

APPENDIX A

Feasibility of a Railway Station – 13-158-07



LAND AT WEST HORDON, BRENTWOOD

Feasibility of a Rail Station at Dunton Garden Suburb

Report No. 13-158-07A February 2015

LAND AT WEST HORDON, BRENTWOOD

Feasibility of a Rail Station at Dunton Garden Suburb

Odyssey Markides LLP
Tuscany House
White Hart Lane
Basingstoke
Hampshire
RG21 4AF

Tel: 01256 331144 Fax: 01256 331134

enquiries@odysseymarkides.com

Project No. 13-158 February 2015

DOCUMENT CONTROL SHEET

REV	ISSUE PURPOSE	AUTHOR	CHECKED	REVIEWED	APPROVED	DATE
	Draft	RN	ACM	ACM	ACM	Feb '15
A	Final	RN	ACM	ACM	ACM	Feb '15

CON	TENTS	Page
1.0	Introduction	1
2.0	Line Construction	2
3.0	Gradient	3
4.0	Line Capacity	4
5.0	Considerations at Existing Stations	7
6.0	Conclusion	10

1.0 INTRODUCTION

- 1.1 This is a brief note which considers the feasibility of constructing a new railway station on the London Tilbury and Southend (LT&S) railway line, between West Horndon and Laindon stations, to serve a possible new housing development at Dunton Garden Suburb.
- 1.2 The main considerations regarding the feasibility of a new railway station are:
 - the construction of the line;
 - its gradient;
 - the timetabling of trains on the line; and
 - the delays caused by trains calling at a new station.
- 1.3 Furthermore, disabled access, car parking and train capacity have been considered.

2.0 LINE CONSTRUCTION

- 2.1 The relevant section of the LT&S railway line was built in 1885 to provide a more direct route between Barking and Pitsea than the original route, which is via Tilbury. Today the original route is known as the Tilbury Loop while the newer section, on which a station to serve a Dunton Garden Suburb would lie, is now regarded as the main line.
- 2.2 West Horndon station lies at about 10m above sea level and the land to the east remains level for a further 2km. Laindon station, about 5.5km from West Horndon, is some 50m above sea level. However, to avoid making a gradient too steep for trains to climb, the line was constructed on a gradually rising embankment which starts just east of the platforms at West Horndon. This means that at a point on the railway near the centre of the southern edge of the proposed Dunton Garden Suburb development, the railway line is significantly above the level of the surrounding land.
- 2.3 The embankment itself was made from the cheapest material available at the time, which was ash from numerous steam locomotives' fireboxes, accumulated over a long period. It was not sufficiently consolidated and due to weathering, some has been absorbed into adjacent fields, discolouring the soil. When the line was electrified in 1958, using overhead wires, a special design of gantry was required because of the risk of slippage¹.
- 2.4 The nature of the embankment therefore makes it most unsuitable for the construction of a station with its heavy platforms and buildings.

_

¹ Laindon and District Community Archive

3.0 GRADIENT

- 3.1 As mentioned in para 2.2, the line rises approximately 40m over a length of 5.5km, which gives an average gradient of 1 in 140. The Rail Safety and Standards Board (RSSB) in its most recent guidance on the design of stations (GI/GN7616, Section 5.2) suggests that, although the convention that no new stations should be built on a gradient steeper than 1 in 500 is unduly restrictive, it may not be desirable to construct one on a gradient as steep as the one in this case.
- 3.2 In the early days of railways, several stations were built on gradients of 1 in 100 or even steeper, but since 1892 the Board of Trade's requirement was that no new station should be built on a line steeper than 1 in 260. This was increased to 1 in 500 around 1950. However, the current organisation responsible for setting such standards, the Rail Safety and Standards Board (RSSB) in its most recent guidance on the design of stations (GI/GN7616, section 4.2) suggests that the convention that no new stations should be built on a gradient steeper than 1 in 500 is now unduly restrictive.
- 3.3 Before agreeing to the construction of a station at Dunton Garden Suburb, a number of considerations would need to be taken into account, including:
 - the braking capability of the trains using it;
 - provision of mitigating circumstances in the case of a train running away; this could take the form of catch points and the construction of separate sidings on the downhill side of the station, on both tracks, with sand traps. These would obviously be very costly.
- 3.4 In conclusion, there is no doubt that Network Rail would wish to look very carefully indeed at the safety considerations of a new station in this location.

4.0 LINE CAPACITY

- 4.1 The LT&S is a typical suburban railway, whose main purpose is to carry people to work in central London in the morning and return them home in the evening. The line is two track throughout, which means that trains cannot overtake each other. However it is also quite lengthy, 63km from Shoeburyness to Fenchurch Street, with many intermediate stations. A train which calls at every one of these stations takes about 68 minutes for the journey, but more importantly, would tend to become full long before reaching London on its inward journey. In order to minimize passengers' journey times and to optimise the use of train capacity, a system of skip-stopping is in use during peak periods.
- 4.2 At these times, most trains from Shoeburyness run non-stop from Pitsea, Basildon or Laindon to London, usually also calling at either Upminster or Barking, but not both. Passengers starting their journeys at Laindon or West Horndon are catered for by a series of trains at roughly 15 minute intervals which start from Laindon; a separate platform has been constructed there for them to wait out of the way of through trains in either direction before starting their journey. During the critical peak periods it would only be these Laindon starters which would call at a new station to serve Dunton Garden Suburb, so as not to delay or overcrowd the through trains.
- 4.3 Track capacity on the LT&S is very intensively used. The timings of all peak period trains are very critical, because of the need to pass as many trains as possible in safety over each section of track, whilst being able to operate a reliable timetable every day. The Timetable Planning Rules issued by Network Rail state that headways between trains should not be less than 2.5 minutes, except between Barking and Fenchurch Street, where it is 2 minutes.
- 4.4 **Table 1** shows a small section of the morning peak **working** timetable (the public timetable never shows half minutes, but the railway is routinely timed to this accuracy).

Train no.		1	2	3	4	5	6	7	8	9	10
Laindon	Start		0737					0750			
	Call			07421/2					0756½		
	Pass	07341/2				0747					
W. Horndon			0742					0755½			
Barking	Call		0755	0758			0806	0809½	08121/2	0817	
	Pass	0749			08021/2	08041/2					0821
Fenchurch	Arrive	0803	0810	0813	0815	0817	0823	0825	0829	0832	0835
Street											

Table 1: Laindon to Fenchurch Street (Partial) Working Rail Timetable

- 4.5 The train numbers shown in the top row of this table are for the purpose of this report and are not carried by the actual trains. Train numbers 1 and 5 are through from Shoeburyness to London Fenchurch Street and do not call at either Laindon or Barking. Trains 3 and 8 are also through from Shoeburyness to London, calling at Laindon and Barking but not West Horndon. Numbers 2 and 7 start from Laindon and call at West Horndon and Barking on their way to London. Trains 4, 6, 9 and 10 travel via the Tilbury Loop, i.e. do not pass through Laindon or West Horndon. They join the main line at either Upminster (trains 4 and 9) or Barking (trains 6 and 10).
- 4.6 It can be seen that the scheduled gap (headway) between train 1 passing through Laindon at 0734½ and train 2 starting there at 0737 is 2.5 minutes, i.e. the minimum allowed by the signaling. Similarly, the headway at Laindon between trains 5 (passing at 0747) and 7 (starting at 0750) is 3 minutes. At Barking the gap between train 2, which has called at West Horndon, arriving at 0755 and the following train (no. 3, arriving 0758) is also 3 minutes. The same applies to the gap between trains 7 (0809½) and 8 (0812½). Again, these gaps are the minimum allowed.
- 4.7 Turning now to the travel time between stations, Train 2 takes 18 minutes to travel from Laindon to Barking, and train 7 takes $19\frac{1}{2}$ minutes, both including stops at West Horndon and Upminster, whereas train 3 takes only $15\frac{1}{2}$ and train 8

takes 16 minutes, both travelling non-stop. Those two stops together cost $2\frac{1}{2}$ - $3\frac{1}{2}$ minutes, or about $1\frac{1}{2}$ minutes each. This is caused by the need to slow down, stop, open doors, allow passengers to board, close doors and accelerate away again. Adding another station stop at a new Dunton Garden Suburb station would cause a similar delay.

