



The Sizewell C Project

6.5 Volume 4 Southern Park and Ride Chapter 6 Landscape and Visual Appendices 6A - 6B

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VOLUME 4, CHAPTER 6, APPENDIX 6B : NIGHT-TIME APPRAISAL

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1. Night-time Appraisal

1.1 Introduction

1.1.1 This appendix assesses the likely landscape and visual effects arising from lighting during the construction and operation of the southern park and ride site at Wickham Market (referred to throughout this appendix as 'the proposed development'). Lower level light periods, when lighting may be required, have the potential to arise in the early morning, dusk and evening, as well as at night.

1.1.2 The assessment describes the existing landscape and visual baseline at lower level light periods; describes the key lighting aspects of the proposed development as they relate to landscape and visual matters; describes the anticipated change upon both landscape and visual receptors; and assesses the magnitude and significance of change for both the construction and operational phases of the proposed development.

1.2 Legislation, policy and guidance

1.2.1 No international or regional legislation or policy is deemed relevant to the assessment for this site.

a) National

1.2.2 At a national level, the relevant National Policy Statements (NPSs) are considered alongside the National Planning Policy Framework (NPPF), and the Planning Practice Guidance (PPG) for light pollution. Much of the policy and guidance relates to ecology considerations or creating nuisance through lighting. Lighting in relation to the proposed development will be designed to avoid creating nuisance or effects on residential amenity and policy specifically in relation to these matters is not referenced below.

1.2.3 Paragraph 180 of the NPPF (Ref. 1.1) requires decisions to ensure that “*new development is appropriate for its location*” including by limiting the impact of light pollution on local amenity and “*intrinsically dark landscapes*”.

1.2.4 The PPG for light pollution (Ref. 1.2) sets out the circumstances in which light pollution can become relevant to planning. It states at paragraph 001:

“Artificial light is not always necessary. It has the potential to become what is termed ‘light pollution’ or ‘obtrusive light,’ and not all modern lighting is suitable in all locations. It can be a source of annoyance to people, harmful to wildlife, undermine enjoyment of the countryside or the night sky, especially in areas with intrinsically dark

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landscapes. Intrinsically dark landscapes are those entirely, or largely, uninterrupted by artificial light. National parks and nature reserves can serve as good examples, particularly where they support habitats for native nocturnal animals.”

1.2.5 The guidance continues at Paragraph 003:

“Light intrusion occurs when the light ‘spills’ beyond the boundary of the area being lit. For example, light spill can result in safety impacts related to the impairment or distraction of people (e.g. when driving vehicles), health impacts arising from impaired sleep, cause annoyance to people, compromise an existing dark landscape and/or adversely affect natural systems (e.g. plants, animals, insects, aquatic life). These adverse effects can usually be completely avoided with careful lamp and luminaire selection and positioning:

Lighting near or above the horizontal is usually to be avoided to reduce glare and sky glow (the brightening of the night sky).

Good design, correct installation and ongoing maintenance are essential to the optical effectiveness of lighting schemes such as fixed and/or regularly operated functional and decorative lighting elements.”

1.2.6 Paragraph 005 adds:

“The character of the area and the surrounding environment may affect what will be considered an appropriate level of lighting for a development. In particular, lighting schemes for developments in protected areas of dark sky or intrinsically dark landscapes should be carefully assessed as to their necessity and degree.”

b) Local**1.2.7** Suffolk Coastal District Local Plan Core Strategy & Development Management Policies (Ref. 1.3). Development Management Policy DM26 – Lighting sets out the Council’s approach to minimising light pollution. The policy is worded as follows:

“The District Council will seek to minimise light pollution. Applications for development requiring or likely to require external lighting should include details of lighting schemes. This should include position, height, aiming points, lighting

levels and a polar luminance diagram. Applicants will need to satisfy the District Council that:

(a) The proposed lighting scheme is the minimum needed for security, working purposes, recreational or other use of the land;

(b) It is designed so as to minimise pollution from glare and light spillage, particularly to residential and commercial areas, areas of nature conservation importance, and areas whose open and landscape qualities would be affected;

...

In order to prevent unnecessary intrusion into the countryside, or the effect on residential amenity, the District Council may seek to control the days and times of use of lighting (excluding street lighting)."

1.3 Methodology

1.3.1 Night-time assessment of lighting on landscape and visual receptors is an emerging area, and there is no specific guidance on which to base the assessment.

