9. Landscape and Visual

9.1 Introduction

9.1.1 This chapter sets out the results of the Landscape and Visual Impact Assessment (LVIA) of the construction and operation of the proposed Project as described in Chapter 3. Photomontages of the proposed Project during the summer and winter periods have been produced by Jacobs and are included in **Appendix V.**

9.1.2 Details of the methodology are included in **Appendix P**. A tree survey was also completed for the site and has been produced as a stand alone document. This is included in **Appendix W.**

9.2 Legislative and Policy Context

9.2.1 Table 9.1 lists the planning policies that have been taken into consideration in assessing landscape and visual effects. It also sets out the implications of the policies for the EIA. Reference is made to both the policies of the Hillingdon Local Plan: Part 1 - Strategic Policies (adopted November 2012) and the Hillingdon Unitary Development Plan 1998, saved with alterations by direction of the Secretary of State 2007.

Table 9.1 Policy Issues to be considered in preparing the ES

Policy Reference	Policy Issue
Regional Planning Policies: The London Plan Spatial Development Strategy for Greater London July 2011.	
Policy 7.4: Local Character	Seeks to ensure that all development has regard to the form, function and structure of the local area which contributes to the local character.
Policy 7.21 Trees and Woodland	Seeks to ensure that trees and woodland are protected, maintained and enhanced. It states that existing trees of value should be retained and any trees lost should be replaced following the principle of 'right place right tree'.
Policy 7.17 Metropolitan Open Space	Metropolitan Open space is an important resource and should be protected from development.
Policy 7.25 Increasing the use of the Blue Ribbon Network for passengers and tourism	The London Plan has policies aimed at improving access to the rivers network for recreational purposes. Therefore it is anticipated that there will be ongoing and potentially increased use of the river banks for recreational purposes.
Local Planning Policies	
Saved policies from the Adopted Hillingdon UDP (1998)	
OL1 and 5	Development adjacent to the Green Belt. Aims to protect the openness of the green belt. It states that proposals adjacent to the green belt will only be allowed if they do not injure the visual amenity of the green belt by reason of siting, materials, design, traffic or activities generated.
OL9 and 11	Areas of Environmental Enhancement and Green Chains Hillingdon aims to enhance the quality of the landscape immediately surrounding Heathrow Airport and river corridors are seen as an important asset in creating green chains within this part of London. It can therefore be assumed that the areas of open

Policy Reference	Policy Issue
	space alongside the Duke of Northumberland River, River Colne, River Brent and River Crane will continue to be enhanced, and that they will be a well used recreational resource.
OL26/BE38	Trees and Woodland This policy requires that an Arboricultural Survey is undertaken.
BE34	Development Adjacent to Rivers Hillingdon would seek to ensure that any development next to a river complements the visual qualities of the riverside.
BE36	High Buildings and Structures within sensitive areas The area to the north of Heathrow Airport has been identified as an area which is sensitive to the addition of tall structures. As such, Hillingdon state that permission for development would only be granted if it can be proved that the proposals do not 'mar the skyline', intrude unacceptably into an important local view or interfere with aviation and navigation. No definition of 'tall is given'.
Hillingdon Local Plan: Part 1 – Strategic Policies	
Policy EM2: Green Belt, Metropolitan Open Land and Green Chains	States that the existing extent of green belt and green chains would be retained. Any proposals for development within the green belt would be assessed against the criteria set out in national and local planning policies.
Policy EM3: Blue Ribbon Network	The Council will continue to enhance the local character, visual amenity, ecology, transportation, leisure opportunities and sustainable access to rivers and canals. As such it is anticipated that the publicly accessible sections of the banks of the River Colne, River Brent, River Crane and Duke of Northumberland River would continue to be a popular recreational resource.
Policy EM4: Open Space and Informal Recreation	The Council will continue to enhance and extend the network of open spaces, informal recreational and environmental opportunities that meet local community needs and facilitate active lifestyles by providing spaces within walking distance of homes. As such it is anticipated that areas of open space within the Study Area would continue to be well used.

9.3 Data Gathering Methodology

9.3.1 A detailed description of the methodology used is given in **Appendix P**. The text below is a summary of the methodology adopted.

Study Areas

9.3.2 The Scoping Report[1] (**Appendix D**) indicated that there are two parts of the proposals that have the potential to cause significant effects on landscape and visual receptors; these being the building of a noise barrier, and changes in the frequency and distribution of air traffic movements due to the change in operation. These two elements of the proposals have the potential to result in significant effects on landscape and visual receptors in different areas and as such, two different Study Areas for this assessment are required. These are shown graphically on **Figure 9.1.**

[1] EIA Scoping Report (June 2011) Enabling works for the implementation of full runway alternation (ending the Cranford Agreement).

Noise Barrier Study Area

9.3.3 The first Study Area relates to the proposed noise barrier at Longford. An initial Study Area of 2km from the centre of the proposed noise barrier was defined in order to gain an understanding of any sensitive landscape or visual features nearby. The noise barrier Study Area was then refined following desk top study and site visits to the visual envelope of the proposed noise barrier i.e. the area where the noise barrier could be seen from and therefore has the potential to have an effect on the visual context of the viewer and on landscape character.

Tranquillity Assessment Study Area

9.3.4 The second Study Area includes the receptors which may potentially experience a significant effect as a result of changes to the frequency and distribution of air traffic movements that would occur as a result of the implementation of runway alternation during easterly operations (see section 3.2.3). The tranquillity assessment Study Area comprises the 3dB+ change in the 55 L_{den} noise contour combined with the proposed (with full runway alternation) flight tracks up to the point at which the tracks merge with the existing (without full runway alternation) flight tracks. It should be noted that following the publication of the Aviation Policy Framework in March 2013 the primary criteria adopted in the noise chapter (see 6.9) to reflect Government policy was the area within the 57 dB L_{aeq} contour. A secondary criteria was also adopted that reflected commitments made by Heathrow during consultation and was defined by the area within the 55 dB L_{den} contour. As the secondary criteria (the 55 dB L_{den} contour) represents a larger area (than the 57 dB L_{aeq} contour) it was used to define the Study Area for this chapter.

Desk Study

9.3.5 A number of organisations were approached for data to inform this assessment. These are identified in **Table 9.2.**

Table 9.2 Desk Study Information

Organisation	Data
London Borough of Hillingdon	Local Development Framework Core Strategy[2]
Natural England	London's Natural Signatures: The London Landscape Framework[3]
Tree Survey	CBA Trees Arboricultural Survey and Arboricultural Development Statement, March 2013 (see **Appendix W**).
Campaign to Protect Rural England	Mapping Tranquillity, Defining and Assessing a Valuable Resource' (www.CPRE.org.uk) The Tranquillity Map of London

[2] Hillingdon Local Plan (adopted November 2012).

[3] London's Natural signatures: The London Landscape Framework (2011) Natural England.

Survey Work

9.3.6 Field survey work was undertaken by a Landscape Architect between July and September 2011. An additional visit to take photographs for use in producing the photomontages of the winter views was undertaken by a photographer on behalf of Jacobs in January 2012.

9.3.7 The site surveys undertaken by the Landscape Architect had the following aims:

- to gain more detailed information about the sensitive landscape features that had been identified from the desk-based sources;
- to identify any additional sensitive landscape and visual receptors not identified in the desk-top survey;
- to establish the Visual Envelope of the proposed noise barrier; and
- to assess the baseline tranquillity levels within the Landscape Character Areas (LCAs) that fall within the tranquillity assessment Study Area.

9.3.8 Comprehensive field notes were made and photographs taken in accordance with the recommendations set out in the second edition of the *Guidelines for Landscape and Visual Impact Assessment* (GLVIA) (LI & IEMA, 2002).

Consultations

9.3.9 A Scoping Report (**Appendix D**) was submitted to Hillingdon Borough Council in June 2011. Following the submission of the Scoping Report, further consultation was undertaken with officers from the London Borough of Hillingdon to inform the Landscape and Visual Impact Assessment (LVIA). Site visits were undertaken on two separate occasions with officers from the Authority, in June and July 2011. The purpose of these site visits was to understand the existing visual context, and to agree together the location of the proposed viewpoints that would be developed to show computer generated photomontages of the proposed noise barrier.

9.3.10 Consultation was also undertaken in December 2012, with Natural England regarding the scope and methodology of the tranquillity assessment.

