



## **The Ageas Bowl, Southampton**

### **Preliminary Minerals Resource Assessment**

On behalf of **Land & Development Advisory Limited**

Project Ref: 332610090/GEO | Rev: 01 | Date: July 2023

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## Document Control Sheet

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|                                                | Name           | Position        | Signature        | Date     |
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| <b>For and on behalf of Stantec UK Limited</b> |                |                 |                  |          |

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This report has been prepared by Stantec UK Limited ('Stantec') on behalf of its client to whom this report is addressed ('Client') in connection with the project described in this report and takes into account the Client's particular instructions and requirements. This report was prepared in accordance with the professional services appointment under which Stantec was appointed by its Client. This report is not intended for and should not be relied on by any third party (i.e. parties other than the Client). Stantec accepts no duty or responsibility (including in negligence) to any party other than the Client and disclaims all liability of any nature whatsoever to any such party in respect of this report.

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# 1 Introduction

## 1.1 Background

- 1.1.1 Stantec UK Limited (Stantec) has been commissioned by Land and Development Advisory Limited (the Client) to undertake a Preliminary Mineral Resource Assessment at The Ageas Bowl in Southampton, Hampshire (the site).
- 1.1.2 The site currently comprises The Ageas Bowl, a cricket stadium, with surrounding areas of at-grade car parking, training facilities and a golf course. It is proposed to redevelop the site for mixed-use purposes including 185 dwellings, a 71-bedroom care-home, a 142-bedroom hotel, a new pavilion building and improvements to the existing stadium. A planning application for the redevelopment has been submitted to Eastleigh Borough Council (EBC) reference F/22/93194.
- 1.1.3 The western part of the site (the residential part of the proposed redevelopment) lies within a Mineral Consultation Area (MCA) for superficial sand and gravel as defined by Hampshire County Council (HCC) acting as Mineral Planning Authority.
- 1.1.4 This report has been prepared in response to comments on the planning application from the Mineral Planning Authority.

## 1.2 Resources

- 1.2.1 Sources of information used for this assessment are summarised below:
  - a. British Geological Survey 1:50,000 Scale Geological Maps Series (England & Wales);
  - b. British Geological Survey 1:10,000 Scale Geological Map;
  - c. British Geological Survey Mineral Resource Map and Report for Hampshire;
  - d. British Geological Survey 'on-line' resources ([www.bgs.ac.uk](http://www.bgs.ac.uk));
  - e. GeoIndex Onshore: Borehole Records;
  - f. GeoIndex Onshore: Minerals;
  - g. Historical Ordnance Survey Maps saved within the Geo-Environmental Preliminary Risk Assessment carried out for the site by WSP in January 2022;
  - h. Hampshire County Council's Minerals and Waste Plan (HMWP) and supporting documents.

## 1.3 Legislative and Policy Background

- 1.3.1 The potential for natural mineral resources to be effectively sterilised by development is a material consideration for the purposes of Town and Country Planning. The revised National Planning Policy Framework (NPPF) (July 2021) addresses the subject of the sustainable use and potential sterilisation of mineral resources in Section 17, paragraphs 209 to 217.
- 1.3.2 Paragraph 210 emphasises that it is the role of planning policies to safeguard mineral resources; and adopt appropriate policies so that known locations of specific minerals resources of local and national importance are not sterilised by non-mineral development.

## **1.4 Guidance for Report Readers**

- 1.4.1 This report is to be read in conjunction with the general guidance notes included in at the end of this report.

## 2 Mineral Planning Considerations

### 2.1 Background

2.1.1 Minerals planning control in the site area is under Hampshire County Council as the Mineral Planning Authority. The Hampshire Waste and Mineral Plan (HMWP) was adopted in 2013 (HCC, 2013).

2.1.2 The site does not lie within or near an allocated site in the HMWP. Allocated sites are those nominated by industry and have been assessed to be appropriate for mineral development subject to relevant development considerations. Additionally, the site does not lie in proximity to any existing mineral and waste infrastructure sites.

