

## Non-Technical Summary

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Since the submission of an Environmental Statement (ES) in 2007 the KIG scheme has changed. This Supplemental Environmental Statement (SES) Chapter has assessed the impact of the scheme change and revised Parameters Plans on archaeological assets.

This SES Chapter is informed by additional assessment including a comprehensive assessment of Thurnham Castle and its setting, a more detailed assessment of the site's archaeological survival and is informed by the results of field evaluation, including a programme of geophysical survey and targeted trial trenching.

Following additional assessment and evaluation the following archaeological assets have been identified for reassessment or assessment:

- Thurnham Castle Scheduled Monument and its setting
- Plough damaged remains of Middle/Late Iron Age occupation
- The site of the 19<sup>th</sup> century Workhouse and grounds
- Prehistoric flint within topsoil
- Ploughed out Ridge and Furrow
- Former 19<sup>th</sup> century field boundaries
- Elements of the historic landscape

This ES Chapter has assessed the significance of the impact of the KIG on archaeological assets and concludes that there will be no impact on Thurnham Castle or its setting and a minor/moderate impact on plough damaged remains of Middle/Late Iron Age occupation and the site of the 19<sup>th</sup> century Workhouse and grounds.

The excavation and recording of the Iron Age occupation and 19th century Workhouse ahead of construction will have a beneficial effect, in that it will enhance the archaeological/historical information currently available and contribute to a wider understanding of the site and the archaeology of Kent.

Following excavation and recording of the buried archaeological remains, the magnitude of impact on archaeological assets within the KIG site will be negligible.



Kent International Gateway

Strategic Rail Freight Interchange  
Maidstone

Supplemental Environmental  
Statement: Archaeology

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## 13a Cultural Heritage (Archaeology)

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## **13.1 Introduction**

- 13.1.1 The Cultural Heritage assessment of the KIG proposals is contained in Chapter 13 of the Environmental Statement (ES) dated 2007 (prepared by WSP Environmental). There has since been a scheme change, as reflected in the revised Parameters Plans contained within the Supplemental Environmental Statement (SES) dated July 2009.
- 13.1.2 This SES chapter has been prepared by CgMs Consulting and assesses the impact of the scheme change and revised Parameters Plans on archaeological assets. The impact of the scheme on cultural heritage assets is assessed in Chapter 13 of the ES as updated by Chapter 13 of the SES.
- 13.1.3 In response to representations made by the KCC Archaeological Officer and English Heritage during the consideration of the planning application in 2007, further assessment and evaluation has been undertaken. The resulting baseline studies are appended to this Supplemental ES chapter and include an assessment of Thurnham Castle and its Setting (Appendix 2), a Geophysical Survey Report (Appendix 3), an Archaeological Deposit Model (Appendix 4), and an Archaeological Evaluation Report (Appendix 5).
- 13.1.4 The paragraphs within the 2007 ES chapter which are superseded by this supplemental chapter are 13.3.2-13.3.6, 13.3.9, 13.4.1-13.4.10, 13.4.18-13.4.23, 13.5.2, 13.5.3, 13.5.14-13.5.18, 13.5.24-13.5.26, 13.6.1-13.6.5, 13.6.20-13.6.24, 13.8.1, 13.8.2 and 13.8.4-13.8.14.

## **13.2 Assessment Methodology and Significance Criteria**

- 13.2.1 The assessment methodology and significance criteria used in this SES chapter do not follow those used in the 2007 ES.
- 13.2.2 The 2007 ES considered scheduled ancient monuments and archaeological sites and was supported by appendices covering Planarch guiding principles, Borough Local Plan Policies, a gazetteer of Kent Sites & Monuments Record entries within a 1km zone around the application site, a gazetteer of previous archaeological investigations within a 2.5km zone around the site and the results of an archaeological watching brief on geotechnical investigations. No archaeological assets were identified on the site, therefore the ES considered development processes (earthmoving, etc) and their impact on archaeological potential.