Photomontages

Photomontages used to inform this chapter were produced by Jacobs. The methodology for producing the photomontages was in accordance with guidance established in the *'Photography and Photomontage in Landscape and Visual Impact Assessment Landscape Institute Advice Note 01/11*[4].

9.3.11 As requested by London Borough of Hillingdon, photomontages were produced, representative of the views experienced, during both the summer and winter months.

[4] 'Photography and photomontage in landscape and visual impact assessment Landscape Institute Advice Note 01/11' March 2011.

9.3.12 A fixed 50mm lens was used and the camera tripod mounted and levelled in horizontal and vertical axes to make the photomontages more accurate and quicker to align in a 3D model. Manual focus was used so that the focusing centre was focused on 'infinity'/the horizon. The aperture was set at f5.6 to achieve a consistent depth of field. Several panoramas and single shot images were taken from each viewpoint at varying shutter speeds so that the best shots could be selected for the creating the photomontages. Where panoramas were taken, a 50% overlap between each photograph was achieved to reduce distortion. Panoramas were taken in excess of 90 degrees where this was feasible to ensure a minimum coverage of 90 degrees, with these to then be cropped down.

9.3.13 The approximate direction/horizontal field of view (taken from a hand held compass), the date, time, weather, lighting conditions, viewpoint height above ground level and OS grid co-ordinates (taken from a hand held GPS system) were all recorded.

9.3.14 The photographs were manually stitched together using photographs from each viewpoint to create the base 'before' images. The photographs were then imported to a 3D model with the photo's OS information added.

9.3.15 A wire-frame model of the sound barrier was created and the various materials applied.

9.3.16 The renders of the sound barrier were taken into Adobe Photoshop where they were worked into the photographs.

9.4 Baseline Conditions

Landscape Baseline of the Noise Barrier Site and 2km Study Area

Site Location and Landscape Context

9.4.1 The location of the site is shown on **Figure 3.1**. Heathrow Airport is located on the western edge of London. It is located at a meeting point between the expansive areas of residential development which characterise the outskirts of London, the more open landscapes of the Colne Valley Regional Park which lies approximately 1km west of Heathrow Airport and the Green Belt located immediately west and north of Heathrow Airport. The location of the Colne Valley Regional Park and the Green Belt in relation to the site are shown on **Figure 9.2**. Sections of the Green Belt are agricultural land, but other areas function as open space e.g. Longford 'pocket park' on the north-western boundary of the Airport (see photo 6, **Figure 9.5**), Harmondsworth Moor approximately 500m north-west of the Airport boundary and Cranford Park approximately 1km north-east of the Airport boundary, or are developed e.g. the Terminal 5 Business Car Park and Terminal 5 itself.

9.4.2 Although the Green Belt to the north and west of Heathrow Airport, and the River Colne Regional Park to the west does lend a certain sense of openness to localised areas of the landscape, large scale infrastructure such as Heathrow Airport, the M25, the M4 and the railway line into central London, all contribute to creating what is generally a cluttered, disjoined and hectic landscape. It is not uncommon to experience views of main roads, road junctions, built form or low flying aircraft within the Metropolitan Green Belt.

9.4.3 To the north and north-west of Heathrow Airport the settlement has developed around historic village cores. Although the villages have expanded due to more recent development, the Green Belt which surrounds them has preserved a sense of separation and distinctness

between the settlements. Examples of such villages include Longford, Harmondsworth, Sipson and Harlington, which all lie to the north of Heathrow Airport. The settlements of Harmondsworth, Sipson and Harlington are separated from the Airport by the A4 and hotels, restaurants and light industrial structures which have developed along the roads within this area.

9.4.4 The closest settlement to the noise barrier site is Longford. This is a linear settlement focussed on the Bath Road, which runs through the centre of the village (see photographs 1, 2 and 3 on **Figure 9.5** which show Longford Village). The location of Longford in relation to Heathrow Airport and the noise barrier site can be seen on **Figure 9.2**.

Topography

9.4.5 Within the 2km Study Area, the topography is broadly flat. This flat landscape is associated with the River Colne and Duke of Northumberland River floodplains. A study of 1:25,000 mapping indicates that the topography within the 2km Study Area is typically between 25m AOD and 30m AOD, although landform does gently slope to 20m AOD in the far southern section of the 2km Study Area, as the topography slopes towards the River Thames. The gentle slope is however, imperceptible on the ground.

Landscape Features

9.4.6 Around the northern boundary of Heathrow Airport, between the Airport and Longford 'pocket park', there is a belt of tree planting. These trees are located within HAL owned land to the north of the timber fence which marks the boundary of the Terminal 5 Business Car Park (see photo 6 on **Figure 9.5**). The majority of the trees have not yet reached maturity as they were planted as part of the Terminal 5 development which was constructed between 2002 and 2008.

9.4.7 Heathrow Airport itself is characterised by expanses of hardstanding used as runways, taxiways, aprons and aircraft parking positions, the large structures of the airport terminals, and a high level of activity and movement e.g. aircraft landing, taxiing and departing, as well as ground operations. There are very few semi-natural landscape features within the Heathrow Airport site. Small patches of grass are interspersed between the runways but within the airport context these contribute little to the overall landscape character.

Landscape Condition

9.4.8 The landscape within the proposed noise barrier site and the landscape to the south of the site forms part of the airport and thus has a strongly developed airport character comprising airport infrastructure and regularly experiencing low flying aircraft. The trees on the northern boundary of Heathrow Airport have not yet reached maturity but already contribute to the landscape character of both the Airport and the adjacent Longford 'pocket park'.

9.4.9 The condition of the landscape to the north of the proposed noise barrier is variable. Within the Longford Conservation Area (see the Cultural Heritage and Archaeology chapter) the buildings and streetscape are generally well maintained and the village core retains a historic character. Within the landscape outside of the conservation area the character is not as strong. There are hotels and units used for non residential purposes e.g. car washing which are of variable styles and characters. In addition, parcels of undeveloped and derelict land also detract from the overall character of Longford outside the conservation area.

Landscape Designation

9.4.10 Landscape designations are shown in **Figure 9.2**. The closest landscape designation is the River Colne Regional Park. This Park covers 43 square miles of varied scenery ranging from

semi-urban to unspoilt countryside. The southern section of the park is located closest to Heathrow Airport. It consists of a flat plain created by the convergence of the flood plains of the River Colne and River Thames.

Landscape Character

9.4.11 Landscape character areas within the 2km Study Area are shown in **Figure 9.3**. The majority of the 2km Study Area falls within the London Borough of Hillingdon and the landscape character is assessed in the Natural England document *'London's Natural Signatures: The London Landscape Framework' (*hereafter referred to as *LNSLLF).* However the far western section of the 2km Study Area is located partly within South Bucks District Council and partly within Berkshire (Slough Borough Council) The landscape character of this area is assessed within the *'Berkshire Landscape Character Assessment'*[5] which defines 53 LCAS in total, one of which falls within the Study Area.

9.4.12 A summary of the landscape character of each of the LCAs within the 2km Study Area is given in **Table 9.3**.

[5] Berkshire Landscape Character Assessment, prepared for the Joint Berkshire Strategic Partnership (2003) Land Use Consultants.

Table 9.3 Natural Landscape Areas within the 2km Study Area

Natural Landscape Area	Key Characteristics*	Key Environmental Assets/Landscape Features**
London's Natural Signatures: The London Landscape Framework		
1. Colne Valley	• Follows the Colne River north to south on the western fringe of Greater London. • The valley floor consists of a series of lakes and reservoirs resulting from the extraction of sand and gravel. • The south of the area is more densely developed than the north, including industrial towns such as Uxbridge and West Drayton. • Despite the intense residential and industrial development, the linear open space corridors and the lakes are dominant landscape features. • The waterways and lakes are typically bordered by wooded areas.	**Lower Colne Valley – supports diverse aquatic and marginal flora.** Mid Colne Valley – system of chalk streams. Passes through several SSSI, including Frayes Meadows and Denham woods. Harefield Chalk Pit – Oak woodland developed over a chalk pit. Springwell & Stocker's Lakes – Flooded former gravel workings. Site of great ornithological importance. Fray's River at Uxbridge Moor. Canals – Reeds and waterfowl habitat. Trees and scrub on towpaths.
10. Hayes Gravels (western section)	• The section of the natural landscape area to the west of the Brent Valley. • Gravel terraces to the north of the River Thames. • The alignment of the area follows the broad flight path of the aircraft landing at Heathrow Airport. • The topography is a gradual but fairly constant slope from north to south. • A densely developed landscape	Stockley Country Park – A large hilly country Park containing extensive areas of grassland and other habitats include trees and hedgerow, many of which have been planted. Osterley Fields and Park – two fields bound by hedgerow.
12. Hounslow Gravels	• Typically a flat landscape with the exception of the River Crane Valley. • Substantial areas have been quarried but many have been backfilled and remain undeveloped. • The area is characterised by recent industrial and interwar suburban development. Built development is interspersed by corridors and patches of open space along tributary streams. • The whole area is dominated by Heathrow Airport which covers 4.7 square miles.	Crane Corridor - Bordered by mixed habitats for over 5km; stronghold for rare aquatic plants.
Berkshire Landscape Character Assessment		
C4. Wraysbury Thames	• A broadly flat landscape strongly influenced by the presence of water. • Lakes formed by former sand and gravel extraction are a distinctive feature. They are often wooded. • The area is strongly influenced by transport corridors e.g. the M4 and M25.	N/A

Table notes: * Summarised from the London's Natural Signatures Framework. ** Assets highlighted within bold fall within the 2km Study Area of the site. Those in plain text do not.