2.1.3 The site lies at the edge of a Mineral and Waste Consultation Area (MWCA). In the HMWP, MWCAa are described as:

*An area identified to ensure consultation between the relevant district or borough planning authority, the minerals industry and the Minerals and Waste Planning Authorities before certain non-mineral planning applications made within the area are determined. The Hampshire Mineral Consultation Area covers the same areas as the Mineral Safeguarding Area.*

2.1.4 Mineral Safeguarding Areas (MSA) are described in the HMWP as:

*The MSA is defined by minerals and waste planning authorities. They include viable resources of aggregates and are defined so that proven resources of aggregates are not sterilised by non-mineral development. The MSA does not provide a presumption for these resources to be worked.*

2.1.5 Potential restrictions to development within a defined MSA are covered under HMWP Policy 15, presented below.

#### **Policy 15: Safeguarding - mineral resources**

**Hampshire's sand and gravel (sharp sand and gravel and soft sand), silica sand and brick-making clay resources are safeguarded against needless sterilisation by non-minerals development, unless 'prior extraction' takes place.**

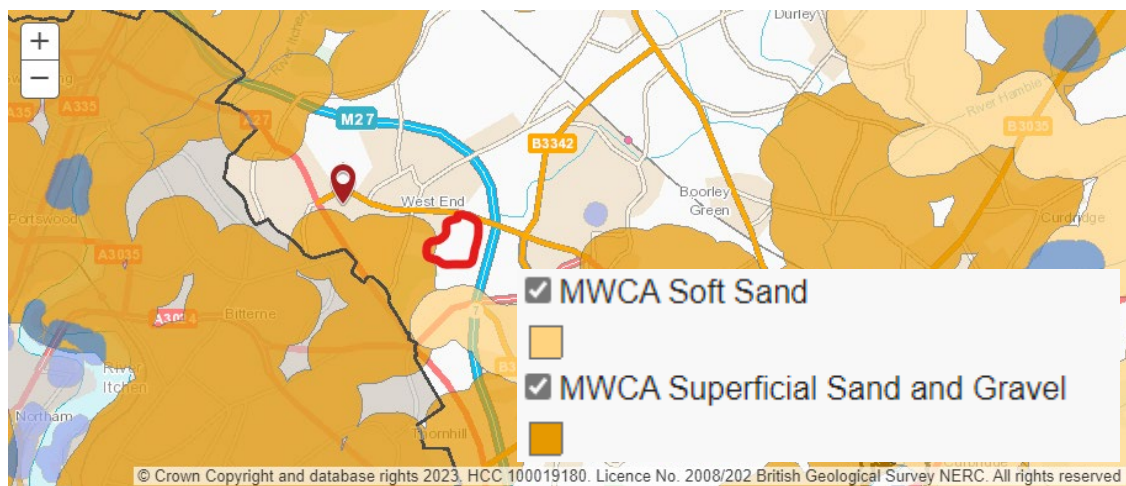
**Safeguarded mineral resources are defined by a Mineral Safeguarding Area illustrated on the Policies Map.**

**Development without the prior extraction of mineral resources in the Mineral Safeguarding Area may be permitted if:**

- a. it can be demonstrated that the sterilisation of mineral resources will not occur; or
- b. it would be inappropriate to extract mineral resources at that location, with regards to the other policies in the Plan; or
- c. the development would not pose a serious hindrance to mineral development in the vicinity; or
- d. the merits of the development outweigh the safeguarding of the mineral.

**The soft sand / potential silica sand resources at Whitehill & Bordon (Inset Map 5), further illustrated on the Policies Map are included within the MSA and are specifically identified for safeguarding under this policy.**

- 2.1.6 The extent of the MWCA/MSA is based on information about aggregate sand and gravel resources from the British Geological Survey (BGS) with a buffer applied. The extent of sand and gravel resources to which the MWCA/MSA will apply are shown on the HMWP Policies Map.
- 2.1.7 An extract from the HMWP Policies Map for the locality of the site is reproduced below with the approximate site boundary highlighted in red.