- 4.8 So if this additional station stop were to be inserted into the schedule of trains 2 and 7 they would arrive at Barking 1½ minutes later than at present. This would mean that trains 3 and 8 would also be delayed by 1½ minutes and this would in turn mean that trains 4, 5, 9 and 10 would also be delayed.
- 4.9 If instead of making trains 2 and 7 arrive later, it was attempted to make them start earlier from Laindon, they would not have the minimum of 2.5 minutes headway behind the preceding fast trains (1 and 5).
- 4.10 Looking at the morning peak period as a whole, between 0720 and 0830 five trains start from Laindon and each one would have the extra 1½ minutes inserted into their schedule to allow for the call at Dunton Garden Suburb, a total of 7-8 minutes cumulative delay. The timetable does not have enough allowance to accommodate this reliably. Similar comments apply to the evening peak period.
- 4.11 In other words, there is simply not enough slack in the timetable to allow trains to make an extra stop at a new station at Dunton Garden Suburb in the peak periods. This does not apply during the middle of the day, but it would hardly be appropriate to open a new station which could only be used outside the peak periods.

5.0 CONSIDERATIONS AT EXISTING STATIONS

Introduction

- 5.1 The following paragraphs go on to consider if it would be possible to provide increased capacity on the existing railway line instead of building a completely new station at Dunton Garden Suburb.
- 5.2 Some simple analysis is undertaken, considering in particular the feasibility of providing improvements to:
 - Disabled Access
 - Parking Provision
 - Train Capacity

Disabled Access

- 5.3 The normal way to achieve disabled access to all platforms at a station is to install lifts at the footbridge, these being located on the opposite side of the bridge from the stairways. If the existing bridge is not suitable then a new one has to be built. Network Rail are currently implementing a programme of improvements of this type under the title 'Access for All'. The current programme covers some 200 stations, costing £370m, even though it does not include West Horndon. The average cost per station, including those where a new footbridge is required, is thus about £1.8m.
- 5.4 The existing footbridge at West Horndon does appear suitable for lifts to be added, which would probably cost of the order of £1m.

Car Parking

5.5 The car parks at Laindon and West Horndon stations are nearly full at midday on a weekday; this would be confirmed by the annual census carried out by the station operator (C2C).

5.6 It might be possible to expand both car parks, either by making them multistorey, or more economically by purchasing additional land for surface parking. There would appear to be space on the south side of the tracks at West Horndon which could be used for this purpose. This would definitely be a much cheaper option than building a new station at Dunton Garden Suburb.

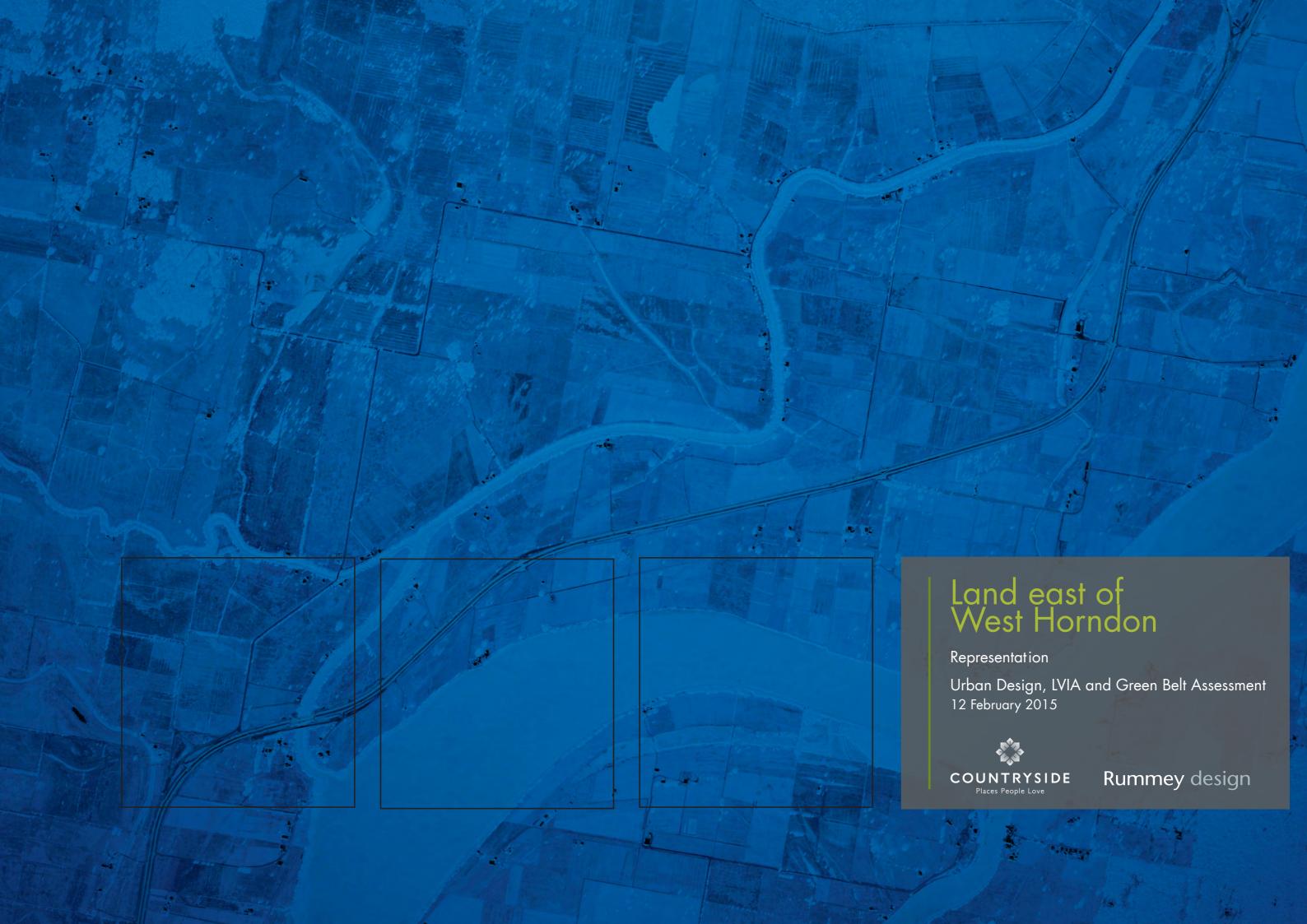
Train Capacity

- 5.7 The Department of Transport publishes annual figures showing the number of passengers arriving at each London terminus in the morning peak period, the capacity of the trains and the numbers who are 'overcrowded'. For this purpose, it is assumed that each train can carry 35% more passengers than the number of seats, before it is overcrowded, so long as none of them has to stand for more than 20 minutes. Even on this somewhat generous definition (from the train operator's point of view), C2C scored badly in the most recently available figures, with 23 out of 47 trains (49%) arriving at Fenchurch Street between 7am and 10am being overcrowded, rising to 74% in the peak hour 8-9. This makes it the second worst route into London, beaten only by Blackfriars. Things are no better in the evening peak.
- 5.8 Something could be done about this, if the train operator would run longer trains. All the stations on the line are capable of accommodating 12-car trains, but at present only a few of the trains are actually 12 coaches long, the remainder being only of 8 cars. To make them all 12 cars long would require at least 18 additional 4-car units to be built.
- Interestingly, when this route was first electrified in 1962, it had 92 4-car units operating on it. These were replaced in 1999 by only 74 similar sized units, although the latter had sliding doors rather than the slam doors on the 1962 trains; the DTP's convention is that sliding door trains can carry many more standing passengers than slam door trains, hence the number of trains could be reduced. However, the growth in passenger numbers since 1999 would certainly now merit a fleet of the same size as that in 1962, and clearly if more houses are to be built in the West Horndon/Dunton area, this will become even more necessary.

5.10 It is concluded that it would be possible to provide improvements in disabled access and parking provision of the two existing stations of West Horndon and Laindon. Increased capacity to the train service would also be easily achievable. This would question the justification and viability of the idea for a new station at Dunton Garden Suburb.

6.0 CONCLUSIONS

- 6.1 The conclusion is that it would be very difficult to construct and operate a new station at Dunton Garden Suburb because:
 - the railway embankment at the site is unsuitable;
 - the gradient is too steep; and
 - the railway is already so fully utilised that an additional station stop could not be incorporated into the timetable while retaining its safety and reliability.
- 6.2 Furthermore, disabled access, car parking and train capacity at West Horndon have been explored. It was concluded that any existing issues can be resolved and that improvements would be possible in disabled access and parking provision. This too would raise serious questions about the justification and viability for a new station at Dunton Garden Suburb.





Section 1
Introduction

Section 2
Approach &
Issues Identification

Section 3
Background & Baseline

Section 4
Urban Design Assessment

5

Section 5
Landscape & Visual Appraisal

6

Section 6
Green Belt Assessment

7

Section 7
Conclusion

8

Section 8
Appendices



1 Introduction

Section 1: Introduction

- 1.1 General
- 1.2 Location of the sites
- 1.3 Purpose of the report
- 1.4 Summary of content

1.1 General

This report has been prepared by Rummey Design (RD) on behalf of Countryside Properties Ltd. (CPL) to provide background and evidence in support of CPL's proposals for a mixed use development at West Horndon.

