HATFIELD AERODROME

Planning application for a new quarry and ancillary facilities

Volume 2C - Non Technical Summary

Prepared for: **Brett Aggregates Limited**

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Introduction

1. This document comprises a Non Technical Summary ('NTS') and has been prepared by SLR Consulting Limited ('SLR') on behalf of Brett Aggregates Limited ('the applicant'). The NTS forms part of a package of documents being formally submitted to Hertfordshire County Council (as Mineral Planning Authority, or 'MPA') in support of a planning application in respect to land at the former Hatfield Aerodrome, near Hatfield, Hertfordshire.

2. The applicant is re-submitting a planning application for the establishment of a new quarry on land at the former Hatfield Aerodrome (referred to as the application site), being part of the allocated site referred to in the extant Minerals Local Plan[1] (refer to Chapter 4 below for further information on the policy framework for the area). The proposals would involve the winning and working, together with processing for sale, of sand and gravel over a period of around 32 years. In parallel with the extraction of minerals would be the importation of low permeability inert material to infill the mineral workings to facilitate the restoration of the site to a beneficial after use, combining recreation and nature conservation. The imported material would typically comprise excavation wastes from construction and engineering projects (soils, overburden, clays etc.) within the region.

Application Submission Package

3. This NTS comprises the third part of the second volume submitted to the MPA to accompany the planning submission. In addition to the formal planning application forms and certificates, the full submission comprises:

   - Volume 1 - Planning Statement;
   - Volume 2 - Environmental Statement (this document);
     - Volume 2A – ES Text;
     - Volume 2B – ES Technical Appendices; and
     - Volume 2C – A Non-Technical Summary of the ES.

4. This NTS has been produced as a separate, standalone document in line with best practice prescribed by the Institute of Environmental Management and Assessment (IEMA) to accompany the planning submission, being a mandatory part of the ES. The purpose of the NTS is to provide, in non-technical language, a brief summary of the likely significant effects that the proposed development would have on the environment.

Publication

5. Electronic and paper copies of the ES can be obtained from SLR at the following address:

   15 Middle Pavement
   Nottingham
   NG1 7DX

6. The ES is available in both paper and CD-ROM format, for which a charge of £250 and £25 is applicable respectively. A copy of the NTS is available free of charge on request. In addition, the application documents will also be available to download from the Hertfordshire County Council website.

[1] "Preferred Area 1", and illustrated on Inset Map 6 within the Mineral Local Plan

Planning and EIA

7. European legislation (the Environmental Impact Assessment Directive or 'EIA Directive' for short) requires that, before granting 'development consent' for projects authorities should carry out a procedure known as environmental impact assessment (or "EIA") of any project which is likely to have significant effects on the environment. In the UK, development consent includes the grant of planning permission.

8. An ES is a report of an EIA that is required to be submitted with a planning application.

9. An integral aspect of the EIA process is to clearly identify or 'scope' the main environmental issues, as this allows for more detailed and targeted assessment to be carried out. The applicant submitted a formal request to the MPA for their opinion as to the issues that needed to be addressed in the EIA and the opinion was issued on 14 July 2021 (see Appendix 1/1 to the ES).

Planning and Environmental Permit

10. The proposals for the importation of inert fill material would be governed by an Environmental Permit issued by the Environment Agency in addition to a planning permission. The Environmental Permit will contain a number of conditions intended to regulate the day to day management of the site with the aim of minimising the effect of the operation on the environment; it will also contain conditions regulating site management and monitoring.

11. Government advice on planning makes it clear that it is important to avoid unnecessary or confusing duplication. For example, National planning policy states that *"The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively. Equally, where a planning decision has been made on a particular development, the planning issues should not be revisited through the permitting regimes operated by pollution control authorities*." (paragraph 188, National Planning Policy Framework).

The Site

12. Land to which the planning application relates (referred to as "the application site") is located on the north-western edge of Hatfield and to the east of St Albans on land associated with the former Hatfield Aerodrome. It lies within an area bounded by the A1057 (Hatfield Road/St Albans Road) to the south, Oaklands Lane to the west, Coopers Green Lane to the north and the western fringe of Hatfield to the east.

13. The application site covers an area of around 87.1ha and comprises the southern part of the former aerodrome. The application site comprises a broadly rectangular area of unoccupied land that is partly used as an informal public open space and partly for grazing.

14. The application site is bounded by the A1057 (Hatfield Road) to the south, the boundary of which is characterised by a mature hedgerow. To the north lie CEMEX's Hatfield Quarry, and more specifically a set of silt lagoons. To the west the boundary is predominantly formed by a mature hedgerow, particularly in the vicinity of the garden centre and nursery, with the northern section being more open in aspect. At the north eastern corner is Home Covert, a small area of broadleaf woodland. The eastern boundary cuts across the former aerodrome to join up with the sports pitches located at the south eastern corner of the application site.

15. In the area surrounding the application site there are no nationally significant ecological designations. There is one Local Nature Reserve (Colney Heath) and 15 Local Wildlife sites within a 2km radius of the application site. The closest is Home Covert, which lies adjacent to the application site. There are no Scheduled Monuments within or surrounding the application site; however there are two listed buildings at Popefield Farm, on the southern boundary of the application site.

16. The nearest residential building to the application site is Popefield Farm. Residential areas exist to the south, east and west of the application site.