- 13.2.3 During the consideration of the application by MBC, representations were made by the KCC Archaeological Officer and English Heritage. KCC indicated that the application site should be the subject of further assessment and field evaluation in advance of the determination of the application. English Heritage indicated that further archaeological work was required to enable an informed judgement on the application and indicated concerns about the impact of the proposed development on the setting of the scheduled monument of Thurnham Castle.
- 13.2.4 The applicant has therefore under taken measures to identify and assess archaeological resources within the proposed development. As a result, this SES chapter includes a comprehensive assessment of Thurnham Castle and its setting, a more detailed assessment of the site's archaeological survival (deposit model) and is informed by the results of field evaluation, including a programme of geophysical survey and targeted trial trenching.
- 13.2.5 Therefore, as a result of the survey results, evolving ES assessment methodology and current best practice, paragraph 13.3.9 of the 2007 ES has been superseded by the significance criteria detailed below.
- 13.2.6 This SES chapter uses a staged process with three sets of criteria to establish the significance of the development impact on archaeological assets. The first set of criteria is used to determine the importance of the asset. The second set of criteria is used to determine the magnitude of the impact of the proposed development on archaeological assets. The third set of criteria is used to assess significance of the impact on archaeological assets. The process and criteria are detailed below.

**Criteria used to determine importance of the archaeological asset**

- 13.2.7 Determination of the importance of the archaeological assets is based on existing statutory designations and, for undesignated assets, the Secretary of State's non-statutory criteria (set out at Annex 4 to PPG 16) and professional judgement. The criteria to establish the importance of assets are described in Table 13.1.

**Table 13.1 Criteria used to determine importance of the asset**

| Importance          | Description   |
|---------------------|---|
| International       | Archaeological sites or monuments of international importance, including World Heritage Sites.  |
| National            | Ancient monuments scheduled under the Ancient Monuments and Archaeological Areas Act 1979, or archaeological sites and remains of comparable quality, assessed with reference to the Secretary of State's non-statutory criteria (these are set out in PPG16, Annex 4). |
| Regional/<br>County | Archaeological sites and remains which, while not of national importance, score well against most or all of the Secretary of State's criteria.  |
| Local               | Archaeological sites that score less well against the Secretary of State's criteria.  |
| None                | Areas in which investigative techniques have produced no or only minimal evidence for archaeological remains, or where previous large-scale disturbance or removal of deposits can be demonstrated.   |

## Magnitude of Impact

13.2.8 Determining the magnitude of impact is based on an understanding of how, and to what extent, the proposed development would impact on the assets.

13.2.9 The magnitude of impact is rated as High, Medium, Low and Negligible/Neutral. The criteria for assessing the magnitude of impact are set out in Table 13.2. Impacts can be direct and indirect, adverse or beneficial.

13.2.10 The types of impact comprise:

- **Direct impacts:** defined as an impact caused by an action, which generally occurs at the same time and place as that action. They are generally associated with the construction, operation or maintenance of a facility or activity and are usually obvious or quantifiable; and
- **Indirect impacts:** defined as changes resulting from primary impacts. These changes include impacts to the setting of assets; effects can be short or long term depending on their persistence or duration.

**Table 13.2 Criteria for Assessing the Magnitude of Impacts**

| Magnitude                      | Direct Impacts  | Indirect Impacts   |
|--------------------------------|---|--|
| <b>High Adverse</b>            | Complete removal of an archaeological site.   | Radical transformation of the setting of an archaeological monument.   |
| <b>Medium Adverse</b>          | Removal of a major part of an archaeological site and loss of research potential.   | Partial transformation of the setting of an archaeological site eg the introduction of significant noise or vibration levels to an archaeological monument leading to changes to amenity use, accessibility or appreciation of an archaeological site. |
| <b>Low Adverse</b>             | Removal of an archaeological site where a minor part of its total area is removed but the site retains a significant future research potential.                     | Minor change to the setting of an archaeological monument  |
| <b>Negligible/<br/>Neutral</b> | No impact from changes in use, amenity or access.<br><br>No change in the ability to understand and appreciate the resource and its historical context and setting. | No perceptible change in the setting of a feature.   |
| <b>Low Beneficial</b>          | Land use change resulting in improved conditions for the protection of archaeological remains.  | Decrease in visual or noise intrusion on the setting of a building, archaeological site or monument.<br><br>Improvement of the wider landscape setting of an archaeological site or monument.  |
| <b>Medium Beneficial</b>       | Land use change resulting in improved conditions for the protection of archaeological remains plus interpretation measures (heritage trails, etc)                   | Significant reduction or removal of visual or noise intrusion on the setting of an archaeological site or monument; and<br><br>Improvement of the wider landscape setting of an  |

