TARMAC TRADING LIMITED

REPRESENTATIONS IN RELATION TO
PROPOSED PREFERRED AREA 1
THE BRIGGENS ESTATE
AS IDENTIFIED UNDER POLICY 4
OF THE EMERGING
DRAFT HERTFORDSHIRE MINERALS LOCAL PLAN

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SECTION 1 INTRODUCTION

1.1 Tarmac has been promoting the allocation of a sand and gravel deposit at the Briggens Estate near Stanstead Abbotts, Hertfordshire as a Preferred Area for minerals extraction under the emerging Hertfordshire Minerals Local Plan.

1.2 This would be a new Greenfield site promoted to provide the Company with the potential to maintain existing production capacity within the County. This production capacity is currently provided from Panshanger and Tyttenhanger Quarries. However, with Panshanger due to cease production in 2018 and Tyttenhanger in the mid-2020s, there is a need to identify and secure a new site to enable continuity of supply going forwards.

1.3 Under the emerging Replacement Minerals Local Plan ("RMLP") the County has identified that existing permitted reserves at the end of 2016 amount to 11.75 million tonnes, with an identified need of 25.75 million tonnes of sand and gravel to maintain supply up to 2031.

1.4 As part of the development of the RMLP, the County considered and assessed eighteen sites or areas promoted to supply the sand and gravel resource.

1.5 The County developed a Site Selection Methodology ("SSM") and implemented this to identify specific sites for allocation and Preferred Areas for sand and gravel extraction. The results of this analysis are detailed in the Site Selection Report ("SSR") which accompanies the emerging RMLP consultation.

1.6 The site at the Briggens Estate was allocated the site number MLPCS010, and after appropriate assessment (refer to Summary at Appendix 1 and content in Section 4 below), both on a standalone basis and against competitor sites, the Council decided to identify the site as a Preferred Area for sand and gravel extraction within their emerging RMLP, meaning that if included within the adopted Plan ***"there is a reasonable expectation that sand and gravel extraction would be acceptable in planning terms".***

1.7 The Sieve 3 screening for the site was provided across twenty-three criteria. Of these, the site scored as Low or Positive Impact under twelve criteria, Medium Impact under six criteria and a High Impact under five criteria.

1.8 Tarmac has engaged specialist advisers to provide a more detailed understanding of the baseline setting and consider what mitigation measures could potentially be required to manage these impacts and reduce the scoring identified, in particular the criteria where a high risk/impact was identified.

1.9 This submission will provide the following:

(i) detailed consideration of the baseline setting and phasing plan;
(ii) presentation of an outline draft working scheme;
(iii) presentation of an outline draft restoration concept; and
(iv) a detailed review of the criteria used on the SSM with particular emphasis on the six criteria scored as High Impact.

1.10 Tarmac is providing this information on a proactive basis, consistent with the requirements for "front loading" as identified under the NPPF. It is also beneficial to the Company to identify potential constraints and high level mitigation measures at the outset in order that the detailed schemes of working and restoration can be developed.

1.11 The technical reviews provided as part of the submission consider the scope for impact, but are in no way intended to provide a comprehensive Environmental Impact Assessment at this time.

1.12 Tarmac would like to safeguard the "Preferred Area" status identified under the RMLP, and have therefore provided this detailed information to allow a more developed understanding of the baseline and the potential scope for impact.

1.13 Tarmac has an extensive track record in the working of sand and gravel sites along with the restoration of the same, and can develop a scheme that will have a long term beneficial effect on the site and surrounding area.

1.14 If allocated and developed the Preferred Site could have many benefits consistent with the objectives of the emerging RMLP as follows:-

a) the site has the potential to provide significant and sustainable quantities of sand and gravel to support the growth and infrastructure requirements in the east of the county, and the east of England region;

b) the location of the site directly adjacent to the A414 is ideally situated to comply with the requirements of the road hierarchy moving the materials to the market in a sustainable manner given the lack of rail and water opportunities in the county;

c) the site presents a opportunity to provide a long term more diverse landform of greater value both in landscape and nature conservation terms;

d) the restoration scheme has the potential to provide greater public access across the area for walkers and other bridleway users alike; and

e) the availability of substantial amounts of overburden materials on site minimises the need to import inert materials to achieve a sustainable restored landform.

SECTION 2 BASELINE

2.1 The site is situated within the Briggens Estate which is part of a wider ancestral estate, situated east of Stanstead Abbots, in the east of the County.

2.2 The site is framed on three sides by public highways, comprising:

- the A414 to the south;
- the B181 Roydon Road to the west; and
- the B180 Hunsdon Road to the north.

The eastern perimeter of the site is secured by Lords Wood (itself a designated Ancient Woodland); Pogdens Wood and the adjacent habitat and wetland environment in the valley of Hunsdon Brook.

2.3 The site is situated in a mainly rural context but has residential amenity in proximity, including (with reference to Plan S410-00001):

- Olives Farm and Olives Farm Cottage in the north-east;
- Home Farm to the north;
- Hunsdon Road Cottages to the north-west;
- properties off Roydon Road to the west;
- Coldharbour Farm to the south-west; and
- properties around Briggens Home Farm to the south-east, south of the A414.

2.4 In an historical context, the site is situated in a sensitive setting with registered parks and gardens, ancient woodland, listed buildings, conservation area, all found in proximity to (but not on) the site and unscheduled but known archaeological remains within the site. Further detail in this regard is provided as part of this report.

2.5 The site extends over an area of approximately 186 hectares with a gently rising landform into the site. The effect of this topography, along with surrounding vegetation and land use, serve to constrain views into the site.

2.6 In the context of Rights of Way the site is bisected by the Harcamlow Way (part of a Long Distance Walk) and local bridleway assets (refer to Plan S410-00001).