Figure 1
Site Location (not to scale)

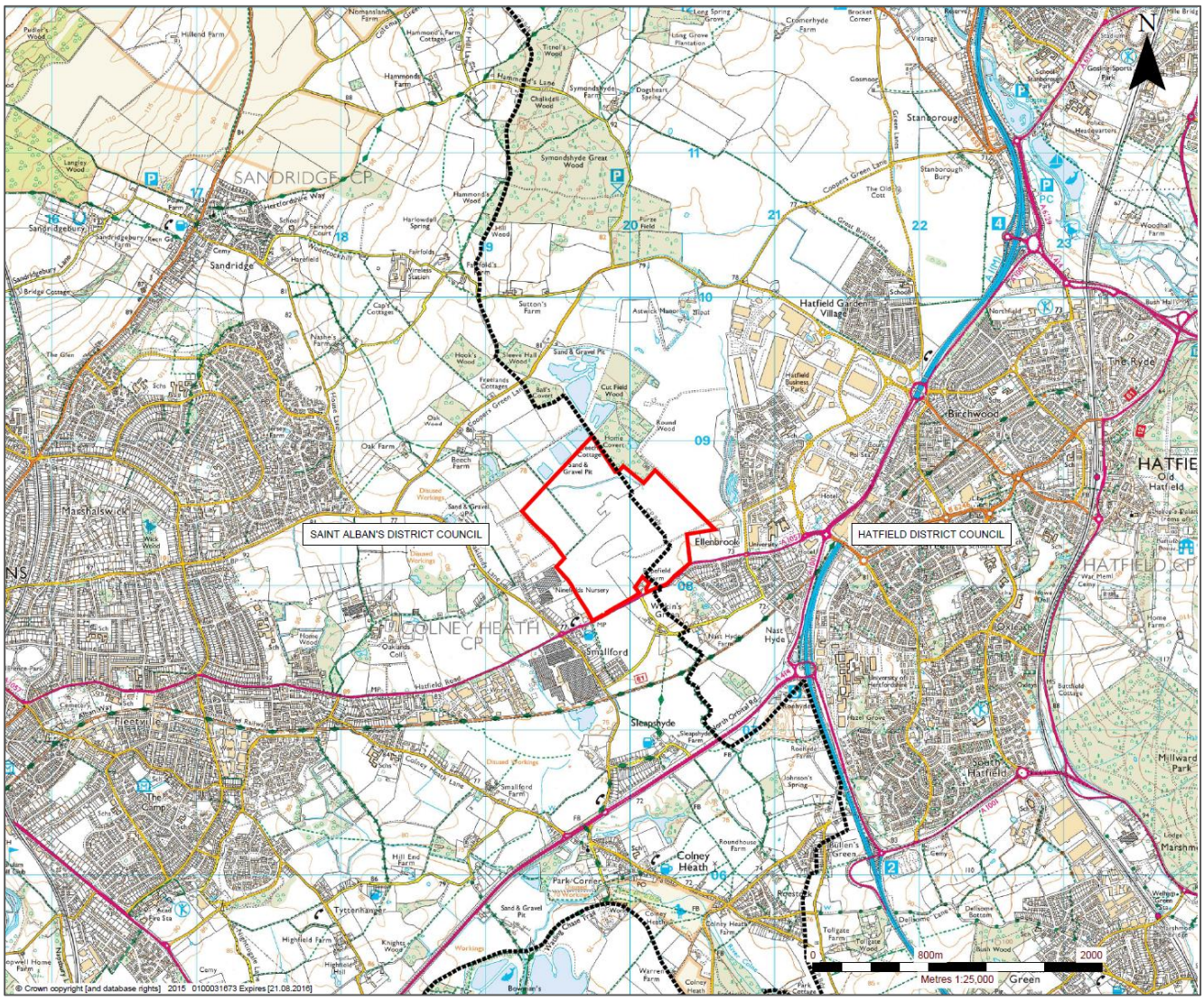


Figure 2
Application Site Context (not to scale)