Landscape Character of Longford

9.4.13 Longford is the closest settlement to the northern boundary of the Airport and it is on the southern edge of this settlement that the proposed noise barrier would be built. Longford was originally a village, and although it has now been engulfed by other development in the

surrounding area, the core of the settlement retains its village character including a number of residential buildings dating from the medieval and post medieval period (see photographs on **Figure 9.5**). Longford is a linear settlement centered on part of Bath Road. Many of the oldest buildings are located on this road. Newer residential development fills the gaps in-between and also extends northwards to an area known as 'The Island'.

9.4.14 Although within the historic core of Longford a village like character is retained, there is not a sense of tranquility as may often be associated with a village. When within Longford, Heathrow Airport is a prominent part of the village character, particularly when aircraft are taking off from, or landing on, the northern runway. When aircraft are taking off from the northern runway to the west, they are frequently visible flying very low over Longford. Views of the low flying aircraft and the noise associated with the aircraft are a distracting characteristic. Other detractors from the sense of tranquility include noise from the nearby M25, A4 and A3044.

9.4.15 The site of the noise barrier itself within Longford is very small, and does not in itself have a specific landscape character. However, it does contribute to the character of the settlement of Longford (see **Figure 9.2** for geographical relationship between the two).

Landscape Baseline of the Tranquillity Study Area

Study Area Location

9.4.16 This Study Area is shown on **Figure 9.1**. The rationale behind the definition of the Study Area is given in **Section 9.3.1**.

Topography

9.4.17 The majority of the tranquillity Study Area is broadly flat and at an elevation of approximately 25m AOD. Exceptions occur where the Study Area is crossed by river corridors when the level drops to approximately 15m AOD. This is the case at the points at which the River Brent and the River Crane cross through the Study Area.

9.4.18 These gentle variations in topography ensure that there are no landforms that form notable or distinctive features.

Landscape Character and Tranquillity

9.4.19 Four Natural Landscape Areas (NLA) as defined by the London's Natural Signatures: The London Landscape Framework (LNSLLF), fall within the tranquillity assessment Study Area. These are:

- NLA 5: Hampstead Ridge;
- NLA 10:Hayes Gravels;
- NLA 11. Brent River Valley; and
- NLA 12: Hounslow Gravels.

9.4.20 A review of the key characteristics of these areas as defined within the LNSLLF indicated that tranquillity was not a baseline 'key characteristic of any of the character areas'. All of the character areas are located in busy, largely urban landscape and so the absolute tranquillity levels are not high or noteworthy at the scale of the overall character area. However, this is not to say that there are not pockets of 'relative tranquillity' as identified within the 'Sounder City.

London's Ambient Noise Strategy'[6]. Within the Sounder City document, relative tranquillity is defined as areas that provide respite in their urban context. As stated in the Hillingdon Local Plan, within urban areas or urban character areas, there are 'quiet areas' that locally have a tranquil character e.g. river corridors and open spaces.

9.4.21 As part of the baseline review of tranquillity, local well used open spaces were visited to understand the local landscape character and relative tranquillity. The open spaces were visited on different days and during both the morning and afternoon to experience the tranquillity levels when both the northern and southern runways were in operation.

Table 9.4 Tranquillity Baseline Undertaken for Purposes of the LVIA

Open Space	Sensitivity*	Features adding to tranquillity levels	Features detracting from tranquillity levels
Longford 'Pocket Park'	Medium	• Bird song. • Views of the Duke of Northumberland River and associated vegetation.	• Aircraft taking off from the northern runway can be heard very clearly to the point of being highly distracting and preventing conversation. • Views of movement within the airport e.g. aircraft taking off on southern runway, the PRT, maintenance vehicles. • Traffic noise from nearby motorways and A-Roads.
Avenue Park – Cranford	Medium	• Sounds of nature e.g. bird song.	• Views of low flying aircraft are clearly visible to the south. Aircraft are visible following the same flight path at approximately 2 minute intervals. • The sounds of low flying aircraft are clearly audible. • Noise from the A4
Capital Ring, Brent River Park – North Ealing	Medium	• Sounds of nature e.g. bird song. • Views of the River Brent and adjacent vegetation.	• Noise from adjacent roads. • Views of cranes from adjacent construction sites.
Moor Mead, Twickenham	Medium	• Sounds of nature e.g. bird song. • Views of the River Crane and adjacent vegetation.	• Sound of trains arriving and departing at St. Margaret's Station. • Views of and noise from aircraft flying directly overhead, arriving at Heathrow airport.
Grand Union Canal Way	Medium	• Sounds of nature e.g. bird song. • Views of the Grand union Canal and adjacent vegetation.	• Occasional noise from the Great Western Main Line to the south. • Noise from the adjacent A Roads.

[6] *Sounder City. The Mayor's Ambient Noise Strategy*, March 2004. Published by The Greater London Authority.

Landscape designations

9.4.22 There are no landscape designations within the tranquillity assessment Study Area.

Visual Context of the Noise Barrier Site and 2km Study Area

Overall Visual Context

9.4.23 Within the 2km Study Area views are typically short range. The flat topography also ensures that there are no opportunities for elevated panoramic views. Views are generally restricted by built form but in some instances views are foreshortened by belts of mature trees. The location of belts of mature trees/blocks of woodland to the north west of Heathrow is shown in **Figure 9.2**. Views within the settlement of Longford are, as within the surrounding area, typically short range and this ensures that the location of the proposed noise barrier has a tight visual envelope (the visual envelope is shown in **Figure 9.6**). Photographs in **Figure 9.5** demonstrate both the features which contribute to restricting views of the noise barrier site, and the features which allow for views of the noise barrier site. These features are also discussed below.

9.4.24 Built form along the northern and southern sides of the Bath Road (as shown on photographs 1 and 2 on **Figure 9.5**) combined with mature trees along the banks of the Duke of Northumberland River (see photo 4 on **Figure 9.5**) largely screen views of the site. Where there are gaps in the built form or in the belts of mature trees, views of the noise barrier site are possible.

9.4.25 Due to the tight visual envelope of the noise barrier site, the only receptors within the visual envelope are recreational receptors within Longford pocket park, pedestrians and motorists using King George IV bridge, residential receptors in properties 485 to 617 Bath Road (on the southern side of Bath Road), office workers within the Padbury Oaks office complex or motorists using the stretch of Stanwell Moor Road, south of Longford Roundabout.

Residential Receptors

9.4.26 As described above, views within Longford are typically channelled along Bath Road by the linear nature of the built form. As such, only residents within properties 485 to 617 on the southern side of Bath Road have the potential to experience partial views of the proposed noise barrier site. During the site visits it was not possible to gain access to these properties to accurately determine the nature of views in a southerly direction. However, study of aerial photography and assessment of views in a southerly direction from King George IV Bridge indicate that with the exception of properties 609-617 Bath Road, views are at least partially screened by mature garden vegetation and by an area of scrub grassland to the south. There is at least 75m between the end of the property gardens and the beginning of the Heathrow Terminal 5 car park.

9.4.27 Properties 609 to 617 Bath Road are closer to the site of the proposed noise barrier than properties 485 to 607 Bath Road. They are separated from the site by the Duke of Northumberland River and associated bankside vegetation. The overall separation distance is approximately 30m (see Jacob Drawing BZN001XA-004). As such clearer views of the existing 3m tall noise and visual barrier, and Terminal 5 are possible.

