

Mineral Resource Assessment

Relating to the proposed erection of 191 residential dwellings
with landscaping and associated infrastructure

at

Land north of Arborfield Road, Shinfield, RG2 9EA

on behalf of

Bellway

by


H e a t o n s
Planning Environment Design

JUNE 2024

CONTENTS

1 BACKGROUND 1

2 THE APPROACH 4

3 DEVELOPMENT PLAN POLICIES 5

4 OTHER MATERIAL CONSIDERATIONS..... 7

5 CONSIDERATION OF THE POTENTIAL FOR MINERAL STERILSATION 8

6 OVERALL ASSESSMENT AND CONCLUSIONS..... 12

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1 BACKGROUND

1.1 Context

- 1.1.1 Heatons is a consultancy with considerable experience in minerals and waste planning matters, including mineral safeguarding and related considerations. Heatons has worked extensively across the UK acting on behalf of the minerals industry and Mineral Planning Authority (MPA) clients. Work includes input into planning policy documents, the promotion and assessment of mineral site allocations, the submission of major mineral planning applications and appearance at hearings and public inquiries relating to mineral extraction proposals.
- 1.1.2 Heatons has been instructed by Bellway Homes ('the Applicant') to carry out a mineral resource assessment to explain the position, as we interpret it, in relation to the potential mineral sterilisation/safeguarding considerations and potential for proximal sterilisation of mineral operations that might arise as a consequence of non-mineral development proposed on land north of Arborfield Road, Shinfield.
- 1.1.3 The Applicant proposes the erection of 191 dwellinghouses on currently undeveloped land that does not appear have been previously developed in its history. The site of the proposed development is identified as partially within a 'Mineral Safeguarding Area' and 'Area of Search for Sand and Gravel' in the Central and Eastern Berkshire Joint Minerals and Waste Plan, as illustrated on Figure 1-1 below:

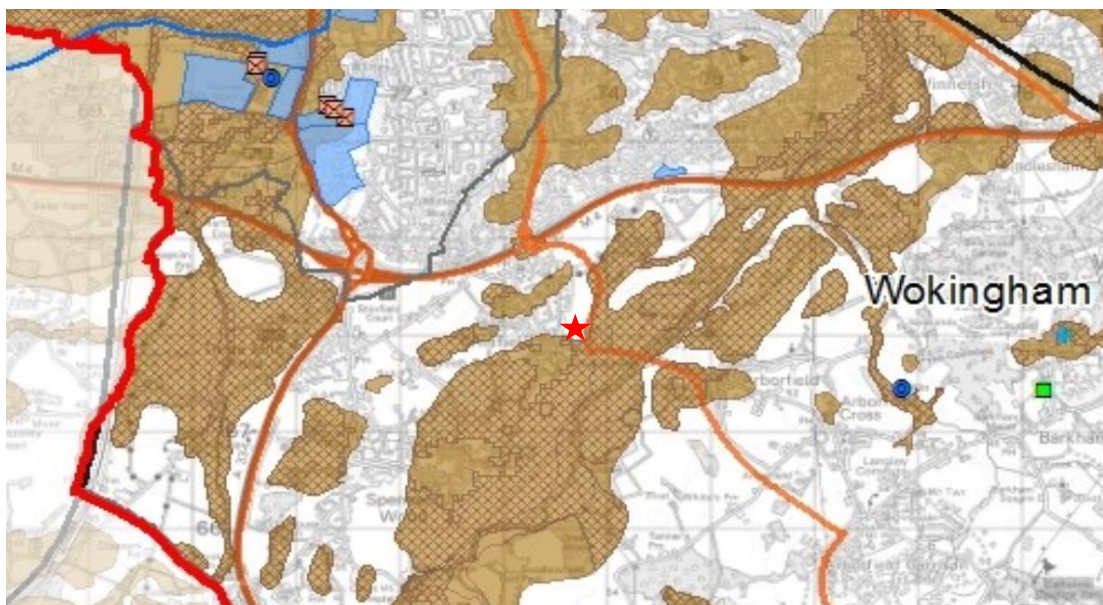


Figure 1-1. Site Location (red star) in the context of Mineral Safeguarding Area (brown) and Area of Search for Sand and Gravel (hatched).

