

## **Chapter 10 Landscape and Visual Impact**

## 10. Landscape and Visual Assessment

### Introduction

- 10.1 This chapter describes the baseline conditions of the application site and identifies and assesses the likely significant landscape and visual effects; the mitigation measures required to prevent, reduce or offset any likely significant effects; and the likely significant residual effects arising from the proposed development. Chapter 3 of the ES: Description of the Project, and the planning application drawings describe the landscape scheme for the proposed development.
- 10.2 Although the landscape and visual assessments are separate, there is an overlap in process as landscape features can influence the visual impact of built development. Landscape effects derive from changes in the physical landscape, which may give rise to changes in its character and how this is experienced. Visual effects relate to the changes that arise in the composition of available views as a result of changes to the landscape, to people's responses to the changes, and to the overall effects with respect to visual amenity.
- 10.3 The chapter describes the policy context; the assessment methodology; the baseline conditions at the application site and in the surrounding area; the likely significant landscape and visual effects; the mitigation measures required to prevent, reduce or offset any significant adverse effects; and the likely residual effects after these measures have been employed. The chapter is supported by the following:

### Appendix 10.1: Illustrative Material:

- Figure 10.1: Site Location Plan, Scale 1:50,000 @A1
- Figure 10.2: Topographical Features Plan, Scale 1:50,000 @A1
- Figure 10.3: Site Context Plan, Scale 1:25,000 @A1
- Figure 10.4: Landscape Character Plan – Wide Area, Scale 1:25,000 @A1
- Figure 10.5: Landscape Character Plan– Local Area, Scale 1:10,000 @ A3
- Figure 10.6: Site Appraisal Plan (Aerial Photograph), Scale 1:2,500 @A1
- Figure 10.7: Zone of Theoretical Visibility Plan, Scale 1:50,000 @A1
- Figure 10.8: Visual Appraisal Plan, Scale 1:25,000 @A1
- Figure 10.9: Existing Light Source Plan, Scale 1:25,000 @A1
- Figure 10.10: Photomontage Location Plan, Scale 1:25,000 @A2
- Site Appraisal Photographs A-Y @A3

- Site Context Photographs 1-29 @A3

#### **Appendix 10.2: Policy Context - Summary**

#### **Appendix 10.3: Landscape Character Assessment Extracts**

#### **Appendix 10.4: Landscape Effects Table**

#### **Appendix 10.5: Visual Effects Table**

#### **Appendix 10.6: Photomontages**

- Appendix 10.6a: Photomontages P1-P10 – Full Size
- Appendix 10.6b: Photomontages P1-P6 – 40 degree Field of View Extracts
- Appendix 10.6c: Photomontage Methodology Document

#### **Policy Context**

- 10.4 Relevant policy at European, national and local levels is summarised in **Appendix 10.2**. The potential implications on the proposed development of these planning policies relate primarily to the need to integrate built form into the rural landscape to protect landscape character and minimise visual impact.

#### **Assessment Methodology**

- 10.5 The assessment has been devised to address the specific impacts likely to result from a development of this scale and nature. The methodology draws upon the following established best practice guidance:
- Guidelines for Landscape and Visual Impact Assessment (GLVIA) 2013;
  - Landscape Character Assessment: Guidance for England and Scotland;
  - Landscape Institute Advice Note 01/11: Photography and photomontage in landscape and visual impact assessment; and
  - Visual Representation of Windfarms: Good Practice Guidance (2006).
- 10.6 The assessment of effects within this Landscape and Visual Impact Assessment aims to:
- Identify systematically the likely landscape and visual effects of the development;
  - Indicate the measures proposed to avoid, reduce, remedy or compensate for these effects (mitigation measures);
  - Estimate the magnitude of the effects as accurately as possible; and
  - Provide an assessment of the nature and significance of these effects in a logical and well-reasoned fashion.

10.7 The assessments of effects on other areas, for example cultural heritage and ecology, are covered in separate chapters of the ES.

10.8 The extent of the study area for the assessment has been determined through desktop study and fieldwork. Landscape character and views have been assessed up to a maximum radius of 15km from the centre of the application site, as beyond this distance it is not considered that significant effects will occur. A detailed study of the existing landscape components and character and views of the application site and the study area has been carried out in consideration of the following:

- Site context;
- Topography;
- Vegetation;
- Roads, public rights of way (PROW) and access;
- Settlement and land-use;
- Landscape character; and
- Representative views from publicly accessible viewpoints.

