

Gravesham Borough Council

Statement on potential impacts on cultural heritage to the south of the River Thames from the Lower Thames Crossing proposals

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1.0 Introduction

1.1 This statement concerns itself primarily with impacts on assets deemed to be of heritage value to the south of the River Thames, in Gravesham. This is to assist the ExA in coming to its conclusions on Cultural Heritage, notwithstanding it will also need to consider the impact of the project in its entirety. This will include the impact of works to the north of the river, which would result in the total loss of several designated heritage assets, resulting in ‘substantial harm’.

1.2 An associated purpose of this statement is to provide evidence to the ExA on impacts subject of disagreement with the applicant as set out in document APP-125 : 5.4.4.6 Statement of Common Ground between (1) National Highways and (2) Gravesham Borough Council, as they relate to Cultural Heritage.

1.3 In assessing impacts, the Council has had regard to the legislative and policy framework against which the level of harm needs to be judged as part of the decision-making process. In addition, the Council has sought to follow relevant parts of Planning Practice Guidance and ‘best practice’ guidance issued by Historic England in reaching its conclusions.

1.4 As part of this assessment process, the Council recognises the intimate relationship between heritage and landscape and the principles enshrined in the European Landscape Convention (2000), to which the UK is a signatory. Article 1 of the Convention defines “Landscape” as “an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors.”

1.5 Comprehending the significance of landscape and heritage therefore involves trying to understand how human interventions into nature have shaped what we see, experience, perceive, value and appreciate in a particular context – place matters.

1.6 In terms of assessing impacts on both designated and non-designated heritage assets, the Council has had regard to:

- The Kent Heritage Environment Record (HER);
- Historic England listing descriptions, as indicative of the significance of the assets at the time of designation;
- Conservation Area Appraisals, as adopted Supplementary Planning Documents (SPDs) published by the Council following public consultation. In this instance, particular regard has been had to those SPDs relating to Conservation Areas in closest proximity to the proposals i.e.:
 - Thong Conservation Area Appraisal SPD (2017);
 - Cobham Conservation Area Appraisal SPD (2017);
 - Shorne Conservation Area Appraisal SPD (2017); and
 - Chestnut Green Conservation Area Appraisal SDP (2017);
- The Cobham Park Conservation Plan V.1 (2003); and
- Primary research undertaken at the British Library; National Archives; London Metropolitan Archives; Medway Archives; the Kent History and Library Centre; and on-line.

1.7 Whilst regard has also been had to all material submitted by the applicant in relation to cultural heritage, the Council has concentrated on those areas where permanent impacts

on cultural heritage are likely to be greatest – i.e. on the A2 corridor: the Thong Conservation Area and its setting; and east of Thong Lane, in the vicinity of the Cascades Leisure Centre.

1.8 The purpose of this is to ensure that the level of harm caused to Cultural Heritage in the area by the project is not obscured by detailed analysis over a much wider area where little or no impact is likely to occur. However, this should not be taken to imply that there may not be impacts elsewhere that may need to be addressed, particularly during the construction phase, when disruption is likely to be widespread.

2. Policy and legislative background

2.1 Assessing impacts of the project on cultural heritage involves a series of value judgements based on the 'significance' of affected heritage assets and the degree of harm (if any) that might occur during the construction and operational phases of the development.

2.2 This exercise cannot be undertaken in isolation from the policy and legislative background against which the proposals stand to be assessed, which in general terms assigns a value to assets in accordance with their relative significance and whether the level of harm to 'significance' should be considered 'substantial' or 'less than substantial'.

2.3 Planning Practice Guidance (PPG at Paragraph: 018 Reference ID: 18a-018-20190723) follows case law by making it clear that 'substantial' harm is a very high test that is unlikely to occur in many situations. It is a matter for the decision maker, on a case-by-case basis, to determine the level of harm based on (for example) whether the adverse impact seriously affects a key element of a Listed Building's special architectural or historic interest or that which makes a Conservation Area of heritage value. PPG makes it clear that it is the degree of harm to the asset's 'significance' rather than the scale of the development that should be assessed.

2.4 There will, of course, also be instances where the relationship between a project and a heritage asset is so slight or inconsequential that there is no impact on significance at all. In other instances, impacts may be beneficial.

2.5 Within the decision making process, it is also important that any contribution made to the significance of heritage assets by their setting should also be taken into consideration. What constitutes the setting of a heritage asset and the contribution it makes will vary from case-to-case and may change over time – it is a matter of planning judgement, applying the appropriate tests, to determine what constitutes a heritage asset's setting and the nature of any such contribution. Whilst there may be some form of visual or physical connection between heritage assets and their settings (which may overlap) this will not always be the case.

2.6 Both PPG and Historic England Good Practice Advice note 3 (GPA3) – The Setting of Heritage Assets (2017) recognise that in some circumstances features that are more remote may still constitute part of a heritage asset's setting where economic, social and historical connections are sufficiently strong to constitute historical relationships between places. As such, these relationships can affect the way in which heritage assets are experienced, understood and appreciated.

2.7 For the avoidance of doubt, based on the analysis that follows later in this submission, the Council considers Shorne Woods, the Thong Conservation Area and the farmland that surrounds the latter as being part of the setting of both Cobham Hall (grade 1 listed) and its associated Registered Park and Garden (grade II* listed). The farmland that surrounds the Thong Conservation Area and the associated White Horse Cottage (grade II listed) which lies within the conservation area constitutes their immediate setting. Whilst there are a number of other historic farmsteads through which the Lower Thames Crossing passes to the north of Shorne Woods and these once formed part of the Cobham Hall Estate, these are not considered to form part of the immediate setting of either Cobham Hall or the Registered Park and Garden, notwithstanding previous economic, social or historical connections. These former parts of the estate should however still be recognised as the

wider context within which the historic landscape developed and may form part of the setting of other designated and non-designated heritage assets.

2.8 Relevant national and local policy documents in relation to heritage are set out in the introduction above.

2.9 Policy as set out in NPS EN-1 (2011) and the NPSNN (2014) in terms of heritage are generally consistent with each other and the more recent NPPF (2021). NPSNN paragraphs 5.131 – 5.134 require ‘great weight’ to be accorded harm to the significance of designated heritage assets and applies separate tests where the level of harm is judged to be ‘substantial’ or ‘less than substantial’ like the NPPF. In contrast, NPS EN – 1 at 5.8.14 only refers to ‘substantial harm’ and there does not appear to be reference to ‘less than substantial’ harm.

2.10 NPSNN at paragraph 5.137 also states that applicants should look for opportunities for new development within Conservation Areas and within the setting of heritage assets to enhance or better reveal their significance. Proposals that preserve those elements of the setting that make a positive contribution to or better reveal the significance of heritage assets should be treated favourably. Similar policy objectives are replicated in the NPPF at paragraph 206.

2.11 Policy CS20 from the Gravesham Local Plan Core Strategy (2014) establishes the Council’s strategic approach to heritage and generally accords with national planning policy. This accords a high priority to the preservation, protection and enhancement of heritage and the historic environment, particularly where they are at risk or under threat. Proposals that enhance significance are supported where they contribute to the distinct identity of the Borough, including its rural Conservation Areas. ‘Saved’ policies from the Gravesham Local Plan First Review (1994) are dated and it is recognised that they do not fully accord with the NPPF (2021) and should be accorded lesser weight, depending on their consistency with national policy.

2.12 In terms of the application of policy and assessment of impacts, ‘significance’ of heritage assets is defined in slightly different ways within the national policy documents. However, it is accepted that, in practical terms, the meanings are similar.

2.13 The NPSNN at paragraph 5.1.22 states:

Those elements of the historic environment that hold value to this and future generations because of their historic, archaeological, architectural or artistic interest are called ‘heritage assets’. Heritage assets may be buildings, monuments, sites, places, areas or landscapes. The sum of the heritage interests that a heritage asset holds is referred to as its significance. Significance derives not only from a heritage asset’s physical presence, but also from its setting.

2.14 The NPS EN-1 at paragraph 5.8.2 states:

The historic environment includes all aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried or submerged, landscaped and planted or managed flora. Those elements of the historic environment that hold value to this and future generations because of their historic, archaeological, architectural or artistic interest are called “heritage assets”. A heritage asset may be

any building, monument, site, place, area or landscape, or any combination of these. The sum of the heritage interests that a heritage asset holds is referred to as its significance.

2.15 The Glossary to the NPPF includes the following definitions:

Heritage asset

A building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. It includes designated heritage assets and assets identified by the local planning authority (including local listing).

Setting of a heritage asset

The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral.

Significance (for heritage policy)

The value of a heritage asset to this and future generations because of its heritage interest. The interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset's physical presence, but also from its setting. For World Heritage Sites, the cultural value described within each site's Statement of Outstanding Universal Value forms part of its significance.

2.16 The Historic England publication Conservation Principles (2008) sets a framework within which the value or significance of heritage assets can be assessed in terms of their:

- **Evidential value** – which derives from the potential of a place to yield evidence about past human activity.
- **Historical value** - which derives from the ways in which past people, events and aspects of life can be connected through a place to the present.
- **Aesthetic value** - which derives from the ways in which people draw sensory and intellectual stimulation from a place.
- **Communal value** – which derives from the meanings of a place for the people who relate to it, or for whom it figures in their collective experience or memory.

2.17 For information, the Council has not yet prepared a Local List of non-designated heritage assets. Buildings that contribute positively towards the character of designated Conservation Areas are however recognised within adopted Conservation Area SPDs. In addition, it is recognised the value the community assigns to such assets may only emerge when they come under threat or as further research is undertaken at the application stage.

2.18 On a general point, in relation to policy and legislation, there would appear to be a difference in focus when determining applications against policy as opposed to undertaking an EIA:

- In determining applications for Development Consent under the NPSNN, paragraphs 5.131 – 5.134 refer to 'harm' in terms of impact on the significance of a designated heritage asset, including any contribution to significance made by its setting. The

emphasis therefore appears to be on harm to individual assets. Similar provisions are contained within the NPPF, including for non-designated heritage assets.

- In contrast, Schedule 4 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 requires the applicant to provide a description of the likely significant effects of the development on the environment resulting from risks to cultural heritage, whether these are direct/indirect or cumulative etc.

2.19 The ES is therefore required not simply to assess harm to individual heritage assets but also impacts on cultural heritage 'in the round'.

3. Council's concerns over the Environmental Statement methodology in relation to Cultural Heritage.

3.1 The applicant has set out the methodology used to define 'significance' and level of harm within AS-044: 6.1 Environmental Statement – Chapter 6 – Cultural Heritage (Clean) (Version 2) at paragraphs 6.3.31 – 6.3.92. This is supported by a range of other material contained in associated appendices.

3.2 With reference to determining significance of effects, the applicant primarily relies on:

- APP-142: 6.1 Environmental Statement – Chapter 4 – EIA Methodology
- DMRB LA 104: Environmental assessment and monitoring (August 2020)
- DMRB LA 106: Cultural heritage assessment (Jan 2020)

3.3 In addition, the applicant draws together and assesses a range of impacts within document APP- 524 – 7.7 Combined Modelling and Appraisal Report - Appendix D - Economic Appraisal Package: Appraisal Summary Table Report. This document does not appear to form part of the ES. For assessment of non-monetised impacts on cultural heritage, landscape etc., this document applies the environmental capital approach, set out in the Department for Transport document WebTAG Unit A3: Environmental Appraisal (May 2022).

3.4 The Council recognises that there is no requirement in policy to apply any particular methodology in analysing cultural heritage impacts as part of the ES or within the application. The use by the applicant of the approaches set out in DMRB and WebTAG is therefore accepted by the Council, subject to the points made below.

3.5 For the avoidance of doubt, the Council has concerns regarding the methodology employed by the applicant in undertaking the ES in relation to cultural heritage. In particular, the Council has concerns that:

- The ES concentrates on harm to individual heritage assets and does not consider harm to cultural heritage 'in the round';
- The ES is not consistent with national policy in terms of the 'value' assigned to heritage assets or categorisation of 'harm'; and
- The ES does not go beyond a high level Historic Landscape Categorisation (HLC) assessment to consider the importance of local landscape development at a more localised level

3.6 Whilst the Council accepts the broad content of Chapter 6 to the ES, it is concerned therefore that the applicant has understated the cultural heritage value of the area most affected by the proposals and the impact of those proposals. The Council's concerns in respect of the applicant's approach are set out in more detail below.

The ES concentrates on harm to individual heritage assets and does not consider harm to cultural heritage 'in the round'

3.7 Chapter 6 to the ES appears to only provide an analysis of impacts on cultural heritage based on effects of the project at the level of individual heritage assets. Whilst there is nothing wrong with this as a starting point, there doesn't appear to be much consideration within the ES itself of the collective value of designated and non-designated heritage assets in context and the overall level of harm that may result. This is left in broad

terms to the summary tables in document APP-524, within the application rather than the ES.

3.8 An issue with this is that the significance of several of the heritage assets derive from their functional inter-relationship as part of the wider Cobham Hall Estate. Given a number of these form part of the setting for each other, harm to one or all of them through development within their shared settings potentially represents a form of multiple harm, the effect of which needs to be considered.

3.9 This was raised with the applicant at the Statutory Consultation stage in 2018. The position of the applicant remains that its methodology is consistent with the NPSNN and has been accepted by PINS at examination of other highway NSIP applications.

3.10 However, in terms of the ES and Department for Transport guidance in WebTAG Unit A3 on Environmental Impact Appraisal¹, it is recommended at paragraph 5.3.19 that the analysis should go beyond looking at harm to individual heritage assets and consider the overall level of harm in the following way:

5.3.19 The following guidelines should be used to derive the overall assessment score for a topic from assessments on a number of separate key environmental resources. The advice here on the accumulation of environmental assessments is intended to provide a transparent and systematic basis for accumulating site or location specific results, while also allowing for the exercise of expert judgement.

- **Most adverse category.** The principle here is that a scheme as a whole should be assessed according to the most adverse assessment of the key environmental resources affected. For example, if a scheme affects, say, five key environmental resources, of which one is in the 'large adverse' category and the remaining four are 'slight adverse', then the overall assessment score should be 'large adverse'. The rationale for this approach is that highly adverse impacts should not be diluted or masked by less adverse impacts. It also encourages the development of alternative schemes which avoid such adverse outcomes.
- **Cumulative adverse effects.** The principle here is that, where it is clear that there is a cumulative effect across a range of key environmental resources, then the scheme as a whole should be scored in a higher category than the key environmental resources in isolation. For example, a scheme may affect a number of key environmental resources, each of which is assessed 'slight adverse'. Where it is clear that there is a cumulative effect across the key environmental resources, the scheme as a whole would be assessed as 'moderate adverse'. The existence of cumulative effects will usually depend on there being some similarity in the characteristic features or attributes of the affected key environmental resources. For example, a group of biodiversity sites might all be habitats for the same species of plant or animal.

¹ For the differences between Environmental Impact Appraisal as part of the transport project assessment process and Environmental Impact Assessment see section 1.3 of WebTAG Unit A3 at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1102784/tag-unit-a3-environmental-impact-appraisal.pdf and associated DMRB documents LA101 – 104 and 106 at <https://www.standardsforhighways.co.uk/>

- **Balancing adverse and beneficial effects.** The principle here is that, where there is a genuine compensatory effect, adverse assessments on some key environmental resources may be balanced by beneficial assessments on others. However, the precautionary principle is especially relevant here. The key issue is whether there are genuine compensatory effects. In most cases, it will be necessary to consider the impacts on each key environmental resource at a detailed level, to ensure that the features lost from one key environmental resource are provided at another. For example, adverse assessments on groundwater supply at one location would probably need to be offset by beneficial assessments on groundwater supply at another location - beneficial assessments on floodplain would probably not provide genuine compensation. The scope for genuine compensatory effects will often be determined by the substitutability of attributes. In most cases, there is great uncertainty about the scope for substitutability, thus balancing should err on the side of caution. In particular, balancing should be restricted to 'slight' or, exceptionally, 'moderate' assessments. It is very unlikely that adequate compensatory effects can be identified to justify any balancing of 'large adverse' or 'very large adverse' assessments. (Emphasis added)

3.11 Beyond the above, WebTAG Unit A3 (at part 8) refers specifically to approaches to Impacts on the Historic Environment. This requires that assessments should be holistic and not simply focus on the value of and impacts on individual heritage assets. i.e.

- 8.2.3 **Step 2** identifying key historic environmental resources and describing their features, involves describing the character of the historic environment in question. Key historic environmental resources should be identified. Note that key historic environmental resources should not automatically be equated with individual heritage assets. Wherever possible, key historic environmental resources should represent groups of heritage assets, bearing in mind the need for coherence of character within each resource and distinctiveness of character between resources.

3.12 The Council's view therefore is that Chapter 6 of the ES should have gone on to consider the wider impact of the project on Cultural Heritage, to accord with WebTAG Unit A3 (following DfT's own guidance) and to comply with the requirements of Schedule 4 to the EIA Regulations.

3.13 Whilst these effects may not be 'cumulative', in the sense they are the in-combination impact of several projects, they are capable of being 'indirect' effects. This is because harm to the significance of an individual heritage asset may result in harm to the significance of others within a group through association.

3.14 As it stands, Chapter 6 to the ES based on harm to individual assets only records a maximum level of harm of **Moderate Adverse** to the south of the River Thames. This is transposed to the overall level of harm to the south of the River in Table 4.2 to Appendix D to the Combined Modelling and Appraisal Report (APP- 524).

3.15 Whilst this follows WebTAG Unit A3 in that the Most Adverse Category of harm is taken as the overall level of harm, no provision is made for cumulative adverse effects – which in this case would clearly appear to apply, whereby the overall level of harm should have been raised to **Large Adverse**.

3.16 Following the WebTAG guidance set out above, it would be inappropriate in this instance to attempt to balance adverse and beneficial effects when the cumulative impact is capable of being considered Large Adverse.

The ES is not consistent with national policy in terms of the 'value' assigned to heritage assets or categorisation of 'harm'

3.17 The Council has concerns in terms of how the applicant has assigned 'value' to different categories of individual heritage asset within the ES and how this aligns with national policy. This can be best illustrated by reference to some of the tables within the application documents set out below.

Table 1: Assessment Criteria used by the applicant to assign 'value' to heritage assets under ES Chapter 6 on Cultural Heritage

Value of heritage asset	Typical description	Typical example of cultural heritage resource
Very high	Very high importance and rarity, international scale and very limited potential for substitution	World Heritage Sites Assets identified as being of very high value through stakeholder consultation
High	High importance and rarity, national scale, and limited potential for substitution	Scheduled monuments Most Listed buildings Some Conservation Areas (those of national value with the highest special architectural and historical value) Grade I and Grade II* Registered Parks and Gardens Protected wrecks Nationally important non-designated heritage assets
Medium	Medium importance and rarity, regional scale, limited potential for substitution	Some Conservation Areas (those with a special architectural and historic value which is of less than national value which contain a small number of Listed Buildings or have been subject to decay or sustained neglect) Regionally important heritage assets Some Listed buildings whose value has been eroded e.g. through the re-location of the asset or have been subject loss of key architectural or historic elements or subject to decay or sustained neglect Grade II Registered Parks and Gardens
Low	Low importance and rarity, local scale	Locally listed buildings Locally important heritage assets
Negligible	Very low importance and rarity, local scale	Heritage assets with very little or no surviving archaeological or historic interest

3.18 The above categories of heritage assets do not appear to accord with the NPSNN which states at paragraph 5.1.3.1 that the designated heritage assets of the highest value comprise World Heritage Sites, Scheduled Monuments, grade 1 and II* Listed Buildings, Registered Battlefields, and grade 1 and II* Registered Parks and Gardens.

3.19 As Cobham Hall is grade 1 Listed; Cobham Hall Registered Park and Garden is Grade II* Listed; the Romano-British villa and 19th century reservoir in Cobham Park are

Scheduled; and the bowl barrow in Ashenbank Wood south of Cobham Park reservoir is also Scheduled, they should all be included in the highest category.

3.20 In addition, the Council also has concerns regarding the alignment of categories of harm to Cultural Heritage assets set out in the ES with those contained in national policy. Chapter 4 of the ES on EIA methodology includes the following two tables derived from DMRB LA104.

Table 2: Significance Matrix and Significance Categories taken from ES Chapter 4 on EIA Methodology.

Table 4.3 Significance matrix

Environmental value (sensitivity)	Magnitude of impact (degree of change)				
	No change	Negligible	Minor	Moderate	Major
Very high	Neutral	Slight	Moderate or large	Large or very large	Very large
High	Neutral	Slight	Slight or moderate	Moderate or large	Large or very large
Medium	Neutral	Neutral or slight	Slight	Moderate	Moderate or large
Low	Neutral	Neutral or slight	Neutral or slight	Slight	Slight or moderate
Negligible	Neutral	Neutral	Neutral or slight	Neutral or slight	Slight

Table 4.4 Significance categories and typical descriptions

Significance category	Typical description
Very large	Effects at this level are material in the decision-making process
Large	Effects at this level are likely to be material in the decision-making process
Moderate	Effects at this level can be considered to be material decision-making factors
Slight	Effects at this level are not material in the decision-making process
Neutral	No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error

3.21 The above raise issues in respect of consistency with national policy and guidance, given the applicable policy tests relate to 'substantial' and 'less than substantial' harm. This was summed up by the judgement in *James Hall v City of Bradford* ([2019] EWHC 2899 (Admin)) as follows:

34. In my judgment the three categories of harm recognised in the NPPF are clear. There is substantial harm, less than substantial harm and no harm. There are no other grades or categories of harm, and it is inevitable that each of the categories of substantial harm, and less than substantial harm will cover a broad range of harm. It will be a matter of planning judgement as to the point at which a particular degree of harm moves from substantial to less than substantial, but it is equally the case that there will be a number of types of harm that will fall into less than substantial, including harm which might otherwise be described as very much less than

substantial. There is no intermediate bracket at the bottom end of the less than substantial category of harm for something which is limited, or even negligible, but nevertheless has a harmful impact. The fact that the harm may be limited or negligible will plainly go to the weight to be given to it as recognised in Paragraph 193 NPPF. However, in my judgment, minimal harm must fall to be considered within the category of less than substantial harm.²

3.22 On the above, there would appear to be a clear conflict between Table 4.4 when it comes to 'slight' harm not being material in the decision-making process, when the above judgment makes it clear that any level of harm (however minimal) should be treated as 'less than substantial'.

3.23 This would clearly be material within the decision-making process, with such harm still being accorded 'great weight'. Dismissing it as being 'not material' as part of the ES is therefore considered to be questionable.