- 1.1.4 British Geological Survey (BGS) mapping shows that the site is underlain by bedrock geology of London Clay Formation (clay, silt, and sand).
- 1.1.5 The application site is circa 7 hectares (Ha), of which 1.3Ha is underlain by River Terrace superficial deposits of sand and gravel, according to publicly available BGS mapping.
- 1.1.6 Wokingham Borough Council (WBC) as minerals planning authority for the area responded to a request for a Screening Opinion relating to the proposed development on 13th June 2024.
- 1.1.7 The Screening Opinion (WBC reference 241326) states that:
- “A Minerals Resource Assessment should be submitted and given the limited extent of the resource; it is unlikely that prior extraction would be viable but this needs to be demonstrated by the applicant.”*
- 1.1.8 The Screening Opinion specifically states that possibility of prior extraction of the mineral resource beneath the site (the deposits of sand and gravel) should be considered within a Mineral Resource Assessment. This Mineral Resource Assessment addresses that request.
- 1.1.9 This Assessment aims to comply with Policy M2 (Safeguarding sand and gravel resources) of the Central and Eastern Berkshire Minerals and Waste Plan. Policy M2 aims to avoid sterilisation of sand and gravel resources, including by requiring non-minerals development in Mineral Safeguarding Areas (defined by the Plan’s Policies Map) to demonstrate through the preparation of a Mineral Resources Assessment that prior extraction has been fully considered.
- 1.1.10 Policy M2 states that non-minerals development in Mineral Safeguarding Areas may be permitted if it can be demonstrated that:
- “a) Prior extraction, where practical and environmentally feasible, is maximised, taking into account site constraints and phasing of development; or*
- b) It can be demonstrated that the mineral resources will not be permanently sterilised; or*
- c) It would be inappropriate to extract mineral resources in that location, with regard to other policies in the wider Local Plans.”*

1.2 Proposed Development

- 1.2.1 The development site comprises an arable field benefitting from gated access from the A327 (Eastern Relief Road). The Applicant is seeking planning permission for the erection of 191 residential dwellings with a southern access from Arborfield Road and a northern access via Phase 1 of the adjoining ‘Cutbush Lane’ residential development.
- 1.2.2 The residential proposal also includes internal roadways, associated landscaping, and public open space.

- 1.2.3 The proposed development includes the erection of permanent residential dwellinghouses on the part of the site that falls within the Mineral Safeguarding Area and the Area of Search for Sand and Gravel.
- 1.2.4 Through the introduction of permanent non-minerals built development at the site, the proposed development has the potential to sterilise mineral resources in situ beneath and/or close to the application site.
- 1.2.5 The need and justification for the delivery of housing at the site is set out within the core planning application documents.

2 THE APPROACH

- 2.1.1 This Assessment has been carried out as a desk-based exercise; an approach that accords with policy advice on safeguarding.
- 2.1.2 Mineral safeguarding is referenced in the development plan and at a national level in the NPPF (2023) and Minerals Planning Practice Guidance. A good deal can be gleaned about the circumstances concerning mineral safeguarding in Berkshire by referencing the national publications alongside the policies of the Central and Eastern Berkshire Joint Minerals and Waste Plan (2022).
- 2.1.3 The assessment assesses the key policy tests relating to mineral safeguarding and considers potential sterilisation of mineral should the proposed development be approved and implemented. It is prepared with regard to *Mineral safeguarding in England: good practice advice* (2011) published by the British Geological Survey, which aims to prevent the unnecessary sterilisation of mineral resources.

3 DEVELOPMENT PLAN POLICIES

3.1 Identification of Policy Test

- 3.1.1 It is important within this Assessment to consider relevant aspects of the development plan in addition to overarching national policy and guidance. In this instance, the key policy test relating to the acceptability of the proposed development in terms of its relationship with underlying mineral resources is Policy M2 of the Central and Eastern Berkshire Joint Minerals and Waste Plan (2022). The same document also contains general policies relating to the extraction of minerals within the Plan area, including sand and gravel.

