrexham LDP2 does not contain any emerging policies of significance to mineral development at this site.

4 COMPLIANCE WITH MINERAL SAFEGUARDING POLICY (MW9)

- 4.1 The geology of the site demonstrates that the glacial sand and gravel deposits are predominantly sand and are not suitable for commercial use.
- 4.2 We therefore consider that the sand and gravel deposits do not constitute an exploitable mineral reserve, and the proposed development would be compatible with the mineral planning policy on avoiding unnecessary mineral sterilisation.
- 4.3 Indirect sterilisation has already occurred over part of the site due to standoffs and buffer zones which would be necessary from existing residential properties to the west of the site and from the highways to the north and south. The proximity of these properties means that mineral extraction of any kind could not be undertaken without having an unacceptable impact on the amenity of the residents in those properties.
- 4.4 Nevertheless, for completeness, we have set out below an assessment of whether prior extraction would be practicable.

Prior Extraction

- 4.5 The extraction of sand and gravel involves the use of excavators and dump trucks, which generate noise, and the formation of a quarry floor is a source of fugitive dust. The deposit is already subject to extensive indirect sterilisation due to the standoffs which would be necessary from existing residential properties along the site's northern boundary. The presence of these properties causes existing indirect sterilisation of the resource in the site due to the need to protect the amenity of residents by the use of buffer zones or standoffs. There are no universally accepted distances for such standoffs as they tend to be site-specific. However, it is reasonable to assume that standoff distances should be at least 100m from residential dwellings for sand and gravel operations.
- 4.6 If the entire thickness of sand and gravel were to be excavated, the site would not subsequently be useable for the proposed housing development. Prior extraction of the minerals would lower the development platform to a depth equal to the depth of the minerals extracted, and the excavated landform would be unsuitable for residential development unless the void was infilled. It would not make commercial sense to infill the void with virgin aggregates or secondary aggregates as this would defeat the object of prior extraction, as well being financially unviable.
- 4.7 It would also be unrealistic to consider that the site could be reinstated to a condition suitable for building residential development by infilling with imported inert waste

because the site would then be recorded as a landfill site and hence subject to “stigma.” In any event, even if sufficient waste could be sourced, it would not provide adequate stability to support buildings and underground utilities.

- 4.8 A significant sand and gravel mineral resource is currently being commercially exploited at Borrass quarry, which is located approximately 800m to the north of the site. Wrexham County Borough Council states in “LDP2 Topic Paper: 5 Minerals” that planning permission for an extension to Borrass quarry was granted in 2007, and it is considered that this is sufficient to meet the Council’s obligations to provide a land bank of at least 7 years.
- 4.9 In consideration of the planning balance, if an application for housing on the site is refused due to mineral sterilisation, the deposit would still not be worked because the proximity of existing residential development would make mineral extraction unacceptable. Prior extraction is inappropriate as it would preclude the ultimate built development for which it was undertaken. Consequently, in the context of mineral safeguarding, the development choice for the site is either much-needed houses, or no houses but the retention of a safeguarded sand deposit that is of no economic importance.

Overriding Need

- 4.10 This report deals with the mineral planning aspects of compliance with the mineral safeguarding policy. We understand that the applicant, Bloor Homes North West, will provide evidence to support its contention that there is an overriding need for the development and therefore it is not considered further in this report.
- 4.11 However, for the reasons presented above it is clear that it is not practicable or environmentally acceptable in the foreseeable future to extract the mineral. This aspect was considered in a recent appeal decision regarding proposed development in a MSA. The Inspector’s report on that appeal is attached at Appendix 7. At paragraph 96 of his report, the Inspector states *“It appears to me that the appeal scheme is unlikely to constrain potential future use of the site for mineral extraction because mineral extraction is unlikely to happen in any event.”* At paragraph 98 of his report, the Inspector notes that *“Whilst the site is in a MSA, I attach only limited weight to this factor because prior extraction is unlikely to be a practical solution here”*. Whilst planning appeal decisions do not establish precedents, those comments do indicate that PINS takes a pragmatic approach to consideration of mineral safeguarding where there is a need for non-mineral development.

5 CONCLUSION

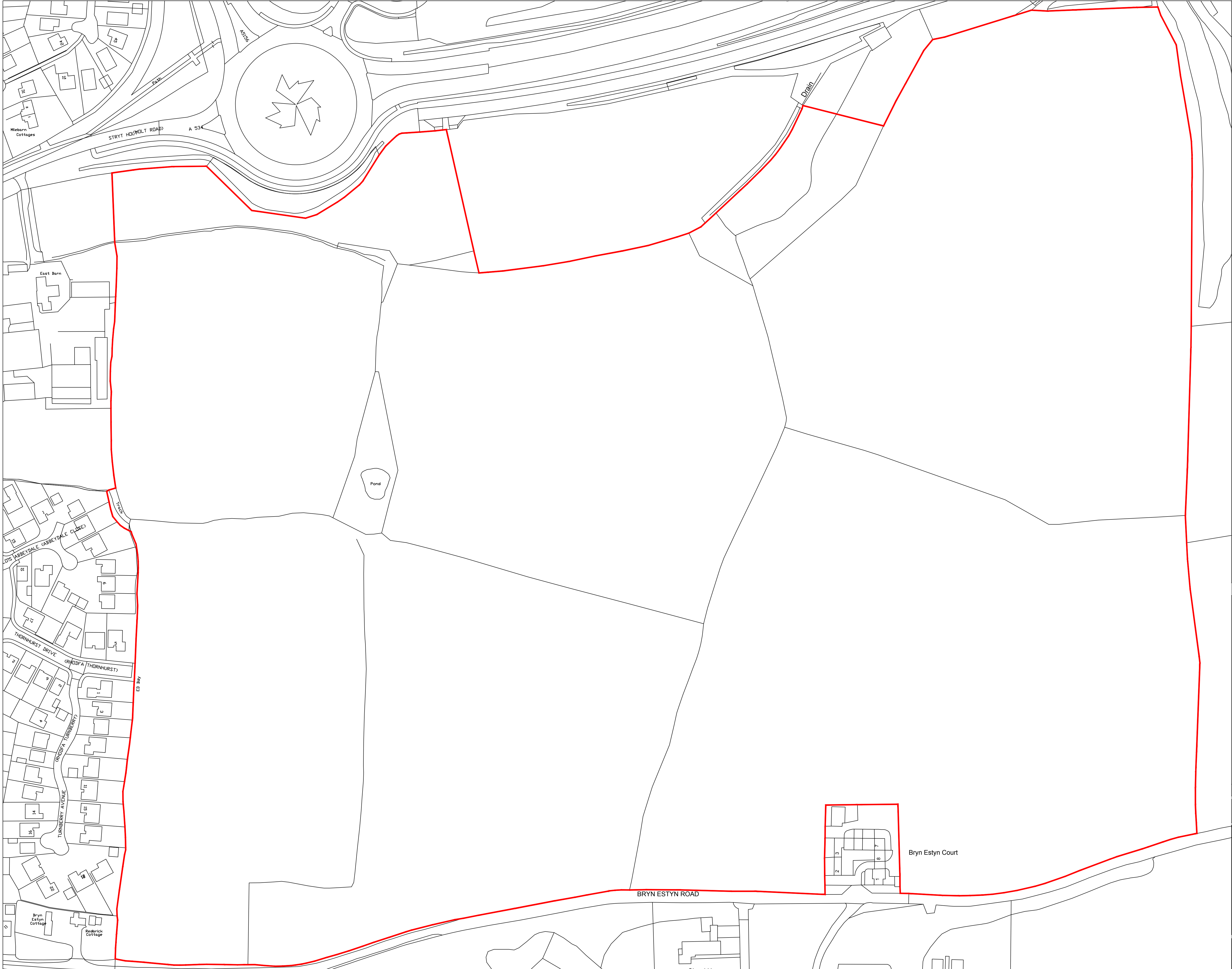
- 5.1 This report has demonstrated that no exploitable reserves exist within the development site because the mineral is primarily sand with almost no gravel content and therefore is not suitable for commercial use.
- 5.2 If the 'mineral resource' was excavated it would create a void which would be unusable for the proposed housing development and there is no practicable means of infilling that void. It would not make sense to infill with virgin or secondary aggregates and there is not sufficient site-derived material to infill up to an acceptable elevation. Infilling with inert waste would not be practicable because it would not provide adequate stability to support buildings and underground utilities.
- 5.3 We therefore consider that the proposed development at this site would not conflict with the MPA's mineral safeguarding policy and we would respectfully suggest that the MPA should not raise any objections to the proposed development on the grounds of mineral safeguarding.