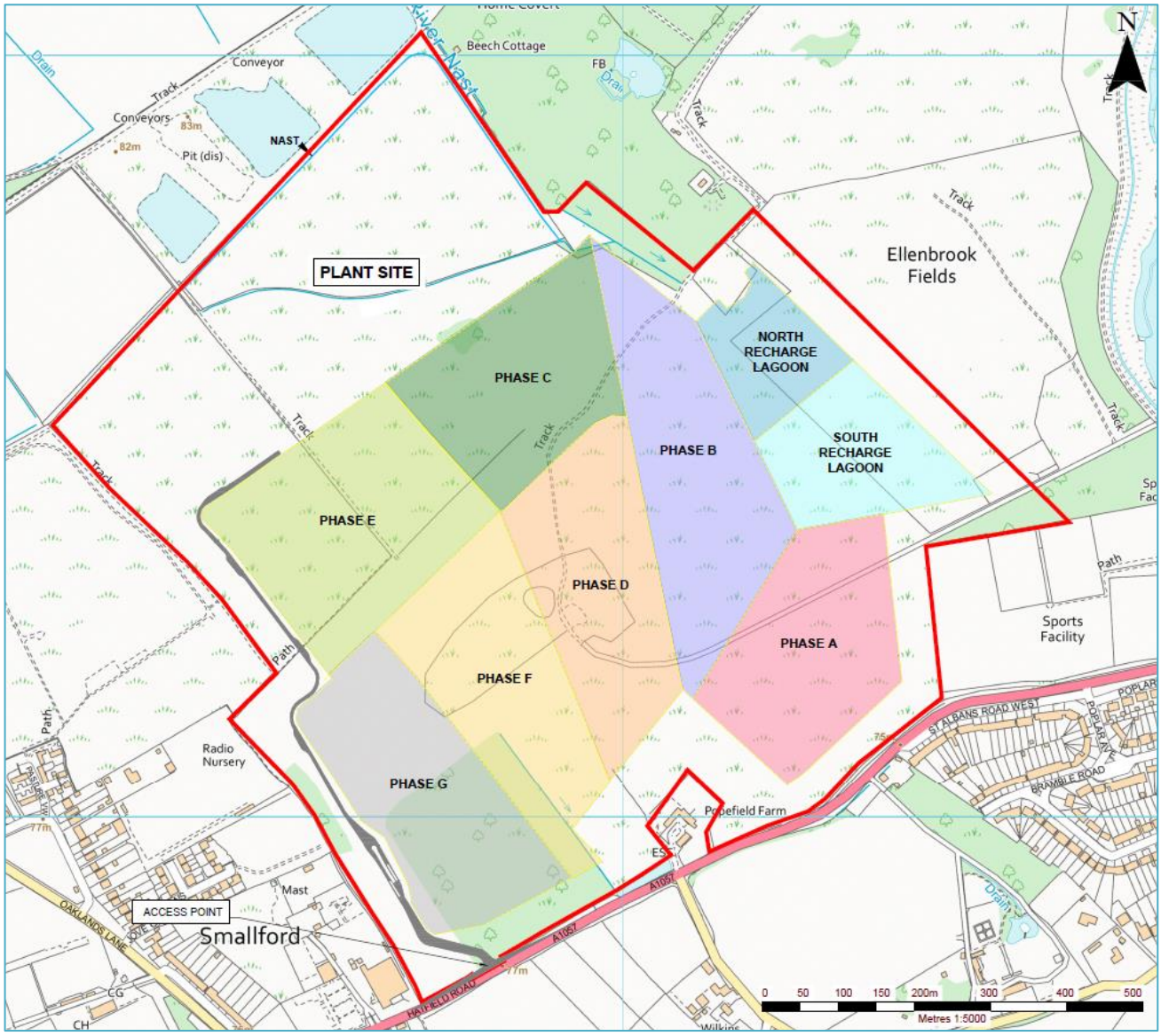
The Proposed Development

17. A planning application was submitted in January 2016 (application reference 5/0394-16) for the extraction of 8 million tonnes (Mt) of sand and gravel along with the installation of ancillary buildings, plant and machinery (including a concrete batching plant) on land at the former Hatfield Aerodrome. The planning application was accompanied by a comprehensive ES (the '2016 ES') which identified the likely significant effect of the development. Despite an initial resolution to approve (in January 2017), the planning application was refused by the planning committee at its meeting on 24 September 2020, with the decision notice issued on 6 January 2021. The reasons cited for refusing the application are set out in the Planning Statement (Volume 1).

18. The applicant is re-submitting a planning application for the establishment of a new quarry. As before, the proposals would involve the winning and working, together with processing for sale, of some 8Mt of sand and gravel over a period of around 32 years (based on an annual output of around 250,000tpa).

19. The quarry would be worked in a phased basis and allow for progressive restoration through the importation of inert materials to backfill the void; this minimises the amount of land taken at any one time. Sand and gravel would be worked from two discrete horizons; the Upper Mineral Horizon ('*UMH*'), which lies predominantly above the water table, would be worked dry whilst the Lower Mineral Horizon ('*LMH*') would be worked wet (i.e. no dewatering of the workings). The two mineral horizons are separated by a seam of boulder clay (referred to as '*interburden*') which would be used as part of the restoration scheme for the workings.

Figure 3
Proposed Phasing (not to scale)



20. Excavated material would be processed at the quarry using a combination of screening and washing plant to produce a range of graded aggregates and sands. Processed aggregates would be dispatched from the site in HGVs. Processed aggregates would be exported via a new access constructed onto the A1057 (Hatfield Road) on the southern side of the application site.

21. Other ancillary development would include a weighbridge, office accommodation, fresh water and silt lagoons.

22. In view of the recent refusal to grant planning permission, the applicant has amended the scheme as follows:

- the erection and operation of a concrete batching plant has been removed from the proposals;

- the standoff for mineral extraction operations in the Lower Mineral Horizon (LMH) to the bromate plume (also in the LMH) will be increased from 50m to 100m;
- there will be no dewatering (pumping) of the LMH; and
- The access road from the quarry entrance will be moved by 5m to the east to allow additional acoustic screening.

23. Further details of the proposed development are set out in Chapter 3 of the ES.

Figure 4
Illustrative Restoration Concept (not to scale)

Planning Policy

24. Chapter 4 of the ES sets out how the proposed development has been considered against relevant national and local planning policy.

25. National planning policy is set out in the National Planning Policy Framework[2] (NPPF), which is accompanied by the web based Planning Practice Guidance[3] resource relating *inter alia* to minerals matters. Many sections of the NPPF are not relevant to this proposal since the application site is not located within a sensitive area subject to land use planning constraints (e.g. a National Park, an Area of Outstanding Natural Beauty, a Site of Special Scientific Interest or a Scheduled Monument). The site is though located within a Green Belt.