Recreational receptors

9.4.28 Baseline summer and winter views from Longford ‘pocket park’ are shown on Viewpoints 2 and 3 (**Appendix J**). Longford ‘pocket park’ is located on the southern edge of the village of

Longford. The open and undeveloped aspect of the park allows for clear views of the existing 3m high timber noise and visual barrier to the north of the Terminal 5 Business Car Park, and Terminal 5 beyond. Semi mature trees along the northern edge of Terminal 5 Business Car Park provide some filtering of views of the existing barrier (more so during summer months), but they currently do little to filter or screen views of Terminal 5.

Motorists and Pedestrians using Bath Road

9.4.29 Baseline views from Bath Road are typically restricted by properties along the road and mature trees along the Duke of Northumberland River as shown by the photographs in **Figure 9.5**. However, where there are gaps in the built form or gaps in the tree line e.g. where the road crosses Duke of Northumberland River and River Colne, the opportunity for views of the noise barrier site become possible. This is demonstrated by baseline views from viewpoints 1 and 6 (**Appendix J**).

9.4.30 Views of the noise barrier site through these narrow gaps are glimpsed and at least partially screened, by intervening features such as the trees along the northern edge of the Heathrow Terminal 5 Business Car Park. Views of other features within the airport also tend to dominate the view, particularly Terminal 5.

Visual Context of the Tranquilly Assessment Study Area

Overall Visual Context

9.4.31 The tranquillity assessment Study Area covers a large area. The majority of the area is densely developed and there are a range of man made and natural features which contribute to creating the visual context. It would not be possible or useful to summarise the visual context of the whole Study Area within this assessment.

9.4.32 It can however be noted that views of aircraft flying overhead is a common feature of the baseline visual context. An increase in frequency of aircraft flying overhead, or a slight change to the flight paths, would not significantly alter the visual baseline.

Future Baseline – Noise Barrier 2km Study Area

9.4.33 Approved planning applications within a 2km Study Area were reviewed to assess any likely changes to either the baseline landscape character, landscape features or visual context for the future baseline year 2015 (see **Section 4.7.1**) during which it has been assumed that the noise barrier would be constructed.

9.4.34 This demonstrated that there are two applications (see **Table 4.2**). One application is for the demolition of an existing hotel and the erection of one four-star and one budget hotel and the other is for the erection of 2 three storey housing blocks at Harmondsworth Detention Centre. Both developments are located outside of the visual envelope of the proposed noise wall, and outside of the conservation area. As such, they are unlikely to alter the character of the immediate vicinity of the proposed noise barrier site, or to introduce new visual receptors.

9.4.35 It is unlikely that large scale developments including large hotels will be permitted within the conservation area, as existing and emerging local planning policy seeks to retain the existing character and setting of Longford. Therefore, the landscape character baseline will remain unchanged.

Future Baseline – Tranquillity Assessment Study Area

9.4.36 In terms of the assessment of effects on tranquillity, the relevant future baseline year is 2015 which is the first year during which full runway alternation would be operational (see **Section 4.7.1**).

9.4.37 The tranquillity assessment Study Area (see **Figure 9.1**) covers an area approximately 9km long and 1.5km wide and is located within London Boroughs where dense built form and construction activity are characteristic. Due to the size of the Study Area it is highly likely that the baseline would change to some extent e.g. as a result of new built form, new transport routes etc. However, during both their construction and operation phases, this is unlikely to result in a significant adverse effect on tranquillity levels within such a high density and varied townscape. There is the potential for there to be localised change to tranquillity levels if any of the river corridors or open spaces within the Study Area were to be built upon. However, planning policy at the regional and local level seeks to protect both open spaces and river corridors. As such, the baseline used assumes that none of these landscapes would be built upon.

9.4.38 Based upon the above assumptions, it is not considered that there would be anything that would significantly change the future baseline tranquillity of the Study Area.

9.5 Environmental Measures Incorporated into the Project

Construction (of Noise Barrier and Runway Works)

9.5.1 During the construction period various environmental measures would be introduced. These are included in the Outline Construction Environmental Management Plan (see **Appendix C**). Individually these may have only minor positive effects, but cumulatively their adoption could have a more positive influence upon the visual characteristics of the construction activities. Such measures would include the following:

- Selective and sensitive location of the contractors' compound(s), security fencing and temporary storage of materials and plant.
- Using designated routes around the site for construction vehicles including plant such as cranes.
- Implementation and monitoring of site management procedures including the regular removal of construction related litter from the immediate environment.
- The protection of key landscape resources such as existing vegetation (on site and around boundaries). The contractor would be required to work in accordance with '*BS 5837:2012 Trees in relation to construction*'.

9.5.2 Where the detailed design and construction methods allow, trees located along the northern edge of the proposed noise barrier would be retained. It is proposed that where any existing trees need to be removed, they would be replaced, within the same area, on a like for like basis.

Table 9.5 Rationale for Incorporation of Environmental Measures

Potential Receptor	Predicted Changes and Potential Effects	Incorporated Measure
Construction Phase		
Landscape elements	Removal of valued landscape elements would weaken landscape character.	Retain key landscape elements (trees) and provide suitable protection throughout construction in accordance with BS 5837:2012.
Landscape Character	Ongoing modification throughout the construction period as some elements are removed.	Standard environmental measures as detailed above.
Visual receptors	Changes in the composition of views from the introduction of temporary new elements.	Standard environmental measures as detailed above. Contractors' compounds and material stockpiles to be located away from adjacent sensitive receptors and to utilise the screening effects of existing vegetation. Crane activity would be minimised.
Landscape elements	Loss of some existing trees during the construction phase.	New tree planting proposed to replace those trees felled during the construction phase.
Landscape character	Addition of a noise barrier has the potential to alter the localised character of Longford.	Introduce a noise barrier, to help reduce effects on receptors from aircraft noise. This will be of a scale and materials that is appropriate to adjacent settlement and the existing character of open spaces (such as the parkland character of the Longford 'pocket park').
Operation Phase		
Visual receptors in close proximity	Changes in views due to the introduction of new built elements.	The upper section of the proposed noise barrier would be transparent to ensure that the existing visual context is retained. The retention of existing vegetation wherever possible would help to ensure a continuity of visual context.

9.6 Scope of the Assessment

Potential Receptors

9.6.1 Within the Scoping Report the following potential receptors were identified:

- landscape character to the north-east and east of Heathrow Airport as a result of changes to tranquillity levels; and
- visual receptors within Longford including:
  - recreational receptors using Longford 'pocket park';
  - residents on the southern side of Bath Road between 485 Bath Road in the east and 617 Bath Road in the west; and
  - office workers within the Padbury Oaks office complex.

9.6.2 Following further consultation with Officers from the London Borough of Hillingdon, the following viewpoints, each of which is representative of the view experienced by a visual receptor that needs considering, have been identified and will be considered within the assessment of views from Longford. Their location is shown on **Figure 9.6**.

- Viewpoint 1: From the bridge over the Duke of Northumberland River;
- Viewpoint 2: From the eastern section of the 'pocket park' within Longford;
- Viewpoint 3: From the western section of the 'pocket park' within Longford;
- Viewpoint 4: From the car park within the Padbury Oaks office complex;
- Viewpoint 5: From Weekly House Listed Building within the Padbury Oaks office complex; and
- Viewpoint 6: From King's Bridge on Bath Road.

9.6.3 After a site meeting and discussion with Robert Reeves, Principle Landscape Architect from the London Borough of Hillingdon, it was confirmed by email dated 15th August 2011 that perspective views from the airport looking north are not required. However, cross sections through the site, another request from Mr Reeves, have been provided to scale the barrier and provide context with the existing properties.

Potentially Significant Effects

9.6.4 The potentially significant effects relating to the proposed Project which are subject to further assessment in this Chapter are summarised below:

- Potential effects on tranquillity levels of open spaces and areas of 'relative tranquillity' within the tranquillity assessment Study Area.
- Potential effects on the local landscape character of Longford as a result of the noise barrier.
- Potential effects on visual receptors within the visual envelope of the noise barrier during the construction and operation phase. These receptors include:
  - recreational receptors using Longford 'pocket park';
  - residents on the southern side of Bath Road between 485 Bath Road in the east and 617 Bath Road in the west; and
  - office workers within the Padbury Oaks office complex.

9.6.5 For the reasons set out below, the following potential effects are not likely to be significant and are therefore not considered further within the ES.

