



Historic England

PLANNING ACT 2008 (AS AMENDED) – SECTION 88 AND THE INFRASTRUCTURE PLANNING
(EXAMINATION PROCEDURE) RULES 2010 (AS AMENDED) - RULE 6

REPRESENTATIONS OF THE HISTORIC BUILDINGS AND MONUMENTS COMMISSION FOR
ENGLAND (HISTORIC ENGLAND)

APPLICATION BY HIGHWAYS ENGLAND FOR AN ORDER GRANTING DEVELOPMENT CONSENT
FOR THE LOWER THAMES CROSSING

APPLICATION REF: TR010032

OUR REFERENCE: PL00217262



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1.0 Introduction

- 1.1 This is a full written representation report from the Historic Buildings and Monuments Commission for England (HBMCE) with regards to an application for a consent order for the **Lower Thames Crossing**.
- 1.2 'HBMCE' or the 'Commission' is better known as Historic England, and we are the Government's adviser on all aspects of the historic environment in England - including historic buildings and areas, archaeology and historic landscape. We have a duty to promote conservation, public understanding and enjoyment of the historic environment. We are an executive Non-Departmental public body and we answer to Parliament through the Secretary of State for Digital Culture, Media and Sport (DCMS).
- 1.3 We understand National Highways have identified a significant congestion and capacity risk with the road network to the east of the London. The project to address this, as set out in the DCO application, is known as the Lower Thames Crossing.
- 1.4 The scheme consists of two new 4 km (2.6 miles) tunnels which would run under the Thames from Tilbury to Gravesend and an additional 23 km (14.5 miles) of new road which would connect the new tunnels to the existing road network. This would require a new interchange with the A13 in Essex and improvements to Junctions 28 of the M25 and Gravelly Hill Junctions of the A2. It would require 50 new bridges and viaducts, two tunnel portals and significant changes to utility's networks in the area of construction.
- 1.5 This is a Nationally Significant Infrastructure Project (NSIP) as defined by the Planning Act 2008, and Historic England have been engaged in pre-application discussion with Highways England (now National Highways) since 2016. The preferred route was announced in 2017, and there have been five public consultations (2018, March and August 2020, September 2021 and June 2022).
- 1.6 As set out in our S.56 response we are aware the proposed development lies in a highly sensitive area for the historic environment. The importance of this area from prehistoric times to the modern day has left a legacy of known and unknown heritage assets, many of which would be affected by the scheme. Foremost of these the proposal would result in the demolition of 3 listed buildings and the removal of a scheduled monument.
- 1.7 It would also affect a number of important non-designated heritage assets, as is within the setting of a range of other high value heritage receptors.



- 1.8 Historic England has been engaged in pre-application discussions with the applicant's heritage consultants for more than 5 years and our engagement is summarised in the Environmental Statement (ES). The applicant has provided a full ES with a Cultural Heritage chapter (see Chapter 6) which includes the results of geophysical surveys and archaeological trial trenching.
- 1.9 Historic England considers the baseline data provided in the Cultural Heritage Chapter of the ES and its appendices, to be adequate for the purposes of assessment and for presentation at examination. The ES includes a full list of known designated and non-designated heritage assets. Similarly, we consider the methodology used to assess the cultural heritage datasets within Chapter 6 is adequate.
- 1.10 We note the ES has identified a number of heritage assets which have the potential to experience significant effects. Of those, the following are within the remit of Historic England for comment.
- Orsett cropmark complex (project ID SM1)
 - Coalhouse Fort Battery and Artillery Defences (project ID SM14)
 - Springfield style enclosure and Iron Age enclosures south of Hill House, Baker Street' (project ID SM7)
 - Causewayed enclosure and Anglo-Saxon cemetery 500m ENE of Heath Place (Project ID SM6)
 - 1-2 Grays Corner Cottages, Orsett, Thurrock, Essex (Project ID LB89)
 - Murrells Cottage, 1 and 2 Stanford Road, Orsett, Thurrock, Essex (Project ID LB96)
 - Thatched Cottage, Baker Street, Grays, Thurrock, Essex (project ID LB58)
 - Non-designated heritage assets with significant effect (Project ID 247)
- 1.11 We are aware there are a number of non-designated heritage assets that are likely to experience a significant effect. Advice on other non-designated assets, other grade II listed and locally listed buildings, and main archaeological matters will be provided respectively by Kent and Essex Council's Conservation and Archaeological Teams and are not considered further within this written representation.
- 1.12 We will however also provide comments on the non-designated but significant locally listed buildings,
- Homes for Heros, Thong
 - Group of non-designated heritage assets on Ockendon Road, Ockendon.



- 1.13 We broadly support the conclusions reached in the ES for the majority of the assets considered. However, Historic England has expressed concerns about the loss of designated heritage assets, and this will be explored further below.
- 1.14 Much work has been carried out in terms of assessment and evaluation in order to understand the archaeological resource of the project area, and the likely impacts. There is some uncertainty about the nature and significance of the below-ground archaeological resource in some areas and therefore about the impacts in those areas.
- 1.15 Historic England are however working closely with the applicant and with colleagues in the LPA to define appropriate mitigation and support the applicant in that regard.



2.0 NORTH OF THE RIVER THAMES - ARCHAEOLOGY

- 2.1 Chapter 6.4.208 of the ES for the area north of the River Thames has identifies 12 scheduled monuments that would experience an effect from the scheme, 10 of which are listed as high value (see Project ID SM1, SM2, SM3, SM4, SM5, SM6, SM7, SM9, SM11, SM12) and two are considered as having very high value (Project ID SM13, SM14).
- 2.2 We acknowledge the majority of the high-value Orsett cropmark complex (SM1) is within the Order Limits, and a very small part of the very Coalhouse Fort Battery and Artillery Defences (SM14) extends within the Order Limits.
- 2.3 Two of the scheduled monuments are on the Heritage at Risk Register. These are Coalhouse Fort (SM14) and the Orsett cropmark complex (SM1) and both of these scheduled monuments are partially located within the Order Limits.
- 2.4 We have provided a detailed commentary on SM1 below and a related archaeological site with the project ID 247.
- 2.5 We acknowledge Coalhouse Fort (SM14) is partially within the order limits and there would; be a change to its setting from the proposals. We do not consider this to be a significant effect at this time and therefore have not provided any further written evidence.

Crop mark complex, Orsett (List Entry Number: 1002134 and SM1 ref: ES 6.4.208)

Description

- 2.6 The site is a Scheduled Monument and therefore in policy term is a designated heritage asset of national importance. It does not have a full modern description available in the public domain. The public record identifies the site as an "old county number" (OCN), and it is an older site designated before revisions were made to the Ancient Monuments and Archaeological Areas Act in 1979.
- 2.7 The site is essentially a complex group of cropmarks. The monument file identifies that these were first recorded in the late 1960's by the renowned aerial archaeologist JK St Joseph and published in 1972. The area was considered for designation in 1973 and was added to the schedule in September of the following year under an earlier version of the legislation known as the Ancient Monument Act (1913-53). The site was then given a registration with the county pre-fix EX174 (areas a/e)

The file note from the time identified



'an extremely complex crop-note picture showing against a background of extinct fields systems and river systems, rectilinear enclosure of possible Romano-British date, ring ditches which probably represent ploughed out barrows and a mass of very substantial pits.'

It goes on to suggest the pits may have been Early Saxon 'Grubenhauser'.

- 2.8 Reference was made to local excavations already taking place in advance of quarrying at Mucking, some 6 km to the east. One of the key discoveries from Mucking was multi-period evidence but with rare features of the late Roman period giving way to early Saxon settlement. Evidence which highlighted this transitional period was both rare and important in the late 1970's. Mucking still remains a key type-site for this period in the academic record.
- 2.9 We can infer that the site was designated because it potentially offered further evidence of this important transitional period, and with prehistoric remains as well as Roman and possibly early Saxon archaeology present within one site. Scheduling in that context would have provided a degree of protection against development, with the legislation of the time requiring three months' notice to be given to the Secretary of State prior to works commencing. This allowed time for rescue excavations to be undertaken.
- 2.10 This is what happened in 1979 when notice was given for construction of the A13, then known as the Grays Northern Bypass. This appears to have been moved to the south to avoid the main crop mark areas, before rescue excavations and recording was carried out in advance of construction.
- 2.11 Despite the potential shown in the aerial photographs, this excavation work appears to have revealed relatively little evidence. Prehistoric pits, post-holes and burials from the mid to late Bronze Age were recorded amongst some largely blank areas as well, although the densest areas of cropmarks was not touched by the road development and are still visible in later aerial photographs (see figure 1).
- 2.12 This development and the archaeological excavation was also undertaken prior to the revision of the Ancient Monuments Act which took place later in 1979. This legislation change provided greater protection for scheduled monuments and required formal 'consent' for any activities or works as opposed to the 3 months 'notice' of intent under the previous legislation.



- 2.13 Further work including evaluation was undertaken in advance of submission of the LTC scheme application in 2022 and this is described in the documents provided for examination, as well as a summary in the main ES chapter (see 6.4.218 - 6.4.223).

Significance

- 2.14 Broadly speaking this asset derives significance from the survival of the multi period settlement evidence, originally established as crop marks from aerial photography, and from the preservation in-situ of below-ground archaeological remains that are associated with those cropmarks.
- 2.15 The recent evaluation has provided additional evidence that establishes the cropmark complex as a multi-period settlement site dating from the Bronze Age, Iron Age and Roman periods. With a focus of activity along the northern edge of the scheduled area, extending to the north across Stifford Clays Road (see 247 below) Evidence is present in terms of field systems (ditches and enclosures), burials and funerary monument (ring barrows), industry (kilns) and settlement (roundhouses).
- 2.16 The pit-like cropmarks that were thought to be Early Medieval sunken-floored buildings, did however turn out to be largely of natural origin. No Early Medieval activity has therefore been recorded.
- 2.17 There is detailed historical, evidential, and communal value that can be revealed from past human interaction within this landscape. This evidence can contribute to our understanding of our common ancestors, how they lived and what they did in this place. The values derived are a reflection and expression of our understanding of the beliefs and traditions of former populations and would contribute to a wider understanding and knowledge of the periods represented, and the environment of the time.
- 2.18 This asset would also derive some value from its setting. Broadly speaking the site is located within a wider landscape of prehistoric and Roman occupation. Setting these groups of people in a wider community focused on this area of the norther Thames and which contributes to the historical and communal value.
- 2.19 As a scheduled monument it is defined as a designated heritage asset in policy and of national importance, this is judged on its potential to provide evidence of human activity, and of which it is in the national interest to protect. This is irrespective of what may be recovered from the site by excavation and recording.



- 2.20 We acknowledge the significance of the site is diminished by the modern intrusion into the monument area, notably by the A13 junction that was built in 1979.

Impact

- 2.21 In our view, the impact of the proposal on the scheduled monument is severe. It would result in the removal of almost the entirety of the Scheduled Monument, and certainly all the areas of archaeology that would contribute most to the asset's significance. It would also result in the removal of an associated and related site known as site 247 (see below), which sits just to the north, but outside of the original scheduled monument.
- 2.22 In our view the development would result in a significant effect in EIA terms and our assessment of impact would be 'major adverse'. In planning policy terms this would equate to substantial harm. We appreciate the applicant has also come to a similar conclusion and this is set out in the ES.
- 2.23 The applicant has also stated (6.6.180) that the SM is only partially located within the main route corridor and that not all of the area of the monument would be affected. This is correct and a small area to the west would be unaffected by the development.
- 2.24 It is however worth stating that the area of the monument lost to the works would be very extensive and includes all the areas with higher heritage values. The remaining area of the monument would in our view be unlikely to have enough significant archaeology to be considered for designation in its own right. This is likely to result in the de-scheduling of the entire asset and its removal from the heritage list. The impact of the development upon the monument should be seen therefore as a total loss of a designated heritage assets and the removal of its significance.