2.7 The technical reports provided at Appendices 4-9 inclusive provide specific details on the baseline setting going beyond a purely desk-based approach.

Geology

2.8 In summary, the deposit at the site is a glacial sand and gravel deposit typically overlain by around 5m of glacial till (clay and silt materials) which are treated as an overburden. This conceals the sand and gravel which is typically found in one seam across the site, although in

the more northern areas the sand and gravel is split by a layer of interburden.

2.9 Typical sand and gravel thicknesses are of the order to 5 m, but can vary between 2.5 m and 10.5 m. The sand and gravel is largely situated above the water table with only the lower 1-2 m saturated.

2.10 The bedrock present beneath superficial cover at the site comprises London Clay in the south of the site and older strata Lambeth Group in the north. The London Clay, generally characterised as a stiff blue-grey clay and where present it will provide materials suitable for the creation of a natural or artificial engineered barrier of the extraction area (where required) to enable the restoration of the site using indigenous and imported inert restoration materials.

2.11 The London Clay is underlain by the Lambeth Group, generally characterised as clays, silts and sands at depths of up to 39m. Both these formations conceal the underlying chalk aquifer.

2.12 Further details on site geology are presented at Section 3.7 of the report reproduced at Appendix 9. Details on the indicative scheme of working and the mineral reserves for the site are presented at Section 3 of this report.

SECTION 3 OUTLINE WORKING SCHEME

General

3.1 The details provided in support of the allocation of the site whilst valuable in enabling draft working schemes to be prepared are not comprehensive and further detailed work will be needed to refine and test the assumptions that are made. Nevertheless even with that caveat they provide a valuable basis to concerns that have been raised and to support the retention of the site in the Plan.

3.2 Since initially promoting the site, Tarmac has (and continues to) undertake more investigative drilling to prove the sand and gravel deposit to inform the development of a more detailed working scheme.

3.3 In addition, the engagement of specialist input at this early juncture has allowed for the design to incorporate bespoke mitigation measures to manage the potential scope for impact.

3.4 An indicative working scheme/phasing plan is provided at Appendix 2. This shows that the economic sand and gravel at the site (in this instance where the overburden mineral ratio is 2:1 or better) is split into two distinct resource blocks in the east and west.

3.5 The area in the centre of the site generally exhibits unfavourable depths of overburden of 10 m plus, which makes economic extraction not possible. However, the same area presents an ideal opportunity to locate the mineral processing plant and ancillary infrastructure required to process, store and distribute the sand and gravel resources. This geological context, allied with existing topography and land use (in particular the presence of Long Spring and Square Spring woodland), provides a centralised but well-sheltered location for this infrastructure.

3.6 The exact details of the processing plant are yet to be determined. However, a typical modular system is envisaged that has the advantage of being relatively low level. The availability of the clay materials should allow the Company to establish the plant site within an engineered area at a lower level than surrounding topography in order to further reduce the visual profile of any plant and equipment.

3.7 The other key requirement is access into the site, which in this case is proposed to be established off the B181 (refer Appendix 2). This has been selected, as Hunsdson Road is too narrow and unaligned to support the HGV activity envisaged, and there is no scope (either practically or economically) to create a new junction/means of access of the A414. Any access would be subject to certain routing restrictions to prohibit HGV activity though Stanstead Abbotts, except for local deliveries. Further consideration of the access is provided in Section 6 below.

3.8 The indicative phasing reproduced at Appendix 2 has been developed under a number of aims and objectives as follows:

(i) to recover the important resources of sand and gravel in as most sustainable manner as possible;
(ii) to safeguard the amenity of adjacent residential premises and other sensitive land uses;
(iii) to ensure Lords Wood remains (and other adjacent woodland such as Pogdens wood) undisturbed and un-effected by the scheme;
(iv) to ensure that all soils associated with best and most versatile agricultural land is stripped handled and replaced sensitively;
(v) to ensure that any features of nature conservation value on the site are protected and managed, and where possible enhanced;
(vi) to ensure that the setting or significance of adjacent and nearby heritage assets is affected as little as possible;
(vii) to ensure best use of all on site materials to minimise the need for imported materials to achieve a sustainable restoration scheme;
(viii) to ensure that the network of public rights of way present on site remains available throughout the scheme;
(ix) to make sure that water is used in an efficient and sustainable manner; and
(x) to ensure all water run-off is maintained on site and only discharged in a controlled manner.

3.9 The extraction areas identified on the plan reproduced at Appendix 2 have been developed using stand-offs to sensitive neighbouring land uses as follows:

- 100 m to all residential development;
- 20 m to Lords Wood;
- 10 m to all other not designated woodland;
- 10 m from public highway; and
- bespoke consideration of stand-offs relative to heritage assets.

These distances would be reviewed under the detailed stage of any planning application. The site is bisected by two public rights of way, both of which would be subject to a diversion which would be no less accommodating than the existing route. The presence of utility infrastructure on site is acknowledged and would not impact on the delivery of the scheme.

3.10 Using the above criteria, the two resource blocks have a combined area of circa 100.8 hectares (split 36.9 hectares in the east and 63.9 hectares in the west) and have been assessed as containing 10.2 million tonnes of economic sand and gravel.

3.11 This mineral resource is concealed by an estimated 8.8 million m^3 of soils and overburden materials, which will be need to be stripped, handled and managed to safeguard its value as a restoration resource. This would be undertaken on a phased basis on

conjunction with the working of the sand and gravel and reinstated on a progressive basis to secure the timely restoration of the site, consistent with national policy and objectives identified in the emerging RMLP.