- *Potential effect on Longford conservation area*: Effects on the setting of the conservation area are made in chapter 8, Cultural Heritage & Archaeology.

- *Potential cumulative effects on landscape character, landscape features or visual receptors as a result of the proposed noise barrier:* A review of planning applications within a 2km Study Area did not identify any features which are likely to significantly alter the baseline landscape character or visual context. It is not anticipated that the development of the proposed noise barrier will result in any significant cumulative effects, and as such, this issue is scoped out of the assessment.

- *Potential cumulative effects on landscape character, landscape features or visual receptors as a result of adopting full alternation:* The tranquillity Study Area covers a large area approximately 9km long and 1.5km wide and is primarily located within London Boroughs where dense built form and construction activity are characteristic. Due to the size of the Study Area it is highly likely that the baseline would change to some extent e.g. as a result of new built form, new transport routes etc. However, these features during both the construction and operation phase would be characteristic and it is not anticipated that within the urban setting, they would have a significant adverse effect on tranquillity levels. There would be the potential for localised change to tranquillity levels if any of the river corridors or open spaces within the Study Area were to be built upon. However, planning policy at the regional and local level seeks to protect both open spaces and river corridors. As such, the assumption has been made that these landscapes will not be developed and thus no cumulative effects are likely.

- *Potential effects on any landscape or visual receptors as a result of any construction activity with the exception of the noise wall:* The construction activity would be wholly located within the Airport. It would include works undertaken at ground level e.g. removal of concrete, laying of new base and sub base materials, delivery of services and painting of new lines. Much of this activity would be screened from view by the existing boundary to Heathrow Airport. Any partial views of this activity would be barely discernible from general maintenance and operational activity within the Airport and would therefore not result in any significant effects.

- *Potential effects on recreational receptors within the Colne Valley Regional Park and on Natural Landscape Area1 Colne Valley, as a result of development of the noise barrier*: Longford roundabout is the only part of the Colne Valley Regional Park which would experience views of the noise barrier. Although technically falling within the park, the roundabout is located on the A3044 which is a busy A-road leading to the M25. Site visits undertaken on a number of different occasions indicated that there are very few people out walking along the A3044. Whilst glimpsed and partial views of the noise barrier may be possible, especially during winter months when the trees lose their leaves, it would be viewed within the context of being close to Heathrow Airport, and at the Longford roundabout on a busy A-Road. As such it is not considered that visual receptors would experience a change to their view that would be significant.

- *Potential effects on any of the NLA which fall within the tranquillity assessment Study Area*: Within landscapes which are as busy and complex as these, a change to the number of over-flights or a slight change to the path of the over-flights, will not result in a significant change to the overall landscape character.

- *Potential effects on users of the local road network*: As receptors using the local road network would experience only transient views of the noise barrier and are, of course, not encouraged to stop and experience views of the site (e.g. through the provision of picnic

spots etc.), it is considered that they would have a low sensitivity to change. As such they would not experience significant effects as a result of changes to their view.

9.7 Assessment Methodology

Methodology for Prediction of Effects

9.7.1 The methodology for undertaking the landscape and visual assessment is detailed in **Appendix P**.

9.8 Assessment of Effects as a Result of the Proposed Noise Barrier

Predicted Landscape Effects and their Significance

9.8.1 The evaluation of landscape effects during the construction and operation stages of the Project are summarised in **Table 9.6** in **Section 9.10**.

Demolition and Construction Phase

Overview of Landscape Changes

9.8.2 The principal activities that would result in landscape change during the approximately 10 week-long construction period are detailed in **Section 3.3.2** and are summarised below:

- Establish and clear the site, including fencing off all temporary work areas and the site compounds.
- Remove the existing timber noise barrier.
- Construct the new barrier post foundations (0.8m in diameter and up to 2.0m deep. The post spacing would range between 2.5 and 3.0m.
- Install the 5m high barrier posts and sections.

Predicted Effects

9.8.3 Potential effects of the construction of the noise barrier on the landscape character of Longford were scoped into the assessment. During the construction phase no features within the village of Longford itself would be removed or altered. One of the key characteristics of the village is that views out in a southerly direction are dominated by Terminal 5 and other airport infrastructure such as the Personal Rapid Transit 'PRT'. The removal of the existing timber boundary fence on the northern edge of the Terminal 5 Business Car Park, and the removal of 1 tree, would not change this characteristic. Within the context of the existing Airport, it is not considered that the proposed levels of activity or introduction of new construction infrastructure will appear uncharacteristic. Levels of movement and activity are already high within the Airport and man made features are also a characteristic feature. The construction effects would also be experienced on a short-term, temporary basis. As such it is judged that the magnitude of change would be **low (adverse)** and **not significant.**

9.8.4 Trees within the site are considered to be of medium sensitivity due to the role that they play in creating the local character and filtering views of Heathrow Airport, particularly Terminal 5. The

noise barrier would result in the loss of 1 tree. Whilst the trees have a **medium** sensitivity to change and their removal would be adverse, the potential to retain a number of the trees is high and the magnitude of change is predicted to be **low-medium (adverse)** and effects **not significant.**

Operational Phase

Overview of Landscape Changes

9.8.5 Once construction has been completed, a new noise barrier would replace the existing one in the same location (but using new foundations). The existing timber noise barrier which ranges from 1.8 - 3m would be replaced with a noise barrier which would be 5m tall overall with the top 2m being perspex.

9.8.6 Any trees removed during the construction phase would be replaced. All new tree species would be native and would replicate the species of the trees lost.

Predicted Effects

9.8.7 Potential effects of the completed noise barrier on the landscape character of Longford were scoped into the assessment. Once completed, no features within the village of Longford itself would be removed or altered. One of the key characteristics of the village is that views out in a southerly direction are dominated by Terminal 5 and other airport infrastructure such as the Personal Rapid Transit System. The proposed new noise barrier would not alter this characteristic. Although the solid element of the bottom 3 metres of the noise barrier would be slightly taller than the existing barrier in places, the use of a 2m tall perspex element at the top of the barrier would ensure that the open aspect of views to the Terminal 5 building on the skyline would remain a characteristic of the southern edge of the settlement of Longford. As such it is judged that the magnitude of change would be **low (adverse)** and **not significant.**

9.8.8 Trees within the site are considered to be of **medium** sensitivity due to the role that they play in creating the local character and filtering views of Heathrow Airport. It is proposed that any trees lost during the construction phase would be replaced once the noise barrier has been constructed. As such once the new trees have been planted and reached maturity there would be **no change** to the overall resource and no significant effect

Predicted Visual Effects Resulting from the Proposed Noise Barrier and their Significance

Demolition and Construction Effects

Overview of Visual Changes

9.8.9 Visual changes associated with the construction stage are driven principally by the loss of vegetation, the introduction of construction infrastructure and the removal of the existing noise barrier. It is not anticipated that any of the construction activity would block or foreshorten any existing baseline views as it is not anticipated that the construction site boundary fencing would be any taller than the existing timber noise barrier.

Predicted Effects

Longford Pocket Park

9.8.10 The baseline views experienced by receptors using the pocket park at Longford are shown on Viewpoints 2 and 3, in **Appendix J**. Receptors using the pocket park at Longford would experience a temporary change to their baseline view during the construction phase. The foreground views of the pocket park at Longford and the background of the Terminal 5 building

would remain unchanged, but features of the existing middle ground would be altered. The existing timber fence would be removed as would one of the semi mature trees along the boundary between the park and Heathrow Airport. New construction infrastructure would be introduced to the view on a temporary basis. As much of the view (i.e. the foreground and the background) would remain unchanged, and the effect would be temporary, the magnitude of change is judged to be **low (adverse)** and would **not be significant.**

Residential Receptors on Bath Road

9.8.11 Viewpoints 2, 3, 4 and 6 (see **Appendix J**) can all be considered broadly representative of the views that would be experienced by the residents on the southern side of Bath Road between 485 Bath Road in the east and 617 Bath Road in the west. For the purposes of assessment the properties 485 to 607 Bath Road are considered separately from properties 609 to 617. Properties 609 to 617 are closer to the proposed noise barrier site (a distance of only 30m separates the proposed barrier from the end of the gardens of these properties) than properties 485 to 609 (which are typically separated from the site by approximately 75m from the ends of the gardens).