## 3 Baseline Conditions

### 3.1 Site Location and Description

- 3.1.1 The site is located in the West End area of Southampton, approximately 6 km north-east of the City Centre. The site covers an area of approximately 15.9 hectares located around The Ageas Bowl stadium and is approximately centred at National Grid Reference 447464 114885. The postcode for the site is SO30 3XH. A Site Location Plan is presented as **Figure 1**.
- 3.1.2 The site comprises an irregularly shaped parcel of land. The centre of the site is occupied by the cricket stadium. South-east of the stadium is a training pitch and training facilities. In the north-eastern area of the site is a golf course, which extends off-site southwards around the stadium and training pitch. The main car park is located in the western area of the site, with satellite car parks present to the north and north-east of the stadium.
- 3.1.3 Topographically, ground levels fall from a high point at the western site boundary at approximately 63 m OD (above Ordnance Datum) to a low point in the eastern area of the site at approximately 34 m OD. In the western car park, the slope has been cut to create a platform for the parking area. Surface reprofiling has also been undertaken across the golf course present in the eastern area of the site in order to create bunkers, ponds and other similar features.

### 3.2 Historical Land Use

- 3.2.1 Information on the historical use of the site and surrounding area has been taken from historical Ordnance Survey maps contained within the Geo-Environmental Preliminary Risk Assessment (WSP, 2022) and available historical aerial imagery from Google Earth.
- 3.2.2 During the mid to late 19<sup>th</sup> Century, the site area comprised mainly open fields and woodland to the north of Hickley Farm, which itself was located in the southern part of the site. A large area of woodland, Telegraph Wood, is present to the south and west of the site boundary. Several small old sand pits and gravel pits are labelled in the woodland area to the south and south-west of the site boundary on historical maps from the late 19<sup>th</sup> and early 20<sup>th</sup> Centuries. The nearest pits are approximately 100 m from the site boundary.
- 3.2.3 The site area remained largely unchanged through to around 1999 when construction works appear to have commenced on the cricket stadium. The stadium was completed in 2001. More recently, improvements to the stadium and ancillary operations have been carried out, including the car park now present in the western part of the site which appears to have been constructed around 2012 and then enlarged westward towards the site boundary around 2019 including earth moving operations on the western site boundary. From plans pertaining to planning application F/16/78213 for the car park extension, obtained online via EBC's planning portal, the area between the car park and the western site boundary has been raised by up to around 2 m with excess material cut from the 2019 car park construction works (also within the MWCA/MSA).

### 3.3 Geology

#### Published Geological Map Record

- 3.3.1 The 1:50,000 series Geological Map of England and Wales - Sheet 315, Southampton (BGS, 1987) and BGS GeoIndex (onshore) (BGS, 2023) indicate the following geological sequence underlying the site:

- 3.3.2 The south and south-western areas of the site are underlain by bedrock of the Marsh Farm Formation of the Bracklesham Group comprising clay, sandy clay and glauconitic sand with laminae of clay.
- 3.3.3 The north and north-eastern areas of the site are underlain by the older Earnley Sand Formation of the Bracklesham Group comprising glauconitic silty sands and sandy silts.
- 3.3.4 There are no mapped Superficial Deposits on site. The nearest mapped deposit is a lobe of River Terrace Deposits located at its closest point approximately 50 m beyond the western site boundary. The lobe is part of the 10th terrace, with a separate larger lobe to the south (approximately 250 m south-west of the site boundary) being part of the 9th terrace. The River Terrace Deposits comprise sand and gravel, locally with lenses of silt, clay or peat.
- 3.3.5 On the 1:10,000 scale geological map, an area of historical gravel extraction is labelled in the 10th terrace approximately 300 m west of the site boundary. This area has subsequently been developed for housing.
- 3.3.6 **Figure 2** shows the mapped extents of the River Terrace Deposits.

#### **Published Geological Memoir**

- 3.3.7 The geological memoir that accompanies the 1:50,000 geological map sheet indicates that the River Terrace Deposits in this area are very variable in thickness but typically the older terraces are fairly thin. The River Terrace Deposits contains flint gravel with sand and the older terraces (like the 9<sup>th</sup> and 10<sup>th</sup> terraces) have an appreciable clay content (BGS, 1987).

#### **Historical BGS Boreholes**

- 3.3.8 There are no available exploratory hole records for the site area. Similarly, there are no available off-site British Geological Survey (BGS) archived exploratory hole records on the River Terrace Deposits outcrops within 500m of the site boundary.