| Magnitude              | Direct Impacts  | Indirect Impacts  |
|------------------------|---|---|
|                        |   | archaeological site or monument<br>Improvement of the cultural heritage amenity, access or use of an archaeological site or monument. |
| <b>High Beneficial</b> | Arrest of physical damage or decay to an archaeological site. | Exceptional enhancement of an archaeological site, its cultural heritage amenity and access or use                                    |

### Significance of impact

13.2.11 The significance of the impact of the proposed development on archaeological remains is determined by:

- the importance of the asset; and
- the magnitude of impact to the asset.

13.2.12 Table 13.3 presents a matrix that demonstrates how the significance of impact has been assessed.

**Table 13.3 Significance of the Impacts**

| Magnitude of Impact             | Negligible/<br>Neutral | Low            | Medium           | High            |
|---------------------------------|------------------------|----------------|------------------|-----------------|
| <b>International Importance</b> | Negligible             | Moderate       | Moderate / Major | Major           |
| <b>National</b>                 | Negligible             | Minor/Moderate | Moderate/Major   | Major           |
| <b>Regional/County</b>          | Negligible             | Minor          | Minor / Moderate | Moderate        |
| <b>Local</b>                    | Negligible             | Negligible     | Minor            | Minor/ Moderate |
| <b>None</b>                     | Negligible             | Negligible     | Negligible       | Negligible      |

### Assumptions

13.2.13 The assessment of the scale of impacts is based on extensive professional experience gained on other major developments across central and southern England. In particular, potential impacts from mass excavations for foundations, access, services and landscaping have been considered.

## 13.3 Baseline Conditions

13.3.1 Following the completion of further assessment and field evaluation, the baseline conditions of the application site have changed. The changes are detailed below and further information is provided in the baseline studies appended to this SES.

- 13.3.2 Not all of the designated and non designated archaeological assets identified in the 2007 ES are reassessed in this supplemental chapter, instead only Thurnham Castle scheduled monument and non-designated archaeological assets within the application site will be considered. This is because, of the 5 scheduled ancient monuments assessed in 2007, only Thurnham Castle has views of the application site. In addition, the revised Parameters Plans will only materially change the impact assessment for the non-designated archaeological assets within the application site.
- 13.3.3 Although, further assessment of Thurnham Castle and its setting has been undertaken (see Appendix 2) essentially there has been no change to this baseline condition since the 2007 ES. The Scheduled Monument list description and maplet is included for reference at Appendix 1 of this chapter and the Monument is shown in relation to the application site on Fig. 1.
- 13.3.4 The geophysical survey identified geomagnetic anomalies across the application site (Appendix 3). The majority of the anomalies were related to Post-Medieval and modern features including woodland boundaries, former field boundaries and tracks (Fields 2, 3, 4, 6, 8/9, 13, 13a-f, 14 and 15). Many of these features are evident on early Ordnance Survey maps. More recent features identified comprise land drains, services pipes (Fields 2, 3, 4, 5, 6, 13 and 14) and areas of ground disturbance associated with woodland clearance (Fields 2, 6, 13 and 14), the construction of the motorway (Fields 4 and 12), former tracks (Field 8/9) and 19<sup>th</sup> century Workhouse (Field 2). Some anomalies detected reflect geomorphological features such as former stream courses (Fields 8 and 9). Features of possible archaeological origin were identified in Fields 1, 3, 8/9, 14 and 15. These generally comprise ditch and pit features. The pit features in Fields 14 and 15 have been identified as Post-Medieval clay pits from which the area derives its name. In addition, probable traces of former ridge and furrow cultivation were also identified (Fields 2, 3 and 14).
- 13.3.5 The Archaeological Deposit Model (see Appendix 4) assessed the potential for archaeological survival across the site based on the results of the geophysical survey, map regression exercise and aerial photograph assessment. Figure 13 of the deposit model at Appendix 4 shows the potential archaeological survival of the study site. The model identified that complete destruction of archaeological remains had occurred on part of the application site as a result of excavations for a gas pipeline and the construction of the Maidstone Bypass/M20. In addition, the model identified that the construction of a 19<sup>th</sup> century Workhouse had caused localised disturbance. The model also identified that Post-Medieval and modern ploughing had occurred across the majority of the application site and will have truncated and in places completely destroyed any archaeological remains. In addition, tree clearance and Medieval ploughing were also identified as factors reducing the potential for archaeological survival of parts of site.

