

**ASSESSING THE HISTORIC ENVIRONMENT OF THE EAST SUSSEX
AGGREGATE RESOURCE**

AGGREGATES LEVY SUSTAINABILITY SCHEME

DESK-BASED ASSESSMENT



**CRUMBLES FORESHORE
(BETWEEN EASTBOURNE AND BEXHILL)**

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ABSTRACT

This document represents the first stage product of the historic environment resource assessment of aggregate geologies in East Sussex, funded by English Heritage from the Aggregates Levy Sustainability Fund (ALSF). This desk-based assessment (DBA) assesses the known and potential historic environment resource for the **Crumbles** storm beach deposits, which run east to west between Eastbourne and Bexhill in East Sussex. Four other similar DBAs deal with the Folkestone Sand Beds near Ditchling, the gravels of the Ouse and Cuckmere Valleys and the coastal gravels deposits of the Rye Bay.

The DBAs bring together existing written, graphic, photographic and electronic information available to the East Sussex County Council Archaeology Team at the start of the project in order to define the present level of understanding of the historic environment in the five areas. The aim of this document was to provide specialists with a baseline in order that they could consider the present state of information available to the County Council Archaeology Team, advise on its strengths and weaknesses and provide information to address these weaknesses with suggestions for future research.

Data currently available demonstrates that the Crumbles storm beach deposits contain evidence for human activity from the medieval period through to the modern day. Evidence for permanent settlement dates from at least the 12th century on the Pevensy Levels, but appears to commence in the later post medieval period along the foreshore. The area has, however, received relatively limited archaeological research until now and its full archaeological potential, particularly for earlier periods may be greater than presently recognised.

1 INTRODUCTION

This report sets out the results of an assessment of the historic environment of the East Sussex aggregate resource funded by English Heritage from the Aggregates Levy Sustainability Fund (ALSF). The survey area comprised the historic county of East Sussex¹ and focused on five key areas of aggregate resource:

- Folkestone Sand (including the Plumpton and Novington areas)
- River Terrace Gravels (Ouse Valleys)
- River Terrace Gravels (Cuckmere Valley)
- Storm Beach Gravels (Crumbles, Eastbourne)
- Storm Beach Gravels (Rye Bay)

The aim of the project was to provide a consistent understanding of the historic environment across the areas of sand and gravel aggregate resource, including areas of past, present and future aggregate extraction, in order to inform decision-making and interpretation. The following aspects of the historic environment were considered:

- Geology and Palaeo-environment
- Archaeology
- Buildings
- Landscape

1.1 Key Aims & Outputs

The aim of this project was to provide a consistent understanding of the historic environment across the chosen areas of aggregate resource, including areas of past, present and future aggregate extraction, in order to inform decision-making and interpretation. A key aim of the project is that outputs will contribute to and enhance the following:

- East Sussex County Council Minerals and Waste planning documents
- East Sussex County Council Historic Environment Record
- South East Historic Environment Research Framework
- ESCC staff and project stakeholder understanding of the relationships between geology and the historic environment

2 PLANNING BACKGROUND

2.1 Aggregate extraction background

National Core Output Indicators for the production of Annual Monitoring Reports by Local Planning Authorities requires production of primary land-won aggregates to be reported on. Policy M3 of RPG9 Waste and Minerals requires the County Council to plan to maintain a land-bank of at least seven years of planning permissions for land-won sand and gravel, which is sufficient to deliver 10,000 tonnes per annum up to 2016. Requirements of aggregate reserves over the 16 years in the period included in the Regional Planning Guidance for the South East (RPG9) – Waste and Minerals (2001 – 2016) inclusive, equates to 16 x 10,000 tonnes. East Sussex and Brighton and Hove is required, therefore to make provision to ensure sufficient permitted reserves of 160,000 tonnes of construction aggregate sand and gravel in a period up to 2016. The current allocations are being renewed as part of future modifications to the South East Plan, which is being prepared to replace RPG9.

¹ Although East Sussex County Council provides archaeological advice to Brighton and Hove City Council, there is no aggregate resource in that area which was the subject of assessment during this project.

The level of production in East Sussex is very low by regional standards. There are valid permissions for sand and gravel extraction in the County but activity is intermittent and is likely to remain so in the near future.

Existing Operation Sites and Permitted Aggregate Reserves (March 2006)

Site	Material	Permitted Reserve
Nook Beach/Castlewater	Sand and Gravel	Confidential figure
Stanton's Farm (Novington Sandpit)	Sand and Gravel	389,000 tonnes
Scotney Court	Sand and Gravel	935,000 tonnes
Scotney Court Extension/Wall Farm	Sand and Gravel	3,230,000 tonnes
Total:		4,545,000 tonnes

Source: ESCC Annual Monitoring Report 2005/2006 Minerals & Waste (Dec 2006)

Future Actions/Comments

There are very low levels of viable resources for land-won aggregates in the South East Plan area and there are relatively few sites in production. Despite this fact, nationally-set economic and housing objectives are creating a considerable demand for aggregates, which has implications for extraction activities within the county well into the future. It should be noted that the project matches the criteria in Objective 2 of ALSF (strategic mitigation of future extraction) as well as analysing existing data the wider dissemination of which will match Objective 3 (mitigation of past extraction).

2.2 Planning background

East Sussex County Council

The County Council is responsible for setting policies for minerals and waste development, dealing with applications for minerals and waste development and dealing with planning applications for its own service developments such as schools and libraries. For these reasons, this project, undertaken by East Sussex County Council Archaeology section with external specialist consultants, provides key guidance and information directly where it is most useful. At a wider level, the provision for involvement of the public, groups and operators in the process of contributing to setting future planning policies and considering planning applications is set out in the East Sussex Statement of Community Involvement (SCI) (East Sussex County Council, December 2006).

The Minerals and Waste Development Scheme (MWDS)

This sets out the titles and timetables of relevant documents to be prepared under the 2004 Planning and Compulsory Purchase Act. The main documents have to be accompanied by a Sustainability Appraisal (SA), which, along with social and economic issues, will appraise the environmental effects of the planning strategies and policies. It is likely that in pursuing the objectives of sustainable development the SA will include requests to carry out Strategic Environmental Assessments (SEA) of plans and programmes. This will demand good data about

the historic environment, which at present is lacking in some areas. This project provides that information for areas of terrestrial aggregate resource (sand and gravel).

The Waste and Minerals Development Framework

This project has been undertaken at a time of considerable change for planning as well as heritage protection. The relatively new planning system (Planning and Compulsory Purchase Act, 2004) has introduced the concept of core strategies and site allocation documents. This means the replacement of the Minerals and Waste Local Plan with a Waste and Minerals Development Framework, Regional Planning Guidance by a Regional Spatial Strategy and Supplementary Planning Guidance by Supplementary Planning Documents (SPDs). It is anticipated that the new system will speed up the preparation of plans, ensure plans are kept up to date (the idea of site documents separate from the core strategy), achieve more effective community involvement and ensure the right development, in the right place at the right time.

The Waste and Minerals Development Framework (WMDF) will comprise a set of Local Development Documents (LDDs) that set out the spatial strategy for the area and include Development Plan Documents (DPDs), such as those for minerals and waste. Along with Supplementary Planning Documents, which expand on policies and provide advice, these documents make up the County Council's Local Development Framework (the Waste and Minerals Development Framework (WMDF), which will comprise the following:

- Adopted Plans
- Core Strategy
- Site Allocation Documents
- Proposals Map
- Supplementary Planning Documents
- Local Development Scheme
- Statement of Community Involvement (SCI)
- Annual Monitoring Report

It is the aim that this project will contribute key data about the historic environment of the aggregate extraction areas, to be included in the above documents.

Sources consulted

- Relevant national planning guidance and legislation
- Relevant policies in the East Sussex Structure Plan
- Relevant Local Plan or Unitary Development Plan policies
- Relevant heritage designations including Scheduled Monuments, Conservation Areas, Listed Buildings and Historic Parks and Gardens

3 GEOLOGY, SOILS & TOPOGRAPHY

3.1 Storm Beach Gravel Deposits

(fig 1)

The Crumbles Storm Beach Deposits have been formed by shingle movement from west to east along the Sussex coast. The beaches are dominantly made up of a gravel backshore and a sandy foreshore, but the latter is often absent or suppressed where shoreline platforms occupy most of the inter-tidal zone.

The relative importance of sources of supply of gravel to feed barrier growth is uncertain, but derived from either updrift sources, bypassing the then less prominent headlands of Seaford and Beachy Heads; or from offshore sources. The late Holocene growth of the Crumbles cusped foreland at Eastbourne is strongly suggestive that the gravel supply, rather than sand, was predominant, though there may have been an earlier phase during which much of the sediment input was sand. It is thus conceivable that the first generation barrier here was composed of sand and that the structure broke down as this supply became exhausted, and/or the entrance of the tidal pass widened and deepened. Much of this offshore supply could have been derived from Pleistocene raised beach and Coombe Rock deposits, the latter rich in weathered flint. The Arun, Adur, Ouse and Cuckmere would have contributed additional coarse sediment when they drained a tundra environment. All of this material would have been reworked and redistributed during the complex sequence of Quaternary climate and sea-level changes. Substantial input would also derive from the earlier denudation of Chalk and Eocene bedrock, a long-term process which would have beveled some 12 to 15km of Chalk outcrop, as well as the Portsdown to Littlehampton Chalk pericline further west. More speculatively, sand and gravel is likely to have been introduced into the eastern English Channel once the Strait of Dover had been created.

There was, then, an abundant supply of flint to build gravel barrier structures along the entire length of the shoreline of East Sussex at this time. Nicholls (1991) considers that the major period of barrier growth was 3 to 2,300 years B.P., known from sites elsewhere (e.g. Dungeness) to have been a period of exceptional storminess.