#### **Minerals Assessment Report**

- 3.3.9 The Industrial Mineral Assessment Unit has not carried out a sand and gravel resource assessment for this area.

### **3.4 Ecologically Designated Sites**

- 3.4.1 The site does not lie within 500m of any statutory designated ecological or geological sites.
- 3.4.2 A Scheduled Monument, Hickley Hill Fort, is located approximately 50m south of the site boundary. Telegraph Wood is Priority Habitat Inventory – Deciduous Woodland.

### **3.5 Hydrology and Hydrogeology**

- 3.5.1 The River Terrace Deposits, Earnley Sand Formation and Marsh Farm Formation are classified as Secondary A Aquifers – these are permeable layers capable of supporting water supplies at a local, rather than strategic scale and may contribute baseflow to surface water features.
- 3.5.2 The site does not lie within a Source Protection Zone for protection of drinking water supplies.
- 3.5.3 The nearest watercourse to the site appears to be a tributary of the River Hamble, located approximately 1.2 km south-east of the site boundary at the closest point. Onsite, a drainage ditch is present along the northern site boundary.

## 4 Mineral Resource Assessment (Sand and Gravel)

### 4.1 Mineral Resource

- 4.1.1 The western area of the site, currently occupied by the main car park, lies within a Mineral Consultation Area.
- 4.1.2 The mineral deposit that the Mineral Consultation Area relates to is the River Terrace Deposits (sand and gravel). As discussed in Section 3, the River Terrace Deposits are not mapped within the site boundary. As described in HCC's Supplementary Planning Document (SPD) to the HMWP (adopted in 2016), a 250 m buffer is applied around the mapped extent of the safeguarded mineral resource, and therefore the western part of the site lies within this buffer.
- 4.1.3 The SPD indicates that the buffer is applied to account for the indicative nature of the mineral resource mapping and for impacts that may arise from developments that are near (but not immediately adjacent to) minerals and waste infrastructure. The width of the buffer is not fixed but has been chosen by HCC based on guidance from the BGS, officer experience and consultation with stakeholders (HCC, 2016).
- 4.1.4 It is noted that the primary purpose of extending the mineral resource boundary using a buffer, as discussed in BGS's safeguarding advice (2011), is to avoid sterilisation by adjacent development. In the site area, the River Terrace Deposits have been largely developed over by housing as part of West End or comprise established woodland and therefore the buffer is largely irrelevant as a mineral operation is highly unlikely in this built-up area.
- 4.1.5 In terms of the likelihood of mineral actually being present onsite, BGS Open Report OR/09/064 (BGS, 2009) states that for geological boundaries that were originally mapped at 1:10,000 scale (including Sheet 315 covering the site), and then rescaled to a smaller scale (i.e 1:50,000 in this instance), an accuracy of +/- 50m can be assumed for that geological boundary.
- 4.1.6 Considering the accuracy of the mapping it is unlikely that River Terrace Deposits are present onsite. If the worst-case accuracy is applied and the boundary of the River Terrace Deposits shifts eastwards 50m towards the site boundary, only a tiny fraction of the western corner of the site (approximately 0.1% of the total site area) would be underlain by mineral.
- 4.1.7 In this scenario it is likely that the mineral would be of negligible thickness as it would be the 'feather edge' of the deposit, and these older river terraces are already relatively thin, and the quality is likely to be poor due to high clay content.