13.3.6 The Archaeological Deposit Model also established that many historic hedgerows have been removed from the site to create large arable fields leaving little of the historic pattern intact.

13.3.7 The evaluation trenching was targeted on geophysical anomalies in Fields 1, 3 and 9 (see Appendix 5). The trenches in Fields 1 and 3 were found to contain no archaeological features, although several pieces of worked prehistoric flint were recovered from the topsoil of both trenches in Field 1. Archaeological features of Middle/Late Iron Age date were recorded in two trenches in Field 9. In 2007 prehistoric pottery had been recovered from a geotechnical pit close to these geophysical anomalies. The features were linear in nature and heavily truncated by modern ploughing. The presence of pottery sherds in the features and from the topsoil is indicative of an occupation site nearby. The truncation identified in Field 9 and plough scars in Fields 1 and 3 confirms the model of archaeological survival in the deposit model at Appendix 4.

13.3.8 The baseline conditions reassessed or assessed in this supplemental ES are therefore as follows:

- Thurnham Castle Scheduled Monument and its setting
- Plough damaged remains of Middle/Late Iron Age occupation
- The site of the 19<sup>th</sup> century Workhouse and grounds
- Prehistoric flint within topsoil
- Ploughed out Ridge and Furrow
- Former 19<sup>th</sup> century field boundaries
- Elements of the historic landscape

13.3.9 The importance of these assets is detailed below in Table 13.4 and shown on Fig. 2.

**Table 13.4 Importance of the Asset**

| Description  | Importance |
|--|------------|
| Thurnham Castle Scheduled Ancient Monument and its setting     | National   |
| Plough damaged remains of Middle/Late iron Age occupation      | Local      |
| The site of the 19 <sup>th</sup> century Workhouse and grounds | Local      |
| Prehistoric flint within topsoil                               | Negligible |
| Ploughed out Ridge and Furrow                                  | Negligible |
| 19th century field boundaries                                  | Negligible |
| Elements of the historic landscape                             | Negligible |

## **13.4 Potential Impacts of Development**

13.4.1 The construction method for the KIG development as set out in the 2007 ES will not be affected by the revised Parameters Plans. However, the archaeological assets assessed here have changed since 2007.

13.4.2 The following archaeological assets are assessed.

### **Thurnham Castle Scheduled Monument and its setting**

13.4.3 There will be no direct impacts on Thurnham Castle or its setting (construction and related impacts are at least 1.5km away). Indirect impacts on the setting of the Castle have been considered by the appropriate specialists and negligible change is identified as a result of the construction and operation of KIG.

### **Plough damaged remains of Middle/Late Iron Age occupation**

13.4.4 Site preparation works, landscaping, construction and utility installation will have a High Adverse impact on the remains of Middle/Late Iron Age occupation which are of Local importance. The impact of the proposed development on this asset will be of Minor/Moderate significance.

### **Prehistoric flint within topsoil**

13.4.5 Machine stripping of topsoil will have a Medium Adverse Impact on an asset of Negligible importance. The impact of the proposed development on this asset will be of Negligible significance.