Policy

- 2.25 The avoidance of direct impact on designated assets is an important principle and direct impacts that result in the loss of a scheduled monuments are therefore very rare.
- 2.26 Policy as set out in the Historic Environment section of the National Policy Statement for National Networks 2014 (hereafter NPSNN) makes it clear that conflicts between the conservation of the heritage asset and any aspect of the proposal should be avoided or minimised (paragraph 5.129) and that great weight should be given to the desirability of sustaining and, where appropriate, enhancing the significance of



heritage assets, the contribution of their settings and the positive contribution that their conservation can make to sustainable communities (paragraph 5.130).

- 2.27 In addition, 'great weight' is given to their conservation in decision making (see NPSNN 5.131). Likewise, any impacts, significant effects or harm need clear and convincing justification (NPSNN 5.131). Para 5.132 recognises that 'any' harmful impact on the significance of a designated heritage asset should be weighed against the public benefit, and that the greater the harm, the greater the justification that would be needed.
- 2.28 In our view it is Paragraph 5.133 that sets out a key policy test for the historic environment and is of full relevance to this application. It states that
- 'Where the proposed development will lead to substantial harm to or total loss of significance of a designated heritage asset, the Secretary of State should refuse consent unless it can be demonstrated that the substantial harm or loss of significance is necessary in order to deliver substantial public benefits that outweigh that loss or harm'*
- 2.29 The NPSNN and the National Planning and Policy Framework (hereafter NPPF) paragraphs are effectively mirrored in intent and instruction although the wording differs. The 2021 version of the NPPF also establishes a presumption in favour of sustainable development (see paragraphs 7, 8, 10 and 11) and identifies protection of the historic environment as an important element of achieving 'sustainable development'.
- 2.30 The principles relating to the historic environment are set out in Chapter 16 of the NPPF. For example Paragraph 199 which requires the examining authority to place 'great weight' on the conservation of designated heritage assets, and states that the more important the asset the greater the weight should be, 'this is irrespective of whether any potential harm amounts to substantial harm, total loss or less than substantial harm to its significance'.
- 2.31 Paragraph 200 States that 'any harm to, or loss of, the significance of a designated heritage asset (from its alteration or destruction, or from development within its setting), should require clear and convincing justification'.
- 2.32 Paragraph 201 also says that where a proposed development '...will lead to substantial harm to (or loss of significance of) a designated heritage asset,' decision makers should refuse consent, unless the harm is necessary to achieve 'substantial public benefits that outweigh that harm or loss'.



- 2.33 Paragraph 202 states that where a development proposal will lead to 'less than substantial harm' to the significance of a designated heritage asset, this harm should be 'weighed against the public benefits of the proposal...'.
- 2.34 We are conscious there is a potential physical relationship between the scheduled monument and the non-designated asset known in this assessment as site 247. This would bring in the policies for non-designated heritage assets of equivalent value (paragraph 5.124), and the handling of non-designated asset in Paragraph 5.139 and 5.140 of the NPSNN into the balancing exercise.
- 2.35 In NPPF equivalence of assets is covered by footnote 63 and Paragraph 203 states that 'the effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that directly or indirectly affect non-designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset.'

Historic England's Position

- 2.36 The site is a large scheduled monument and our understanding of its significance and rationale for its designation are shaped by the evidence available to archaeologists at the time of its discovery and our subsequent understanding and ability to interpret and interrogate sites.
- 2.37 This site was undoubtedly a rarity at the time of designation and can be placed in a contemporary context against archaeological discoveries that were being unearthed at that time. In addition, work subsequently undertaken in advance of the A13 works in 1979 and for this development have indicated that some of the features originally considered as archaeological may be natural in origin and that the extent of archaeological features does not cover the whole site as originally thought.
- 2.38 In 1979 an area of the monument (approximately 25 - 30%) was removed when the A13 by-pass was constructed. Farming practices such as deep ploughing are likely to have resulted in some additional erosion of the buried archaeology in the 50 years since its discovery.
- 2.39 The area of the site with the highest significance is therefore centred around the northern and eastern sections of the monument between the B188 (Stifford Clays Road) and the A13 bypass. This is the area with the densest cropmarks and the highest residual historic and evidential value. We acknowledge that the significance of the



whole monument is diminished due to a combination of factors including an area lost to the footprint of the A13 in 1979 and a recognition that some of the features originally considered to be early Saxon in date are naturally occurring marks.

- 2.40 Evidence from the evaluation for this project does also show that some of the important archaeological features remain outside the designated area to the north of the B188 (This is explored in our note on 247 below). This extends the areas of significance to the North.
- 2.41 We confirm our view that the Scheduled Monument as an overarching entity does continue to have high heritage values, though with areas of lesser and higher significance situated within its boundary. As a designated heritage asset, the monument is of national importance. As set out above, policy therefore directs applicants and decision makers towards the avoidance of impacts on designated heritages as far as possible, this includes impact upon their setting.
- 2.42 During the pre-app process we have been assured by the applicant that there are no other route options open to them that would not in some way impact the monument. Design options that seek to avoid or reduce harm are not available in this case. The ES states the mitigation for loss if consented would be through excavation of the impacted area and public dissemination of the results.

Conclusion/Summary

- 2.43 Following our assessment and the consideration given to designated asset in policy we have come to the following conclusions. Primarily that the degree of harm to the scheduled monument is substantial in planning policy terms.
- 2.44 We accept that the monument has already been to some extent compromised before this development took place, however the effect of the scheme would still be significant. The archaeology nonetheless remains part of a designated heritage asset, and the impact upon the significance of the asset would be permanent and residual.
- 2.45 The development would therefore result in the removal of the archaeology within the asset and then the removal of monument from the National Heritage List for England (NHLE). We have also considered there would also be a clear change in the setting of the asset and therefore an additional element of harm to its significance through these changes.
- 2.46 We confirm that while we do not object in principle, we are of the view that the loss of the assets is highly regrettable, and that the policy tests would need to be carefully



considered by the Examining Authority (hereafter ExA). This is specifically with regards to policy 5.133 of the NPSNN which states that

'Where the proposed development will lead to substantial harm to or total loss of significance of a designated heritage asset, the Secretary of State should refuse consent unless it can be demonstrated that the substantial harm or loss of significance is necessary in order to deliver substantial public benefits that outweigh that loss or harm'.

- 2.47 In coming to our conclusion, we note that the applicant has stated that no other options are available that would avoid or negate harm and that the scheme benefits are sufficient to outweigh this heritage harm. They have also set out a number of heritage specific mitigations and other benefits, that would need to be taken into consideration by the ExA.
- 2.48 Whilst we can confirm our view that this outcome would result in substantial harm, it is not our role to weigh the overall public benefits of the scheme, this role falling to the ExA. You would therefore need to be content that the benefits outweigh substantial harm and that the impact can be justified in terms of those tests set out in NPSNN and the NPPF. Specifically, this is policy 5.132, giving regard to the great weight established in policy 5.131 of the NPSNN and paragraphs 199, 200, 201 and 202 of the NPPF.
- 2.49 The monument is within the scheme boundary, and therefore the DCO would also overrule the powers of the 1979 Ancient Monuments and Archaeological Areas Act (The 1979 Act). The ExA would also need to be content that the provision for archaeology within both the DCO and associated requirements would be sufficient to secure an appropriate programme of archaeological works.

Springfield style enclosure and Iron Age enclosures south of Hill House, Baker Street' (Project ID SM7)

- 2.50 The site is known as the 'Springfield style enclosure and Iron Age enclosures south of Hill House, Baker Street' (LEN 1009287). This is a designated heritage asset (scheduled monument) that sits to the east of the Orsett Cock site along the line of Bakers Street. This is described in the ES as SM7 (see 6.4.227).
- 2.51 This asset consists of a series of enclosures overlying domestic settlement overlooking Orsett Fen to the north and is believed to date to the Iron Age period. The monument is represented by a series of buried features which have been recognised as cropmarks from aerial photography and is relatively well-defined as a discrete group of features. It has a high potential for important buried archaeological remains and settlement



evidence and its significance lies in the evidential and historical value of the features and the information they contain.

- 2.52 This site had the potential to be affected by utilities work associated with the road development. We were party to early discussions and have supported the approach put forward to move utilities and other impacts away from these assets. The utilities works have now been moved so they are outside of the known area of scheduled monument and there is therefore no direct impact on the asset itself.
- 2.53 We do consider there would be a potential for archaeological finds and features to be recovered during the utilities work. It is important to note that if this is the case anything associated with the monument or from directly adjacent to it would be of equivalent value to a scheduled monument in policy terms (see para 5.124 of the NPSNN and footnote 63 of the NPPF).
- 2.54 We are broadly content the applicant has provided an appropriate strategy for mitigation and provisions to protect the monument to ensure it is not inadvertently damaged. This is set out in the CEMP and is underpinned by the relevant requirement. We are also content there would be no change to the setting of the monument once the works are complete and the utilities works have been reinstated.

Causewayed enclosure and Anglo-Saxon cemetery 500m ENE of Heath Place (Project ID SM6)

- 2.55 The second asset is known as the '*Causewayed enclosure and Anglo-Saxon cemetery 500m ENE of Heath Place*' with the list entry number 1009286 and project ID SM6. This is a very rare and early Neolithic monument which survives as a crop mark at this location. Causewayed enclosures are amongst the earliest known field monuments to survive as recognisable features in the modern landscape and are one of the few known Neolithic monument types. Due to their rarity, their wide diversity of plan, and their considerable age, all causewayed enclosures are of national importance. This is SM6 in the ES (see 6.4.224).
- 2.57 This site had the potential to be affected by utilities work associated with the road development. We were party to early discussions and have supported the approach put forward to move utilities and other impacts away from these assets. The utilities works have now been moved so they are outside of the known area of scheduled monument and there is therefore no direct impact on the asset itself.
- 2.58 We do consider there would be a potential for archaeological finds and features to be recovered during the utilities work. It is important to note that if this is the case



anything associated with the monument or from directly adjacent to it would be of equivalent value to a scheduled monument in policy terms (see para 5.124 of the NPSNN and footnote 63 of the NPPF).

- 2.59 We are generally content that the applicant has provided an appropriate strategy for mitigation and provisions to protect the monument to ensure it is not inadvertently damaged. This is set out in the CEMP and underpinned by the requirement.
- 2.60 This asset would however also derive some value from its setting. Broadly speaking the site is located within a wider landscape of prehistoric occupation and the road development would cut through the landscape some 275 m to the south and west of the monument. The applicant (see 6.6.313) has provided some design mitigation but acknowledges a permanent change to the monument's setting.
- 2.61 The road development would therefore have an impact upon the setting of this asset which would equate to some harm to its significance. This is in our view a significant effect, although less than substantial harm in policy terms.
- 2.62 The ExA would therefore need to be content that the benefits outweigh the less than substantial harm to this asset and that the impact can be justified in terms of those tests set out in NPSNN and the NPPF. Specifically, this is policy 5.132, giving regard to the great weight established in policy 5.131 of the NPSNN and paragraphs 199, 200, 201 and 202 of the NPPF.