Appendix 1

Drawing No. WREX-HR-TITLE

Location Plan

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28.37 HECTARES

REVISIONS		

JOB
HOLT ROAD
WREXHAM

DRAWING
TITLE PLAN

DATE: 06.02.2017 | DRAWN: QJB | SCALE: 1:1000

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BLOOR HOMES

BLOOR HOMES NORTH EST

S BLOOR | MS O | TD
NITS 2 | HITES/DE | STATION ROAD
HO: MES CHA | E | CHESH RE | C | BAA
TE: E: HONE | 177 | 3 | ACS M | E | 177 | 3

DRAWING No: WREX-HR-TITLE

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Appendix 2

Borehole Log BGS Ref. SJ35SE-26

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SJ 35 SE 26

3622 5156

North of Bryn Estyn, Bieston 1st no. 121

Block B

Surface level (+73.2 m) +240 ft

Water not struck

Shell and auger 8-in (203 mm) diameter

February 1977

Overburden 1.8 m

Mineral 23.2 m +

LOG

Geological classification	Lithology	Thickness m	Depth m
Glacial Sand and Gravel	Soil, slightly sandy with pebbles	0.3	0.3
	Clay, reddish brown, silty and sandy with occasional fine quartzite pebbles	1.5	1.8
	Sand, pebbly in parts Sand: buff-brown, medium and fine with a trace of coarse, subangular to subrounded. Fines with depth, with pebbles of quartzite, sandstone, volcanics, quartz, coal and limestone at the top	23.2+	25.0

GRADING

Mean for deposit percentages			Depth below surface (m)	percentages						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				1/16	+1/16-1/4	+1/4-1	+1-4	+4-16	+16-64	+64
7	91	2	1.8-2.8	8	27	57	3	3	2	0
			2.8-3.8	2	19	62	6	6	5	0
			3.8-4.8	5	15	63	5	6	6	0
			4.8-5.8	3	15	79	2	1	0	0
			5.8-6.8	2	11	79	7	1	0	0
			6.8-7.8	1	18	75	5	1	0	0
			7.8-8.8	2	36	53	1	1	0	7
			8.8-9.8	2	28	70	0	0	0	0
			9.8-10.8	2	36	61	1	0	0	0
			10.8-11.8	24	48	28	0	0	0	0
			11.8-12.8	4	40	56	0	0	0	0
			12.8-13.8	4	47	49	0	0	0	0
			13.8-14.8	2	36	62	0	0	0	0
			14.8-16.8	6	35	58	0	1	0	0
			16.8-18.8	6	53	41	0	0	0	0
			18.8-21.8	15	74	11	0	0	0	0
			21.8-25.0	13	69	18	0	0	0	0
			Mean	7	43	47	1	1	1	0

COMPOSITION

Depth below surface (m)	Percentages by weight in +8 mm fraction						
	Quartz	Quartzite	Sandstone	Limestone	Other sediments	Igneous	Chert, flint
1.8-3.8	3	60	17	5	2	9	4
3.8-5.8	2	71	1	Trace	6	18	1
5.8-7.8	6	36	13		2	33	10
8.8-16.8	1	92	Trace	1	Trace	3	3

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Appendix 3

Site Investigation

Borehole Logs & Borehole Location Plan

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Project Id: ST16134
Project Title: Holt Road, Wrexham
Location: Holt Road, Wrexham
Client: Bloor Homes North West

Title: Site Plan
Scale: 1:3000
Engineer: M Heys
Contractor: Exploration Ltd



- Legend Key
- Locations By Type - Empty
 - Locations By Type - WLS
 - Project Bounds - Project Bounds



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Borehole Log

Borehole No.

WS101

Sheet 1 of 1

Project Name: Holt Road, Wrexham

Project No.
ST16134

Co-ords: 335959.01 - 351479.32

Hole Type
WLS

Location: Holt Road, Wrexham

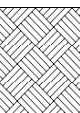
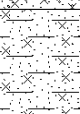
Level: 75.00

Scale
1:25

Client: Bloor Homes North West

Dates: 30/03/2017 -

Logged By
G Usher

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10 - 0.20	ES		0.37	74.63		TOPSOIL: Grass over soft dark brown organic silty sandy CLAY with rootlets. Sand is fine to medium.	1
								Loose yellowish brown slightly silty slightly gravelly SAND. Sand is medium to coarse. Gravel is fine to medium angular to sub-rounded of sandstone and mudstone.	
		1.00		N=9 (4,3/3,2,2,2)			<u>Water encountered from 1.0m depth (2nd run).</u>		2
					1.60	73.40		Light orangish brown to yellowish brown mottled grey slightly silty very clayey SAND. Sand is medium.	
		2.00		N=5 (4,2/1,1,2,1)	2.00	73.00		Very loose light brown silty SAND. Sand is fine to coarse with rare black coarse sand of coal.	
					2.80	72.20			Medium dense becoming dense light yellowish to orangish brown slightly silty SAND. Sand is fine to coarse.
		3.00		N=22 (3,4/4,5,7,6)					
		4.00		N=50 (11,11/12,12,13,13)					
		4.35		N=48 (11,12/14,10,11,13)					
					4.80	70.20		End of borehole at 4.80 m	

Remarks

Terminated at 4.8m depth due to sample refusal.
Water encountered from 1.0m depth.
Backfilled with arisings upon completion.

AGS



Borehole Log

Borehole No.

WS102

Sheet 1 of 2

Project Name: Holt Road, Wrexham

Project No.
ST16134

Co-ords: 335896.93 - 351583.64

Hole Type
WLS

Location: Holt Road, Wrexham

Level: 74.00

Scale
1:25

Client: Bloor Homes North West

Dates: 31/03/2017 -

Logged By
G Usher

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10 - 0.20	ES		0.40	73.60		TOPSOIL: Dark brown slightly clayey silty gravelly SAND. Sand is medium. Gravel is fine to medium sub-angular to sub-rounded of mudstone and sandstone.	1
								Orangish brown mottled black slightly silty slightly gravelly SAND. Sand is medium to coarse. Gravel is fine to medium sub-angular to sub-rounded of sandstone, coal and mudstone.	
		1.20		N=14 (2,3/4,3,3,4)	1.26 1.36	72.74 72.64		Brown mottled orange and black clayey slightly silty sandy GRAVEL. Sand is fine to medium. Gravel is fine to coarse sub-angular to sub-rounded of sandstone and mudstone.	
								Medium dense light orangish brown slightly silty slightly gravelly SAND with low cobble content. Sand is medium. Gravel is fine to coarse angular to sub-rounded of sandstone and coal. Cobble is sub-rounded of sandstone.	2
		2.00		N=21 (3,3/4,8,5,4)	1.76	72.24		Coal fragments between 1.7m and 1.76m depth.	
								Medium dense orangish light brown slightly silty sand. Sand is medium to coarse.	
					2.24	71.76		Medium dense orangish brown mottled black slightly silty gravelly SAND. Sand is medium. Gravel is fine to coarse sub-angular to sub-rounded of sandstone and mudstone.	3
		3.00		N=22 (5,6/6,5,6,5)	2.56	71.44		Medium dense becoming dense orangish brown becoming light brown slightly silty slightly gravelly SAND. Sand is medium to coarse. Gravel is fine to medium sub-angular to sub-rounded of sandstone.	
								Becoming pale brown with increasing gravel coarseness between 2.8m and 5.45m depth.	
		4.00		N=19 (3,4/4,4,5,6)					4
								Coal fragments between 4.3m and 4.37m depth.	5
		5.00		N=34 (9,9/8,8,9,9)					

Continued on next sheet

Remarks

Target depth achieved.
Water not encountered.
1.2m hand dug service pit prior to sampling.
Backfilled with arisings upon completion.

AGS



Borehole Log

Borehole No.

WS102

Sheet 2 of 2

Project Name: Holt Road, Wrexham

Project No.
ST16134

Co-ords: 335896.93 - 351583.64

Hole Type
WLS

Location: Holt Road, Wrexham

Level: 74.00

Scale
1:25

Client: Bloor Homes North West

Dates: 31/03/2017 -

Logged By
G Usher

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					5.45	68.55		End of borehole at 5.45 m	
									6
									7
									8
									9
									10

Remarks

Target depth achieved.
Water not encountered.
1.2m hand dug service pit prior to sampling.
Backfilled with arisings upon completion.





Borehole Log

Borehole No.

WS103

Sheet 1 of 1

Project Name: Holt Road, Wrexham

Project No.
ST16134

Co-ords: 335892.40 - 351351.97

Hole Type
WLS

Location: Holt Road, Wrexham

Level: 78.00

Scale
1:25

Client: Bloor Homes North West

Dates: 30/03/2017 -

Logged By
G Usher

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10 - 0.20	ES		0.40	77.60		TOPSOIL: Dark brown slightly clayey slightly silty gravelly SAND. Sand is medium. Gravel is fine to medium angular to sub-rounded of sandstone and mudstone.	1
		1.00		N=10 (2,1/2,2,3,3)	1.60	76.40		Loose yellowish brown slightly silty slightly gravelly SAND. Sand is medium to coarse. Gravel is fine sub-angular to sub-rounded of quartzite and sandstone.	
		2.00		N=3 (2,1/1,0,1,1)	2.50	75.50		Soft with occasional firm pockets light brown mottled grey, orange and black silty sandy CLAY. Sand is fine to medium. Feels damp throughout.	2
		3.00		N=29 (4,3/4,6,8,11)				Increased sand content between 2.0m and 2.5m depth.	
		3.50		50 (20,10 for 10mm/18,14,13,5 for 15mm)	3.95	74.05		Medium dense becoming very dense yellowish brown slightly silty slightly gravelly SAND. Sand is medium to coarse. Gravel is fine sub-angular to sub-rounded of quartzite and sandstone	3
								End of borehole at 3.95 m	4
									5

Remarks

Terminated at 3.95m depth due to sample refusal.
Water encountered from 2.0m depth.
Backfilled with arisings upon completion.





Borehole Log

Borehole No.