The assessment forms part of a response to an invitation for formal representations in regard to Brentwood Borough Council Local Plan Strategic Growth Options Consultation. It also responds to the Dunton Garden Suburb Consultation which is being undertaken jointly by Brentwood and Basildon Borough Councils, as part of formal public consultations that run in parallel from 6 January 2015 until 17 February 2015.

1.2 Location of the sites

The two sites are located to the west of the town of Basildon in south central Essex , as illustrated by Figure 1. The boundaries of the proposed sites are within 1km of each other: Dunton Garden Suburb is directly contiguous with the western periphery of Basildon and the CPL site is to the east of the village of West Horndon.

1.3 Purpose of the report

The purpose of this document is to highlight the deliverability of the CPL's site, which is identified within an opportunity area for growth in Brentwood Borough Council's Local Plan Strategic Growth Options Consultation document (January 2015). The benefits of developing the West Horndon site is set in the context of an alternative proposal to focus such future development in the neighbouring Dunton Garden Suburb site. The report forms an appendix to representations made by Andrew Martin Associates on behalf of CPL.

Relevant issues pertinent to assessing the qualities of each site are:

- compliance with planning policy
- transport and access
- urban and landscape design principles
- landscape and visual impacts
- compliance with Green Belt statutory purposes

In this context a case can be made for the release of land such as that to the east of West Horndon which is privately owned Green Belt without any real environmental or amenity treasures. The land has been intensively farmed and has limited access and relatively little amenity value. Years of intensive farming could even be said to have had a negative environmental value by removal, for example, of key features such as hedgerows and hedgerow trees, and the increase in field sizes, with a consequential reduction in habitat and landscape value.

This document will discuss the potential significance for residential development at CPL's West Horndon site in comparison to the Dunton Garden Suburb site in terms of urban design considerations; potential landscape and visual effects; and Green Belt impacts.

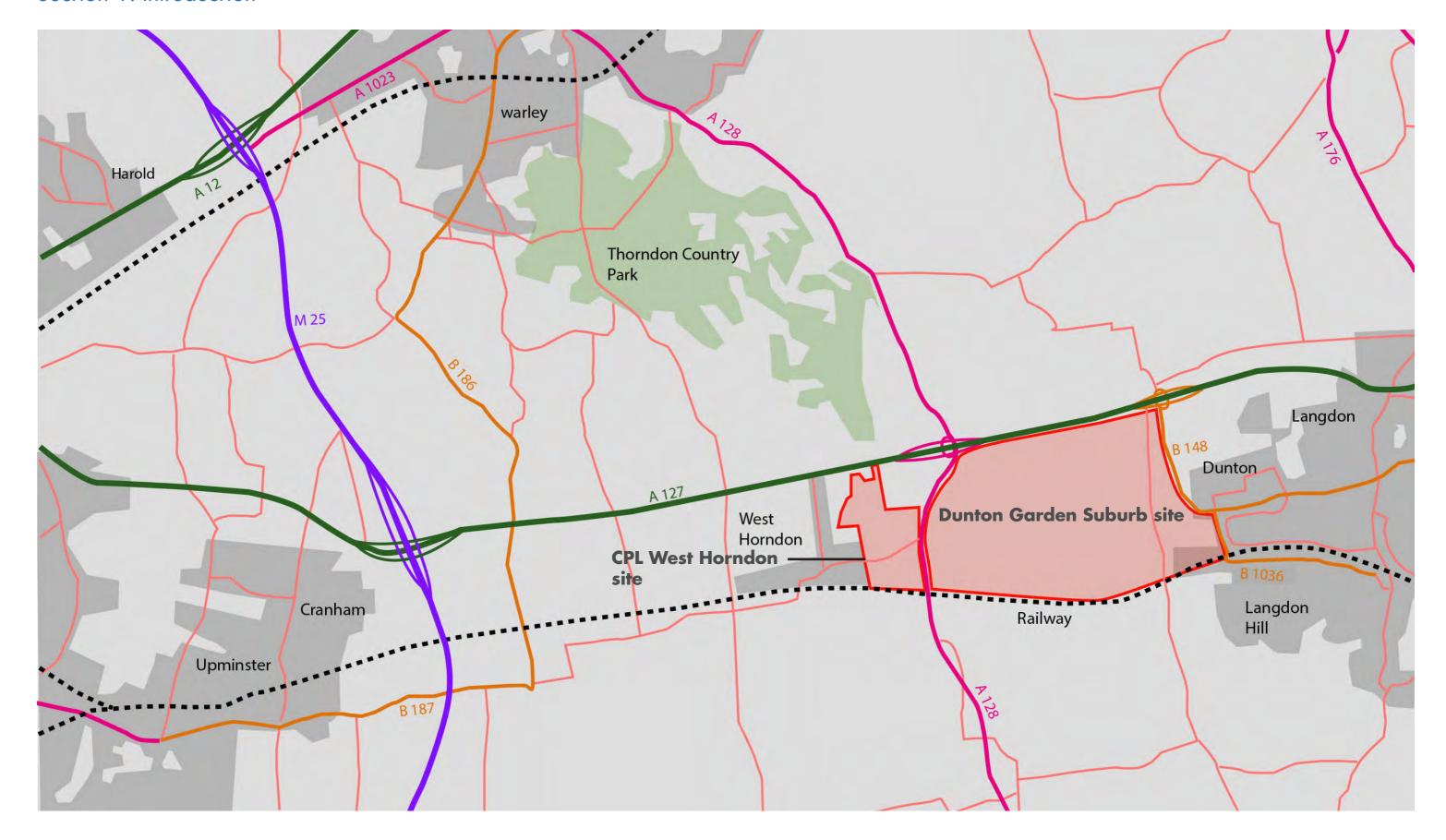
For the purposes of brevity, from henceforth the land east of West Horndon is referred to as 'the CPL site' and land west of West Horndon is referenced to as 'the Iceni Homes site'. Dunton Garden Suburb is referred to as its full name to reduce confusion.

1.4 Summary of content

The document is structured as follows:

- Section 1: introduction
- Section 2 approach and issue identification: outline of how the report studies have been undertaken and what are the key issues raised
- Section 3 baseline and background: general information regarding each of the West Horndon and Dunton Garden Suburb sites, including landscape character baseline, viewpoints, and scheme descriptions. Key differences and similarities are highlighted
- Section 4 urban design assessment: using a schedule of questions that address key factors that ensure design quality, the CPL and Dunton Garden Suburb sites are evaluated in turn and compared
- Section 5 landscape and visual appraisal: using the baseline and scheme descriptions included in Sections 3 and 4, the impacts and effects of each of the sites appraised
- Section 6 Green Belt assessment: the landscape character and visual effects of each scheme with regards to the five statutory purposes of the Green Belt evaluated and compared in terms of significance
- Section 7 conclusions: summarising the relative differences in terms of urban design, landscape and visual impact, and Green Belt impacts

Section 1: Introduction



2 Approach & issues identification

Section 2: Approach & methodology

- 2.1 General approach
- 2.2 Review of background & evidence
- 2.3 Methodology
- 2.4 Landscape and visual impact assessment approach and methodology
- 2.5 Green Belt review approacl

2.1 General approach

This section provides an explanation of the approach and methods used to undertake this assessment. It also outlines key issues in more detail, providing an explanation of the assessments direction and focus.

The report does not set out the definitive answers to issues that comparisons raise: it does, however, highlight concerns and implications regarding the application of urban design criteria, the landscape and visual environment, and the Green Belt relative to each site. In regard to urban design, it evaluates how desirable a place in which each site would be to live; how accessible and buildable they would be, and how deliverable in terms of sustainability and desirability. In terms of landscape and visual impacts, the assessment reviews how acceptable each site would be in terms of magnitude of changes to character and views. Finally, in regards to the Green Belt, the assessment weighs up the relative impacts on its statutory purposes of each site.

The following steps have been taken to carry out a comparison for each of the West Horndon and Dunton Garden Suburb opportunity sites:

- review of background and evidence
- urban design audit
- landscape character and visual appraisal
- Green Belt assessment

The topics examined by this report raise a number of issues that should be addressed for successful implementation of new residential development. The report will identify the issues and state if the answers are believed to be self-evident, or if further study to assess, or resolve them is required.