Non-designated heritage assets with significant effect (Project ID 247)

Description

- 2.62 We are aware the archaeology from the scheduled monument extends onto land to the north of Stifford Clays Road (see Fig 1 below). It is effectively the same settlement, but the archaeological remains preserved here lie outside of the designated area of the monument. This is known in the ES as site 247 (see 6.4.281) and the trenching evidence is also set out in ES appendices (see Page 526 Lower Thames Crossing – 6.3 Environmental Statement Appendices Appendix 6.1 – Cultural Heritage Desk-based Assessment (1 of 4))
- 2.63 Trial trenching has identified similar evidence to that of the monument including period evidence from the Bronze Age and Iron Ages and then through to the Roman Period, in the form of agricultural and industrial activity and burials. The archaeology extends some way to the north although the density of preserved features is more closely associated with the northern part of the scheduled monument. (fig 1 below



shows the Stifford Clays road and the archaeology present on both sides in a recent aerial photograph.

Significance.

- 2.64 This is an area of high value archaeological remains which are associated with a scheduled monument and are likely to be a continuation of the same. The significance of this non-designated asset derives from the detailed historical, evidential, and communal value present in the surviving archaeological evidence. This asset would also derive some value from its setting.
- 2.65 We consider this asset to have equivalence in value terms to that of the SM adjacent as well as some additional significance from being able to further inform the scheduled monument.

Impact

- 2.66 The ES states that a large proportion of THIS asset (247) and the directly associated scheduled monument would be within the order limited and would be directly impacted by the scheme, resulting in near-total loss of significance. As with SM1 this is substantial harm in policy terms but to a non-designated heritage asset albeit one with an equivalence of value and significance.

Policy

- 2.67 Broadly speaking the policy considerations remain consistent with those set out above for the scheduled monument however this asset would need to be considered under policy 5.124 of the NPSNN which states that;

'non-designated heritage assets of archaeological interest that are demonstrably of equivalent significance to Scheduled Monuments, should be considered subject to the policies for designated heritage assets.' This is mirrored in the NPPF under footnote 63.

Position

- 2.68 We confirm our view that this asset has high heritage values, and we have concluded this asset is both adjacent and for all intent and purpose is the same archaeological site as the designated asset, which we know to spread north wards. We have therefore concluded that because site 247 is likely to contain information that would help to



inform our understanding of the designated asset and place it in a wider landscape context, it therefore shares the same values as the adjacent scheduled monument.

- 2.69 It should in our view therefore be considered non-designated assets of equivalent value in policy terms. The impact of the works mirrors that to the designated monument and therefore must be also considered as substantial harm. The impact would also be permanent and residual and would result in preservation by record only. There would also be a clear change to the setting of the asset and therefore an additional element of harm to its significance.
- 2.70 If the ExA is content that the policy 5.124 would apply in this case, then the policy tests that relate to designated assets would also need to be applied. This is giving regard to the policy test in 5.133 and establishing if the impact can be justified in terms of those tests set out in policy 5.132 and giving regard to the great weight established in policy 5.131. This is covered by paragraphs 199, 200, 201 and 202 of the NPPF.
- 2.71 Again, we note that the applicant has stated that no other options are available that would avoid or negate harm and that the scheme benefits are sufficiently high enough to outweigh this heritage harm. Heritage specific mitigation also would apply to this case and the ExA would therefore also need to be content that the provision for archaeology within the DCO is sufficient to ensure this archaeological work is discharged appropriately.

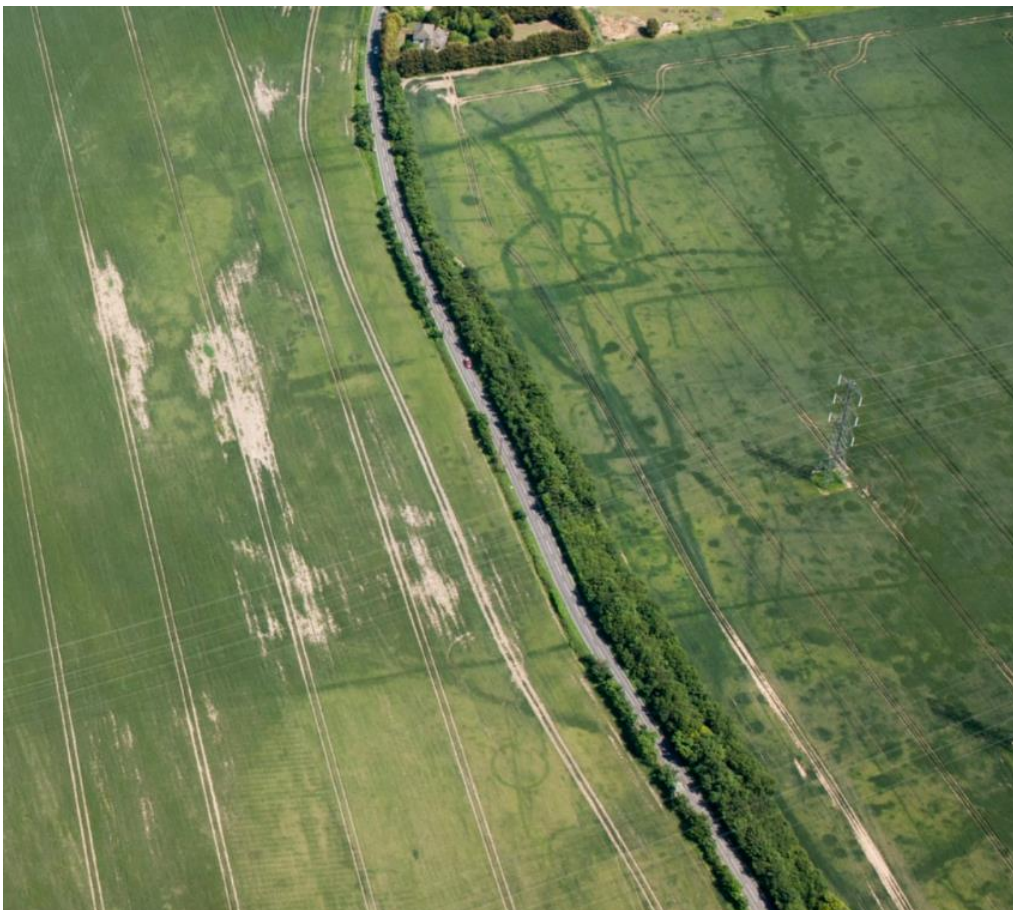


Figure 1: HE AP 29650_023 showing cropmarks on either side of the B188 - Stifford Clays Road (from the Historic England Archive)



3.0 NORTH OF THE RIVER THAMES - BUILT HERITAGE

3.1 We are broadly content with the conclusions of the ES for most of the highly graded designated built heritage assets assessed North of the River Thames and have deferred comment on many grade II assets to the specialists within the local planning authority. We have also provided a more detailed assessment of the designated heritage that have been earmarked for demolition

1-2 Grays Corner Cottages, Orsett, Thurrock, Essex (Project ID LB89)

Description and Significance

3.2 This building was originally listed at Grade II in 1981 as one cottage (No. 2) (NHLE number 1337056). The file associated with the listing described the building as a good example of a late 18th or early 19th Century vernacular house built in a local style. Constructed of gault bricks and slate roofed originally noted as having double hung vertical sliding sashes with glazing bars and segmental arches and a central chimney.

3.3 Historic map analysis provided as part of the ES shows however that the house was built at sometime after 1839 because it is not visible on the tithe map of that date. Subsequently the houses was sub-divided and seemingly has been much altered and extended twice. Nos 1 & 2 are now part of the same listing.

3.3 The house also once stood on a quiet corner of a minor crossroads between Baker Street and Orsett Heath however following the construction of the A13 Grays bypass, the house is now situated on an island in an interchange between the A13, A1039, A103, and the B188 (Baker Street). The house has remained, but its setting was changed, firstly when the A103 was upgraded in 1944, and then again in 1965, and further changed with the construction of the A13 and A1089 junction to the north and west of the house sometime around 1979.

3.4 The asset remains a listed building and is therefore designated heritage asset of national importance. Its demolition would need to be addressed by the polices in the NPSNN and the NPPF for designated assets. Its significance derives primarily from its evidential value and the potential it holds for further information relating to its construction and the history of the local area. This is more so for the older part of the dwelling; however, the analysis of change and alteration provide additional evidential context.

3.5 Aside from that, the building is intrinsically a good example of a vernacular dwelling recognisable as a country cottage and with historical and evidential value. We



acknowledge however that the setting of the asset has been altered and negatively contributes to its significance.

- 3.6 The house was visited by the LTC team and a full historic assessment description and record of significance is included in the ES 6.3 Environmental Statement, Appendices, Appendix 6.16 Historic Buildings Recording. At the time of writing only one of the two cottages had been inspected

Impact

- 3.7 The impact of the proposal on the listed building is high and the works would result in the removal of a designated heritage asset and a total loss of its significance. The demolition of the listed building would also be a significant effect in EIA terms and the Impact would be 'major adverse'. In policy terms this would therefore constitute substantial harm.

Policy

- 3.8 The heritage policies of the NPSNN remain appropriate here, because this is a listed building and a designated heritage asset in policy terms.
- 3.9 The NPSNN for example makes it clear that conflicts between the conservation of the heritage asset and any aspect of the proposal should be avoided or minimised (paragraph 5.129) and that great weight should be given to the desirability of sustaining and, where appropriate, enhancing the significance of heritage assets, the contribution of their settings and the positive contribution that their conservation can make to sustainable communities (paragraph 5.130).
- 3.10 This is giving regard to the policy test in 5.133 and establishing if the impact can be justified in terms of those tests set out in policy 5.132 and giving regard to the great weight established in policy 5.131. Likewise, this is set out in paragraphs 199, 200, 201 and 202 of the NPPF.
- 3.11 Given the monument is within the scheme boundary, and the DCO would also overrule the powers of the 1990 Planning Act, the ExA would therefore also need to bear in mind the statutory duty of Section 66(1) of the Planning (Listed Buildings and Conservation Areas) Act 1990 to have special regard to the desirability of preserving listed buildings or their setting or any features of special architectural or historic interest which they possess.

Position



- 3.12 We have considered the comprehensive Historic Building Investigation and Recording produced by Oxford Archaeology for the applicant in relation to this asset and we are satisfied that the Historic England Level 4 recording completed to date has achieved the principal Aims and Objectives outlined at 1.2 of Appendix 6.16 (Historic Buildings Recording) of the Environmental Statement.
- 3.13 One of the semi-detached houses was occupied at the time of the site visit and we note that an updated and expanded version of the interim report would be issued when that property becomes accessible and that further recording would be undertaken during the proposed dismantling of the cottages.
- 3.14 We do not object in principle to its demolition, however the loss of any designated heritage asset is a matter for concern. The policy tests that consider harm, loss and public benefits with regards to designated and non-designated heritage assets would need to be clearly considered by ExA in order to provide the SoS with a considered view about this demolition.
- 3.15 This is specifically with regards to policy 5.133 of the NPSNN which states that 'Where the proposed development would lead to substantial harm to or total loss of significance of a designated heritage asset, the Secretary of State should refuse consent unless it can be demonstrated that the substantial harm or loss of significance is necessary in order to deliver substantial public benefits that outweigh that loss or harm'.
- 3.16 We note the applicant states that no other options are available to them that would avoid or negate the total loss of significance in this case and that the scheme benefits are considered by the applicant to be sufficiently high enough to outweigh this heritage harm. They have also set out a number of heritage specific mitigations and benefits that would need to be taken into consideration in the balance.
- 3.17 Whilst we are able to confirm our view that this outcome would result in substantial heritage harm, it is not our role to weigh the overall public benefits of the scheme; this is a matter for the ExA to consider. The ExA would therefore need to be content that the benefits outweigh the substantial harm to this asset and that the impact can be justified in terms of those tests set out in NPSNN and the NPPF. Specifically, this is policy 5.132, giving regard to the great weight established in policy 5.131 of the NPSNN and paragraphs 199, 200, 201 and 202 of the NPPF.
- 3.18 Further, the ExA would need to be content with any proposed mitigation. Firstly, that the applicant has demonstrated the building cannot be removed intact or demolished and rebuilt elsewhere, and thereby any significance retained by relocation.