3.2 Central and Eastern Berkshire Joint Minerals and Waste Plan (2022)

- 3.2.1 The full wording of Policy M2 'Safeguarding of sand and gravel resources' is below:

"1. Sharp sand and gravel and soft sand resources of economic importance, and around active mineral workings, are safeguarded against unnecessary sterilisation by non-minerals development.

2. Safeguarded mineral resources are defined by the Minerals Safeguarding Area illustrated on the Policies Map.

3. Non-minerals development in the Minerals Safeguarding Area may be permitted if it can be demonstrated through the preparation of a Mineral Resources Assessment, that the option of prior extraction has been fully considered as part of an application, and:

a. Prior extraction, where practical and environmentally feasible, is maximised, taking into account site constraints and phasing of development; or

b. It can be demonstrated that the mineral resources will not be permanently sterilised; or

c. It would be inappropriate to extract mineral resources in that location, with regard to other policies in the wider Local Plans."

- 3.2.2 Additionally, Policy M3 'Sand and Gravel Supply' states that provision will be made for the release of land to allow a steady and adequate supply of sand and gravel for aggregate purposes in Central and Eastern Berkshire at an average rate of 0.628 million tonnes a year to 2036, subject to the impact of local circumstances on demand. It also reinforces NPPF objectives to ensure the maintenance of a sand and gravel landbank of seven years' supply.

- 3.2.3 Finally, Policy M4 'Locations for Sand and Gravel Extraction' aims to ensure that a steady and adequate supply of locally extracted sand and gravel is provided through a sequential approach involving:

- 1) The extraction of remaining reserves from permitted sites; and
- 2) Extensions to specific sites at Horton Brook and Poyle Quarry, Horton; and then
- 3) Proposals for new sites not outlined in Policy M4 (1 and 2) in appropriate locations which comply with all relevant policies in the Plan, where:
 - a. They are situated within the Area of Search (as shown on the Policies Map); and
 - b. They are needed to maintain the landbank; and/or
 - c. They maximise opportunities of existing infrastructure and available resources; or
 - d. At least one of the following applies:
 - i. The site contains soft sand;
 - ii. The resources would otherwise be sterilised; or
 - iii. The proposal is for a specific local requirement.

3.2.4 With specific regard Policy M4, an application for mineral extraction at the land subject of this Assessment would not fall into Policy M4 categories 1 or 2. It would fall within category 3)d.ii. as the resource “would otherwise be sterilised” should permanent non-minerals development be implemented without prior extraction.

3.2.5 Therefore, sand and gravel extraction of the site is potentially compliant with Policy M4, notwithstanding issues surrounding practicality and the likely environmental impact of mineral operations on neighbouring land uses, which are discussed later in this Assessment. There are many other development plan policies of potential pertinence to the determination of an application for prior extraction at land north of Arborfield Road, including those relating to the protection of amenity from noise and dust, and the potential impacts of mineral operations on the highway network.

3.2.6 Such policies include DM9 ‘Protecting Health, Safety and Amenity’ and DM12 ‘Sustainable Transport Movements’. In particular, Policy DM9 relates to unacceptable adverse impacts on health, safety and amenity of local communities. The Policy aims to avoid the following potential impacts of minerals development, inter alia:

- Unacceptable emissions to atmosphere, land or water;
- Unacceptable impacts on human health;
- Unacceptable noise, dust, lighting, vibration or odour; and
- Unacceptable visual impact.

4 OTHER MATERIAL CONSIDERATIONS

4.1 Introduction

- 4.1.1 As explained in the earlier section of this assessment concerning the approach to be taken, it is important to take into account a series of other ‘material considerations’ that constitute information/evidence to be taken into account in this assessment. The documents include national planning policy and planning practice guidance, as well as other relevant publications from specialist organisations.