10.9 This is supported by tables, drawings and photographs as appropriate. The planning context with respect to landscape character and visual amenity has also been assessed, taking into account relevant European, national and local planning policies. The baseline study forms the basis against which the predicted effects of the proposed development are assessed.

### **Terminology**

10.10 Throughout this assessment, a number of specific terms are used which relate to landscape and visual impact assessment. These are explained below:

- **Landscape Character Types** (LCTs) are types of relatively homogenous landscape character which may occur in a number of discrete areas.
- **Landscape Character Areas** (LCAs) are areas of relatively homogenous landscape character. They are defined by the combination of elements that contribute to landscape context, character and value. Typical landscape elements include landform, land cover, vegetation and settlement pattern. More subjective criteria are also considered such as scale, unity and enclosure.
- **Zone of Theoretical Visibility** (ZTV) provides a graphical representation of places within the study area from where the proposed development would be visible. The ZTV is the area within which a proposed development could have an influence or effect on visual amenity.

ZTVs are generated by computer programme Key-TerraFirma, by analysing data representing the dimensions of the proposed development against data representing a bare ground Digital Terrain Model (DTM). The screening effect of vegetation and buildings can be modelled in as required.

- **Visual receptors** are viewer groups who would have views of the proposed development. Visual receptors are identified through interrogation of the ZTV and field work. As the study area for this assessment is very large, visual receptors are presented as a series of representative views selected from within the ZTV.
- **Landscape effects** result from change to physical characteristics or components of the landscape, which together form the character of that landscape, e.g. landform, vegetation and buildings; and
- **Visual effects** result from change to an individual receptor's view of that landscape, e.g. local residents, users of public footpaths or motorists passing through the area.

#### **Landscape Character/Landscape Features Assessment Methodology**

- 10.11 The sensitivity of the landscape to change is reflected in the degree to which the landscape is able to accommodate change (due to a particular development or land use change) without adverse effects on its character. This may be influenced by the extent of existing landform and/or existing vegetation or new planting, and the degree to which the landscape is already developed. These and other factors also influence the visibility of the proposed development and therefore influence the extent of its effect on the perceived character and visual amenity of the surrounding landscape. These include the direct and indirect effects of the development on individual landscape elements and features, as well as the effect upon the general landscape character and quality of the surrounding area.
- 10.12 The sensitivity of landscape features is considered in terms of their value, including aesthetic, perceptual or experiential qualities and their existing condition, as well as their susceptibility to change from the type of development proposed. Landscape effects are described clearly and objectively, and the extent and duration of any adverse/beneficial effects quantified, using different categories of magnitude of change, indicating a gradation from high to low (i.e. high, medium, low, very low or no change). Intermediate categories are used where a finer degree of differentiation is required, for example, to describe effects on receptors which do not entirely fall within one of the main categories, or to provide a sufficient range of differentiation across a large number of receptors. Some effects have been quantified (e.g. how many mature trees and hectares of scrub vegetation are to be lost as a result of the proposed development), and this type of factual data has the advantage of helping to put in context the degree of change that will occur.
- 10.13 Wider effects on landscape character and quality are less easy to predict and professional judgement is imperative to provide a fully reasoned objective conclusion/judgement. A clear picture of likely effects is presented by referring back to the baseline landscape character

assessment, and describing how the development may alter existing patterns of landscape elements and features.

10.14 The assessment of landscape impacts has been structured around the identification of Landscape Character Areas (LCAs). Within the study area there will be areas where development would take place resulting in direct effects, areas where there is a degree of intervisibility between the application site and the surrounding landscape causing indirect effects, and/or areas where no change would be perceptible. To reflect the scale and nature of likely impacts of the proposed development, landscape character has been described at range of scales.

10.15 Given the likely visibility of the proposed built form from the surrounding area, the National Landscape Character Areas as defined and described by Northern Ireland Environment Agency (NIEA), lying within approximately 10km of the application site, have been considered.

10.16 At a local level, LCAs within the immediate proximity of the application site have been identified through desk study and field work. They take into account the finer level of detail required to assess the impacts of a development of the scale and nature proposed and are included in the assessment of landscape effects.