Alternatively, the provision for recording and publication within the DCO needs to be sufficient to ensure the public benefit is sufficiently re-balanced.

- 3.19 We confirm the ES provides for a detailed level of analysis (at Level 4) regarding the historic development of the cottages and that together with, specifically, the comprehensive photographic record of the dwellings this would be invaluable as a research resource following the dismantling and demolition of the buildings.
- 3.20 We do however recommend the brief for the recording is updated following the full internal inspection of the unvisited cottage and further information is provided on the conditional and survival of original features. The recording should include details of any additional investigation that would add to the documentary record.
- 3.21 Following this update, we recommend the applicant be asked to set out a clear statement as to whether the assets could be dismantled and moved, whether a suitable location has been identified for its reassembly and the extent to which its significance could be retained by doing so.
- 3.22 We recommend that than in the event that this is not considered feasible then alternative mitigation measures could be considered. For example, further detailed documentary research to see if any historic archives exist to explore more about former owners and occupiers of the property, and a collection and retention strategy to include recovery and salvage of architectural, aesthetic or historic features. Further evaluation, sampling and recording would need undertaken during the soft strip and demolition phases.

Murrells Cottage, 1 and 2 Stanford Road, Orsett, Thurrock, Essex (Project ID LB96)

Description and Significance

- 3.23 The ES appendix 6.6 has a detailed assessment of this early C18 cottage. The report suggests the house is poorly documented in its early years and considered it as being a potential squatter's cottage. There is however a very good and well documented history of the site provided from c. 1840 onwards. This includes records of its many occupants.
- 3.24 Listed at Grade II in 1981, the building itself is timber-framed and rendered with thatched roof and is effectively a pair of 1 and 1/2 story cottages known as Murrell's Cottage on the list entry, after the first documented resident - John Murrell. The other part of the building is now known as the Thatches



- 3.25 The list entry is relatively sparse in terms of a description and this to some extent reflects an older record type in which buildings were listed for their age and for historic interest, primarily as a vernacular timber-framed and thatched cottage in a local style. They form a part of the social historical tradition of timber framing tradition in this part of the county.
- 3.26 The asset is however a listed building and is therefore designated heritage asset of national importance and its demolition would need to be addressed under the policies in the NPSNN and the NPPF for designated assets. Its significance therefore derives primarily from its evidential value and the potential it holds for further information relating to the construction and history of the building and the regional timber framing tradition. The building additionally has aesthetic value as a pair of attractive thatched dwellings which are clearly recognisable as an early English country cottage; it therefore also has a high historical value.
- 3.27 Although subdivided and altered these cottages have been in near continuous habitation since construction and remain within a largely unaltered rural setting. Although we acknowledge some modern intrusions from the main A13 to the North, the rural landscape to the east, the Stamford road to the front and woodland behind is relatively unchanged and therefore recognisable from the landscape depicted on the tithe map from 1840. The asset therefore derives some significance from its setting

Impact

- 3.28 In our view, the impact of the proposal on the listed building would be severe. The works would result in the removal of a designated heritage asset and therefore the total loss of its significance. The demolition of the listed building and would also be a significant effect in EIA terms and constitute a 'major adverse' effect. In policy terms this would be substantial harm. Furthermore, the works would result in a major adverse change to an area of land that forms the setting of the building, which contributes to its significance.

Policy

- 3.29 The heritage policies of the NPSNN remain appropriate here, because this is a listed building and a designated heritage asset in policy terms.
- 3.30 The NPSNN for example makes it clear that conflicts between the conservation of the heritage asset and any aspect of the proposal should be avoided or minimised (paragraph 5.129) and that great weight should be given to the desirability of sustaining and, where appropriate, enhancing the significance of heritage assets, the



contribution of their settings and the positive contribution that their conservation can make to sustainable communities (paragraph 5.130).

- 3.31 This is giving regard to the policy test in 5.133 and establishing if the impact can be justified in terms of those tests set out in policy 5.132 and giving regard to the great weight established in policy 5.131. Likewise, this is set out in paragraphs 199, 200, 201 and 202 of the NPPF.
- 3.32 Given the building is within the scheme boundary, and the DCO would also take the powers of the 1990 Planning Act, the ExA would therefore also need to bear in mind the statutory duty of Section 66(1) of the Planning (Listed Buildings and Conservation Areas) Act 1990 to have special regard to the desirability of preserving listed buildings or their setting or any features of special architectural or historic interest which they possess.

Position

- 3.33 Our position in relation to this listed building is very similar to that outlined above for 1-2 Grays Corner Cottages. We are satisfied with the report provided with the application, which details the buildings inside and out, provided maps and evidence of some of the former occupants. The policy position is also clearly set out and the applicant has accepted in the ES that this would be substantial harm.
- 3.34 The significance section (see 5.1, pp 25) is clear and highlights the conditions and situation of the current building, its origins, the degree of alteration since listing and the level of evidential and historical significance ascribed. This accords with our own assessment of the assets high overall significance and we have also determined the asset has a clear and historical setting which remains relatively unchanged and contributes to its significance.
- 3.35 As this asset is sited only just within the redline boundary, we have pressed the applicant on whether this asset could be retained in situ albeit with an altered setting. The applicant has stated that no other options are available to them that would avoid demolition and the total loss of significance that would ensue. The applicant's position is that the demolition is necessitated by scheme requirements and the scheme benefits are sufficiently high to outweigh this heritage harm.
- 3.36 We therefore accept the applicants position that demolition is necessary in order for the scheme to proceed. It is not our role to advise on highways design therefore we would defer to the examining authority with regards to the position adopted by the applicant with regards to the engineering need. Specifically, this relates to whether



this building could have been retained and what factors determine its demolition in terms of highways design and engineering.

- 3.37 It is also worth restating here g that the demolition of a listed building is a negative outcome of the scheme in heritage terms that would need to be weighed against the public benefit, within the terms off the policy tests that consider harm and loss.
- 3.38 This is specifically with regards to policy 5.133 of the NPSNN, that the benefits outweigh substantial harm and that the impact can be justified in terms of policy 5.132, giving regard to the great weight established in policy 5.131 of the NPSNN and paragraphs 199, 200, 201 and 202 of the NPPF.
- 3.39 The applicant has set out heritage specific mitigation for this building and we would request the ExA considers the benefits of the proposals in the planning balance. Specifically, this is to consider if the applicant has demonstrated whether the building can or cannot be removed intact or rebuilt elsewhere. If it cannot, the applicant needs to satisfactorily demonstrate there is provision for recording and publication within the DCO, and whether this sufficiently documented to ensure the public benefit is sufficiently re-balanced. This should be set out in the CEMP and the requirement wording in the DCO.
- 3.40 We can confirm however the ES provides for a detailed level of analysis (at Level 4) regarding the historic development of the cottages prior to and during demolition. Together with the comprehensive photographic record this would be valuable as a research output and resource.
- 3.41 We do however recommend the brief for the recording is updated following the examination and further information is provided on the conditional and survival of original features. The recording should include details of any additional investigation that would add to the investigation, for example thatch analysis, dendrochronology and archaeological excavations that would add to the research and enhance the documentary record.
- 3.42 Following this update, and further to this point as stated above, we recommend the applicant be asked to set out a clear statement as to whether the assets can or cannot be dismantled and moved, whether a suitable location has been identified for its reassembly and the extent to which its significance could be retained by doing so.
- 3.43 If this is not considered feasible then alternative mitigation measures would need to be considered. For example, more detailed documentary research to explore former owners and occupiers of the property, and a collection and retention strategy to



include recovery and salvage of architectural, aesthetic or historic features. Further evaluation, sampling and recording would need undertaken during the soft strip and demolition phases.

Thatched Cottage, Baker Street, Grays, Thurrock, Essex (project ID LB58)

Description and Significance

- 3.44 The ES appendix 6.16 has a detailed assessment of this C17 cottage. As above, the report suggests the house like Murrell's Cottage is poorly documented in its early years and may have been a squatter's cottage. There is however a good documented history of the site from c.1840 onwards.
- 3.45 Listed at Grade II in 1981 (LEN 1111644), the building is described as a 1 storey building with attics. It has a timber-frame, thatched roof and weather boarded exterior with a single brick chimney stack. The ES report also describes the building in more detail, describing three bays with some repairs to the frame as well as a large extension dating to 2005 which post-dates the listing. Other minor alterations, garden buildings and large outbuildings are also described.
- 3.46 The list entry is sparse in terms of a description and this reflects an older record, where buildings were primarily listed for age and historic interest. It is however a good example of a modest vernacular timber frame and thatched cottages in a local style. The building is older than Murrell's Cottage and has survived longer as a single dwelling. This building very much forms a part of the social and historical tradition of timber framing tradition in this part of the county.
- 3.50 The asset is confirmed as a listed building and would therefore need to be considered as a designated heritage asset of national importance. Its proposed demolition would need to be addressed under the polices in the NPSNN and the NPPF for designated assets.
- 3.51 The significance of this building primarily derives from its evidential and historical value. This is from its survival as a 17th Century cottage and the information that is retained in the building and the land surrounding it. The asset has potential to holds further information relating to the construction and history of the building which could be gained during is deconstruction. It also has aesthetic value as an attractive dwelling recognisable as an early English country cottage. Overall therefore it also has high historical value.



- 3.52 Although altered this building has been in continuous habitation since construction and remains within a small land parcel and garden environment. This house once stood on a quiet corner of a minor crossroads between Baker Street and Orsett Heath until the construction of the A13 Grays bypass, the house is now situated on an island in an interchange between the A13, A1039, A103, and the B188 (Baker Street), just to the south of the asset known as the 1-2 Grays Corner Cottage .
- 3.53 This means that whilst the house has remained largely unaltered, the setting has seen some change, in the latter part of the 20th Century with alterations to the local roads and when the A13 and A1089 junction was constructed. We therefore acknowledge the setting of the asset has been altered and now has a more negative contribution to its significance.
- 3.54 The house was visited by the LTC team and a full historic assessment description and record of significance is included in the ES 6.3 Environmental Statement, Appendices, Appendix 6.16 Historic Buildings Recording. The asset is a listed building and is therefore designated heritage asset of national importance and would need to be addressed by the polices in the NPSNN and the NPPF for designated assets.
- 3.55 We have considered the comprehensive Historic Building Investigation and Recording produced by Oxford Archaeology and are satisfied that the Historic England Level 4 recording completed to date has achieved the principal Aims and Objectives outlined at 1.2 of Appendix 6.16 (Historic Buildings Recording) of the Environmental Statement.
- 3.56 We confirm that Appendix 6.16 of the ES provides the appropriately detailed level of analysis (Level 4) regarding the historic development of the cottage and that together with, specifically, the comprehensive photographic record of the dwellings would be a valuable research resource.

Impact

- 3.57 The impact of the proposal on the listed building is high and the works would result in the removal of a designated heritage asset and total loss of its significance. The demolition of the listed building and would be a significant effect in EIA terms and the impact would be 'major adverse'. In policy terms this would therefore constitute substantial harm.

Policy

- 3.58 The heritage polices of the NPSNN remain appropriate here, because this is a listed building and a designated heritage asset in policy terms.