3.24 Chapter 6 to the ES at paragraph 6.3.76 sets out the applicant's position in terms of where the threshold for 'Substantial Harm' is met. This states:

6.3.76 To identify any designated heritage assets, or non-designated heritage assets that are demonstrably of equivalent significance to scheduled monuments that would experience 'substantial harm' in NPSNN terms, the following approach has been implemented to convert the impact assessment terminology of DMRB LA 104 (Highways England, 2020b) to correlate with the NPSNN. In NPSNN terms, substantial harm or total loss of significance to a designated heritage asset, or asset of equivalent value, is considered to constitute the total loss of value of the heritage asset. Therefore, in the terms used in DMRB LA 104 this would be described as a major adverse impact and large or very large adverse significance of effect. Substantial harm or total loss of value can occur due to a physical impact to a heritage asset or due to changes to the setting of a heritage asset that cause a severe enough reduction in its value. The assessment in Section 6.6 of this chapter identifies whether an effect is significant in EIA terms and whether it constitutes substantial harm or less than substantial harm to a designated, or equivalent value, heritage asset.

3.25 Unfortunately, Chapter 6 to the ES does not contain a table setting out what actual criteria have been used to determine level of impact on heritage assets. For example, how has magnitude of impact in Table 4.3 been assessed – what do the terms 'No Change'; 'Negligible'; 'Minor'; 'Moderate' or 'Major' mean? The methodology is therefore not transparent because it isn't clear what thresholds have been used to distinguish between different levels of harm. In terms of the application of policy, it is also important to understand how these relate to the tests engaged where there is either 'substantial harm' (particularly when it comes to development within the setting of a heritage asset) and 'less than substantial harm' (or any gradations within that category of harm).

² [https://www.bailii.org/cgi-bin/format.cgi?doc=/ew/cases/EWHC/Admin/2019/2899.html&query=\(James\)+AND+\(Hall\)+AND+\(v\)+AND+\(City\)+AND+\(of\)+AND+\(Bradford\)+AND+\(.2019.\)+AND+\(EWHC\)+AND+\(2899\)+AND+\(Admin\)](https://www.bailii.org/cgi-bin/format.cgi?doc=/ew/cases/EWHC/Admin/2019/2899.html&query=(James)+AND+(Hall)+AND+(v)+AND+(City)+AND+(of)+AND+(Bradford)+AND+(.2019.)+AND+(EWHC)+AND+(2899)+AND+(Admin)))

3.26 All of the above raise issues when it comes to the applicant's assessment of heritage impacts as set out in Chapter 6 to the ES at Tables 6.6, 6.7 and 6.8. Initially, it is important to note the content of paragraph 6.6.9 to Chapter 6 of the ES:

6.6.9 Those assets that would be completely removed by construction of the Project are listed in the Assessment Tables (Appendix 6.10, Section 1.9 (Application Document 6.3)). The Project would result in substantial harm (in NPSNN terms) to a number of designated heritage assets following mitigation, identified in the assessment text below and summarised in Table 6.6 of this chapter. Where the Project would result in less than substantial harm to a heritage asset following mitigation, this has not been stated explicitly in the text.

3.27 Following on from this, the applicant only identifies 'substantial harm' to heritage assets north of the River Thames in Table 6.6, where they would be destroyed and there would be a total loss of significance. It is not necessary to repeat this here, as the intention is to concentrate on permanent impacts to the south of the river.

3.28 Table 6.7 then sets out what the applicant considers to be 'significant' cultural heritage effects, whilst Table 6.8 sets out those effects the applicant considers 'not to be significant'. The relevant entries are set out below.

Table 3: Significant permanent heritage effects south of the River Thames during operational phase– Taken from ES Chapter 6 Table 6.7

Impact description	Value	Impact magnitude	Significance of effect	Significance
Operation				
South of the River Thames:				
Permanent impact to Thong (CA10) Conservation Area	Medium	Moderate	Moderate adverse	Significant
Permanent impact to White Horse Cottage (LB22) Grade II listed building	High	Moderate	Moderate adverse	Significant
Permanent impacts to non-designated Cheney's Farm, White Horse Cottage Farmstead (1133, 1134)	Medium	Moderate	Moderate adverse	Significant

Table 4: Permanent heritage effects south of the River Thames not considered to be significant during the operational phase – Taken from ES Chapter 6 Table 6.8

Impact description	Value	Impact magnitude	Significance of effect	Significance
Operation				
South of the River Thames:				
Permanent impact to one non-designated archaeological asset	High	Minor	Slight adverse	Not significant
Permanent impacts to seven non-designated archaeological assets	Medium	Minor	Slight adverse	Not significant
Permanent impact to two non-designated archaeological assets	Low	Moderate	Slight adverse	Not significant
Permanent impacts to five non-designated archaeological assets	Low	Minor	Slight adverse	Not significant
Permanent impact to one non-designated archaeological asset	Negligible	Moderate	Slight adverse	Not significant
Permanent impact to two non-designated archaeological assets	Negligible	Moderate	Neutral	Not significant
Permanent impact to one Grade II* Registered Park and Garden	High	Minor	Slight adverse	Not significant
Permanent impact to one Conservation Area	High	Minor	Slight adverse	Not significant
Permanent impact to one Grade II* listed building and one Grade II listed building	High	Minor	Slight adverse	Not significant
Permanent impacts to five non-designated buildings	Medium	Minor	Slight adverse	Not significant
Permanent impacts to 12 non-designated buildings	Low	Moderate	Slight adverse	Not significant
Permanent impacts to three non-designated buildings	Low	Minor	Slight adverse	Not significant
Permanent impacts to one non-designated buildings	Low	Negligible	Slight adverse	Not significant
Permanent impacts to two non-designated buildings	Low	Negligible	Neutral	Not significant
Permanent impact to one historic landscape	Medium	Minor	Slight adverse	Not significant
Permanent impact to one historic landscape	Medium	Negligible	Slight adverse	Not significant
Permanent impact to one historic landscape	Low	Moderate	Slight adverse	Not significant

3.29 Based on the forgoing discussion, the Council has two issues in respect of the above table. The first is that even where it is concluded that the overall level of impact is 'slight adverse', this still constitutes 'less than substantial harm' which should be accorded great weight in the planning balance when applying the relevant policy test. The second is that the

Council disagrees that the impact of the Grade II* Registered Park and Garden is only minor, slight adverse and not significant. The reason for this is that the proposal results in increased severance between the areas north and south of the A2, which at one time formed part of the park associated with Cobham Hall. The loss of trees/woodland within the A2 central corridor will also reduce the sense of connectivity, making this corridor less rural and more urban. This will be further considered later in this statement.

The ES does not go beyond a high-level Historic Landscape Categorisation (HLC) assessment to consider the importance of local landscape development at a more localised level

3.28 The Council also has concerns about the way in which the heritage value of landscape has been treated in the ES. This appears to rely on a Historic Landscape Characterisation (HLC) assessment which focuses, as a starting point, on the following seven broad landscape types to the south of the River Thames:

- Reclaimed land;
- Woodland;
- Parkland, commons and recreational land uses;
- Farming;
- Settlement;
- Industry and infrastructure; and
- Military activity and defence

3.30 In looking at this aspect, the Council has had regard to the South East Research Framework (SERF) put together by Kent, East Sussex, Surrey, and West Sussex County Councils along with Historic England as a means to focus on-going consideration of the historic environment in the South East and to identify gaps in our understanding of the past – see <https://www.kent.gov.uk/leisure-and-community/history-and-heritage/south-east-research-framework#:~:text=The%20South%20East%20Research%20Framework%20%28SERF%29%20aims%20to,a%20research%20agenda%20and%20strategy%20for%20the%20future.>

3.31 The following papers would appear to be of relevance in this instance:

- Historic Landscapes at https://www.kent.gov.uk/_data/assets/pdf_file/0009/93177/South-East-Research-Framework-Resource-Assessment-and-Research-Agenda-for-historic-landscapes.pdf, and
- Post-medieval, Modern and Industrial at https://www.kent.gov.uk/_data/assets/pdf_file/0008/99494/Post-medieval,-Modern-and-Industrial-chapter.pdf

3.32 Amongst the key messages taken from the above in terms of analysis and the South East research agenda are that whilst Historic Land Use Characterisation (HLC) is a useful tool, it only provides a baseline understanding of the historic dimensions of the current landscape and how, in generalised terms, different landscape typologies have come about. It is therefore a starting point to which greater value can be added by more detailed analysis.

3.33 To a certain extent, this has been partly done for part of the project area through Historic England's Hoo Peninsula Landscape Project (see <https://historicengland.org.uk/research/current/discover-and-understand/rural-heritage/hoo-peninsula/> and main booklet at Figure 15). However, this does not extend south of the A2 to include the main Cobham Hall complex and the relationship of that part of the estate with the land to the north.

3.34 This is unfortunate as the more recent SERF work identifies the importance of seeking to understand the impact houses and associated gardens of royalty/gentry had on the local landscape, economy and social structure, including their relationship to the surrounding landscape – including the tenanted landscape, woodland and any relation to their function as places of upper-class display and contrived use of space. An additional key message from the SERF in terms of historic landscape analysis is the importance of cross-cutting, multidisciplinary approaches to understanding place by using historical research and other methods to supplement archaeology and to build a richer picture of how areas have developed and their significance.

3.35 Whilst the importance of the Cobham Hall Estate is recognised within the text of the HLC section of the ES, its significance in Cultural Heritage terms is the way in which land (through which the LTC will run south of the river) was owned, controlled, and managed. The Estate cuts across the different landscape types listed above and provides part of the context within which heritage assets needs to be understood. This will become clearer below where the development of the Cobham Hall Estate is discussed.

3.36 This is not to say that the Cobham Hall Estate should be treated (in its own right) as some form of designated or non-designated heritage asset, rather that it is the context for much of what we see today – it is the glue that holds the heritage significance of the area together.

3.37 One of the concerns the Council has about the HLC section of the ES therefore is that it considers impacts at a very large scale, rather than looking in detail at areas where these are more locally extremely adverse. For example, Table 1.11 at page 195 of document AS-052: Additional Submission - 6.3 Environmental Statement - Appendix 6.10 - Assessment Tables - (Clean) (Version 2) contains the following assessment of impact on the woodland and farming landscape to the south of the river: These areas would include the A2 corridor itself and the farming landscape within the Thong sub-area, in particular.

Table 5: Extract from document AS-052 Assessment Table 1.11 on Historic Landscape Characterisation implications

Historic landscape category	Value	Historic Landscape Types (HLTs) impacted	Construction / Operation Impact	Operation mitigation	Magnitude of impact	Significance of effect	Significance
Farming landscape	Low	HLT ref. A: fields predominantly bounded by tracks, roads and other rights of way. HLT ref. H: 19th century prairie fields with extensive boundary loss. HLT ref. M: small regular fields with straight boundaries (parliamentary type enclosures formed by 19th and 20th century enclosure)	Impacts on the historic landscape from construction and operation have been considered cumulatively. The construction of the main alignment, earthworks, landscaping and utility diversions will remove parts of this historic landscape and permanently change its layout and character. Woodland planting will alter an area of small regular enclosures with straight boundaries (HLT ref. M) located north of the A2 and north-west of M2 junction 1. Nitrogen deposition (Ndep) compensation planting would permanently alter the agricultural landscape within Ndep sites at Burnham, Henhurst, Court Wood, and Fen Wood.	Reinstatement of majority of 19th prairie fields (HLT ref. H) following construction works. Ndep compensation tree planting would impact the agricultural landscape at Burnham, Henhurst, Court Wood, and Fen Wood sites.	Moderate	Slight adverse	Not significant
Woodland	Medium	HLT ref. B: 19th century coppices. HLT ref. F: pre-19th century woodland. HLT ref. I: pre-19th coppices	Impacts on the historic landscape from construction and operation have been considered cumulatively: Pre-1810 woodland (HLT ref. F) at Claylane Wood will be impacted by the Project, and the main alignment, earthworks, and cycleways will be present during operation. 19th century plantations (HLT ref. C) incorporating parts of Ashenbank, Shorne, and Brewers Woods will be impacted by landscaping, utility diversions and earthworks. 19th century coppices (HLT ref. B) in Brewers Wood, and pre-19th century coppices (HLT ref. I) in Shorne Woods will be impacted by landscaping and earthworks.	Vegetation will be largely retained along woodland edges of Brewers Wood and Shorne Woods.	Minor	Slight adverse	Not Significant

3.38 This clearly underestimates the impact on the historic farmed landscape around Thong and into Chalk, within the order limits, where much of the landscape is subjected to severance and ceases to be farmed at all because of the proposals. This then impacts back on the significance of the Thong Conservation Area, as a designated heritage asset, which derives much of its significance from its agricultural setting. For the extent of the Thong Conservation Area, see Figure 5 appended.

3.39 There would also appear to be quite a large disparity here between the way the HLC analysis and ES Chapter 7 on Landscape and Visual approach that part of the Higham Arable Farmlands around Thong (see App - 145: 6.1 Environmental Statement: Chapter 7 – Landscape and Visual), which considers this area to be of **High Value** due to its condition, habitat, diversity, cultural associations, recreational value and perceptual aspects. This also considers the fact the sub-area forms an important part of the setting of the Kent Downs AONB, set at a higher level to the east.

3.40 Whilst the Council accepts that the criteria used to assess impacts on landscape and cultural heritage differ, these two aspects are interconnected here because of the way the area has developed over time. Attention is therefore drawn to the conclusions reached at Table 7.27 on page 148 that the effects of the proposal on landscape in this area are considered to be **Very Large Adverse** at the opening year, reducing to **Large Adverse** at the Design Year because of planting, 15 years after opening.

3.41 Relevant sections from Tables 7.26 (Effects on Kent Downs AONB during operation) and Table 7.27 (Effects on the Thong sub-area) are reproduced below at Table 6 because they reinforce the Council's thoughts on harm to heritage interest caused by the proposals set out later in this statement.

Table 6: Extracts from ES Chapter 7 Tables 7.26 and 7.27 on impacts on landscape within the Kent Downs AONB and Thong sub-area

Summary of effects on landscape receptors	Landscape sensitivity	Magnitude and nature of effect	Significance of effect
West Kent Downs (sub area Shorne) <ul style="list-style-type: none"> Continued partial absence of mature woodland along the A2 corridor (including some ancient woodland), resulting in a perceived increase in the prominence and scale of the A2 corridor and associated highway infrastructure Greater landscape severance north and south of the modified A2 Highway infrastructure, structures and moving vehicles at the M2/A2/A122 Lower Thames Crossing junction to the west Further reduction to relative tranquillity along the southern edge of the LLCA 	Very high	<u>Opening year</u> Moderate adverse <u>Design year</u> Minor adverse	<u>Opening year</u> Large adverse <u>Design year</u> Moderate adverse
West Kent Downs LCA 1A (comprising the sub areas of Shorne and Cobham) <ul style="list-style-type: none"> As described above for sub area Shorne 	Very high	<u>Opening year</u> Moderate adverse <u>Design year</u> Minor adverse	<u>Opening year</u> Large adverse <u>Design year</u> Moderate adverse
Higham Arable Farmland (sub area Thong) <ul style="list-style-type: none"> Introduction of prominent and uncharacteristic M2/A2/A122 Lower Thames Crossing junction and associated highway infrastructure into the arable landscape Continued partial absence of mature woodland along the A2 corridor and Clayfane Wood (including some ancient woodland) Substantial change to the flat to gently undulating landform Bisection of open landscape character between the urban area of Gravesend and Shorne Woods Country Park A further reduction in relative tranquillity due to the increased prominence of the modified A2 corridor and new M2/A2/A122 Lower Thames Crossing junction 	High	<u>Opening year</u> Major adverse <u>Design year</u> Major adverse	<u>Opening year</u> Very large adverse <u>Design year</u> Large adverse

Changes to heritage context following submission of the DCO application

3.42 For the sake of completeness, the Council notes that Shornemead Fort to the southern side of the River Thames in the vicinity of the project was designated a Scheduled Monument by Historic England on the 2 March 2023. This is not considered to affect the points made elsewhere in this statement.

4. Development of the Cobham Hall Estate, the importance of the setting of the Thong Conservation Area and changes over time in the A2 corridor.

4.1 This part of this statement concentrates on the development of that part of project to the south of the River Thames over the past 250 years. This is the most relevant period for the purposes of understanding the surviving above ground heritage interest of the area through which the project runs, albeit it is accepted that the main body of the Cobham Hall Estate (including Cobham Hall itself and its immediate surroundings) has C16 – 17th origins. The extensive parkland which surrounded the Hall was largely remodelled towards the end of the C18th – early C19th by James Wyatt and, latterly, Sir Humphry Repton (see Cobham Park Conservation Plan Vol 1 2003).

4.2 The Cobham Hall Estate was also expanding over this period, taking in additional woodland and farmsteads, until such time it encompassed a broad swathe of land stretching from the River Medway at Cuxton to the River Thames at Chalk. Figure 1 appended to this statement shows what the Council understands to be the full extent of the estate during the C19th, prior to disposal of much of the farmland that surrounded its core post WWI. This is based on the 1905 Cobham Hall Estate Plans at the Medway Archives; Tithe Maps, Tithe Apportionments and Sales Particulars in the Kent Archives; and 1910 Land Tax Assessment field books and mapping at the National Archives, Kew.

4.3 Whilst the Cobham Hall Estate changed the way in which the land within this area was controlled, as part of a managed landscape, there would have been underlying patterns of land-use that pre-dated it and are now only evident through archaeology or such elements as surviving field/parish boundaries or tracks/rights of way etc. Setting these aside, from the C12th to the C19th, the tithe collected for the area around Randall Manor and Thong was for the benefit of the Priory of St Andrews Cathedral, Rochester.

4.4 Hasted's History and Topographical Survey of the County of Kent (Vol 3, 1797) refers to the rights to the tithe being gifted by Smalman of Shorne and this being confirmed during the reign of Henry II (reigned 1154 – 1189). At the time of the dissolution of the monasteries in the late 1530s, the rights to the tithe passed to the Crown. During the English Civil War, they became part of Crown possessions seized by the Commonwealth, with the extent of the area what by then had become known as the 'Borough of Thong', subject to investigation. It appears that upon the restoration in 1660, the rights to the tithe passed back to Rochester Cathedral. A subsequent deposition was sworn as to its extent at the beginning of the 18th century (See National Archives E134/12 Wm3/Mich 17 dated 1700 – 1701).

4.5 A plan in the Medway Archives shows the extent of the 'Borough of Thong' in 1822, including the location of Monken Barn (tithe barn) at its centre, at the junction of the old road from Gravesend (now footpath NS167) with Thong Lane. For the tithe of this area to be assigned to Rochester Cathedral in the C12th implies that this must have been some form of estate where the landowner had the power to do so. Effectively therefore this area represents the historic setting of the medieval rural settlement of Thong, from which the current Conservation Area derives significance (primarily evidential and historical).

4.6 The extent of the 'Borough of Thong' (which does not appear to have been a borough in the legal sense of the term) as shown on the 1822 plan is included as Figure 2. The extent of Cheney's Farm at the time of the Tithe Map of 1842 is shown in Figure 3. This appears to correspond with the remaining farmed area from the Borough of Thong. The

extent of Cheney's Farm as an agricultural unit as it was in 1918 , immediately prior to disposal to the London County Council, is shown in Figure 4 for the purposes of comparison.

4.7 Both the rural settlement of Thong and its immediate setting would have changed over time from the C12th through into the C19th, as would have the way in which the land was farmed and how people related both to it and each other. There appears to have been significant continuity however in that Thong was set in an agricultural farmed landscape and this still forms the essential setting of the settlement and the grade II listed Whitehorse Cottage, that lies within it.

4.8 This is similar to the conclusion reached in the Thong Conservation Area Appraisal (at 3.4) which states:

Approached from the south along Thong Lane, tree and hedge growth and the sinuous line of the road as it enters the built up area hide from view the village's linear development northward beyond this. The two former farmsteads (and mature planting), one to each side of the road, provide a sort of 'gateway' to what lies beyond.

Approaching from the north along Thong Lane, development is initially restricted to the west side of the road. Here the village's eastern setting is open land sweeping up to the skirts of Shorne woods. The woods, on rising ground, give complete 'middle distance' enclosure on this side of the village. The wide stretch of arable land (down to grass at the time of survey) between woods and village extends right up to the roadside here. In the village's southern part the open land runs from the woods up to various back gardens, domestic paddocks and the like, these belonging to development along the east side of the road.

Seen from the wide flat windswept arable fields to the west, the backs of the village buildings and enclosures, strung out along the road and of varying degrees of visual complexity and attractiveness, seem almost 'islanded' in a wider landscape. Particularly at the village's northern end they have a kind of utilitarian bleakness and feel of isolation which is in strong contrast to many of Gravesham's other rural conservation areas. This is particularly resonant given the close proximity of suburban Gravesend.

And

The following positive features form the wider setting of the conservation area:

- The open arable fields to the east of the village, along the east edge of which, parallel to the line of Thong lane, is rising ground on which is the view enclosing feature of Shorne woods
- The wide, flat, arable country west and north-west of the village from within which the village appears to stand 'islanded' in the open landscape

4.9 The original Ordnance Survey drawing for the Cobham area at the British Library dating from 1797 shows the linear settlement of Thong at that time, within its rural agricultural hinterland beneath Shorne Woods on higher ground – see Figure 6.

4.10 Whilst the form of the landscape and the relationship between different elements is recognisable, the field pattern appears more enclosed with smaller, irregular fields surrounded by hedgerows. It is not possible from this mapping to understand the mix of use between arable and pasture. It is clear however that the setting of Thong was agricultural with woodland on higher ground to the east (albeit with some fields associated with Randall Manor/Randall Hall) and at Claylane Woods to the south-west.

4.11 A more detailed plan of Thong Farm and the linear settlement of Thong dating from 1778 from the British Library is reproduced at Figure 7. Whilst this does not show all of the surrounding area, the agricultural setting of the settlement is clear, in particular with an orchard and fields lying to the east of what was Thong Farm, now the site of Cheney's Cottages. The junction of the old road from Gravesend with Thong Lane, crossing the fields west of Thong, towards what is now Riverview Park, is also clearly shown. The Finnish scientist Pehr Kalm in his account of his visit to England: on his way to America in 1748 notes in particular the extensive cherry and other orchards around Gravesend, serving the growing London market.

4.12 The Cobham Hall Estate appears to have acquired additional land around Thong in the 1790s and set about making improvements. This would have included the woodland around Randall Manor and a now demolished house known as Randall Hall. It is assumed that the farmland also came into the possession of Lord Darnley at the same time.

4.13 The 1822 map of the Borough of Thong See extract at Figure 8) shows the settlement remodelled to perform a new role as the western gateway to the main body of the Cobham Hall Estate to the east and south. Aside from other properties within the settlement (which included what was then the White Horse PH – Grade II listed, formerly the Yorkshire Grey) both Cheney's Farm House and Thong House are clearly shown. The former was occupied by one of Lord Darnley's principal tenant farmers, whereas the latter appears to have been built to house his land agent/estate manager.