9.8.12 Mature trees and shrubs in the gardens of properties 485 to 607 Bath Road would provide some filtering of views southwards towards the proposed noise barrier site, although during winter months views would be clearer when there are no leaves on the trees. Within the 75m separating the properties from the proposed barrier, there is additional tree and shrub planting within the Longford pocket park and along the Duke of Northumberland River. It is anticipated that these layers of vegetation would further screen and filter views of the barrier. The screening effect will be greatest during summer months when there are leaves on the trees, but even during winter months, a combination of the layers of vegetation and occasional evergreen species will ensure that a level of screening is provided). Due to this screening it is not considered that clear and uninterrupted views of the proposed construction activity would be possible from any of the above properties. Even with the addition of partial views of the construction activity, much of the view would remain unchanged. The foreground vegetated landscape and background views of Terminal 5, will remain unchanged. As such, the high sensitivity residential receptors would experience a **low (adverse)** magnitude of change which would **not be significant.**

9.8.13 It is anticipated that from properties 617-609, partial views of the proposed construction activity would be possible from upper floor windows facing southwards. This would be experienced for a temporary period. The background of the view, dominated by Terminal 5 would remain unchanged. As the change to the view would be experienced on a temporary basis of only approximately 10 weeks, there would be a **low/medium (adverse)** magnitude of change which would **not be significant.**

Employees at Padbury Oaks Office complex

9.8.14 Viewpoints 4 and 5 (see **Appendix J**) are broadly representative of the view experienced from the Padbury Oaks office complex from the ground level. The baseline views from the ground floor are across the open foreground of the car park to the timber boundary fence which would not be removed as part of the proposed works. It is noted however, that clearer views of the construction works would be possible from the upper floors of the three storey building. During the construction phase it is proposed that the majority of the view would remain unchanged. There may be potential for views of larger scale machinery associated with construction of the noise barrier to be visible from the upper floors, but this would be viewed alongside the activity that accompanies the operational Airport. As such, although the construction machinery would be uncharacteristic, the levels of movement would not be. The construction activity would only

be visible for a period of approximately 10 weeks. The overall magnitude of change would be **low (adverse)** and **not significant.**

Pedestrians using Bath Road

9.8.15 Viewpoints 1 and 6 (as shown in **Appendix J**) demonstrate the baseline view experienced by pedestrians using the Bath Road, where there are gaps in the built form and vegetation. The gaps are formed where the River Colne and Duke of Northumberland River create openings. Through the openings it is anticipated that glimpsed and partial views of the construction activity will be possible. However, much of the view would remain unchanged. In the case of views along the Duke of Northumberland River (Viewpoint 1) the foreground views of the tree lined river course in the foreground will remain unchanged, as will the background views of the Terminal 5 building. Views of construction activity in the middle ground will not dominate the view. It will not block or foreshorten views. The glimpsed and partial views of the construction activity would be experienced on a temporary basis. The magnitude of change will be **negligible** and the overall effect **not significant.** Similarly views from the western end of Bath Road, where it crosses the River Colne, this being the view experienced by pedestrians, would be largely unchanged. The foreground views across the grassy banks of the River Colne to a retained timber boundary fence (outside of the site) will also remain unchanged. There is potential for partial views of construction activity to be visible above the retained timber fence, but this would not dominate the view or block views to Terminal 5 in the background. As such, the magnitude of change will be **negligible (adverse)** and the overall effect **not significant.**

Operational Effects

Overview of Visual Changes

9.8.16 Once construction has been completed, a new noise barrier would replace the existing in the same location (but using new foundations). The existing timber noise barrier which ranges from 1.8 - 3m would be replaced with a noise barrier which would be 5m tall overall with the top 2m being perspex.

9.8.17 Any trees removed during the construction phase would be replaced. All new tree species would be native and would replicate the species of the trees lost.

Predicted Effects

Longford Pocket Park

9.8.18 The baseline and post development views experienced by receptors using the pocket park at Longford are shown on Viewpoints 2 and 3 (**Appendix J**). The new noise barrier will be visible as the new boundary treatment to Heathrow Airport. Although the noise barrier will be taller than the existing, due to the use of perspex panels for the top 2m of the barrier, the change in height will not result in a markedly different view. The perspex panels will ensure that a sense of openness of views is retained, and partial views of the Terminal 5 building will not be blocked.

9.8.19 During summer months, the vegetation alongside the Duke of Northumberland River in conjunction with the newly planted trees, will filter and soften views of the new noise barrier. Essentially the key components of the view i.e. fairly enclosed foreground views across a narrow, vegetated river corridor to the boundary of Heathrow Airport, opening up to skyline views of Terminal 5 will remain unchanged. The magnitude of change experienced by the **medium** sensitivity recreational receptors would be **negligible (adverse)** and **not significant.**

9.8.20 During winter months, the existing vegetation along the Duke of Northumberland River and the newly planted trees will have less of an effect in filtering and softening views of the new noise barrier. However, as in the case of the assessment of summer views, the use of perspex for the top 2 metres of the barrier will ensure that the key components of the view will remain unchanged from the baseline. The magnitude of change experienced by the **medium** sensitivity recreational receptors would be **negligible (adverse)** and **not significant.**

Residential Receptors on Bath Road

9.8.21 Once the noise barrier is constructed, residential receptors at 485 to 607 Bath Road will experience partial and filtered views of the new noise barrier beyond the layers of vegetation within the gardens of the property, within Longford pocket park and along the banks of the Duke of Northumberland River. The barrier will be taller than the existing timber boundary, but due to the use of perspex at the top of the barrier, the impermeable section of the barrier which blocks views southwards will only be 1.2m taller than the existing. As views of the noise barrier are broken up by intervening vegetation, it is not anticipated that this extra 1.2m will result in a notable change to the view. As such, the magnitude of change experienced by the **high** sensitivity receptors would **negligible (adverse)** and **not significant.**

9.8.22 Receptors within 609 to 617 will experience views of a new noise barrier in the same location as the existing noise barrier. In this location the existing barrier is 3m tall. This is demonstrated by viewpoint 6 (**Appendix J**). Due to the use of perspex for the top 2m of the barrier, the view will remain unchanged. The magnitude of change experienced by these **high** sensitivity receptors would be **negligible (adverse)** and **not significant.**

Employees at Padbury Oaks Office complex

9.8.23 Viewpoints 4 and 5 are broadly representative of the view experienced from the Padbury Oaks office complex from the ground level. Once the noise barrier is constructed, the view as experienced from these offices would be largely unchanged. The existing 3m tall timber noise barrier would be replaced with a 5m tall noise barrier, the top 2m of which would be transparent Perspex. As such the openness of the view and the extent to which the Terminal 5 building would be visible would remain unchanged.

9.8.24 As demonstrated by photomontages (**Appendix J**), the nature and extent of the view as experienced by receptors from the Padbury Oaks Office Complex is not influenced by existing or proposed vegetation. As such, the view experienced during summer and winter months will be very similar. It is anticipated that all receptors in the office complex would experience a **negligible (adverse)** change to their view. The receptors have a **low** sensitivity as the receptors attention would not be focused on the view. The overall change would **not be significant.**

Pedestrians using Bath Road

9.8.25 As demonstrated by the photomontages of the proposed views from Viewpoints 1 and 6 (**Appendix J**), pedestrians using Bath Road will experience only partial background views of the noise barrier and due to the use of perspex for the top two metres of the barrier, the overall view will be largely unchanged. The foreground of the view will therefore remain as existing.

9.8.26 During summer months, the screening effect of vegetation along the Duke of Northumberland River will be greater than during winter months, and will minimise the visual effect as experienced from Viewpoint 1. However, the density of vegetation is such that even during winter months, the layers of branches, trunks and occasional evergreen vegetation will still have a screening effect, albeit that the screen is less complete.

9.8.27 The noise barrier will not block or foreshorten views of Terminal 5. The Terminal 5 building will be retained as the focus of views. Therefore, pedestrians experiencing the view at both Viewpoint 1 and 6 will experience a **negligible (adverse)** magnitude of change and an overall effect which is **not significant**.

9.9 Assessment of Effects as a Result of the Changes to Distribution of Aircraft Overflights during Runway Alternation

9.9.1 The assessment of effects relating to changes to distribution of aircraft overflights is made for the operational phase only as construction works are limited to those on the airfield and the noise barrier which is covered separately.

Predicted Effect on Landscape as a Result of Changes to Distribution of Aircraft Overflights

Overview of Changes for a typical, average year

9.9.2 As noted in Chapter 3, in a typical, average year, for 71% of the time when the Airport is operating on a westerly schedule, there would be no change to the distribution of aircraft overflights or the noise levels experienced. For a typical, average year, for the remaining 29% of the time there would be a change to the distribution of aircraft overflights as follows.