26. At the heart of the NPPF is a presumption in favour of sustainable development for which three overarching objectives are identified, namely economic, social and environmental. It is considered that the proposed development would create various economic and social benefits without resulting in significant impacts upon the environment.

27. The NPPF does not change the fundamental premise that applications for planning permission must be determined in accordance with the adopted development plan unless material considerations indicate otherwise.

28. The Minerals Local Plan specifically governs mineral development within Hertfordshire and remains in force until the adoption of the emerging Minerals Development Framework.

29. The Development Framework seeks to reconcile the development needs of society against safeguarding the environment and amenity of local communities. In so doing, the Development Framework sets out a series of Policies which seek to guide developments in terms of acceptable limits and design, whilst ensuring interests of archaeological, cultural heritage, ecological interest and importance are protected, and that the local amenity and environment of communities are not derogated through pollution to air, land or water.

30. Through the EIA process, it has been possible to demonstrate that the development proposals would not conflict with the stated aims and policies of the Development Framework. This is explored in greater detail within the Planning Statement which also accompanies the planning application.

Alternatives

31. Chapter 5 of the ES sets out the alternatives to the proposed scheme have been considered as part of the EIA. The EIA Regulations require that an outline of the main alternatives studied and an indication of the main reasons for this choice, taking into account the environmental effects should be included in an ES.

32. Few alternatives were considered as part of the original 2016 EIA. The design evolution involved the following changes:

- changing the location of the recharge lagoons to the eastern boundary (from the southern boundary);
- opting for a traditional static mineral processing plant, with screens and crusher housed within clad enclosures;
- leaving two ponds on the periphery known to contain great crested newts in situ; and

[2] Ministry of Housing, Communities and Local Government. July 2021
[3] http://planningguidance.communities.gov.uk/

- altering the restoration strategy from a heavily biodiversity lead scheme to one involving more public access.

33. As part of the 2021 EIA work, given that the proposals are a re-submission of the 2016 scheme then no additional alternatives have been considered. Notwithstanding this, it should be noted that the applicant has amended the scheme as follows:

- the erection and operation of a concrete batching plant has been removed from the proposals;
- the standoff for mineral extraction operations in the Lower Mineral Horizon (LMH) to the bromate plume (also in the LMH) will be increased from 50m to 100m;
- there will be no dewatering (pumping) of the LMH; and
- The access road from the quarry entrance has been moved by 5m to the east to allow additional acoustic screening.

34. Whilst the option exists to delete one or more of the above changes, this has not been considered as part of the EIA as it would result in an overall reduction in the quality of the scheme; the effect of such an option would bring the scheme in closer alignment with the previous scheme which has previously been considered through the 2016 ES.

35. Finally, the option exists for the 'do-nothing' option whereby proposals to extract sand and gravel are dropped. This would mean that the application site remains in its current state and that 8Mt of sand and gravel are not worked, having an impact on supplies of aggregates within the county and wider region. The implications of this are considered in Chapter 5 of the Planning Statement.

36. The MPA has asked whether it would be possible to use field conveyors for transferring extracted sand and gravel to the processing plant. This has been considered but considered impractical and unfeasible.

Water Environment

37. Chapter 6 of the ES describes the scope, relevant legislation, assessment methodology and the baseline conditions currently existing at the application site and its surroundings. It then considers any potential significant environmental effects the proposed development of the quarry could have on this baseline environment, the mitigation measures required to prevent, reduce or offset any significant adverse effects, and the potential residual effects after these measures have been employed.

38. The operation and restoration of the application site would be undertaken using current technical guidance, relevant Pollution Prevention Guidelines, other codes of best practice and consents, to limit the potential for contamination of both ground and surface waters. Best practice techniques would be incorporated within the management procedures for construction and operation activities onsite in order to protect the water environment from pollution incidents.

39. A hydrogeological risk assessment has been completed to assess the proposed restoration of the site with imported inert wastes. The risk assessment has confirmed that the proposed development of the quarry (and the backfilling of the void) would not have a significant effect on the water quality. No additional mitigation measures are therefore required over and above the technical precautions that are proposed for the construction and management of the site.

40. Groundwater in the Lower Mineral Aquifer (LMA)/Chalk to the north-east of the application site is impacted by bromate from an offsite historical source. There is to be no pumping of groundwater from the LMA so there is no potential for actively drawing the plume towards the site, although wet digging could have a minor but insignificant effect.

41. It is unlikely, but if LMA/Chalk groundwater levels fall below the lowest historically recorded levels on site then this could affect the location of the plume edge. Nine years of monitoring results, however, indicate the plume is stable but precautionary measures incorporated into the design and operation of the site mitigate this risk which would not be significant.

42. All groundwater pumped from the Upper Mineral Horizon (UMH) would be recharged back into the UMH aquifer via discharge lagoon with the option for discharge into the LMH if needed via a second recharge lagoon. There would therefore be no significant loss of resource. The recharge area is relatively close to the points of abstraction, and it is not envisaged that there would be a significant impact on water resources.

43. Restoration of the void with imported inert fill may result in a local rise in groundwater levels, but this would be mitigated by a perimeter back drain to manage water levels during historically high groundwater periods during the operational and restored phases of the site.