1.3.2 The approach and methodology of this assessment will follow the same structured approach as **Volume 4, Chapter 6** of the **Environmental Statement (ES)**. The assessment terminology will also follow that presented in the landscape and visual methodology, with the exception of the approach to assessing and describing the sensitivity of receptors as follows:

a) Sensitivity of landscape character at night

1.3.3 For landscape character types (LCTs) / areas, susceptibility will be judged based on the degree to which the character of the landscape is characterised by darkness, informed by satellite mapping of light distribution and site observations. Value will be judged as presented within the assessment of effects during the day, unless specific factors suggest otherwise, for example the identification of a dark sky discovery site which would increase value; or where factors that contribute to value in the daytime are irrelevant at night (which may reduce value at night).

b) **Sensitivity of visual receptors at night**

1.3.4 For visual receptors the assessment will take account of the importance attached to views at night. Generally, the value attached to night-time views is considered to be low, unless there is a particular feature that can be best, or only appreciated in the hours of darkness. This may include views of stars and the night sky that are only, or best available in particularly dark areas, or views to well-known landmarks that are illuminated at night.

1.3.5 The susceptibility of visual receptors also differs at night, reflecting the different activities people undertake in the hours of darkness. For example, drivers using roads at night tend to be more focused on the road and the area illuminated by their headlights and roadside lighting than during the day and may have their attention drawn by oncoming headlights, road markings/cat's eyes, or signage, resulting in lower susceptibility. By contrast, people taking part in activities requiring darkness, such as star gazing, would be of higher susceptibility.

1.3.6 The sensitivity of visual receptors at night is rated as follows:

- National value and high susceptibility – visitors to dark sky parks or dark sky reserves as recognised by the International Dark Sky Association.
- Local value and high susceptibility – visitors to dark sky discovery sites, public observatories or places often visited by astronomical societies and groups.
- Community value and high susceptibility – people engaged in night-time activity such as bat watching, residents of notably dark areas (i.e. rural locations with no street lighting) in the streets around their homes and footpaths where dark skies are integral to the amenity.
- National (or local) value and medium susceptibility – visitors to nationally important or well-known local landmarks that are illuminated at night.
- Community value and medium susceptibility – residents in urban areas or semi-urban/rural areas, users of cycle routes and footpaths where street lighting/illumination is characteristic.
- Community value and low susceptibility – drivers using local, unlit roads and train passengers.
- Limited value and low susceptibility – users of A roads, illuminated minor roads and people at their place of work.

c) Scope

- 1.3.7 The extent of the study area for the assessment of night-time effects is two kilometres (km), which replicates that used for the assessment of daytime effects, which has been agreed by landscape and visual consultees. The assessment considers the impact of lighting on landscape character, visual receptors and landscape designations.
- 1.3.8 Viewpoints from the main assessment were visited at night as relevant. However, a number are inaccessible at night due to being unlit or were not suitable for night-time photography due to proximity to busy roads. Therefore, no night-time viewpoints are presented to accompany this assessment.

1.4 Assessment

- 1.4.1 This section identifies those groups of landscape and visual receptors likely to experience notable effects as a result of the proposed lighting associated with the proposed development. The baseline description of the existing night-time environment for each receptor group is provided alongside the assessment of effects for ease of reference.
- 1.4.2 This section considers both landscape character and visual receptors before considering designated landscapes. It is common for designations to encompass both character and visual considerations within their special qualities or purposes of designation. It therefore makes a more natural reading sequence to draw together those aspects of character and views which relate to the designation if they have been described earlier in the chapter.

a) Night-time visual environment of the study area

- 1.4.3 The existing intensity of artificial lighting across the study area is illustrated on **Figure 6B.1** to this appendix using satellite data (Visible Infrared Imaging Radiometer Suite day/night) from March 2019 (Ref. 1.4). This illustrates that there is a low level of artificial light within much of the study area, including the site itself. To the south-west, the settlement of Wickham Market, creates a much higher degree of light pollution and there is a further area of higher light pollution around Campsea Ashe to the south-east of the site.
- 1.4.4 There are also a small number of other light sources within the study area, beyond those generally associated with the settlements mentioned above, that can be seen from within the study area and vary in prominence depending on the context of the view. These include the elevated junction of the A12 with the B1078 and B1116. Other roads and settlements within the study area are generally unlit.