4.2 The National Planning Policy Framework (NPPF) (2023)

- 4.2.1 Paragraph 216 of the NPPF states that planning authorities should define Minerals Safeguarding Areas and “adopt appropriate policies in order that known locations of specific minerals resources of local and national importance are not needlessly sterilised by non-mineral development where this should be avoided (whilst not creating a presumption that the resources defined will be worked).” (Heatons emphasis)

4.3 Mineral Safeguarding in England: good practice advice (BGS and Coal Authority) (2011)

- 4.3.1 The Good Practice Advice indicates that Mineral Assessments should not be onerous and should be sufficient to allow a balanced assessment to be made on the potential for mineral sterilisation. The information provided should be proportionate to the nature, scale and sensitivity of the location. In some cases, minimal assessment or no assessment is required. In other cases, a site-specific desk-based assessment is likely to be appropriate including consideration of information concerning the geological and mineral resource information, mining history, site investigations, technical reports and mining plans. These site-specific details can then be analysed and consideration given to the potential economic value of the mineral resource and the viability/feasibility to extract the mineral ahead of the proposed development.
- 4.3.2 Section 2.1.4 of the advice states that ‘delineation of mineral resources does not involve consideration of the full range of land uses planning constraints that might apply if extraction were to be considered’. This references the potential environmental, social and cultural impacts of mineral extraction to be considered by the decision maker.

5 CONSIDERATION OF THE POTENTIAL FOR MINERAL STERILISATION

5.1 Approach and Methodology

- 5.1.1 Mineral resources including sand and gravel are finite. Extraction of primary mineral resources can only be achieved where the mineral naturally occurs.
- 5.1.2 The Mineral Safeguarding Area for sand and gravel is identified within the Central Berkshire Joint Minerals and Waste Plan. The Mineral Safeguarding Area covers a significant proportion of the land covered by the Plan, reflective of the extent of sand and gravel in the geology of the region. Sand and gravel resources are shown on the Plan's Policies Map as loosely following the Thames Valley and locations following tributaries of the Thames, including the River Loddon Valley in which the site is located.
- 5.1.3 The Minerals Safeguarding Area is overlapped by the identified Area of Search for Sand and Gravel unless in a clearly inappropriate location for sand and gravel extraction due to the presence of built-up areas.
- 5.1.4 Adherence with Policy M2 Point (a) of the Central and Eastern Berkshire Joint Minerals and Waste Plan requires this Assessment to consider whether prior extraction is practical and environmentally feasible, taking into account site constraints.
- 5.1.5 Point (b) of Policy M2 requires consideration of whether or not the proposed development within the Minerals Safeguarding Area would permanently sterilise mineral resources beneath the site. In this instance, the proposed development would be permanent. The issue of permanence is therefore not examined further in this Assessment.
- 5.1.6 Finally, Point (c) requires this Assessment to consider whether it would be inappropriate to extract mineral in that location, with regard to wider accordance with development plan policies.
- 5.1.7 Appropriately, the potential impact of prior extraction of sand and gravel at land north of Arborfield Road has been assessed using Heaton's knowledge and expertise. Due consideration has been given to sterilisation of both any sand and gravel resources that lay beneath the site and resources in close proximity to the site.

5.2 On-site Sand and Gravel

- 5.2.1 Without undertaking intrusive investigations comprising drilling and / or geophysical survey, it is not possible to accurately determine the presence / absence / details of mineral deposit beneath the site. Therefore, a desk-based review of relevant documents has been undertaken.

- 5.2.2 The review includes analysis of historic mapping to assess the site and its surroundings for evidence of mineral extraction. Presence of former quarries would indicate that there was once feasible mineral reserves in a location that could indicate that viable mineral reserves stretch to beneath the application site. However, analysis of publicly available historic mapping from the National Library of Scotland (<https://maps.nls.uk/>) does not indicate that mineral extraction has ever taken place either within the site or in close proximity to the site.
- 5.2.3 This assessment considers potential physical sterilisation of mineral reserves beneath the site and the potential for the proposed development to result in “proximal sterilisation” of existing/future mineral operations adjacent to the site.
- 5.2.4 An overall assessment and conclusions are then reached covering these two aspects of potential mineral sterilisation.