WS104

Sheet 1 of 2

Project Name: Holt Road, Wrexham

Project No.
ST16134

Co-ords: 336098.28 - 351581.67

Hole Type
WLS

Location: Holt Road, Wrexham

Level: 73.00

Scale
1:25

Client: Bloor Homes North West

Dates: 31/03/2017 -

Logged By
G Usher

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.45 - 0.65	ES		0.35	72.65		TOPSOIL: Grass over dark brown clayey silty slightly gravelly SAND. Sand is fine to medium. Gravel is angular to sub-rounded of sandstone and mudstone.	1
		1.20		N=11 (4,3/3,2,3,3)	1.50	71.50		Medium dense light orangish brown mottled black slightly silty slightly gravelly SAND. Sand is medium. Gravel is fine to medium sub-rounded of sandstone.	
		2.00		N=6 (1,2/1,1,2,2)	1.64	71.36		Medium dense light orangish brown mottled black slightly clayey slightly silty slightly gravelly SAND. Sand is medium. Gravel is fine to medium sub-rounded of sandstone. Loose light orangish brown mottled black slightly silty slightly gravelly SAND. Sand is medium. Gravel is fine to medium sub-rounded of sandstone. <i>Slightly damp from 1.65m depth.</i>	2
		3.00		N=4 (1,1/1,1,1,1)				<i>Increased gravel content between 3.5m and 3.75m depth.</i>	3
		4.00		N=12 (2,2/3,3,3,3)	3.75	69.25		Medium dense becoming loose light orangish brown slightly silty SAND. Sand is fine to coarse.	4
		5.00		N=8 (0,1/2,1,2,3)					5

Continued on next sheet

Remarks

Target depth achieved.
Water not encountered.
1.2m hand dug service pit prior to sampling.
Backfilled with arisings upon completion.

AGS



Borehole Log

Borehole No.

WS104

Sheet 2 of 2

Project Name: Holt Road, Wrexham

Project No.
ST16134

Co-ords: 336098.28 - 351581.67

Hole Type
WLS

Location: Holt Road, Wrexham

Level: 73.00

Scale
1:25

Client: Bloor Homes North West

Dates: 31/03/2017 -

Logged By
G Usher

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					5.45	67.55		End of borehole at 5.45 m	
									6
									7
									8
									9
									10

Remarks

Target depth achieved.
Water not encountered.
1.2m hand dug service pit prior to sampling.
Backfilled with arisings upon completion.





Borehole Log

Borehole No.

WS105

Sheet 1 of 2

Project Name: Holt Road, Wrexham

Project No.
ST16134

Co-ords: 336062.95 - 351359.74

Hole Type
WLS

Location: Holt Road, Wrexham

Level: 79.00

Scale
1:25

Client: Bloor Homes North West

Dates: 31/03/2017 -

Logged By
G Usher

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10 - 0.20	ES		0.40	78.60		TOPSOIL: Grass over dark brown clayey silty slightly gravelly SAND. Sand is fine to medium. Gravel is fine to medium sub-angular to sub-rounded of sandstone and mudstone.	1
								Loose orangish brown mottled reddish brown slightly clayey slightly silty gravelly SAND. Sand is fine to coarse. Gravel is fine to coarse angular to sub-rounded of sandstone, mudstone, quartzite and clayey sand nodules.	
		1.20		N=7 (1,2/1,2,2,2)	1.57	77.43		Loose orangish brown slightly silty SAND. Sand is fine to medium.	
		2.00		N=10 (2,2/1,3,3,3)	2.00	77.00		Loose orangish brown mottled black and reddish brown slightly clayey slightly silty gravelly SAND. Sand is fine to medium. Gravel is fine to medium sub-angular to sub-rounded of sandstone, mudstone and clayey sand nodules.	2
					2.32	76.68		Medium dense orangish brown mottled black slightly silty SAND. Sand is fine to medium.	
		3.00		N=13 (2,2/3,2,4,4)					3
		4.00		N=28 (5,6/7,6,7,8)	4.00	75.00		Medium dense light greyish brown slightly silty gravelly SAND. Sand is fine to medium. Gravel is fine to medium angular to sub-rounded of sandstone and mudstone.	4
					4.56	74.44		Medium dense light brown slightly silty SAND. Sand is medium to coarse.	
		5.00		N=22 (5,4/5,5,6,6)					5

Continued on next sheet

Remarks

Target depth achieved.
Water not encountered.
1.2m hand dug service pit prior to sampling.
Backfilled with arisings upon completion.

AGS



Borehole Log

Borehole No.

WS105

Sheet 2 of 2

Project Name: Holt Road, Wrexham

Project No.
ST16134

Co-ords: 336062.95 - 351359.74

Hole Type
WLS

Location: Holt Road, Wrexham

Level: 79.00

Scale
1:25

Client: Bloor Homes North West

Dates: 31/03/2017 -

Logged By
G Usher

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					5.45	73.55		End of borehole at 5.45 m	
									6
									7
									8
									9
									10

Remarks

Target depth achieved.
Water not encountered.
1.2m hand dug service pit prior to sampling.
Backfilled with arisings upon completion.





Borehole Log

Borehole No.

WS106

Sheet 1 of 2

Project Name: Holt Road, Wrexham

Project No.
ST16134

Co-ords: 336265.29 - 351593.80

Hole Type
WLS

Location: Holt Road, Wrexham

Level: 74.00

Scale
1:25

Client: Bloor Homes North West

Dates: 30/03/2017 -

Logged By
G Usher

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10 - 0.20	ES		0.30	73.70		TOPSOIL: Grass over dark brown slightly clayey slightly silty slightly gravelly SAND with rootlets. Sand is fine to medium. Gravel is fine to medium sub-angular to sub-rounded of sandstone and mudstone. Loose to medium dense orangish light brown slightly clayey slightly silty slightly gravelly SAND. Sand is medium to coarse. Gravel is medium sub-angular to sub-rounded of quartzite, sandstone and nodules of clayey sands.	
		1.00		N=18 (4,4/4,4,5,5)					1
		2.00		N=11 (3,3/2,3,3,3)					2
		3.00		N=23 (4,5/6,5,6,6)				Inclusions of reddish brown clayey sand nodules between 2.46m and 2.65m depth.	3
		4.00		N=8 (2,3/2,2,2,2)					4
		5.00		N=11 (2,3/3,2,3,3)				Continued on next sheet	5

Remarks

Target depth achieved.
Water not encountered.
Backfilled with arisings upon completion.

AGS



Borehole Log

Borehole No.

WS106

Sheet 2 of 2

Project Name: Holt Road, Wrexham

Project No.
ST16134

Co-ords: 336265.29 - 351593.80

Hole Type
WLS

Location: Holt Road, Wrexham

Level: 74.00

Scale
1:25

Client: Bloor Homes North West

Dates: 30/03/2017 -

Logged By
G Usher

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					5.45	68.55		End of borehole at 5.45 m	
									6
									7
									8
									9
									10

Remarks

Target depth achieved.
Water not encountered.
Backfilled with arisings upon completion.





Borehole Log

Borehole No.

WS107

Sheet 1 of 2

Project Name: Holt Road, Wrexham

Project No.
ST16134

Co-ords: 336223.51 - 351372.66

Hole Type
WLS

Location: Holt Road, Wrexham

Level: 78.00

Scale
1:25

Client: Bloor Homes North West

Dates: 30/03/2017 -

Logged By
G Usher

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.30	77.70		TOPSOIL: Dark brown clayey silty gravelly SAND. Sand is medium. Gravel is fine to coarse angular to sub-rounded of mudstone, sandstone and quartzite.	
								Loose to medium dense light orangish brown slightly clayey slightly silty slightly gravelly SAND. Sand is fine to medium. Gravel is fine to coarse sub-angular to sub-rounded of sandstone, mudstone, coal fragments and nodules of clayey sand.	
		1.20		N=6 (2,2/1,1,2,2)					1
		2.00		N=11 (2,3/2,3,3,3)				Increased gravel size between 1.5m and 2.0m depth.	2
		3.00		N=9 (2,2/3,2,2,2)				Reddish brown clayey sand nodules between 2.45m and 2.95m depth.	3
		4.00		N=10 (3,2/3,2,2,3)				Sand becoming finer between 3.46m and 4.55m depth.	4
		5.00		N=18 (1,1/4,4,5,5)				Continued on next sheet	5

Remarks

Target depth achieved.
Water not encountered.
1.2m hand dug service pit prior to sampling.
Backfilled with arisings upon completion.

AGS



Borehole Log

Borehole No.

WS107

Sheet 2 of 2

Project Name: Holt Road, Wrexham

Project No.
ST16134

Co-ords: 336223.51 - 351372.66

Hole Type
WLS

Location: Holt Road, Wrexham

Level: 78.00

Scale
1:25

Client: Bloor Homes North West

Dates: 30/03/2017 -

Logged By
G Usher

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					5.45	72.55		End of borehole at 5.45 m	
									6
									7
									8
									9
									10

Remarks

Target depth achieved.
Water not encountered.
1.2m hand dug service pit prior to sampling.
Backfilled with arisings upon completion.





Borehole Log

Borehole No.