2.2 Review of background & evidence

In order to enable a comparison of landscape and visual factors, Rummey Design has undertaken a summary baseline assessment of the Dunton Garden Suburb proposals in the absence of other readily available material. Documents used in the preparation of this report

are listed in Section

2.3 Methodology

Full methodology is explained in Section 8, Appendices

Urban design & masterplan assessment criteria & approach

New design guidance is provided by the National Planning Policy Framework web portal, which states a range of best practice design objectives which collectively embody that promoted by the above. These are located online at:

http://planningguidance.planningportal.gov.uk/blog/guidance/design/

Landscape and visual impact assessment approach and methodology

The comparison of relative landscape and visual impacts is indicative of:

- how each proposed area of development might sit with the existing character and views;
- what the major impacts might be;
- what mitigation measures are proposed to be used to reduce or eliminate these impacts; and
- residual impacts.

The assessment of the landscape character areas surrounding the two sites has been carried out as follows:

- desktop review of relevant local landscape character studies and designations as well as consideration of the existing topography and vegetation pattern;
- undertaking of site visits to assess the key landscape qualities of the area surrounding the CPL and Dunton Garden Suburb sites.

Assessments are then undertaken as follows:

- sensitivity of each landscape character area with regards to accommodating change within the development site;
- quality of each landscape character area;
- magnitude of effect of the development proposals on landscape character areas (or perception of landscape character areas for those areas the development proposal does not sit within);
- significance, nature and duration of the effect.

This assessment follows the principles contained within the 'Guidelines for Landscape and Visual Impact Assessment' (Institute of Environmental Assessment and Landscape Institute 2013.

Green Belt review approach

Assessment of the impact of both proposals on statutory Green Belt policies and their functions at local level examines how each scheme would affect the 5 key policies in NPPF clauses in Section 9 – Protecting Green Belt land:

79 The Government attaches great importance to Green Belts. The fundamental aim of Green Belt policy is to prevent urban sprawl by keeping land permanently open; the essential characteristics of Green Belts are their openness and their permanence.

80 Green Belt serves five purposes:

- to check the unrestricted sprawl of large built-up areas;
- to prevent neighbouring towns merging into one another;
- to assist in safeguarding the countryside from encroachment;
- to preserve the setting and special character of historic towns: and
- to assist in urban regeneration, by encouraging the recycling of derelict and other urban land.'

3 Background & baseline

- 3.1 General
- 3.2 Landscape Character Baseline
- 3.3 Site Local Landscape Characte
- 3.4 Visual Receptor
- 3.5 Site Visibility
- 3.5 Baseline Summary

3.1 General

Detailed descriptions of the landscape character at national, county local and site level are given below. All but the site level descriptions are sourced from peer-reviewed publicly available documentation. Viewpoints have been selected to approximate 'worst case' instances of views by potentially sensitive receptors located in publicly accessible areas such as roads, public rights of way (PRoWs), Byways open to all traffic, (BOATS) and public parks. Designations are taken from OS and online sources including www.magic.gov. For the purposes of brevity, the landscape appraisal does not undertake a repetition of description where more than one sensitive receptor site is covered by a single viewpoint or character area.

3.2 Landscape Character Baseline

National Character Areas - Combined Sites

The CPL and Dunton Garden Suburb sties lie within National Character Area NCA111 Northern Thames Basin (Natural England, July 2013). This is a diverse area, which extends from Hertfordshire in the west to the Essex coast in the east. This NCA includes the suburbs of North London, historic towns and cities such as St. Albans and Colchester, as well as new and planned towns such as Welwyn Garden City, Hatfield and Basildon.

Arable agriculture is a large industry in the area although the soil quality ranges from good to poor. The London Clay provides a poor quality soil that becomes waterlogged in winter and cracks and shrinks in summer. Better quality alluvial soils are found in areas where the Thames and other rivers in the area formed and changed position over time.

The Northern Thames Basin is an area rich in geodiversity, archaeology and history with landscapes ranging from the wooded Hertfordshire plateaux and river valleys, to the open, predominantly arable, landscapes of the Essex heathlands. Urban expansion has been a feature of this area since the 16th century and this trend increased dramatically from the mid-19th century, mainly as commuting to London from the surrounding areas became possible. This has resulted in many areas losing their rural tranquility, although this remains in parts of Essex where there is a more dispersed settlement pattern within the arable and semi-natural habitats.

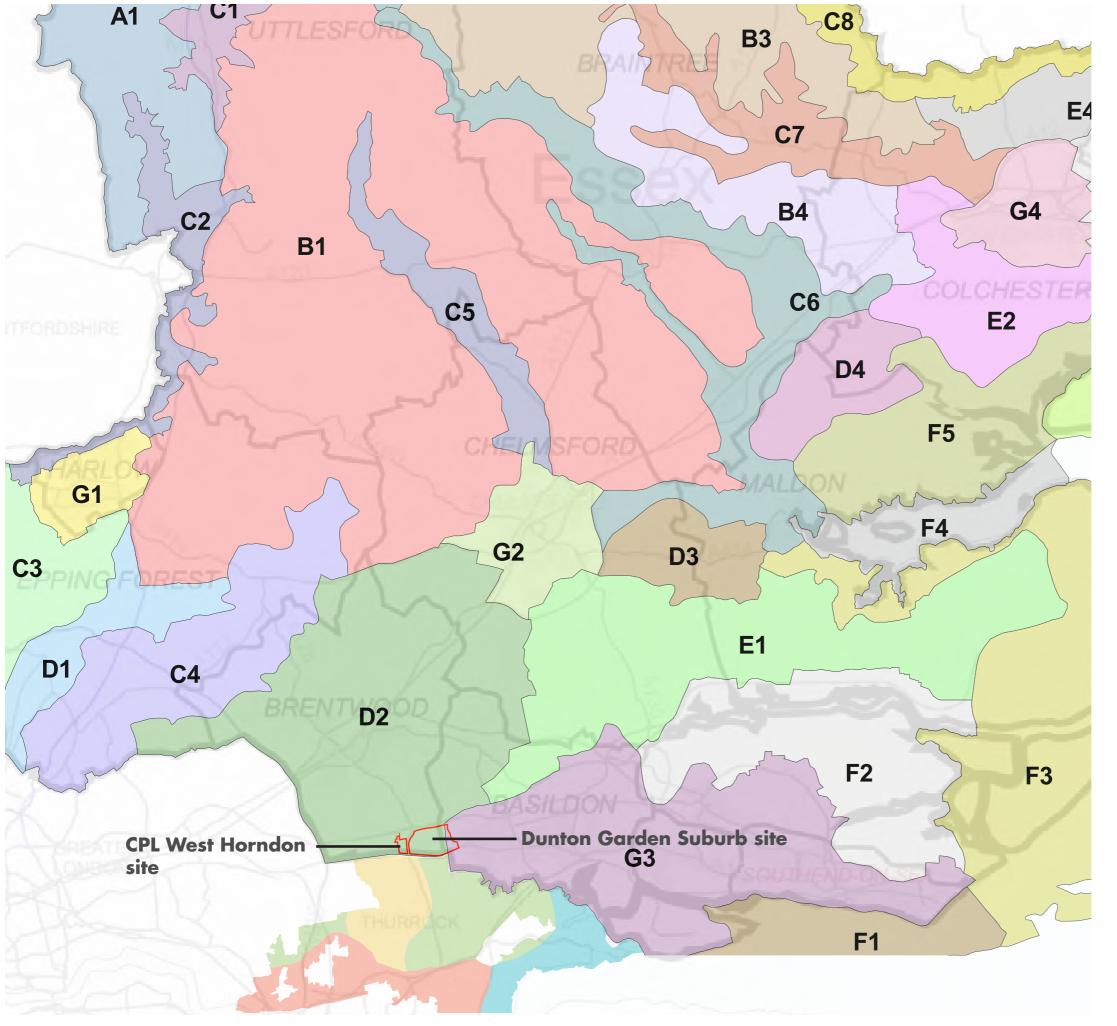
County Character Areas - Combined Sites

As illustrated by Figure 2: Regional Landscape Character Areas, The Essex Landscape Character Assessment, 2003 places both sites on the southern edge of LCA D2, Brentwood Hills. This area lies mainly on the London clay with soils varying. This area is characterised by gently undulating ridges and hills, and a semi-enclosed character due to a network of small woodlands, hedgerows and hedgerow trees. There is an irregular patchwork of pasture and arable and the assessment notes the dense linear settlement pattern along main roads.