4.14 Travelling from Gravesend, either by the old road across the fields to the west of Thong or the longer route via Chalk and Thong Lane itself, Lord Darnley would have been able to progress through his estate to Thong, past these two properties and what was effectively an estate village before entering the private part of the estate via the Thong Lodge gatehouse (designed by John Repton, one of the sons of Humphry Repton – see Figure 9) and travelling through the woods along the Rhododendron Walk to Cobham Hall. William IV visited Cobham Hall in September 1830, presumably following this route, inspecting the site of Darnley's proposed new town in Gravesend (Harmer Street etc) on his way (South Eastern Gazette 14 September 1830).

4.15 The woods to the north of what is now the A2 were at one stage part of Cobham Park, as is shown on the Sales Particular plans for Randall Bottom from 1826 at the London Metropolitan Archives (see figure 11). The 1842 Tithe Apportionment for Shorne also refers to the ponds in the woods north of the A2 as being 'in the park'. The woods would have formed an important part of the estate economy, providing timber and underwood for building, fuel and for sale. They would have also been important in terms of their gaming

rights, which were jealously protected against poaching and were also of value (the valuation of the woods in the 1910 Land Tax Field Books at the National Archives include those for gaming rights). The Duke of Wellington joined a shooting party with Lord Darnley on the estate in January 1820 (see appendix A1). When the Darnley's were trying to let the estate in 1901, it was described as comprising 8,000 acres, including 2,000 acres of woodland capable of holding 10,000 pheasants (St James Gazette, 25 January 1901).

4.16 By way of contrast, the current Grade II* Registered Park and Garden only comprises 338 hectares (835 acres), of which 22 hectares (54 acres) are formal gardens and pleasure grounds and 120 hectares (296 acres) are woodland (see Figure 10) Given the scale of the area that was put up to let in 1901, it is assumed that this also included most of the farmland beyond the park and woods.

4.17 Thong and its agriculture hinterland therefore formed an important part of a managed landscape directly associated with Cobham Hall (Grade 1 Listed) and the Grade II* Registered Park and Garden. This also contributes towards the significance of the Thong Conservation Area, given the intimate interrelationship between associated designated heritage assets within the historic landscape.

4.18 Once again, this is not to say that the landscape providing the setting for the Thong Conservation Area has not been subject to change. This is due in part to the way farming has evolved and become more mechanised over time, resulting in larger more open fields to the west of the settlement in particular. Those to the east have remained more enclosed and intimate, although they are now mainly used for grazing and paddocks rather than arable or orchard.

4.19 However, the landscape setting of Thong currently remains predominantly agricultural (not just open) and it is possible to trace how farming practices may have changed as part of this process, which also contributes towards significance in terms of evidential, historic and communal value.

4.20 For example, a detailed account of how Cheney's Farm was cultivated by Henry Solomon survives from 1871 (Maidstone and Kentish Journal, 18 September 1871 – see Appendix A3 and farming returns for parishes at A2). This suggests that it was at the time seen as a farm employing best practice. The Solomons themselves were a Shorne farming dynasty during the C19th, with two of them serving on the committee of management of the Gravesend and Rochester Agricultural Association for the Encouragement of Servants and Labourers in the 1830s. Their annual ploughing match was held at Cheney's Farm in 1836 (See transcript at Appendix A4 from West Kent Guardian, 24 September 1836). Henry Solomon was Lord Darnley's oldest tenant when he died in 1890, aged 77, having held the farm for over 50 years (Gravesend Reporter 30 August 1890).

4.21 The situation regarding land holding changed immediately post WWI, with the sale of extensive parts of the Cobham Hall Estate in Shorne and Chalk in 1918. This land was acquired by the London County Council (LCC) to construct and lay out a smallholding scheme (the Shorne Estate) to promote occupation by ex-servicemen. Whilst few of these 'Homes for Heroes' schemes aimed at getting people to return to the land were successful nationally, the LCC appears to have made the effort to design something special here given the detailed designs and a series of photographs on their completion have survived in the London Metropolitan Archive (see Figure 12).

4.22 These lands (including the smallholdings) were conveyed to the KCC in 1924, although the land parcels assigned to each unit and that to Cheney's Farm appear to have been changed from the original scheme (see Medway Archives plan of altered tithe apportionment 1926, U565 E682 at Figure 13). Whilst in general terms the smallholding scheme was not successful, many did continue in operation for a prolonged period. This is evidenced by returns from the 1941/2 National Farm survey in the National Archives, which provides detailed information on each unit as well as the main farms and how well they were being managed (National Archives MAF 32/1037/269 and associated mapping under MAF 73).

4.23 Another non-designated heritage asset immediately to the south of Thong is the 1930s house known as Thong Mead, designed for one of his relations by the internationally important architect, Sir Herbert Baker of Owletts, Cobham. A copy of the original drawings for the house are appended (see Figure 14). Sir Herbert Baker was a contemporary of Lutyens and designed several important buildings in both India and South Africa and the UK.

4.24 Aside from connections with a number of other important buildings and structures in the immediate area (including the gravestone of Ivo Bligh at Cobham Church, Cobham War Memorial and the restoration of the Yeoman's House at Sole Street, Cobham), he was also a member of the Commonwealth War Graves Commission and was responsible for designing numerous memorials both in the UK and France – including the largest WWI British war cemetery at Tyne Cot, Passchendale.

4.25 This provides an interesting link in terms of WWI and its aftermath with the construction of the LCC Shorne Estate smallholdings to the north, adding to the contribution made toward the significance of the Conservation Area by development within its setting in terms of historic, aesthetic and communal value (for main plans and contracts see London Metropolitan Archive LCC/CO/CON/02/7250 and LCC/CO/CON/03/7250).

4.26 Clearly, there have been other developments which have affected the setting of the Thong Conservation Area in the C20th that need to be considered in determining the contribution that this makes to its significance. Whilst now largely obliterated by the subsequent development of the Riverview Park Estate, Cascades Leisure complex and the Southern Valley Golf Course, the area immediately to the north was occupied between 1932 – 1954 by the London East/Gravesend Airport – latterly RAF Gravesend during WWII (see Figure 15 + National Archives AIR20/7285 + operational log books for Nov1940 to July 1944 at AIR28/294).

4.27 Part of Cheney's Farm, Thong was taken over by RAF Gravesend to create the enlarged two runway airfield during the war, capable of being used as a fighter base and as an emergency landing field for returning bombers when low on fuel. Post war, the farmed area south of Riverview Park was returned to agriculture. Very little has survived on the ground by way of non-designated heritage assets associated with the airfield, except a hard surfaced dispersal route, a building now used for agricultural purposes to the north of Cascades, and a pair of semi-detached houses on Thong Lane which were once occupied as a headquarters building.

4.28 As the runways were grass and not hard surfaced, evidence of their length, position and alignment can only be discerned by record. However, one would have extended out into the farmland south of Riverview Park, whilst the other crossed Thong Lane over land now

occupied by the Southern Valley Golf Course. Other buildings and structures associated with the airfield during wartime survive in the woodland to the north and south of the A2.

4.29 Whilst little now remains of Gravesend Airport/RAF Gravesend, it is memorialised at the Cascades Leisure Centre and is locally important in terms of historical, evidential and communal value of pre-war flights which took place from the airfield and its wartime role – such as the flights made by Amy Mollison (Johnson) to South Africa in 1936 and Alex Henshaw's flight to South Africa and back in 1939 in a record time of 39 hours 25 minutes. This record stood for more than 70 years and was only broken in 2009. Henshaw's Percival Mew Gull G-AEXF survives as an exhibit in the Shuttleworth Collection.

4.30 Negative features within the setting of the Thong Conservation area include the post war pylons that cross the adjacent farmland. Whilst these have an adverse impact, this is marginal because the agricultural landscape remains the dominant feature and the legibility of the settlement within this context remains evident. The A2 to the south is also a negative feature, given its impact in terms of noise, peripheral light and disturbance crossing the landscape as an east west corridor.

4.31 It is now to the development of this arterial route and impact on the Cobham Hall Estate that this section will now turn.

4.32 Whilst the original Watling Street was of Roman (or even pre-Roman) origins, by the C18th – C19th it had become little more than a country lane in and around Cobham/Shorne that no longer provided a direct route between the coast and London. The River Thames and the turnpike road between Rochester and Dartford, via Gravesend and Northfleet had become the most important route. It was only in the early 1920s that the decision was made to reconstruct the road as a main arterial route, partly as an effort to relieve unemployment.

4.33 The A2 was opened by the Prince of Wales as a two-lane road in November 1924. Whilst this both straightened and widened the transport corridor, the degree of severance between what is now the Grade II* Registered Park and Garden and the remainder of the park to the north of the road (the outer park/Shorne Woods etc) was limited. The level of traffic on this route would not have been high on opening, with relatively low speeds compared to today and limited traffic noise/disturbance.

4.34 Whilst development did occur because of the opening of the road corridor, this was extremely limited in this section. The main development which occurred was the Laughing Waters motor inn at the southern end of Thong Lane, which opened in 1933. This was used by the RAF during WWII before returning to civilian use and subsequently demolished to make way for the Inn on the Lake in the 1960s. The lakes or fishponds here are of earlier origin. Lord Darnley also had permission to erect a tea hut close to Shepherds Gate/Brewers Road to serve passing motorists (For image of Laughing Waters motor inn see <https://britainfromabove.org.uk/image/epw051613> and Figure 17 for plan of tea hut) .

4.35 The original plans of the 1920s Watling Street reconstruction survive in the National Archives and relevant sections are reproduced at Figure 16, along with photographs showing how the rural lane appeared pre-implementation and the A2 post-construction (National Archives MT 57/39; MT 39/774). The purpose of including these is for information only and to provide context, as it is recognised that in determining the application any consideration of harm stands to be assessed against impacts of the existing development compared to that proposed.

4.36 Whilst there were discussions regarding construction of a Thames Rail Tunnel at Gravesend in the 1920s, these never came to fruition and the option of building a Dartford Purfleet Tunnel was taken forward instead under a 1930 Act of Parliament (See Kent Messenger 24 February 1924 and National Archives MT 49/183; T/161/804/5; MT 39/609; MT 39/179 and, for the original Dartford Tunnel Act 1930 – https://www.legislation.gov.uk/ukla/Geo5/20-21/182/pdfs/ukla_19300182_en.pdf).

4.37 In the 1930s, Lord Darnley sold off rights to clay in Shorne Woods to the Associated Portland Cement Manufacturers (APCM) with this being taken out by lorry to serve works on the Medway. It is understood that this continued into the 1970s, with large parts of the original woodland being cleared and land levels reduced. The effect of this can be seen from contemporary aerial photographs (see Figure 18). However, this area has since regenerated and forms the central part of the Shorne Woods Country Park. In landscape terms, it is considered of the highest value due to its inclusion within the Kent Downs AONB and remains legible as a former part of the historic Cobham Park, although severed from the Grade II* Registered Park and Garden by the A2/HS1 corridor. The extent of the woodland north of the A2 owned by the Darnley's in 1910 and its relationship with the remainder of the park is shown in the 1910 Land Tax returns mapping reproduced in Figure 17.

4.38 Due to increased traffic pressure, the A2 was dualled from the top of Swanscombe Cutting to join with the M2 at Strood in the mid-1960s. This involved a significant widening of the transport corridor to accommodate both increased width and the grade separated junction at Cobham. There was clearly debate at the time on the form this junction should take, with drawings of two different schemes having survived (National Archives HLG 126/170 – see Figure 19).

4.39 As a result of the construction of the junction, the Shepherd's Gate entrance to Cobham Park became isolated within the road network and was subsequently demolished. The Brewer's Gate entrance also became isolated at the foot of the Brewers Road embankment but this was only demolished in 1980 (see image in Figure 16). The loss of the two main entrances to Cobham Hall from Watling Street means that the sole surviving gatehouse to the park itself is Thong Lodge, which like Brewers Gate, was to a design by John Repton.

4.40 Even though the dualling of the A2 caused harm to both landscape and associated heritage interest within this area, this was mitigated to a certain extent by the inclusion of a wide wooded central reservation between the two carriageways from the Cobham Junction eastwards to the Park Pale accommodation bridge. Whilst it is understood this was required because of poor geology, it did have the effect of softening the impact of the road by making it a less urban feature. It is also clear from looking at the alternative designs for the Brewer's Road junction that efforts were made to reduce encroachment of the area around Repton's Ponds.

4.41 Further harm to heritage interest occurred because of the widening required to accommodate both the HS1 railway line and A2/M2 improvements under the Channel Tunnel Rail Link Act 1996. This resulted in an increase in the number of lanes from three to four in each direction and the construction of the railway adjacent. Whilst there is a vegetated gap between the two eastwards from a point around 300 metres east of the Brewers Road bridge, to the west the A2 and HS1 come far closer together.

4.42 As a result, the surviving rural lanes that ran to the south of the A2 (the old Watling Street) have been lost with a poor outcome in terms of maintaining the setting of the Grade II* Registered Park and Garden, particularly in the vicinity of Ashenbank Wood and Repton's Ponds, where a vehicle containment bund was required for railway safety purposes instead of the originally intended planting (see Gravesham application references: GR/97/401 CTRL Schedule 6 package 5; GR/97/857 A2/M2 Road Widening).

4.43 Whilst a scheme of compensation was agreed with the applicant (Union Railways) which allowed the Council to lever in significant additional funding to restore large parts of the historic Cobham Park and associated structures, the design of some elements of the scheme have not proved to be satisfactory.

4.44 As an example, the corridor south of HS1 within the setting of the Grade II Listed Engine House (Listing Reference 1262054) carrying footpath NS179 is very narrow at the juxtaposition of the HS1 retaining wall to Repton's Pond. This was a deliberate compromise at the time to minimise as far as possible the land take from the pond and the impact this would have had on the significance of the Engine House.

4.45 As an integral part of the Grade II* Registered Park and Garden, the Grade II Listed Engine House derives significance from its evidential, historical, aesthetic, and communal value. It provides evidence of the importance of water management within the wider Cobham Hall estate, along with other features such as the fish ponds at the Inn on the Lake (which were used to supply water to Thong until 1901) and water pumps at Thong (now removed) and at Cobham (Grade II Listed). The full value of the Engine House only appears to have become recognised as a result of work undertaken as the CTRL/HS1 proposals came forward in the 1990s, given the 1789 structure was only separately listed in 1995. It clearly derives significance from its setting close to Repton's Pond, which is also important in terms of the local history of the estate in that Lord Darnley's daughter, Lady Mary, committed suicide through drowning in it in July 1896 (syndicated report on inquest in The Aberdeen Journal, 7 July 1896).

4.46 The A2/M2 widening works also introduced a large (34m diameter street lit) roundabout as an additional urbanising feature at the junction of Brewer's Road/Halfpence Lane/A2 slip roads, that impacted directly on the Grade II* Registered Park and Garden. In landscape terms, the junction at this point also falls within the Kent Downs AONB.

4.47 Further to the east and closer to M2 junction 1, the progressive widening of the A2 and introduction of the CTRL/HS1, along with the construction of the A289 Wainscott Bypass, resulted in the demolition and relocation (twice) of the clubhouse to the Cobham and Rochester Golf Club from its original position to the north of the A2 to the south. These works also resulted in the demolition of the farmhouse at Park Pale farm, with the remainder of the farmyard now used by a haulage business.

4.48 Overall, the impact of these works of improvement and upgrading of the A2 trunk road and construction of the CTRL/HS1 have resulted in a far wider transport corridor that has increased severance between the Grade II* Registered Park and Garden and other heritage assets to the south and what was originally part of the park to the north, the settlement of Thong, and a formal entrance to the estate via Thong Lodge. With this has come increased noise, disturbance and light pollution over time, along with the visual intrusion of gantries and other associated highway paraphernalia.

4.49 Whilst there has been a cumulative environmental degradation over time which has been harmful to the way in which cultural heritage in this area is seen, understood and appreciated, the historic connection between the areas to the north and south of the A2 is still tangible and the requirement under national policy that applicants should look for opportunities for new development within Conservation Areas and within the setting of heritage assets to enhance or better reveal their significance applies.

5. Archaeology and gaps in evidence

5.1 The Council intends in most part to defer to the expertise of colleagues at KCC and Historic England in respect of archaeological interest. Much work has been done already along the A2 corridor as part of investigations undertaken in connection with the construction of the CTRL/HS1 and the A2/M2 widening (see <https://archaeologydataservice.ac.uk/archives/view/ctrl/#:~:text=The%20archaeological%20programme%20of%20works%20associated%20with%20the,have%20revealed%20an%20impressively%20rich%20array%20of%20information>).

5.2 Work undertaken as part of the Cobham Landscape Detectives Project and by the Shorne Woods Archaeological Group is also of interest when considering how the area has evolved over time (see in particular the Cobham Landscape Detectives booklet at https://www.webster-smalley.co.uk/static/archaeology/SWAG/CLD_booklet.pdf).

5.3 The Council has read and considered the submission documents relating to archaeology in making the following comments. The Council acknowledges the extensive work that has been undertaken to date and its quality. It is understood that discussions are still on-going with KCC on further archaeological work and on a detailed scheme of investigation, should a DCO be granted. At the time of writing, the Council's outstanding concerns are:

- No archaeological fieldwork appears to have been undertaken in the area immediately east of Thong Lane, to the north of the Cascades Leisure Centre (parcel 85 shown on Figure 2, page 449 of APP-365: 6.3 Environmental Statement appendices - Appendix 6.8 – Trial Trenching Reports (Volume D)). Associated plans show this to include several mainly iron age targets which the report states have not been investigated due to lack of access.

This remains a matter of concern given aerial photography and LiDAR imagery show that the earthworks were extensive in the 1940s and, although now largely ploughed out, are still evident in LiDAR imagery (see June 1940 Luftwaffe image at <https://www.alamy.com/stock-photo-gravesend-kent-4th-june-1939-30092011.html> and LiDAR imagery available at <https://houseprices.io/lab/lidar/mapat> . These earthworks were overlain by the A226 main road in the 1930s but continue northwards through the Council's allotments as two pronounced banks running north-south.

The applicant intends that this area will be used as a construction compound and (in part) for the disposal of spoil (see AS-049 : 6.3 Environmental Statement Appendices - Appendix 2.1 – Construction Supporting Information). It is assumed that as part of

these temporary works, soils would be stripped and the site recontoured as necessary for facilitate these works. Subsequently, land to be permanently acquired will be used to create Chalk Park, with the land to the north being returned to the Rochester Bridge Wardens Trust (see APP-490: 6.7 Outline Landscape and Ecology Management Plan). This is likely to result in the destruction of non-designated archaeology in this area.

The Council would ask therefore that full archaeological assessment takes place prior to the commencement of the main works to ascertain the value of any archaeological remains and whether they should be preserved in-situ. Because this assessment has not been undertaken at the pre-application stage, sufficient flexibility should be built into any DCO to allow the relocation or adjustment to the construction compound and to revisit the spoil disposal/earthwork/ environmental mitigation strategy in this area.

- There are several areas proposed in Gravesham and elsewhere south of the river for ancient woodland compensation planting or to deal with nitrogen deposition. These include:
 - Fenn Wood Site (5.8 ha) for nitrogen deposition.
 - Court Wood Site (27.7 ha) for nitrogen deposition.
 - Land north of Brummelhill Wood (8.5 ha) and Randall Wood (9.2 ha) for ancient woodland compensation.
 - Henhurst Hill Site (9.1 ha) for nitrogen deposition.
 - Land west of Jeskyns (10.7 ha) for ancient woodland compensation.
 - Land east of Brewers Wood (27 ha) for ancient woodland compensation.

The applicant also intends to undertake several other areas of woodland planting both along the A2/M2 corridor and away from the main project area, south of the river, to deal with nitrogen deposition at Bluebell Hill (72.2 ha) and at Burham (9.7 ha).

Apart from areas within the red line boundary, there would not appear to be much assessment of the archaeological potential of these areas. Given areas previously proposed for planting have been changed given the discovery of important archaeology to the north of the Shorne-lfield Road, it cannot be ruled out that similar circumstances may arise post any DCO being granted. As the areas involved are significant, it would be surprising if archaeology was not revealed as the scheme progresses.

Paragraphs 6.3.91 – 6.3.92 of document AS-044: 6.1 Environmental Statement Chapter 6 – Cultural Heritage states that the design and management of these sites will accord with the control plan documents, including the Outline Landscape and Ecology Management Plan (OLEMP) (APP-490), Design Principles (APP-516) and the Environmental Masterplan (APP-159 - 168). AS-044 then provides a desktop assessment of the impact of the proposals on the nitrogen deposition sites at 6.4.21; 6.4.103 -5; 6.6.67 -68; 6.6.89; 6.6.299; 6.6.301; and 6.6.305.

Where the desktop assessment recognises that there is archaeological interest, the applicant has said that total loss of significance through destruction is the worst case and that they will seek to avoid through design of planting schemes etc.

Given heritage is an irreplaceable resource, and subject to input from KCC Archaeology and Historic England, the Council would suggest there should be a commitment in respect of nitrogen deposition sites etc. that, where there has not been full assessment at the pre-application stage, this will take place in accordance with an agreed written scheme of investigation and that significant archaeology will be preserved in situ, where it is practicable to do so.

- The ExA's attention is also drawn to early mapping of the Thong area which appears to show two outlying cottages to the north and south of the existing settlement (one of which will fall within the area taken up by a construction compound) that may be worthy of examination. That to the south of Thong and west of Thong Lane appears to fall outside of the area that was subject to trial trenching.

5.4 None of the above appear to be insurmountable objections to the scheme and the Council considers that it should be possible to reach agreement on a detailed scheme of investigation (being led by KCC) and there being sufficient flexibility built into the scheme to ensure important archaeology is capable of being preserved in-situ.

6. Consideration of level of harm caused by the proposals and effectiveness of proposed mitigation.

6.1 Following the Department for Transport's own guidance in WebTAG Unit A3, the level of harm resulting from the proposal should be based on the **Most Adverse** category. Looking at the scheme as a whole, this would occur to the north of the River Thames where there would be part destruction of the Scheduled Orsett Crop Marks and the loss of Grade II Listed Buildings. This would comprise **Substantial Harm**, requiring the ExA to apply the appropriate policy test under NPSNN paragraph 5.133.

6.2 However, in terms of assessing level of harm, the applicant sub-divides the scheme into three areas for assessment purposes - i.e. south of the river; the tunnel; and north of the river. As noted above, the ES arrives at the conclusion that the maximum level of harm to any individual heritage asset south of the River Thames is only **Moderate Adverse**.

6.3 This is transposed into the Table 4.2 to Appendix D to the Combined Modelling and Appraisal Report (APP- 524) without following the guidance in WebTAG Unit A3 that the level of harm should be ratcheted upwards where there are multiple harms – i.e. to **Large Adverse** in this instance.