WS108

Sheet 1 of 2

Project Name: Holt Road, Wrexham

Project No.
ST16134

Co-ords: 336375.86 - 351742.99

Hole Type
WLS

Location: Holt Road, Wrexham

Level: 71.00

Scale
1:25

Client: Bloor Homes North West

Dates: 30/03/2017 -

Logged By
G Usher

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10 - 0.20	ES		0.28	70.72		TOPSOIL: Brown slightly clayey silty gravelly SAND. Sand is fine to medium. Gravel is fine to medium sub-angular to sub-rounded of sandstone and mudstone.	
		1.00		N=8 (2,2/2,2,2,2)				Loose orangish light brown slightly silty slightly gravelly SAND. Sand is medium to coarse. Gravel is medium to coarse sub-angular to sub-rounded of sandstone, mudstone and quartzite. <i>Becoming paler with depth. Damp throughout.</i>	1
		2.00		N=8 (2,1/2,2,2,2)					2
		3.00		N=8 (3,2/2,2,2,2)					3
		4.00		N=8 (1,2/3,2,2,1)					4
		5.00		N=10 (3,3/3,2,2,3)				<i>Increased gravel content between 4.5m and 4.6m depth.</i> <i>Increased sand coarseness between 4.6m and 5.0m depth.</i>	5

Continued on next sheet

Remarks

Target depth achieved.
Water not encountered.
Backfilled with arisings upon completion.

AGS



Borehole Log

Borehole No.

WS108

Sheet 2 of 2

Project Name: Holt Road, Wrexham

Project No.
ST16134

Co-ords: 336375.86 - 351742.99

Hole Type
WLS

Location: Holt Road, Wrexham

Level: 71.00

Scale
1:25

Client: Bloor Homes North West

Dates: 30/03/2017 -

Logged By
G Usher

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					5.45	65.55		End of borehole at 5.45 m	
									6
									7
									8
									9
									10

Remarks

Target depth achieved.
Water not encountered.
Backfilled with arisings upon completion.





Borehole Log

Borehole No.

WS109

Sheet 1 of 2

Project Name: Holt Road, Wrexham

Project No.
ST16134

Co-ords: 336394.99 - 351558.36

Hole Type
WLS

Location: Holt Road, Wrexham

Level: 74.00

Scale
1:25

Client: Bloor Homes North West

Dates: 30/03/2017 -

Logged By
G Usher

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10 - 0.30	ES		0.30	73.70		TOPSOIL: Grass over dark brown slightly clayey silty slightly gravelly SAND with rootlets. Sand is fine to medium. Gravel is fine to medium sub-angular to sub-rounded of sandstone and mudstone.	
		1.00		N=14 (2,3/3,3,4,4)				Loose to medium dense orangey light brown slightly silty slightly gravelly SAND. Sand is medium to coarse. Gravel is fine to coarse angular to sub-rounded of sandstone. <i>Becoming paler between 0.3m and 5.45m depth.</i>	1
		2.00		N=9 (2,3/2,2,3,2)					2
		3.00		N=5 (2,1/1,2,1,1)					3
		4.00		N=5 (0,0/0,2,1,2)					4
		5.00		N=11 (1,1/2,3,3,3)				Increased gravel content from 4.7m and 5.0m depth. Also damp.	5

Continued on next sheet

Remarks

Target depth achieved.
Water not encountered.
Backfilled with arisings upon completion.

AGS



Borehole Log

Borehole No.

WS109

Sheet 2 of 2

Project Name: Holt Road, Wrexham

Project No.
ST16134

Co-ords: 336394.99 - 351558.36

Hole Type
WLS

Location: Holt Road, Wrexham

Level: 74.00

Scale
1:25

Client: Bloor Homes North West

Dates: 30/03/2017 -

Logged By
G Usher

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					5.45	68.55		End of borehole at 5.45 m	
									6
									7
									8
									9
									10

Remarks

Target depth achieved.
Water not encountered.
Backfilled with arisings upon completion.





Borehole Log

Borehole No.

WS110

Sheet 1 of 2

Project Name: Holt Road, Wrexham

Project No.
ST16134

Co-ords: 336391.54 - 351352.50

Hole Type
WLS

Location: Holt Road, Wrexham

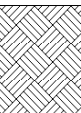
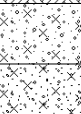
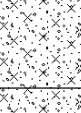
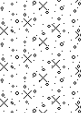
Level: 75.00

Scale
1:25

Client: Bloor Homes North West

Dates: 30/03/2017 -

Logged By
G Usher

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10 - 0.20	ES		0.40	74.60		TOPSOIL: Grass on top dark brown clayey silty gravelly SAND. Sand is medium. Gravel is fine to coarse angular to sub-rounded of mudstone, sandstone and quartzite.	
					0.60	74.40		Light orangish brown slightly silty sandy GRAVEL. Sand is fine to coarse. Gravel is fine to coarse sub-angular to sub-rounded of sandstone and mudstone.	
		1.00		N=14 (4,3/4,3,3,4)	1.50	73.50		Medium dense light orangish brown slightly silty gravelly SAND. Sand is fine to coarse. Gravel is fine to coarse sub-angular to sub-rounded of sandstone and mudstone.	1
								Light orangish brown slightly silty slightly gravelly SAND. Sand is medium. Gravel is fine to medium sub-angular to sub-rounded of sandstone and mudstone.	
		2.00		N=18 (6,5/4,5,4,5)	2.00	73.00		Medium dense light orangish brown slightly silty sandy GRAVEL. Sand is medium. Gravel is fine to coarse angular to sub-rounded of sandstone, mudstone and quartzite.	2
					2.47	72.53		Loose to medium dense light orangish brown slightly silty slightly gravelly SAND. Sand is medium. Gravel is fine to medium sub-angular to sub-rounded of sandstone and mudstone.	
		3.00		N=11 (3,2/3,2,3,3)					3
								Increased gravel content with reddish brown mottling between 3.53m and 3.71m depth.	
		4.00		N=7 (2,2/2,1,2,2)					4
								Sand becoming predominately fine to medium with black to brown mottling from 4.52m to 5.0m depth.	
		5.00		N=19 (2,3/4,4,5,6)					5

Continued on next sheet

Remarks

Target depth achieved.
Water not encountered.
Backfilled with arisings upon completion.

AGS



Borehole Log

Borehole No.

WS110

Sheet 2 of 2

Project Name: Holt Road, Wrexham

Project No.
ST16134

Co-ords: 336391.54 - 351352.50

Hole Type
WLS

Location: Holt Road, Wrexham

Level: 75.00

Scale
1:25

Client: Bloor Homes North West

Dates: 30/03/2017 -

Logged By
G Usher

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					5.45	69.55		End of borehole at 5.45 m	
									6
									7
									8
									9
									10

Remarks

Target depth achieved.
Water not encountered.
Backfilled with arisings upon completion.





Borehole Log

Borehole No.

WS111

Sheet 1 of 1

Project Name: Holt Road, Wrexham

Project No.
ST16134

Co-ords: 336182.00 - 351473.00

Hole Type
WLS

Location: Holt Road, Wrexham

Level: 77.00

Scale
1:25

Client: Bloor Homes North West

Dates: 31/03/2017 -

Logged By
G Usher

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10 - 0.20	ES		0.35	76.65		TOPSOIL: Dark brown silty clayey gravelly SAND. Sand is fine to medium. Gravel is fine to medium sub-angular to sub-rounded of sandstone and mudstone.	1
								Medium dense light orangish brown mottled reddish brown slightly clayey slightly silty slightly gravelly SAND. Sand is fine to medium. Gravel is fine to medium sub-angular to sub-rounded of sandstone, mudstone and nodules of clayey sand.	
		1.20		N=11 (3,3/3,3,2,3)	1.60	75.40		Brown mottled orange, grey and black clayey slightly silty SAND. Sand is fine to coarse.	2
					1.76	75.24		Firm brown to orangish brown silty very sandy CLAY. Sand is medium.	
		2.00		N=32 (6,7/7,7,9,9)	2.00	75.00		Dense light orangish brown slightly silty SAND. Sand is fine to coarse.	
		3.00		N=45 (4,4/5,6,17,17)					3
		4.00		50 (9,9/8,10,15,17 for 70mm)					4
					4.45	72.55		End of borehole at 4.45 m	5

Remarks

Terminated at 4.45 due to sample refusal.
Water not encountered.
1.2m hand dug service pit prior to sampling.
Backfilled with arisings upon completion.

AGS



Borehole Log

Borehole No.

WS112

Sheet 1 of 2

Project Name: Holt Road, Wrexham

Project No.
ST16134

Co-ords: 335903.00 - 351241.00

Hole Type
WLS

Location: Holt Road, Wrexham

Level: 76.00

Scale
1:25

Client: Bloor Homes North West

Dates: 31/03/2017 -

Logged By
G Usher

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10 - 0.20	ES		0.30	75.70		TOPSOIL: Dark brown slightly clayey silty slightly gravelly SAND with rootlets. Sand is fine to medium. Gravel is fine to medium sub-angular to sub-rounded of sandstone and mudstone.	1
								Orangish brown slightly silty slightly gravelly SAND. Sand is medium. Gravel is fine to medium sub-angular to sub-rounded of sandstone.	
								Soft to firm light yellowish brown mottled grey silty sandy CLAY. Sand is medium.	
		1.20		N=12 (3,2/3,3,3,3)	1.16	74.84		Medium dense light brown slightly silty gravelly SAND. Sand is fine to medium. Gravel is fine to coarse angular to sub-angular of mudstone, sandstone and coal.	2
					1.38	74.62		Medium dense light orangish brown slightly silty slightly gravelly SAND. Sand is medium. Gravel is fine to medium sub-angular to sub-rounded of sandstone and coal.	
					1.65	74.35			
		2.00		N=11 (2,3/2,3,3,3)					
					2.60	73.40		Light orangish brown slightly silty gravelly SAND with low cobble content. Sand is medium to coarse. Gravel is fine to coarse angular to sub-rounded of sandstone and mudstone. Cobble is sub-rounded sandstone.	3
					2.82	73.18		Medium dense orangish brown slightly silty SAND. Sand is fine to coarse.	
		3.00		N=12 (2,4/3,3,3,3)					
								Becoming paler and coarser from 3.59m to 5.45m depth.	4
								Increased gravel content including coal between 4.51m and 4.63m depth.	
		4.00		N=19 (3,4/4,4,5,6)					5
		5.00		N=20 (3,5/5,5,5,5)					

Continued on next sheet

Remarks

Target depth achieved.
Water encountered at 1.16m depth.
1.2m hand dug service pit prior to sampling.
Backfilled with arisings upon completion.