### 4.2 Response to HWMP Policy 15

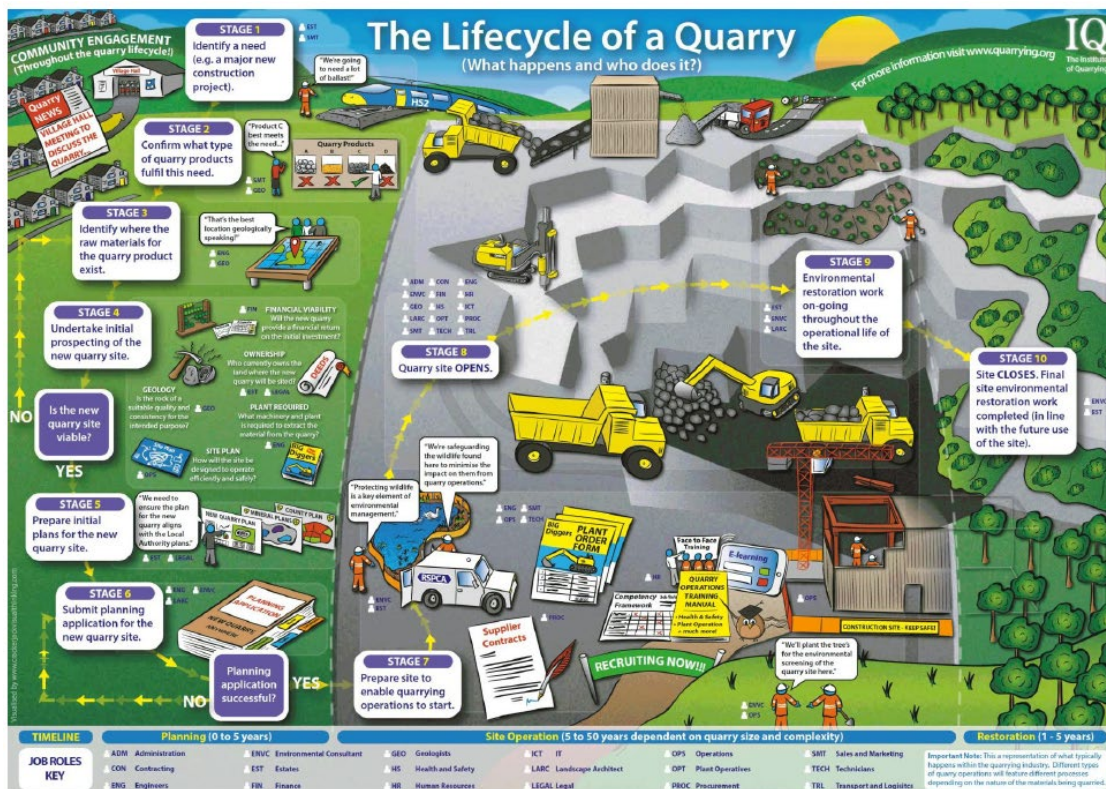
- 4.2.1 In response to HWMP Policy 15, proposed development without prior extraction of mineral resources in the Mineral Safeguarding Area may be permitted if:

*a. It can be demonstrated that the sterilisation of mineral resources will not occur, or:*

Based on geological mapping from the BGS, including their Minerals Map for Hampshire (BGS, 2003b), there are no mapped deposits of sand and gravel within the site area. Even allowing for some inaccuracy in the geological mapping boundaries, it is unlikely that there is a viable thickness of mineral resource onsite.

- b. It would be inappropriate to extract mineral resources at that location, with regards to the other policies in the Plan, or:

To aid understanding of the lifecycle of a large-scale extraction operation, a schematic produced and published by the Institute of Quarrying is provided below.



**Stages 1 to 4 Identification of need and viability** – The site does not coincide with any of the allocated sites identified in the HMWP. Mineral is not mapped on site, and it is unlikely that any mineral that is present on site would be worth extracting based on likely thickness and quality. However, if Stages 1 to 4 were pursued in detail (i.e. formal investigation of the site, marketing of the reserve and contractual arrangement with an appropriate mineral operator) it may be reasonable to expect a programme of 2 to 3 years. This assumes that a suitably experienced mineral operator would take a commercial interest. A commercial mineral operator would be highly unlikely to consider any mineral reserve without certainty of supply for several years.

**Stages 5 and 6 Planning** – For a mineral to be worked at a site, appropriate planning permission will be required from MPA. Typically, this will take a staged approach, which includes:

- Environmental Impact Assessment (EIA) Screening/Scoping to consider whether an EIA approach to planning would be required to agree matters to be “scoped in”.
- Preparation of EIA or non-EIA planning application to include all surveys, assessments, design and consultations.
- Submission of and determination of planning application by the MPA.