6.4 The Council disagrees with the applicant's assessment that the level of harm to Cultural Heritage to the south of the River should only be characterised as Moderate Adverse given cumulative impacts along the A2 corridor and in the area lying within the setting of the Thong Conservation Area.

6.5 Even if the proposal south of the river is not treated as constituting substantial harm, because it does not directly impact upon designated assets, the Council considers that the

combined effect of the proposals suggest it should be treated as at the upper end of less than substantial harm.

6.6 In terms of potential impacts south of the river, the ExA's attention is drawn to:

6.7 Construction Phase

- Whilst impacts will be time limited during the construction phase, it is inevitable that there will be adverse impacts due to the works themselves being undertaken (noise, dust, light, disturbance, and presence of construction compounds etc, in relation to enabling works and the main development) affecting the ability of the community to appreciate the significance of heritage assets either alone or in combination.
- Movement through the landscape will be disrupted due to the need to reconstruct both the Thong Lane and Brewers Road bridges, build the Thong Lane North green bridge, and the major works to the west of Thong. Public rights of way will also be closed for a prolonged period, restricting the ability of people to visit, enjoy and appreciate the historic environment. This will include the proposal to upgrade a public right of way to the south of the CTRL/HS1 between Brewers Road and Park Pale past Repton's Pond and the Grade II Listed Engine House. This may also reduce the ability of the public to access the area around the Grade II Listed Boundary Stone in this location, albeit it is recognised that this was relocated following damage during the construction of HS1.
- Whilst it is intended that HGV restrictions will be imposed on Thong Lane during the construction period and the main access to the Thong Lane south construction compound would be via the A2, light goods and cars would still be able to access it via Thong Lane from the north. It is unclear from the application papers whether any increase in traffic flows would be significant. However, with the closure of much of the local public right of way network in the vicinity during the construction period, any increase in traffic on Thong Lane could bring walkers in particular into increased conflict with vehicles. On this, it is assumed that the new right of way to the west of Thong may not be in place during at least part of the construction period and that walkers will have to use Thong Lane. Aside from any direct impact on the Conservation Area due to increases in traffic, this may deter people from entering the Conservation Area on foot etc. during the construction period and their ability to enjoy and appreciate the historic environment from the road. There is also potential for traffic to use Shorne Ifield Road as a rat-run during construction, which would impact on the Grade II Listed Baynards Cottage. However, impact on the latter is likely to be limited and this will be more of a road safety/amenity issue.
- Construction is also likely to result in the demolition of a non-designated heritage asset to the north of the Cascades Leisure Centre complex – one of the few surviving buildings related to RAF Gravesend. Whilst it is no longer intended to demolish the most northerly pair of the LCC 1920 'Homes for Heroes' dwellings within the Thong Lane Conservation Area, the drawings indicate that the access to these properties is likely to be affected. In the absence of detail, it is not possible determine whether this will impact on significance. It is also unclear whether the dispersal route for RAF Gravesend to the south of Riverview Park will be retained as part of the landscape

scheme as a non-designated heritage asset of local interest, where significance could be better revealed should the southern extent of the original runway here be delineated.

- It is intended that demolition and construction of the Brewers Road bridge will take up to 14 months before it is re-opened to the public. This will make access to Cobham Hall and Cobham Village difficult, involving either a diversion along the A2 or via Henhurst Road. Cobham Village as a Conservation Area derives significance from its function as a centre within the rural area, in particular from the successful operation of its public houses (The Leather Bottle [Grade II Listed], The Ship Inn [Grade II Listed] and The Darnley Arms). Any impact on the viability of these businesses which could result in either their loss or a reduction in income compromising the ability to maintain trading would be detrimental to the significance of the Conservation Area and/or Listed Buildings.
- Chalk Church is likely to be directly impacted on by the Southern Portal construction compound (visual/noise/light/disturbance) within its setting. Both this and construction traffic entering and leaving via the A226 may also deter users to a limited extent. Like all construction impacts, this would be temporary.
- There would also clearly be impacts on non-designated archaeology during the construction phase – some of which do not appear to have been investigated through trial trenching as part of the pre-application works (i.e. parcel 85, east of Thong Lane).

6.8 Operational Phase

- **A2 Corridor:** There will be an increased level of severance caused between the Grade II* Cobham Hall Registered Park and Garden to the south of the A2 and what was originally part of the park to the north, now largely contained within the Shorne Woods Country Park (see also below on Halfpence Lane junction etc).

Whilst the applicant has sought to reduce impact by minimising the width of the highway corridor, this will become far harsher and more urban in character because of the loss of the vegetated central reservation between the Halfpence Lane junction and Park Pale. As the road approaches Thong Lane to the west, the number of lanes and width of the corridor increase significantly, further increasing perceptions of severance. It is noted that the applicant's landscape assessment comes to much the same conclusion.

Embedded mitigation in the form of landscaping and the greening of Thong Lane and Brewers Road bridges will provide partial mitigation but a level of harm will still occur due to it being more difficult to perceive the relationship between the two areas of woodland that once formed part of the parkland (including woodland setting) of Cobham Hall.

Because the track from Thong Lodge to the entrance to the formal park and gardens at Shepherd's Gate has long been lost, the physical changes brought about by the

changes here would not result in any increased level of harm. However, the potential to improve interpretation of the original layout to the estate should be explored as part of a package of compensation.

On this, the Council does not know the full extent of the applicant's land acquisition in the vicinity of Thong Lodge and it may be possible to reinstate the original access to and through the woods at this point. This could also provide an alternative route for walkers and cyclists where the existing route alongside the A2 northern carriageway is to be lost.

No comments are provided here on signage and lighting on the A2 corridor at this point, which will be required to meet highway standards for road safety reasons. These should however be designed to minimise impact both during hours of daylight and at night-time. This will also need to be addressed for both landscape and nature conservation reasons given the sensitivity of the area.

- **Halfpence Lane junction, local feeder road and proposed improvements to rights of way at Repton's Pond:** The current junction arrangement here comprises a roundabout south of the A2, serving the A2 on and off slips, Brewers Road, Halfpence Lane and the access road running parallel to the A2 leading to the Thong Lane over-bridge. The roundabout lies within both the Grade II* Registered Park and Garden and the Kent Downs AONB and is an extremely intrusive, lit urban feature.

This arrangement was put in place as part of the A2/M2 widening works under the Channel Tunnel Rail Link Act 1996. The Shepherd's Gate and Brewer's Gate formal entrance to Cobham Hall and the Park were removed previously. A two-way link (Darnley Lodge Lane) will be provided for local traffic as part of the scheme, running between the Halfpence Lane junction westward. As part of the scheme, the remaining woodland between the existing A2 and local link road will be removed, decreasing screening whilst making more urban the CTRL/HS1/A2 corridor as it approaches the proposed A122 link road junction.

This will further exacerbate the impression of severance between the Grade II* Registered Park and Garden to the south and the woodland, that once formed part of the park, to the north.

The design and mitigation of this part of the scheme under the previous A2/M2 widening was always a compromise and has not been successful, particularly because of the need to include a vehicle containment bund at the top of the CTRL/HS1 cutting. This also led to an increase in traffic using the feeder road between Halfpence Lane and Thong Lane (Darnley Lodge Lane), which was originally intended to be a replacement narrow country lane with passing places. Because of this and the potential for vehicular conflict etc. the feeder road was marginally widened by hard surfacing the roadside margin.

Given the changes to the A2 on-off arrangements at the Halfpence Lane junction, it is suggested that the design of the roundabout junction with Brewers Road be revisited to see if it can be improved to reduce existing impacts on the Grade II* Registered

Park and Garden and Kent Downs AONB at this point. This would at least, in part, assist in compensating for the additional harm caused by the increased severance effect of the A2 works.

The potential impact of the proposed improvements to the right of way past Repton's Pond and the Grade II Listed Engine House has already been mentioned earlier. This will require very careful consideration in design terms to minimise any adverse impact through development within the setting of the designated heritage asset. Landscape and nature conservation considerations are also likely to apply given the sensitivity of the location. This was an issue when the Council was considering the construction of the CTRL/HS1 at this point and the design solution has not proved to be particularly successful.

These comments should be read in conjunction with those made by the Council on changes to the Public Rights of Way network.

- **A2 junction and A122 and impact on Thong:** The Council has had issues with being able to understand the full implications of the junction design given its complexity and the technical nature of the application drawings. At the Statutory Consultation stage, in 2018, the Council asked that consideration be given to producing a computer-generated terrain model into which the proposals could be inputted, allowing people to view them from different points in the surrounding area as at opening and once the landscaping had become established.

This did not seem to be an unreasonable request given the overall scale and cost of the project. Unfortunately, the applicant did not respond positively to this request, and it is considered that the visualisations, photomontages, and fly-through video are a poor substitute.

The Council therefore finds it difficult to assess the impact of the junction itself on the heritage significance of the Thong Conservation Area and other heritage assets in the immediate vicinity. There will however be a negative impact given the insertion of a large, engineered structure into what is currently a largely agrarian landscape, save for the presence of the existing dual carriageway running east-west at distance of around 700 metres from the public footpath leading out of the settlement to the west (NS167).

The A122 link road will pass by Thong Conservation Area to the west, skirting round to pass under the Thong Lane green bridge in cutting immediately south of Riverview Park. Beyond this, the impact on heritage interest is likely to be largely confined to archaeology. It is between the A2 and the Thong Lane green bridge that impact on heritage interest is likely to be the most severe.

By cutting through the farmland to the west of the Conservation Area, the road will effectively sever a large part of what was formerly the Borough of Thong and Cheney's Farm from the settlement, directly impacting on its setting and the significance it derives from it.

An associated impact here is that from the western edge of Thong, particularly when leaving it along footpath NS167, views over this landscape will be significantly foreshortened by the earthworks associated with the cutting and landscape planting. This is not simply a landscape impact but one which affects the way in which the historic settlement is perceived.

Footpath NS167 will also be severed by the cutting, which as noted above reflects the alignment of the old road from Gravesend to Thong, which would also have served as a main access between Lord Darnley's landholdings in Gravesend on the River Thames (later to become the Milton New Town development based around Harmer Street) and the Cobham Hall estate.

In this respect, Thong will no longer be appreciated in its wider historic setting, which potentially goes back to the C11 – 12th (i.e. the 'so-called' Borough of Thong) and was later reflected in Cheney's Farm as an agricultural unit, which was part of a wider managed or controlled landscape forming part of the Cobham Hall Estate.

Other impacts on the land forming part of the setting of the Conservation Area to the west of Thong are likely to be greater light intrusion (although it is accepted that this may diminish over time, as landscaping matures) and noise.

Notwithstanding the creation of a false cutting and the A122 descending into cutting as it progresses towards Thong Lane, the application appears to accept that there will be an increase in noise levels in the area immediately to the west of the Conservation Area. Once again, this mirrors the conclusions of the applicant's own landscape assessment.

Whilst there would be benefits as a result of the bunding to the south, in the area immediately west of the Conservation Area the modelling predicts between a moderate up to a major adverse change in noise levels [see APP – 315: 6.2 Environmental Statement Figures: Figure 12.7 – Opening Year Noise Change Contour (DSOY minus DMOY) and APP-316: 6.2 Environmental Statement Figures: Figure 12.8 – Future Year Noise Change Contour (DSFY minus DMOY)].

As an aside, there would also appear to be increases in noise levels around Jeskyns Court and (in future years) the road leading from Cuxton to the Cobham Village Conservation Area.

As far as the Council understands, all of the above modelled noise predictions derive from the Lower Thames Area Model (LTAM) outputs. These are based on increased flows in line with the National Trip End Model/TEMPRO, with local adjustments based on the WebTAG Unit M4 derived uncertainty log.

As such, they represent traffic flows under normal working conditions and not when an event occurs on the Strategic Road Network – something that the Lower Thames Crossing is intended (in part) to address. Because no information has been provided on loadings or where traffic may divert, we have no idea what the environmental impact would be under these circumstances.

The applicant effectively asserts that the impact of the proposals on the Thong Conservation Area would be mitigated by the proposed earthworks and the fact that the land to the west would remain 'open'.

The Council disagrees with this because whilst the land would be effectively 'open' it would have lost its agricultural character. It is from this and its scale (reflecting the Borough of Thong and the extent of Cheney's Farm) and not just the openness of the residual area that the settlement derives its heritage significance.

The Council therefore remains unconvinced by the approach taken to landscape mitigation in the area immediately west of Thong up to the A122 alignment. In the absence of a detailed scheme that can be agreed in advance of a DCO being granted, it cannot confirm that it agrees with the red line boundary chosen by the applicant – more land may be needed to achieve a satisfactory design solution that best preserves the heritage significance of the settlement.

The Council suggests that revisiting the above in advance of determination accords with the policy principles set out in the NPSNN at paragraph 5.130 in that, in determining the application, the Secretary of State should consider the desirability of sustaining and, where appropriate, enhancing the significance of heritage assets and the contribution made to significance by their settings.

Beyond this, it will be important to ensure that there is an appropriate and enforceable scheme of aftercare and management put in place for this area to ensure that a subsequent environmental deterioration does not occur, detrimental to the heritage significance of the Conservation Area.

- **Area to the east of Thong to be used as 'mosaic habitat:** The scheme as currently proposed includes converting the paddocks/fields to the east of the Thong Conservation Area to 'mosaic habitat' as part of the wider package of biodiversity mitigation.

The Council has discussed this aspect of the proposal with the applicant, whereby Officers were directed to the content of document APP- 490 6.7 Outline Landscape and Ecology Management Plan to understand the nature of 'mosaic habitat' and what is proposed here.

As will have been noted from the analysis set out above, this area has historically been an area occupied by orchards, arable fields and paddocks. Whilst its use and appearance may have changed over time, it has always been in agricultural type uses etc.

Because of this and its intimate connection with the settlement of Thong, it contributes towards the heritage significance of the Conservation Area and provides an important transition between the historic settlement of Thong and the woods/site of Randall Manor set on higher ground to the east. Once again, it is not simply the 'openness' of this area that makes such a contribution rather than its actual use and function relative to the settlement.

The applicant's proposals for this area are contained within section 5.9 of APP-490, with a detailed description of the form that 'mosaic habitat' would take and its creation at 8.22. The text of section 8.22 is reproduced in Appendix A5 for ease of reference.

From this, it would appear that the form of intervention is quite radical, effectively seeking to create a brownfield site capable of accommodating invertebrates and translocated amphibians.

The argument that this could be designed in such a way as to preserve the character of the area and the contribution it makes to the significance of the Thong Conservation Area as an historic settlement is difficult to accept, particularly in the absence of a detailed scheme demonstrating that this is feasible.

The Council remains concerned therefore that the proposed mitigation in this location is potentially harmful in heritage terms and cannot support this part of the proposals.

In reaching this conclusion, the Council has had regard to statutory duties imposed by the Listed Building and Conservation Areas Act 1990 and policy as set out within the NPSNN.

In terms of the former, section 72 only applies to development of land and buildings in a Conservation Area, not within its setting. Land to the east of Thong is not within the Conservation Area itself, although it is noted that 37 – 39 Thong Lane are within the Conservation Area and red line boundary.

However, section 66 however would apply here in that special regard must be given to the desirability of preserving the special historic interest of White Horse Cottage (former public house, the Yorkshire Grey) as a Grade II Listed Building, including the contribution to significance made by its setting.

AS-044 - LB22 Additional Submission - 6.1 Environmental Statement - Chapter 6 - Cultural Heritage - (Clean) (Version 2) confirms that this (LB22) should be treated as of High Value and (at paragraph 6.4.154) that its rural setting, which includes land within the Order Limits to the east, south and west, contributes to its value. At 6.6.22, the construction impacts on this asset are considered by the applicant to be moderate adverse and significant. At 6.6.268, the operational impact of the project is still considered to be permanently moderate adverse and significant.

Under the 1990 Act, special regard must be given to this significant impact and, in terms of policy, great weight should be accorded its conservation (along with the significance of the Conservation Area within which it lies) in the decision making process (NPSNN paragraph 5.131). Similar considerations will apply to the Thong Conservation Area, which the ES treats as of Moderate Value, given impacts on its setting and the contribution this makes towards its heritage significance.

Looking at both statutory duties and planning policy, whilst great weight has to be accorded heritage conservation, the same does not appear to apply when considering ecological mitigation. Presumably, this is because the historic environment is an irreplaceable resource, that should be conserved through the planning process in a manner appropriate to its significance.

Whilst it is understood that ecological mitigation will be required, no adequate justification appears to have been given as to why the area of 'mosaic habitat' has to be created in this location rather than elsewhere, when the most appropriate design solution that preserves or enhances the heritage interest of the Conservation Area is to maintain this area broadly in its current form.

In the absence of a detailed design demonstrating otherwise, it is contended that this aspect of the proposal is therefore contrary to national policy and should be revisited.

- **Other impacts on Thong and other heritage assets during the operational phase:** The Council has had difficulty in finding within the application papers an assessment of predicted highway impacts on the local road network during the operational phase. Whilst it has been provided with outputs from the Lower Thames Area Model at different stages, these are not available to the public and do not form part of the application.

In terms of Cultural Heritage impacts, it is important to be able to understand whether flows through the nearby Conservation Areas are likely to increase at opening year and in future years because of the proposals.

The impact on the Thong Conservation Area is of particular concern given the changes proposed to the highway network in the vicinity and the potential for rat-running to occur into and out of Riverview Park to the A2 etc.

A careful consideration of this is required because any significant increase in traffic flows (including to the proposed car park at the southern end of Thong Lane) would make it more difficult and dangerous for walkers and cyclists to use Thong Lane itself, where the heritage significance of the Conservation Area etc. is best appreciated.

Whilst the applicant is proposing an alternative walking and cycling route in the residual land to the west of Thong, this would not allow walkers and cyclists to appreciate and understand the heritage significance of the Conservation Area to the best advantage. Any detrimental impact therefore needs to be addressed on heritage grounds, aside from any other highway safety or amenity considerations.

The Council therefore asks that a report and analysis be provided by the applicant on this aspect, with proposals as to how any adverse impact will be addressed. Given that any such assessment will be based on highway modelling and that actual impacts may differ, the Council would also ask that the situation be monitored on the ground for a period after opening with a requirement that steps be taken to introduce an acceptable form of traffic management should a problem be identified.

As noted above, noise modelling appears to indicate a potential increase along the route between Cuxton and Cobham in the future year scenario. It is assumed that this is also due to a predicted increase in traffic volumes using this route. In addition, there is also the potential for this route to be used as a rat-run should there be an incident on the strategic road network, with this being exacerbated by the introduction of the Lower Thames Crossing.

Increases in traffic in Cobham Village would also impact on its heritage significance, given it too is best appreciated from the road that runs through the Conservation Area. Additional traffic may also have other impacts on heritage interest as it may result in increases in accidents and collisions, including the risk of damage to historic buildings.

Once again, given the application appears to contain little information of traffic impacts on the local road network, this aspect also needs to be considered and addressed.

7. Suggested amendments or other measures to avoid, mitigate or compensate for harm to Cultural Heritage.

7.1 LTC's position is that it is effectively mitigating harm to heritage interest through landscape and other works, whilst also providing a range of funding through its Designated Funding initiative.

7.2 GBC's position is that the LTC heritage assessment underestimates harm to heritage significance south of the river because it fails to properly consider cumulative impacts on a range of heritage assets and an area of historic landscape that formed a key part of the Cobham Hall Estate.

7.3 Whilst it is recognised that the estate is not a designated heritage asset (although the Grade II* Registered Park and Garden is) it does provide the context and setting for other inter-related assets through which their significance stands to be appreciated, enjoyed and understood.

7.4 The works on the A2 corridor and the introduction of the junction with the A122 are significant interventions that exacerbate existing harm, further severing those parts of the former estate north and south of the A2.

7.5 The A122 will also sever and take out of agricultural use the area to the west of Thong, whilst converting paddocks etc. to the east of Thong to compensatory mosaic habitat. Both will have an impact on the heritage significance of Thong, not merely as an historic rural settlement and Conservation Area but also as the western gateway to the Cobham Hall Estate.

7.6 Because the proposals do not result in total loss of significance, the Council considers nonetheless that the level of harm should be considered at the upper end of less than substantial harm in policy terms. The mitigation as it currently stands is insufficient to address this level of harm and a compensatory package is required to deal with this outstanding issue.

7.7 The Council has thought through what amendments could be considered to the scheme to reduce harmful impacts to heritage significance and, where mitigation is insufficient, what compensatory measures could be taken to offset these. In terms of the latter, consideration has been given to the statutory tests for s.106 agreements set out in Regulation 122 of the Community Infrastructure Levy Regulations 2010 (as amended), that

such obligations may only constitute a reason for granting planning permission where they are:

- necessary to make the development acceptable in planning terms;
- directly related to the development; and
- fairly and reasonably related in scale and kind to the development.

7.8 The Council would wish to discuss and agree possible components of a mitigation/compensation package, taken from the list below. It is understood that a number of these may already be under discussion with other parties.

Overall project

- All archaeological reports and heritage studies should be published and made publicly available online.
- LTC should commit to commissioning a book on the heritage + archaeology of the Lower Thames Crossing and film documenting its construction. Recording construction is equally important as the past because the A122 will itself become part of the history of the area and there needs to be an historical record.
- There needs to be a clear understanding of what happens to the physical archaeological archive arising from the project, in terms of on-going storage, curation and display. The Council wishes to see important finds displayed locally alongside appropriate interpretation material designed to illustrate how the landscape and interaction with society has changed the character of the area over time.

Changes/further detail the Council wishes to see considered south of the River Thames

- For the reasons set out above, the Council opposes the design approach to the east of Thong, where it is proposed to create mosaic habitat. This is an important part of the setting of the historic settlement, and it should remain in a mixture of paddock/agricultural type uses. Historically this would have been a mixture of arable farmland and orchard. Consideration could therefore be given to a mixture of allotments/community orchard/paddocks. The Gravesham Green Blue Infrastructure Study (2021) identifies a need for allotments in the immediate area and a well-designed scheme could reflect the former London County Council/Kent County Council WWI Homes for Heroes smallholding scheme. Such a mix could also be designed to make the area more bio-diverse.
- The Council has concerns in respect of the mitigation proposed to the west of Thong up to the alignment of the A122 and in the absence of a more detailed scheme cannot confirm agreement on the red line boundary. There is an area outside the red line boundary that once formed part of the WWI Homes for Heroes scheme that appears to be largely unused, and it is unclear why this has been omitted when potentially mitigation could benefit from its inclusion to ensure the setting of the Conservation Area is further enhanced. In the absence of this, there is a risk that this becomes space left over after planning.