AGS



Borehole Log

Borehole No.

WS112

Sheet 2 of 2

Project Name: Holt Road, Wrexham

Project No.
ST16134

Co-ords: 335903.00 - 351241.00

Hole Type
WLS

Location: Holt Road, Wrexham

Level: 76.00

Scale
1:25

Client: Bloor Homes North West

Dates: 31/03/2017 -

Logged By
G Usher

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					5.45	70.55		End of borehole at 5.45 m	
									6
									7
									8
									9
									10

Remarks

Target depth achieved.
Water encountered at 1.16m depth.
1.2m hand dug service pit prior to sampling.
Backfilled with arisings upon completion.

AGS

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Appendix 4

Borehole Logs BGS Refs: SJ35SE-98, 101 & 119

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BGS ID: 154714 : BGS Reference: SJ35SE98

British National Grid (27700) : 336430,352720

[Report an issue with this borehole](#)

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BOREHOLE LOG

Company: TARMAC QPL(NW)LTD

Site: BORRAS QUARRY

Page 1 of 2.

Borehole No. BR96-09

Logged by: H.LISTER

Date: 15/05/96

Elevation mAOOD 73.78

Easting: 336433

Northings: 352721

SJ 35 SE

Drilling Rig\Method HE 90 CONTINUOUS FLIGHT AUGER

Testing Laboratory: BORRAS ETC.

98

Legend	CLASS.	FIELD DESCRIPTION	AS DUG SAND										GRAVEL				FRACTIONS				
			From m	To m	75 u	150 u	212 u	300 u	600 u	1.18 mm	2.36 mm	5.00 mm	Fin % 020	Gr % 050	6.3 mm	10.0 mm	20.0 mm	37.5 mm	Fines %	Sand %	Grav %
	DARK GREYISH BROWN CLAYEST SILT	Dark Greyish Brown Mainly Fine Sand. Clayey Silt. 44% Fine to Coarse. Sub-Angular to Sub-Rounded Gravel with sand. Occ. Coal up to 3mm. Topsoil?	0.00	1.50	2	4	7	13	29	39	47	56			60	71	89	100	2.1	53.9	44.0
	MEDIUM COARSE SAND AND GRAVEL.	Buff Slightly Orangeish Brown. Occ Silty Clay. Medium Coarse Grained. Sand. 50% Fine to Coarse Grained. Sub-Angular to Sub Rounded. Gravel. Occ. Cobbles up to 80mm. Occ. Coal up to 5mm.	1.50	3.00	4	5	7	9	25	32	36	42			46	57	77	91	3.8	38.5	57.7
	MEDIUM FINE SAND.		3.00	4.50	2	7	19	41	70	78	80	82			83	86	92	100	2.3	79.7	18.0
	FINE TO FINE MEDIUM SAND	Buff/Orange/Brown. Medium Fine Grained. Sand. 10% Fine to Coarse. Traces of Gravel. Traces of Coal.																			
	MEDIUM FINE SAND	Greyish Buff Brown. Fine to Fine Medium Grained. Sand Traces. Medium to Coarse. Sub-Rounded. Gravel. Trs Coal-Sub mm to 5mm. NOT SAMPLED?	7.50	9.00	1	2	5	15	38	44	48	60			65	79	95	97	1.4	58.5	40.1
	MEDIUM COARSE SAND AND GRAVEL.	Buff Brown. Traces of Silty Clay. Medium Fine Grained. Sand. 12% Traces. Fine to Medium. Sub-Angular to Sub Rounded. Gravel. Traces of Sub mm Coal.	9.00	10.00	3	5	10	26	68	76	78	81			82	85	91	100	2.5	78.2	19.3
	MEDIUM COARSE SAND.	Buff Brown. Medium Coarse Grained. Sand. 40% Fine to Coarse. Sub Rounded and Sub Angular. Gravel.	10.00	12.00	2	2	5	16	74	91	93	94			95	95	96	100	1.5	92.8	5.7
	MEDIUM TO COARSE SAND AND GRAVEL.	Greyish Buff Brown. Medium Coarse Grained. Sand. 19% Fine to Coarse. Sub-Rounded and Sub-Angular. Gravel. Traces of Coal.	12.00	15.00	2	4	6	12	33	41	46	52			59	71	87	100	2.5	49.1	48.4
	MEDIUM TO COARSE SAND AND GRAVEL.	Buff Slightly Orangeish Brown. Medium Coarse Grained. Sand. 64% Traces. Coarse, and occ. medium. Sub-Rounded and Sub-Angular. Gravel.	15.00	18.00	2	3	6	13	31	38	42	50			55	67	92	97	2.0	47.9	50.1
	SILTY CLAY	Greyish Buff Brown. Medium to Coarse Grained. Sand. 40% Fine to Coarse. Sub-Rounded and Sub-Angular. Gravel. Occ Tabular Gravel.																			
	FINE SAND	Greyish Buff Brown. Medium to Coarse Grained. Sand. 50% Fine to Coarse. Sub-Rounded and																			

Additional Comments :

TARMAC ROADSTONE LTD - Geological Department, Halesowen

SCALE: 1:100

Additional Comments :

TARMAC ROADSTONE LTD - Geological Department, Halesowen

SCALE: 1:100



BGS ID: 154714 : BGS Reference: SJ35SE98
British National Grid (27700) : 336430,352720

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BOREHOLE LOG		Company: TARMAC QPL(NW)LTD		Site: BORRAS QUARRY		Page 2 of 2.															
Borehole No. BR96-09		Logged by: H.LISTER		Date: 15/05/96		57 35SE 98															
Elevation mAOD 73.78		Easting: 336433		Northings: 352721																	
Drilling Rig\Method HE 90 CONTINUOUS FLIGHT AUGER				Testing Laboratory: BORRAS ETC.																	
		AS DUG SAND										GRAVEL				FRACTIONS					
Legend	CLASS.	FIELD DESCRIPTION	From m	To m	75 u	150 u	212 u	300 u	600 u	1.18 mm	2.36 mm	5.00 mm	Pin % 020	Grav % 050	6.3 mm	10.0 mm	20.0 mm	37.5 mm	Fines %	Sand %	Grav %
	WITH SILT.	Sub-Angular. Gravel. Occ Tabular Gravel.	19.50	21.00	10	24	55	82	92	93	93	94			94	97	100	100	9.6	84.5	5.9
	PINE SAND WITH SILT.	Reddish Brown. Firm. Silty Clay. NOT SAMPLED.																			
		Buff Slightly Orangeish Brown. With Silt. Fine Grained. Sand. 64 Fine to Coarse Sub-Rounded. Gravel. Traces of Coal-Sub mm	21.00	24.00	18	57	82	93	96	97	97	98			98	99	100	100	18.4	79.2	2.4
	PINE TO FINE MEDIUM SAND WITH SILT.	Buff Orangeish Brown. Traces of Silty Clay. Fine Grained. Sand. 24 Fine to Coarse. Sub-Rounded. Gravel. Slight Coarsening Downwards.	24.00	27.00	16	38	64	79	85	87	87	88			92	95	97	100	16.2	72.1	11.7
	PINE TO FINE MEDIUM SAND WITH SILT.	Buff Slightly Orangeish Brown. Traces of Silty Clay. Fine to Fine Medium grained. Sand. 124 Fine to Coarse. Sub-Rounded and Sub-Angular. Gravel. Occ.Flattened.	27.00	30.00	5	15	40	75	95	96	96	96			98	99	99	100	5.4	90.9	3.7
	PINE MEDIUM SAND WITH SILT.	Buff Greyish Brown. Traces/Occ Silty Clay. Fine Medium grained. Sand. 104 Fine to Coarse. Mainly Sub-Rounded. Gravel. Traces Coal Sub mm to 5mm. Damp/wet.	30.00	33.00	14	26	47	71	88	89	90	90			92	95	99	100	13.9	75.9	10.2
	PINE MEDIUM SAND WITH SILT.	Buff Greyish Brown. Occ. Silty Clay. Fine Medium Grained. Sand. 104 Fine to Medium. Sub-Rounded. Gravel. Traces of Coal Sub mm to 5mm. NOT	33.00	34.00	21	43	61	77	88	89	89	90			93	95	98	100	21.4	68.3	10.3
	SILTY CLAY	Grey Brown. Firm Occ.Soft. Silty Clay. NOT SAMPLED.																			
	End of hole at 36.00 metres.																				
Additional Comments :																					
TARMAC ROADSTONE LTD - Geological Department, Halesowen											SCALE: 1:100										