### **Ploughed out Ridge and furrow**

13.4.6 Site preparation works, landscaping, construction and utility installation will have a Medium Adverse impact on ploughed out Ridge and Furrow of Negligible importance. The impact of the proposed development on this asset will be of Negligible significance.

### **The site of 19<sup>th</sup> century Workhouse and grounds**

13.4.7 Site preparation works, landscaping, construction and utility installation will have a Medium Adverse impact on this asset of Local importance. Therefore, the impact of the proposed development on this asset will be of Minor significance.

### **Elements of the historic landscape**

13.4.8 Site preparation works, landscaping, construction and utility installation will have a Medium Adverse impact on this asset of Negligible importance. Therefore, the impact of the proposed development on this asset will be of Negligible significance.

## **13.5 Mitigation Measures**

13.5.1 The significance of the impact of the proposed development on archaeological assets and therefore appropriate mitigation has changed since 2007.

### **Thurnham Castle Scheduled Monument and its setting**

13.5.2 No impacts are identified to Thurnham Castle or its setting and thus no mitigation measures are proposed in relation to the setting of Thurnham Castle.

### **Plough damaged remains of Middle/Late Iron Age occupation**

13.5.3 The excavation and recording of archaeological remains ahead of site preparation works, landscaping, construction and utility installation will have a beneficial effect in that it will enhance the archaeological information currently available and contribute to research agendas and a wider understanding of the archaeology of Kent.

13.5.4 The residual impact on remains of Middle/Iron Age occupation will therefore be Negligible.

### **The site of 19<sup>th</sup> century Workhouse and grounds**

13.5.5 The excavation and recording of archaeological remains ahead of site preparation works, landscaping, construction and utility installation will have a beneficial effect in that it will enhance the historical information currently available.

13.5.6 The residual impact on remains of the site of 19<sup>th</sup> Workhouse and grounds will therefore be Negligible.

13.5.7 There are no mitigation measures identified for archaeological assets which will incur impacts of a Negligible significance.