- The Council has no objection in principle to the creation of an area of parkland to the south of Riverview Park, north of the A122 and supports the outline design concept. The tarmac dispersal route has heritage significance as part of RAF Gravesend and consideration should be given to its retention. The drawings also show the potential for the former airstrip to be delineated by closer/more frequent mowing. Although this is supported, it would also be useful if the edges of the former grass runway are marked by standing stones or other appropriate markers. There may also be an opportunity for public art here to act as a focal point within the space and this needs to be agreed.
- The scheme as currently proposed leaves the Halfpence Lane roundabout in place. This was a compromise solution at the time of the A2/M2 widening scheme and lies within the boundary of the Grade II* Listed Cobham Hall Registered Park and Garden. It also lies within the boundary of the Kent Downs AONB. The Council asks if it remains necessary to have a junction of this form given other changes being made. Changing this junction to reduce harm to heritage and landscape interest would be a benefit of the scheme and also serve to mitigate to some extent the physical harm caused by the proposed works on the A2 corridor.
- The proposal involves the building of a new footpath/cycleway to connect Brewers Road with the Park Pale golf club access, south of HS1 and the main road. This will pass through a very narrow gap adjacent to Repton's Ponds and the Grade II Listed Engine House, which has always been considered sensitive to interventions – see information above of the building of the dual carriageway in the 1960s and subsequent changes brought about by the construction of the High Speed railway. From the plans submitted to date it is not possible to determine what the impact of this part of the proposal will be. A more detailed scheme should be prepared for consideration prior to the granting of a DCO to ensure that this component is acceptable in principle and capable of being dealt with post determination. As it currently stands, the Council cannot agree to this part of the scheme.

Other issues south of the River Thames

- It is proposed that Henhurst Road bridge will be closed for reconstruction for a prolonged period. This has the potential to impact adversely upon the trading of businesses to the south of the A2 (in particular) including Cobham Hall and the public houses in Cobham. The impact here is not simply economic given that their continued health and functioning contributes towards the heritage significance of the area. A package of compensation therefore needs to be agreed should their business suffer because of the works.
- At the current time, it is not possible to determine precisely what the impact of the works will be on Thong during either the construction or operational phases. Construction impacts are likely to be severe given proximity and the Council would expect traffic generated on Thong Lane to be monitored and managed in accordance with an agreed scheme. During the operational phase, it is possible that traffic on Thong Lane will increase because it could become a rat-run between the urban area and the A2 feeder road to the south. This will need to be covered by some form of

agreement whereby National Highways will continue to monitor (in combination with KCC and GBC) with a requirement to mitigate through traffic calming and other works of improvement to the Conservation Area (scope to be agreed) should a trigger point be reached.

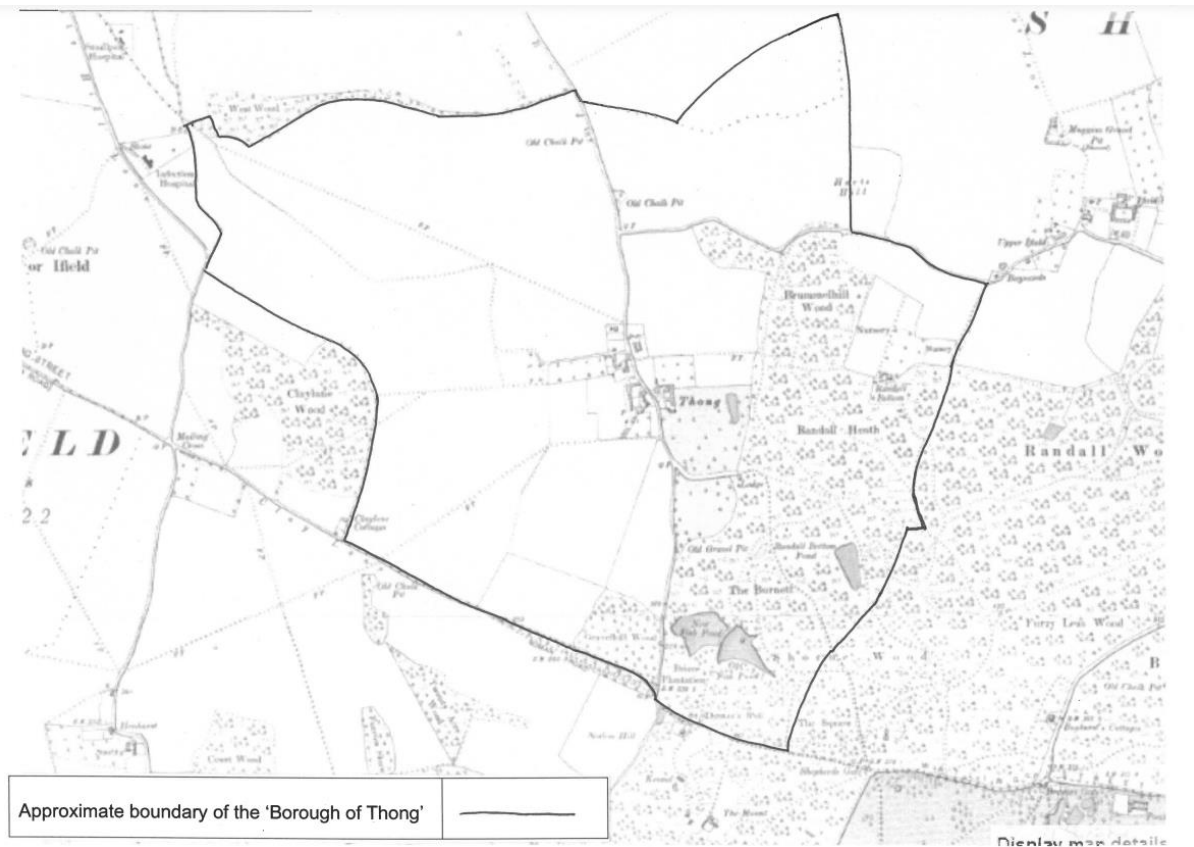
- It is understood that one of Kent County Council's 'asks' will be the funding of a Community Archaeologist to work out of Shorne Woods Country Park, effectively as a continuation of the good work that has been undertaken previously – including the Cobham Landscape Detectives project. The Council supports this but is concerned that the wider heritage context of LTC south of the river needs to be better understood.

As noted above, the LTC works run through what was once part of the historic Cobham Hall Estate adversely impacting on heritage significance of several associated assets and their landscape context. This will worsen the current situation and make it more difficult for the public to interpret, enjoy and understand that significance.

The Council therefore asks that a sum of money (to be agreed) be provided to research and publish a document on the history of the Cobham Hall Estate, how it evolved, was worked, and declined – including role of the surrounding villages in supporting the estates and the post WWI development of the Homes for Heroes scheme at Thong/Chalk.

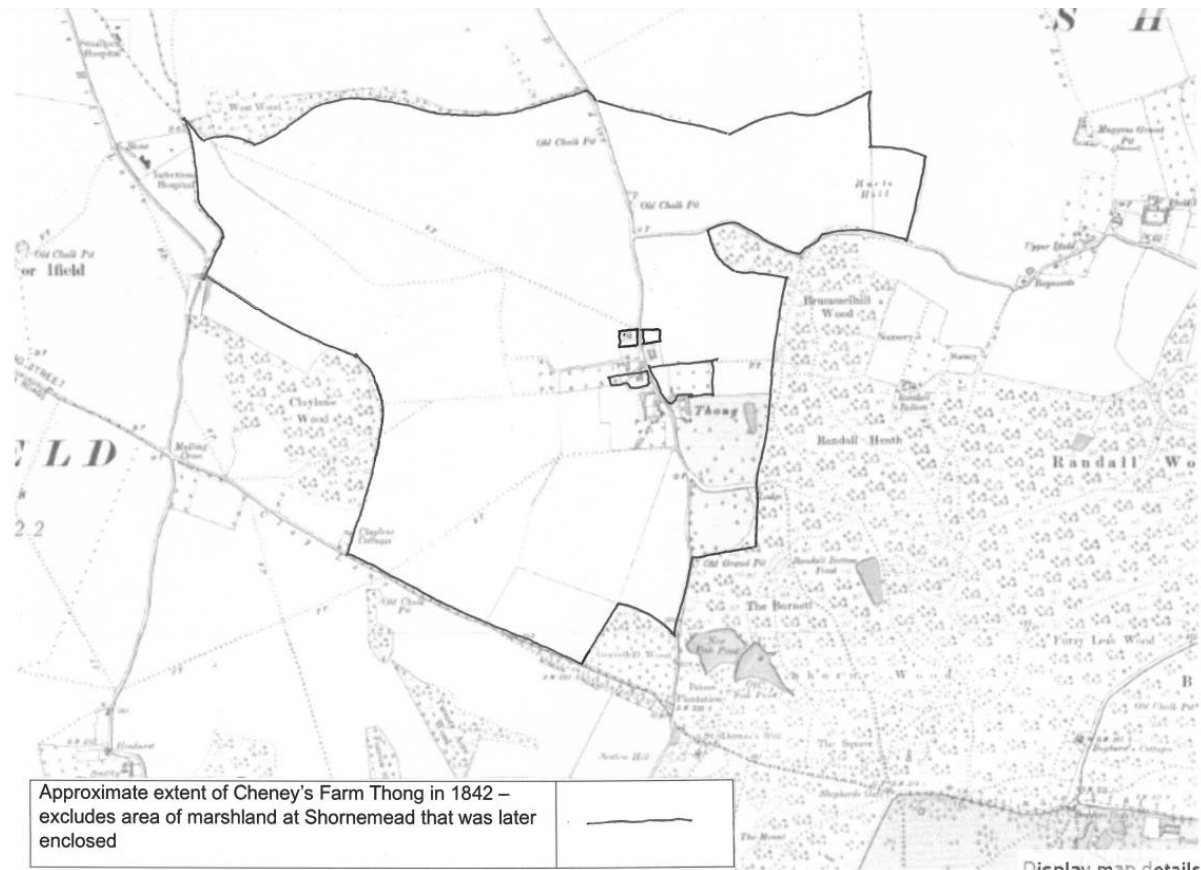
This would also provide a wider heritage context for the proposed 'Super National Nature Reserve' being led by the Kent Downs AONB Unit etc and assist in tying together what is going on within the AONB with the green infrastructure being provided as part of the project itself. Properly conceived, developed, and handled here, the legacy of LTC could be far greater than the sum of its parts and represent a more holistic approach that is sensitive to heritage, ecology, landscape, and a need to improve public access.

Figure 2: Approximate extent of the 'Borough of Thong' in 1822



Base plan 1907 Ordnance Survey 6 inch to one mile. Reproduced with the permission of the National Library of Scotland. Boundary information derived from Medway Archives document CCRC P48 Map of Thong Borough 1822

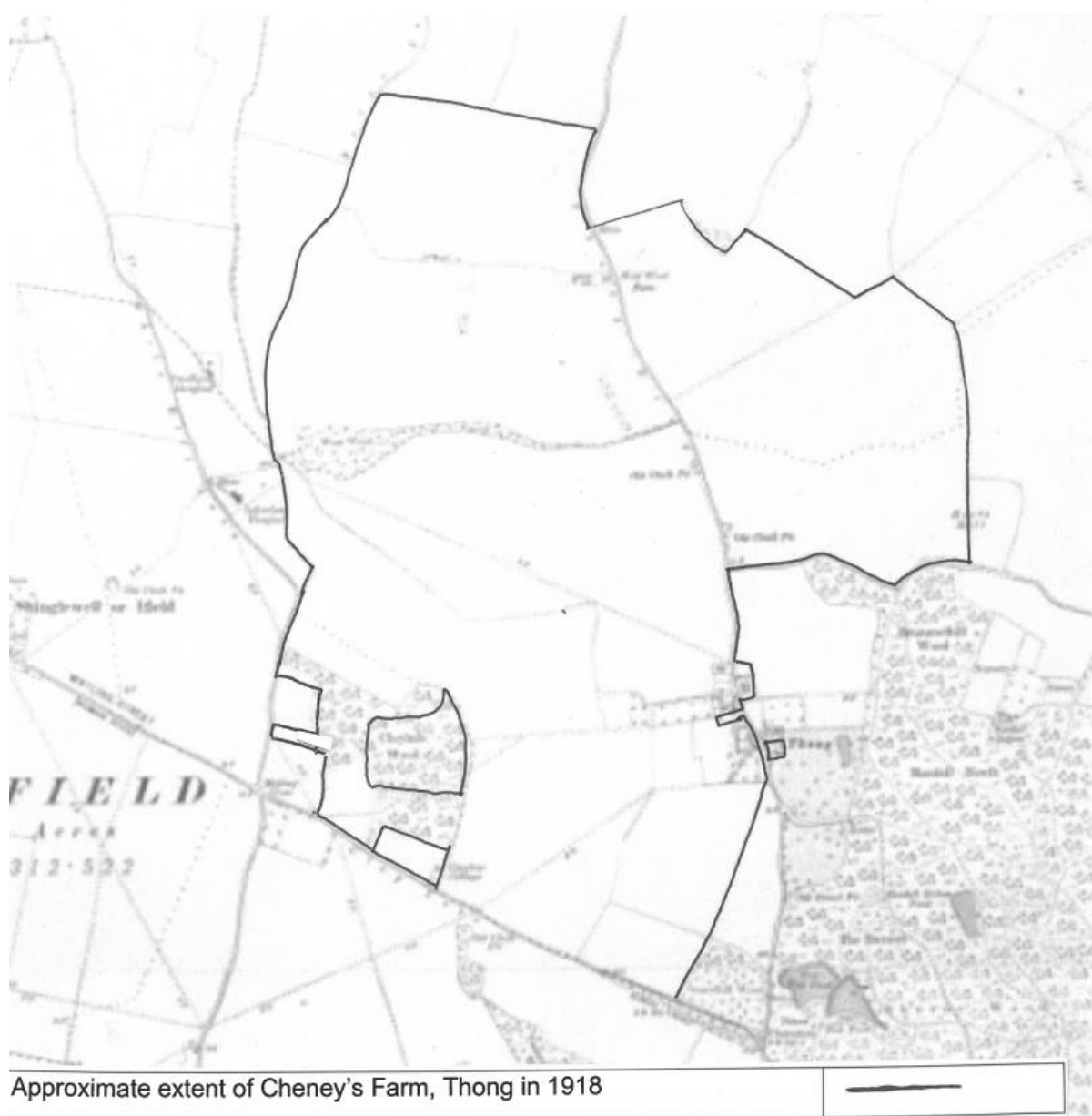
Figure 3: Approximate extent of Cheney's Farm, Thong in 1842



Base plan 1907 Ordnance Survey 6 inch to one mile. Reproduced with the permission of the National Library of Scotland. Boundary information derived from Tithe Map and Apportionment for Shorne Parish. Tithe Map reference National Archives, Kew IR/30/17/329 and Kent Archives, Maidstone CTR 336B. Transcript of Tithe Apportionment available online by Kent Archaeological Society at <https://www.kentarchaeology.org.uk/research/titheatoz>.

Note that the extent of Cheney's Farm at this time effectively represented the farmed portion of the area known as the 'Borough of Thong', with the woodland to the east held in hand by Lord Darnley and his family as part of the parkland surrounding Cobham Hall. Cheney's Farm included 'Monkin Barn' as part of the holding, the tithe barn that once stood at the junction of Thong Lane with the old road from Gravesend, which crossed the fields to the west.

Figure 4: Approximate extent of Cheney's Farm, Thong on disposal to the London County Council in 1918.



Base plan 1907 Ordnance Survey 6 inch to one mile. Reproduced with the permission of the National Library of Scotland. Boundary information derived from 1918 Sales Particulars for parts of the Cobham Hall estate at Kent Archives reference U55 SP626. Note that the area east of Thong did not form part of Cheney's Farm at this time but that IR124 1910 Land Tax mapping at the National Archives indicates that it was still part of the Darnley Estate and part of the farm in 1910. Parts of Claylane Wood owned by the Darnley's were included in the farm. In the 1840s, Claylane Wood formed part of Cobham Parish, north of Watling Street/Clay Lane. Those parts of Cheney's Farm to the north of the parish boundary were subsumed into Gravesend Airport in the 1930s, although parts taken to expand RAF Gravesend during WWII were later returned to agriculture.

Figure 6: Extract from original OS survey of the area around Thong in the 1790s showing field pattern



Image © and reproduced by courtesy of the British Library Board, extract of original OS survey dated 1797. Full plan available on-line at <https://britishlibrary.oldmapsonline.org/maps/a0742617-49b3-5ac3-b191-4c17309b637e/view>.

Note that this would have been at the time the Darnley family acquired further land in this area. The field systems at a higher level within Randall Wood appear to have been abandoned and replaced with woodland as part of Cobham Park. Randall Hall was also demolished to make way for Thong Lodge as a formal entrance into the outer park and to provide a driveway through the woods towards Shepherd's Gate and/or Brewers Gate. The woods here were formally planted with rhododendron. Note the old road from Gravesend passing through the fields to the west of Thong, this now forming part of the public rights of way network that would be severed by Lower Thames Crossing.

Figure 7: Plan of Thong Farm (now occupied by Cheney's Cottages, Thong Lane) in 1788



Image © and reproduced by courtesy of the British Library Board, Egerton MS 3021 U: 1778.

Linear form of the hamlet of Thong is clear, with the old road from Gravesend joining Thong Lane opposite the site of what are now Cheney's Cottages. Note location of cottage immediately south of Shorne Ifield Road, which has since disappeared. Field to rear of what is now Cheney's Cottages occupied by an orchard. The majority of buildings shown on this plan would have been redeveloped, with the exception of the Grade II listed Whitehorse Cottages – former public house. The redevelopment of the hamlet appears to have been part of Lord Darnley's aspirations to create a gateway entrance to his Cobham Hall estate, as part of a wider managed landscape.

Figure 8: Plan of the hamlet of Thong in 1822 and its relationship with the arable land and woodland, set at a higher level, to the east



Image © and reproduced courtesy of the Medway Archives Centre, plan reference CCrc P48, extract of a plan of the Borough of Thong 1822. Most of the historic built form (including Cheney's Farm and Thong House) are present by this time. These were occupied by one of Lord Darnley's main tenants and his land agent/estate manager. Access to Cobham Hall would have been via the driveway past Thong Lodge.

Figure 9: John Repton's design for Thong Lodge built in the 1790s – image taken from John Claudius Loudon's *The Landscape Gardening and Landscape Architecture of the Late Humphry Repton Esq* (1839)



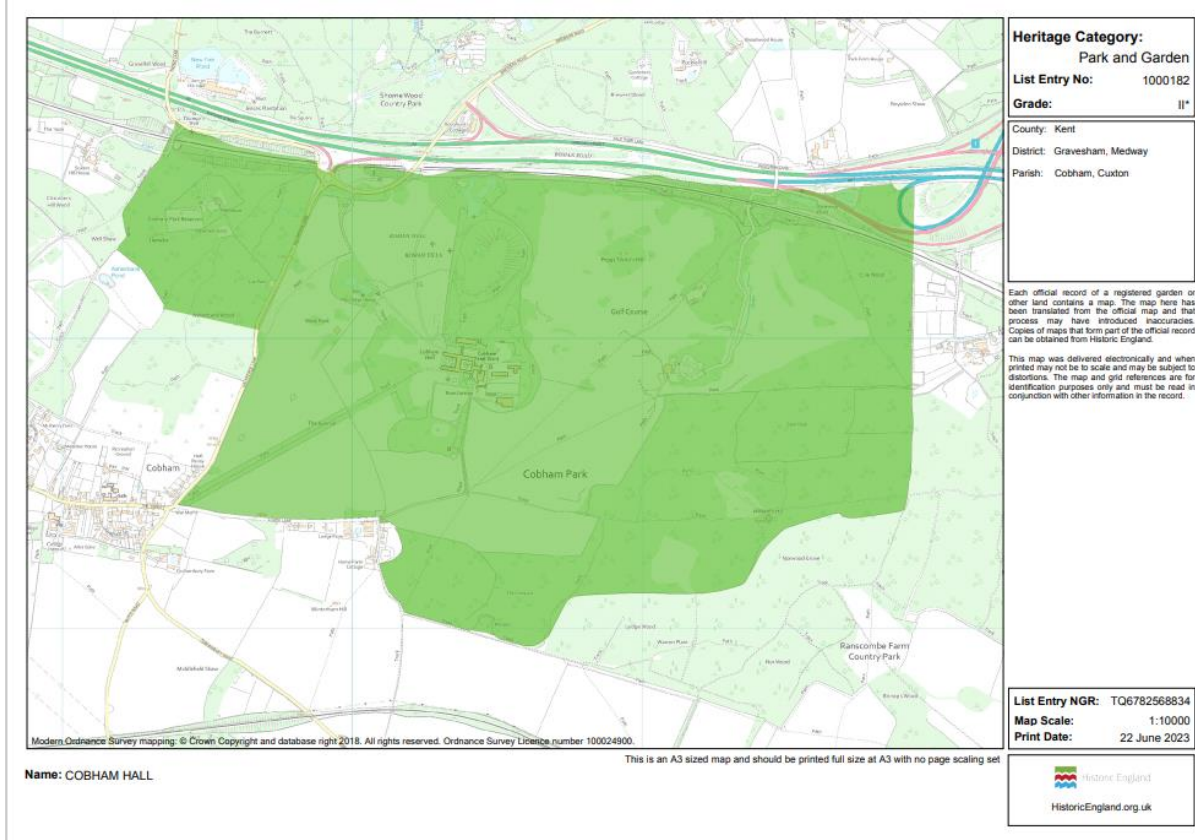
e-book available on line at

<https://archive.org/details/landscapegardeni00rept/page/564/mode/2up>



Photo of Thong Lodge in 1910 – Source: Discover Gravesham website.

Figure 10: Extent of the Grade II* designated Cobham Hall, Registered Park and Garden.



Designated 1 May 1986. For listing description see -

<https://historicengland.org.uk/listing/the-list/list-entry/1000182?section=official-list-entry>

Figure 12: Plans of the London County Council 'Homes for Heroes' smallholding scheme at Thong in 1920.



Image © and reproduced courtesy of the London Metropolitan Archive, reference LCC/C)/CON/03/7250 – London County Council: Comptroller of the Council's department: Contract drawings: Shorne Estate: Erection of 23 cottages, June 1920.