The analogy with better-developed barriers along the south and southwest coasts of England (e.g. Chesil Beach; Slapton Sands; Dungeness; Sandwich Bay) is close. However, all of these examples are now eroding, or are in a condition of chronic disequilibrium. A main cause of their degeneration is the exhaustion or substantial decline of offshore "reservoirs" of gravel and sand. In East Sussex, the erosion of beaches and accretion structures such as The Crumbles and Dungeness since the eighteenth century is consistent with this. Barrier breakdown has also been accelerated by a switch from swash to drift alignment, which had the effect of promoting strong spit growth across the previously wider tidal passes of the Adur, Ouse and Cuckmere. This, in its turn, caused a previously more segmented shoreline, characterised by several discrete cells or sub-cells, to become dominated by uni-directional (eastwards) drift between major headlands (Nicholls, 1991).

Jennings and Smyth (1990), after documenting the history of the Crumbles cusped foreland, hypothesise that there have been several short period (up to 50 year?) "pulses" of offshore to onshore gravel transport superimposed on a longer-term history of diminishing feed. This is considered to result from a change from a dissipative to a reflective domain. The last such "pulse" coincided with a major phase of growth some 300 years ago. It is tempting to adapt this concept to the coastline west of Beachy Head, but there is no specific evidence to support it. One important implication, however, is that the morphodynamic behaviour of regional beaches is subject to cyclical fluctuation, with rapid phases of sediment gain separating longer periods of loss. Seen in this context, coastal defences are not necessarily a fundamental cause of beach deterioration (e.g. Seaford Beach) as both current and historical losses are diagnostic of a tendency for natural erosion. However, in the case of the coastline between Shoreham and Newhaven, modern beach budgets have been greatly modified by the insertion of orthogonal structures such as massive breakwaters and groynes.

Nicholls (1991), in discussion of the hypotheses of Jennings and Smyth (1990) places strong emphasis on the fact that headlands (especially Beachy Head) were less prominent features of the coastline in the mid to late Holocene. They were therefore less effective barriers to longshore transport, thus linking West and East Sussex in a more unified littoral drift system. This view would allow potentially large quantities of gravel moving onshore at, and east of, Selsey Bill to feed beaches up to some 50km eastwards. Rates of long-shore transport during the late Holocene would have been a function of prevailing coastal platform, mean wave height, wave approach, the magnitude/frequency of large storms and offshore bathymetry. By-passing of estuary mouths would have been achieved under storm conditions, when remobilisation of offshore stores might also have occurred. This would create conditions for "pulsed" longshore transport, in contrast to

episodic offshore to onshore gravel inputs preferred by Jennings and Smyth. Nicholls (1991) also calculates that an annual drift rate of approximately $80,000\text{m}^3\text{a}^{-1}$ along the West and East Sussex coasts would have been needed to create the gravel store of the Crumbles, Eastbourne over the 500 year period (800-300 years B.P.) during which he argues it was formed. However, it is possible that there were precursors to the modern Crumbles foreland, and that gravel from as far west as Selsey Bill might have moved longshore to supply Dungeness and the Camber ness. If this were the case, the drift rate along the East Sussex coast prior to approximately 2000 years B.P. must have been substantially more than $120,000\text{m}^3\text{a}^{-1}$. This is some five to six times prevailing rates, and is considered by Jennings and Smyth (1991, in reply to Nicholls) to be unlikely. They therefore prefer a sediment budget dominated by offshore supply.

3.2 Soils

Soils on the storm beach are scarce due to the loose nature of the gravels and the constant erosion by the elements. They do survive better along the north edge of the foreshore, protected by modern day built structures and encouraged by human management. Where they do exist however, they are relatively thin and heavily leached.

3.3 Topography

The project area is situated between Eastbourne Pier and Cooden Station near Bexhill and encompasses Langney Point, Pevensey Bay and Normans Bay.

The Crumbles to Bexhill foreshore comprises of a long relatively flat linear strip of beach gravels, of a maximum width of 1400 metres (but generally less than 500 metres) and approximately 11 km long. The majority of the foreshore is at 0 OD, but there are small isolated higher points or knolls rising to 2-3 metres OD on the Langney Point area, and larger high points representing former 'eyes' or islands at the Bexhill end which rise to 10 metres OD.

4 ARCHAEOLOGICAL BACKGROUND

East Sussex has received a high level of archaeological research from the mid 19th century when the Sussex Archaeological Society and a number of local archaeological societies were formed. The majority of the early research tended to focus on the chalk downs, but in the later 20th century attention was turned to the Low and High Weald landscapes.

4.1 Sources consulted

The main sources for East Sussex were found to be:

1. **The East Sussex Historic Environment Record (ESHER)**. This is the prime source of data for the desk based assessment and is held at East Sussex County Council. The record should hold data of all recorded sites, past investigations as well as a range of historic maps. The ESHER also holds more detailed records such as grey literature reports, listed building data and Portable Antiquity Scheme data. Although a huge source of data, the HER is reliant on transfer of information and does not unfortunately reflect a total archaeological record. It is also inevitable that some areas will have a low number of record sites due to a lack of investigation in the past.
2. **The National Monuments Record (NMR)**. No other databases independent of the ESHER were identified and the NMR was found to contain an identical but out of date data set to that of the ESHER.
3. **Listed building list**. The ESHER holds point data for Listed Buildings and this records a total of six within the project area. Local building lists were not consulted.

4. **Schedule of Ancient Monuments & Archaeologically Sensitive Areas.** The project area contains five Scheduled Ancient Monuments, all Martello towers and ten Archaeologically Sensitive Areas, relating to post medieval coastal defence structures and the Roman villa at Eastbourne Pier
5. **The Registers of Historic Parks and Gardens.** The project area contains no registered parks and gardens. Local lists were not consulted.
6. **Current Ordnance Survey maps** at 1:10000, 1:2500 and 1:1250 scales. The current 1:10000 Ordnance Survey map was analysed for evidence of current extraction and land use. Approximately 50% of the project area was found to be farmland/beach, with the remainder being housing/industrial. No evidence was seen for working quarries or extraction areas, the recent quarries at the Crumbles having been developed into a marina and housing estate.
7. **Historic mapping Analysis** was carried out of:
 - Ordnance Surveyors Draft c. 1805-1810 (OSD)
 - 1st edition Ordnance Survey c.1865 (1st OS)
 - 2nd edition Ordnance Survey ,1895 (2nd OS)
 - 3rd edition Ordnance Survey c.1915 (3rd OS)
 - 4th edition Ordnance Survey c.1930 (4th OS)

Evidence was recorded primarily from the Surveyors Draft and 1st edition Ordnance Survey, concerning the extents of villages as an indication of post medieval occupation areas, isolated buildings including settlements, industrial and agricultural, as well as evidence of extraction and quarrying. The 2nd to 4th Ordnance Surveys were used to track expansion of quarries and identify new areas of extraction.

Analysis of the historic maps has added a lot more information regarding the medieval and post medieval occupation of the Pevensey Levels and Crumbles foreshore. As discussed in the ESHER summary the levels are characterised by small hamlets, isolated farms and shepherds 'lookers cottages'. The modern mapping data shows that most of these survive in the same format today, with only a few of the isolated farms having been abandoned.

The mapping data was useful in providing evidence of past quarrying. This suggests that the Gravels have been targeted in the past but only on a small piecemeal scale, probably for road building.

8. **Aerial data.** In light of the large extent of this project area, four transact target areas were selected:
 - C4a targeted at the Storm Beach Deposits at the Crumbles focused on an area of medium density HER data distribution.
 - C4b targeted at the Storm Beach Deposits to the west of Cooden, an area of low-medium HER data distribution.

The following air photographic collections were assessed:

- The National Monuments Record's collection
- Cambridge University Air Photographic Collection
- 1946 RAF verticals held by ESCC
- Such other collections as are held by East Sussex County Council within the Historic Environment Record, the Archives Service, Planning and Highways Departments or elsewhere.
- The Sussex University collection.

Cover searches of these sources recorded a large quantity of material which is quantified below:

Source	Collection	Vertical	Oblique	Military Oblique
NMR	Various	1306 (Transect 4A)	12	15
NMR	Various	577 (Transect 4B)	0	15
ESCC	Various	0	4	0
ESCC	1947 RAF	Full coverage		
ESCC	1999 colour	Full coverage		
ESCC	2006 colour	Full coverage		
ESRO	RAF for the Ordnance Survey, 1945-1947 (AMS 5868).	Not assessed		
ESRO	RAF, 1957 (C/P 63/8-9)	Not assessed		
Sussex University	1946 RAF	Full coverage		
Sussex University	1950s collection	Full coverage		
Sussex University	1990s collection	Full coverage		
Cambridge University	Various		4	2
				0

9. **Historic Landscape Characterisation report.** The HLC project is currently running in East Sussex, with an expected conclusion in summer 2009. Eastbourne Borough and Rother District data is not yet available, so analysis cannot be included in this report.
10. **Placenames studies.** These have not been assessed for the area but represent an area for future study. They can be derived from sources such as tithe and estate maps as well as existing village and landscape names. Place name studies shows that many place names have their origin in the early medieval period. Field names may also reveal potential sites such as mill sites. However, this source has major drawback in that place names tend to drift from their original location.
11. **Geotechnical reports.** We were unable to locate any relevant geotechnical reports.
12. **Published and grey literature reports:** previous archaeological evaluation and excavation records relating to sites in and immediately adjacent to the study area. Only three published reports were identified regarding archaeological research within the project area. These relate to the 19th century investigations of the Eastbourne Roman villa and the finding of a wooden clinker built boat and artefacts at Cooden in 1887.

5 DESK BASED ANALYSIS

5.1 East Sussex Historical Environment Record (ESHER)

(fig 2)

Examination of the ESHER recorded thirty-one records and three events (summarised under grey literature). The monument records are summarised in appendix 1.

The HER data suggests that the project area has been utilised from at least the medieval period, with an increase in activity during the post-medieval periods. There is evidence of occupation on the margins of the Levels from at least the Bronze Age and it is likely that the marshes were utilised seasonally for resources such as salt production, prior to their reclamation in the medieval period.

The HER also provided designated Archaeologically Sensitive Areas (ASAs) and Scheduled Ancient Monument Areas (SAMs), which will be discussed below.

The project area does however contain areas with no ESHER records, likely to represent a lack of past archaeological research in these areas, rather than a lack of sites.