10.17 Each LCA to be assessed has been assigned a sensitivity based on the character and quality of the existing landscape and its susceptibility to change from the type of development proposed. Sensitivity of LCA has been classified as Very High, High, Medium or Low, as follows:

- Very High: landscape of highly distinctive components and characteristics, sensitive to very small changes;
- High: landscape of relatively distinctive components and characteristics, sensitive to small changes;
- Medium: landscape of relatively common components and characteristics, reasonably tolerant of changes; and
- Low: landscape of relatively inconsequential components and characteristics, the nature of which is potentially tolerant of substantial change.

Intermediate categories are used where a finer degree of differentiation is required, for example, to describe the sensitivity of receptors which do not entirely fall within one of the main categories, or to provide a sufficient range of differentiation across a large number of receptors.

10.18 Magnitude of change has been determined through a combination of the scale of the development, the type of development and the level of integration of new features with existing elements. Magnitude of change has been classified as High, Medium, Low, Very Low or Neutral, as follows:

- High: ranging from a limited change in landscape characteristics over an extensive area, to an intensive change over a more limited area;
- Medium: moderate change in a localised area;
- Low: minor change in a localised area;
- Very Low: virtually imperceptible change in any component; and
- Neutral: no change discernible in any component.

Intermediate categories are used where a finer degree of differentiation is required, for example, to describe effects on receptors which do not entirely fall within one of the main categories, or to provide a sufficient range of differentiation across a large number of receptors.

### **Visual Assessment Methodology**

10.19 An assessment of the visibility of the application site within its surroundings was carried out in accordance with the GLVIA to determine the likely nature of public and private views towards the application site, including the built form of the proposed development.

10.20 Visual impact assessment involves systematically identifying the visual receptors (i.e. properties or groups of properties/premises, and users of roads and PROW that are likely to be affected by the development, and within the visual envelope of the development.

10.21 To understand the visual envelope of the development and inform the visual assessment, a number of exercises were undertaken as part of the iterative design process, starting with the ZTV computer modelling, to give an indication of the likely extent of visibility of the proposed built form.

10.22 It is widely accepted that visual effects tend to decrease with distance. For the purposes of this assessment, the ZTV extent was set at a radius of up to 15km from the proposed development, as beyond this distance it is not considered that significant landscape or visual effects are likely to occur.

10.23 This modelling provided a rough illustration of those areas likely to experience views of the proposed built form, enabling a refinement of the study area for the purposes of visual appraisal on the ground.

10.24 The resulting ZTV was then reviewed by desk study and fieldwork against the following factors in order to determine a selection of representative views which form the basis of the visual assessment:

- Receptor function / activity;

- Distance from the application site;
- Topography and elevation;
- Degree and period of exposure to view;
- Designation of the viewing place; and
- Distribution of receptors.

10.25 To prioritise the selection of sensitive viewpoints against these factors, the following criteria were adopted:

- The requirement to provide representative viewpoints within the visual envelope;
- Locations which represent a range of near, middle and long distance views;
- Whilst private views are relevant, public viewpoints, i.e. from roads and PROW and other areas of open public access are selected, since they are often the most significant in terms of the number of people affected; and
- Views from receptors within designated landscapes.

10.26 Based on these considerations, a number of areas of search for sensitive viewpoints for verification on the ground were identified in liaison with the landscape officer at the Department of Environment Landscape Branch.

10.27 Sensitive viewpoints identified include listed buildings, PROW, public open spaces and recreation grounds, roadways and residential areas.

10.28 Verification on the ground was initially undertaken in a visual appraisal exercise in July 2012. In order to assist the visual impact assessment, and the prediction of likely significant effects, the visual assessment field exercise involved the flight of a helium balloon (blimp) from the application site to demonstrate the heights proposed for the tallest components of the proposed development.

10.29 The blimp assessment was undertaken using a specialist external company responsible for the helium blimp hire and operation. The helium-filled blimp enabled the siting and height of the Energy from Waste (EfW) flue and the top of the EfW building to be assessed from a variety of principal representative viewpoints within the study area, to assist in the identification of the extent and nature of the existing views which would be subject to change.

10.30 The blimp, measuring 5.2m long and 1.7m diameter, was inflated and flown with the top of the balloon 80m above the proposed base level of 245m Above Ordnance Datum (AOD), to demonstrate the proposed flue height known at the time. A pennant/windsock was also flown on the balloon tether, at a height of +47.3m to represent the height of the EfW building.