b) Lighting proposals

- 1.4.5 As discussed in **Chapter 2** of this volume of the **ES**, lighting would be provided at the perimeter and car parking areas of the proposed development for security and safety reasons, as well as along the access road into the proposed development. Lighting columns would have a maximum height with lanterns of six metres (m), with the exception of along the A12 slip road and along the access road where lighting columns would be 10m in height.
- 1.4.6 Regard has been given in the lighting design to minimising potential effects on neighbouring residential occupiers and ecological receptors. Therefore, the lanterns would utilise LED based light fittings to ensure energy efficiency with zero degree tilt, and lighting columns along the perimeter would be fitted with a demountable shield to reduce backward spill of light. To further assist in mitigating obtrusive light, a central management system has been proposed for the lighting which would be capable of dimming of parts of the site independently from other parts, as usage changes through the day and to allow for seasonal variations in the operational hours of the external lighting.

c) Landscape effects

- 1.4.7 Local LCTs within the 2km study area, as identified in the Suffolk Landscape Character Assessment (Ref. 1.5), are illustrated on **Figure 6B.1** to this appendix. This shows that most LCTs within the study area are characterised by lower intensity of artificial light present within them, with localised areas higher intensity focused at the settlements of Wickham Market and Campsea Ashe.
- 1.4.8 LCTs within the 2km study area and to the south-west of the site have a higher intensity of artificial light present within them. These LCTs are unlikely to experience any notable effects on landscape character as a result of the proposed development.
- 1.4.9 The main source of effects would occur as a result of the proposed lighting within the parking areas and along the access road. Lighting within the whole of the proposed development would occur in an area that is generally unlit.
- 1.4.10 As discussed in **Volume 4, Chapter 6**, the only LCTs likely to experience effects from the proposed development are the Plateau Estate Farmlands, Rolling Estate Farmlands and the Ancient Estate Claylands LCTs. This remains the case in relation to lighting effects at night.

i. Plateau Estate Farmlands

- 1.4.11 The key characteristics of this LCT are described in the Suffolk Landscape Character Assessment and set out in **Volume 4, Chapter 6**. The night-time character of the LCT is not discussed in the current character assessment. However, within the study area, this LCT is generally dark with localised areas of existing light pollution associated with settlements, as illustrated by **Figure 6B.1** of this appendix. The LCT occurs in two locations within the study area – the site is located in one and Wickham Market located in the other. Existing lighting within this LCT is more prevalent in the area around Wickham Market, but is also present in settlements and at occasional isolated dwellings, within the remainder of the study area.
- 1.4.12 Despite the proximity of lighting at Wickham Market and around the elevated junction of the A12 with the B1078 and B1116, in the vicinity of the site the LCT contains relatively limited sources of artificial lighting. As a result, this LCT is considered to have medium susceptibility to the proposed lighting. Taking this with the community value of the landscape, as set out in **Volume 4, Chapter 6**, the LCT is considered to have medium-low sensitivity to the proposed lighting.
- 1.4.13 The proposed development would introduce a large area of lighting within the LCT, in an area where there is a small area of existing lighting of a similar type and intensity but at some distance from the site. This would result in long-term effects on this LCT that would be medium scale and occur over a localised extent. Effects would be of medium magnitude, resulting in a moderate adverse effect, which is considered to be **not significant**, given the relative lack of existing artificial lighting in the vicinity of the site.

ii. Rolling Estate Claylands

- 1.4.14 As for the main landscape and visual assessment in **Volume 4, Chapter 6**, visibility of the proposed development from within this LCT would be relatively limited. Those areas of the LCT that would have potential visibility of the lighting from the proposed development already experience the effects of existing lighting from Wickham Market and around the elevated junction of the A12 with the B1078 and B1116. This would result in negligible scale effects on this LCT. Effects would be of negligible magnitude, resulting in a minimal neutral effect, which is considered **not significant**, given the degree of artificial lighting already characteristic of this character type.

iii. Ancient Estate Claylands

- 1.4.15 As for the main landscape and visual assessment in **Volume 4, Chapter 6**, visibility of the proposed development from within this LCT would be relatively limited. Intervening vegetation is likely to minimise visibility of the proposed lighting from this LCT, and the existing lighting at Wickham Market is likely to be present in any locations where views are possible, resulting in negligible scale effects on this LCT. Effects would be of negligible magnitude, resulting in a minimal neutral effect, which is considered **not significant**, given the limited influence likely to be experienced from the proposed lighting.

d) Visual effects

- 1.4.16 The approach to assessing visual receptors will follow the same approach as **Volume 4, Chapter 6**, utilising receptor groups and assessing effects on key routes separately.

i. Visual aids

- 1.4.17 Of the viewpoints utilised for the full landscape and visual assessment in **Volume 4, Chapter 6**, representative viewpoints R2-R5, as well as R8 are all on public rights of way that would not generally be used at night because they are unlit. Representative viewpoints R1, R6 and R7 are located along unlit stretches of road where it would be unsafe to take photographs at night. Consequently, no night-time photography has been provided to accompany the assessment.