5.2 The NMR

No other databases independent of the ESHER were identified and the NMR was found to contain an identical but out of date data set to that of the ESHER.

5.3 Listed buildings

The ESHER holds point data for Listed Buildings and this records a total of six within the project area. Local building lists were not consulted.

5.4 Scheduled Ancient Monuments & Archaeologically Sensitive Areas

(fig 2)

The project area contains five Scheduled Ancient Monuments, all Martello towers, and ten Archaeologically Sensitive Areas, relating to post medieval coastal defence structures and the Roman villa at Eastbourne Pier.

5.5 Registered Parks and Gardens

(fig 2)

The project area contains no registered parks and gardens. Local lists were not consulted.

5.6 Current Ordnance Survey mapping

The current 1:10000 Ordnance Survey map was analysed for evidence of current extraction and land use.

Approximately 50% of the project area was found to be farmland/beach, with the remainder being housing/industrial. No evidence was seen for working quarries or extraction areas, the recent quarries at the Crumbles having been developed into a marina and housing estate.

5.7 Historic Mapping

Analysis was carried out of:

- Ordnance Surveyors Draft c. 1805-1810 (OSD)
- 1st edition Ordnance Survey c.1865 (1st OS)
- 2nd edition Ordnance Survey ,1895 (2nd OS)
- 3rd edition Ordnance Survey c.1915 (3rd OS)
- 4th edition Ordnance Survey c.1930 (4th OS)

Evidence was recorded primarily from the Surveyors Draft and 1st edition Ordnance Survey, concerning the extents of villages on as an indication of post medieval occupation areas, isolated buildings including settlements, industrial and agricultural; as well as evidence of extraction and quarrying. The 2nd to 4th Ordnance Surveys were used to track expansion of quarries and identify new areas of extraction.

Analysis of the historic maps has added a lot more information regarding the medieval and post medieval occupation of the Pevensey Levels and Crumbles foreshore. As discussed in the ESHER summary the levels are characterised by small hamlets, isolated farms and shepherds 'lookers cottages'. The modern mapping data shows that most of these survive in the same format today, with only a few of the isolated farms having been abandoned.

The mapping data was useful in providing evidence of past quarrying. This suggests that the Gravels have been targeted in the past but only on a small piecemeal scale, probably for road building.

5.8 Aerial data

In light of the large extent of this project area, four transect target areas were selected:

- C4a targeted at the Storm Beach Deposits at the Crumbles focused on an area of medium density HER data distribution.
- C4b targeted at the Storm Beach Deposits to the west of Cooden, an area of low-medium HER data distribution.

Aerial data sources identified were:

1. oblique and vertical photographs held by NMR
2. 1947 black and white RAF verticals held by the ESHER
3. 1999 colour verticals held by ESHER
4. 2006 colour verticals held by ESHER
5. selection of oblique black and white photographs held by ESHER
6. selection of oblique and vertical photographs held by East Sussex Record Office
7. selection of oblique and vertical photographs held by Sussex University
8. oblique and vertical photographs held by Cambridge University

Cover searches of these sources recorded a large quantity of material which is quantified below:

Source	Collection	Vertical	Oblique	Military Oblique
NMR	Various	1306 (Transect 4A)	12	15
NMR	Various	577 (Transect 4B)	0	15
ESCC	Various	0	4	0
ESCC	1947 RAF	Full coverage		
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ESCC	2006 colour	Full coverage		
ESRO	RAF for the Ordnance Survey, 1945-1947 (AMS 5868).	Not assessed		
ESRO	RAF, 1957 (C/P 63/8-9)	Not assessed		
Sussex University	1946 RAF	Full coverage		
Sussex University	1950s collection	Full coverage		
Sussex University	1990s collection	Full coverage		
Cambridge University	Various	4	2	0

5.9 Sussex Historic Landscape Characterisation

The HLC project is currently running in East Sussex, with an expected conclusion in summer 2009. Eastbourne Borough and Rother District data is not yet available, so analysis cannot be included in this report.

5.10 Place name studies

Have not yet been assessed.

5.11 Geotechnical reports

We were unable to locate any relevant geotechnical reports for the study area.

5.12 Published & grey literature reports

Only three published reports were identified regarding archaeological research within the project area. These relate to the 19th century investigations of the Eastbourne Roman villa and the finding of a wooden clinker built boat and artefacts at Cooden in 1887.

6 SPECIALIST REVIEW AND RECOMMENDATIONS

Dr Martin Bates, Luke Barber, Chris Butler and Ron Martin assessed the draft DBAs in order to highlight factual errors, enhance the period summaries and where possible identify site information and bibliographic sources not identified by the initial DBA research. All the specialist comments have been incorporated in the period summaries above and their observations summarized below.

6.1 Dr Martin Bates University of Wales, Lampeter

Geology and topography

- Geological resource for study areas. While data from the BGS appears to have been obtained and displayed on the maps provided in its current form this is limited. What would actually also be useful would be the bedrock geology as well as the superficial geology. The bedrock geology is critical in providing first order guesstimates as to the preservational status of the overlying sediments and hence of some considerable use. When displaying the superficial geology it is also important to note the nature of surrounding superficial geologies in order to begin to understand where source areas of material within the target sediments may be coming from.
- Boreholes. The DBA has not highlighted any geotechnical data. Even if only the locations (rather than their lithology) can be presented this would be useful to see the extent of the information resource.
- Topography. This needs to be developed further. It would be most useful (from a geoarchaeological perspective) to be able to see a map with only the contour plots for the study areas and their immediate surroundings.

Past levels of impacts

The impact of extraction on the archaeological resource is likely to be restricted to those periods of gravel accretion lying close to the modern surface rather than those preserved at depth within the area. The absence of a geoarchaeological model for individual areas makes it difficult to assess this level of impact precisely. Other important questions that are not addressed relate to the nature of the quarrying in each area – main extraction methods, usual depth of quarrying etc. These will have important implications on the likely impact on subsurface geology as well as archaeology.

Key Research Questions

The first level of investigation has to be a processed based geoarchaeological model for the study area. In order for this to be appropriate and realistic it is likely that the model should also include information from the surrounding areas. Because of the reliance for much of the interpretative framework on the BGS mapping the earlier history of many parts of these landscapes remains unknown (even in Romney Marsh much of the work has focused on the post 6000 B.P period). Consequently on set of sequence formation, presequence formation landscapes etc are all legitimate research goals. It should be remembered that because both systems form part of large 3-dimensional landscapes that elements of these bodies may well exist closer to the surface in some areas and even wedge out at the ground surface beyond the study region. Only by understanding the full nature of these deposits can we hope to fully assess their archaeological potential.

6.2 Luke Barber, Research Officer, Sussex Archaeological Society

Comments on Mesolithic to Modern Periods

Bronze Age Period

- The wetlands were certainly exploited during this period – more emphasis on Shinewater and the finds from Romney Marsh would be good to back up the potential. Just nothing yet found. Still low to medium potential.

Iron Age Period

- Possibility of finding salt-working sites – there was briquetage from Iron Age features at ECAT so it is probable salt-working occurred down on the wetlands.

Roman Period

- As with earlier periods there is a potential for salt-working.
- The exact edges of the tidal inlet/harbour mouth which served the Saxon Shore Fort are not certain and would be worth geoarchaeological work to pinpoint such and study the nature of the silting within. There is a chance of buried boats.

Anglo-Saxon and Medieval Periods

- As for the Roman period. As such I do not agree with there being only low potential as there could be salterns close to the current shore – low to medium potential?
- Archaeologically, much less is known of about the exact method of reclamation of the wetlands here (in comparison to Romney Marsh). There may be scope to begin studying this depending on the exact location of any new extraction. There is a fair chance for traces of infilled medieval drainage ditches and sluices, particularly as one goes inland. Has the current field system directly developed from a buried medieval one?
- Worth pointing out the presence of a number of moats in area as well as farmsteads and ‘villages’. It would be interesting to study how these sites related to each other and indeed to the overseeing Abbey.
- I would say potential for medieval remains is medium, if not medium to high.

Post-medieval to Modern Periods

- The importance of the historic marsh landscape, together with its associated Looker’s huts and sheepfolds should be emphasized.
- Structures associated with post-medieval/modern reclamation /drainage/water management are often overlooked by archaeologists despite their importance. Sluices, pump-houses etc. They are usually of local significance at least.
- Other post-medieval foreshore features such as coastguard stations and boat-houses are also overlooked and need to be considered, particularly if threatened.
- Historic extraction (i.e. gravel in this area) needs consideration as it was obviously a reasonably significant industry in the past. This is particularly the case if it can be linked to specific events like Martello Tower construction.
- The map quite clearly shows the very high potential for Napoleonic fortifications – extant examples should be preserved in situ (too many have already been destroyed one way or another). Mention should be made of the C20th- fortifications in the area even though most have now been destroyed.

Generic Comments

- It would have been good to combine the historic map data with the HER for the post-medieval period and plot all the sites on the PM maps. Historic landscape characterization, historic maps, HER and Listed Buildings, if combined on one map would give a really good impression of the PM period – but probably too much work at this stage?
- It would probably be better to divide the PM period into early (to 1750/1800) and late (post 1750/1800) and integrate the industrial into the relevant bit (most will be late PM) – but this is

probably too much work at this stage/level.

- It would be useful to know what the 'grey reports' were – small watching briefs, small/large evaluations. Would give a better idea on the basis for which potential is being gauged. Also it would be useful to feed some more detail from these reports back into the relevant period heading – i.e. medieval pottery has been found in Ditchling during at least one WB. Have unstratified finds on other sites suggested activity for different periods. Maybe too much work at this general overview stage?
- The ESHER desperately needs to add the C20th military remains of the county. More industrial sites should also be added.

6.3 Chris Butler, Chris Butler Archaeological Services and Mid Sussex Field Archaeology Team (MSFAT)

Comments on all periods, especially Lithic periods and military archaeology

- The HER dataset is particularly weak in aspects of 20th century Defence Heritage, and therefore it is of no surprise to see that there are no 20th century military sites on the HER for this area.
- However, the Tudor gun batteries and Napoleonic fortifications are listed on the HER.