- 3.59 The NPSNN for example makes it clear that conflicts between the conservation of the heritage asset and any aspect of the proposal should be avoided or minimised (paragraph 5.129) and that great weight should be given to the desirability of sustaining and, where appropriate, enhancing the significance of heritage assets, the contribution of their settings and the positive contribution that their conservation can make to sustainable communities (paragraph 5.130).
- 3.60 This is giving regard to the policy test in 5.133 and establishing if the impact can be justified in terms of those tests set out in policy 5.132 and giving regard to the great weight established in policy 5.131. Likewise, this is set out in paragraphs 199, 200, 201 and 202 of the NPPF.
- 3.61 Given the building is within the scheme boundary, and the DCO would also take the powers of the 1990 Planning Act, the ExA would therefore also need to bear in mind the statutory duty of Section 66(1) of the Planning (Listed Buildings and Conservation Areas) Act 1990 to have special regard to the desirability of preserving listed buildings or their setting or any features of special architectural or historic interest which they possess.

Position

- 3.62 We have considered the Historic Building Investigation and Recording produced by the applicant in relation to this asset and we are satisfied that the Historic England Level 4 recording completed to date has achieved the principal Aims and Objectives outlined at 1.2 of Appendix 6.16 (Historic Buildings Recording) of the Environmental Statement. We note that an updated and expanded version of the interim report would be issued at a later date accessible and that further recording would be undertaken during the proposed dismantling of the cottages.
- 3.63 We do not object in principle to its demolition, however the loss of this charming 17th Century cottage is highly regrettable and is a matter for concern. It is worth reflecting that the demolition of a listed building is a negative outcome of the scheme in heritage terms that would need to be weighed against the public benefit, within the terms of the policy tests that consider harm and loss.
- 3.64 We note the applicant states that no other options are available to them that would avoid or negate the total loss of significance in this case and that the scheme benefits are considered by the applicant to be sufficiently high enough to outweigh this heritage harm. They have also set out heritage specific mitigation and benefits that would need to be taken into consideration in the balance.



- 3.65 Whilst we are able to confirm our view that this outcome would result in substantial heritage harm, it is not our role to weigh the overall public benefits of the scheme. This is a matter for the ExA.
- 3.66 The ExA would therefore need to be content that the benefits outweigh the substantial harm to this asset and that the impact can be justified in terms of those tests set out in NPSNN and the NPPF. Specifically, this is policy 5.132, giving regard to the great weight established in policy 5.131 of the NPSNN and paragraphs 199, 200, 201 and 202 of the NPPF.
- 3.67 The ExA would also need to be content with any proposed mitigation. Broadly speaking of the three listed buildings that are proposed for demolition it is this one that has would appear to hold the higher overall significance and potential for relocation. This would be the timber framed cottage without the later extension. Given its setting is already compromised by the existing road developments more of its significance could be retained if it were carefully dismantled and moved to a location and reconstructed.
- 3.68 We can confirm however the ES provides for a detailed level of analysis (at Level 4) regarding the historic development of the cottages prior to and during demolition. Together with the comprehensive photographic record this would be valuable as a research output and resource.
- 3.69 We do however recommend the brief for the recording is updated following the examination and further information is provided on the conditional and survival of original features. The recording should include details of any additional investigation that would add to the investigation, for example thatch analysis, dendrochronology and archaeological excavations that would add to the research and enhance the documentary record.
- 3.70 Following this update, we recommend the applicant be asked to set out a clear statement as to whether the assets can or cannot be dismantled and moved, whether a suitable location has been identified for its reassembly and the extent to which its significance could be retained by doing so.
- 3.71 If this is not considered feasible then alternative mitigation measures would need to be considered. For example, more detailed documentary research to explore former owners and occupiers of the property, and a collection and retention strategy to include recovery and salvage of architectural, aesthetic or historic features. Further



evaluation, sampling and recording would need undertaken during the soft strip and demolition phases.

- 3.72 Of all the three listed building considered in our representation we consider this one has the most potential for dismantling and relocation. This is because it is older, the frame and building survive better and it has the highest overall significance. Only a part of the building would need to be considered, and this does not include later extensions or any of the outbuildings.



4.0 NORTH OF THE RIVER THAMES - NON-DESIGNATED BUILT HERITAGE

Assets on Ockenden Road

- 4.1 We have found we disagree with the assessment of the significance that has been set out in the ES for a group of undesignated heritage assets situated along the B1421 Ockenden Road. These have the project ID's 4153, 4154, 4155, 4156, 4157 and 4775 and 4776 and they all fall within the Order Limits and are proposed for demolition.
- 4.2 We consider the effect of the scheme on those non-designated assets is likely to be higher than the ES suggests, and the assessment has not fully revealed the significance of these assets. Our assessment does however recognise these are non-designated heritage assets.
- 4.3 There are also two building we feel may be part of this group and have not been assessed as heritage assets and have not been allocated an ID number by the project. These building need to be reconsidered as heritage assets.

Description

- 4.4 Assets 4153, 4154, 4155, 4156, 4157 are described in the ES as part of a group low value non designated assets, which are earmarked for demolition as part of the project, specifically to create junction and slip road where the new road would join the M25
- 4.5 Asset 4153 is locally listed and is a non designated heritage asset known as the Estate House. This is likely to be the key building in the group and was constructed c. 1850 as a two-storey T-plan house in yellow brick. The Estate House is described as an example of a simple and attractive rural vernacular house and came with a range of contemporary outbuildings.
- 4.6 Assets 4154 and 4155 are known as 1 and 2 Bridge Cottages and are non-designated heritage assets of 19th Century date. Constructed as a two-storey pair of semi-detached cottages with two gables fronting the road, described in the ES as a simple and attractive rural pair of vernacular cottages with some historic and aesthetic value.
- 4.7 Assets 4156 and 4157 are known as 3 and 4 Bridge Cottages and are Buildings of Local Interest and therefore also non designated heritage assets. These are a pair of semi-detached late 18th early 19th Century two-storey cottages although much alterations are described as an example of good-quality vernacular rural architecture with some historic and aesthetic value. The 1st edition Ordnance Survey has them marked as



three cottages suggesting they may have been small cottages or dwellings associated with farm worker or rural industry.

- 4.8 Asset 4775 or Larwood Cottage appears in its origins is in our view very similar to assets 4156 and 4157. The ES suggest these are 19th Century semi-detached cottages, but the 1st edition OS suggest a possible late 18th Century or very early 19th Century date and again show this as a small terrace of three cottages. The style of chimneys suggest this was originally another group of three cottages that was in fact built at a similar time, in the same style to 4156 and 4157.
- 4.9 Although much altered, we feel this building should also be considered as a non-designated heritage asset. Built of yellow stock brick with a clay tiled roof and two chimney stacks on the ridgeline this is a good example of a simple but good-quality vernacular rural dwelling with local historic and aesthetic value.
- 4.10 Asset 4776 is known as the Rosery and is a late 19th or early 20th century L plan rural house which is described as an example of turn-of-the-century rural house with some historic and aesthetic value. Its origins unknown but it may form a group with assets listed above
- 4.11 We also note two buildings known as 1-2 Cherry Orchard cottages, also form part of this group and have not been assessed as part of the ES and have not been given an asset number. These were a pair of modest red brick 19th Century semi-detached houses which sit just to the west of the Estate Cottage. These have been altered extended and converted to one dwelling the original frontage survives. We consider they may also have formed part of the same group and therefore should have been included.

Significance

- 4.12 In our view these assets may have more merit and integrity as a group than considered in the ES and should be considered as having a higher significance. Our analysis suggests the applicant's assessment has not identified or revealed the full significance and collective value of these buildings, and the mapping available to us highlights a potentially different age of the assets and sequence for their development.
- 4.13 The evidence indicates that these may be in fact a small estate settlement with the Estate House forming the focus with an associated group of workers cottages. Assets 4156 and 4157 and 4775 were clearly built first as two sets of three small cottages with



the Estate House (4153) and 1-2 Bridge Cottages (4154 and 4155) being added later in the 19th century.

- 4.14 It is not clear if asset 4776 is part of the same group or a separate dwelling however the two dwellings known as 1-2 Cherry Orchard cottages, another pair of modest semi-detached worker cottages sit just to the west of the Estate Cottage, and in our view may have formed part of the same group.
- 4.15 Analysis suggests that in the 18th and 19th Centuries when these buildings were built, the land was originally part of the Cranham Hall Estate. With the Hall and Park sitting less than 500 m to the north-west. The dates these assets were built appear to tally with estate changing hands from the Apreece family to the Gurney families and the subsequent modernisation of the estate at that time. It also ties in with the enclosure of this landscape (c. 1840) and subsequent landscape re-organisation. Many similar estate dwellings and farms were built at that time.
- 4.16 Although we accept many of these buildings are much extended and altered - evidence from things like the surviving chimneys and the choice of materials suggest a degree of uniformity and a common design across some of the assets, as would be common for an estate at that time. Many of the buildings have modest aesthetic, vernacular design and have some evidential and historical value.
- 4.17 In our view this means these assets hold some merit both individually and as a discrete group and should be noted as having a higher overall value in the ES and therefore the magnitude of change and effect would also be greater.

Impact

- 4.18 The ES is clear there would be permanent loss of the built heritage assets known as 4153, 4154, 4155, 4156, 4157, 4159, 4775 and 4776). This would be a significant effect and would result in substantial harm, and total loss of significance to those assets. This should be extended to the un-assessed Cherry Orchard cottages.

Policy

- 4.19 Paragraph 5.125 of the NPSNN states that consideration needs to be given to the impacts on non-designated heritage assets on the basis of clear evidence that the assets have a significance that merit consideration in that process, even though those assets are of lesser value than designated heritage assets.



4.20 In addition, the NPSNN makes it clear that conflicts between the conservation of the heritage asset and any aspect of the proposal should be avoided or minimised (paragraph 5.129) and that great weight should be given to the desirability of sustaining and, where appropriate, enhancing the significance of heritage assets, the contribution of their settings and the positive contribution that their conservation can make to sustainable communities (paragraph 5.130).

Position

4.21 Broadly speaking although we do not object to the demolition on heritage grounds, and we accept these assets individually do not meet the criteria for designation as listed buildings on either aesthetic or historic grounds.

4.22 We are however concerned about the loss of a group of assets with some historic merit and aesthetic values. Our primary consideration is therefore to ensure the significance of asset is correctly identified that they are assessed, and that appropriate mitigation is applied to them.

4.23 Following our analysis, we feel the value of these assets has not been fully established in the ES, and elements of significance may be unrecognised. In particular, we understand these buildings are a small discrete group of assets that once formed an estate village to Cranham Hall.

4.24 This appears to have consisted of a slightly larger Estate house or office plus a series of tied workers cottages in various styles. It was not built at one time or as a set piece 'village', and the buildings were added to over time and in slightly different styles, however, they appear to form a recognisable group and show elements of common design.

4.25 They broadly appear to date to a reorganisation of the estate in the late 18th and 19th Centuries, following enclosure and the estate being sold and changing hands.

4.26 At least two potential assets (1-2 Cherry Orchard Cottages) that may have formed part of the group have not been formally identified as assets within the ES, there is no description and they have not been allocated ID numbers. These assets need to be assed and taken into consideration, as soon as practical.

4.27 We consider the effect of the scheme on those non-designated assets is likely to be higher than the ES suggests, and level of significance and impact would need to be



amended. We accept the applicant has already considered the effect to be significance, however the significance would in our view make these of medium value.