Phasing

3.12 It is proposed that the eastern resource blocks would be worked first. This would be split into three phases with an estimated reserve of approximately 2.2 million tonnes. The intention in this area would be to store the overlying soils and overburden initially in purpose-designed bunds to minimise the landscape, acoustic and dust impacts of the scheme.

3.13 As the scheme develops these resources would be recovered in support of restoration, and be supplemented by overburden resources from Phases 4 and 5 to enable the restoration of the eastern area to near original ground level using on-site materials only. This would therefore reduce the need to import materials from the outset and negate any requirement for such materials to cross the entire site. Such design considerations are consistent with the objectives of Policy 2 of the emerging RMLP.

3.14 Based on a typical output of 500,000 tonnes per annum, the mineral in Phases 1-3 would take about 4-5 years to recover with restoration of the area potentially completed by Year 8 of the scheme.

3.15 The western area is spit across nine phases (4-12 inclusive) and contains approximately 8 million tonnes of sand and gravel. This is the main component of the site and would be worked and restored in a progressive manner over a period of 16-17 years, with a general progression from north to south. This phased approach of working and restoration on a progressive basis is fundamental to sustainable design and consistent with objectives highlighted in the emerging RMLP.

3.16 It is envisaged that Phases 4-12 would be restored using a combination of indigenous resources and imported inert restoration material in order to achieve a sustainable long term landform and land use post restoration. Further details in this regard are presented at Section 4 below.

Ancillary Facilities

3.17 The extraction processing and distribution of the sand and gravel would require a range of infrastructure/ancillary facilities. In addition to the processing plant itself there would be a need to establish water management lagoons in order to provide a supply of water to the mineral washing process.

3.18 There is recognition that there is a potential scarcity of available water resources, both locally and further afield, and therefore the processing plant and water management systems will be based on a recycle/re-

use system that would be operated to minimise water losses and therefore minimise water demand. The selection and use of power and water efficiently is entirely consistent with Policy 2 of the emerging RMLP.

3.19 Tarmac have reviewed the current framework for water licensing in the area. The entirety of the Site is situated within the Upper Lee Catchment Abstraction Management Strategy (CAMS) area. For water resource management purposes, CAMS areas are generally divided into surface water sub-catchments and Groundwater Management Units (GWMU's), and provide guidance on water availability across the catchment, for both surface and groundwater resources. Review of the detail under each MU indicates that there is an availability of water resources under certain conditions or constraints, within which the site can be operated.

3.20 Clearly the operation of the plant (both fixed and mobile) would require the installation and use of facilities for oil storage, and such facilities can be installed in accordance with the appropriate legislation with no risk to the underlying aquifer.

3.21 In addition to the above, there would also be a need to establish site management infrastructure, such as:

- weighbridge;
- site offices;
- messroom; and
- wheelwash/spinner facilities.

These would all be situated within the plant site are and therefore would not be visible from the surrounding area.

3.22 All of these facilities are typical requirements of any operational sand and gravel site and Tarmac is well versed in establishing and operating such facilities.

3.23 In addition to the above, the establishment of this new site could also support the development of downstream or added value operations, such as an aggregate bagging plant and/or a ready mixed concrete plant. Section 10 of the emerging RMLP recognises the benefits of hosting such operations at primary extraction sites by both increasing the sustainability of these added value operations and maximising the best possible use of the finite mineral resource.

Advance Planting

3.24 The site generally is generally well enclosed by existing topography and vegetation however In view of the nature and scale of the proposals and the environmental (in particular visual) context of the site, Tarmac has engaged specialist advice to identify options for advance planting. This is a standard approach at any new potential extraction site.

3.25 Details in this regard are presented at Drawing BRG AVP 1 of the LVIA reproduced at Appendix 5, and include for the following:-

- broadleaf woodland shelter belt planting along the northern site perimeter to strengthen the existing hedgerow;
- broadleaf woodland block planting around the proposed plant site location; and at other areas of potential visual sensitivity;
- management and enhancement of existing woodland and hedgerows, in particular in the south of the site and adjacent to the B181.

3.26 Details on the species composition and planting density etc are yet to be established, but the provision of such planting on a phased basis over time ensures that the scheme is consistent with the policy content on Green Infrastructure and Landscape Quality as articulated in the emerging RMLP.

SECTION 4 OUTLINE RESTORATION CONCEPT

4.1 Section 16 of the emerging RMLP highlights the importance of restoration to achieve high quality sustainable land forms and land uses. Such schemes should be developed and delivered in a timely manner to minimise the scope for adverse effects over long periods of time.

4.2 The restoration of minerals sites are supported by detailed and rigorous management plans to ensure the implementation and development of the restoration schemes. Consistent with Policy 25 of the emerging RMLP, this in turn is supplemented by aftercare schemes to ensure that the land uses and habitats are well managed to ensure their long term integrity.

4.3 The section recognises the importance of a phased and progressive approach of restoration and the scheme provided in this report (although still in outline form) is predicated on this basis.

4.4 Tarmac has developed an indicative restoration concept which is reproduced at Appendix 3 of this report. Consistent with the NPPF and the objectives and policies of the RMLP, the aims and objectives of the concept are as follows:

(i) to provide a long term sustainable landform;
(ii) to positively contribute to local landscape character objectives wherever possible;
(iii) to ensure that all best and most versatile agricultural land is restored to arable cultivation to the same or higher standard at the earliest opportunity;
(iv) to ensure an improvement in the nature conservation value of the site into the future;
(v) to ensure that the long term setting or significance of adjacent and nearby heritage assets is affected as little as possible;
(vi) ensure best use of all on site materials to minimise the need for imported materials to achieve restoration;
(vii) to provide an enhanced network of public access routes to support recreational aspirations; and
(viii) to ensure all water run-off is maintained on site and only discharged in a controlled manner.