9.9.3 When on easterly operations (with full runway alternation) there would be a decrease in the number of aircraft that arrive onto the northern runway (from 630 to 328 on a typical easterly day) and also a decrease in the number of aircraft taking off from the southern runway. There would however be an increase in the number of aircraft that depart from the northern runway (i.e. an increase from less than 0.2% of total annual easterly departures[7] to 328 per typical easterly day). The 328 easterly departures would not however all follow one single flight track. As shown on **Figure 3.9c**, the flight paths would be grouped into 6 Noise Preferential Routes (NPR) which would follow routes branching out to the north, east, south and west.

9.9.4 In addition to the changes of number of flights taking off from and landing at the two runways, there would be a change in the distribution of aircraft over-flights (see **Figure 3.9c** showing areas where there will be Scheduled Over-flights from 09L where there were previously no Scheduled Over-flights). This would result in aircraft flying a path which is different to the existing BPK, BUZ and DVR Noise Preferential Routes, and flying directly over Avenue Park, Cranford Park and a section of the River Brent, River Crane and Grand Union Canal with a corresponding change in noise levels (see Chapter 6 Noise Chapter).

Overview of changes during an extreme easterly or westerly year

9.9.5 In years of extreme easterly operations aircraft may take off from the northern runway for up to 40% of the year. Conversely, in years of extreme westerly operations aircraft may take off from the northern runway for up to 22% of the year.

9.9.6 Consequently, easterly operation from the northern runway, under both average and extreme easterly operations, mean that low flying aircraft would only be an intermittent feature contributing to the experience of being within the landscape.

[7] For 2010 this was an average of 14 in total.

9.9.7 The potential effect of these changes on the tranquillity of open spaces is made below.

Predicted Effects

Grand Union Canal Way

9.9.8 The Grand Union Canal Way falls within the tranquillity assessment Study Area as shown on **Figure 9.4**.

9.9.9 The baseline situation, without full alternation during easterly operations, does not involve aircraft directly overflying this section of the Grand Union Canal. Following the implementation of full alternation on easterlies, new flight paths would be adopted. Flight paths within the *BUZ* and *BPK* Noise Preferential Routes (as shown on **Figure 3.9b**) would cross the Grand Union Canal within the Study Area. On a typical easterly day, 102 aircraft would fly over the London Loop in this area. Aircraft flying directly overhead would be an uncharacteristic feature of the area and have the potential to detract from the overall tranquillity levels currently experienced. However, it will be experienced only when the airport is operating on easterlies and planes are taking off from the northern runway (i.e. 14.5% of the time for an average year and up to 20% of the time during an extreme easterlies year). As such the effect will be experienced on an intermittent rather than regular basis. As such, the low flying aircraft would only be an intermittent feature contributing to the experience of being within this landscape. As a result of the introduction of an uncharacteristic feature on an occasional basis, this **medium** sensitivity landscape would experience a **medium (adverse)** magnitude of change. The overall effect would **not be significant.**

Capital Ring Public Right of Way (PRoW)

9.9.10 The Capital Ring PRoW within the Brent River valley west of Ealing falls within the tranquillity assessment Study Area as shown on **Figure 9.4**.

9.9.11 During the baseline, whilst operating on easterlies, there are no aircraft directly overflying the Capital Ring as it falls within the tranquillity assessment Study Area. During westerly operations there are also no direct flight paths overhead and low flying aircraft do not detract from tranquillity levels. Following the implementation of full alternation on easterlies, new flight paths would be adopted. Flight paths within the BUZ and *BPK* Noise Preferential Routes (as shown on **Figure 3.9b**) would cross the Capital Ring within the Study Area. On a typical easterly day, 102 aircraft would fly over the Capital Ring in this area.

9.9.12 However, this effect would only be experienced for the 14.5% of the year when aircraft will be departing from the northern runway in an easterly direction (or up to 20% of the time during an extreme easterlies year). This would be a new and uncharacteristic feature of the area, particularly as aircraft do not directly overfly this section of the Capital Ring during westerly operations. Although uncharacteristic, the effect will be experienced on a temporary basis and on an intermittent rather than regular basis which would be determined by the wind conditions. As such, the low flying aircraft would only be an intermittent feature contributing to the experience of being within this landscape. It is judged that this **medium** sensitivity landscape would experience a **medium (adverse)** magnitude of change which would **not be significant.**

Longford Pocket Park

9.9.13 Assuming adoption of full alternation during easterly operations, there would be fewer aircraft landing on the northern runway (a reduction from 630 to 328 on a typical easterly day) and an increase in aircraft taking off from the northern runway (equating to 328 departures on a typical easterly day). Therefore as viewed from within the Longford pocket park, during easterly operations, the number of aircraft movements would remain approximately the same, and the

direction of movement e.g. from west to east would remain unchanged, but the type of movement e.g. arrival or departure would alter.

9.9.14 As viewed from this park, ground level aircraft movements have the potential to significantly alter tranquillity levels. The extent to which aircraft are visible taking off from the northern runway and using the approach taxiing routes will depend in part on the size of the aircraft and the length of runway that they need to taxi along before taking off. In a worst case scenario, receptors within Longford pocket park will experience views of aircraft taxiing along the approach routes to runway 09R and along runway 09R from a distance of approximately 200m. The noise barrier will partially screen views of these aircraft movements but it is anticipated that partial views of the taxiing aircraft will still become a feature of the view. This will be experienced for 14.5% of the time over an average year. As such, it is anticipated that the magnitude of change as experienced by this **medium** sensitivity landscape will be **medium (adverse)** and will **not be significant.**

Avenue Park

9.9.15 During the baseline, whilst operating on easterlies, there are no aircraft directly overflying Avenue Park. Following the implementation of full alternation on easterlies, new flight paths would be adopted. Flight paths within the BUZ and BPK Noise Preferential Routes (as shown on **Figure 3.9b**) would overfly Avenue Park within the Study Area. On a typical easterly day, 102 aircraft would fly over the park.

9.9.16 However, this effect would only be experienced for the 14.5% of the year when aircraft will be departing from the northern runway in an easterly direction (or up to 20% for an extreme easterlies year). Whilst aircraft do not currently directly overfly this park on easterly operations, frequent overhead aircraft movements are characteristic when on westerly operations. The effect resulting from adopting full alternation will be experienced on a temporary basis and on an intermittent rather than regular basis which would be determined by the wind conditions. As such, the low flying aircraft would only be an intermittent feature contributing to the experience of being within this landscape. As views of and noise from low flying aircraft are a common feature experienced from within the park during westerly operations, it is judged that this **medium (adverse)** sensitivity landscape would experience a **low** magnitude of change which would **not be significant.**

Moor Mead

9.9.17 Assuming adoption of full alternation, the flight paths will change and there will be potential for 62 aircraft to fly directly overhead on a typical easterly day, within the DVR Noise Preferential Route. Low flying aircraft are a characteristic of this area during westerly operations, so the views of, and noise from, low flying aircraft will not in itself be uncharacteristic. Assuming full alternation, the effect of low flying aircraft on tranquillity levels will be experienced for a slightly larger percentage of the time but still it is anticipated that the magnitude of change as experienced by the **medium** sensitivity landscape will be **low (adverse)** and will **not be significant.**

9.10 Cumulative Effects

9.10.1 Cumulative effects on landscape or visual receptors have been scoped out of the assessment. A review of consented development proposals within the noise barrier Study Area did not identify any schemes which are of a scale to significantly alter the baseline landscape or visual

context. None of the consented schemes were considered to have the potential to cause cumulative effects with any component of the Project being proposed.

9.10.2 In the case of the tranquillity assessment Study Area, there are numerous examples of consented development. Due to the size of the Study Area it is highly likely that the baseline would change to some extent e.g. as a result of new built form, new transport routes etc. However, these features during both the construction and operation phase would not be uncharacteristic of a city the size of London and it is not anticipated that within the urban setting, they would have a significant adverse effect on tranquillity levels. There would be the potential for there to be localised change to tranquillity levels if any of the river corridors or open spaces within the Study Area were to be built upon. However, planning policy at the regional and local level seeks to protect both open spaces and river corridors. As such, it is not anticipated that these landscapes would be built upon.