44. A flood risk assessment has been prepared to assess the risk that the development itself would be affected by flooding or would exacerbate flood risk elsewhere. Mitigation measures are presented to ensure flood risk is not significantly increased. This includes the recharge of water back into the aquifer during the operational and restored phases of the development.

45. A Water Framework Directive compliance assessment has been undertaken and is included as an appendix to the ES. This concludes that the proposals would not have a significant impact on the objectives of the Directive.

46. Overall, it is concluded that there would be no significant residual effects to groundwater and surface water from the proposed development after inclusion of the identified mitigation measures.

Traffic

47. The ES, in Chapter 7 reports on an assessment of the impacts on the local transportation network as a result of the proposed development.

48. The assessment included a detailed audit of the existing highway conditions and a review of the local accident history in the proximity of the application site. As part of the development proposals a new access would be constructed onto the A1057. The assessment has considered the design of this access and demonstrated that the highway network would continue to operate satisfactorily.

49. The A1057 Hatfield Road is a classified ‘A’ road which currently accommodates an Annual Average Weekday Traffic (AAWT) flow of over 15,000 mixed size vehicles.

50. A link capacity assessment has been undertaken and demonstrated that the A1057 currently operates within its theoretical capacity and it would continue to do so comfortably with the addition of the proposal traffic from the quarry.

51. The link impact assessment has demonstrated that the likely increase would be 1.3% in terms of total vehicles, which is well within the daily fluctuations in traffic levels experienced and is therefore unlikely to be perceptible away from the site access junction.

52. Appropriate mitigation measures are proposed in order to minimise any impacts of the proposed development relating to road safety and dust and dirt.

53. In conclusion, it is considered that the proposed development traffic would operate adequately and have no adverse impact on the surrounding road network.

Landscape and Visual Impact Assessment

54. Chapter 8 of the ES considers the potential landscape and visual implications of the proposed development. The assessment follows recognised guidance issued jointly by the Landscape Institute and Institute of Environmental Management and Assessment.

55. This assessment included a baseline study of the existing site and its surroundings, a study of the landscape and visual characteristics of the development and an assessment of the residual landscape and visual effects likely to be generated after mitigation has been considered and their significance.

56. Overall there are no significant landscape or visual effects predicted as a result of the proposed development, influenced in part by the proposed mitigation and landscape strategy.

57. The physical changes to landscape elements and features is initially considered to be slight, associated with site preparation and establishment stages, rising to moderate and adverse during working phases and when the majority of disturbance would have occurred, but reducing as part of progressive restoration and eventually becoming slight and beneficial after final restoration is achieved.

58. The changes to aesthetic and perceptual aspects are also considered to be no more than moderate and adverse during operation phases, but becoming slight and beneficial after restoration.

59. The overall landscape effects upon the application site and “Area 31 De Havilland Plain” as a whole are considered to be slight as the published character area is relatively large in comparison and the scale of change is limited; the area would continue to be described inter alia as a jumbled, urban fringe landscape, with existing and restored mineral workings across parts of the extensive level plain.

60. There would be no new key characteristics introduced, but the addition of a new area of active quarrying and infilling, with processing plant is nevertheless a detracting element.

61. At a local level, the application site would be classified as “medium to large-scale greenspace with mineral workings” and after restoration would be returned to “medium to large-scale greenspace plain/former aerodrome”.

62. In terms of cumulative landscape effects, the addition of the proposed development to the ongoing operations at Hatfield Quarry would not give rise to changes in landscape character of such an extent as to have major effects on its key characteristics or transform it into a different character type; it is not considered that the development “tips the balance” through its additional effects.

63. The visibility of the application site is influenced at a local level by the screening effects of vegetation in the surrounding area, in particular in conjunction with the flat, level plain which prevents any views down

or over the site. The clearance of existing vegetation and landcover, the formation, working and subsequent backfilling of the mineral extraction void would have very limited visibility.

64. The diversion of the rights of way and areas of permissive access around the site perimeters would move visitors to this part of Ellenbrook Fields along landscaped corridors that are of similar character to existing routes and/or across the new internal access roads and over undisturbed areas. These routes would then be progressively reinstated as part of final restoration.

65. The mineral processing plant would have some visibility from limited locations at gaps in hedgerows, etc to the north and west of the application site, but this is generally backgrounded and/or seen as part of a mainly wooded horizon, with other development such as Ellenbrook, Hatfield or Smallford. The formation of the site entrance and movement of vehicles to and from the site would be visible from a small part of the existing busy Hatfield Road (A1057).

66. Although there are several sensitive receptors in the study area (mainly residential and recreational), most would experience a small degree of change to the baseline condition; change is discernible but underlying landscape character or view composition would be similar to the baseline. The landscape strategy / mitigation proposals would be effective.

67. In cumulative terms effects are restricted in landscape terms due to the nature of the existing landscape character and potential for screening and separation of the considered developments. In visual terms, some visual interconnection would occur, but this would be limited by screening. A wide 335m buffer of open space would be retained between the proposed development and the housing development with soil mounds and a hedgerow included in the proposed development to reduce visibility between the two developments. The detailed consideration of cumulative effects within the proposed large scale housing development confirms this assessment of cumulative effects and conclude cumulative effects would be restricted to socio-economic issues only.