4.5 In this regard, the indicative concept reproduced at Appendix 3 provides for a farmland reinstatement and nature conservation creation, supplemented by a network of permissive rights of way to improve connectivity across the landform, in particular east-west.

4.6 The proposed scheme will contribute positively to the environment, consistent with draft policies 9, 12 and 17, articulated in the emerging RMLP as well as being entirely consistent with National Policy Guidance.

4.7 The nature conservation habitats envisaged include:

- broadleaf woodland;
- wetland habitats;
- neutral grassland habitats; and
- farmland margins.

These are all identified Habitat Management Plans under the adopted Hertfordshire BAP, ensuring further positive contributions.

4.8 The creation and development of the above habitats will also result in the establishment of environment where many of the species identified under the BAP can flourish, including the farmland bird and invertebrate species.

4.9 The value or significance of this scheme can only be determined under detailed assessment. However, even in its conceptual form the scheme has the potential to deliver significant long term and sustainable environmental enhancement to the benefit of the local community and local environs.

SECTION 5 SITE ASSESSMENT

5.1 The emerging RMLP is accompanied by a number of supporting documents including the SSR. The SSR report (prepared by LUC on behalf of HCC) provides a methodology and review of the decision making process behind the assessment of each of the sites identified under Policy 4 of the RMLP.

5.2 The assessments were based on a sieve analysis with Stages 1 and 2 designed to initially remove sites where major constraints were present and secondly remove any sites where economically viability and/or deliverability was not proven.

5.3 Site MLPCS010 passed both of these more strategic reviews and progressed into the third tier of assessment. The 20 sites which went into the third tier process where subject to review and assessment under twenty three criteria with scoring based in the assessed degree if impact (i.e. high, medium, low or no impact).

5.4 The scoring for the site at Briggens is detailed in the proforma reproduced at Appendix 1, and summarised in Table 1 below.

Criteria	**Scoring**
Airport Safeguarding Zone	Low
Ancient Woodland	High
Aquifers	Medium
BAP Priority Species or Habitats	Positive
BMV Land	Medium
Cumulative Impact	Low
Ecological Status of Water Bodies	High
Flood Risk	Positive
Geodiversity	Low
Green Belt	Low
Groundwater Vulnerability	Medium
Heritage Designations	Medium
International and National Eco Designations	Low
Landscape Designations	Low
Local Nature Reserves and/or W/S	Medium
Proximity to Residential Land	Medium
Recreation	High
Restoration	Low
Sensitive Land Uses	Medium
Sustainable Transport	High
Sustainable Transport and Pollution to the Environment	Low

Table 1: Summary of the Finding of the Sieve 3 Analysis for the Briggens Site

5.5 As can be seen above of the 23 criteria examined, 6 scored as high impact, including:

- ancient woodland;
- ecological studies of water bodies;
- recreation;
- sensitive land use; and
- sustainable transport.

5.6 Furthermore, 6 criteria examined were scored as medium impact, including:

- aquifers;
- BMV land;
- groundwater vulnerability;
- heritage designations;
- local nature reserves; and
- proximity to residential or built development.

5.7 Sections 6-11 inclusive below and the contents of Appendices 4-9 inclusive will provide detailed evidence to, where appropriate, challenge these scores, or suggest mitigation measures to enable the scope for impact to be re-examined.

5.8 Of the eleven criteria identified as medium or high impact above, five have not been subject to detailed technical review at this time, namely:

- ancient woodland;
- recreation;
- best and most versatile land;
- proximity to residential or built development; and
- sensitive land uses.

Consideration of these matters in relation to the indicative schemes presented at Appendices 2 and 3 would however suggest some potential changes to the scoring identified in the SSR. Addressing each in turn.

Ancient Woodland

5.9 The site assessment (refer Appendix 1) scored this element as a High Impact, as the site is immediately adjacent to Lords Woodland.

5.10 The British Standard for Root Protection in conservation requires a maximum 15 m stand-off from development to protect the integrity of an individual tree or area of woodland.

5.11 In advance of any development, the woodland would be subject to detailed ecological and arboricultural evaluation that would inform the need for any specific management and/or mitigation measures to safeguard the integrity of this asset. For the purposes of the working

scheme illustrated on the plan reproduced at Appendix 2 a 20 m stand-off has been assumed from this asset. It is proposed that the effect of this is to change the scoring from High Impact (i.e. immediately adjacent) to Moderate Impact (i.e. in close proximity to the woodland).

Recreation

5.12 The site assessment (refer Appendix 1) scored this element as a High Impact, as public rights of way are within the site.

5.13 The scoring criteria identified in Table 3.1 of the Site Selection Report provides for five tiers of scoring. The site is scored as High Impact due to the presence of existing rights of way. However, there is opportunity to enhance and expand on the availability of rights of way across the site, and the restoration scheme reproduced at Appendix 3 identifies potential routes in this regard.

5.14 It is therefore proposed that this site could actually be scored as Very Low impact overall. This is because whilst there would be a short term impact associated with the diversion of the routes, this would be more than offset with the creation of new additional routes to provide a longer term major enhancement to the benefit of existing and future planned communities.

Best and Most Versatile Land

5.15 In the absence of a detailed survey, Tarmac would not challenge this assessment at this time.

5.16 Section 12 below will provide a summary of revised scoring based on the above and the technical reports provided.

Proximity to Residential or Built Development

5.17 The site scored as Medium under this criterion, indicating a close proximity or adjacent location to residential or built development. The indicative working scheme set out at Section 3 above and illustrated at Appendix 2 provides for a 100 m stand-off from all residential premises.

5.18 This is a figure known to ensure that potential effects, in particular from noise and dust, are within acceptable levels of impact. Nonetheless, as residential development is in proximity, it is agreed that a Medium score under the methodology identified under Table S.1 of the Site Selection Report is accurate.