BGS ID: 154717 : BGS Reference: SJ35SE101
British National Grid (27700) : 336720,352530

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BOREHOLE LOG		Company: TARMAC QPL(NW) LTD	Site: BORRAS QUARRY	Page 1 of 1.																		
Borehole No. BR96-13		Logged by: PCJ	Date: 08.05.96																			
Elevation MAOD 72.32		Easting: 336717	Northings: 352528	SJ 35SE 101																		
Drilling Rig/Method HE 90 CONTINUOUS FLIGHT AUGER		Testing Laboratory: BORRAS, ETC																				
		AS DUG SAND												GRAVEL				FRACTIONS				
Legend	CLASS.	FIELD DESCRIPTION	From	To	75	150	212	300	600	1.18	2.36	5.00	Fine	Grav	6.3	10.0	20.0	37.5	Fines	Sand	Grav	
			m	m	m	m	m	m	m	m	m	m	m	%	%	%	%	%	%	%	%	%
	GRAVEL WITH SAND	Dark Brown Traces Clay Medium Sand 64 Fine to Coarse Sub Rounded to Rounded Gravel Lignite Staining	0.30	1.50	3	4	4	7	21	25	29	36			42	55	78	100	3.3	33.1	63.6	
	SAND AND GRAVEL	Brown Traces Clay Medium Sand 47 Fine to Coarse Gravel Disseminated lignite	1.50	1.90	3	4	5	9	30	37	43	53			58	70	87	100	3.2	49.4	47.4	
	SAND WITH GRAVEL	Slight Brown Medium Coarse Sand 27 Fine to Coarse Sub Rounded to Rounded Gravel	1.90	2.90	2	3	4	14	55	64	68	73			74	77	84	90	2.2	70.5	27.3	
	COARSE SAND	Brown Coarse Sand	2.90	4.50	2	4	4	8	30	45	52	60			64	75	92	100	2.4	57.2	40.4	
	SAND AND GRAVEL	Brown Medium to Coarse with Grit Sizes Sand 47 5/8 Fine to Coarse Rounded to Sub Rounded Gravel Disseminated Lignite	4.50	5.20	5	6	7	10	23	31	37	45			51	64	82	100	5.5	39.3	55.2	
	SAND AND GRAVEL	Dark Brown Medium, Coarse and V. Coarse Sand 55 Fine to Coarse and occ. Cobbles Sub Rounded to Rounded Gravel Cobbles up to 60mm	5.20	5.80	12	20	28	32	40	47	58	73			81	92	99	100	12.2	60.6	27.2	
	FINE BROWN CLAY	Orange and Brown firm Clay dominance Clay Not sampled	5.80	7.00	9	16	21	24	34	41	48	61			70	84	98	100	9.5	51.5	39.0	
	SILT CLAY	Brown Firm 27 Fine Rounded and Sub Rounded Gravel Dissem Lignite in fine and occ. coarse grains. Very coarse sand to top of unit	9.00	10.50	41	58	63	66	70	72	74	78			83	88	94	100	40.8	37.4	21.8	
	BROWN SILTY WITH GRAVEL	Orange and Brown firm Clay dominance Clay Not sampled	10.50	11.50	20	31	34	36	41	44	47	52			59	77	90	100	20.1	31.6	48.3	
	STIFF BROWN CLAY	Brown with clay silt 39 Medium to Fine Gravel	11.50	11.70	25	49	62	67	70	72	73	75			81	85	91	100	25.1	50.2	24.7	
	STIFF BROWN CLAY	Brown Stiff Mainly Clay Clay Not sampled																				
	SILT CLAY WITH GRAVEL	Brown Stiff Mainly Clay Clay Not sampled																				
	SILT FINE SAND AND GRAVEL	Dark Brown with Silt and Fine Sand Clay 22 Fine to Coarse Sub Rounded Gravel Wet																				
	MEDIUM FINE SAND	Brown With Silt Fine Sand 48																				
	CLAY WITH SILT	Buff Medium Fine Sand 25 Gravel Query 25% Gravel?																				
End of hole at 15.00 metres.		Dark Brown Stiff with silt Clay Clay 7 occ. large cobbles																				

Additional Comments :

Additional Comments :

TARMAC ROADSTONE LTD - Geological Department, Halesowen

SCALE: 1:100



BGS ID: 154735 : BGS Reference: SJ35SE119

British National Grid (27700) : 336540,352620

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BOREHOLE LOG		Company: TARMAC QPL(NW)LTD	Site: BORRAS QUARRY	Page 1 of 2.																	
Borehole No. BR96-34		Logged by: P.C.JOEL		Date: 05/06/96																	
Elevation mAOD 77.355		Easting: 336539		Northings: 352616																	
Drilling Rig\Method HE90 CONTINUOUS FLIGHT AUGER		Testing Laboratory: BORRAS ETC.		SJ 35 SE 119																	
		AS DUG SAND		GRAVEL																	
				FRACTIONS																	
Legend	CLASS.	FIELD DESCRIPTION	From m	To m	75 u	150 u	212 u	300 u	600 u	1.18 mm	2.36 mm	5.00 mm	Fine % 020	Grav % 050	6.3 mm	10.0 mm	20.0 mm	37.5 mm	Pines %	Sand %	Grav %
	MEDIUM COARSE SAND AND GRAVEL.	Dark Brownish. Traces of Silty Clay. Medium Coarse Grained Sand. and Fine to Coarse Sub-Angular and Plattish Gravel.																			
	MEDIUM COARSE SAND AND GRAVEL.	Dark Brownish. Traces of Silty Clay. Medium Coarse Grained Sand. and Fine to Coarse Sub-Angular and Plattish Gravel. Traces of Coal.Fine Gravel Sized.	0.00	4.50	1	2	2	4	18	33	44	51			55	62	79	97	0.8	50.4	48.8
	MEDIUM COARSE TO MEDIUM FINE SAND & GRAVEL.	Dark Brownish With Silty Clay. Medium Coarse to Medium Fine Gr. Sand. and Fine to Coarse Sub-Rounded and Plattish Gravel.	4.50	7.50	2	12	29	61	89	94	97	98			98	99	100	100	2.4	95.4	2.2
	SILTY CLAY	Red Brown Soft to Firm Silty Clay.																			
	SILTY CLAY	Red Brown Soft to Firm Silty Clay. Damp.																			
	MEDIUM SAND.	Buff Brown Traces of Silty Clay Medium Grained Sand Traces Medium Gravel.	7.50	9.00	2	6	16	47	74	80	84	87			88	91	95	100	1.8	85.1	13.1
	MEDIUM FINE TO FINE SAND.	Buff Brown to Orangey Traces of Silty Clay Medium Fine to Fine Grained Sand.	9.00	12.00	7	25	46	76	94	96	98	99			99	99	99	100	7.3	91.8	0.9
	MEDIUM SAND	Buff Brown Clean Medium Grained Sand.	12.00	15.00	7	35	34	66	98	100	99	100			100	100	100	100	7.3	92.6	0.1
	MEDIUM FINE TO MEDIUM COARSE SAND & GRAVEL.	Dark Brownish Medium Fine to Medium Coarse Sand. and Fine to Coarse Sub-Angular to Elongated Gravel. Traces of Cobbles up to 75mm. Traces of Fine Gravel Sized Coal.	15.00	18.00	5	11	20	35	57	61	65	69			71	77	89	96	5.2	63.8	31.0
MEDIUM FINE TO MEDIUM COARSE SAND & GRAVEL.	Brownish Medium Fine to Medium Coarse Grained Sand. and Fine to Coarse Sub-Rounded Gravel. With Medium Gravel Sized Coal.	18.00	21.00	3	7	13	21	37	42	46	52			57	67	88	96	3.5	48.9	47.6	
Additional Comments :																					
TARMAC ROADSTONE LTD - Geological Department, Halesowen											SCALE: 1:100										



BGS ID: 154735 : BGS Reference: SJ35SE119
British National Grid (27700) : 336540,352620

[Report an issue with this borehole](#)