Prehistoric, Roman and medieval Periods

- There is little evidence for early defences in this Project Area. However, just inland the late Roman fort at Pevensey would have provided a centre for the defence of this coastal region (Pearson 2002), and later became the focus for defence during the Saxon, and Medieval periods (Jones 2003).

Post-medieval Period

- All of the known sites within or just outside the project area, and whether extant or removed, are summarised in Appendix 4. However it should be noted that this table represents our current knowledge of military sites, and there are likely to be many more, especially Civil Defence sites, still to be re-discovered. A brief assessment of the Defence Scheme for 5th Bn The Kings Regiment, which covers the beach defences between Eastbourne and Bexhill was made, and a number of sites were added to table 1 as a result of this. However, this and other documents require further analysis.
- Pevensey Castle is just outside the Project Area, but obviously had a large influence on the defence of this area throughout the whole period covered. The Second World War defences at Pevensey Castle have been recently summarised by Foot (2006), so have not been repeated in Table 1. The main defences in Bexhill have also been excluded from Table 1 as they lie outside the project Area, although those at Cooden have been included.
- Any removal of shingle from the foreshore may reveal buried archaeology from Second World War and earlier defence sites, whilst surviving structures may also be affected due to subsequent coastal erosion or more directly by the extraction and its associated workings.
- Any military sites that pre-date the 20th Century are now so rare, that they should all be considered nationally important.
- The most important group of sites are the six Martello Towers that survive within the Project Area, together with the Eastbourne Redoubt. These are nationally important sites and must be preserved. Although other Martello Towers and the Langley Forts have been lost, there may still be remains of these sites either below the high water tide level or buried under the shingle,

so any proposed extraction or other work on the sites of these monuments should be monitored.

- There are a number of Second World War defences still surviving along the foreshore, together with many areas where defences have been superficially removed or infilled. It is very likely that some forms of defence were buried in the shingle rather than being removed; for example anti-tank cubes, beach scaffolding etc. As the surviving sites are now so rare consideration should be given to the preservation of all such in-situ sites, whilst proposed extraction in other areas should be subject to desk-top research to locate the appropriate defence schemes which will provide a guide to the types of defences that were located there and may still survive, albeit buried and infilled. Some key surviving sites, for example one of the searchlight posts at Normans' Bay, which survives almost intact, should be considered for scheduling.
- Surviving civil defence sites are predominantly located in areas of habitation, and as far as this Project Area is concerned they are concentrated in Eastbourne and Bexhill, although some are present in villages and in rural locations. Therefore, they will be largely unaffected by any future quarrying activity. However, they form a group of rapidly disappearing sites, due to the perception that there are lots of them surviving, so any that may be threatened in the future should be considered as important.

Key research questions

There are a number of key research questions for the Project Area:

- A War Department 'defence scheme' survives from the Second World War for the Eastbourne coastal area, but has not yet been fully studied. Another exists for the Pevensey & Normans' Bay area, and there are likely to be others, which fill in the gaps. A full desk-top study of these defence schemes and other associated documents will enable us to have a much better understanding of the location of sites within the Project Area (The example of the 5th Kings Defence Scheme being given above). This could be followed up with a detailed field survey to locate some missing features. Recent work on the east side of Bexhill has located partly infilled slit trenches and weapons pits (Hibbs, pers. com.).
- The emergency coastal batteries set up in 1940/1 also need further research. There should be drawn plan of each battery, together with a war diary available at the National Archives. Recent fieldwork has suggested that there could be many elements of these batteries surviving as current structures, albeit much altered.
- There needs to be more research, both desk-top and in the field, for surviving military sites that were transient in their nature. Examples of these would be anti-aircraft, searchlight and barrage balloon sites, together with camps, training areas and storage sites. A national desk-top study (Dobinson 1996) may provide a starting point for this.

Chris provided a total of 43 military sites (summarised in appendix 5) mainly comprising of WW2 features. These have been added to the East Sussex HER.

6.4 Ron Martin, Sussex Industrial Archaeology Society

Section to be added

7 SUMMARY AND DISCUSSION BY PERIOD

The archaeological background is provided by recognised periods as follows:

Periods	Date	Thematic divisions (after Champion, 2007)
Palaeolithic	800,000 to 10,000 BP	After the Ice Age (Upper Palaeolithic – Mesolithic) The first farmers (Early Neolithic) A world of monuments (later Neolithic – Early Bronze Age) Ordering the landscape (later Bronze Age – early Iron Age) The approach of Rome (later Iron Age)
Mesolithic	10,000 to 6,000 BP	
Neolithic	4,000 to 2,000 BC	
Bronze Age	2,000 to 700 BC	
Iron Age	700 BC to AD 43	
Roman	AD 43 to 410	
Saxon	AD 410 to 1066	
Medieval	AD 1066 to 1550	
Post-Medieval	AD 1550 to present	

It has been common to organise the pre-Roman past by use of the Three Age System, where the three phases, the Stone Age, the Bronze Age and the Iron Age (each sub-divided into sub-phase such as the Palaeolithic, Mesolithic and Neolithic or by early, middle and late sub-phases for example) allow prehistoric material remains to be grouped in chronological order. In line with recent work e.g. Champion in Williams, J (ed.), 2007) a discussion is also given below of the broader phases of subsistence economy, settlement patterns and social organisation to accompany the more typical technological divisions.

It is suggested that the earlier periods are described by radio carbon years Before Present (BP) until about 4000BC after which there is an agreed calibration method and dates are given in calendar years BC.

7.1 Palaeolithic (c. 800,000 – c.10,000 BP)

(fig 3)

This period coincides with the latter part of the Pleistocene geological period and is characterised by repeated cold periods or ice ages separated by warmer interglacial periods, the last cold stage, known as the Devensian, reached its peak around 18,000 BP. During cold stages glacial ice was rare and through most of the time frozen ground persisted rather than glacial ice, during the height of the interglacials temperatures were warmer than those of the present day. The extreme temperatures led to extensive modifications to the topography with valleys carved out and mass deposits of sediments. The present landscape is largely the result of these Pleistocene changes and Palaeolithic remains often lay deeply buried or transported from their original positions. This immense period of time (over 800,000 years) saw the 'arrival of one hominine species, their evolution into Neanderthals, extinction of the Neanderthals and arrival of the first modern humans'. (Wenban-Smith, 2007). The last main glacial period was at its height approximately 16,000 years ago and sea level as much as 100m below that of today. A sudden rise in temperatures approximately 13,000 years ago was followed by nearly 2,000 years of slowly cooling temperatures before a sudden decline in temperatures brought in the colder so called Loch Lomond Stadial around 11,000 years ago. This colder period lasted for a further 1,000 years before the final retreat of the glaciers around 10,000 years ago. Current evidence suggests that humans recolonised Britain by about 12,60BP during this later Upper Palaeolithic period but evidence for human activity in the south east is rare.

Until around 8500 years BP (c. 6500 BC) the upland surrounding the Pevensy Levels would have overlooked large coastal lowlands that connected southern England to the European landmass and contained prior to the formation of the English Channel the large English Channel river system, which the Sussex Rivers were tributaries of. Migrating across this area would have been small groups of nomadic humans, surviving by hunting animals and gathering foodstuffs. Tools and weapons constructed out of stone (predominantly flint), bone and wood were being used.

Landscapes and environments towards the end of this period were recovering rapidly from the effects of the last ice age. Rising sea-levels severed the land-link between southern England and

Europe around 8500 yrs BP, the climate became warmer and cool tundra-like landscapes were being replaced by deciduous woodlands of hazel, lime and oak.

The East Sussex Historic Environment Record records no sites or find spots from these periods. This may suggest a lack of activity during these periods, but it may indicate that deposits of this date are now buried at a great depth below the Storm Beach Gravel deposits and have therefore not been found. With such limited data it is unclear whether Palaeolithic finds and possible sites exist on the Crumbles.

7.2 Mesolithic (c. 10,000 – 6,000 BP)

(fig 3)

Landscapes and environments at this time were recovering rapidly from the effects of the last ice age. Rising sea-levels severed the land-link between southern England and Europe around 8500 yrs BP, the climate became warmer and cool tundra-like landscapes were being replaced by deciduous woodlands of hazel, lime and oak, broken by isolated patches of grassland. Changes in environment and mammal populations led to a switch from the hunting of big game in open landscapes to the targeted hunting of smaller game in more closed, wooded environments. Tracking and hunting smaller prey required different strategies and more movement around their 'territory' probably on a seasonal cycle. Lighter tool kits were developed which were better suited for working in a woodland environment and travelling greater distances. The major impact during this period is the severing of the land bridge to the continent which 'stranded' Mesolithic groups in Britain and meant they developed a different culture to their cousins in Europe.

Certainly in Sussex Mesolithic communities appear to have utilised all geological and topographical zones, but appears to have been more active, possibly in the form of semi-permanent settlements, on the better drained lands, such as sand and gravel deposits. Most 'sites' are represented by concentrations of flint tools and waste flint debitage from tool production, but occasionally physical features and deposits are discovered, such as pits, hearths and stake hole clusters. Such features have been recorded at sites such as Selmeston, which is located on sand geology (Curwen, E. 1938)

No Mesolithic finds have been recorded within the project area and as in the Palaeolithic Period it is probable that this area was either not utilised or deposits are buried at depth beneath the current foreshore. With such limited data unclear whether Palaeolithic finds and possible sites exist on the Crumbles.

7.3 Neolithic (c.4,000 – 2,000 BC)

(fig 4)

The Neolithic period marks the adoption of 'elements' of European farming technology by the indigenous Mesolithic population of Britain (Drewett, P. 2003). Possibly as a result of this technology came an increase in forest clearance resulting in an increase in erosion and rapid choking of the river valleys resulting in floodplain development.

No Neolithic sites or finds are recorded within the project area and as with earlier periods it is not possible to predict whether they may exist.

7.4 Bronze Age (c. 2,000 – 750 BC)

(fig 4)

The Bronze Age in Britain is defined by a marked influx of new people, technology and customs from the European continent. They brought new industrial and agricultural practices, burial traditions and the new technology of tools made of bronze metal. Certainly by the end of the Bronze Age, population pressures, limited land and a wetter climate resulted in the emergence of a tribal society and defended settlements, such as Seaford Head (Hamilton, S. 2003). During the Bronze Age, erosion and sedimentation on floodplain floors is typically a phenomenon.