Sensitive Land Uses

5.19 The pro forma reproduced at Appendix 1 indicates that the site has been allocated a High Risk of Impact under this criterion. This is mainly due to the proximity of residential amenity around the site. However, under the methodology summarised at Table 3.1 of the

SSR, this level of impact is associated with ***"sites or areas located adjacent to or within the boundary of sensitive land uses".***

5.19 As set out above, the scheme will benefit from stand-offs from residential development and other sensitive land uses, such that the actual development associated with the site will not be "adjacent to or within" such receptors but actually only be in close proximity to. On this basis, it is suggested that a Medium scoring should actually apply under this criterion.

SECTION 6 TRAFFIC

6.1 A Transport and Access Appraisal (TAA) has been undertaken by David Tucker Associates and the resultant report is reproduced at Appendix 4.

6.2 The report has been commissioned to define the baseline conditions of the highways network of the vicinity of the site, and to provide an outline design in terms of site access.

6.3 The need for a Transport Assessment at the planning application stage is common for all mineral sites and will be prepared in due course based on the assessments included here and with the benefit of traffic and speed surveys.

6.4 The appraisal has considered in high level terms the potential scope for impact based on a mineral output of 500,000 tonnes per annum, and a restoration materials input of 200,000 tonnes per annum.

6.5 The conclusions of the appraisal reproduced at Appendix 4 are:

- there are no existing capacity problems on the A414 / B181 junction or indeed on the links adjacent to it.
- safe and secure access to the site (in accordance with the NPPF Para 32 test) can be achieved and there are no constraints to delivering such an access.
- there are no highway design constraints on the A414 or B181 that would limit the output of the mineral site.
- it is accepted that discussions regarding HGV routing would be appropriate. However, existing restrictions are already in place to prevent routing of HGVs through villages and surrounding communities notably Stanstead Abbotts and these can be readily enhanced as part of the scheme. This does not in any way represent a constraint to safe and efficient use of the site for mineral extraction.

6.6 The appraisal concludes that there are no highways or transport constraints that apply, it is thus wholly appropriate to allocate the site. The development would be in full accordance with the relevant requirements of the National Planning Policy Framework at paragraph 32.

6.7 The appraisal will not alter the scoring of the site as allocated under the Sustainable Transport and/ or the Sustainable Transport and Pollution to the Environment criterion. However, the appraisal sets out a clear demonstration as to the acceptability of a minerals scheme in highways terms at this particular location.

SECTION 7 LANDSCAPE AND VISUAL

8.1 A Landscape and Visual Appraisal (LVA) has been undertaken by SLR Consulting and the resultant report is reproduced at Appendix 5.

8.2 The report provides a detailed consideration of the baseline setting in terms of both landscape and visual receptors, and in high level terms finds that the scope for significant levels of adverse effects is limited and that in the long term the scheme has the potential to have a positive effect.

8.3 Under potential landscape effects high level consideration of the indicative schemes presented as part of this report, the LVA reproduced at Appendix 5 finds that whilst the type of development proposed would lead to direct effects on the landscape of the site and have potential for perceived effects on the character of the surrounding landscape, the subsequent restoration offers a unique opportunity to "contribute and enhance the natural and local environment" and positively make the place "better for people" as alluded to above in the paragraphs referenced form the NPPF.

8.4 The key landscape considerations for the proposed indicative restoration concept are set out in Section 5 of the report reproduced at Appendix 5; with the strategy and guidelines of the 'East Herts Landscape Character Assessment' being held in particular regard notably "*the planting of new woodland around existing woodlands where this will contribute to ecological diversity*", to "*encourage the replanting of hedges along historic field boundaries*" and to "*encourage a reversion from arable to pasture where practicable, and the management of new and existing grasslands to maximise their biodiversity potential*".

8.5 In term of potential visual effects high level consideration of the indicative schemes presented as part of this report, the LVA reproduced at Appendix 5 finds that the extent of any visual effects arising from a future extractive mineral operations at the site would be limited and localised.

8.6 Nearby residential receptors would be of highest sensitivity to development of this nature and there is potential for visual effects; however, consideration of these views has been recognised as part of the proposed development, with standoffs to the extraction boundary and advance planting being included in the scheme.

8.7 Further temporary mitigation would also be provided via any subsequent planning application; these measures would include the construction soil storage / screen bunds The positioning and reduction in base level of both the haul road and plant site are also key to mitigating visual effects with activities associated with both of these aspects with screening being provided by a combination of intervening landform and vegetation.

8.8 Local road users, particularly motorists travelling along the A414 would be much less sensitive owing to the transient and glimpsed nature of views towards the site. This is also the case for the other local roads adjacent to the boundary with the most open and elevated section of carriageway being Hunsdon Road between Home Farm and Newgate House.

8.9 A 15m wide belt of advance planting has been proposed along the northern edge of the site which will not only provide a screen but also reinstate the remnant field boundary and improve landscape structure. The ground also slopes away from this location which will provide further visual mitigation to activities within a mineral extraction with the proposed plant site being beyond further woodland vegetation at Square Spring which would be flanked by advance planting.

8.10 The rerouting and associated temporary effects on recreational receptors using the PRoW that cross the site (notably the Harcamlow Way long distance walking route) are unavoidable while the extraction takes place. However, once the route is reinstated the quality and value of the surrounding landscape would arguably be improved, as would the user experience.

8.11 Other key receptors such as the Registered Parks and Gardens South of the A414, namely Stanstead Bury and Briggens would also be well screened (as illustrated by the ZTV, see SLR Drawing BRG LVA1 reproduced at Appendix 5) with significant visual effects on these or wider visual receptors being very unlikely.