5.3 Potential Physical Sterilisation of Mineral Resources beneath the Site

Need

- 5.3.1 Paragraph 6.7 of the Central and Eastern Berkshire Joint Minerals and Waste Plan states that:
“Minerals make a significant contribution to the nation’s prosperity and quality of life and are needed to build and maintain local communities.”
- 5.3.2 There is a need for minerals planning authorities to plan for “a steady and adequate supply” of minerals (NPPF paragraphs 219 and 22). The need for sand and gravel can be assessed by reviewing the supply figures within the most recent Local Aggregate Assessment (LAA), weighed against historic trends of supply to determine current demand.
- 5.3.3 The latest LAA for the application site is the Central and Eastern Berkshire Authorities Joint Minerals and Waste Plan Local Aggregates Assessment dated December 2023. There were four active sand and gravel and soft sand quarries in Central and Eastern Berkshire at the time of the LAA’s publication. Any implemented permissions issued since the publication of the LAA will have further increased this number. However, the LAA reports that trend for land-won sand and gravel is generally decreasing, whereas sales of marine-won sand and gravel is growing.
- 5.3.4 The National Planning Policy Framework states that mineral planning authorities should make provision for the maintenance of landbanks of at least seven years for sand and gravel. The total landbank for all land-won aggregate based on a ten-year sales average in Central and Eastern Berkshire is 9.42 years according to the latest LAA. Based on three-year average sales, the landbank is 10.1 years. Both figures are above the required landbank for permitted reserves of sand and gravel.
- 5.3.5 Despite this, it is acknowledged that the area covered by the Central and Eastern Berkshire Joint Minerals and Waste Plan does not benefit from sufficient permitted sand and gravel

reserves to meet the supply targets (apportionment) over the Minerals and Waste Plan period. Policies within the adopted Minerals and Waste Plan reflect this fact and offer some support to the establishment of new site for land-won sand and gravel extraction, subject to accordance with other policies within the development plan.

- 5.3.6 However, at the time of writing and based on the information available, it can be demonstrated that there is an adequate landbank of permitted sand and gravel reserves within the Plan area.
- 5.3.7 The Central and Eastern Berkshire Joint Minerals and Waste Plan identifies a broad Area of Search for sand and gravel as well as specific allocations for extraction comprising extensions to existing quarries. The Area of Search for sand and gravel identified huge areas of the Central and Eastern Berkshire Joint Minerals and Waste Plan area that are potentially geologically and environmentally acceptable for sand and gravel extraction, including locations within the Borough of Wokingham.

Feasibility

- 5.3.8 The feasibility of future extraction of the sand and gravel resources is limited to consideration of prior extraction, given that the proposed permanent non-minerals development would sterilise the mineral believed to be in situ once the proposed development has commenced, if approved.
- 5.3.9 In considering the feasibility of prior extraction it is important to note that only 1.3Ha of the circa 7Ha site is covered by Mineral Safeguarding Area. The part of the site within the Mineral Safeguarding Area is bordered by Arborfield Road to the south, land beyond the Applicant's control at Parrot Farmhouse to the south-east, and the Eastern Relief Road (A327) to the east. Any potential prior extraction would involve a small extraction area which would likely yield modest tonnages of sand and gravel.
- 5.3.10 It is notable that the area of the site identified as within a Mineral Safeguarding Area is close to existing sensitive receptors, including residential properties at Arborfield Road and Oatlands Road. Properties on both roads would have direct visibility of any potential sand and gravel extraction with very limited space for visual and amenity screening to mitigate the likely adverse impacts that are an inevitable consequence of land-won primary minerals extraction. In our view, mineral extraction in this location could not avoid some degree of adverse impact on existing sensitive receptors, specifically from noise and dust generation.
- 5.3.11 There are no active sand and gravel quarries within a reasonable haulage distance of the site. Therefore, the potential for the extraction of sand and gravel from the site prior to its transfer to a nearby location for off-site processing is not feasible given the economic cost of transporting sand and gravel and the environmental cost of hauling sand and gravel across the Borough.

- 5.3.12 In our experience and judgment, such a small extraction area would be unattractive for a mineral operator. Given the size and constraints of the potential extraction area, the rewards brought about by working any in situ sand and gravel would be so small that it would likely be outweighed by the economic costs of site preparatory operations, soils and overburden removal, and costs associated with procurement of staff, plant, machinery, and HGV movements.
- 5.3.13 Furthermore, the prior extraction of any sand and gravel present on-site would not only be unfeasible for the reasons outlined above, but would result in potentially significant delays to the delivery of much needed housing and its associated benefits.