## **13.6 Cumulative Impacts**

13.6.1 There are not considered to be any cumulative impacts under the revised Parameters Plans.

## **13.7 Overall Appraisal and Residual Effects**

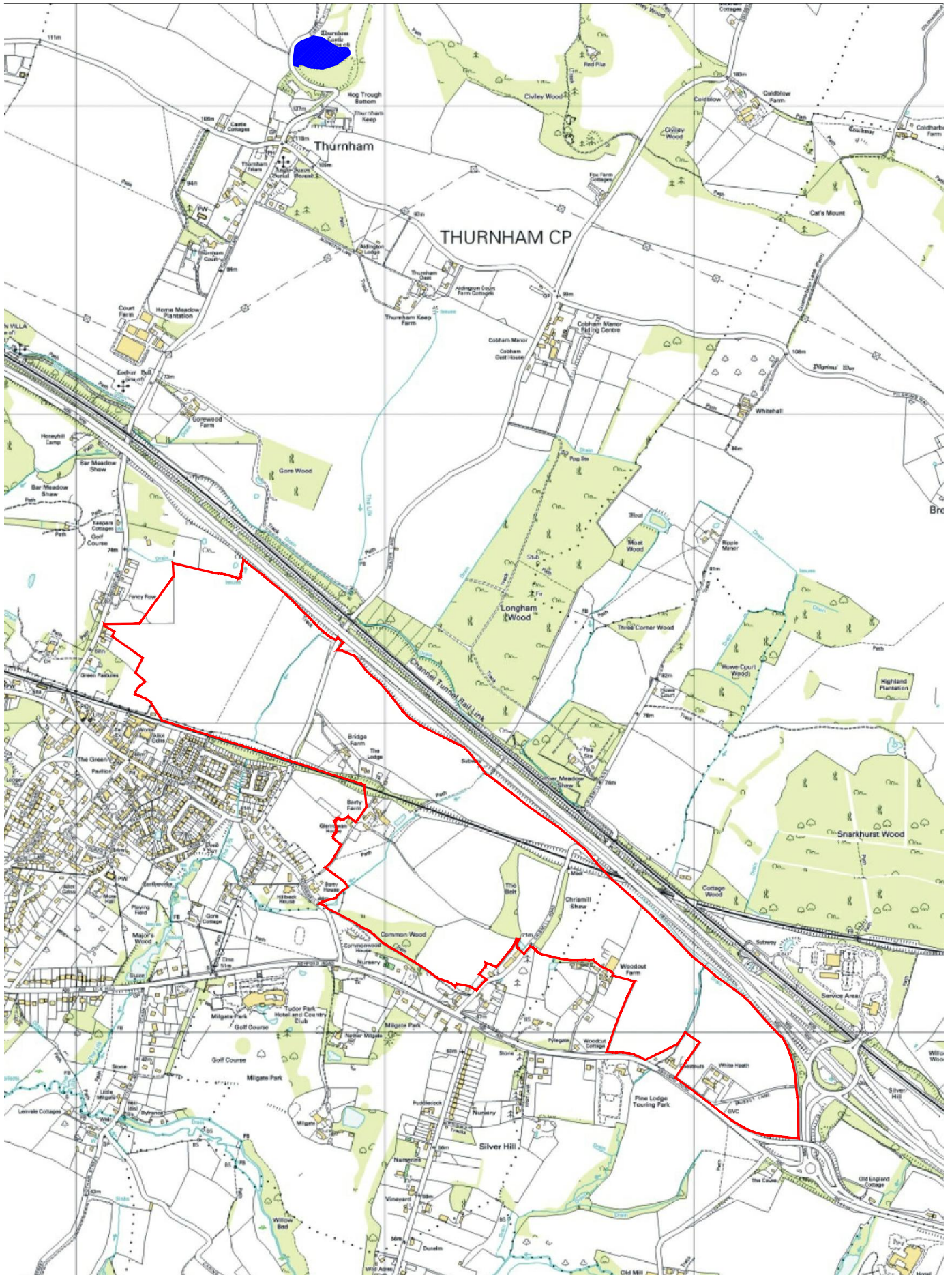
13.7.1 There will be no direct impact and negligible indirect impact on Thurnham Castle or its setting.

13.7.2 Further assessment of the site's archaeological survival potential and field evaluation including geophysical survey and evaluation trenching indicates that the site contains plough-damaged remains of Middle/Late Iron Age occupation, prehistoric flint within topsoil, ploughed out ridge and furrow, evidence of former 19<sup>th</sup> century field boundaries and the site of 19<sup>th</sup> century Workhouse and grounds. Elements of the historic landscape within the application site has been degraded by woodland and hedgerow removal.

- 13.7.3 The plough damaged remains of Middle/Iron Age occupation and the site of 19<sup>th</sup> century Workhouse and grounds are considered to be of Local importance and all other assets are considered to be of Negligible importance.
- 13.7.4 The magnitude of impact from the proposed development on plough-damaged remains of Middle/Late Iron Age occupation and the site of the 19<sup>th</sup> century Workhouse will be High Adverse.
- 13.7.5 Following excavation and recording of the buried remains, the magnitude of impact on these archaeological assets will be effectively reduced to Negligible.

## **13.8 Assumptions and Limitations**

- 13.8.1 The geophysical survey has been undertaken on the vast majority of the application. There are some areas in the vicinity of existing buildings and field boundaries which were not surveyed. However, in view of the results indicating a generally low archaeological potential of the site, this limitation is not significant.
- 13.8.2 The trenching was targeted on anomalies identified by geophysical survey.