- 4.28 As with other non-designated heritage assets the ExA would need to be content that the benefits outweigh the substantial harm to these assets and that the impact can be justified in terms of those tests set out in NPSNN and the NPPF.
- 4.29 The ExA would also need to be content with any proposed mitigation, and we recommend a detailed level of analysis and recording (at Level 3) should be undertaken. This should include Cherry Orchard Cottages. A further and more detailed documentary study should also be undertaken that seeks to reveal more about the historical context of this settlement, its relationship with Cranham Hall and its more recognisable owners. Together with the comprehensive photographic record this would be invaluable as a research output and resource.
- 4.30 This should be undertaken prior to demolition and we recommend the brief for the recording is updated following the examination of 1-2 cherry cottages, plus interior inspection of the remaining dwellings and outbuildings. Further information would need to be provided on the conditional and survival of any original features. The recording should include details of any additional techniques that would aid the investigation.



5.0 SOUTH OF THE RIVER THAMES - DESIGNATED HERITAGE ASSETS

Scheduled Monuments

- 5.1 There are 9 high value scheduled monuments in the study area South of the river (project ID SM8, SM10, SM20, SM21, SM22, SM23, SM24, SM26, SM27). We note there are no scheduled monuments located within the Order Limits. There are also three further high-value scheduled monuments located outside the study area, but which have been included within this assessment (Project ID SM15, SM16, SM17).
- 5.2 We accept there would be some changes to the setting of a number of these monuments however we broadly agree with the settlement of effects set out in the ES, that these are not significant effects, and have not provided any detailed comments.

Cobham Hall' Grade II* Registered Park and Garden

- 5.3 Cobham Hall' which is a Grade II* Registered Park and Garden which includes approximately 22ha of formal gardens and pleasure grounds, surrounded by a large parkland. It is associated with a group of seven high-value listed buildings.
- 5.4 The designation The ES has identified the construction impacts of the scheme as being negative and adverse but not significant. We have concluded a similar level of harm and do not wish to make any further comment,
- 5.5 We are also broadly content with the conclusions of the ES for most of the built heritage that we assessed South of the River Thames.



6.0 SOUTH OF THE RIVER THAMES - NON- DESIGNATED BUILT HERITAGE

Homes for Heroes, Thong

- 6.1 We are generally content with the conclusions of the ES for the majority of the built heritage that we assessed South of the River Thames.
- 6.2 We do however disagree with the assessment of the significance of the ‘Homes for Heroes’, a group of undesignated heritage assets within the Thong Conservation Area, which falls within the Order Limits (Project ID 1561, 4401-4403, 4597-4600). We consider the effect of the scheme on those non-designated assets is likely to be higher than the ES suggests. Our assessment here focusses on the significance of ‘Homes for Heroes’ as non-designated heritage assets.

Significance

- 6.3 The ‘Homs for Heroes’ consists of a small historically and architecturally interesting land settlement project of the 1920s planned by the London County Council to provide smallholdings for veterans of the first world war. This development defines the specific character and interest of the northern half of the conservation area.
- 6.4 The original LCC planned layout comprised firstly four new one-storey-and-a-half semi-detached yellow stock brick house pairs to a standard design, set far apart along the west side of Thong Lane and looking east over the road to Shorne Woods. Secondly, it brought into the scheme the existing Gable Cottages pair south of the new development and also added Woodlands Cottage over the road to the east.
- 6.5 All these buildings were provided with a small, free-standing, two-storied, multi-purpose, agricultural shed to a standard pattern. Black weather-boarded with steep pitched roofs, the sheds, almost tiny traditional barns, had storage at first floor with a stable and further storage space at ground floor. Although they have been subject to various alterations, they still retain considerable architectural integrity.
- 6.6 The significance of these houses lies in the key part they play in the overall plan of this little settlement and they contribute highly to the character of the north half of the conservation area.
- 6.7 In addition, while these homes broadly reflect the typical rural council houses of the inter-war period which are common in Kent, the rear barns are surviving examples of a rare type that have no exact historic precedent in the region, thus enhancing their significance.



- 6.8 The open fields to the west and north-west of the 'Homes for Heroes' make an important contribution to their illustrative historical value as planned rural homesteads. Conversely, the barns set towards the back of the plots are prominent and attractive elements of the landscape.

Impact

- 6.9 The proposal would dramatically alter the rural setting of the 'Homes for Heroes' in views towards the group of buildings from the west and views out from them towards the fields.
- 6.10 The rural agricultural character of these large open fields, a setting which currently contribute to the significance of the buildings, would be fundamentally altered by the introduction of the proposed road, associated earthworks, lighting and noise. Even with the proposed mitigation of visual screening earthworks and wooded landscaping, we still consider the significance of the 'Homes for Heroes' as undesignated heritage assets that would be harmed.
- 6.11 This is because their setting would be reduced by a considerable degree by the proposed road infrastructure. Noise and lighting associated with the proposal would also diminish the sense that the group of houses had an agricultural setting, which reinforced their character as modest farmsteads in a rural location.
- 6.12 We therefore consider that the impact in EIA terms would need to be amended to moderate adverse.
- 6.13 We acknowledge that these are non-designated assets, however we consider there is merit in the argument that these assets should be given policy equivalence of a designated heritage asset. They have not been designated in their own right and individually may lack special interest however we would argue that the equivalence stems from their group and social value, and the wider historical context. These all add to their overall significance.

Policy

- 6.14 In our view then the effect of the Project on the 'Homes for Heroes' should be assessed in the context of paragraph 5.125 of the NPSNN. This states that consideration needs to be given to the impacts on non-designated heritage assets on the basis of clear evidence that the assets have a significance that merit consideration in that process, even though those assets are of lesser value than designated heritage assets.



- 6.15 In addition, the NPSNN makes it clear that conflicts between the conservation of the heritage asset and any aspect of the proposal should be avoided or minimised (paragraph 5.129) and that great weight should be given to the desirability of sustaining and, where appropriate, enhancing the significance of heritage assets, the contribution of their settings and the positive contribution that their conservation can make to sustainable communities (paragraph 5.130).
- 6.16 If weight is given by the ExA to equivalence in relation to these non-designated assets, then additional policy considerations need to be considered. The key among these is set out in paragraph 5.133 of the NPSNN, unless the balance can be weighed in favour of the application (5.132) and haven giving regard to the great weight established in policy 5.131. Likewise, this is set out in paragraphs 199, 200, 201 and 202 of the NPPF.

Position

- 6.17 We consider that the assets' significance has not been accurately assessed, as required by paragraph 5.125 of the NPSNP, and we, therefore, disagree with the ES which indicates that the 'Homes for Heroes' as non-designated heritage asset have a low value. We consider this group of houses to have at least medium heritage value, derived the social and historical context of their development.
- 6.16 Because the Impact Assessment concludes that the operational phase of the Project would have a permanent impact of moderate adverse magnitude on these undesignated heritage assets considered of low value, the overall effects would be slight adverse. On this basis, the effects are assessed as not significant.
- 6.17 However, our assessment is that the proposal would have moderate adverse effects on their medium heritage value through change of their setting due to the proximity of the operational alignment and the visual and aural change to the open rural land to the west of the assets. We consider these effects to be significant.
- 6.17 We do however agree with the overall assessment of significance ascribed to Thong Conservation Area in the ES.



7.0 COMMENTS ON OTHER DOCUMENTS

Appendix 2.2: Code of Construction Practice (CoCP) including the REAC table

- 7.1 This document includes the Register of Environmental Actions and Commitments (REAC) which sets out a framework for how the mitigation and management of environmental effects would be delivered and maintained. We acknowledge archaeological investigations would take place as part of the preliminary works (Section 3.1 and Table 3.1).
- 7.2 It would be appropriate to see reference made in this section to the work to record designated and non-designated heritage assets prior to demolition, and we recommend this is added to Section 3.
- 7.3 The Register of Environmental Actions and Commitments (REAC) is set out in Section 7, consolidating the mitigation commitments and presenting the good practice and essential mitigation commitments that underpin the environmental assessments (Section 7.1.1).
- 7.4 The approaches identified for Cultural Heritage are summarised in Section 7.3, Table 7.1, with cultural heritage starting reference as CH001 to CH008 . We appreciate specific reference to Historic England, however the wording of the REAC needs to reflect our full legal name and should be changed to the 'Historic Buildings and Monuments Commission for England (known as Historic England)' This may need to be amended through the ES including in the abbreviations.
- 7.5 We agree the REAC commitments broadly cover the main aspects. For example, physical damage to heritage assets and land-taking for archaeological excavation, as well as more specific prescriptions for the Cropmark complex scheduled monument at Orsett and the Grade II listed buildings
- 7.6 We would however make the following recommendations with regards to specific additions to the REAC table.
- that the specific preservation needs and requirements for covering a site are carefully considered so that the approaches used are appropriate for the archaeology in question, its significance and its condition.
 - Under fencing or in an additional topic we recommend reference is made to site security for archaeological excavations. This is to protect against illegal metal



detecting, theft of cultural property and damage to a designated heritage asset during National Highways project programme.

- under Listed Buildings or in an additional topic we recommend reference is made to the demolition of non-designated heritage assets such as those assets at Ockenden Rd. This is to ensure the implementation of mitigation for these assets and to confirm the approach is appropriate.
- We also consider this would be the appropriate place to make reference to a scheme wide Research Agenda for archaeology and cultural heritage. This is an approach that would provide a framework whereby all the archaeological excavation work can be addressed against a series of pre-agreed research topics, which fit into the existing regional and national research agendas, and ensure relevance and consistency across the whole scheme including archaeology, landscapes, and listed buildings. We therefore recommend this is added as an additional cultural heritage topic.

Appendix 6.5: 6.3 Environmental Statement Appendices Appendix 6.5 – Lower Thames Crossing: Palaeolithic and Quaternary Deposit Model (PQDM)

- 7.7 We are pleased to see the PQDM has been updated in the light of additional data (geotechnical investigations and the archaeological trial trench evaluation works). The additional data has allowed the preliminary deposit model to be refined. The number of PQ Zones has been updated, and the assessment of the revised Transects has provided greater detail and better understanding of certain areas. The PQDM therefore provides a good collation and presentation of the existing evidence for the Palaeolithic period
- 7.8 We remain concerned with regards to some aspects of the document, specifically the format and presentation of the data. The main issues is the geoarchaeological remit of the PQDM is dominated by the Palaeolithic period and is more like a Geoarchaeological and or Quaternary deposit model.
- 7.9 We therefore consider that the PQDM does not achieve its remit as a geoarchaeological report, nor does it help us understand the archaeological potential of the deep deposit sequences of all periods encountered by the scheme. We feel it should deal with Pleistocene and Holocene deposits with equal emphasis.
- 7.10 We therefore recommend the Holocene report is properly integrated into the main text to form a wholistic, rather than the Holocene being included as an addendum. Its



focus should be the deposits and landforms and their archaeological (of all periods) potential.

- 7.11 We appreciate that a specific Holocene Geoarchaeology DBA has been produced (Appendix 6.13) but feel that this should also have been integrated into the PQDM and a single document produced.