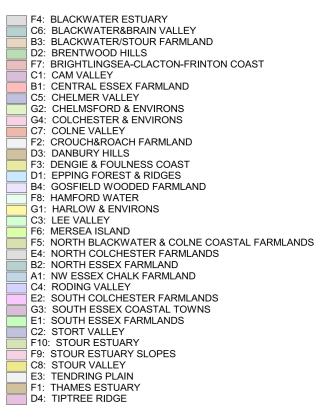
Overall the assessment evaluates the landscape condition as good with Moderate sensitivity both to large-scale development and smaller-scale urban extensions. This is mainly attributed to the low to moderate intervisibility within the area although the assessment comments on the visual exposure of some hillsides and ridgetops as well as concerns over coalescence.

District Character Areas - combined sites

As illustrated by Figure 3: District Landscape Character Areas, West Horndon lies solely within the Horndon Fenlands LCA whilst the Dunton Garden suburb straddles administrative boundaries and so falls partly within the Horndon Fenlands LCA and partly within the Dunton Settled Claylands LCA.



Essex Landscape Character Area

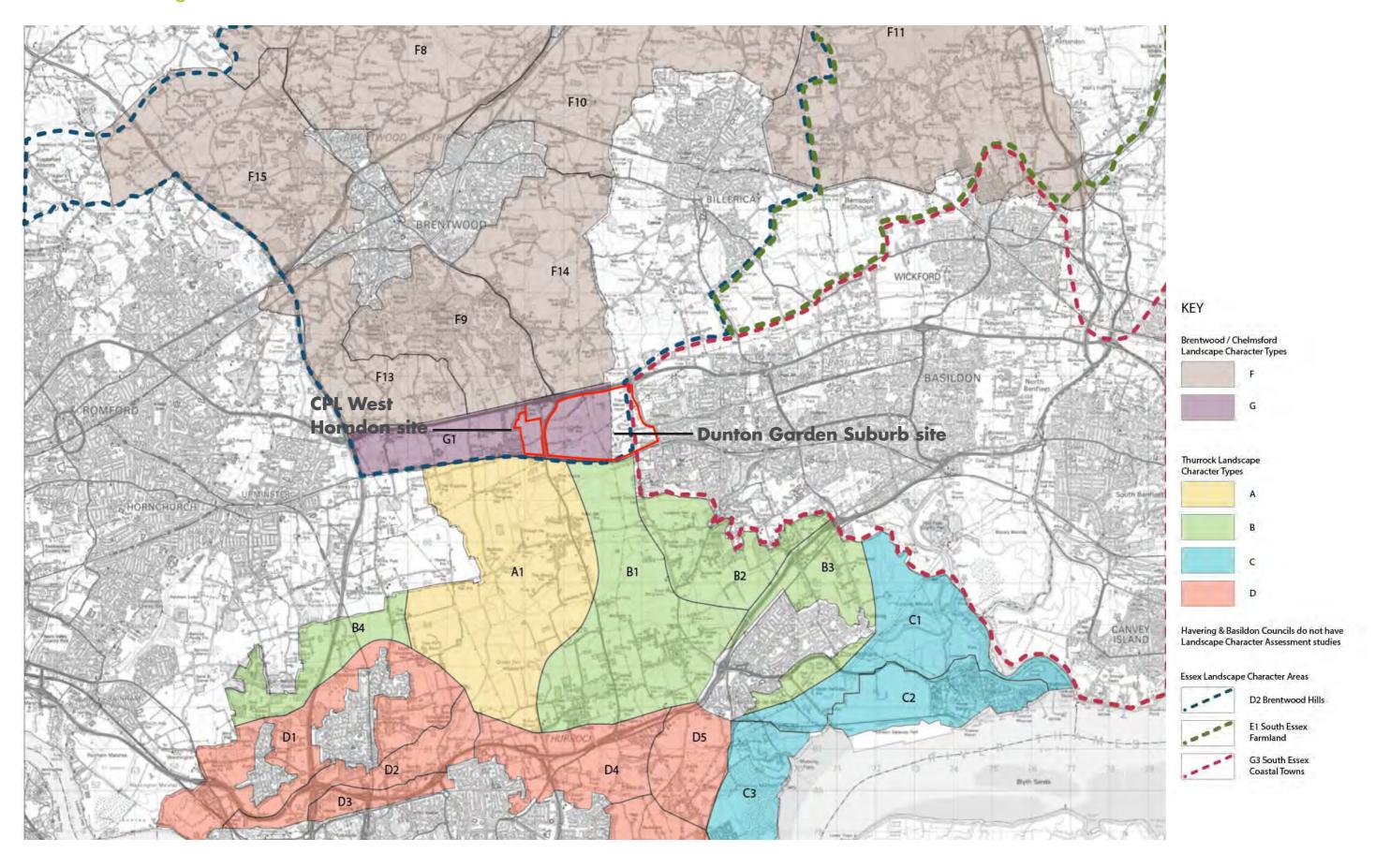


Thurrock Landscape Character Types

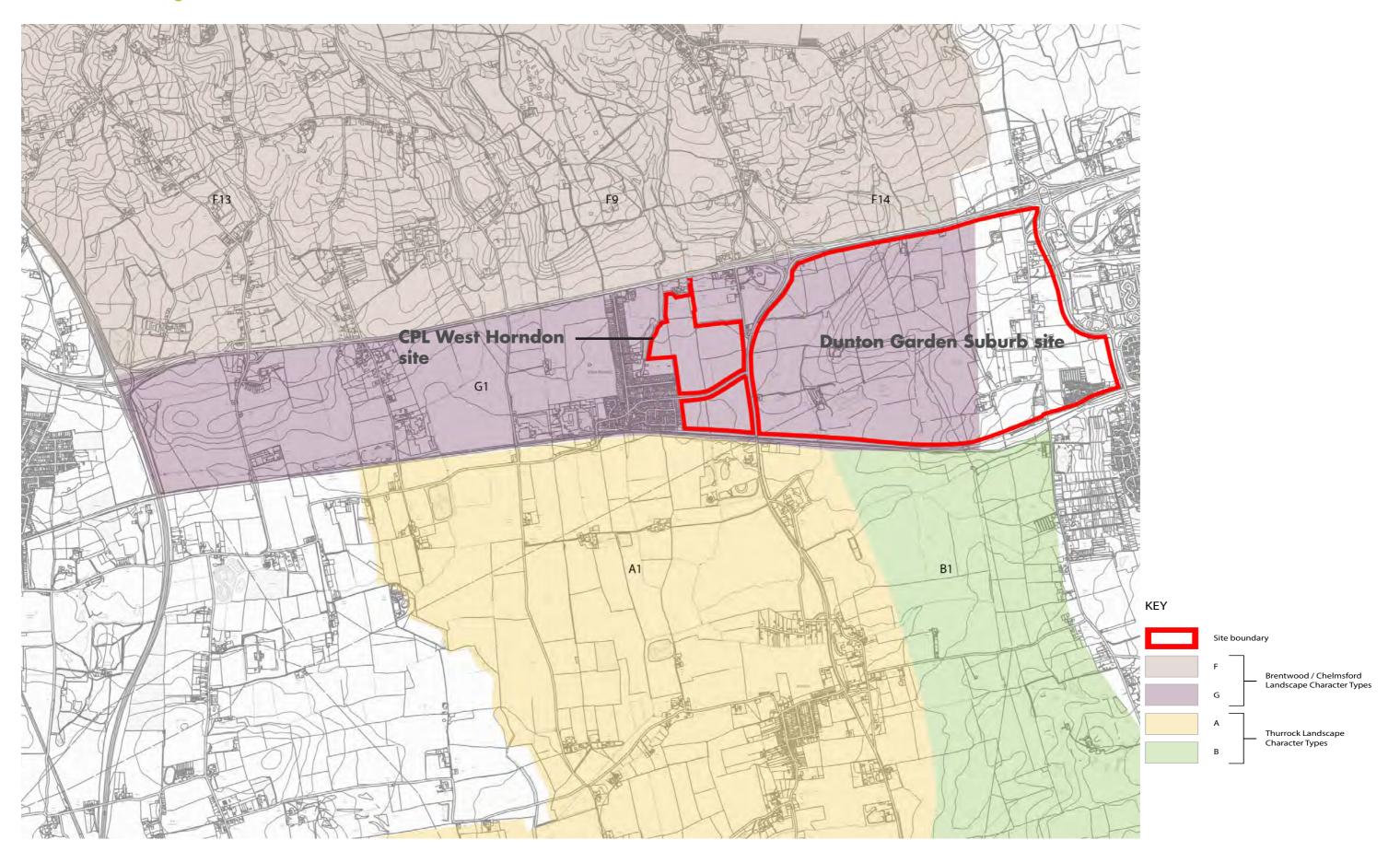


Figure 2 Regional Landscape Character Types

Section 3: Background & baseline



Section 3: Background & baseline



- 3.1 General
- 3.2 Landscape Character Baseline
- 3.3 Site Local Landscape Character
- 3.4 Visual Receptor
- 3.5 Site Visibility
- 3.6 Baseline Summary

3.3 Site Local Landscape Character

CPL Site Local Landscape Character

As illustrated by Figure 4, Local Landscape Character, at a Borough scale, identified by Brentwood Borough Council, the landscape character around West Horndon the site has been designated G1 Horndon Fenland. The characteristics include:

- large, arable pasture fields
- predominantly flat topography
- mature hedgerow field boundaries
- relatively sparse settlement pattern
- views to surrounding wooded hills to the north
- long distance views to pylons and Tilbury Power Station

The assessment notes the disturbed tranquility of this area, largely as a result of road noise. It also notes a general sense of enclosure to the north and east due to low wooded hills, but the more open views southwards to power lines and Tilbury. Landmarks include Little Warley and East Horndon churches to the north.