8.12 In summary and in respect of the “Low” Landscape Designation scoring under the SSR, it is considered that this is an accurate reflection of the scheme under the methodology provided.

SECTION 8 ARCHAEOLOGY

8.1 An Archaeological Desk Based Assessment (DBA) has been undertaken by Phoenix Consulting and the resultant report is reproduced at Appendix 6 of this document.

8.2 A wide range of sources were consulted for this assessment, including the local Historic Environment Record, published articles and books and manuscript documents. In addition, the site was visited for a visual appraisal.

8.3 The review of the available evidence indicates that the site contains a few records of archaeological interest, being a possible Roman farmstead to the west of Olive's Farm, a scatter of Medieval pottery and various undated cropmarks appearing to relate to former field divisions, enclosures and trackways. In the wider surrounding landscape are archaeological records of all periods dating back to the Mesolithic.

8.4 Whilst archaeological sites are recorded for the site, and others could potentially exist that are currently unknown, nothing presently appears to be of such significance so as to represent an issue with regard to minerals development. Indeed, the identified archaeology could be considered to represent 'minor issues capable of mitigation'.

8.5 It is agreed that further evaluation would be required at the point of application to substantiate views, but on the basis on the current assessment the site should, with regard to archaeology, score 'Low' , with no significant impacts that can't be mitigated being present.

8.6 Any effects upon the archaeological resource could be adequately mitigated through an approved programme of archaeological works prepared in full consultation with the archaeological adviser to the Mineral Planning Authority. This is typical for all sand and gravel operations under consideration though the emerging RMLP.

SECTION 9 CULTURAL HERITAGE

9.1 A Baseline Heritage Assessment (BHA) has been undertaken by the Heritage Collective and the resultant report is reproduced at Appendix 7.

9.2 The assessment identifies the principal heritage assets in the vicinity of the site, and assesses their significance, including the contribution made by their setting. It also explains the relevant national policy framework applicable to planning decisions affecting heritage assets.

9.3 The study area has been chosen so as to include consideration of those heritage assets which are most likely to be affected by effects arising from mineral extraction on the Briggens Estate. The assessment considers the following assets:-

- the conservation area, and listed buildings therein associated with Stanstead Abbotts;
- the Grade II registered parks and gardens at Stanstead Bury and Briggens; and
- other listed buildings in and around the site.

Addressing each in turn:-

Stanstead Abbotts Conservation Area

9.4 Section 3 of the report reproduced at Appendix 7 includes a detailed review of the Conservation Area, its significance and its connection with the Briggens Site. The report finds that there is no historical evidence to suggest that the site, which was in several different ownerships at the time of the tithe map c.1840, has strong associations with Stanstead Abbotts Conservation Area, or that it forms a specifically important component of the setting or significance of the conservation area.

9.5 Accordingly a low level of impact can be assessed.

Registered Parks and Gardens

9.6 Section 4 of the report reproduced at Appendix 7 includes a detailed review of both Registered Parks and Gardens, their significance and their connection with the Briggens Site. The report finds that the focus of Stanstead Bury RPG is the church-manor relationship in the group of listed buildings at the western end of the landholding, which is clearly of more than special architectural and historic interest.

9.7 In terms of the setting, the report finds that the Stanstead Bury RPG does not have strong historical connections with the land to the north of the A414 within the site, and it does not “borrow” views of the landscape in that direction. At the time of the tithe map c.1840 Stanstead Bury was an estate owned by Charles Phillips, whereas the

site was in numerous ownerships, the principal landowners being the executors of the late William Henry Fielde.

9.8 Briggens is an essentially 18th century house surrounded by parkland which retains features designed by Charles Bridgeman c.1720. The wider Briggens RPG has a strong linear focus towards the entrance gates and lodges south-west, near Roydon Station, and the predominant setting is to the south.

9.9 The report reproduced at Appendix 7 finds that the RPG does not "borrow" from its external surroundings, and it does not have a historical connection with land within the site to the north-west, which was in different ownership and use.

9.10 Accordingly a low level of impact can be assessed against these heritage assets, and the listed buildings therein, when considering any potential development scheme at the site.

Other listed Buildings

9.11 Section 5 of the report reproduced at Appendix 7 includes a detailed review of the listed buildings around the site and not within the above assets including the assets in and around Olives Farm. The presence of the listed buildings requires detailed discussions with English Heritage at all stages of decision making.

9.12 The report finds that as follows:-

- Bonningtons is a building of special architectural and historic interest that formed the centrepiece of an estate associated with Olives Farm and Little Briggens. The relationship between Bonningtons and the site is not strong, in terms of context and setting;
- Olives Farm is of more than special architectural and historic interest, and it forms part of an important group of historic buildings, albeit there are modern agricultural structures within its close surroundings. There is a historic association with the fields north-east of Long Wood, and the agricultural land here is part of the setting of the group;
- the two listed buildings at Little Briggens are of special architectural and historic interest, but they are set some distance from the site. There is no strong historic relationship between Little Briggens and the site;
- Newlands is a building of special architectural and historic interest, the setting of which extends into the surrounding fields on either side of Hunsdon Road, including the northern part of the site.

9.13 The degree of impact on these features is difficult to establish at this time due to the conceptual nature of the working and restoration plans. It is clear that there will be no impacts on the fabric or understanding of these assets; however, the position in respect of

setting can be managed through well considered advanced planting details of which are provided with this submission.

9.14 On the basis of the report provided at Appendix 7, it is considered that a scheme can be developed to recover the sand and gravel without creating “harm” to the heritage assets that surround the site. Nonetheless, it is acknowledged that the site is immediately adjacent to such assets and therefore the current “Medium” risk indicated under the SSR is appropriate under the Heritage Designations criterion.