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BOREHOLE LOG		Company: TARMAC QPL(NW)LTD	Site: BORRAS QUARRY		Page 2 of 2.																
Borehole No. BR96-34		Logged by: P.C.JOEL		Date: 05/06/96																	
Elevation mAOD 77.355		Easting: 336539	Northings: 352616		SJ 35SE 119																
Drilling Rig/Method HE90 CONTINUOUS FLIGHT AUGER			Testing Laboratory: BORRAS ETC.																		
			AS DUG SAND										GRAVEL				FRACTIONS				
Legend	CLASS.	FIELD DESCRIPTION	From m	To m	75 u	150 u	212 u	300 u	600 u	1.18 mm	2.36 mm	5.00 mm	Pin % 020	Gr % 050	6.3 mm	10.0 mm	20.0 mm	37.5 mm	Fines %	Sand %	Grav %
	GRAVEL.																				
	MEDIUM SAND WITH GRAVEL.	Brownish Medium Grained Sand. 17% With Fine to Coarse Sub-Angular to Sub-Rounded Gravel.	21.00	24.00	5	10	20	36	71	79	81	83			84	88	95	100	4.8	78.0	17.2
	British Geological Survey		British Geological Survey										British Geological Survey								
	SILTY CLAY WITH FINE SAND	Red to Buff Brown Soft to Firm Silty Clay With Fine Grained Sand.	24.00	26.00	44	75	86	90	96	97	97	98			98	99	100	100	44.1	54.2	1.7
	British Geological Survey		British Geological Survey										British Geological Survey								
	FINE SAND	Orangey Red Fine Grained Sand. Traces Medium Sub-Rounded with Some Soft Clasts Gravel.	26.00	27.00	19	47	65	76	86	87	88	91			92	94	96	100	18.6	72.3	9.1
	SAND?	Sample Lost Due to Back Rotation Easy Drilling-Suspected Sand.																			
	British Geological Survey		British Geological Survey										British Geological Survey								
	SILTY CLAY?	Sample Lost Due to Back Rotation Difficult Drilling-Suspected Clay.																			
	End of hole at 30.00 metres.																				
	British Geological Survey		British Geological Survey										British Geological Survey								
Additional Comments :																					
TARMAC ROADSTONE LTD - Geological Department, Halesowen											SCALE: 1:100										

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Appendix 5

Extract from Wrexham County Borough Council Report

Dated 5th December 2005

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REPORT TO:	Planning Committee
REPORT NO.	CPLO/79/05
DATE:	5 December 2005
REPORTING OFFICER:	Chief Planning Officer
CONTACT OFFICER:	Bob Dewey (Ext 2470)
SUBJECT:	Borras Quarry
WARD:	Holt and Gresford (East and West)

PURPOSE OF THE REPORT

To consider the report of the Chief Planning Officer in respect of a proposal to extend Borras Quarry.

INFORMATION

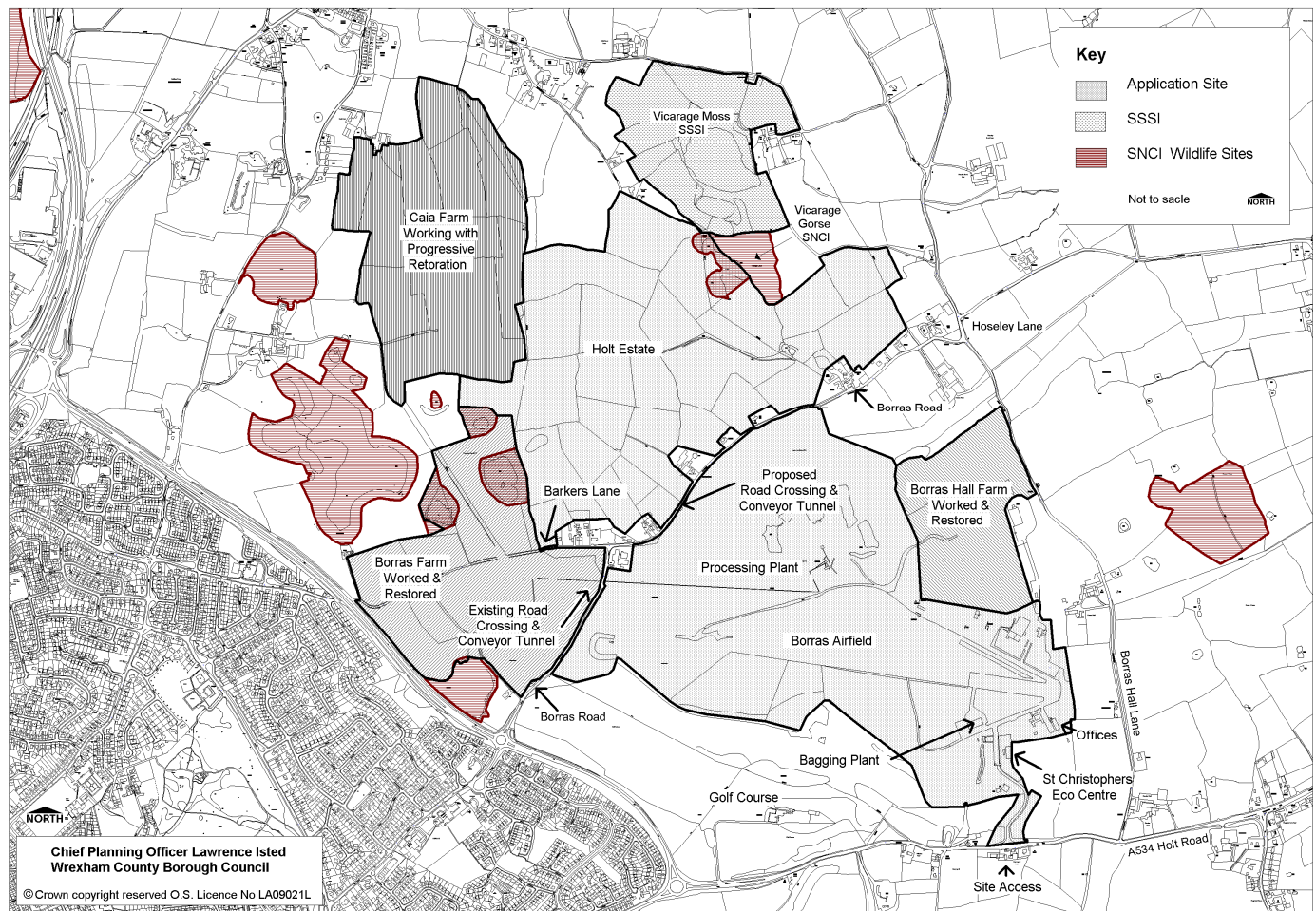
Contained in the report which follows (see attached).

RECOMMENDATION

To determine the planning application in accordance with the recommendation.

BACKGROUND PAPERS

Planning File P/2003/0579.



Plan No 2 Application Site

PROPOSAL

The proposal as submitted in 2003 sought permission to continue extraction at Borras Quarry in two ways:

- By selective deepening of the permitted sand and gravel workings at Borras Airfield, which currently has an extraction depth limit of 62m AOD (above Ordnance Datum) down to 43 metres AOD at its deepest
- A lateral extension of the Quarry onto land at the Holt Estate, which would be worked in 6 phases

An Environmental Statement (ES) was submitted with the Application, following a comprehensive Environmental Impact Assessment (EIA) of the proposed development.

After submission of the application further consultations took place, which led to a number of issues being raised about the proposed development. Careful consideration was given to these issues and, as a result, amendments have been made to the proposed development. A Supplementary Statement was submitted to the Council in August 2005, detailing the amendments and providing additional information. The

main changes that have been made to the proposed development are:

- A significant reduction in the extraction boundaries at the Holt Estate, including the removal of extraction Phase H6
- A reduction in the proposed working hours at the Holt Estate
- Major improvements to the main Quarry access
- Greater stand-offs to residential properties along Barkers Lane and Borrass Road

As a result of these changes the extraction area has been reduced from 58.3 has to 43.4 has and a revised scheme of working and restoration phases submitted.

The deposits of sand and gravel in the area generally consist of a coarse grained upper layer, referred to as the Upper Sands and Gravels and a finer lower layer, referred to as the Lower Sands. The aggregate products manufactured by Tarmac depend on the correct balance of coarse and fine materials being supplied to the processing plant. Most of the Upper Sands and Gravel layer within the Airfield has now been worked out. The reserves of mineral within the Airfield are mostly of the finer material in the Lower Sand layer. The mineral within the Lower Sands layer is generally too fine grained to be used on its own for the manufacture of high quality aggregate products and requires blending with coarser sands and gravels. Without the coarser materials the working of the Lower Sands reserves is unlikely to be economic.

The original application proposed a comprehensive scheme for the working and blending of 22.8 million tonnes of sand and gravel from Borrass Quarry and the Holt Estate. This comprised both planned (6.8 million tonnes) and unplanned (16.0 million tonnes) sand and gravel (planned is with permission and unplanned is without permission). As of 1st January 2003 the planned reserves at Borrass Quarry were 6.8 million tonnes. 1.2 million tonnes have been worked in the intervening 2 years, leaving 5.6 million tonnes of planned sand and gravel as of 1st January 2005. The unplanned sand and gravel within the Application Site comprised 2 million tonnes in Borrass Airfield (below 62m AOD) and 14 million tonnes in the Holt Estate. The reduction in the extraction boundaries now being proposed within the Holt Estate has reduced the sand and gravel resource from 14 million tonnes to 9.8 million tonnes, resulting in an overall reduction within the application site from 16 million tonnes to 11.8 million tonnes. The amended Application now proposes a total extractable reserve (both planned and unplanned) of 17.7 million tonnes, compared with the 22.8 million tonnes stated in the original Application.

The existing planning permissions contain additional reserves of about 1.8 million tonnes, which would be relinquished if permission for the extension were to be granted. The reasons for relinquishment of these reserves are that some would require working to take place below the local water table and some would require removal of substantial amounts of overburden materials. The reserve figures are based on information gathered in January 2003 and allowance will need to be made for depletion as reserves are worked at a rate of over 600,000 tonnes per year. The permitted reserves are within Caia Farm, which is likely to be worked out in late 2005, and within the Airfield. At current rates of output the coarse material at the Airfield is likely to be exhausted by 2009.