- 10.31 The assessment was carried out on a fine clear day although it is noted that variable wind speeds resulted in some limited displacement of the blimp. However, any displacement was not greater than 10m as this is the safety tolerance range of the blimp operator; as a result, it did not materially detract from the usefulness of the blimp flight in identifying the likely extent of the proposed built form.
- 10.32 All photographs were taken with the equivalent of a 50mm lens, typically using panoramic photographs of five or six frames in width to provide an appropriate degree of context to the view as it is experienced on the ground. Photographs were taken at eye level, approximately 1.75m above ground level, from public viewpoints. Photographs were taken in landscape format from distances wherever the blimp would be visible in this format and in portrait from near distances where a higher field of view was required.
- 10.33 The exercise focused on those sensitive views with public access - no access to private properties or restricted locations such as school grounds was obtained during the visit.
- 10.34 To understand the nature of views towards the site in winter conditions, a visit to the same viewpoints as visited in August 2012 was undertaken in April 2013.
- 10.35 In July 2013, as a result of Best Available Technology (BAT) optimisation dialogue with NIEA Industrial Pollution and Radiochemical Inspectorate (IPRI) in respect of air quality, as part of feedback from the PAD process, the EfW flue height was revised from 80m to 95m above the proposed base level.
- 10.36 As a result, all stages of the visual appraisal exercise were reviewed and updated. A revised ZTV was prepared and issued to DoE Landscape Branch who agreed the proposed additional areas of search for visual appraisal field assessment. These additional areas of search accounted for two factors:
1. The increased area from where views towards the EfW flue will potentially be obtained. This was found to be primarily to the west, towards Belfast International Airport and Crumlin, with marginal increases in other areas.
  2. The areas where the increased height will have potential to render the EfW flue more visible.
- 10.37 A revised blimp assessment with the balloon flown at 95m above the proposed base level of 245m AOD was undertaken in July 2013, on an entirely still day with some early mist clearing to very bright conditions, with no displacement of the blimp.
- 10.38 Finally, accurate Visual Representations (photomontages) of the proposed development for representative views (visual receptors) have been produced in line with the guidance in the Landscape Institute Advice Note 01/11: Photography and photomontage in landscape and

visual impact assessment. These provide a further degree of detail in illustrating the likely appearance of the proposed development, to assist in the assessment of effects.

10.39 Visual receptors (based on representative views) have been assigned a category of sensitivity based on a combination of the activity and expectations of the predominant receptor type (e.g. residents, recreation, work etc.) and the location, context and importance of the existing view. Sensitivity of receptors has been classified as High, Medium or Low, as follows:

- High: activity resulting in a high interest or appreciation of the view (e.g. residents or people engaged in outdoor recreation whose attention is largely focussed on the landscape) and/or a high value of existing view (e.g. unspoilt countryside or a Conservation Area);
- Medium: activity resulting in a medium interest or appreciation of the view (e.g. people engaged in outdoor recreation that does not largely focus on an appreciation of the landscape e.g. motorists travelling through the area on rural roads) and/or a medium value of existing view (e.g. suburban residential areas or intensively farmed countryside); and
- Low: activity resulting in a low interest or appreciation of the view (e.g. people at work or motorists travelling through the area on fast roads) and/or low value of existing view (e.g. industrial areas or derelict land).

10.40 Magnitude of change in view results from a combination of the degree of change to the view resulting from the proposed development with consideration of the extent of the area over which the changes would be visible, the period of exposure to the view and reversibility. Magnitude of change has been classified as High, Medium, Low, Very Low or Neutral, as follows:

- High: high degree of change to existing view (e.g. loss of characteristic features) and/or high degree of exposure to view (e.g. near-distance or open views);
- Medium: medium degree of change to existing view (e.g. partial loss of characteristic features) and/or medium degree of exposure to view (e.g. middle-distance or partial views);
- Low: low degree of change to existing view (e.g. limited loss of characteristic features) and/or low degree of exposure to view (e.g. long-distance, interrupted or glimpsed views);
- Very Low: barely perceptible change to existing view and/or very brief exposure to view; and
- Neutral: no change discernible in existing view.