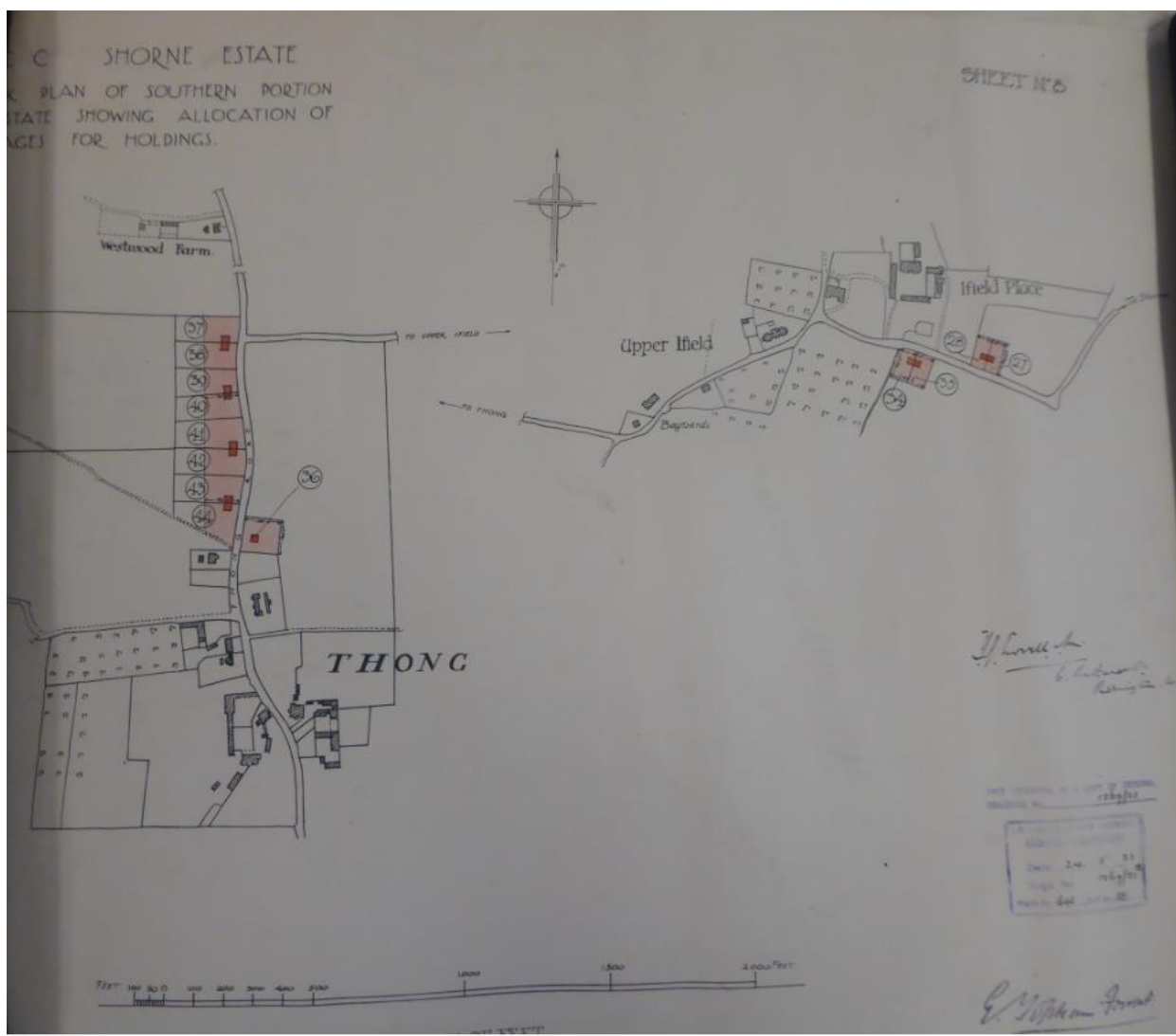


Image © and reproduced courtesy of the London Metropolitan Archive, reference LCC/C)/CON/03/7250 – London County Council: Comptroller of the Council's department: Contract drawings: Shorne Estate: Erection of 23 cottages, June 1920.

The plans appear to have been signed by George Topham Forrest, the Chief Architect to the London County Council at the time, who was also responsible for the development of the Becontree Estate in East London.

The Shorne Estate was aimed at the rural re-settlement of returning servicemen. The London Picture Archive has photographs of the finished scheme at <https://www.londonpicturearchive.org.uk/quick-search?q=Shorne+Estate&WINID=1687425869740&key=SXsiUCI6eyJ2YWx1ZSI6IINob3JuZSBFc3RhdGUiLCJvcGVyYXRvcil6MSwiZnV6enlQcmVmaXhMZW5ndGgiOjMsImZ1enp5TWluU2ltaWxhcml0eSI6MC43NSwibWF4U3VnZ2VzdGlbnMiOjMsImFsd2F5c1N1Z2dlc3QiOm51bGx9LCJGJljoizXIKMElqcGJNVjE5In0&pg=1>

Figure 13: Altered Tithe Map for the Thong Smallholdings dated 1926, showing organisation of the holdings when taken over by Kent County Council.

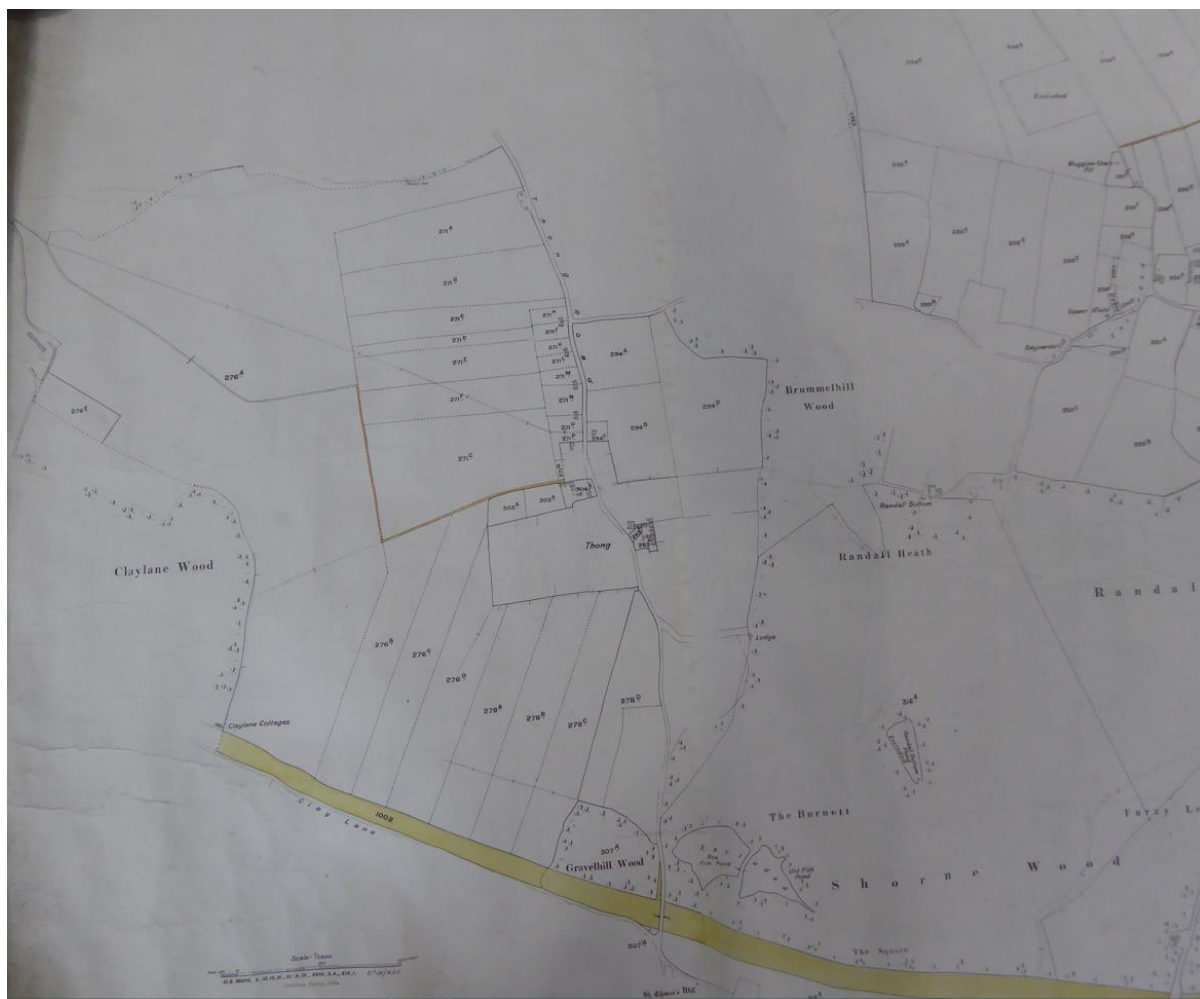


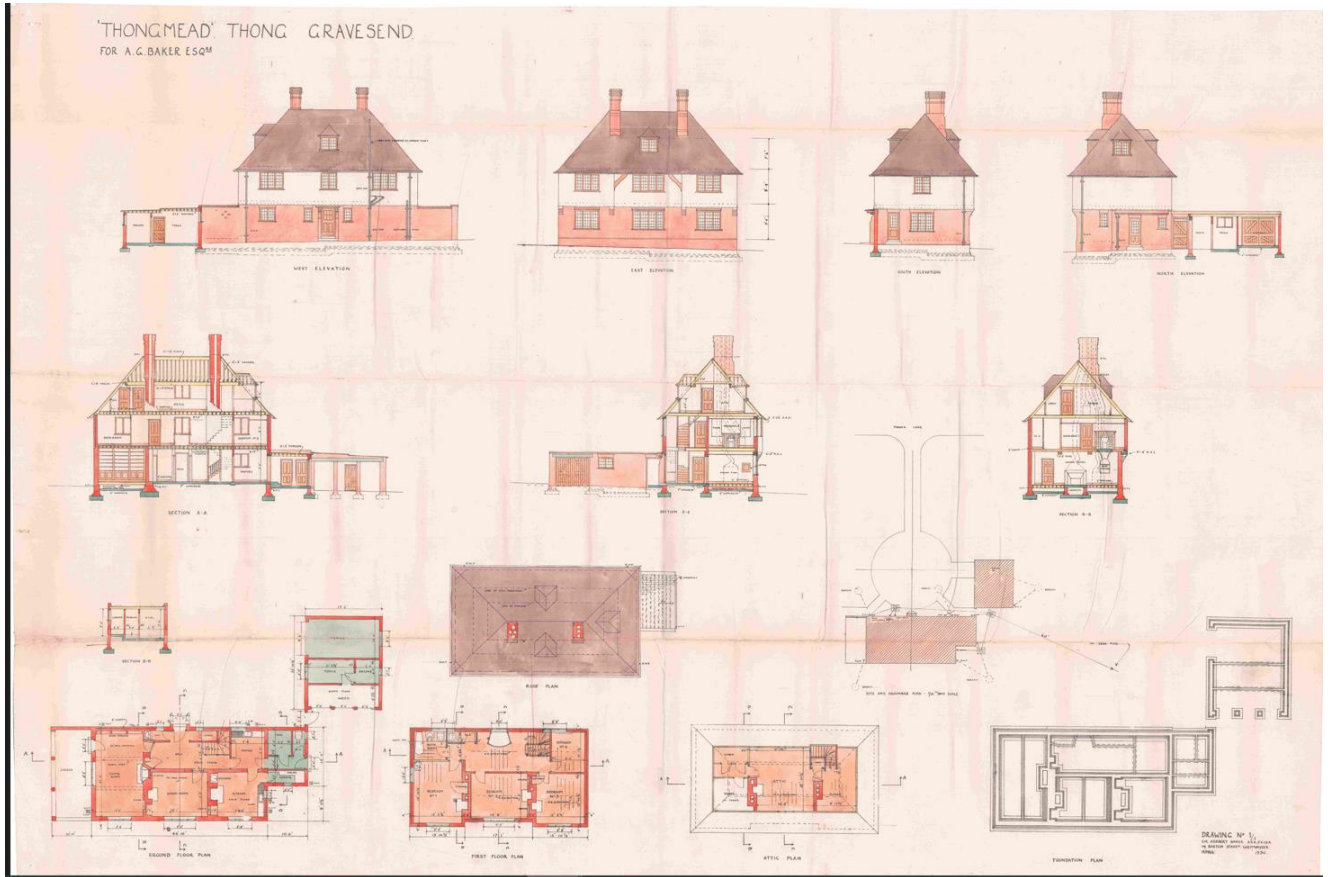
Image © and reproduced courtesy of the Medway Archives Centre, plan reference U565E 682 dated 1926.

Note that the smallholdings scheme was not successful and much of the land was subsumed back into Cheney's Farm or other larger parcels. This is shown in the 1941 National Farm Survey returns at the National Archives under MAF32/1037/269 and associated mapping under MAF73.

The land was then being farmed by a tenant (W. Davys & Sons) which had held it for 15 years. Part of the land had been taken for RAF Gravesend but was returned after the war. It was a mixed farm growing wheat (87 acres); barley (77 acres); oats (10 acres); potatoes (43 acres); vegetables (13 acres); orchards (31 acres); small fruit (6 acres strawberries); and 17 acres of grass or pasture. In addition, the farm had 84 sheep; 10 chickens; and 4 horses. 6 men and 5 women were employed full time, with an additional 8 people employed part-time or on a casual basis. Equipment included a fruit tree washer, motor scythe and two tractors (14 and 30 horsepower International Tractors). Rent for the farm was £269 per annum.

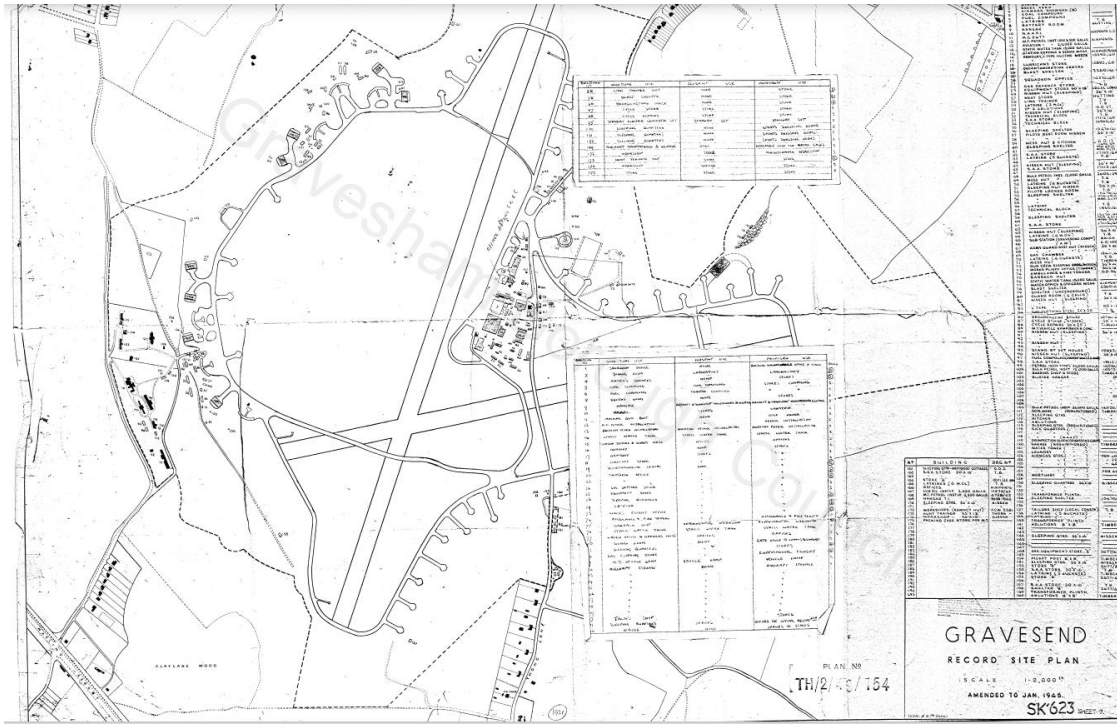
Returns are also available in the same series for the smallholdings/poultry farms.

Figure 14: Sir Herbert Baker's plans for Thong Mead in the 1930s.



Source: Gravesham Borough Council planning records.

Figure 15: Plan of Gravesend Airport/RAF Gravesend following closure in the 1950s and aerial photograph.

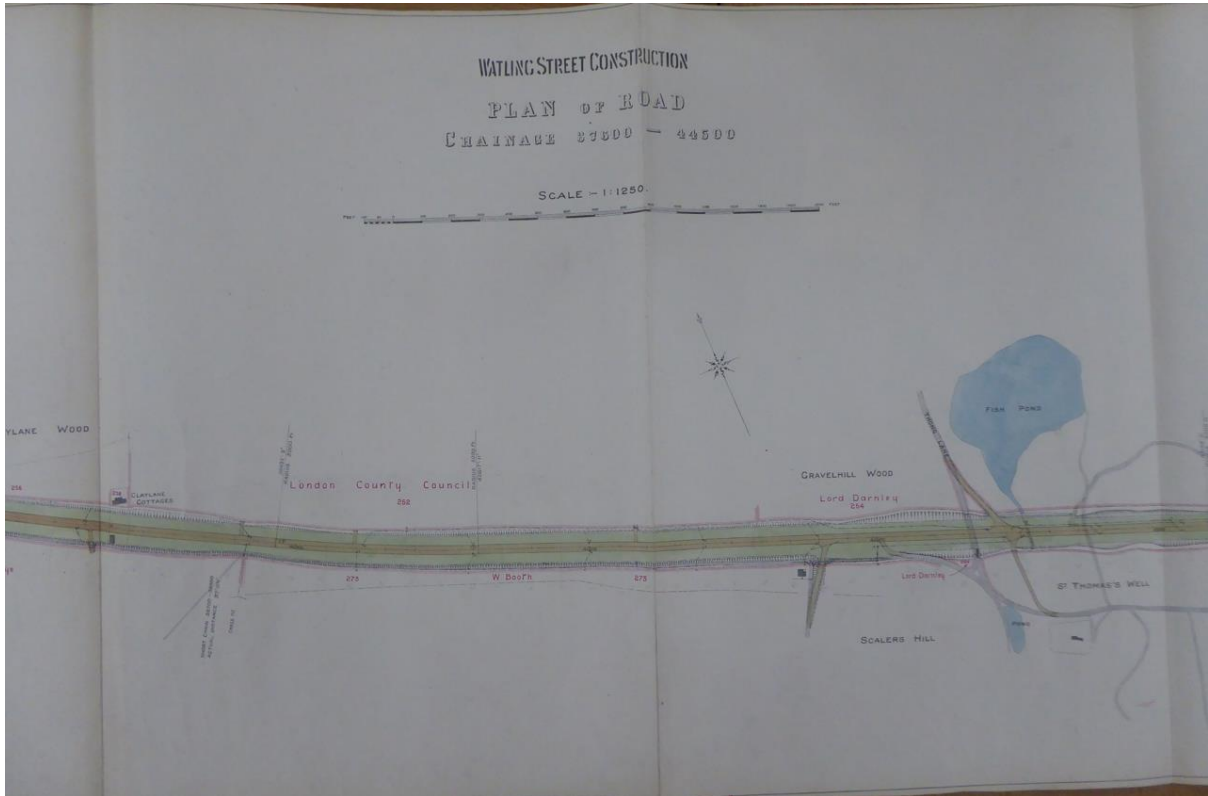


Source: Gravesham Council planning records. Plan dated 1948.



Image © and reproduced by courtesy of The National Archives reference AIR 20 7855 dated 3 May 1944.

Figure 16: As built plans and photographs of the A2 following implementation of the 1920s improvement scheme (opened November 1924) and photographs of what this scheme replaced in the vicinity of Cobham.



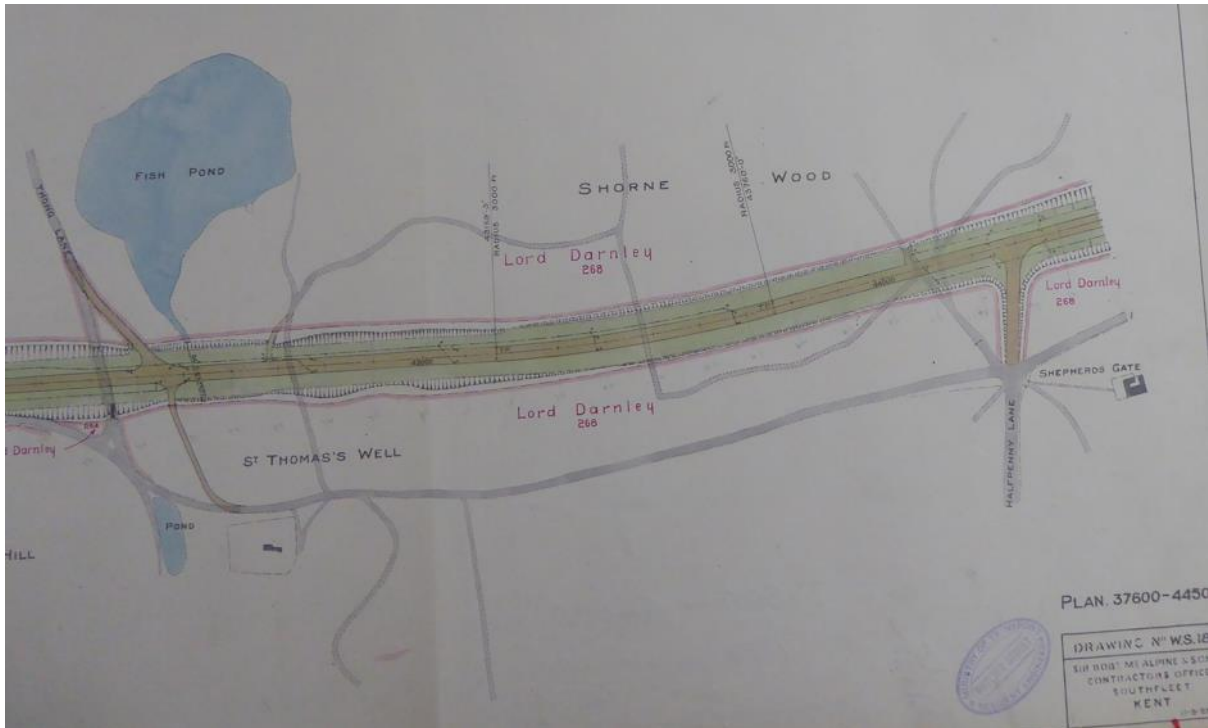
As built plan of A2 between Thong Lane and Claylane Wood. Image © and reproduced by courtesy of The National Archives reference MT57 39 (1924)



Clay Lane (now A2 main road) looking westward toward Claylane Wood prior to construction of the 1924 scheme, with Clay Lane Cottage in foreground. This is approximate site of new A2/A122 junction. Image © and reproduced by courtesy of The National Archives reference MT39 774 (dated approx. 1920)



Thong Lane/A2 crossroads looking west upon completion of the scheme in 1924. The new A2/A122 junction would lie in the dip in the distance, close to the site of the A2 Cobham South services. Image © and reproduced by courtesy of The National Archives reference MT39 774 (dated 1924)