The historic character is one of a distinctive grid-like grain of fields, thought to be of ancient origin. Settlements tend to be nucleated. There are smaller ponds scattered in the area and some medieval moated sites.

Due to its open, flat nature, the fact that it is overlooked from the wooded hills to the north and east, and the sense of historic integrity, the assessment concludes the area to be of Moderate sensitivity to change. The Landscape Planning Guidelines suggest that any appropriate new development responds to the existing settlement pattern and uses materials which are appropriate to the local landscape character. The assessment also suggests that the setting of West Horndon needs to be conserved through careful consideration of the existing landscape structure It identifies the need to screen visual detractors such as the industrial estate in West Horndon and recommends that the existing hedgerow network is conserved and enhanced and new woodland planting introduced in the form of shaws, copses and hedgerow trees.

At a site-specific level, the district is gridded with roads, settlement, hedges and ditches as the lower fenland has been artificially drained, occupied and farmed. Important east – west routes, either rail or road, run perpendicular to north - south drainage, settlement and hedgerow lines that mirror linear parish boundaries. The local area has largely been shaped by the natural geography; the Thames, Mar Dyke and Hole Craven Creek to the south and the Langdon/Horndon Hills to the north.

The east site comprises eight fields lying within a low-lying, level landscape, sloping imperceptibly to the north from 10-20m AOD. There is a large belt of trees associated with its northwestern flank, close to the village of West Horndon. The east site's fields are rectilinear in shape, lined by hedgerows and watercourses which follow a broadly north-south and east-west orientation. Station Road, which runs broadly in an east-west direction, splits the east site. The early field pattern system appears broadly intact. The east site backs onto a number of houses within West Horndon. The east site is bound on its northern and eastern flanks by large roads; the A127 and A128 respectively. These two roads are bounded by strong belts of vegetation which enclose the site.

The land to the west of West Horndon (the west site) comprises a mix of brownfield industrial land to the south, with an area of greenbelt arable farmland to the north. The three arable fields have a relatively weak hedgerow pattern. Its northern edge is open and marked by a low ridgeline. Its eastern boundary is marked by housing at West Horndon whilst its western edge is marked by Dunning Lane which is lined by hedgerows. The A127 lies north of the site beyond the ridgeline; a dense hedgerow and trees line the road. The site lacks an obvious northern edge to it.

Dunton Garden Suburb Site Setting and History

The study area is located directly to the west of Basildon and about 1km east of West Horndon (see Figure 2). It is accessed via the A127 and A128 and connects in to the existing village and its key community facilities of the primary school and Local Park. It comprises low-grade agricultural land which is contained and parceled by a strong and intact structure of hedgerows. The site lies to either side of the main access into West Horndon, Station Road.

The history of the land within the Dunton Garden Suburb is that typical of an agricultural landscape dating back many hundreds of years.

Dunton Garden Suburb Site Landscape Character

The Dunton Garden suburb lies within the Greenbelt on the western edge of Basildon. The site lies partly within Basildon Borough and partly within Brentwood Borough and, as a result straddles 2 character areas: the edge adjacent to the west edge of Basildon is known as Character Area 13 Dunton Settled Claylands whilst the western parts are within the Horndon Fenlands LCA which is described above.

Area 13 Dunton Settled Claylands

The Basildon Borough Council Landscape Character Assessment and Green Belt Landscape Capacity Study BBC LCA) describes the area as follows:

'The area gently rises in the south culminating with a low hillock south west of Dunton Hall. The western boundary is marked by the Borough boundary although the same character extends further into Brentwood Borough. The southern boundary follows the railway. The northern part of the character area encompasses grazed pastures and the small settlement of Dunton Wayletts north of the A127. The urban edge of Laindon is largely well enclosed from view by dense vegetation to the east of the B148, but the A127, B148 and railway line heavily affects the tranquillity of the area. The area retains a distinctive grid-like grain to its layout, derived

- 3.1 General
- 3.2 Landscape Character Baseline
- 3.3 Site Local Landscape Character
- 3.4 Visual Receptor
- 3.5 Site Visibility
- 3.6 Baseline Summary

from its medieval or earlier rectilinear field system. Built development is sporadic with dispersed lines of residential properties.'

The field pattern is thought to be of Middle Saxon origin and there are medieval relics in the area including the site of a medieval church and hall complex at Dunton Hall and a former medieval moated site at the Old Rectory. The Church spire at Dunton is a local landmark.

Key characteristics according to the BBC LCA are:

- Predominantly flat landform with gentle slopes in the south towards the railway
- Typically medium to large sized arable fields.
 Medium sized paddocks are subdivided with post and barbed wire fencing
- Predominantly open farmland with occasional tall hedgerows forming fragmented enclosure
- Field boundaries delineated with some tall hedgerows, post and wire fencing and mature tree rows without hedgerows
- Narrow rural lanes connect dispersed roadside settlement and agricultural barns
- Dunton Park static caravan park occupies the south east corner of the character area
- Small area of mature Oak and Birch woodland north of the caravan park
- Church and hall complex at Dunton Hall are local landmarks
- Houses are predominantly 20th century with some Victorian gault brick buildings including the Old Rectory and Friern Manor

Whilst the landscape condition is considered to be moderate to poor, the historic field pattern is intact so that the long term management prescription for this LCA is to Improve and Conserve. The management guidelines note the visual relationship of this area to the Langdon Hills that lie to the south of Basildon and that key views need to be retained.

Basildon Borough Council Green Belt Study 2013

In October 2013 Basildon Borough Council undertook a Landscape Character Assessment of Greenbelt around Basildon and a Landscape Capacity Study. This further subdivided the Area 13 LCA into two areas, which were assessed for their landscape capacity to accommodate different development including residential, commercial and recreational.

Area 66 is described as:

'an area of gently sloping open farmland located west of Laindon/Basildon. The land use is a mix of predominantly rectilinear grazed pastures and arable fields divided by fragmented hedgerows, and post and wire fencing. There are areas of semi-mature woodland to the southwest adjacent to the Laindon West neighbourhood and some areas of young woodland. The B148 forms the eastern boundary separating the land area from the urban edge of Laindon/Basildon. A busy road junction lies to the north where the B148 meets the A127 and the railway line forms the southern boundary. The western boundary follows Lower Dunton Road, which divides the area from the more historic side of Dunton village within Area 67. Built development comprises Dunton Park Residential Caravan Park occupying a large site in the southeast corner and scattered roadside properties mainly to the north and agricultural barns, predominantly from the 20th century. There are no ecological designations in the area. Field boundaries are in decline resulting in the area looking in a poor condition'.

The assessment suggested that there was scope to combine areas 66 and 67 for a coordinated western extension to Basildon. However the subsequent capacity assessment yielded a final landscape capacity rating score of Low capacity, with one of the key issues affecting this rating being openness to public view.

Area 67 is described as:

'an area of predominantly open farmland located west of Laindon/ Basildon. The land slopes gently to the south, culminating with a low hillock south west of Dunton Hall. The land area's boundaries follow

the railway line to the south, the A127 to the north, the Borough boundary to the west and Lower Dunton Road to the east. Land use is predominantly rectilinear grazed pastures and arable fields divided by fragmented hedgerows, tree lines without hedgerows or post and wire fencing. Field boundaries have been lost in parts and much of the land is in a poor condition. There are no ecological designations in the area. Modern development is limited to a small amount of sporadic roadside housing. Historic buildings include the medieval church and hall complex at Dunton Hall, Friern Manor and The Old Rectory, which occupied a medieval moated site. There is also a small private fishing lake in the northern part of the area'.