9.11 Summary of Significance Evaluation

Table 9.6: Summary of Significance Evaluation

Receptor and Effects	Magnitude of Effect[1]	Sensitivity or Value[2]	Significance[3] Level	Summary Rationale
Effects resulting from proposed noise barrier				
Construction – Landscape				
Effects on the local landscape character of Longford resulting from construction activities relating to the noise barrier.	Low (adverse)	Medium	NS	Longford is a settlement recognised in part for its cohesive and historic character by the conservation area status. However, the influence of Heathrow Airport on the overall character of the area is apparent. The construction of the noise barrier may be visible from a small section of the settlement (as detailed in the visual assessment) but the proposed materials, infrastructure or levels of movement during construction would not be uncharacteristic or dominate the area.
Effects on trees within the site boundary resulting from construction activity relating to the noise barrier.	Low-medium (adverse)	Medium	NS	A number of semi-mature trees would be removed during the construction phase, but would be replaced once the noise barrier is constructed.
Operation – Landscape				

Receptor and Effects	Magnitude of Effect[1]	Sensitivity or Value[2]	Significance[3]	
			Level	Summary Rationale
Effects on the local landscape character of Longford resulting from operation of the noise barrier.	Low (adverse)	Medium	NS	Once constructed the noise barrier would only be visible from small parts of the settlement. Where it is not visible it would have no influence on the landscape character. Where it is visible it would not alter the key characteristic of views out of the settlement to the south, Although the barrier would be approximately 3m taller than the existing, as the top 2m would be transparent, views out towards Heathrow Terminal 5 building would still be possible and would still dominate the skyline.
Effects on trees within the site boundary resulting from operation of the noise barrier.	No change	Medium	NS	Any trees lost during the construction phase would be replaced on a like for like basis once the noise barrier has been completed.
Construction – Visual				
Effect on recreational receptors using Longford 'pocket park' (viewpoints 2 and 3)	Low (adverse)	Medium	NS	Receptors would experience views of construction activity in the context of the existing operational Airport. As such the views of new infrastructure and increased movement and activity are unlikely to dominate the view or detract from the key feature of the view which is Terminal 5. The change to the view would be experienced on a temporary (10 weeks) basis.
Effect on residents on the southern side of Bath Road between 485 Bath Road in the east and 607 Bath Road in the west.	Low (adverse)	High	NS	Receptors may experience partial and filtered views of the proposed construction activity on a temporary (10 weeks) basis. Within the context of the existing built form and movement levels within Heathrow Airport, the change is unlikely to dominate the view or change its key characteristics.
Effect on residents on the southern side of Bath Road between 609 Bath Road in the east and 617 Bath Road in the west.	Low (adverse)	High	NS	Receptors may experience partial and filtered views of the proposed construction activity on a temporary basis. The views would not dominate the view or detract from its key feature which is Terminal 5 visible on the skyline.

Receptor and Effects	Magnitude of Effect[1]	Sensitivity or Value[2]	Significance[3]	
			Level	Summary Rationale
Effect on office workers within the Padbury Oaks office complex as a result of the operational noise barrier (viewpoints 4 and 5)	Low (adverse)	Low	NS	It is considered that views of construction activity associated with the noise barrier would largely be screened from view by the perimeter boundary fence. Any partial views of the construction activity would be experienced on a temporary basis within the context of the existing built form and movement levels within Heathrow Airport.
Effect on pedestrians on the eastern end of Bath Road (viewpoints 1)	Negligible (adverse)	Medium	NS	Only glimpsed views of the construction activity will be experienced on a temporary basis.
Effect on pedestrians on the western end of Bath Road (viewpoints 6)	Negligible (adverse)	Medium	NS	Only glimpsed views of the construction activity will be experienced on a temporary basis.
Operation - Visual				
Effect on recreational receptors using Longford 'pocket park' (viewpoints 2 and 3)	Negligible (adverse)	Medium	NS	Receptors would experience views of the proposed noise barrier in the middle of the view. The vegetated foreground would either be retained/reinstated and in the background of the view, Terminal 5 would remain visible. Whilst the proposed barrier would be taller than the existing it would not block views of the Terminal 5 building. The same key characteristics of the view would remain unchanged.
Effect on residents on the southern side of Bath Road between 485 Bath Road in the east and 617 Bath Road in the west.	Negligible (adverse)	High	NS	Receptors may experience partial and filtered views of the proposed noise barrier during winter months. However, the view would be experienced within the context of the existing built form and movement levels within Heathrow Airport. The noise barrier is unlikely to dominate the view or change its key characteristics.
Effect on residents on the southern side of Bath Road between 609 Bath Road in the east and 617 Bath Road in the west.	Negligible (adverse)	High	NS	Receptors may experience partial and filtered views of the proposed noise barrier during winter months. However, the view would be experienced within the context of the existing built form and movement levels within Heathrow Airport. The noise barrier is unlikely to dominate the view or change its key characteristics.

Receptor and Effects	Magnitude of Effect[1]	Sensitivity or Value[2]	Significance[3]	
			Level	Summary Rationale
Effect on office workers within the Padbury Oaks office complex as a result of the operational noise barrier (viewpoint 4 and 5)	Negligible (adverse)	Low	NS	It is considered that the existing perimeter boundary fence would at least partially screen views of the proposed noise barrier. Any partial views of the noise barrier would be experienced within the context of the existing built form and movement levels within Heathrow Airport.
Effect on pedestrians on the eastern end of Bath Road (viewpoints 1)	Negligible (adverse)	Medium	NS	Due to the use of perspex for the top 2 metres of the noise barrier, the views would remain largely unchanged.
Effect on pedestrians on the western end of Bath Road (viewpoints 6)	Negligible (adverse)	Medium	NS	Due to the use of perspex for the top 2 metres of the noise barrier, the views would remain largely unchanged.
Effects as a result of changes to flight paths and noise levels				
Operation – Landscape				

Receptor and Effects	Magnitude of Effect[1]	Sensitivity or Value[2]	Significance[3]	
			Level	Summary Rationale
Grand Union Canal Way	Medium (adverse)	Medium	NS	The baseline situation, without full alternation does not involve aircraft directly overflying this section of the Grand Union Canal Way. Following the implementation of full alternation, on easterlies, new flight paths would be adopted, some of which would result in aircraft flying directly overhead. Aircraft flying directly overhead would be an uncharacteristic feature of the area and has the potential to detract from the overall tranquillity levels experienced. However, it will be experienced for only 14.5% of the time and as such would only be an intermittent feature contributing to the experience of being within this landscape.
Capital Ring	Medium (adverse)	Medium	NS	During the baseline, whilst operating on easterlies, there are no aircraft directly overflying the Capital Ring as it falls within this landscape area. During westerly operations there are also no direct flight paths overhead and low flying aircraft do not detract from tranquillity levels. As such for 14.5% of the time when the Airport is operating on easterlies and aircraft are taking off from the northern runway, there is potential for aircraft to fly directly overhead and for views of and sounds from these aircraft to detract from the overall tranquillity levels. As the effect will be experienced for only 14.5% of the time, it will only be an intermittent feature contributing to the experience of being within this landscape.
Longford Pocket Park	Medium (adverse)	Medium	NS	Receptors within Longford pocket park have the potential to experience views of aircraft taxiing along the approach routes to runway 09L and along runway 09L from a distance of approximately 200 metres. The noise barrier will partially screen views of these aircraft movement but it is anticipated that partial views of the taxiing aircraft will still become a feature of the view. This will be experienced for at most 14.5% of the time, and close range views of aircraft within the airport are not uncharacteristic.

Receptor and Effects	Magnitude of Effect[1]	Sensitivity or Value[2]	Significance[3] Level	Summary Rationale
Avenue Park	Low (adverse)	Medium	NS	For the majority of the time when the airport is operating on westerlies there will be no change to the baseline tranquillity levels. During easterly operations for 14.5% of the time, departing aircraft will take off in a north easterly direction from the northern runway, and will follow new flight paths some of which will be directly over Avenue Park. Whilst views of and noise from low flying aircraft is not an uncharacteristic feature of this park (during westerly operations aircraft landing on the northern runway are clearly visible and audible), it will mean that the effect of low flying aircraft on tranquillity levels will be experienced for a larger percentage of the time.
Moor Mead	Low (adverse)	Medium	NS	For the majority of the time when the airport is operating on westerlies there will be no change to the baseline tranquillity levels. Assuming full alternation, the effect of low flying aircraft on tranquillity levels will be experienced for a larger percentage of the time.

Key/footnotes:

1. [High, medium, low or negligible]
2. [High, Medium or low]
3. S = Significant
   NS = Not-significant