Were Stages 5 and 6 pursued it would be reasonable to expect a programme of 2 to 3 years to the point where the MPA was able to reach determination of the application. The outcome however would not be certain and if the MPA were to refuse the application, the appeal process could take a similar period again.

Stages 7 to 10: Pre-operational, Operational, Restoration and Closure – If planning permission is granted it is likely that a range of Conditional matters would need to be addressed before any mineral extraction can commence. It would not be unreasonable for this process to take another year or more. At this stage, an operator would also need to make sure that had all other consents in place, in particular those controlled under regimes regulated by the Environment Agency (EA) i.e. waste environmental permits for the backfilling of the mineral void with imported waste on succession of phased mineral extraction.

Before any mineral can be extracted the following activities would also be required to ensure minerals operations can be undertaken in a manner compliant with approved planning, permits and general best practice:

- Vegetation clearance.
- Removal of topsoils and subsoils. These materials would typically be retained as temporary bunds around the site perimeter and would be replaced as part of the final restored landform.
- Construction of infrastructure such as HGV access to public highway, weighbridge, wheel wash, site offices and welfare facilities, secure fencing and gates; processing plant and stockpile areas.

Once all of the above is completed to the satisfaction of the MPA in line with Conditions of planning, and with the necessary approvals from the EA, the mineral can be 'worked'.

For the site to be returned to a suitable landform for the proposed development, the void resulting from mineral extraction would need to be backfilled. Restoration of the void would involve the importation of non-hazardous waste materials which would need to be regulated by the EA under an appropriate Environmental Permit. Upon completion, the site would need to be subject to appropriate assessment and monitoring to allow the EA to approve surrender of the Environment Permit.

Notwithstanding the operational period itself (when mineral is extracted) the work required to secure EA consent can take anything from 1 to 3 years depending on complexity and the degree of twin tracking (where possible) with earlier planning process (Stages 5 to 6). It should be noted that the EA is currently significantly exceeding its statutory periods for permit applications.

As can be seen, mineral extraction of this scale would require significant investment in time and money and would represent a significant delay to a development programme and a considerable constraint to the ongoing use and operation of the Ageas Bowl site. In addition, use of waste materials for restoration would create ground-related 'abnormals' which could impact on the land value. In this respect, it is noted the current National House Building Council Technical Standards would likely require special foundation schemes to be employed. Consideration would need to be given also to the potential differential settlement of infilled materials and the impact that they may have on roads and infrastructure, which could result in increased mitigation measures also needing to be employed.

Medium to small scale prior extraction would also not be viable as the proposed development does not require significant earthworks and therefore any mineral present beneath that restricted development footprint is likely to be of limited vertical and horizontal extent.

In terms of incidental extraction, given the nature of the proposed development it is difficult to see how any material won during development would be sufficient to yield mineral of any economic viability, if any mineral is encountered at all. Fundamentally the developer would require site won material to meet engineering specifications which would be extremely unlikely at this site unless suitable processing plant were also installed at significant cost. As above, working of any theoretical mineral reserve at the site is already considered commercially unattractive and therefore the prospect of very limited mineral working during incidental extraction would be impracticable, let alone commercially viable.

- c. *The development would not pose a serious hindrance to mineral development in the vicinity, or:*

There are no proposed mineral sites in the vicinity of the proposed development and the mineral resource in this area (River Terrace Deposits) is either developed over by housing or contains established woodland (Priority Habitat) including a Scheduled Monument and is very unlikely to come forward for mineral development.

- d. *The merits of the development outweigh the safeguarding of the mineral.*

Any mineral resource present beneath the site fringe will likely be thin and of poor quality and therefore of minimal economic importance and highly unlikely to outweigh the additional development costs and loss of land value brought about by its extraction and subsequent need for restoration to allow follow-on residential development.