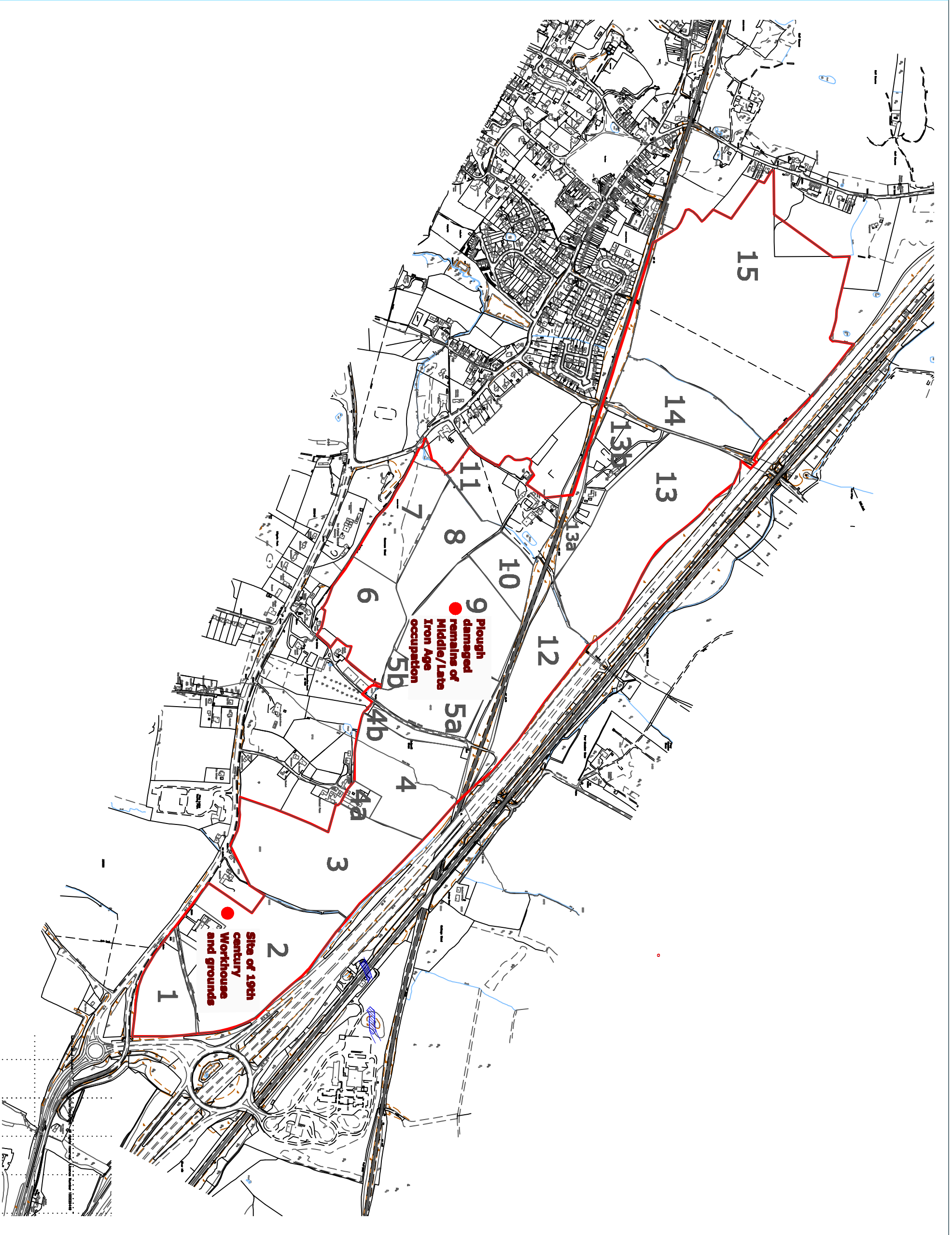
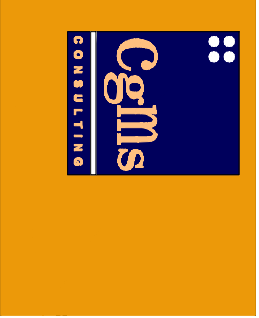
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|---|---|--|---|
|  Site boundary<br> Thurnham Castle Scheduled Monument |  | Project title:<br>Kent International Gateway |  London<br>Cheltenham<br>Kettering<br>Newark<br>Birmingham<br>www.cgms.co.uk<br>Planning & Development<br>Archaeology & Historic Buildings |
|   | Not to scale,<br>illustrative only  | Date printed:<br>Aug 12, 2009                |   |

Figure 1: Thurnham Castle and the application site

Additional information:



Project title: Kent International Ga



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Figure 2: Baseline Conditions within the application si