Evidence from the early Bronze Age period suggests a steady 'colonisation' of the 'wildwood' of the

Low Weald. It is likely that a series of droveways were being formed running from the South Downs through the Low Weald and onto the High Weald during this period (many of which continued in use through to the present day). These droveways would have attracted settlement and further forest clearance along their routes.

The ESHER holds only one record for these periods, the finding of a hoard of axes deposited near Culver Croft Bank. Culver Croft Bank is a low area of raised ground within the salt marshes of the Pevensey Levels and it is probable that such 'islands' of dry ground were utilised during the Prehistoric periods as temporary/permanent settlement areas utilising the resources of the surrounding marshland. Alternatively, this area may have been a lot dryer in the Bronze Age and a greater distance from the foreshore than it is today (Woodcock, A. 2003). Evidence from the analysis of the submerged forest at Pebsham suggests that that area of coastline was forested coastal plain during the Bronze Age (Marsden, P. pers comm.). Inundation appears, based on evidence from the Shinewater timber structure on the Willingdon Levels (Greatorex, C. 2003) to have come suddenly around c. 800 BC.

The Bronze Age certainly represents the first evidence of human activity within the project area and indicates that at least the eastern margin of the foreshore was being utilised. There is therefore a low potential for further findspots and possible sites to exist within the project area.

7.5 Iron Age (c.750 BC – AD 43)

(fig 4)

Iron Age society appears to have become increasingly territorial, with social/political power apparently focused on hillforts some of impressive size and complexity. These hillforts are likely to have acted as the administrative and trade centres for their territories, territories that would have been predominately occupied by small farmsteads.

Regionally, this period is characterised by a steady increase in agricultural practice and consequentially increased expansion into the Low Weald, although current evidence suggests the main focus was on the chalk downland and the colluvial deposits at its scarp base. By the later Iron Age, East Sussex appears to have formed part of the Atrebate tribe, who dominated much of South-East Britain. The later Iron Age period also marks the first resourcing of the iron deposits of the Low and High Weald and a possible shift of communal hierarchy/control from the downs onto the High Weald (Hamilton, S. & Gregory, K. 2001).

The East Sussex HER records no sites or findspots from this period within the Crumbles project area, although the wooden boat discovered near Cooden (MES72) may date from this period. This may suggest that the limited activity seen in the Bronze Age had ceased, possibly due to inundations by the sea, which are evident in the final stage of occupation of the late Bronze Age site at Shinewater.

With such limited data unclear whether Iron Age finds or sites exist on the Crumbles.

7.6 Romano-British (AD 43 – 410)

(fig 5)

The arrival of Roman control and the integration of Britain into a wider European community marked a sharp expansion in the Cuckmere Valley, triggered by new technology, a stronger economy and possibly by investment from the Empire.

A road network was constructed in East Sussex, with one of the main 'trunk roads' running from the Ouse Valley to Pevensey. At Pevensey/Westham there is evidence of an early port, which was later fortified by the construction of a large fortress (outer walls of Pevensey Castle). The road network and port would have opened up the landscape and providing trade routes with the rest of the country, increasing the export of food and resources (including processed iron ore) out of the area and allowed the import of fine commodities from the rest of the Roman Empire.

Evidence of Romano-British activity within the project area is apparent only at the western end on

the chalk/foreshore margin. Here a substantial and very early villa complex was constructed. It is likely that this villa was built for a local aristocrat (a series of early villas stretch along the Sussex coast, focused on each of the River Estuaries, culminating in the important palace site at Fishbourne) and that this villa was a centre of trade and control over the surrounding area, origins of which may have existed prior to the Roman invasion.

During the Roman period, the marsh and foreshore are likely to have been utilised for hunting and the production of salt, although no sites have yet been identified, but are suggested by evidence of this industry that has been recorded on Romney Marsh.

With such limited data it is unclear whether Romano British sites exist on the Crumbles, but there is a low potential at the eastern and western margins, especially in proximity to the Eastbourne villa site.

7.7 Anglo-Saxon & medieval (AD 410 – 1550)

(fig 6)

By the early 5th century AD Roman military and economic systems were collapsing in Britain. Troops were being transferred to more strategic sites or withdrawn from Britain. By AD 410 the few remaining Roman militia formed the only defence against invading Saxon tribes arriving in greater numbers from northern Europe.

The current archaeological record suggests a dramatic contraction of population and settlement patterns after the withdrawal of Roman control. This decline appears to have begun in the later years of the Roman period, brought on by a series of catastrophes including a collapse of the economy, pressures of Germanic raiding along the coast and a series of devastating plagues. The surviving population appears to have quickly adopted Saxon overlords and Germanic culture. Evidence of settlement during this period is scarce in East Sussex, but is attested by cemetery sites, which in other areas have been found to be in close proximity to the associated settlement. The East Sussex HER records no sites or findspots from this period within the project area, settlements and cemeteries are however recorded at Eastbourne and Pevensey. As in the Roman period, it is likely that the marsh behind the shingle barrier was utilised for salt production and hunting.

An expansion of population and settlement patterns starts again around the 7th century a time when the pagan population was being converted to Christianity and once again becoming part of a European community. It is likely that small scale reclamation of the Pevensey Levels started in the late Saxon Period; the Domesday Book however shows that its main function was salt production. During the late Saxon/medieval period a number of hamlets formed on the low rises of land within the Pevensey Levels, probably starting as little more than a cluster of family farms, but gradually increasing in size over the following centuries.

The Esher records no evidence of Saxon activity, but does record a single substantial boundary bank known as Mark Dyke, which forms the parish boundary at that point between Pevensey and Bexhill. Although not closely dated, it is likely that this earthwork was constructed not only as a boundary but also as part of the infrastructure of the salt marsh reclamation taking place in the 12th – 15th centuries.

The medieval period represents a rapid growth in existing settlements and the formation of new settlements and outlier farms. This pattern forms the basis for much of today's settlement pattern on the Pevensey Levels. The 'power' focus remained at Pevensey as it was in the Roman period, which became an important *Cinque port* town. It is likely that the current shingle beach deposits were beginning to form during these periods, possibly as a result of land and water management on the Pevensey Levels. Access to the port at Pevensey was through a narrow channel in the shingle barrier and appears to have shifted a number of times during this period.

The medieval period saw a huge reclamation project to drain the Pevensey Levels and provide good quality farmland, the leading organisation in this appears to have been the monks of Battle Abbey, who owned much of the marsh. Later on the project was taken over by the inhabitants of Pevensey whose port access was suffering from silting brought on by the earlier reclamation and the shifting

river mouth.

The ESHER records no sites or findspots within the project area, but does record settlement, salt production sites and a series of dykes/earthworks behind the shingle barrier. It is probable that as the port of Pevensey waned boats were landed on the beach; the wooden boat discovered near Cooden (MES72) may date from this period.

There is therefore a low potential for sites from this period to exist within the project area, but the possibility of hulks and wrecks to exist must be considered as medium to high potential.

7.8 Post-medieval, modern & industrial (AD 1550 – present)

(fig 7)

By the post medieval period the Pevensey Levels had been totally 'tamed' and gave us the landscape we see today. This land was predominately used for the grazing of livestock and is characterised by a series of scattered farms and 'lookers' cottages. As with Romney Marsh, this was probably a harsh environment in which to live, with population numbers severely affected by outbreaks of malaria.

The post medieval period records within the project area are dominated by military structures. By the Tudor period, the coastline had changed significantly, and continued to change, and this together with the introduction of cannon, led to the construction of a number of gun batteries, one of which was located within Pevensey Castle (Butler 2007), and two others were located behind Normans' Bay.

East Langley Fort was constructed in 1759 as one of a number of forts along the Sussex coast (Goodwin 1994), and was equipped with six cannon. In 1795 it was supplemented by the West Langley Fort, which was also equipped with six guns. These two forts continued to be used throughout the 19th century with the West Langley Fort being lost to coastal erosion in the later 19th century. East Langley Fort was remodelled in 1855 and was still extant in 1910, but by the Second World War had also succumbed to coastal erosion. A line of 73 Martello Towers was constructed from 1805 to 1808 between Folkestone in Kent and Eastbourne, with a further tower added at Seaford in 1808 (Clements 1999). The Martello Towers were round brick-built towers, two storeys high, with a cannon mounted on the roof. They were constructed at regular intervals along the coast, and designed to be inter-supporting. Of the 47 Martello Towers built in Sussex, only 10 survive today (Telling 1997). A redoubt with a garrison of 350 men and 11 cannon was also built at Eastbourne, to support the Martello Towers, whilst numerous signal stations were constructed at intervals along the coast.

Also during the French Revolutionary and Napoleonic Wars, there had been a huge influx of soldiers into East Sussex to counter the possibility of an invasion. To accommodate these, barracks were built at many locations, including Eastbourne, Langley, Pevensey and at Bexhill (Longstaff-Tyrrell 2002). The Barracks at Bexhill being built to house the Kings German Legion (Bexhill Hanoverian Study Group 2003).

20th century Military

During the First World War the impact on this area was limited. If any coastal defences were built, there is no trace of them today. Large training camps were established in Sussex, with one being built at Cooden in 1914 comprising wooden huts and bell tents to house the newly raised volunteer battalions of the Royal Sussex Regiment. These battalions left in 1915, but the camp continued in use until the end of the war. St. Anthony's RNAS Aerodrome took over the hangars and buildings of the Eastbourne Flying School in 1914 and 17 Bessoneaux hangars were erected, some adjacent to Leeds Avenue, whilst others were erected in what is now Birch Road. A site on the Crumbles, in the region of the present day Sovereign Centre, was used by the Eastbourne Aircraft Company as a seaplane factory, and also for refuelling and servicing patrolling seaplanes. The hangars on the Crumbles were converted to an aircraft factory, and during the war the Eastbourne Aircraft Company built BE2c aircraft for the RNAS and later Avro 504 aircraft for the RFC; altogether a total of 252 aircraft were built.