Receptor groups

- 1.4.18 Users of the footpaths and bridleways in the immediate vicinity of the site (E-288/008/0, E-288/007/0 and E-387/008/0), to the north of the A12 and within 400m of the site: The public rights of way are unlikely to be used at night due to their unlit nature. Effects on users of these routes are not considered further within this assessment.

1.4.19 Users of footpaths and bridleways (E-288/016/0, E-288/017/0, E-288/009/0, E-178/002/0, E-178/003/0 and E-387/007/0), local residents and motorists to the south of the A12 and within 700m of the site: The public rights of way within this receptor group are unlikely to be used at night due to their unlit nature, and effects on users of these routes are not considered further within this assessment. As set out above, people in and around their homes in unlit rural areas are considered to be of medium sensitivity. The B1078 and Station Road are currently unlit. Given the relative darkness of this area at night, the lighting along the proposed access road and within the parking areas of the proposed development would be a noticeable new feature, although slightly remote from these locations and lighting at the elevated junction of the A12 with the B1078 and B1116 is currently visible. However, the lighting strategy has been designed to minimise the amount of lighting required and its spill into the surrounding area. Long-term effects would be of medium-small scale over an intermediate extent. These effects would be of medium-low magnitude, resulting in a moderate adverse effect, which is considered to be **not significant**.

1.4.20 Local road users using the B1116 and Marlesford Road: As set out above, users of unlit local roads are considered to be of medium-low sensitivity. They are considered more likely to be focused on the road and the area illuminated by their headlights than during the day. Neither road is orientated in such a way that drivers would look directly towards the site. Long-term effects would be of small-negligible scale over a localised extent. These effects would be of low-negligible magnitude, resulting in a slight adverse effect, which is considered **not significant**.

Long-distance routes

1.4.21 The A12 passes along the southern boundary of the site. As set out above, users of A roads are considered to be of medium-low sensitivity. For users of the route, the proposed lighting would form a noticeable new feature when passing through the area around the site. Road users on the A12 would experience large scale effects as they pass the proposed development. However, this would be a very brief part of a longer journey and the long-term effects would be of limited extent. These effects would be of medium magnitude, resulting in a moderate adverse effect, which is considered to be **not significant**.