There is a consented 500kw wind turbine located north of Dunton Hills Golf Course within the Dunton Garden Suburb site. This is 44m to the hub and 72m to the blade tips. When constructed, it would be the only feature of its kind within the visual envelope.

3.1 General

3.2 Landscape Character Baseline

3.3 Site Local Landscape Character

3.4 Visual Receptors

3.5 Site Visibility

3.6 Baseline Summary

3.4 Visual Receptors

The following viewpoints are located as shown in Figure 5 and panoramic photographs of each viewpoint are shown in Figure 6, viewpoints 1 - 22.

Viewpoint 1:

View westwards from Childerditch Lane south of the A127, distance from west site approx. 500m; distance from east site approx. 1100m; distance from nearest Dunton Garden Suburb development approx. 2750m; 20m AOD.

Viewpoint 2:

View westwards from the Church of All Saints, north of the junction of the A127 and A128, distance from the CPL site approx. 600m; distance from nearest Dunton Garden Suburb development approx. 1,200m; 45m AOD.

Viewpoint 3:

View westwards from Station Road west of the junction with the A128, distance from the CPL site approx. Om; distance from nearest Dunton Garden Suburb development approx. 860m; 14m AOD.

Viewpoint 4:

Two panoramic views: north eastwards and south eastwards from Station Road east of West Horndon with the A128, distance from the CPL site approx. 0; 10m AOD.

Viewpoint 5:

View from north western edge of the community park looking northeast, distance from the CPL site approx. Om; distance from nearest Dunton Garden Suburb development approx. 1,700m; 12m AOD.

Viewpoint 6

A 180 degree panorama stretching southeast to south west from Octagon Plantation Country Park, distance from the CPL site approx. 700m; distance from nearest Dunton Garden Suburb development approx. 1590m; 50m AOD.

Viewpoint 7:

View southwards from public footpath within Thorndon Country Park South, distance from the CPL site approx. 600m; distance from nearest Dunton Garden Suburb development approx. 2000m; 40m AOD.

Viewpoint 8:

View southwards from public footpath within Thorndon Country Park South, distance from the CPL site approx. 800m; distance from nearest Dunton Garden Suburb development approx. 2400m; 55m AOD.

Viewpoint 9:

View northwards from Dunnings Lane, distance from the CPL site approx. 2000m; distance from nearest Dunton Garden Suburb development is more than 3km; 6m AOD.

Viewpoint 10:

View westwards from the junction of the entrance of Nuttys Farm and Childerditch Lane; distance from the CPL site approx. 1100m; distance from nearest Dunton Garden Suburb development approx. 2800m; 15m AOD.

Viewpoint 11

Southwards from the PRoW northeast of the South Essex Golf Centre, distance from west site approx. 1000m; distance from Dunton Garden Suburb site approx. 1000m; 47m AOD.

Viewpoint 12

View eastwards from the junction of the A128 and Station Road, east of West Horndon; distance from Dunton Garden Suburb developed area: approx. 850m; 11m AOD.

Viewpoint 13:

View eastwards from Dunton Hills Golf Club entrance, distance to Dunton Garden Suburb development approx. 870m; 15m AOD.

Viewpoint 14:

Byway to the south of A127 near Green Meadows

Nursery, distance from Dunton Garden Suburb site nearest
development approx. 50m; 31m AOD.

Viewpoint 15:

PRoW to the south of A127 near Green Meadows Nursery, distance from Dunton Garden Suburb site nearest development approx. Om; 37m AOD.

Viewpoint 16:

North-south aligned PRoW traversing Dunton Hill on the hilltop towards Dunton Hall. Distance from Dunton Garden Suburb site nearest development approx. Om; 41 m AOD.

Viewpoint 17:

Access drive to Friern Farm, off of old alignment Lower Dunton Road to the south of the A127, near Brookman's Farm; distance from Dunton Garden Suburb site nearest development approx. Om; distance from CPL site approx. 2320m; 33m AOD.

Viewpoint 18:

PRoW to the south of Church Lane near Dunton Hall and Church, distance from Dunton Garden Suburb site nearest development approx. distance from CPL site approx. 1880m; 0m; 37m AOD.

Viewpoint 19:

From Church Lane south over Dukes Farm to the rail line; distance from Dunton Garden Suburb site nearest development approx. Om; 33m AOD.

Viewpoint 20:

View westwards from car park of Dunton Park Static Caravan Park; distance from Dunton Garden Suburb site nearest development approx. Om; distance from CPL site approx. 2460m; 34m AOD.

Viewpoint 21:

View westwards from car park of Dunton Plotlands Nature Reserve, distance from Dunton Garden Suburb Site approx. 150m; distance from CPL site approx. 2400m; 25m AOD.

Viewpoint 22:

View northwards from Doesgate Lane toward the Southend railway line and Dunton Garden Suburb site; distance from nearest development approx. 1,500m; 21m AOD.

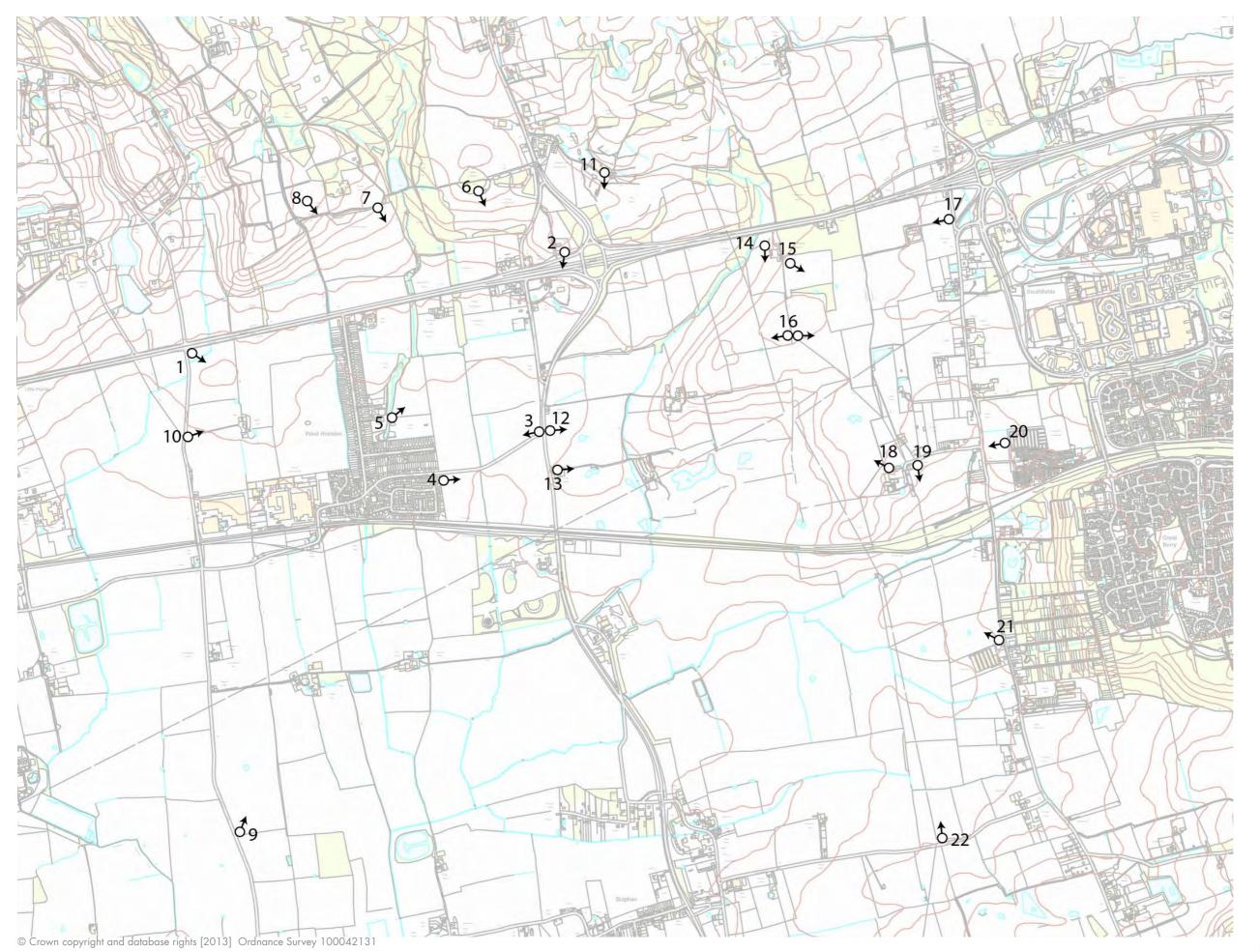


Figure 5 - Viewpoint locations



Viewpoint 1: View westwards from Childerditch Lane south of the A127, distance from west site approx. 500m; distance from nearest Dunton Garden Suburb development approx. 2750m; 20m AOD.