## 5 Conclusions

- 5.1.1 The site lies in a Minerals and Waste Consultation Area (MWCA) for sand and gravel resources as defined under the Hampshire Mineral and Waste Plan.
- 5.1.2 Geological mapping shows that the sand and gravel resource is an isolated lobe of River Terrace Deposits located approximately 50 m from the western site boundary at its closest point. These River Terrace Deposits are part of an old terrace, reported to be of limited thickness and to contain an appreciable clay content.
- 5.1.3 The MWCA includes a 250m buffer applied around the mapped extent of the River Terrace Deposits and it is this buffer that extends into the site boundary along the western edge. This edge of the site has been recently reprofiled for the extension to the existing car park and associated landscaping works.
- 5.1.4 The application of a buffer is primarily to prevent sterilisation of an adjacent mineral resource. As this area is generally well developed with housing and areas of established woodland, it is considered highly unlikely that any mineral development would occur in this area.
- 5.1.5 In terms of the accuracy of geological mapping, the size of the buffer is considered excessive compared to the British Geological Survey's own assessment of their data.
- 5.1.6 Our understanding of the mineral sector suggests that there would be no commercial interest given the scale of the theoretical reserve, if any is present at all. It is also likely that there would be significant environmental and local objection factors to quarrying and restoration of the site using waste. Prior extraction of any sand and gravel present beneath the western edge of the site is not considered to be practical nor commercially viable. As such it is considered that the site does meet the requirements for development without prior extraction as per Policy 15 of the Hampshire Minerals and Waste Plan.

## 6 Essential Guidance for Report Readers

This report has been prepared within an agreed timeframe and to an agreed budget that will necessarily apply some constraints on its content and usage. The remarks below are presented to assist the reader in understanding the context of this report and any general limitations or constraints. If there are any specific limitations and constraints, they are described in the report text.

The opinions and recommendations expressed in this report are based on statute, guidance, and best practice current at the time of its publication. Stantec UK does not accept any liability whatsoever for the consequences of any future legislative changes or the release of subsequent guidance documentation, etc. Such changes may render some of the opinions and advice in this report inappropriate or incorrect and the report should be returned to us and reassessed if required for re-use after one year from date of publication. Following delivery of the report, Stantec has no obligation to advise the Client or any other party of such changes or their repercussions.

Some of the conclusions in this report may be based on third party data. No guarantee can be given for the accuracy or completeness of any of the third-party data used. Historical maps and aerial photographs provide a “snapshot” in time about conditions or activities at the site and cannot be relied upon as indicators of any events or activities that may have taken place at other times.

The conclusions and recommendations made in this report and the opinions expressed are based on the information reviewed and/or the ground conditions encountered in exploratory holes and the results of any field or laboratory testing undertaken. There may be ground conditions at the site that have not been disclosed by the information reviewed or by the investigative work undertaken. Such undisclosed conditions cannot be taken into account in any analysis and reporting.

It should be noted that this report is a land condition assessment and does not purport to be an ecological, flood risk or archaeological survey and additional specific surveys may be required.

This report has been written for the sole use of the Client stated at the front of the report in relation to a specific development or scheme. The conclusions and recommendations presented herein are only relevant to the scheme or the phase of project under consideration. This report shall not be relied upon or transferred to any other party without the expressed written authorisation of Stantec. Any such party relies upon the report at its own risk.

The interpretation carried out in this report is based on scientific and engineering appraisal carried out by suitably experienced and qualified technical consultants based on the scope of our engagement. We have not taken into account the perceptions of, for example, banks, insurers, other funders, lay people, etc., unless the report has been prepared specifically for that purpose. Advice from other specialists may be required such as the legal, planning and architecture professions, whether specifically recommended in our report or not.

Public or legal consultations or enquiries, or consultation with any Regulatory Bodies (such as the Environmental Agency or Local Planning Authorities) have taken place only as part of this work where specifically stated.