During the Second World War with the threat of invasion the coastal defences were enhanced by the construction of emergency coastal batteries at Eastbourne, Pevensey, Normans' Bay and Cooden, whilst the beaches were defended by pillboxes, barbed wire and minefields, together with concrete anti-tank cubes and beach scaffolding. There were also many other form of defence which were more transient in nature, such as anti-aircraft gun sites, searchlights and barrage balloons, whilst some locations in the region were used for training. There will be little surviving evidence for these installations, although some do survive, whilst many others probably exist unrecognised. Pevensey Castle was fortified as a defended locality, and was also used as a Headquarters (Foot 2006). With the advent of total war, and the increasing importance of aircraft, defence installations became much more widespread, whilst there was a dramatic increase in civil defence sites. These were mostly constructed in towns and villages, and included air-raid shelters, air-raid wardens posts, fire-watchers posts and emergency water supply tanks. Many of these were removed soon after the war, but a number still survive, although they are frequently not recognised and therefore are often removed with little regard for their preservation or recording.

The current data suggests there is a high to very potential for further sites, features and artefacts to exist from these periods within the Crumbles project area, especially relating to military structures.

Historic Extraction

(fig 8)

The Crumbles area has been targeted from at least 1862 for gravel extraction, but is likely to have been utilised in a peace-meal fashion as early as the early 19th century when the Martello Towers were constructed. In 1862 a railway was constructed linking the Crumbles to the main London, Brighton and South Coast railway for the purpose of transporting gravel for railway construction. The railway was closed in the 1920s when demand dropped. Subsequent extraction was undertaken by Hall Aggregates (South East) who at their peak were extracting between 200,000 – 250,000 tons per annum (Williams, G. 1988). This material was used for foundation works on highways and construction sites, sea defences, the Ready Mix Concrete plant, ground cover for waterlogged sites, decorative building work and ground up material for pottery production. A number of Martello Towers and other later coastal defences have been destroyed by the removal of shingle from the shoreline. In fact Martello Tower 61 was converted into a shingle grader in the 1930's, although it has survived, whilst the demise of Martello Tower 63 may have been the result of shingle removal (www.martello-towers.co.uk/). Most of the Martello Towers along the Sussex coast have been lost to coastal erosion, some of which may have been caused by the removal of shingle from the beach. Some of the surviving Second World War defences were removed during the recent construction of Sovereign Harbour.

Extraction ceased in 1988 in advance of the development of the Crumbles for industrial and housing needs.

Other industrial archaeology

(fig 9)

The Crumbles area has had periods of intensive industrial activity, mainly relating to gravel extraction. Little evidence of this remains as large areas have been heavily developed. The coastal nature of this area also resulted in it being used for small scale maritime activities, such as commercial fishing and boat building. Some remnants of this remains in the form of net shops and boat repair workshops.

As a tourist area, there are a number of leisure facilities of age, including a rowing club. The area also contains a number of historic social buildings such as cinemas and schools.

Many sites within this area are highly vulnerable to redevelopment, but as a predominantly urban area, there is a low potential for impact from gravel extraction, except the area west of Pevensey Bay.

8 SYNTHESIS & CONCLUSIONS

The analysis of the Historic Environment within the Crumbles project area has shown that it does contain evidence of human activity from the medieval period to modern day. The area is rich in post medieval sites and the current landscape is characterised by surviving elements from these periods.

The project area has received very little archaeological investigation, resulting in its full archaeological potential not being immediately apparent.

From the evidence so far collated this potential, rated by historic period based on guidelines set by the Institute of Field Archaeologists, can be seen as:

Period	Potential
Palaeolithic	Low
Mesolithic	Low
Neolithic	Low
Bronze Age	Low - Medium
Iron Age	Low - Medium
Romano-British	Low - Medium
Anglo-Saxon & medieval	Medium
Post-medieval	Very high
Modern	Very high
Industrial	Medium

The different sources of information were also found to be of varying quality and usefulness in assessing the archaeological potential of this area. The main and underlying source of data came from the ESHER, however this was found to contain limited detailed information and also often vague locations; this may reflect the level and quality of past archaeology research in this area though. Listed building data was again very basic and did not include local lists. A clearer pattern of surviving medieval and post-medieval buildings was identified from the historic mapping. It is unfortunate that HLC was not available, in the Folkestone Beds and Ouse Valley project areas this has proved vital in analysing the character of this landscape and the date of its components.

It is difficult to give the importance of many of the sites individually, this is partly because there are so many, partly because single finds may be the tip of an iceberg and some sites only become more important when one groups them together. For example, the lower Cuckmere valley WW2 defences, when taken together, are of high importance as is their landscape setting.

Allocating importance to sites will be easier when a more defined area for extraction is given – most of the very important sites in the Study Areas appear to be outside areas of potential extraction.

Most other post-medieval sites are of local/regional importance. Again, individually many are of low importance, but when grouped together they become of local/regional importance (e.g. farm complexes, water management features, and extractive industries). Extraction is only likely to impact on a small number/area of these sites/landscapes.

8.1 Potential effects of proposed development and mitigation

We are not aware of any current proposals for extraction in the area assessed, but the following principles will be followed in assessing new proposals for development.

Modern extractive industry, even more than that of earlier periods, tends to be high impact and often completely destroys extant historic structures, buried archaeological deposits, and in many cases, geoarchaeological remains. Following the advice set out in Planning Policy Guidance 16 (PPG16), developers are likely to be required to carry out an archaeological mitigation strategy.

There is a danger of the loss of the landscape setting of farmsteads and defensive structures etc

which needs to be considered on an individual basis by site. Usually only a 'relatively' small area of the landscape is affected and screening can help but this needs to be considered by site. There should be a preference for preservation in situ of upstanding farm complexes and military sites.

Thought should also be given to recording the remains of 'historic' extraction, which are themselves important elements of industrial historic environment. Often new extraction results in the complete destruction of the original pit/quarry and any associated structures, transport systems/infrastructure and indeed its fossilized outline.

Archaeological mitigation may comprise:

- desk based research, including historic map analysis and historical research to understand the development of the site and the material extracted
- walkover and geophysical survey, to locate surviving structures and transport networks and assess condition, character and importance.
- targeted evaluation excavation , informed by the above, to assess condition, extent and depth of buried deposits
- further/fuller archaeological excavation, monitoring and recording if required

Potential developers should seek guidance from the East Sussex County Council Archaeology Section, 01273 481608, [county.archaeology @eastsussex.gov.uk](mailto:county.archaeology@eastsussex.gov.uk)

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APPENDIX 1 – EAST SUSSEX HER DATA

Monument Records

Site Name	Parish	NGR	HER no.	Type	Date
South Cliff	Bexhill	TQ 727 069	MES84	artefact concentration	Neo
Culver Croft bank	Bexhill	TQ 6956 0597	MES95	hoard	BA
area of pier	Eastbourne	TV 618 990	MES628	villa	RB
Cooden	Bexhill	TQ 720 066	MES72	Boat and finds	IA – med ?
Mark Dyke	Pevensey - Wartling	TQ 663 073	MES4997	parish boundary earthwork	med
The Roundhouse	Eastbourne	TV 6181 9894	MES7018	mill	18th
Leaf hospital	Eastbourne	TV 619 992	MES816	cottage hospital	19th
	Pevensey	TQ 661 046	MES4733	battery	16th
Rockhouse Bank	Bexhill	TQ 6791 0561	MES118	battery	16th
The Wish Tower	Eastbourne	TV6217399393	MES512	Martello tower	E 19th
The Redoubt	Eastbourne	TV 6230 9968	MES637	Martello tower	E 19th
Tower 70	Eastbourne	TQ 6273 0003	MES512	Martello tower	E 19th
Tower 69	Eastbourne	TQ 6321 0028	MES512	Martello tower	E 19th
Tower 68	Eastbourne	TQ 6360 0053	MES512	Martello tower	E 19th
Tower 67	Eastbourne	TQ 6420 0095	MES511	Martello tower	E 19th
Tower 65	Eastbourne	TQ 6454 0167	MES510	Martello tower	E 19th
Tower 64	Eastbourne	TQ 6471 0219	MES508	Martello tower	E 19th
Tower 63	Eastbourne	TQ 6489 0265	MES509	Martello tower	E 19th
Tower 62	Westham	TQ 6509 0308	MES4734	Martello tower	E 19th
Tower 61	Pevensey	TQ 6527 0349	MES4727	Martello tower	E 19th
Tower 60	Pevensey	TQ 6555 0386	MES4728	Martello tower	E 19th
Tower 59	Pevensey	TQ 6595 0422	MES4729	Martello tower	E 19th
Tower 58	Pevensey	TQ 6639 0444	MES4730	Martello tower	E 19th
Tower 57	Pevensey	TQ 66957 04752	MES4731	Martello tower	E 19th
Tower 56	Pevensey	TQ 6710 0483	MES4732	Martello tower	E 19th
Tower 55	Pevensey	TQ 6748 0501	MES4715	Martello tower	E 19th
Tower 54	Bexhill	TQ 6805 0530	MES119	Martello tower	E 19th
Tower 53	Bexhill	TQ 6862 0555	MES86	Martello tower	E 19th
Tower 52	Bexhill	TQ 6908 0579	MES87	Martello tower	E 19th
Tower 51	Bexhill	TQ 6947 0593	MES88	Martello tower	E 19th
Tower 50	Bexhill	TQ 7003 0616	MES83	Martello tower	E 19th
Cooden Station	Bexhill	TQ 709 065	MES109	station	20th