Intermediate categories are used where a finer degree of differentiation is required, for example, to describe effects on receptors which do not neatly fall within one of the main categories, or to provide a sufficient range of differentiation across a large number of receptors.

10.41 The assessment of visual effects describes:

- The changes in the character of the available views resulting from the development; and
- The changes in the visual amenity of the visual receptors.

10.42 The visual effect of a development on a view will depend upon a number of factors. These can be summarised as:

- The nature of the proposal;
- Its siting in the landscape;
- Its size;
- Its detailed design; and
- The position and distance from which it is viewed.

10.43 A visual impact assessment seeks to assess the effects of the development resulting from the degree of change in the view experienced by the observer. The results are presented in a systematic form allowing an informed judgement to be made of the effects of the development proposals.

10.44 In the assessment of views there is likely to be a continuum in the degree of visibility of the development from Open View to No View, and in order to assist in the description and comparison of the effect on views, simplified categories were used which considered:

- The extent of the view that would be occupied by the development (degree of visual intrusion): Full, Partial, Glimpse, None etc.;
- The proportion of the development or particular features that would be visible:
  - all of the components of the proposed development (Full);
  - most of the building, and the whole of the flue (Most);
  - the upper parts of the building and the whole of the flue (Partial);
  - views of the upper parts of the flue (Small Amount);
  - views of the very top of the flue (Negligible); and
  - none.
- The distance of the viewpoint from the development and whether the viewpoint would focus on the development due to proximity, or the development would form one element in a panoramic view; and
- Whether the view is fixed or transient/one of a sequence of views, as from a moving vehicle or footpath.

10.45 In the evaluation of the effects on views and the visual amenity of the identified receptors, the magnitude of scale or visual change is described by reference to:

- The scale of change in the view with respect to the loss or addition of features in the view and changes in its composition;
- The degree of contrast or integration of any new features or changes in the landscape with the existing or remaining landscape elements;
- The duration and nature of the effect, whether temporary or permanent, intermittent or continuous;
- The angle of view in relation to the main activity of the receptor;
- The distance of the viewpoint from the proposed development;
- The extent of the area over which the changes would be visible.

10.46 The detailed assessment of the likely significant effects of the proposed development on visual receptors is set out in the Visual Effects Table. This table records the receptors affected after completion of the proposed development (Year 1) where it is assumed that the landscape mitigation measures designed as part of the scheme would have been introduced within the first planting season. This represents the “worst case” scenario. This table also records the effects at Year 20 following completion when it is assumed that planting within the proposed landscape measures would have become well established.

#### **Character of the Night Sky Assessment Methodology**

10.47 The methodology for the assessment of the effect of the lighting associated with the proposed development has been developed from the Department for Communities and Local Government document entitled “Lighting in the Countryside: Towards Good Practice” (1997).

10.48 In addition to the information gathered as part of the desktop study for the landscape and visual assessment, consideration is given to the existing lighting installations present in the area surrounding the application site, to establish how dark the area surrounding the application site is, and to establish a lighting baseline. This also includes considering the visibility, brightness and prominence of light sources, and identifying any areas of dark sky.

10.49 The sensitivity of the landscape in the vicinity of the application site to lighting and associated apparatus is then determined. This is based not only on the perceived value of the landscape (e.g. formal designation) but also on an assessment of the character of the landscape, including the sensitivity of the landscape type to the impacts of lighting and elements such as visibility and remoteness, with the degree of enclosure afforded by landform and vegetation being key factors, along with patterns of fields and settlements.

10.50 The Institution of Lighting Professionals (ILP) “Guidance Notes for the Reduction of Obtrusive Light” (2011) provides the following guidance on classifying areas into ‘Environmental Zones’ for levels of exterior lighting:

- E0: Protected, dark UNESCO Starlight Reserves, IDA Dark Sky Parks;
- E1: Intrinsically dark landscapes - National Parks, Areas of Outstanding Natural Beauty, etc.;
- E2: Low district brightness areas - Rural, small village, or relatively dark urban locations;
- E3: Medium district brightness areas - Small town centres or urban locations; and
- E4: High district brightness areas - Town/city centres with high levels of night-time activity.

10.51 Where an area to be lit lies on the boundary of two zones, the obtrusive light limitation values used should be those applicable to the most rigorous zone.