SECTION 10 ECOLOGY

10.1 A Preliminary Ecology Appraisal (PEA) has been undertaken by SLR Consulting and the resultant report is reproduced at Appendix 8.

10.2 The site at Briggens Estate MLPCS010 has proceeded through the first and second stages of site assessment (Sieve 1 and Sieve 2) contained with the Hertfordshire Minerals Local Plan Site Selection Report and has then been assessed against the more detailed considerations in Sieve 3 which include the following ecological criteria:-

1. Presence of Ancient Woodland (high);
2. Presence of BAP Priority Species or Habitats (low);
3. Ecological status of water bodies (high);
4. Presence of International and National Ecological Designations (low); and
5. Presence of Local Nature Reserves and Local Wildlife Sites (medium).

10.3 The report reproduced at Appendix 8 aims to provide further site-specific information in respect of the ecological sensitivity of the Briggens site, obtained through desk study and a Phase 1 habitat survey (reported as a Preliminary Ecological Assessment).

10.4 The site has been subject to a PEA which has comprised of a desk study and Phase 1 habitat survey undertaken in January 2018. The Phase 1 survey has included an assessment of:-

- the presence of ecological sites (statutory and non-statutory) within a 2km radius;
- the presence of ancient woodland within a 2km radius;
- the composition of the site in terms of the habitat types present and their extent, character and affinity to BAP Priority Habitat Types; and
- the potential of site to support UK BAP Priority Species and Protected Species.

10.5 The report finds that there are no habitats on site of any great value or significance, and although further work is required to surveys species assemblages, the report finds that the any impacts could be suitably managed through appropriate planning conditions under any grant of consent and through appropriate species licensing controls.

10.6 Based on the work undertaken to date, the effects on the scoring highlighted in the SSR are suggested as follows.

Ancient Woodland (1)

10.7 The Briggens site is immediately adjacent (west) of Lord's Wood, an ancient woodland and Local Wildlife Site. Due to the size of the

Briggens site (c. 187ha) a relatively short interface with the site is present (250m).

10.8 It is considered that through the adoption of a suitable buffer/stand-off (20m) that direct and indirect impacts on the site could be avoided. In the event that there is a hydrological inter-relationship between the Briggens site and Lord's Wood then a large buffer may be required; this would be established by detailed hydro-ecological studies at the time of any planning application.

10.9 It is considered that the category should be revised to "Medium" in respect of potential impacts on Lord's Wood ancient woodland and LWS, as the scheme will not be immediately adjacent to the woodland in particular.

Presence of BAP Priority Species and Habitats (2)

10.10 The PEA reproduced at Appendix 8 has found that the site has the potential to support BAP Priority Species (e.g. farmland birds and bats) and contains hedgerow and woodland habitats, some of which would broadly meet the relevant descriptions of UK Priority Habitats. The four small woodland copses would be retained and the PEA provides recommendations in respect of the retention of the likely most important hedgerows.

10.11 In respect of UK BAP species, the potential also exists for impacts to occur, however, through appropriate avoidance measures and mitigation (if necessary after following the necessary licensing procedures) it is considered that these can be managed to an acceptable level.

10.12 It is considered that the potential exists to deliver habitat gains through restoration and that this would include BAP habitat types. Taking into account the potential impacts and likely gains, the "Low" impact scoring category assigned to this issue is considered to remain appropriate.

Ecological Status of Waterbodies (3)

10.13 The Hertfordshire County Council Site selection report states that a watercourse and a number of small ponds. The Phase 1 survey has recorded the presence of three ponds which were considered to be in poor condition due to shading and agricultural and other inputs. This is a low number when considering the size of the site. Of these two ponds would be retained.

10.14 The Phase 1 survey recorded the presence of both wet and dry ditches but no major watercourses. The ditches are either heavily shaded or are intensively managed drainage features. It is considered that the site does not contain any waterbodies of high ecological value which could be impacted upon and that the category should be revised from red (High) to green (Low) accordingly.

International and National Ecological Designations (4)

10.15 The desk study has found that there are no international and national within close proximity. The nearest site is Lee Valley SPA/Ramsar site (Rye Meads SSSI) which is 850m west. Impacts on international and nationally designated ecological sites are therefore not predicted and the “Low” impact category (refer to Appendix 1) is considered to be accurate.

Presence of Local Nature Reserves and Local Wildlife Sites (5)

10.16 The desk study has found that there are no local reserves or sites on site but several within close proximity. On this basis, there is scope for impacts on locally designated ecological sites are therefore the “Medium” impact category is considered to be accurate, but it could also be argued that as a standoff is provided that the site is not immediately adjacent to any LWS and therefore a “Low” impact category could apply.

SECTION 11 HYDROGEOLOGY

11.1 Baseline hydrogeological information has been used in the development of a conceptual model that attempts to succinctly describe the existing hydrogeological and hydrological regimes operating within and in the vicinity of the site.

11.2 The glacial sands and gravels that are proposed to be extracted at the site comprise a superficial aquifer that is truncated close to its boundaries by valleys to its west, south and east; the northwards extent of the superficial aquifer is effectively unbounded at the scale of interest.

11.3 The base of the Superficial Aquifer within the southern area of the site is formed by underlying London Clay, the extremely limited hydraulic conductivity of which is likely to effectively prevent interaction with further aquifer units at depth.

11.4 In the north of the site the superficial aquifer is underlain by strata of the Lambeth Group the sandy horizons of which convey a “Secondary A” aquifer designation to the strata.

11.5 However, the group is dominated by low permeability clays; clay being the dominant lithology attributable to the Lambeth Beds found during mineral evaluation drilling undertaken at the Site.