**APPENDIX 2 – HISTORIC MAP ANALYSIS
(Surveyors Draft and 1st to 4th Ordnance Survey)**

Site Name	Parish	NGR	Earliest source	Type	Date
Seaside Roundabout	Eastbourne	TQ 6269 0102	GPC pers comm.	hulk	med
Sea Houses	Eastbourne	TV 619 992	SD	houses	PM
The Lodge	Eastbourne	TQ 629 013	SD	buildings	PM
Langney Gate	Eastbourne	TQ 6315 0196	SD	sluice house	PM
Crumbles	Westham	TQ 6497 0277	SD	building (military?)	PM
Crumbles	Westham	TQ 6502 0289	SD	building (military?)	PM
Wallsend	Pevensey	TQ 6565 0397	SD	sluice houses	PM
Red House	Pevensey	TQ 6637 0454	SD	building	PM
Markstone	Pevensey	TQ 6713 0483	SD	coastguard station	PM
Normans Bay (west)	Bexhill	TQ 6766 0514	SD	building	PM
Rockhouse Bank	Bexhill	TQ 6772 0566	SD	building	PM
Normans Bay	Bexhill	TQ 6834 0546	SD	building	PM
Normans Bay	Bexhill	TQ 688 057	SD	hamlet	PM
Star Inn	Bexhill	TQ 6866 0614	SD	sluice houses	PM
Star Inn east of	Bexhill	TQ 6887 0627	SD	sheepfold	PM
Harbrand Walk	Bexhill	TQ 6986 0610	SD	building	PM
Cooden Beach	Bexhill	TQ 7099 0649	SD	farm complex ?	PM
Addingham Road area	Eastbourne	TV 6216 9991	SD	barracks	Napoleonic
Cooden	Bexhill	TQ 709 063	SD	martello tower	Napoleonic
Langney battery	Eastbourne	TQ 6326 0198	SD	battery	Napoleonic
Seaside Road	Eastbourne	TV62019951	SD	barracks	Napoleonic
south of Hartfield Road	Bexhill	TQ 7198 0661	SD	martello tower	Napoleonic
Tower 49	Bexhill	TQ 7289 0678	SD	martello tower	Napoleonic
Tower 66	Eastbourne	TQ 6438 0122	SD	martello tower	Napoleonic
Tower 68	Eastbourne	TQ 6384 0065	SD	martello tower	Napoleonic
Langney Point	Eastbourne	TQ 6384 0101	SD	two buildings ? Guard houses	Napoleonic
Langney Point	Eastbourne	TQ 6443 0151	SD	building may be military	Napoleonic
Crumbles	Westham	TQ 6516 0340	SD	building	Napoleonic
Crumbles	Westham	TQ 6526 0354	SD	well house?	Napoleonic
West Langney fort	Eastbourne	TQ 6377 0058	none	fort	Napoleonic
East langney fort	Eastbourne	TQ 6436 0103	none	fort	Napoleonic
Normans Bay	Bexhill	TQ 6897 0587	1st OS	gravel pit	Napoleonic ?
Crumbles	Eastbourne	TQ 634 009	1st OS	Firing Range	19th C
Crumbles	Eastbourne	TQ 638 015	1st OS	Firing Range	19th C
Crumbles	Eastbourne	TQ 6489 0260	1st OS	coastguard boat-house & flagstaff	1830s
Crumbles	Eastbourne	TQ 6455 0283	1st OS	coastguard station	1830s
Normans Bay	Bexhill	TQ 686 056	1st OS	coastguard station	1830s
Kewhurst	Bexhill	TQ 7106 0654	1st OS	coastguard station	1830s
Site Name	Parish	NGR	Earliest	Type	Date

			source		
Addingham Road	Eastbourne	TV 6215 9985	1st OS	coastguard station	1830s
Crumbles	Eastbourne	TQ 623 004 - TQ 642 009	1st OS	earthwork & later tramway	1830s
"Old Shingle Pit"	Eastbourne	TQ 634 014	1st OS	gravel pit	E 19th ?
"Old Shingle Pit"	Eastbourne	TQ 632 010	1st OS	gravel pit	E 19th ?
Langney Bridge	Eastbourne	TQ 6345 0192	1st OS	gravel pit	E 19th ?
Normans Bay (west)	Bexhill	TQ 6776 0523	1st OS	possible gravel pit	PM

APPENDIX 3 – BIBLIOGRAPHIC RESOURCE

ESHER no.	Date	Organisation	Grid Ref	Location	Source
EES14105	1997	Archaeology South East	TV 6171 9904	99-107 Seaside Road, Eastbourne	Report: Archaeology South-East. no. 770 (1997) Stevens S.
EES9397			TV 61800 99000	Eastbourne Roman villa	Sussex Archaeological Collections. 14/1862/125-126
EES9402	1848		TV 61800 99000	Eastbourne Roman villa	Sussex Archaeological Collections. 2/1849/257-259
EES9272	1887		TQ 720 066	Off martello tower no. 48	Sussex Archaeological Collections 39/1894/161-163

APPENDIX 4 – SITES IDENTIFIED BY SPECIALISTS

Table 1 – Military sites

<i>Type of Site</i>	<i>Parish</i>	<i>NGR</i>	<i>Condition</i>	<i>Source</i>	<i>Date</i>
Barracks (Napoleonic)	Eastbourne	TV621998	Removed and built over	Ordnance Survey Timeline Historical Map 199	Nap
Barracks (Napoleonic)	Eastbourne	TV594992	Removed and built over	Ordnance Survey Timeline Historical Map 199	Nap
Barracks (Napoleonic)	Pevensey	TQ633047	Removed and built over	Ordnance Survey Timeline Historical Map 199	Nap
Barracks (Napoleonic)	Bexhill	TQ730082	Removed and built over	Bexhill Hanoverian Study Group 2003. Ordnance Survey Timeline Historical Map 199	Nap
<i>Type of Site</i>	<i>Parish</i>	<i>NGR</i>	<i>Condition</i>	<i>Source</i>	<i>Date</i>
Anti-aircraft battery	Eastbourne	TV52299967	Removed - on Redoubt gun platform	Butler 2007, pg 64	WW2
Observation post	Eastbourne	TV61289832	Removed - On Martello Tower 73	Butler 2007, pg 66	WW2
Emergency Coastal Battery	Eastbourne	TV61289831	Gun positions removed, but may be partly preserved in Café	Butler 2007, pg 66	WW2
First aid post	Eastbourne	TV61319824	Extant - was part of ECB now public toilets	Butler 2007, pg 67	WW2
Gas post	Eastbourne	TV61169818	Extant - part of Lansdowne Hotel	Butler 2007, pg 67	WW2
Sentry post	Eastbourne	TV61259821	Removed, some bricks remain	Butler 2007, pg 67	WW2
WD Boundary marker	Eastbourne	TV61259821	Extant - built into wall	Butler 2007, pg 67	Nap
WD Boundary marker	Eastbourne	TV61319829	Extant - built into wall	Butler 2007, pg 67	Nap

Domestic site	Eastbourne	TQ59470121	One building extant used by ATC - Domestic site for Beachy head ROTOR station	Butler 2007, pg 62	WW2
Air-raid shelter	Eastbourne	TV597974	Destroyed	Defence of Britain database	WW2
Training Centre	Eastbourne	TV60909852	Extant - Eastbourne College used as HMS Marlborough	Butler 2007, pg 67	WW2
Nissen hut	Eastbourne	TV60889855	Extant	Butler 2007, pg 67	WW2
Loopholes	Eastbourne	TV60089729	Extant - 4 loopholes in brick wall	Butler 2007, pg 68	WW2
Air-raid shelter in Crypt	Eastbourne	TV60889831	Extant All Saints Church - no trace of shelter	Butler 2007, pg 68	WW2
Aerodrome	Eastbourne	TQ625015	Removed - St Anthony's RNAS	Butler 2007, pg 66	WW2
Hangar	Eastbourne	TQ62700155	Base survives off Leeds Avenue	Butler 2007, pg 67	WW2
Guardroom	Eastbourne	TQ62750153	Extant - The Bungalow	Butler 2007, pg 67	WW2
Type of Site	Parish	NGR	Condition	Source	Date
Martello Tower 66	Eastbourne	TQ64360123	Extant - recently used as Coastguard OP	Butler 2007, pg 69	Nap
Machine gun post	Eastbourne	TQ64360123	Incorporated into Martello Tower 66	Butler 2007, pg 69	WW2
East Langley Fort (C19th)	Eastbourne	TQ642010	Destroyed	Butler 2007, pg 69	Nap
West Langley Fort (C19th)	Eastbourne	TQ636005	Destroyed	Butler 2007, pg 69	Nap

Type of Site	Parish	NGR	Condition	Source	Date
Martello Tower 67	Eastbourne	TQ64200095	Destroyed but remains could be seen at low tide until recently	Butler 2007, pg 69	Nap
Martello Tower 68	Eastbourne	TQ628016	Destroyed but tower base preserved in cellar of house	Butler 2007, pg 69	Nap
Gun pivots	Eastbourne	TQ64250102	Reused as posts, probably come from Langley Forts	Butler 2007, pg 69	WW2
Anti-tank wall/ditch	Eastbourne	TQ635008 to TQ641011	Removed	Hibbs: www.pillbox.org.uk/concrete_evidence	WW2
Weapons pits	Eastbourne	TQ643015	Removed - 2 x concrete pipe sections	Hibbs: www.pillbox.org.uk/concrete_evidence	WW2
Pillbox (Type 25)	Eastbourne	TQ643015	Removed @ 1990	Hibbs: www.pillbox.org.uk/concrete_evidence	WW2
Pillbox (Type 25)	Eastbourne	TQ644016	Removed @ 1990	Hibbs: www.pillbox.org.uk/concrete_evidence	WW2
Weapons pits	Eastbourne	TQ644016	Removed - 2 x concrete pipe sections	Hibbs: www.pillbox.org.uk/concrete_evidence	WW2
Beach scaffolding	Eastbourne	TQ644012	Covered by sea defences	Hibbs: www.pillbox.org.uk/concrete_evidence	WW2
Magazine (C19th)	Eastbourne	TQ646022	Last of pair removed @ 1990	Hibbs: www.pillbox.org.uk/concrete_evidence	Nap
Anti-tank cube	Eastbourne	TQ647023	Removed (1)	Hibbs: www.pillbox.org.uk/concrete_evidence	WW2
Anti-tank cube	Eastbourne	TQ648025	Removed (2)	Hibbs: www.pillbox.org.uk/concrete_evidence	WW2
Firing Range	Eastbourne	TQ64250145	Removed (NGR is for butts)	5th Kings Defence Scheme	WW2
Minefield	Eastbourne	TQ63870160	Removed	5th Kings Defence Scheme	WW2
Minefield	Eastbourne	TQ64260195	Removed	5th Kings Defence Scheme	WW2
Minefield	Eastbourne	TQ64550220	Removed	5th Kings Defence Scheme	WW2
Beach defence light	Eastbourne	TQ64650215	Removed	5th Kings Defence Scheme	WW2
Pillbox (unknown)	Eastbourne	TQ635013	Removed	Wills 1985	WW2