10.52 Potential receptors of visual effects of lighting associated with the proposed development are identified, such as residents, visitors and other groups of viewers including those participating in astronomy.

10.53 The lighting baseline provides a framework for determining the overall sensitivity of the application site and the surrounding area, and the capacity to accommodate lighting, as well as informing the design of the proposed development. The effects of the lighting associated with the proposed development can then be assessed in relation to this baseline.

#### *Classification of Effects*

10.54 The potential effects of the proposed development upon the existing (baseline) landscape character, and receptors' views of that landscape, have been identified and assessed at three points in time:

- During construction;
- On completion (Year 1); and
- Following 20 years of operation (Year 20).

10.55 Through the assessment of effects at these stages, distinctions have been drawn between temporary, permanent and residual impacts. Landscape and visual impacts have been further categorised as being either direct (e.g. introduction of built forms), or indirect (e.g. off-site visual impact of construction traffic) and permanent or temporary.

#### *Significance of Effects*

10.56 Whilst there is a degree of subjectivity involved in determining the significance of landscape and visual effects, they can broadly be determined by the interaction of the sensitivity of receptor and magnitude of impact. This interaction results in an effect with a significance. **Table 10.1** illustrates one way in which this interaction can be established. However, to draw out the key issues and ensure that the significance of the effects and scope for reducing any adverse effects are properly understood, clear explanations in the form of narrative describing the

change in landscape or visual conditions are used. As such, professional judgement is paramount and may vary from this matrix.

**Table 10.1 Significance of Effects – indicative matrix**

Sensitivity of Receptor	Magnitude of Change			
	High	Medium	Low	Very Low
High	Major	Major / Moderate	Moderate	Moderate / Minor
Medium	Major / Moderate	Moderate	Moderate / Minor	Minor
Low	Moderate	Moderate / Minor	Minor	Negligible

10.57 Environmental effects have also been identified as being beneficial, neutral or adverse. A textual description of landscape and visual effects is given in **Table 10.2**. A neutral magnitude of impact will always result in a neutral effect. For the purposes of this assessment, it is considered that effects that are of moderate or greater significance are considered to be significant.

**Table 10.2 Description of Landscape and Visual Effects**

Significance of Effect	Description of Landscape Effect	Description of Visual Effect
Major	Where the proposed changes would be sufficiently large to substantially alter important landscape features / valued aspects of landscape.	Where the proposed changes would be sufficient to substantially alter a nationally important view, or view of high scenic quality.
Major / Moderate	Where the proposed changes would be noticeably out of scale with the underlying character of an area or substantially alter a locally important landscape feature / valued aspect of landscape.	Where the proposed changes to views would be noticeably out of scale with the existing view and/or substantially alter a locally important view, or view of scenic quality.
Moderate	Where the proposed changes would be out of scale with the underlying character of an area or noticeably alter a landscape feature or aspect of landscape.	Where the proposed changes to views would be out of scale with the existing view or noticeably alter a view.
Moderate / Minor	Where proposed changes would be	Where proposed changes to

	readily apparent and at slight variance with the underlying character of an area and / or landscape features.	views would be noticeable and at slight variance with the existing view.
Minor	Where proposed changes would be intermittent and at slight variance with the underlying character of an area or landscape features.	Where proposed changes to views would be intermittent and at slight variance with the existing view.
Negligible	Where proposed changes would have an indiscernible effect on the character of an area or landscape features.	Where proposed changes would have an indiscernible effect on views / visual amenity.
Neutral	No effect.	No effect.