Appendix 6.6: Standalone Palaeolithic Archaeological Assessment and Research Framework (SPAA-&-RF)

- 7.12 The Stand-alone Palaeolithic Archaeological Assessment & Research Framework (SPAA) is a comprehensive document, which is intended to give curators and other stakeholders confidence that Palaeolithic archaeology has been properly considered as part of the LTC baseline assessment and that measures would be in place to adequately mitigate impacts following DCO approval.
- 7.13 The Research Framework (RF) part of the SPAA has done a very comprehensive job of pulling together the various relevant Palaeolithic Research Frameworks that it needs to consider (given the linear nature of the route). These have been recast as a LTC-specific Palaeolithic Research Framework.
- 7.14 This is a positive approach, and it is very much easier for the LTC, stakeholders and contractors to comprehend and work towards than dealing with multiple Research Frameworks. These route-wide themes and research priorities are not just another tier of RF, but carefully pull out common themes and questions that would be relevant and compatible with the many frameworks applicable for different parts of the route.
- 7.15 The route is also sensibly divided into seven landscape-zones and for each a set of Research Objectives have been identified which feed into the overarching LTC Palaeolithic Research Framework. However, it is not explained or illustrated how the PQ zones, already identified using the deposit-centred approach in the PQDM (and repeated in the SPAA&RF) fit into the seven broad landscape zones. A map illustrating this would have been useful and we recommend one is produced should consent be granted.
- 7.16 This linkage is needed as it would tie the top-down Research Framework-led overview of the wider Palaeolithic context in with the bottom-up deposit-centred PQ zones. This is a key link as the PQ zones would be the focus of the WSI's for Evaluation, which would need to feed into the landscape zones, framing the research objectives.



- 7.17 The SPAA-&-RF references the PQDM prepared in 2020 (Sections 3.5, 5.2, 5.7 & 9), and not the revised version prepared in 2022. The initial version divided the scheme area up in to 34 PQ Zones, while the 2022 version divided the scheme into 33 PQ Zones. The revised version also added detail to our understanding of the extent and nature of the deposits present within the footprint of the Scheme, filling in some of the gaps where only limited information was available for the 2020 version of the PQDM. The difference in the number and location of the PQ Zones, and the additional information for key areas does not appear to have been considered in the SPAA-&-RF.
- 7.18 It should be noted that the Research Frameworks for the East of England have been revised/updated: <https://researchframeworks.org/eoe/>. The updated research agenda should be referred to within this document. We also recommend a scheme wider Research Framework is established that sets out research objectives and context this would allow greater interrogation of scheme data and better outcomes for the publications

Appendix 6.9: Draft Archaeological Mitigation Strategy (dAMS) and Outline WSI (OWSI) Application Document Ref: TR010032/APP/6.3 (October 2022)

- 7.19 It is noted that the AMS-OWSI has been submitted as a draft, which would be refined before and during the Examination, in consultation with key heritage stakeholders (Section 2.3.1). This is supported and we would expect that Historic England is set out as a named party in any requirements defined in the Consent Order.
- 7.20 The mitigation measures proposed within the dAMS-OWSI and outlined in Sections 2.5.2 to 2.5.4 and Table 3.1 seem sensible and appropriate, and we look forward to providing advice on the Site Specific WSIs (SSWSIs) in due course.
- 7.21 Section 4.2 summarises the results of the evaluation works, which clearly demonstrates the rich and complex nature of the archaeology preserved within the development corridor. The archaeological evidence spans the Palaeolithic to the Post-Medieval period and includes settlements, burials, cremations, mortuary evidence, field boundaries, industrial evidence and deposits conducive to preserving organic archaeological remains (e.g. peat).
- 7.22 We are pleased to see that each Site Specific WSI (SSWSI) would identify research objectives relevant to that site (Section 5.1.6). We are also pleased that a question-led approach would be utilised to direct the archaeological investigations (Section 6.1.3).
- 7.23 It is noted that some areas of the proposed scheme area have not been included in the evaluation work carried out to date due to access issues. Additional evaluation



investigations (which may include geophysics, trial trench excavations etc.) would therefore need to be carried out post-consent in certain locations (Section 2.4.3), which includes the site of the A2 Compound (Section 6.3.6), the Park Pale Lane ULH (Section 6.3.9) and the diversion of the Cadent high-pressure pipeline (Section 6.3.99).

- 7.24 A range of archaeological mitigation measures have been presented in Section 6.4, ranging from preservation, to recording and intrusive investigations, and we support this approach.
- 7.25 We are pleased to see that site-specific method statements would be prepared for each site where preservation is being considered. This would allow the most appropriate approaches to be used for each individual site (Section 6.4.5). We are pleased that the Historic England document '*Preserving Archaeological Remains*' (2016) would be referred to as part of this work (Section 7.3.3).
- 7.26 The detail that would be presented in the site-specific method statements has been summarised in Section 7.3 and generally seems sensible and appropriate. However, we would recommend that the specific preservation requirements are weighed up for each site so that the approaches used are appropriate for the archaeology in question, its significance and its condition.
- 7.26 For example, it is stated in Section 7.3.4 that a layer of geotextile would be laid over the layer of protective shingle, but this may not be needed in all cases. The Historic England document '*Preserving Archaeological Remains*' argues that often the most appropriate material for reburial is the material that has been excavated from the site (Historic England 2016, Appendix 5). In this case, then questions would therefore need to be asked about what the geotextile layer would add, and what materials would be used for reburial
- 7.27 We are pleased to see that palaeoenvironmental remains would be recovered during the intrusive excavations, and that the samples would be assessed during the works on site to allow strategies to be adjusted where necessary as new information becomes available (Sections 6.4.21, 6.4.23, 7.3.33). Processing the samples while the excavation work is ongoing would also ensure a stable archive is obtained, in line with the guidance presented in the CIFA document

'Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials' (2014, updated 2020):

https://www.archaeologists.net/sites/default/files/CIFA%26GFinds_2.pdf.



- 7.28 It is stated that the environmental sampling strategy would be based upon the results of previous assessments, which is good to see (Section 7.3.69). We are also pleased to see that a specific strategy would be developed to deal with waterlogged organic archaeological and palaeoenvironmental remains (Sections 7.3.36 & 7.3.75). Additional detail can be included in the subsequent SSWSIs but we would recommend that additional information is included in this document about the materials that may be expected and how they would be dealt with (investigated, recorded, sampled, lifted and stored in the field and offsite) and the guidance and standard documents that would be utilised to guide this work.
- 7.29 This information is important so that it is clear how this work would proceed, but also to outline what is expected of the contracting unit(s) responsible for excavating the sites.
- 7.30 We would also recommend that the relevant Historic England documents are referenced as part of this work, such as:
- ‘*Waterlogged Organic Artefacts*’ (2018): <https://historicengland.org.uk/images-books/publications/waterlogged-organic-artefacts/>.
 - ‘*Waterlogged Wood*’ (2010): <https://historicengland.org.uk/images-books/publications/waterlogged-wood/>.
- 7.31 It is noted that a project-wide programme of radiocarbon dating would be carried out (Section 6.4.24), including the use of statistical modelling (Section 7.3.77). We would recommend that the Historic England document
- ‘*Radiocarbon Dating and Chronological Modelling*’ (2022) is referred to (<https://historicengland.org.uk/images-books/publications/radiocarbon-dating-chronological-modelling/>).
- 7.32 We would also recommend that the material selected for scientific dating from the cores recovered for geoarchaeological and palaeoenvironmental investigations is carefully considered (Section 7.3.113); some materials, such as peat contain multiple different fractions (e.g. plant macrofossils, humin fraction, humic acid fraction) and so specialist advice is needed to select the most appropriate material to produce a robust chronology.
- 7.33 Detail has been provided on the geoarchaeological and palaeoenvironmental investigation works that would be carried out, including the dating techniques and palaeoenvironmental remains that would be investigated (Section 6.4.33 to 6.4.36). We would recommend that additional detail is added in subsequent WSI documents



to outline the type of samples that would be collected (e.g. bulk sample, specialist samples, monoliths etc.) and the size of the samples.

- 7.34 We are pleased to see that a strategy has been included to address any unexpected finds (Sections 7.1.14 & 7.3.127). It is stated that if the relevant planning authority finds that further investigation is needed, that no construction would take place within 10 metres of the remains until further investigation can take place. We would recommend that this is reconsidered if waterlogged remains are discovered, as a greater stand-off may be more appropriate to ensure that the area is not accidentally dewatered before the mitigation strategy is implemented.
- 7.35 It is good to see that fired clay features, such as hearths would be assessed in terms of their potential for scientific dating, such as archaeomagnetism, but it is noted that the hearths and areas of in situ burning would be completely excavated (Section 7.3.54). The potential of the feature for archaeomagnetic dating needs to be established before the features are excavated further as samples need to be collected from in situ fired clay. A specialist would therefore need to be contacted to assess and sample any features as soon as possible. In the first instance, the Science Advisor for the East of England could be contacted for advice on the potential of any features.
- 7.36 Section 7.3.57 outlines how any dwelling structures would be investigated if discovered. We would recommend that a sampling strategy is developed to investigate any occupation surfaces that may survive. This could include spatially distinct environmental samples, micromorphology or samples to assess the physical and chemical properties of occupation material (e.g. magnetic susceptibility, pH, soil phosphates, lipid biomarkers, loss-on-ignition etc.), which may help understand the use of space within the structures. The same comments apply to structures investigated as part of any strip, map and sample excavations (e.g. Section 7.3.98).
- 7.37 It is very welcome to see that scientific methodologies are being considered alongside traditional recording if there is a clear research question, such as the use of biomolecular techniques (Section 7.3.76).
- 7.38 The document should reference the principles outlined in the CIFA Dig Digital Toolkit: <https://www.archaeologists.net/digidigital>.

Appendix 6.13: Holocene Geoarchaeological DBA of the Route

- 7.39 The report presents the findings of the desk-based geoarchaeological assessment for Holocene deposits within the route corridor. This work complements the work presented in the PQDM, but as set out above it would be good for the sequences to be



discussed together. The Holocene DBA has identified the complexity and variation in the sedimentary sequence across the route, which in turn impacts the preservation potential and survival of palaeoenvironmental material. The report has also identified areas where further work is needed, such as the dating of key deposits.

- 7.40 Overall, the background sections of the Holocene DBA are excellent. However, the key sections that tackle what is there, its potential and what we should do to investigate it are lacking in detail. The document needs to acknowledge and explain how the standard approaches would be used, and then how the new approaches (e.g. sedimentary DNA, sediment geochemistry etc.) would be used to supplement and enhance the information obtained.
- 7.41 There is much sense in building these techniques into the geoarchaeological investigation going forward, but this should be done alongside elements of what are currently standard geoarchaeological approaches. We recommend that information is added into the document to clarify this situation and to adequately justify the use of the new approaches.
- 7.42 We would also recommend that a staged approach is utilised, applying the standard techniques first, and then using developing approaches to address specific questions where appropriate. The exception to this would be the application of portable luminescence readers to complement conventional OSL assessments. Several research questions presented in the document rely on robust chronologies and an understanding of geomorphological processes.
- 7.43 The analysis of luminescence characteristics and signal intensity using a portable luminescence reader would contribute to addressing the questions about the formation processes and depositional histories, as well as helping to target the OSL dating programme. We would therefore support the use of a portable luminescence reader to complement the conventional OSL approaches.
- 7.44 The Holocene Deposit Model has divided the scheme into nine zones. It would be useful for the Holocene Zones to be correlated with the zones presented in the PQDM. Both documents have used the topography and Quaternary geology to divide the route into zones and so we would recommend that there is some correlation between the two. We consider that this would help facilitate the programme of geoarchaeology work moving forwards.
- 7.45 Since the report was prepared (March 2020), several phases of investigation have been carried out (Ground Investigation works, archaeological Trial Trench investigations etc.) which may have produced information of value to this report. The PQDM was



updated/revised in the light of this new evidence (see Appendix 6.5), and it would be useful if this was also carried out for the Holocene sequences as well. The Ground Investigation work provides a huge amount of baseline data and we feel that the Holocene Deposit Model should build on this work.