5.4 Potential Proximal Sterilisation of Existing and Future Mineral Workings

- 5.4.1 There are no sand and gravel quarries (either active or dormant) within such proximity to the application site that the proposed residential development would prejudice potential future mineral extraction at any existing quarry. Neither mineral allocations identified within the Central and Eastern Berkshire Joint Minerals and Waste Plan are located close to the site.
- 5.4.2 The land north of Arborfield Road is bordered on three sides by existing residential uses. The site is located on the 'inside' of the A327 Shinfield Eastern Relief Road and is located in a predominantly residential setting. Therefore, it is concluded that the proposed development would not sterilise potential future off-site mineral extraction to a greater extent than the current status quo.
- 5.4.3 In addition, should the need for a steady and adequate supply of sand and gravel in Wokingham result in a requirement for new greenfield sand and gravel sites to come forward in the future, there are large expanses of the Borough that are significantly less constrained for sand and gravel extraction than the land north of Arborfield Road. The part of the application site located within the Mineral Safeguarding Area and Area of Search represents a tiny proportion of land potentially suitable for sand and gravel extraction by virtue of its geology across the Minerals and Waste Plan area.

6 OVERALL ASSESSMENT AND CONCLUSIONS

- 6.1.1 This Minerals Assessment has had regard to national and local policies and guidance concerning minerals safeguarding. Heaton's knowledge and experience of mineral working has also contributed to the assessment.
- 6.1.2 The subject of this Assessment is a circa 7Ha site proposed to accommodate permanent non-minerals development in the form of residential uses with internal roadways associated landscaping, and public open space. A small proportion of the site, covering an area of 1.3Ha, is believed to be underlain by sand and gravel, as per the Mineral Safeguarding Areas defined by the MPA.
- 6.1.3 With regard to development plan policies, it is concluded that the proposed development is in accordance with the development plan with regard to the appropriate safeguarding of mineral resources. Key policy tests are set out within the Central and Eastern Berkshire Minerals and Waste Plan Policy M2. Policy M2 states that non-minerals development in the identified Minerals Safeguarding Area may be permitted if it can be demonstrated that prior extraction has been fully considered as part of an application and it is concluded that it would be inappropriate to extract mineral resources in that location, with regard to other policies in the wider Local Plans.
- 6.1.4 This Assessment demonstrated the approach taken by the Applicant in fully considering the potential for prior extraction and explaining why prior extraction is not practical or environmentally acceptable in this instance.
- 6.1.5 The reasons for this conclusion are:
- the limited size of the sand and gravel resource beneath the site, which is highly likely to make prior extraction uneconomic given the significant costs of accessing the mineral; and
 - the high probability of unavoidable unacceptable amenity impacts on sensitive receptors located adjacent to the Mineral Safeguarding Area within the site. These are likely to include visual, noise, and dust impacts that cannot be adequately mitigated. In our view any sand and gravel extraction would be unable to accord with Central and Eastern Berkshire Joint Minerals and Waste Plan Policy DM9.
- 6.1.6 In addition, the proposed development will not have an additional constraining effect on any potential for mineral operations on land in the wider vicinity of the site, as the proposal does not introduce sensitive receptors to a location that is currently unconstrained.
- 6.1.7 Furthermore, the content of this Mineral Assessment should be weighed against the benefits of delivering much-needed homes in the context of the current housing crisis.

- 6.1.8 In overall terms it is concluded that the implementation of the proposed development will make the future extraction of sand and gravel within the Mineral Safeguarding Area on the land north of Arborfield Road impossible. This is due to the permanent nature of the non-minerals development. However, given the limited size of the resource beneath the application site and the site's existing constraints, it would be inappropriate to extract mineral from that location. Therefore, the proposed development is considered to be in accordance with Policy M2 of the Central and Eastern Berkshire Joint Minerals and Waste Plan, specifically point 3c:

"3. Non-minerals development in the Minerals Safeguarding Area may be permitted if it can be demonstrated through the preparation of a Mineral Resources Assessment, that the option of prior extraction has been fully considered as part of an application, and:

...

c. It would be inappropriate to extract mineral resources in that location, with regard to other policies in the wider Local Plans."