The proposed development envisages that current production levels at between 600,000 and 700,000 tonnes per year would be maintained until 2011. At that time, owing to closure of Tarmac quarries in Cheshire, production at Borrass Quarry is expected to rise to 900,000 tonnes per year. The additional tonnage would be made

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Appendix 6

Policy MW9

Wrexham Unitary Development Plan 1996 - 2011

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Restoration of Mineral Working Sites

Policy MW8 Proposals for the winning, working and processing of minerals should make provision for securing a beneficial after use. Sites should be progressively restored in accordance with the following criteria:-

- a) where the development comprises a single, discrete phase of working, restoration of the site should commence immediately on conclusion of all extraction and processing operations;
- b) where the development comprises two or more discrete phases of working, restoration of the site should be undertaken in sequence commencing as soon as extraction and processing operations within each phase have been completed;
- c) where the development comprises overlapping phases of working which prevent full restoration of each phase in sequence, deferred restoration of some phases may be acceptable within the broader context of the site restoration as a whole.
- d) if the restoration scheme entails the return to agriculture of land which is classified as Grades 1, 2 or 3a, the site should be restored as closely as practicable to its original grade.

11.9 Planning permissions for mineral working are granted for finite periods at the end of which land affected must be restored to a beneficial and sustainable after use. Operations must generally allow for phased restoration which reduces the overall environmental impact of the working and, as far as reasonably practicable, restricts the

amount of land subject to mineral working at any one time. In accordance with the principles of sustainability, reclamation schemes should be to a high standard that enhances the quality of poorer land and landscapes and provides opportunities for creating sites for nature conservation interest. In addition to restoration, where a site is restored to a "green" after use then reclamation will normally also involve aftercare. The phasing of operations allows for a phased restoration that reduces the overall environmental impact of the working and minimises the loss of agricultural land. The restoration scheme must comply with the Plan's land use and environmental policies.

Protection of Mineral Resources

Policy MW9 Resources of sand and gravel, and clay will be safeguarded from non-mineral development in order to prevent the sterilisation of unworked minerals deposits. The identification of mineral resource areas gives no presumption in favour of the working of any deposits. Within such areas non-mineral development will be strongly resisted unless a resource assessment (or other information) is provided to demonstrate that no exploitable reserves exist within the development site. Where non-mineral development which materially prejudices minerals resources is granted planning permission on land holding minerals deposits, provision should be made for the prior removal of mineral deposits.

11.10 Sand and gravel extraction is the principal mineral working activity in the County Borough with output contributing significantly to the total regional output of North Wales. In addition, the County Borough's clay reserves provide a high quality

material for brick and tile making. Policies MW2 and MW5 therefore seek to ensure that the extraction of sand, gravel and clay is undertaken in a sustainable manner within the broad context of meeting realistic market demands during the plan period. However, extensive unworked reserves of these minerals occur throughout the County Borough and, in accordance with Welsh Assembly Government policy, it is important that access to these resources should be safeguarded in case they are needed in the longer term. Policy MW9 therefore protects sand, gravel and clay resources from other types of permanent development which would either sterilise them completely or hinder future extraction.

Inactive Minerals Sites

Policy MW10 Prohibition Orders, designed to ensure that no further extraction takes place without a further planning consent, will be made for the following inactive sites:-

- 1 Bwlchgwyn: Bwlchgwyn Quarry (north)
- 2 Bwlchgwyn: Bwlchgwyn Quarry (south)
- 3 Froncysyllte: Pen y Craig
- 4 Rhos: Llwyneinion
- 5 Wern: Tir Celyn

11.11 Clarification regarding the future of inactive sites which are considered unlikely to be reactivated is required to provide certainty to the local community, encourage early and effective restoration and after use, and contribute to a more accurate and realistic reflection of minerals landbanks.

Minerals Buffer Zones

Policy MW11 Open buffer zones, where new mineral extraction and new sensitive non-mineral development will be resisted, will provide protection around the following minerals sites:-

Inactive Sites

- 1 Bwlchgwyn: Bwlchgwyn Quarry (north)
- 2 Bwlchgwyn: Bwlchgwyn Quarry (south)
- 3 Froncysyllte: Pen y Craig
- 4 Rhos: Llwyneinion
- 5 Wern: Tir Celyn

Active Sites

- 6 Bronington: Fenns Bank and Whixall Mosses
- 7 Gresford: Caia Farm
- 8 Johnstown: Hafod
- 9 Llay: Ballswood
- 10 Llay: Llay Main Tip
- 11 Minera: Minera
- 12 Wrexham: Borrass Airfield/Caia Farm

11.12 There is often conflict between mineral workings and other land uses resulting from the environmental impact of noise and dust from mineral extraction and processing and vibration from blasting. Establishing and retaining open buffer zones around both inactive and active minerals sites provides protection against such conflicts. New non-minerals development (e.g. housing, schools, etc) which would be sensitive to any adverse impact of minerals development or new mineral extraction that would significantly and detrimentally affect existing adjacent non-mineral development will be resisted. In view

Appendix 7

Extract from Appeal Decision

APP/Z1510/W/16/3146968

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Appeal Decision

Inquiry opened on 31 January 2017

Site visit made on 7 February 2017

by David Prentis BA BPI MRTPI

an Inspector appointed by the Secretary of State for Communities and Local Government

Decision date: 21 March 2017

Appeal Ref: APP/Z1510/W/16/3146968

Land off Western Road, Silver End, Essex CM8 3SN

- The appeal is made under section 78 of the Town and Country Planning Act 1990 against a failure to give notice within the prescribed period of a decision on an application for outline planning permission.
 - The appeal is made by Gladman Developments Ltd against Braintree District Council.
 - The application Ref 15/00280/OUT is dated 27 February 2016.
 - The development proposed is up to 350 residential dwellings (including up to 40% affordable housing), introduction of structural planting and landscaping, informal public open space and children's play area, surface water flood mitigation and attenuation.
-

Decision

1. The appeal is allowed and outline planning permission is granted for up to 350 residential dwellings (including up to 40% affordable housing), introduction of structural planting and landscaping, informal public open space and children's play area, surface water flood mitigation and attenuation at Land off Western Road, Silver End, Essex CM8 3SN in accordance with the terms of the application, Ref 15/00280/OUT, dated 27 February 2016, subject to the conditions set out in the attached schedule.

Preliminary matters

2. The Inquiry sat for 5 days from 31 January to 3 February and on 7 February 2017.
3. The application was in outline with all matters reserved for subsequent approval. It was supported by an illustrative development framework plan. An alternative illustrative development framework plan was submitted in support of the appeal together with illustrative access details showing one way in which the site could be provided with two vehicular access points to Western Road. I have taken this illustrative material into account in reaching my decision.
4. The Council resolved that, had it been in a position to determine the application, it would have been refused for 7 reasons¹ which may be summarised as follows:
 - 1) the site lies outside the development boundary of Silver End and would amount to an unjustified intrusion into the countryside, harmful to the rural setting of the village

¹ The reasons are set out in full in the Council's Statement of Case

degree of harm would be minor. For the reasons given above, I consider that the effect of the appeal scheme on the setting of the conservation area, and hence on its significance, would be so limited that it should attract little weight in the planning balance. I attach substantial weight to the significant social and economic benefits which would flow from the delivery of new housing, including affordable housing. These public benefits would, in my view, be sufficient to outweigh the harm to the significance of the heritage assets. The proposal would therefore accord with the Framework insofar as it relates to the historic environment.

96. I now return to paragraph 144 of the Framework which I referred to under the fourth main issue. Amongst other matters, it states that local planning authorities should not normally permit other development proposals in mineral safeguarding areas where they might constrain future use for these purposes. For the reasons given above I consider that there would be significant practical difficulties in extracting the minerals from the appeal site. It appears to me that the appeal scheme is unlikely to constrain potential future use of the site for mineral extraction because mineral extraction is unlikely to happen in any event. I do not regard the appeal scheme as being in conflict with the Framework as it relates to minerals.
97. Having regard to my finding that the appeal site is not a '*valued landscape*', together with my conclusions on the historic environment and minerals, my overall conclusion is that this is not a case where there are specific policies of the Framework that indicate that development should be restricted. In these circumstances paragraph 14 of the Framework requires the adverse impacts to be weighed against the benefits.
98. For the reasons given above, I consider that the main adverse impacts would be the sterilisation of a mineral resource, the harm to the setting of Bowers Hall and barns and harm to the landscape. With regard to minerals, it is relevant to bear in mind that this is neither a preferred site for mineral extraction (as identified in the EMLP), nor is it a reserve site. Whilst the site is within a MSA, I attach only limited weight to this factor because prior extraction is unlikely to be a practical solution here. Moreover, even if it were a practical solution, the timescales involved would negate (or largely negate) the benefit of an early contribution to housing delivery.
99. I have concluded that the proposal would result in moderate harm to landscape character and that there would be some significant adverse visual impacts, particularly for users of FP53. However, the visual impacts would be localised and mitigation could be achieved as part of the detailed design of the scheme. I have commented above on the degree of harm to the setting of the listed buildings.
100. Turning to the benefits, I attach substantial weight to the social and economic benefits of the delivery of housing, including affordable housing. The provision of land for an early years/childcare facility would also be a benefit to which some weight should be attached. My overall assessment is that the adverse impacts would not significantly and demonstrably outweigh the benefits when assessed against the Framework as a whole. Consequently, material considerations indicate that permission should be granted notwithstanding the conflict with the development plan.

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