68. In considering the previous planning application no objections were raised in relation to landscape and visual impact by technical consultees, such as the County Landscape officer. The proposed development no longer includes the concrete plant which would have represented the tallest element on the operational mineral site and an increase in the overall level of development. The tallest element is now the mineral processing plant which represents an essential element of the mineral extraction process; with the principal of mineral extraction in the Green Belt being identified in the NPPF (as previously identified in the policy section of the chapter).

69. The review of Green Belt objectives above indicates limited effects on sprawl, coalescence and encroachment may occur. However, the level of these effects is not considered sufficient to have a significant impact on the function of the Green Belt, particularly in the context of the phased restoration proposals and temporary (although long term) nature of the proposed development.

70. The proposed development seeks to improve the recreational and ecological aspects of the development site without removing it from Green Belt through development that is not inappropriate in the Green Belt.

Air Quality

71. Chapter 9 of the ES considers the potential for the proposed development to impact upon air quality in the vicinity of the application site.

72. The chapter describes the scope, relevant legislation, assessment methodology and the baseline conditions at the application site and the surroundings area. The assessment considers any potential significant environmental effects that the proposed development would have on the baseline environment; the mitigation measures required to prevent, reduce or offset any significant adverse effects; and the likely residual impacts after these mitigation measures have been employed. The assessment has considered both emissions from the quarrying (and associated) activities and from HGVs transporting aggregates or inert waste.

73. The potential impacts of the development have been assessed in terms of potential emissions of particulates (dust). Two assessments have been undertaken; the first to assess and the second to assess the coarse fraction dust which is typically associated with amenity or nuisance issues.

74. A summary of modelled concentrations for worst-case human receptors is provided in turn below for each pollutant assessed, complete results are provided in Appendix 9/1 of the ES. The worst-case receptors presented below refers to the location of maximum change and resultant predicted pollutant concentration.

75. In relation to Nitrogen Oxides in accordance with relevant guidance, the impact of the development on annual mean nitrogen dioxide (NO_2) concentrations at all assessed existing receptors is considered to be 'negligible'. Furthermore, there are no predicted exceedences of the annual mean NO_2 Air Quality Assessment Levels (AQALs), and are calculated to be 'well below' the AQAL. Effects associated with annual mean NO2 concentrations at all assessed receptor locations are therefore considered to be 'not significant', despite the conservative nature of the applied assessment methodology.

76. Turning to the fine particulate fractions (namely dusts with a diameter of less than 10 microns[4] and 2.5 microns) for which Air Quality Standards exist; in accordance with relevant guidance, the impact of the development on annual mean PM_{10} concentrations at all assessed existing receptors is considered to be 'negligible'. Furthermore, there are no predicted exceedences of the annual mean PM_{10} AQAL, and are calculated to be 'well below' the AQAL. Allied to this cumulative effects associated with annual mean PM_{10} concentrations at all assessed receptor locations are therefore considered to be 'not significant', despite the conservative nature of the applied assessment methodology. For $PM_{2.5}$, in accordance with relevant guidance, the impact of the development on annual mean $PM_{2.5}$ concentrations at all assessed existing receptors is considered to be 'negligible'. Furthermore, there are no predicted exceedences of the annual mean $PM_{2.5}$ AQAL, and are calculated to be 'well below' the AQAL.

77. Cumulative effects associated with annual mean $PM_{2.5}$ concentrations at all assessed receptor locations are therefore considered to be 'not significant', despite the conservative nature of the applied assessment methodology.

78. Detailed dispersion modelling of both road traffic and fugitive dust emissions generated by site activities has been undertaken in consideration of potential effects onto both sensitive human and ecological receptors. This has involved the consideration of potential effects on human health associated with increases in ambient pollutant concentrations, as well as the loss of amenity and deterioration of sensitive ecological environments arising from dust deposition.

79. In conclusion, all impacts assessed associated with the operational phase of the quarry were found to be not significant.

[4] Also referred to as micrometre. For dust with a particle size of 10 microns, the acronym PM10 is often used, and for 2.5 microns, PM2.5.

Noise

80. Chapter 10 of the ES considers the potential for the proposed development at Hatfield Aerodrome to impact upon the noise environment in the vicinity of the application site. The chapter describes the scope, relevant legislation, assessment methodology and the baseline conditions that exist around the application site.

81. The noise assessment has used measured background noise levels at three locations around the application site and made a series of noise level predictions based in accordance with relevant standards and guidelines. The predicted noise levels have then been assessed against criteria in accordance with recognised guidance. Predicted noise levels are based on a 'worst case' scenario when operations are being undertaken simultaneously at their closest approach to the noise-sensitive receptor being assessed or highest elevation with the quarry.

82. Noise levels during temporary operations (such as soil stripping and overburden removal) would remain within the specified criterion adopted for the assessment at all locations assessed. It should also be noted that construction noise levels would also remain below the lower 55dB(A) noise limit derived in accordance with the relevant guidance for day to day operations except during construction of the perimeter screening mounds to the south. In view of this no mitigation measures are deemed necessary.

83. Worst case noise levels generated by operational activities, including all truck movements on the access road, would be at or below the noise limits derived in accordance with the relevant guidance at all locations. The cumulative effects of operational noise from both the proposed Hatfield and Hatfield quarries would result in an impact of 'None' at all of the receptors, apart from Location 5b (Nimrod Gardens) where the impact is considered to be 'Minor'. Consequently, the level of effect at all of the receptors is 'None', apart from Location 5b (Nimrod Gardens) where the level of effect is 'Minor.