### Baseline Conditions

#### *Site Location*

- 10.58 The application site boundary includes Hightown Quarry, as well as the proposed access route, which extends north from the quarry along the existing access route and then east from the quarry access road along Boghill Road as far as the junction with Hydepark Road, as well as west along Boghill Road from the quarry access road for approximately 450m. Unless otherwise stated, all distances noted in this chapter are from the nearest extent of the application site, which is illustrated on all plans by a red line boundary, to the nearest extent of the relevant location.
- 10.59 As shown in **Figure 10.1 Site Location Plan**, the application site is located to the south-west of Glengormley, which forms the south-western part of the urban area of Newtownabbey. Newtownabbey comprises a conurbation of urban districts grouped around Carnmoney Hill which lies approximately 9km to the north of the centre of Belfast. Hydepark Road delineates the extent of the Hightown district on the south-western edge of Glengormley. The quarry area of the application site is located approximately 1.2km to the south-west of Hightown.
- 10.60 The quarry and quarry access road parts of the application site lies within the administrative area of Antrim Borough Local Government District (LGD). Boghill Road to the west of Blacks Bridge lies on the border of Antrim and Newtownabbey Borough LGD, and to the east of Blacks Bridge, entirely within Newtownabbey Borough LGD. The boundary of Belfast City LGD lies approximately 150m to the east of the quarry, defined by the course of the Flush River.
- 10.61 Given the proposed height of built form within the proposed development, an extensive study area has been considered: up to 15km from the application site. This allows for a comprehensive assessment of the landscape and visual characteristics of the area forming the context to the proposed development, as the baseline for the assessment of landscape and visual effects.

### *Topography*

- 10.62 As illustrated in **Figure 10.2 Topographical Features Plan**, the landform in the vicinity of the application site varies considerably and includes a range of prominent features. The most prominent landforms in the area surrounding the application site are the Belfast Hills, which define the eastern extent of the Antrim Plateau, and are located to the north-east, east, south and south-west. The hills reach their highest point at the summit of Divis, 478 metres (m) AOD, situated approximately 4.4km to the south. Other peaks within this range of hills include Collinward, which reaches 360m AOD, approximately 2.3km to the east; Squires Hill, which reaches 375m AOD, approximately 1.6km to the south-east; Cave Hill, which reaches 368m AOD, approximately 2.9km to the east; Black Mountain, which reaches 390m AOD, approximately 5km to the south; McIlwhans, which reaches 340m AOD, approximately 650m to the south-west; Boghill, which reaches 283m AOD, approximately 2km to the west; and Carnmoney Hill, a northern outlier of the main area of the Belfast Hills, which reaches 231m AOD, approximately 3.5km to the north-east. The upper slopes of these hills are drained by a large number of streams which merge into watercourses draining into valleys to the north-west and south-east of the summits.
- 10.63 Approximately 5.3km to the east lies Belfast Lough, an inlet of up to approximately 5.5km in width, extending inland approximately 18km from the open sea. At the head of this inlet, at the mouth of the River Lagan, lies the port and city centre of Belfast. The landform slopes up from the valley floor of the River Lagan, through western districts of Belfast, to the Belfast Hills, a number of which have prominent eastern escarpments, forming a dramatic containing feature on the western side of the city.
- 10.64 To the north, the land falls gradually into the valley of the Ballymartin Water. Flush River extends north over this falling landform, from its source on high ground, approximately 1.1km to the south of the application site, passing approximately 100m to the east of the quarry area of the application site and beneath Blacks Bridge on Boghill Road. The western valley flank forms an area of elevated landform extending east from McIlwhans, through the area of the quarry and extending to the north-east, reaching an elevation of approximately 240m AOD on the north-eastern boundary of the application site. Flush River flows through Hyde Park Dam reservoir, located approximately 350m to the north, into the Ballymartin Water in the vicinity of Mallusk, approximately 2.6km to the north of the application site, at an elevation of approximately 108m AODm.
- 10.65 The Ballymartin Water flows north-west to meet the Six Mile Water on the northern edge of Templepatrick, approximately 7.9km to the north-west, at an elevation of approximately 47m AOD. The Six Mile Water flows west through a very gently sloping valley, passing through the town of Antrim to enter Lough Neagh at a point approximately 16.2km to the north-west, at an elevation of approximately 15m AOD.
- 10.66 Boghill Dam reservoir is located approximately 850m to the north-west, on land sloping into the valley of the Ballymartin Water.

10.67 To the north of the valley of the Ballymartin Water lies a distinct ridgeline extending north-west from Carnmoney Hill and reaching approximately 150m AOD in elevation at Sentry Hill, approximately 2.7km to the north of the application site. To the north of this ridge lies the valley of Three Mile Water which flows south-east from the vicinity of Ballycraigy to meet Belfast Lough at Whiteabbey, approximately 6km to the east of the application site. A small stream flows north-west from the vicinity of Ballycraigy, parallel to Ballymartin Water, to meet the Six Mile Water in the vicinity of Doagh, approximately 7.6km to the north-west of the application site. North of this valley the landform rises onto a range of hills which reach an elevation of 312m AOD at Carn Hill, approximately 8.9km to the north-east of the application site. The southern part of this upland area includes hills at My Lord's Mountain (273m AOD) and Knockagh (270m AOD). The County Antrim War Memorial is located on the escarpment forming the eastern flank of Knockagh, overlooking Belfast Lough, approximately 8.6km to the north-east of the application site.