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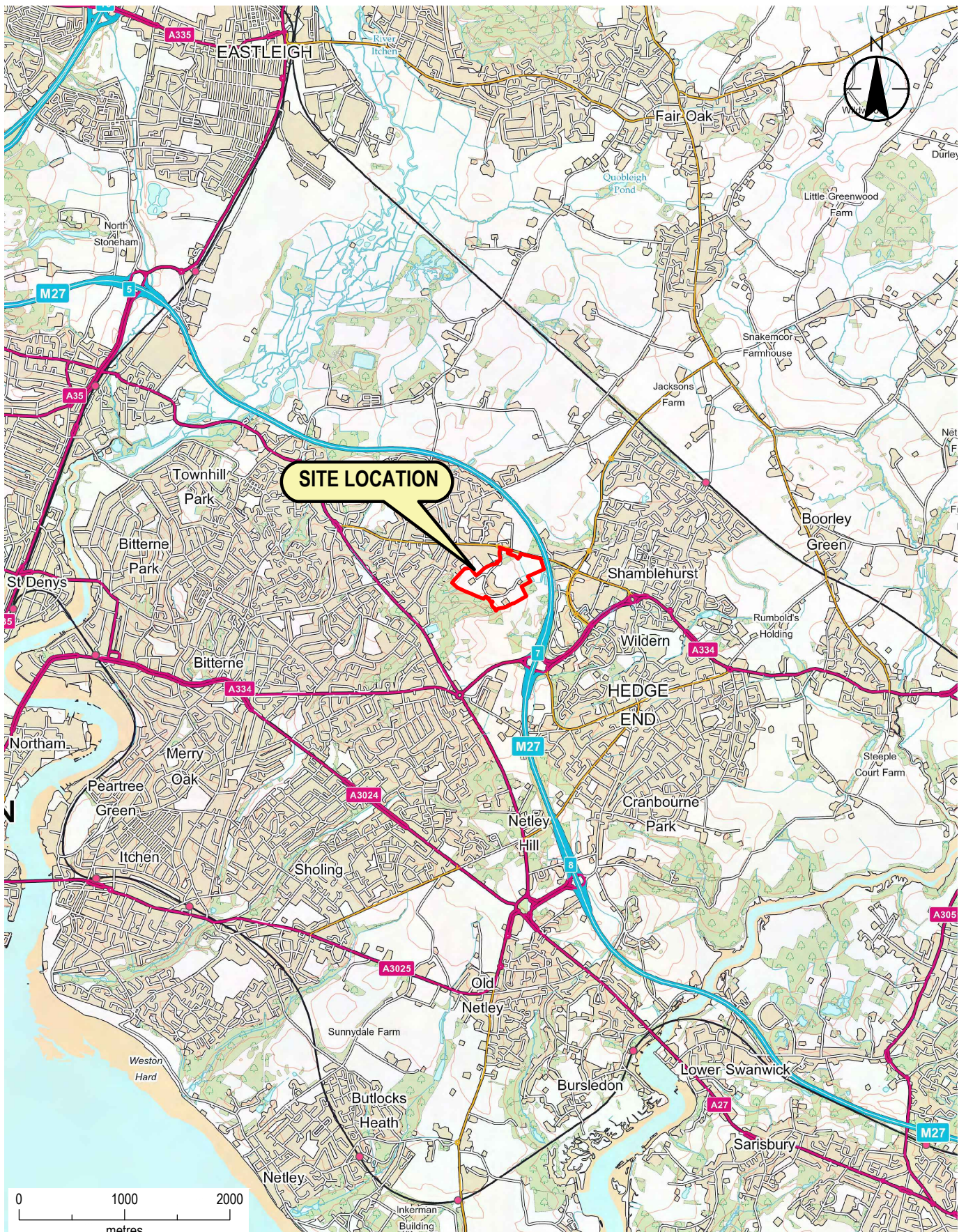
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Site Grid Reference: SU 477 140



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2023.05.12

Title

Site Location Plan

Revision:

0

Figure

1



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Key

 Approximate Site Boundary

Superficial Deposits

 **RTD** River Terrace Deposits (Sand and Gravel)

Bedrock Geology

 **EA** Earnley Sand Formation

 **MARF** Marsh Farm Formation

Mineral and Waste Consultation  
Area Buffer Zones

 250m RTD Buffer

Based on Calderpeel Architects Drawing  
No 2106 (PL) 001E Dated 24.05.21 as  
provided by client

Client/Project:  
**Land and Development  
Advisory Ltd**

**Ageas Bowl, Southampton**

|           |          |            |
|-----------|----------|------------|
| Prepared: | Checked: | Date:      |
| davco     | RF       | 2023.05.12 |

Title  
**Geology Plan**

|           |        |
|-----------|--------|
| Revision: | Figure |
| 0         | 2      |

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