84. Based on the results of the assessment, it is considered that all practical means have been employed in the design of the site to protect the amenity of the nearby noise-sensitive receptors. A number of good site practice measures have been suggested to further reduce the risk of any potential adverse noise impacts.

85. It is concluded that noise should not pose a material constraint for proposed development.

Ecology

86. Chapter 11 of the ES assesses the potential impacts on valued ecological receptors resulting from the proposed changes to the approved scheme.

87. The assessment has found that the habitats are mainly derived from former airfield grasslands in various stages of development towards rough grassland and scrub, but with areas of disturbance from demolition activities and past use of the site as a film set and areas where habitat succession has been arrested by grazing or mowing. A few hedgerow features and some of the ponds and ditches represent relics from the pre-airfield landscape, and the site adjoins Home Covert, a mature woodland and Local Wildlife Site. The main ecological interest lies in the site's expansive and open grasslands, which although of limited species-diversity, have value due to their scale; their essentially unbroken expanse attracting open country species such as meadow pipit, skylark, kestrel and owls. Certain of the waterbodies also support great crested newts, although reptiles are very sparsely represented, despite the habitat. The invertebrate interest can

be classed as 'developing': whilst it includes formally scarce and rare species, it is not dissimilar to that which would be expected on marginal or abandoned land anywhere in the Home Counties, although populations of the scarcer species are likely to be large.

88. The net residual effect of the proposals in terms of the key ecological receptors is anticipated to be at worst neutral and at best a positive effect measurable at least at the District level of significance. The difference relates to a degree of residual and unavoidable uncertainty over the success of the restoration scheme and subsequent long-term management in securing similar or enhanced habitats to the baseline position and, in particular, the extent of visitor pressure and its management over the long-term.

89. The development would give rise to minor temporary negative effects on certain key faunal receptors (in particular great crested newts) during various stages of the working sequence, but none of these receptors are predicted to be subject to negative effects of high magnitude (e.g. significant in terms of wider local populations), subject to mitigation measures which, in respect of great crested newts, are required under statute in any event. There is no impediment to mitigation proposals being delivered that are in accordance with standard best practice, and in that context there is no cause to believe that the requisite licenses would not be forthcoming in due course. There is also a high certainty that all temporary negative effects on key faunal receptors related to habitat loss would be at least fully compensated in the long-term through the restoration scheme.

90. The proposals for restoration focus on replication of the higher-value elements of the site in its baseline condition, including in particular the large expanses of rough circumneutral grassland, but also seek to exploit opportunities to secure expanded representations of other semi-natural vegetation, in particular acid grassland and wetland habitats, providing replacement and expanded opportunities for species of conservation importance, including declining open-country birds, scarce plants and insects, great crested newts and others. Depending on the success of restoration delivery, and the future management of the site, the project has the potential to ultimately deliver significant positive effects at District level or above, and to qualify the restored site for non-statutory designation within a relatively short time frame.

Cultural Heritage

91. Chapter 12 of the ES presents the findings of a cultural heritage desk-based assessment and field evaluation in connection with the proposed development.

92. Although the Hertfordshire Historic Environment Record would indicate that the application site lies within an area of some archaeological potential, there is clear evidence of significant disturbance through the construction and demolition of Hatfield Aerodrome, and subsequent use as a film set for Saving Private Ryan and Band of Brothers.

93. Even where the ground is undisturbed, geophysical survey and Phase 1 trenching has found scant archaeological remains and none that would appear to pre-date the post-medieval period. No artefacts of earlier date were found.

94. The nature of the proposed mineral extraction however results in the total loss of the archaeological resource wherever extraction takes place, and the potential loss or damage in other areas associated with infrastructure and landscaping.

95. There would be no adverse direct effects upon designated assets such as listed buildings or scheduled monuments.

96. In accordance with planning policy, a precautionary approach should be taken to the potential loss of the archaeological resource. A tiered watching brief within areas undisturbed by modern activities, accompanied by excavation and recording, is therefore proposed. Such mitigation could be carried out in line with the quarry phasing.

97. Should archaeological features be identified these would be recorded and excavated, appropriate to their significance, with subsequent analysis and publication of the results. This would ensure recovery of archaeological information within the application site.

98. The scope of work would be submitted to Hertfordshire County Council before development commences in the form of a Written Scheme of Investigation and would be subject to a planning condition requiring its implementation.

99. Examination of a study area of 1km from the application site was undertaken to assess the potential effects of the proposed development upon the setting of designated heritage assets. Thirty listed structures lie within 1km of the application site boundary, but due to intervening vegetation and development only the listed building complex at Popefield Farm could experience an adverse effect of any magnitude.

100. An assessment of the predicted effects upon Popefield Farm both during operation and after restoration was carried out using Historic England guidance. This concluded that there would be a minor adverse effect upon views of and from Popefield Farm during the operational phase. After restoration, that would include hedge planting to recreate the 1888 historic field pattern with the aim of reinstating the broader landscape setting of Popefield Farm, there would a minor beneficial effect.

101. No additional mitigation is considered necessary in connection with the effects upon offsite designated heritage assets.