Section of 1924 A2 scheme between Thong Lane eastwards to Brewers Road/Halfpence Lane junction. Note original alignment of Watling Street to the south of the new road – now Darnley Lodge Lane. Image © and reproduced by courtesy of The National Archives reference MT57 39 (1924)



Cobham Woods prior to being cleared to make way for new road in the 1920s. Image © and reproduced by courtesy of The National Archives reference MT39 774 (dated approx. 1920)



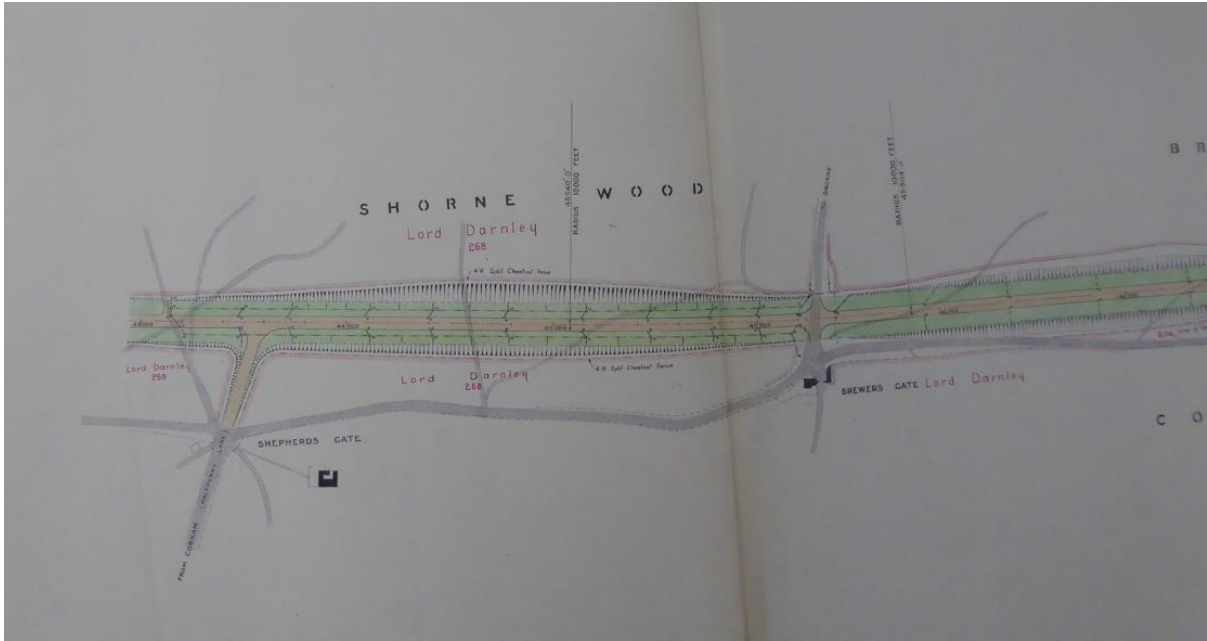
New road as built looking eastward from Thong Lane. Image © and reproduced by courtesy of The National Archives reference MT39 774 (dated 1924)



Original Watling Street through Cobham Woods – this is now probably Darnley Lodge Lane as it would have been in around 1920. Image © and reproduced by courtesy of The National Archives reference MT39 774



Junction of old Watling Street with Scotland Lane, close to the Thong Lane over-bridge. The former Becket's Pond is in the foreground with St Thomas' Cottages (demolished) and St Thomas' Well behind. Road has effectively become Darnley Lodge Lane with previous A2 widening works and construction of the CTRL/HS1 cutting taking the site of the cottages. Image © and reproduced by courtesy of The National Archives reference MT39 774 dated approx. 1920.



1924 scheme showing the section between Shepherd's Gate and Brewer's gate. Shepherd's Gate became isolated because of the 1960s dualling scheme and was demolished, it already being in a dilapidated condition. Brewer's Gate survived until around 1980 before being demolished, it being taken as part of the Cobham Hall transfer to the Westwood Educational Trust. Although there was interest from third parties to restore it, it fell into disrepair. The site was finally taken by CTRL/HS1 works, with the remains excavated as part of archaeological works. Image © and reproduced by courtesy of The National Archives reference MT57 39 (1924)

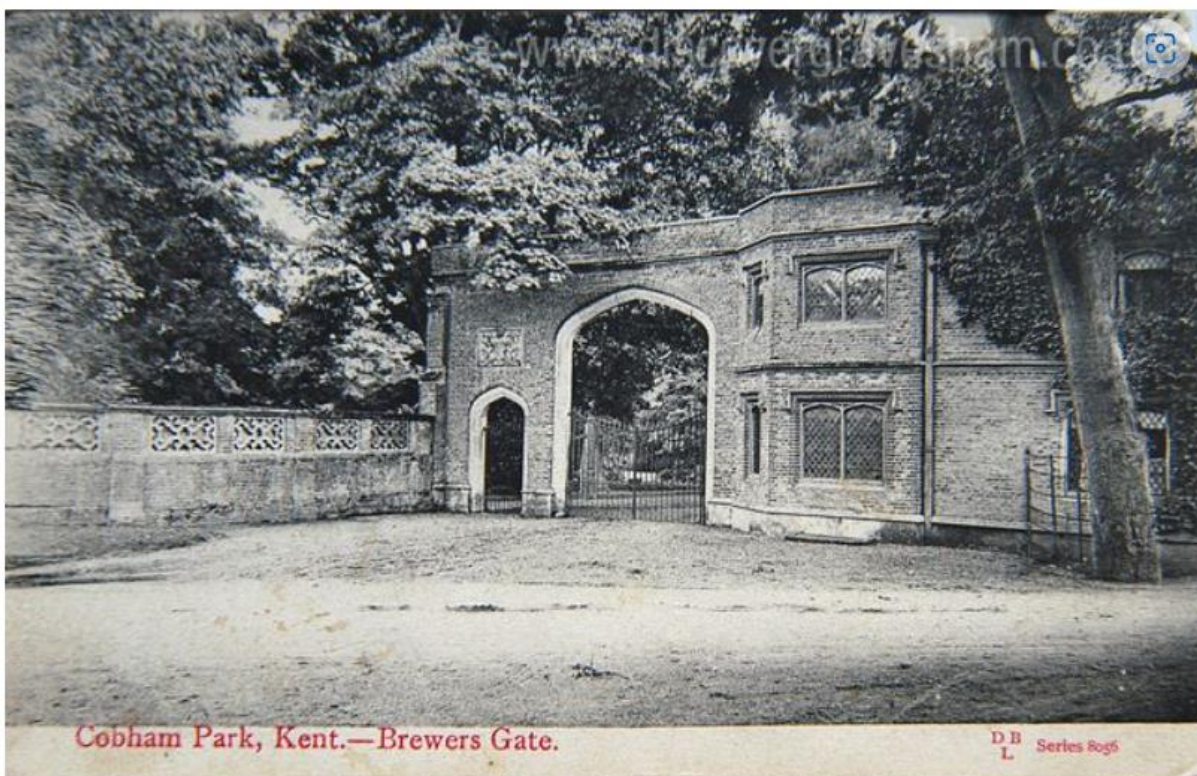
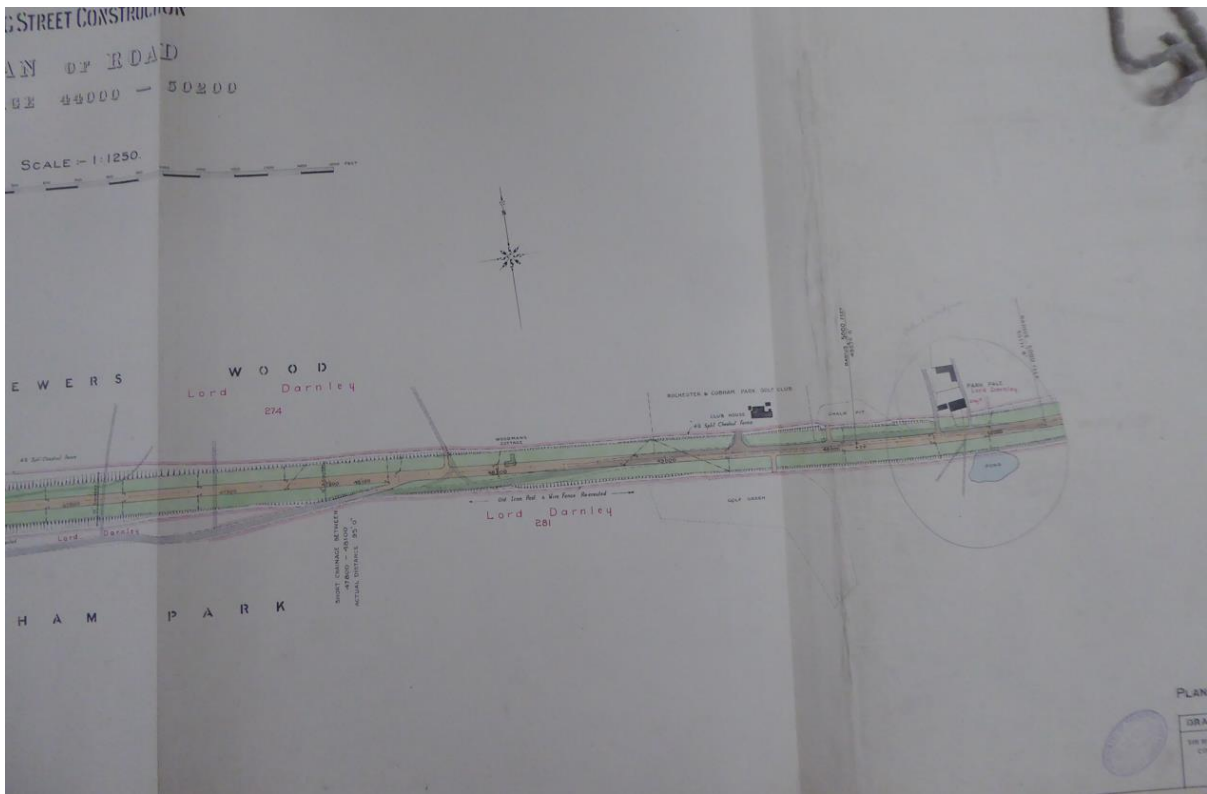


Photo of Brewer's Gate in the 1930s. Source: Discover Gravesham website.



Section of the 1924 scheme between Park Pale and Brewers Road. Small part of the old Watling Street continued to run adjacent to the dual carriageway until the 1990s, when the land was taken for the CTRL/HS1 and A2 widening scheme. Image © and reproduced by courtesy of The National Archives reference MT57 39 (1924)

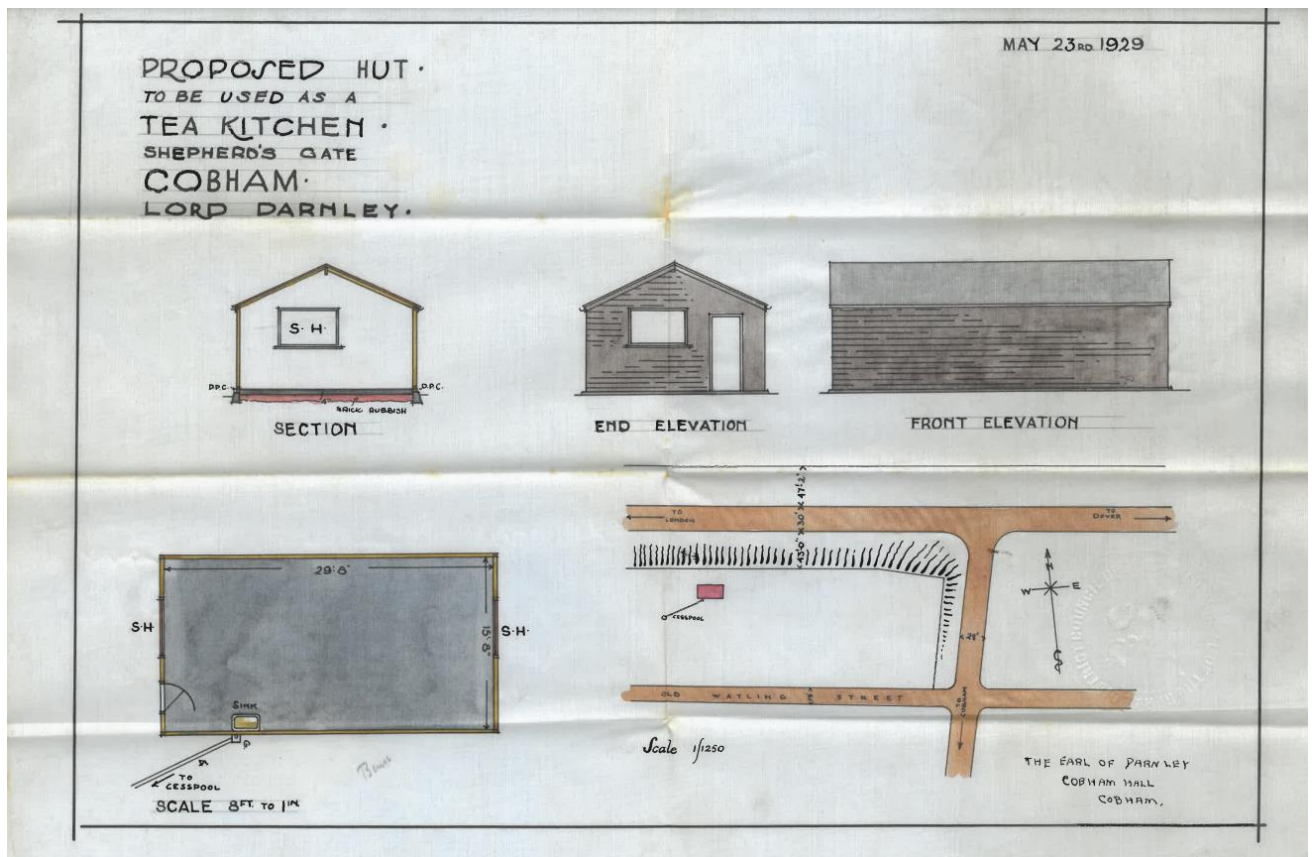


Watling Street looking westwards from Park Pale, with former golf course clubhouse to the right of the photo. Image © and reproduced by courtesy of The National Archives reference MT39 774 dated approx. 1920.



Woodman's Cottage, to the west of the previous photograph approximately half way between Park Pale and Brewer's Road. The narrow lane to the right hand side of the photograph is the country lane forming part of the old Watling Street. Image © and reproduced by courtesy of The National Archives reference MT39 774 dated approx. 1920.

Figure 17: Plans for tea hut on the A2 at Shepherds Gate for Lord Darnley in 1929



Source: Gravesham Borough Council records.

Figure 18: 1910 Land Tax mapping for Shorne Woods, Thong area and Cobham Park, showing woodland (green) north of Watlinge Street held in hand by the family of Lord Darnley and farmland to the north and west (coloured blue and pink) also forming part of the estate before WWI. The pink area formed part of Cheyney's Farm at the time.



Images © and reproduced by courtesy of The National Archives reference IR124/6/23 (Kent sheet X16) and IR124/6/59 (Kent sheet XVIII.4)

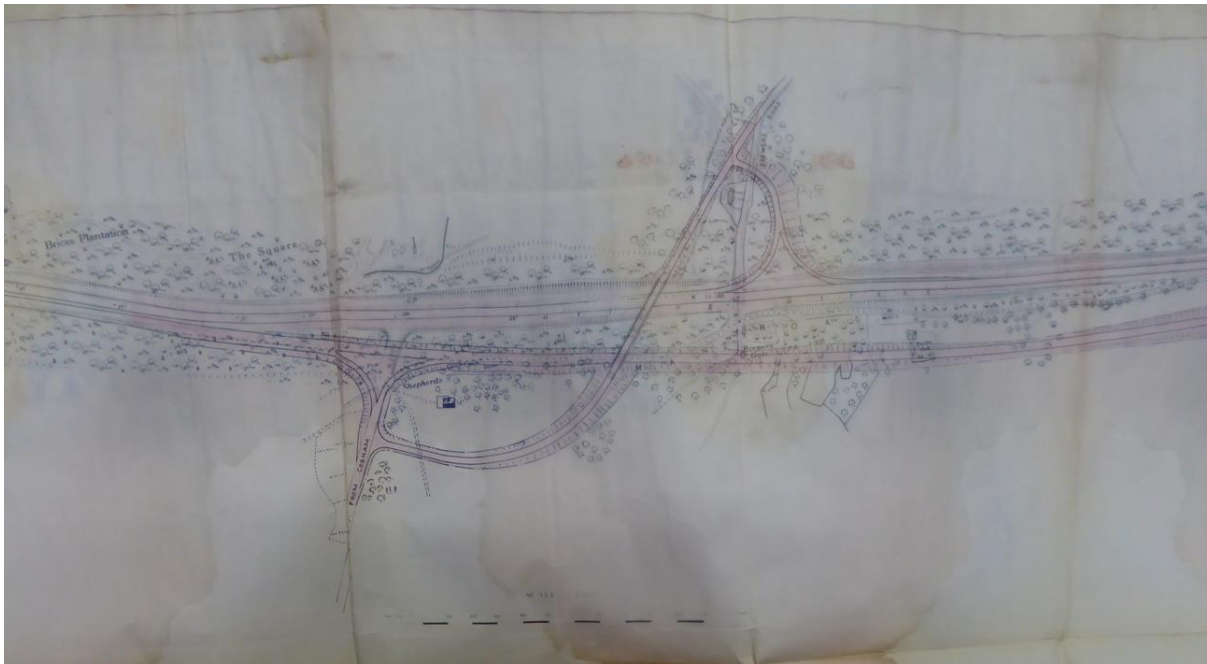
Figure 19: Aerial photograph showing the extent of clay workings at Shorne Woods in 1960



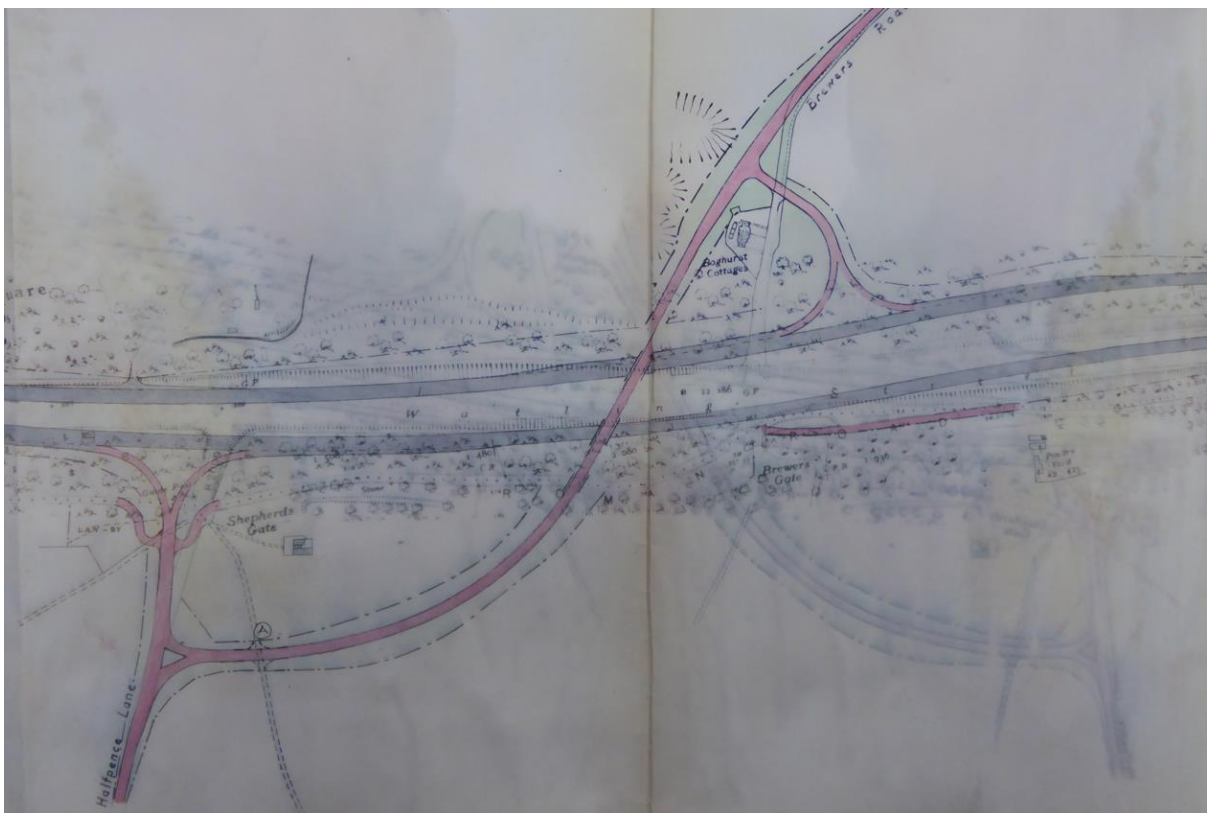
Source: Google Earth online image. Lord Darnley disposed of the woods to the Associated Portland Cement Manufacturers (APCM) in the 1930s, to extract clay to supply works on the Medway. At the same time, Lord Darnley effectively moved out of Cobham Hall and 'downsized' to Puckle Hill House, Shorne. Upon cessation of mineral working, the woods were acquired by Kent County Council to create Shorne Woods Country Park, with the woodland being allowed to regenerate where clay was removed. This area north of the A2 forms part of the Kent Downs AONB and the Shorne and Ashenbank Woods SSSI.

Figure 20: Alternative designs for the A2 Halfpence Lane/Brewers Road junction in 1964 to reduce impact on the setting of Cobham Hall and its parkland.

Original scheme



Amended scheme



Images © and reproduced by courtesy of The National Archives reference HLG126 1703. Northbound carriageway followed old A2 + southern carriageway was moved north to reduce impact on Repton's Ponds/Brewers gate etc, maintaining wooded central reserve.

Appendices

Appendix A1: Sporting party at Cobham in 1820

Sporting Party at Cobham

On Tuesday week his Royal Highness Prince Leopold, accompanied by his Grace the Duke of Wellington, arrived at Cobham Hall, on a visit to Earl Darnley. On Wednesday, Prince Leopold, the Duke of Wellington, Earl Darnley, Lord Clifton, and other Noblemen and Gentlemen, went out on a shooting party, and were very successful; the country around Cobham Hall, and the well stocked preserves of Lord Darnley, affording abundance of sport. Prince Leopold brought down upwards of 60 head of game. The pleasure of the party was considerably damped by two unfortunate accidents which occurred during the day. As the party was numerous, and the game likely to rise fast, the Duke of Wellington recommended a separation of the party; but as no danger was apprehended by the majority, the recommendation was over-ruled. An unlucky evidence of his Grace's recommendation, however, soon occurred; for, as his Grace was shooting at a pheasant, Lord Darnley being near him, but unseen, a few of the shot penetrated his Lordship's hat, and wounded him slightly in the forehead: and a more serious accident happened to the Hon. Mr Vernon, who had that day arrived at Cobham, and joined the party, and had taken his stand behind a tree, which effectively concealed him from the view of his companions; while in this situation a hare passed the tree, and Lord Clifton shot at it, at the moment Mr Vernon bent one of his knees so forward that it came within the line of fire, and received a large portion of the charge. The wound proved to be so severe, that Mr Vernon was obliged to be conveyed immediately to the Hall, where surgical assistance was procured, and the shot extracted: he still continues confined to the house, but is in a state of convalescence.