A relatively narrow gap in the roadside hedge affords a glimpsed view of a sloping arable field. Nuttys Farm appears just above the low ridge which blocks views to the west site. The Dunton and Langdon Hills are just visible in the mid- to far-distance above the ridgeline. Views to the east site are blocked by the vegetation associated with properties in West Horndon.



Viewpoint 2: View westwards from the Church of All Saints, north of the junction of the A127 and A128, distance from the CPL site approx. 600m; distance from nearest Dunton Garden Suburb development approx. 1,200m; 45m AOD.

The view westwards from near the Church of All Saints looking towards West Horndon affords a partial view of the east site and the industrial sheds west of West Horndon. The view is open and panoramic in character and includes Canary Wharf, the Shard and a power station in the far distance. The rolling hills of the Thorndon Country Park South frame the view to the north. The view is typically semi-rural in character. It is dominated by the A127 and the Halfway House services. The noise of the A127 detracts from the quality of the view. A dense network of vegetation dominates the mid ground of the view. The vegetation partially screens the CPL site; the high ground of the Dunton Garden Suburb site is visible over mid-distant screening trees.

The high ground of the Dunton Garden Suburb site is visible over mid-distant screening trees the view eastwards from near the Church of All Saints.



Viewpoint 3: View westwards from Station Road west of the junction with the A128, distance from the CPL site approx. Om; distance from nearest Dunton Garden Suburb development approx. 860m; 14m AOD.

The view looking westwards along Station Road is dominated by the road and a low clipped hedge to the south and a taller hedgerow to the north. The hedgerows blocks views of the fields of the CPL site.

The Dunton Garden Suburb site is not visible.



Viewpoint 4: Panoramic view eastwards from Station Road east of West Horndon with the A128, distance from the CPL site approx. 0; distance from nearest Dunton Garden Suburb development approx. 1,700m; 11m AOD.

The view to the north side of Station Road is glimpsed between fencing for new housing and the existing hedgerow. It is open in character; the foreground is dominated by a level, open field surrounded by a low hedgerow to the south and a taller one to the north. The Dunton and Langdon Hills are just visible in the mid to far distance. The row of pylons that traverse the Dunton Garden Suburb site and the railway embankment intersecting Lower Dunton Road (B 1007) cross the view in the mid-distance. The southern portion of the CPL site is clearly visible in the view to the south side of the station road. The fields within the northern portion of the CPL site are blocked by a tall hedgerow. Pylons and hilltops within the Dunton Garden Suburb site are visible to the east.



Viewpoint 5: View from north western edge of the community park looking northeast, distance from the CPL site approx. Om; distance from nearest Dunton Garden Suburb development approx. 1,700m; 12m AOD.

The view looking northeast affords open views of the east site. The view comprises an open, level arable field which is framed by trees to the east and a hedgerow in the far distance. The high ground of the Dunton Garden Suburb site is visible over mid-distant screening trees the view eastwards.



Viewpoint 6: A 180 degree panorama stretching southeast to south west from Octagon Plantation Country Park, distance from the CPL site approx. 700m; 50m AOD.

Pylons and hilltops within the Dunton Garden Suburb site are visible to the east.

The view features a characteristic mix of both rural and urban elements encompassing the Kent Hills, Langdon Hills as well as a number of power stations, factories and the Dartford Crossing. West Horndon is clearly visible in the mid ground of the view. The foreground of the view comprises a large area of amenity grassland enclosed by hedgerows and mature hedgerow trees. The CPL site can be seen in the mid-ground of the view but only appears as a relatively small element within the overall view and is visually broken up by existing vegetation within the site and off-site. The West Horndon Industrial Park sheds are visible. Pylons and hilltops within the Dunton Garden Suburb site are visible to the east.



Viewpoint 7: View southwards from public footpath within Thorndon Country Park South, distance from the CPL site approx. 600m; 40m AOD.

An open, panoramic view, it encompasses the hills of Kent and the chimney and towers of the Thames Estuary. Both sites are just visible in the mid ground of the view amidst a network of trees. However roadside planting on the A127 screens a large proportion of both sites. The foreground of the view is dominated by a large arable field. Pylons and hilltops within the Dunton Garden Suburb site are visible to the east.



Viewpoint 8: View southwards from public footpath within Thorndon Country Park South, distance from the CPL site approx. 800m; distance from nearest Dunton Garden Suburb development approx. 2400m; 55m AOD.

The open, panoramic view encompasses the hills of Kent and the factories and power stations of the Thames estuary. The house within West Horndon and their associated vegetation appears at the centre of the view. Portions of the east site are visible however these appear as relatively insignificant elements of the view. The west site by contrast appears as an open, large field in the centre of view. The lack of vegetation, associated with the west site's northern flank, renders the site particularly open and visible.



Viewpoint 9: View northeast from Dunnings Lane, distance from the CPL site approx. 2000m; distance from nearest Dunton Garden Suburb development is more than 3km; 6m AOD.

This northward looking view encompasses the hill ridge of the Thorndon Country Park South to the north. The foreground of the view is dominated by Dunnings Lane which is enclosed by hedgerows on either side which restrict the openness of the view. Neither site can be seen.



Viewpoint 10: View westwards from the junction of the entrance of Nuttys Farm and Childerditch Lane; distance from the CPL site approx. 1100m; distance from nearest Dunton Garden Suburb development approx. 2800m; 15m AOD.

This view is an open semi-rural view. Views to Jury's Hill are possible to the north, whilst the industrial sheds of West Horndon can be seen to the south. Views of the tops of Dunton Hills and the associated power line pylons are possible just below the horizon; Langdon Hills are also visible in the far distance. Views to the CPL site are not possible.



Viewpoint 11: Southwards from the PRoW northeast of the South Essex Golf Centre, distance from west site approx. 1000m; distance from Dunton Garden Suburb site approx. 1000m; 47m AOD.

The panoramic view sweeps south towards Dunton Garden Suburb site over Eastlands Spring and the tree-lined and screened A127 towards East Horndon, Thorndon Park South and Dunton Hills. Basildon/Langdon Hills is visible in the distance. Dunton Hills Farm is visible to the west. The CPL site is not visible and is screened by landform and vegetation.



Viewpoint 12: View eastwards from the junction of the A128 and Station Road, east of West Horndon; distance from Dunton Garden Suburb developed area: approx. 850m; 11m AOD.

The view comprises open arable fields in the foreground. Dunton Hill Farm is visible on the skyline in the mid-distance. Dunton Hill ridgelines lie behind the farmhouse and this runs through to the Dunton Hills Golf Club the south. The view is cumulative with CPL site 180 degree to the west (see viewpoint 3 above).



Viewpoint 13: View eastwards from Dunton Hills Golf Club entrance, distance to Dunton Garden Suburb development approx. 870m; 15m AOD.

The view is of open well maintained golf fairways and greens without hedgerows or trees in the near to mid-distance; the south the golf club driveway leads to a group trees in which the club house is just visible. The view is cumulative with CPL site 180 degrees to the west.



Viewpoint 14: Byway to the south of A127 near Green Meadows Nursery, distance from Dunton Garden Suburb site nearest development approx. 50m; 31m AOI

The view is up hill toward Dunton Hill ridge, framed by substantial hedgerow trees. A substantial over grown hedgerow follows the north-south alignment of the PRoW to the east of the view, south of Green Meadows Nursery. There is no view of the CPL site from this location.



Viewpoint 15: PRoW to the south of A127 near Green Meadows Nursery, distance from Dunton Garden Suburb site nearest development approx. Om; 37m AOD.

The view to the southeast affords open views of the northernmost area of the Dunton Garden Suburb site; an open field surrounded by mature hedgerows on all sides, this is an attractive area that is relatively contained from the otherwise wide and open farmland landscape. It helps to buffer the A127 to the north, screening views of the busy traffic. Views are therefore connected with the wooded upland to the north of the A127. There is no view of the CPL site from this location.



Viewpoint 16a: North-south aligned PRoW traversing Dunton Hill, diverting northwest-southeast on the hilltop towards Dunton Hall. Distance from Dunton Garden Suburb site nearest development approx. Om; 41 m AOD.

From a high point within the Dunton Garden Suburb site, the PRoW affords 360 degree panoramic views that encompass views of the South Essex Golf Club driving range and wooded fairways to the north, the urban fringe and factories of Basildon to the east, extensive and open fields to the south with the church and building of Dunton Hall visible amongst woodland, and beyond that the tree-lined Southend railway embankment and Langdon Hills.