11.6 Therefore, vertical hydraulic connectivity between the ground water of the superficial aquifer and underlying bedrock aquifers (comprising the Lambeth Group itself and the underlying Chalk Aquifer) is likely to be limited.

11.7 A watertable is present towards the base of the superficial aquifer within the western and eastern areas of the Site, the saturated thickness of the sand and gravel resource here typically being c.1m to c2m.

11.8 This watertable appears to reside below the base of the lower gravel within a wide belt traversing through from north to south through the centre of the Site.

11.9 The direction of groundwater flow within the lower gravel is made broadly from north to south through the site, suggesting discharge to the surface water system of the Stort valley to the south.

11.10 Within this overall direction of flow, components of eastward groundwater flow within the lower gravels are also suggested by the data, indicating the likelihood of gravity discharge to the Hudson Brook to the east of the site; groundwater discharge to surface water is also anticipated to occur within the Newlands Brook to the west.

11.11 A perched groundwater table appears to be present within the superficial sequence of the northern Site area (the Upper Gravels), the piezometric level of which is c.10m above that of the Lower Gravels with a saturated typical saturated thickness of c.2m to c3m.

11.12 Perched groundwater flow within the Upper Gravels is tentatively suggested to be made from west to east towards the valley of the

Hunsdon Brook, possibly locally emerging at surface as bed-seepage and spring flow in the area of Pondcroft to the north east of the Site.

11.13 In terms of its setting under flood risk the entirety of the site resides within Flood Risk Zone 1 (FRZ1). This is the zone of lowest designated flood risk, defined as having an Annual Exceedance Probability (AEP) of fluvial flooding of 1:1,000 or less frequent.

SSR Criterion

11.14 The water related criteria adopted by the SSR process, together with its assessment of the potential severity of impacts associated with mineral extraction and restoration at the site with respect to those criterion, are shown below:

- Aquifer designation – Medium impact;
- Groundwater Vulnerability – Medium Impact; and
- Flood Risk - Positive Impact.

11.15 The Flood Risk scoring is accepted as being accurate, under the provisions of the methodology in the SSR, with a positive effect being created during working and restoration.

11.16 The extent to which risks to groundwater quality associated with implementation of the current draft plans for mineral extraction and restoration at the site are in principle effectively identical to those that apply at numerous similar operations sited throughout the region.

11.17 EA guidance relating to the protection of groundwater quality states no policy presumptions against quarrying or restoration in the manner proposed in strata within or overlying the SPZ designations applying at the site.

11.18 Based upon the prevailing understanding of hydrogeological conditions and assuming application of straightforward industry standard preventative and reactive measures during quarrying operations, and adherence to conditions of any future Environmental Permit, it is considered that the potential risk of contamination of groundwater resources associated with the current draft plans for quarrying and restoration at the Site may be reduced to well within acceptable levels.

11.19 Under the provisions of the methodology identified as part of the SSR the medium scoring under the aquifer and groundwater quality criterion are not challenged. However it should be pointed out that under the provisions of any detailed HRA that would accompany a planning application the risk to the water environment can be managed to a low level of impact.

Section 12 Summary and Conclusions

12.1 In view of the above assessments it is considered that the scoring for the site at Briggens should be amended, as summarised in Table 2 below. Rows shaded in green show areas where the scoring could potentially be altered with the proposed level identified.

Criteria	Scoring
Airport Safeguarding Zone	Low
Ancient Woodland	Medium
Aquifers	Medium
BAP Priority Species or Habitats	Low Risk with long term Positive Effect
BMV Land	Medium
Cumulative Impact	Low
Ecological Status of Water Bodies	Low
Flood Risk	Positive
Geodiversity	Low
Green Belt	Low
Groundwater Vulnerability	Medium
Heritage Designations	Medium
International and National Eco Designations	Low
Landscape Designations	Low
Local Nature Reserves and/or W/S	Medium - Low
Proximity to Residential Land	Medium
Recreation	Low
Restoration	Low
Sensitive Land Uses	Medium
Sustainable Transport	High
Sustainable Transport and Pollution to the Environment	Low

Table 2: Summary of the proposed revised scores

12.2 The baseline reporting and high level assessment work undertaken and provided in this report indicate that the environmental impact associated with the extraction of minerals and the subsequent restoration of the site could be undertaken with a relatively low level of impact and well within best practice guidelines.

12.3 Tarmac has an extensive track record in the working of sand and gravel sites along with the restoration of the same, and can develop a scheme that will have a long term beneficial effect on the site and surrounding area.

12.4 If allocated and developed the Preferred Area could have many benefits consistent with the objectives of the emerging RMLP as follows:-

a) the site has the potential to provide significant and sustainable quantities of and gravel to support the growth and

infrastructure requirements the east of the county, and the east of England region;

b) the location of the site directly adjacent to the A414 is ideally situated to comply with the requirements of the road hierarchy moving the materials to the market in a sustainable manner given the lack of rail and water opportunities in the county;

c) the site presents a opportunity to provide a long term more diverse landform of greater value both in landscape and nature conservation terms;

d) the restoration scheme has the potential to provide greater public access across the area for walkers and other bridleway users alike; and

e) the availability of substantial amounts of overburden materials on site minimises the need to import inert materials to achieve a sustainable restored landform.

12.5 Consideration of the scoring methodology would support the councils own view that the site should be identified as a Preferred Area for sand and gravel extraction within their emerging RMLP, meaning that if included within the adopted Plan ***"there is a reasonable expectation that sand and gravel extraction would be acceptable in planning terms".***

12.6 Tarmac therefore support the identification of the site as a Preferred Area as it provides a justified and effective means of delivering sand and gravel supply (in particular in the east of the county) in a highly sustainable manner, consistent with the provisions of the NPPF and the emerging replacement Minerals Local Plan.