102. With the implementation of the proposed mitigation strategy, in respect of archaeology and the historic landscape-led restoration scheme, there would be no adverse residual impacts.

Health

103. A Health Impact Assessment (HIA) has been undertaken following the standard Hertfordshire County Council preferred format based on the WHIASU Toolkit. The HIA draws heavily on the extensive assessment work undertaken for the Environmental Impact Assessment which is reported in the Environmental Statement (ES) accompanies the planning application, and signposting to other reports is provided where appropriate.

104. The socio-economic and health profile for the surrounding area has been summarised. This generally shows that whilst Hertfordshire in general is relatively buoyant, there are certain geographical areas in the vicinity of the site that are less prosperous than the county as a whole.

105. An assessment of health effects is set out in section 6.0 of the HIA and cross-references are provided where appropriate to the detailed studies reported in the ES. Where relevant, the assessment identifies any population groups that may be expected to be disproportionately affected by the proposed development, whether negatively or positively.

106. During consultation with stakeholders and the local community, concerns have been raised regarding two environmental issues that have the potential for serious health consequences:

- air quality, including the potential effects of silica from air-borne particulate matter. SLR has undertaken detailed emissions modelling of such matters which is reported in full in the ES. The results show that emissions of particulate matter from the operational phases of the quarry would not give rise to significant adverse effects at surrounding receptors. The assessment (based on the worst case assumption that all PM10 particulate emissions are silica) assessed emissions against the US standard of 3ug/m3 as an annual mean to provide a suitable Air Quality Assessment Level (AQAL) as there is no standard for silica in the UK. The results showed that no sensitive receptor including nearby residential properties exceeded 10% of the AQAL.
- water quality, including the potential for historical bromate pollution to be drawn into the quarry when it is being worked sub-watertable. As there would be no pumping of groundwater from the Lower Mineral Horizon (LMH) the potential for drawing impacted groundwater into the site is considered to be low. However, wet digging of mineral from beneath the LMH could create short lived local changes in groundwater head which could conceivably induce a local gradient towards the site and suitable mitigation measures are proposed including the development of a groundwater and water management plan to be agreed with the Environment Agency and Affinity Water prior to works commencing .

107. As a result of the proposed mitigation, no significant effects are predicted.

108. The assessment concludes that the proposed development is not predicted to give rise to any significant adverse health-related impacts, and that there would be some benefits particularly to the economy during the site operation and to biodiversity and public access in the longer term. The potential benefits are likely to benefit certain groups within local communities through the provision of skills training and career development. An Employment and Skills Plan is recommended to help reduce potential inequalities in access to work and to ensure that local people, particularly those that may be disadvantaged in terms of employment opportunities, gain maximum benefit from the proposed development.

109. In summary, the proposed development is not expected to have a significant adverse impact on health for those living near the site, working on the site or using nearby areas for recreational purposes. Where required, the proposed development provides for appropriate mitigation measures to minimise adverse effects and enhance beneficial effects.

Cumulative Impacts

110. The final chapter of the ES considers the potential cumulative impacts arising as a result of the proposals described above.

111. Chapters 6 to 13 of the ES set out the findings of the EIA for a range of environmental topics, and in particular, ascertained the potential significance of identified impacts. It is possible for a number of the environmental topics to impact upon nearby receptors; whilst individually, the impacts may be within accepted limits, collectively, and the impacts could potentially be more significant. These are referred to as "*inter-relationships between impacts*". At the same time, potential impacts associated with the proposed development may be acceptable in isolation, but when considered in the context of other developments in the immediate vicinity, may become more significant. These are referred to as "*Cumulative Impacts*".

112. It is noted that there is a sand and gravel quarry (CEMEX Hatfield Quarry) to the north of the application site. The potential cumulative impacts arising through the proposed development of the quarry have been considered and none have been identified.

113. No significant impacts have been identified for any of the environmental topics considered as part of the EIA. Thus, no receptors are likely to experience any significant accumulated impacts from two or more sources.

EUROPEAN OFFICES

United Kingdom

AYLESBURY
T: +44 (0)1844 337380

BELFAST
belfast@slrconsulting.com

BRADFORD-ON-AVON
T: +44 (0)1225 309400

BRISTOL
T: +44 (0)117 906 4280

CARDIFF
T: +44 (0)29 2049 1010

CHELMSFORD
T: +44 (0)1245 392170

EDINBURGH
T: +44 (0)131 335 6830

EXETER
T: + 44 (0)1392 490152

GLASGOW
T: +44 (0)141 353 5037

GUILDFORD
T: +44 (0)1483 889800

LONDON
T: +44 (0)203 805 6418

MAIDSTONE
T: +44 (0)1622 609242

MANCHESTER (Denton)
T: +44 (0)161 549 8410

MANCHESTER (Media City)
T: +44 (0)161 872 7564

NEWCASTLE UPON TYNE
T: +44 (0)191 261 1966

NOTTINGHAM
T: +44 (0)115 964 7280

SHEFFIELD
T: +44 (0)114 245 5153

SHREWSBURY
T: +44 (0)1743 23 9250

STIRLING
T: +44 (0)1786 239900

WORCESTER
T: +44 (0)1905 751310

Ireland

DUBLIN
T: + 353 (0)1 296 4667

France

GRENOBLE
T: +33 (0)6 23 37 14 14