- 7.46 The scope and aims of the report are good and conform with what we would expect to see (sections 1 and 3). We are also pleased to see that the document includes the Late Glacial, which gives a useful overlap with the Pleistocene DBA. It also ensures that the Late Upper Palaeolithic / Mesolithic periods can be examined together.
- 7.47 The methods used (section 4) go beyond the standard geoarchaeological approach, which typically draws only on geology, topography and deposit sequence. Use of the OS DTM to map slope aspect and stream network is an interesting additional approach but information is needed in Section 5 as to why it was selected and what the information means. For example, was the information used in order to identify locations of unmapped slope deposits?
- 7.48 The key part of the document for understanding the potential of the Holocene deposits along the route is Section 6, together with its supporting figures and summary set out in Table 3. At a superficial level what has been produced is useful, as it divides the route into zones of different geomorphological and sedimentary characteristics, illustrating the different zones in cross sections and maps and including key research questions for each zone. However, parts of Section 6 need to be redrafted to make it clearer: some sections seem to have been cut and pasted in, and the research questions need to be explained or justified in the section discussing the different zones, or in the background section.
- 7.49 We support the ‘enhance not replicate’ approach and to some extent the various techniques and research themes identified in section 7. However, the approach needs to be built into the document more to justify the techniques in more detail and how they would sit alongside standard approaches. We would also recommend a staged approach whereby the new approaches are applied following the standard approaches to address outstanding/specific questions where appropriate.
- 7.50 The bullet points in Section 7 make valid points, but we would recommend that these points/questions are identified earlier in the document (in Section 2), and then discussed throughout the document: in the geoarchaeological framework (Section 5), alluded to in the zone discussions and research questions (Section 6) and discussed in terms of the methods and approaches that would be used (Section 7). This would help understand the sort of samples that would be needed from different deposit types,



and when they would need to be collected as part of the investigation. This can then feed into the WSIs that would follow-on from the Holocene Deposit Model.

- 7.51 A similar argument could be made for the information in Table 4, which sets out techniques for evaluation and investigation, to address the gaps and research questions posed for each zone. This could be a useful summary table, but in the same way as section 7, it needs to be integrated into the document more and explained in terms of the investigation methods or techniques used.
- 7.52 We also feel that the established approaches could also be utilised in different ways as part of the ‘enhance not replicate’ approach, such as pollen and radiocarbon dating, to extract human-scale information from the sediments. In addition, some areas (like the Mar Dyke) have not been examined geoarchaeologically before and so the standard approaches should be applied in the first instance.
- 7.53 The document implies that the research questions for the route cannot be addressed by standard geoarchaeological techniques alone, which we would not agree with. The standard geoarchaeological approaches need to be discussed more: for example, trenching (listed in Table 4 in all zones apart from Zone 4) needs some modification for geoarchaeological purposes, boreholes of different types might be appropriate (which type of borehole should be selected and why?), and the use of geophysics to investigate deep sequences.

Specific comments:

- 7.54 Section 2.2 (4th bullet): it should be noted that buried soils might also exist within alluvium. There is also no mention of wind-blown sediments here or elsewhere in the document.
- 7.55 Section 2.3: note that the Research Frameworks for the East of England has been updated: <https://researchframeworks.org/eoe/>
- 7.56 Section 5.2.3: the explanation of asymmetric valleys, slope erosion and accumulation of slope deposits needs a fuller, clearer explanation. This might also be the place to explain the relevance of the stream fitting and slope aspect mapping in a bit more detail.
- 7.57 Section 6: the identification of likely source materials in each zone is good but it would be useful if this was also linked to likely state of preservation and range of surviving archaeological and palaeoenvironmental remains.



- 7.58 Section 6.2 second para: reference to Taplow and Lynch Hill Gravels might be better made consistent with the Lower Thames terminology as elsewhere in the document (i.e. Mucking and Corbets Tey).
- 7.59 Section 6.2 bullet point: it is not clear why the focus of this question is on the margins of the zone, as the zone itself is a narrow marginal zone. It may be more appropriate to discuss the zone holistically.
- 7.60 Section 6.3 (final bullet): the use of geochemical techniques has not really been discussed before this point in the document. The value of geochemical records needs to be included and explained earlier in the document (Section 5).
- 7.61 Zone 5 does not appear on any of the illustrated transects - we recommend this is rectified.
- 7.62 Section 6.6: it would be useful if the putative stream systems could be superimposed on the Zone 6 maps (Figs 33 to 39).
- 7.63 Section 6.7: the topographic location of Zone 7 (Mar Dyke slopes) is much clearer in (zoomed-out) Figure 27 than the maps intended to illustrate the zone (Figures 36 to 39).
- 7.64 Section 6.7, last para: it should be noted that archaeological material could also be in situ beneath Head or colluvium in break of slope and foot of slope locations.
- 7.65 Section 6.7 bullet point: it might be worth adding a question to look at the survival of archaeological and palaeoenvironmental material and their state of preservation.
- 7.66 Table 2: is there any potential for wind-blown sediments to be present along the route (especially in the early Holocene).
- 7.67 Tables 3 and 4 should be updated in line with the comments for section 6 above.
- 7.68 Fig 3: it would be useful if a simple key or annotation could be included on the figure itself.
- 7.69 Fig 6: the key is hugely complicated, and it would be useful if this could be replaced by simple figure-specific keys.
- 7.70 Fig 4: the labels on this figure are not correct. Could the labels for B and C be swapped in caption please?



- 7.71 Figs 9 & 10: this figure needs a simple key to identify the geology.
- 7.72 Fig 11: this is a useful figure, but it needs more annotation/explanation to clarify the information that is being presented. For example, what are the horizontal grey shaded lines? Could the 8.2ka event be added in? Could the events discussed in Section 5 be included on the figure, such as the 10th-11th century warm period, the Little Ice Age and general characteristics of the Holocene climate?
- 7.73 Figures 12 – 23 are very useful photos, but they could be annotated to make it clear what is being shown.
- 7.74 Fig 43: the location of these transect lines are illustrated on some of the maps but it would be useful to include the location of the boreholes used to aid their interpretation.
- 7.75 We would recommend that the spread of datapoints used (i.e. borehole distribution) is illustrated. This is included as an information source in section 4.2 (phases 1 and 2 of geotechnical investigation) and extant BGS borehole data. However, it feels like this report has not really been based on or perhaps even influenced by the results of the geotechnical works. We appreciate that this may in part be down to the timing of when different reports became available, but this needs to be rectified.

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- 7.76 Broadly speaking we have no overall comments about the OLEMP - however the applicant would need to confirm that all areas earmarked for mitigation have or will have been subject to archaeological investigation prior to the implementation of the scheme.

8.0 DCO WORDING

- 8.1 The version of the DCO we have been working with is referenced TR010032/APP/3.1 VERSION: 1 and is dated (dated October 2022), we are aware some additions may have been added however this is the version that was issued to Historic England. We have the following observations and recommendations to make.
- 8.2 We are aware the DCO if granted would assume the statutory powers for consenting works to a Scheduled Monument and demolition of some Listed Buildings. We have noted that Historic England are a named consultee as set out in Requirement 9 (see pp122) of the DCO, and given that works would be undertaken within the area of



the Scheduled Monument we would consider this approach as appropriate, and support the wording

- 8.3 We would however anticipate however the wording of the DCO needs to reflect our full legal name and should be changed to the 'Historic Buildings and Monuments Commission for England (known as Historic England)'.
- 8.4 There is no mention of either the 1979 Ancient Monuments and Archaeological Areas Act in the PART 1: PRELIMINARY (Interpretations) on page 7. If consented the DCO would take on the powers in relation to the scheduled monument from the 1979 Act. The wording would in our view be strengthened if the 1979 Act was added to the relevant list.
- 8.5 We note there is a reference in the PART 1: PRELIMINARY (Interpretations) to the 1990 planning act, however there is no corresponding mention of the provision contained within that Act for Listed Building Consent. Given the DCO would take on the powers in relation to the 1990 Planning act for the demolition of Listed Buildings, we consider the wording here also needs to be amended.
- 8.6 Paragraph 5.101 of the Explanatory Memorandum (doc ref Vol 3.2) states that *'Paragraph (9) is also a bespoke provision which has been inserted at the request of Thurrock Council, to require prior notice to be given to the local planning authority and Historic England where works are proposed to listed buildings, and to have regard to any responses received from those bodies.'*
- 8.7 Having looked at Provision 9 it appears only to refer to archaeological works. We are concerned that Listed Buildings are not mentioned in Provision 9, and in fact are not mentioned at all in the DCO wording. We consider the wording of the DCO would be strengthened if specific references were made to the Listed Building provision within the 1990 act, and to Historic England's (as HBMCE) statutory role as stated in Paragraph 5.101 of the Explanatory Memorandum.
- 8.8 We recommend an additional paragraph is therefore inserted that makes explicit reference to listed buildings and those buildings of equivalent value, and the bespoke provision for assessment, recording and publication. This also needs to include the relevant reference to 'Historic Buildings and Monuments Commission for England (known as Historic England)' as mentioned in the Explanatory Memorandum.
- 8.9 The applicant would also need to take responsibility for amending the statutory list of designated heritage assets following works to the scheduled monument and listed buildings. We consider they wording of the DCO would be strengthened if this



function was noted as a provision within the DCO and with an appropriately worded section in the ES. Again, we recommend the ExA seek additional wording from the applicant for inclusion in the DCO.

9.0 SUMMARY/CONCLUSION

- 9.1 Historic England are broadly content with the proposed layout and design, and with the documentation provided. We have however provided further comment on several of the key scheduled monuments and listed buildings, as well as some of the non-designated heritage assets affected by the scheme.
- 9.2 In relation to the SM1 we have concluded that the development would result in substantial harm and would have a significant and permanent adverse effect upon it in policy terms. This is regrettable and, in our view, would only be acceptable if the ExA considers the scheme benefits to outweigh the heritage harm, and that the mitigation is sufficient. It is not our role to weigh this balance and we defer to the ExA in this matter.
- 9.3 We have also come to the same conclusion with regards to the three grade II listed buildings that are earmarked for demolition on the north side of the Thames, (project ID's LB58, LB89 and LB96) and in relation to a non-designated heritage of equivalent value to a scheduled monument (project ID 247).
- 9.4 We have also identified a number of non-designated assets for which further work is required to fully establish their significance. These have the project ID's 4153, 4154, 4155, 4156, 4157 and 4775 and 4776, and well as the unrecorded dwellings known as 1-2 Cherry Orchard Cottages. Following further assessment updated information would be required with regards to appropriate mitigation and recording.
- 9.5 Broadly speaking, we are very aware the effect on cultural heritage is strongly negative, however the proposal would also have some potential benefits for cultural heritage, provided the mitigation that is set out in the ES is delivered. This includes dissemination of the results of any investigations, publication of surveys and excavations and the synthesis and dissemination of new evidence through public engagement. We recommend a scheme specific research framework is produced to support this work.
- 9.6 We have also made some recommendations in relation to specific documents and consider these changes will need to be made during or following the completion of the examination and before works commence.



- 9.7 We have also identified some concerns with regards to the REAC table and have made some recommendations for additions to this document. Likewise these are matter we would need to be addressed during or following the completion of the examination and a revised CoCP/REAC issued for comment before works commence.
- 9.8 We have also identified some concerns with regards to the REAC and DCO wording and have made some recommendations. We consider these are matters that would need to be addressed prior to the consent being granted and a revised DCO draft issued for comment
- 9.9 We do however want to mention the applicants open, collaborative and supportive approach to the assessment of significance and for their extensive engagement work on heritage matters during the pre-app process.

Should you require any further information or clarification on anything we have written please do not hesitate to contact me directly.

14th July 2023

Dr Will Fletcher

Historic England: East Region Development Advice Team Leader

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