e) Effects on landscape designations

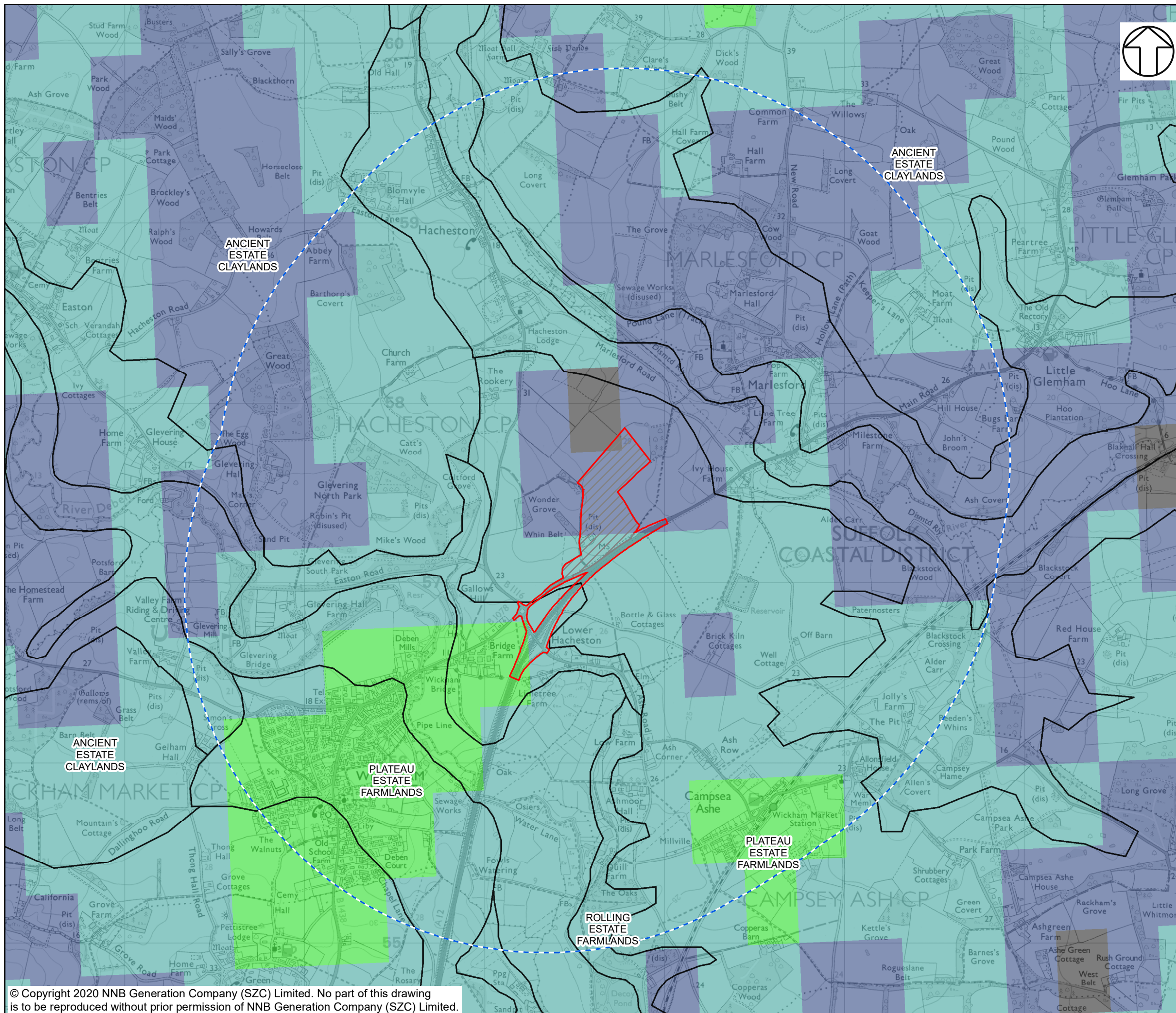
- 1.4.22 As set out in **Volume 4, Chapter 6**, special landscape areas related to the valleys of the River Deben and the River Alde cover much of the study area, and wrap around the site to the north, east, and west. The main landscape and visual assessment concludes that there would be very limited visibility of the proposed development from within the special landscape areas. In any views from the special landscape areas, the existing artificial lighting in Wickham Market and at the elevated junction of the A12 with the B1078 and B1116 would already be visible, either as a backdrop to the site or in the foreground of views. Long-term effects would be of negligible scale. These effects would be of negligible magnitude, resulting in a minimal neutral effect, which is considered **not significant**.

References

- 1.1 The Ministry of Housing, Communities and Local Government (2019) National Planning Policy Framework
- 1.2 The Ministry of Housing, Communities and Local Government (2019) Planning Practice Guidance – Light Pollution
- 1.3 East Suffolk Council (2013) Suffolk Coastal District Council Core Strategy and Development Management Policies
- 1.4 Juri Stare. Intensity of Artificial Lighting (Visible Infrared Imaging Radiometer Suite 2018). (Online) Available from: <https://www.lightpollutionmap.info/> (Accessed 22 March 2019).
- 1.5 Suffolk County Council (2008, revised 2011) Suffolk Landscape Character Assessment

Figures

Figure 6B.1: Existing light pollution



- NOTES**
 DATA PRESENTED TO REPLICATE MAPPING AT
 WWW.LIGHTPOLLUTIONMAP.INFO
- KEY**
- SOUTHERN PARK AND RIDE DEVELOPMENT SITE BOUNDARY
 - EXTENT OF PREDOMINANT DEVELOPMENT AREA
 - STUDY AREA (2KM FROM SITE BOUNDARY)
 - LANDSCAPE CHARACTER TYPES
- EXISTING LIGHT POLLUTION (MARCH 2019)
- RADIANCE (W/CM² * SR)
- <math>< 0.25</math>
 - 0.25 - 0.4
 - 0.4 - 1
 - 1 - 3

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DOCUMENT:
 SIZEWELL C
 ENVIRONMENTAL STATEMENT
 VOLUME 4
 APPENDIX 6B
 NIGHT-TIME APPRAISAL

DRAWING TITLE:
 EXISTING LIGHT POLLUTION

DRAWING NO.:
 FIGURE 6B.1

DATE: JAN 2020 **DRAWN:** V.W. **SCALE:** 1:20,000 @A3