<i>Type of Site</i>	<i>Parish</i>	<i>NGR</i>	<i>Condition</i>	<i>Source</i>	<i>Date</i>
Pillbox (unknown type)	Eastbourne	TQ638022	Removed	Wills 1985	WW2
Pillbox (unknown type)	Eastbourne	TQ647021	Removed	Wills 1985	WW2
Pillbox (unknown type)	Pevensey	TQ648027	Removed - May have been incorporated into Martello Tower 63 now removed	Wills 1985	WW2
Minefield	Pevensey	TQ64780283	Removed	5th Kings Defence Scheme	WW2
Beach defence light	Pevensey	TQ65380344	Removed	5th Kings Defence Scheme	WW2
Pillbox (unknown type)	Pevensey	TQ65350335	Removed	5th Kings Defence Scheme & aerial photograph	WW2
Pillbox (unknown type)	Pevensey	TQ65390340	Removed	5th Kings Defence Scheme & aerial photograph	WW2
Gun position	Pevensey	TQ65650375	Removed - marked as 4" but possibly Home Guard manned US 75mm	5th Kings Defence Scheme	WW2
Gun position	Pevensey	TQ65840390	Removed - marked as 4" but possibly Home Guard manned US 75mm	5th Kings Defence Scheme	WW2
Machine gun post	Pevensey	TQ64710216	Incorporated into Martello Tower 64	Butler 2007, pg 71 Hibbs: www.martello-towers.co.uk/	WW2
Anti-tank cubes	Pevensey	TQ64710216	12 cubes gathered at Martello Tower 64 from elsewhere	Butler 2007, pg 71	WW2
WD Boundary marker	Pevensey	TQ647021	Removed 1998	Hibbs: www.martello-towers.co.uk/	Nap
ROC post	Pevensey	TQ65560389	Incorporated into Martello Tower 60	Butler 2007, pg 73	WW2
Observation post	Pevensey	TQ65280350	Incorporated into Martello Tower 61, OP was for adjacent ECB	Butler 2007, pg 73	WW2
Machine gun post & OP	Pevensey	TQ65090307	Incorporated into Martello Tower 62	Butler 2007, pg 74	WW2

Type of Site	Parish	NGR	Condition	Source	Date
Emergency Coastal Battery	Pevensey	TQ65480355	Removed, but concrete gun floor and possible engine room still extant at 'The Pink House'	Butler 2007, pg 74	WW2
Searchlight post (90cm)	Pevensey	TQ65390345	Removed (NGR approx)	Butler 2007, pg 74	WW2
Searchlight post (90cm)	Pevensey	TQ65540368	Removed (NGR approx)	Butler 2007, pg 74	WW2
Trench	Pevensey	TQ65500356	Removed	Aerial photograph	WW2
Anti-tank cubes	Pevensey	TQ64400135 to TQ68800545	Removed double line of cubes along top of beach	Butler 2007, pg 74	WW2
Beach scaffolding	Pevensey	TQ64500135 to TQ68300535	Removed line of scaffolding along beach	5th Kings Defence Scheme	WW2
Defended locality	Pevensey	TQ658040	Various MG & bren gun positions on map	5th Kings Defence Scheme	WW2
Beach defence light	Pevensey	TQ66070410	Removed	5th Kings Defence Scheme	WW2
Minefield	Pevensey	TQ656046 to TQ675051	Removed	5th Kings Defence Scheme	WW2
Beach defence light	Pevensey	TQ66450439	Removed	5th Kings Defence Scheme	WW2
Anti-tank buoys	Pevensey	TQ65450361	Eight extant buoys - not in-situ	Butler 2007, pg 75	WW2
Anti-tank buoys	Pevensey	TQ65500365	Four extant buoys - not in-situ	Butler 2007, pg 75	WW2
Anti-tank pimples	Pevensey	TQ66850475	16 extant pimples - probably not in original location	Butler 2007, pg 75	WW2
Nissen huts	Pevensey	TQ66160438	Five huts in Environment Agency depot - unsure whether in-situ	Butler 2007, pg 75	WW2
Minefield	Bexhill	TQ680054 to TQ685055	Removed	5th Kings Defence Scheme	WW2
Beach defence light	Bexhill	TQ68200528	Removed	5th Kings Defence Scheme	WW2
Roadblock	Bexhill	TQ68410572	Removed	5th Kings Defence Scheme	WW2

Anti-tank cube	Bexhill	TQ682053	Removed (2) Normans' Bay	Hibbs: www.pillbox.org.uk/concrete_evidence	WW2
Type of Site	Parish	NGR	Condition	Source	Date
Defended locality	Bexhill	TQ67910561	Platoon position in WW2 at Rockhouse Bank	Butler 2007, pg 83	WW2
Observation post	Bexhill	TQ68070530	Incorporated into Martello Tower 55	Butler 2007, pg 83	WW2
Anti-tank cubes	Bexhill	TQ68070530	Two uprooted cubes adj. Martello Tower 55	Unpublished	WW2
Emergency Coastal Battery	Bexhill	TQ68850560	Removed, but concrete gun floor still extant	Butler 2007, pg 83	WW2
Concrete bunker	Bexhill	TQ68850570	Possible associated with ECB	Butler 2007, pg 84	WW2
Anti-tank buoys	Pevensey	TQ67080565	16 buoys possibly from nearby roadblock	Butler 2007, pg 84	WW2
Gun pivot	Bexhill	TQ69800612	Probably from a Martello Tower	Butler 2007, pg 84	Nap
Searchlight post (90cm)	Bexhill	TQ68750561	Extant adj. 'Beach Crest' should be scheduled	Butler 2007, pg 84	WW2
Searchlight post (90cm)	Bexhill	TQ68960573	Incorporated into house 'Beach Cottage'	Butler 2007, pg 85	WW2
Anti-tank cubes	Bexhill	TQ67480499 to TQ67400495	Extant remnant of line of cubes at top of beach. At least 9 seen, now incorporated into house extensions	Butler 2007, pg 85	WW2
PSP Tracking	Bexhill	TQ67560508	Extant section of tracking on beach	Butler 2007, pg 85	WW2
Anti-tank cubes	Bexhill	TQ678052	Jumble of cubes and other bits of concrete including possible spigot mortar base	Butler 2007, pg 85	WW2
Emergency Coastal Battery	Bexhill	TQ712065	Removed & built over. Roof of bunker may be base for garage?	Butler 2007, pg 87	WW2

Pillbox (unknown type)	Bexhill	TQ712065	Removed - In corner of garden with ECB	Butler 2007, pg 87	WW2
Type of Site	Parish	NGR	Condition	Source	Date
Anti-tank cubes	Bexhill	TQ70830728	Large dump of cubes probably from beach or Nodal Point defences	Butler 2007, pg 88	WW2
Camp	Bexhill	Unknown	WW1 training camp at Cooden	Butler 2007, pg 87	WW1
ARP Wardens Post	Bexhill	TQ71150700	State unknown - NGR approx	Bexhill civil defence map 21/3/1942	WW2
ARP Wardens Post	Bexhill	TQ71490705	State unknown - NGR approx	Bexhill civil defence map 21/3/1942	WW2
ARP Wardens Post	Bexhill	TQ71900685	State unknown - NGR approx	Bexhill civil defence map 21/3/1942	WW2
Admiralty signal post	Pevensey	TQ6604	Removed - Extant in 1811 at Pevensey Bay on coast	Goodwin 2000	Nap
<i>Barn Hill</i>	Eastbourne	TQ6400	Offshore wreck (sunk 1940)	Marsden 1987	WW2

Table 3 Aircraft Crash Sites

Date	Aircraft type	Location
30/09/1940	ME109	Langney
30/09/1940	ME109	Rockhouse Bank, Normans' Bay
07/12/1940	Spitfire	Foreshore, Pevensey Bay
26/08/1942	FW190	Lottbridge Drove
17/12/1942	Spitfire	In sea, Normans' Bay
11/08/1943	Spitfire	Langney
04/06/1943	FW190	Normans' Bay
11/08/1943	Stirling	In sea, Normans' Bay
06/09/1943	Fortress B17	Pevensey Bay beach
31/12/1943	Thunderbolt P47	Normans' Bay
10/07/1944	Lancaster	In sea, Normans' Bay

Table 4 Industrial and 19th / 20th century sites

Grid ref	Type of site	New HER no.
TQ 68870 05710	Saw pit	MES8220
TQ 68820 05710	Drainage culvert	MES8221
TQ 68820 05800	Drainage sluices	MES8222
TQ 63580 01540	Primary School	MES8223
TQ 6265 0044	Boat repair shop	MES8224
TV 62300 99830	Bowling Club House	MES8225
TQ 62590 00030	Rowing club house	MES8226
TV 62520 99990	Fishermans Club House	MES8227
TQ 62630 00040	Two fishermans net stores	MES8228
TQ 62720 00090	Four fishermans net shops	MES8229

TV 62560 99990	Sea cadet headquarters	MES8230
TQ 64010 01970	Boat repair yard	MES8231
TQ 62900 00400	Royal Sovereign Bowling Club	MES8232
TV 62000 99600	Army HQ	MES8234
TV 61880 99360	Children's nursery, formerly Methodist Church	MES8235
TV 6187 9951	Former coachbuilders	MES8236
TV 61920 99550	Former Regal Cinema	MES8237
TV 61960 99690	Former Gaiety Cinema	MES8238
TV 61990 99700	Former Lloyds Bank	MES8239
TQ 62870 01270	Queen Alexandra's Cottage Homes	MES8240
TQ 62790 01260	Junior School	MES8241
TQ 6258 0072	CE Infants School	MES8242