Morning Post, London Thursday 6 January 1820

Appendix A2: Transcript of an advertisement for a ploughing match at Cheney's Farm, Thong, published in the West Kent Guardian, Saturday 24th September 1836.

The Gravesend & Rochester
Agricultural Association
 For the
Encouragement of Servants and Labourers
Established 1834

President

William Masters Smith, Esq, of Camer

Vice-Presidents

Lieut-Col Best	Richard Knight Esq.
William Brown Esq	Samuel Baker Esq
William Edmeades Esq	Richard T Bingham Esq
The Rev James Formby	Thomas Harman Esq
Thomas Bentley Esq	William H Nicholson Esq
Thomas Comport Esq.	

Committee of Management

Mr James Edmeades, Ifield	Mr J.A. Edmeades, Haxells
- M Comport, Decoy	- John Tilden, Ifield Court
- R. Everist, Allhallows	- John Smith, Isle of Grain
- William Lake, Cobham	- Wm. Wells, Cobham
- George Lake, Higham	- T. Colyer, Parrock Hall
- George Knight, Cliffe	- Thomas Wall, Southfleet
- A. Spong, Frindsbury	- W. Brown, jun, Chalk
- J.R. Baker, Chalk	- William Pye, Cuxtone
- William Stunt, Higham	- John Pett, Berry Court
- John Oakley, Frindsbury	- G. Comport, White Hall, Hoo
- James Steel, Cliffe	- W. Bargrove, Northfleet
- James Everist, Stoke	- T.J. Solomon, Shorne
- J.H. Solomon, Shorne	- Wm. Eley, Islingham
- J. Murton, Cooling Castle	-

Secretary and Treasurer – Mr WILLIAM HUBBLE

Subscription – Ten Shillings per Annum, due every Midsummer,
 to be paid to the Treasurer

AT a MEETING of the COMMITTEE on Wednesday 14th of September, 1836, it was agreed, that a **PLOUGHING MATCH** for this Year should take place on **THURSDAY, the 20th OCTOBER** next, in a field occupied by **Messrs. Henry and William SOLOMON, on the Cheneys Farm, at Thong, in the parish of Shorne**, when the following **PREMIUMS** will be given: - to

	£	s	d
The best ploughman, with a turnriste, or other plough with 4 horses	3	0	0
The driver	0	12	0
Second best ploughman	2	10	0
Driver	0	10	0
Third best ploughman	2	0	0
Driver	0	8	0
Fourth best ploughman	1	10	0
Driver	0	6	0
Fifth best ploughman	1	5	0
Driver	0	4	0
The best ploughman, with turnriste or other plough, with 3 horses	2	0	0
Driver	0	8	0
The shepherd who has reared the greatest number of lambs from a flock of ewes from 100 to 300, from Michaelmas 1835, to the 20 th July 1836	3	0	0
Ditto, who has the second number	1	10	0
The shepherd who has reared the greatest number of lambs from a flock of ewes, exceeding 300, from Michaelmas 1835, to the 20 th July 1836	3	0	0
Ditto, who has the second number	1	10	0
The shepherd who has care and management of a wether flock, not less than 150, and the least loss to every 100 sheep within the year from Michaelmas 1835, to Michaelmas 1836	2	0	0
Ditto, second	1	0	0
The labourer who has worked for the same family, or on the same farm, the greatest number of years	3	0	0
The second	1	10	0
The labourer who has brought up the largest family and received no parochial relief	3	0	0
The second	1	10	0

There must be three competitors to entitle a Candidate to a Premium

The ploughs to be in the field by Eight o'Clock in the morning, and started at Nine – Each Candidate to plough half an acre by One o'Clock.

The unsuccessful ploughmen to receive 3s each.

All certificates for premiums for Servants and Labourers must be sent to the Secretary previous to the 1st of October, and the successful Candidates for such Premiums be on the ground on the day of the ploughing.

All members who intend to send ploughs, must give notice (in writing) to the Secretary previous to the 13th of October.

No candidates (except the shepherds) to receive the same Premium but once in seven years.

JUDGES

Mr J. Edmeades, Hever Court	Mr A. Spong, Frindsbury
Mr M. Comport, Decoy	Mr J. Murton, Cooling Castle
Mr G. Knight, Perry Hill	Mr Wm. Wells, Cobham
Mr William Bargrove, Dundale	

The Members will dine at the New Inn, Gravesend. Tickets, 10s 6d each, including a bottle of wine, to be had of the Secretary previous to the 13th of October.
The Chair will be taken at Four o'Clock precisely.

WILLIAM HUBBLE
Secretary and Treasurer

Northfleet, 15 Sept. 1836

Appendix A3: Agricultural returns for Chalk, Shorne and Cobham (1870)

		Parish		
		Chalk	Shorne	Cobham
Number of persons	<i>Who occupy land</i>	6	19	17
	<i>Who keep livestock but do not occupy land</i>	-	-	-
Number of farms or holdings	<i>Not exceeding 5 acres</i>	1	4	5
	<i>Above 5 and not exceeding 20 acres</i>	1	5	6
	<i>Above 20 and not exceeding 50 acres</i>	-	6	-
	<i>Above 50 and not exceeding 100 acres</i>	-	-	1
	<i>Above 100 acres</i>	4	4	5
Corn Crops (Acres)	<i>Wheat</i>	211	357 ½	440 ½
	<i>Barley or Bere</i>	126 ½	271 ¼	185 ¼
	<i>Oats</i>	138 ½	218 ¼	226
	<i>Rye (Corn)</i>	-	-	-
	<i>Beans</i>	19 ¾	110 ½	35 ¼
	<i>Peas</i>	69 ¾	87 ½	103 ½
Green Crops (Acres)	<i>Potatoes</i>	84 ¾	90	168 ¼
	<i>Turnips and Swedes</i>	100	75	206
	<i>Mangold</i>	12 ¼	33	17 ¾
	<i>Carrots</i>	4 ½	2 ½	¼
	<i>Cabbage</i>	3	1/2	1 ¾
	<i>Kohl Rabi</i>	-	-	-
	<i>Rape</i>	10	-	-
	<i>Beetroot</i>	-	-	-
	<i>Chicory</i>	-	-	-
	<i>Vetches or Tares</i>	-	11	6 ½
	<i>Lucerne</i>	5 ¼	34	7
	<i>Other Green Crops (except Clover, Sainfoin, "Seeds" etc)</i>	20	3	-
Flax (Acres)	-	-	2	
Hops	10	80	280 ¼	
Bare Fallow or Ploughed Land From Which A Crop Will Not Be Taken This Year	-	-	-	

		Chalk	Shorne	Cobham
Clover, Sainfoin, "Seeds", Rye and Other Grasses under Rotation for one or more years	<i>For Hay this year</i>	120 $\frac{1}{4}$	192 $\frac{1}{2}$	229
	<i>Not for Hay this year</i>	40	19	17
Permanent grass or meadow, Down or pasture not broken up in rotation	<i>For Hay this year</i>	-	37 $\frac{1}{2}$	87 $\frac{1}{4}$
	<i>Not for Hay this year</i>	396	833 $\frac{1}{2}$	208 $\frac{3}{4}$
Livestock on 25th June 1870				
Number of Horses (including ponies)	Used solely for the purposes of agriculture and market gardeners	24	79	105
	Unbroken horses of any age (including fowls)	7	-	2
	Mares kept solely for the purposes of breeding	1	-	-
Number of cows and heifers of all ages in milk on in calf		14	85	46
Number of cattle other than those in milk or in calf	Two years of age and above	29	197	68
	Under two years of age (including calves)	12	31	17
Number of sheep of all kinds one year old and above		854	2734	518
Number of lambs under one year old		614	967	239
Number of pigs of all kinds and of all ages		32	90	113

Source: National Archives MAF68/246

Appendix A4: Description of how Cheney's Farm was being farmed in 1871

Maidstone and Kentish Journal 18 September 1871

Includes an article carrying a report of a paper written by a Mr Evershed in the Journal of the Bath and West of England Society on 'The Farming of Kent, Sussex and Surrey' in which he states that the soils, subsoil, quality and cropping of Cheney' Farm, Thong was equal to the farmland of the Isle of Thanet. A detailed description of how the farm operated was then provided as follows:

Mr Henry Solomon, Cheney's Farm, Thong, near Gravesend. 590 acres – 383 arable, 28 hops, 150 marsh land at Cliffe, 30 meadows, on the farm. The land lies on an open exposure, overlooking the Thames at a distance of between one and two miles. The soft white chalk rock (which forms the sub-stratum) was formerly largely used on the farm for agricultural purposes. The farm lies partly on one of that group of Lower Eocene beds which extend from Woolwich to the Isle of Thanet. The soil is from 6 inches to 6 feet deep. The higher ground and table land are the stiffer, and the lighter is in a hollow, where the chalk comes close to the surface. The farm is compact, and not so uneven but that most of the fields may be ploughed in any direction without inconvenience. There are some 6 acres of lucern³ on the farm. There is one good homestead, well situated.

Cropping. – 1, roots, dressed with Odam's blood manure; 2, barley or oats, the district produces good barley; 3, beans and peas, potatoes, and 7 or 8 acres of mangel: the two latter crops are dunged; 4, wheat dunged after pea or beans; 5, seeds – 1 peck red clover, 1 gallon trefoil, mown; 6, wheat, dunged; 7, oats.

The tillages on this farm are remarkably well done, according to the "customs of the country" with the Kentish turn-wrest plough. The number of ploughings is few in proportion to the number of corn crops; but though the tillages are not frequent, they are effective. There are 16 horses, and the ploughing and broadsharing are entirely done by three 4-horse teams.

The principal tillages are as follows:- After the harvest (6) wheat-stubble is effectively broadshared 4 inches deep and the field is left in ridges by means of a double mould board attached to the plough, If time permits it is harrowed down immediately and the operation of broadsharing is repeated.

After Christmas is is harrowed and ploughed 8 inches deep and the oats are drilled on a stale fallow. Occasionally part of (7) – oats – is sown with trefoil for sheep (on corn and mangel), to follow the last turnips, before the marshes are ready. The land is then ploughed two or three times for (1) roots. But in general a fallow for roots is made by four ploughings, commencing with a –inch furrow in autumn, followed by a spring ploughing an inch deeper.

Resuming the autumn work – the work that follows the broadsharing is, ploughing with a good furrow for (4 and 6) wheat which is sown or drilled in November, or later, 2 ½ and 3 bushels per acre. After wheat sowing (2), barley and oat stubbles are ploughed for (3) beans and peas; and then he broadshared ground (say in January)

³ Lucern or Lucerne is an alternative name for alfalfa, a leguminous fodder crop.

for (7) oats; and, if well-farmed, the oat stubble will be as clean as a garden, and there will be a good crop of Black Tartarians⁴ without manure. The (2) barley and oat land is ploughed after the fold, say in January, February and March. Barley (3 bushels) is drilled chiefly in March. Fallowing follows.

And this the character of this land admits to very equal distribution of the tillage throughout the year, and field-work can be effected in winter, which on sticky land would be impracticable.

One word on (3) peas. The early grey peas are drilled (3 ½ bushels) in February on a 7 inch furrow, ploughed after (2) above. After the peas are off, the land is broadshared, dressed, broadshared again, and sown with rape, a crop much relied on for autumn folding. The cultivation for (3) the mangel is simple and excellent for land not subject to deep-rooting weeds. A good furrow is turned in winter, with 16 yards of dung, 4 cwts of guano, and 4 salt, sown on the furrow at seed-time and 4 cwt of Odams' blood manure drilled with the seed.

MANURES:- The dung is distributed for mangel, potatoes and wheat. Artificial: 4 cwt guano, 4 cwts salt, 4 cwts blood-manure; swede and turnips, 5 cwt of Odams' blood-manure, including a small portion of guano; rape, a light dressing of blood-manure.

When straw is sold, an equivalent of barge-manure⁵ is purchased. Hops are manured in the same way and do not trespass on the farmyard. As regards horse labour, an acre of hops is about equal to an acre of the other arable land.

LIVE STOCK: - Sheep: The usual number wintered is about 400 Kent lambs and 400 tegs⁶. The lambs are brought in Romney Marsh in August; they run on the stubbles etc. till they are first put on rape and next on turnips, with half a pint of oats, and pea-haulm. Etc. cut with a little clover hay, until the middle of April, when they are sent to the marsh. One-half of them is brought back in autumn, fattened on swedes and cake, and finished in May on trefoil and mangel. The others remain on the Marsh during the winter, and are fattened on grass only during the following summer. Cattle: about 70 are wintered; shorthorns and North Welsh heifers are brought principally in Autumn; when coming 2 years' old they are wintered on uncut barley, and oat straw, and half a bushel of mangel. These go on the Marsh about the 1st of May and graze with the fattening sheep. The second winter the best beasts are fattened in yards and the rest receive from 4lbs to 6lbs of cake, with clover hay cut with straw, and are afterwards finished in the Marsh with grass only. A few pigs are bred on the farm and a few are fattened for home consumption.

⁴ Black Tartarian is a strain of oat grown at the time and should not be confused with the cherry of the same name.

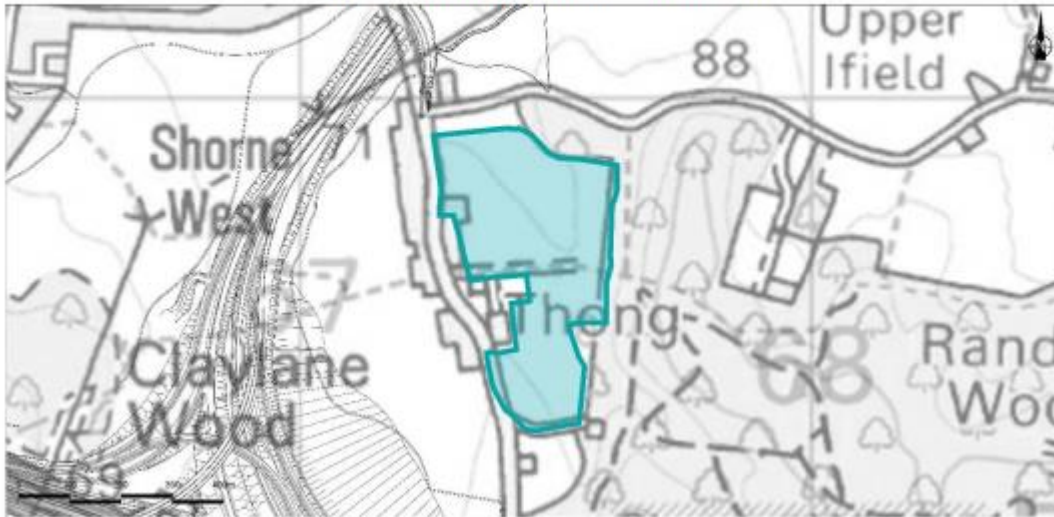
⁵ This presumably would have comprised night soil etc. similar to that brought down from London by barge to be put on the fields. This was common practice in respect of local market gardens, including those that thrived in Gravesend in the C18th producing asparagus or Gravesend Grass for the London market.

⁶ A teg refers to a sheep in its second year or up to its first shearing as opposed to a lamb. Also known as a shearling or hogget.

Appendix A5: Extract from application document APP490 – 6.7 Outline Landscape and Ecology Management Plan, detailing area east of Thong as an area for the creation of ‘mosaic habitat’ and the nature of the proposal.

5.9 Thong open mosaic habitat

Plate 5.9 Thong open mosaic habitat



Description of management area

- 5.9.1 This management area is located between the village of Thong and the western extents of Shorne Woods Country Park. The existing land is predominantly used for grazing and paddock enclosure, with fencing and small trees and scrub at boundaries.
- 5.9.2 The management area is approximately 13 ha in size.
- 5.9.3 This management area is shown in the Environmental Masterplan (Application Document 6.2, Figure 2.4), Section 2, Sheets 19-20.

Management requirements

- 5.9.4 The management requirements of this area are:
- a. to establish a mosaic of open habitat which would provide suitable habitat for the translocation of species including amphibians (notably GCN present in the adjacent SSSI), and reptiles. The relevant typology's planting would

also support a range of invertebrates which would form a food source for amphibians, reptiles, bats present in adjacent woodland, as well as badgers and other notable mammals.

- b. habitat present would be rough grassland, ponds, and patches of bare earth, with scrub blending into the adjacent woodland of Shorne Wood. Habitat would be planted as a patchwork rather than large areas of similar habitat.
- c. provision around the site, of hibernacula and refuges for translocated species, based on good practice guidance designs (English Nature, 2001).

Typologies present

5.9.5 The planting and habitat typologies present within this area are listed below:

- a. LE8.1 Open mosaic habitat
- b. LE8.5 Ecological ponds

5.9.6 The outline management prescriptions and programmes for the typologies listed above are detailed in Section 8 of this document.

8.22 LE8.1 Open mosaic habitat

Overarching requirements

- 8.22.1 To provide open mosaic habitat that incorporates a structural diversity of bare, sandy flat areas and south-facing slopes and banks. Species-rich habitats of native grasses and wildflowers should transition into more dense scrub habitats where adjacent to dense scrub or woodland.

Description

- 8.22.2 Open mosaic habitat is proposed as essential component of the landscape mitigation design and will provide biodiversity and nature conservation value.
- 8.22.3 Open mosaic habitat is a dynamic habitat, the value of which is generated through regular disturbance, avoiding habitat succession, and retaining structural diversity.
- 8.22.4 Various differing elements make up an open mosaic habitat. They are associated with brownfield or previously developed/disturbed land. Open mosaic consists of a variety of different habitats at different stages of transition.
- 8.22.5 Open mosaic habitat can include varied microtopography to incorporate south-facing banks which can be created using inert material such as pulverised fuel ash, sands and gravels.
- 8.22.6 LE8.1 Open mosaic habitat is an overarching landscape typology which is shown on the Environmental Masterplan (Application Document 6.2, Figure 2.4). It has been assigned its own unique Landscape element code further to LD 117. These areas will be developed and detailed further to the appropriate landscape element codes in future iterations of this document.
- 8.22.7 The proposed make-up of the open mosaic habitat is:
- a. Scrub: no greater than 10% coverage
 - b. Bare ground: approximately 10% coverage (small patches spread across site rather than single areas)
 - c. Rough grassland: approximately 30% coverage
 - d. Low-nutrient, free-draining grassland: 50% coverage (pulverised fuel ash to provide a minimum 10% overall area substrate and left to regenerate naturally)
 - e. Wildlife ponds, hibernacula and refuges to be created in line with good practice guidance (English Nature, 2001).

- 8.22.8 LE8.1 Open mosaic habitat corresponds to open mosaic habitat on previously developed land in good condition within the biodiversity net gain metric. The time to target condition following habitat creation is 10 years.

Outline requirements

- 8.22.9 The following outline requirements are for all areas of open mosaic habitat.
- a. To provide replacement habitat for reptiles, amphibians, invertebrates, and other fauna.
 - b. To be a receptor site for translocated species including amphibians and reptiles.
 - c. To be managed to avoid natural succession and retaining the mosaic character of the habitat.
 - d. To create grassland habitats that follow the priority habitat descriptions for open mosaic habitats (JNCC, 2010b).

- 8.22.10 This will be agreed between National Highways and the identified management agent.

Outline prescriptions

- 8.22.11 The exact details of the work activities will be developed between all parties during the development of the LEMP and subsequent work-specific method statements.
- 8.22.12 The list below describes the outline programme for establishment, initial maintenance and then goes on to explain the outline long-term management.
- a. To plant the open mosaic habitat areas to ensure the ratio of habitats as described above.
 - b. For the first few years after initial planting, habitat maintenance will be minimal to allow areas to establish naturally.
 - c. Botanical and protected-species surveys will be carried out to ensure the habitat developed as anticipated and that there are healthy populations of species that have been translocated to these sites.
 - d. Where issues arise, such as over dominance of a particular species or habitat, then appropriate reactive responses will be undertaken to ensure the diversity of the habitats.
 - e. Habitats will be managed to ensure that the structure and diversity of habitats is retained. Open mosaic habitats are dynamic areas which respond well to regular disturbance. Management through a range of measures including mowing, flailing and grazing would be employed to control natural succession and create the disturbed conditions which this broad habitat benefits from.

- f. Planting of habitats will be with species that are found locally to tie in with the surrounding areas.

Measure of success

- 8.22.13 To ensure that the management requirements outlined previously are achieved, the following monitoring targets have been devised to measure the success of the management requirements:
- a. Varied vegetation structure, with a single structural habitat component or vegetation type not accounting for more than 80% of the total habitat area.
 - b. A diverse range of flowering plant species are present which include native, non-native but beneficial to wildlife or non-native sedum plants.
 - c. Invasive non-native species cover less than 5% of the total vegetated area.
 - d. The site shows spatial variation, forming a mosaic of at least four early successional communities (a) to (h) plus bare substrate and pools. (a) annuals; (b) mosses/liverworts; (c) lichens; (d) ruderals; (e) inundation species; (f) open grassland; (g) flower-rich grassland; (h) heathland.
 - e. Establishment of open mosaic habitat in accordance with the structural composition specified within the Design Principles.
 - f. Establishment of floral species composition in line with planting palette set out within Design Principles.
 - g. Colonisation by diverse invertebrate species assemblage typical of open mosaic habitat along the Greater Thames Estuary National Character Area
 - h. Pond creation in line with design approach in Great Crested Newt Mitigation Guidelines (English Nature, 2001).

Outline monitoring frequency and methods

- 8.22.14 The aim of the suggested monitoring programme is to ascertain whether the outline measures of success listed above have been achieved, and whether maintenance operations or remedial actions are required.
- 8.22.15 After the five-year establishment period, long-term monitoring would be undertaken to assess the success of the grassland in terms of developing into the relevant target priority habitat. This would include fixed point or aerial photography to record overall habitat development within any given management area. UKHab surveys and condition assessments would also be undertaken to inform progress and confirm target habitat and condition is achieved (Panks et al., 2022a). These would continue once every five years with the detailed monitoring approach being refined over this period as part of the advisory group discussions.
- 8.22.16 National Highways' appointed monitoring party will carry out the monitoring visits and feed back to the advisory group as part of the monitoring report.