10.68 To the west, beyond Boghill, the gently undulating landform of the Antrim Plateau falls steadily towards Lough Neagh.

#### *Land Use and Settlement*

10.69 The immediate surrounds of the application site include moorland to the south and south-west of the quarry and enclosed pasture fields flanking Boghill Road and to the north, west and east of the quarry.

10.70 An area of agricultural/industrial storage is located to the eastern side of the quarry access road, midway between the quarry area and Boghill Road.

10.71 The transition between pasture fields and moorland occurs at approximately 300m AOD. Below this height, the field pattern comprises regular, small to medium sized fields, enclosed by hedgerows. On more elevated ground, the land comprises areas of rough grazing and open moorland, with limited hedgerow or fenced enclosure sub-dividing these areas. Communication masts are located on a number of the summits of the moorland area of the Belfast Hills, at Collinward, Squires Hill, Divis and Black Mountain.

10.72 Farmsteads and residential properties are scattered evenly across the rural area, generally at intervals of between 300-500m. They are connected by an irregular network of lanes (public highways) and private access tracks.

10.73 A number of routes extend straight across the rural landscape, including the B39 Seven Mile Straight from Ballyutoag to Antrim, to the west of the application site; the A52, in stretches between Ballyutoag and Lough Neagh to the south-west; and the B95 from Mallusk to Templepatrick, to the north.

- 10.74 To the north and north-east, beyond Hydepark Road, lies residential development within Hightown, including the recently-developed Blackrock neighbourhood. Further residential development is anticipated and under construction in this area.
- 10.75 A large area of industrial and commercial development extending along the flanks of Mallusk Road and the M2 motorway, including a number of substantial built forms, providing warehousing and office facilities, is situated further to the north-east. The associated infrastructure includes a grid of service roadways as well as extensive areas of car parking, including for Heavy Goods Vehicles, which form prominent transient and stationary features in this area.
- 10.76 To the north-east of this area of industrial and commercial development, the M2 motorway extends on a south-east – north-west axis through Glengormley, approximately 2.4km to the north-east of the application site, along the valley of the Ballymartin Water towards Templepatrick which lies approximately 7km to the north-west of the application site.
- 10.77 To the north-east of Glengormley, residential areas of Newtownabbey extend north-east, forming a chain of development flanking the western side of Belfast Lough, reaching as far as Carrickfergus, approximately 12.5km to the north-east of the application site.
- 10.78 To the south-east of Newtownabbey, unbroken development extends along the routes of the A6 and M2 motorway to join the wider conurbation centred on Belfast. Extensive industrial/commercial development is located to the north-east of the A2, in the vicinity of Whitehouse, approximately 4.5km to the east of the application site.
- 10.79 In addition to the industrial and commercial development in the vicinity of Glengormley and Whitehouse, there are a number of active and disused quarries in the wider landscape surrounding the application site. These include Mallusk Quarry, approximately 1.7km to the north-west; Black Mountain Quarry, approximately 7km to the south; a disused quarry in the vicinity of Wolf Hill, approximately 2km to the south; a disused quarry in the vicinity of Ballyutoag, now used as a minerals stockyard with a prominent warehouse unit and lighting columns, approximately 1.2km to the south; three disused quarries on the eastern and southern flanks of Squires Hill, which lie approximately 1.6km to the south-east; and an active quarry at Collinward, approximately 1.6km to the east.
- 10.80 Lines of pylons traverse the landscape in the vicinity of the application site, including two roughly parallel routes on a north-south axis, passing immediately to the east and west of the quarry area. The pylons passing to the east reach approximately 29m above ground level and those to the west approximately 45m above ground level.

#### *Vegetation*

- 10.81 As shown in **Figures 10.5** and **10.6**, vegetation features surrounding the application site comprise a network of predominantly substantial hedgerows which define field boundaries and flank roadways to the west, north and east. These features comprise a mixture of species,

dominated by hawthorn, with frequent rows of canopy trees, typically beech. The other dominant canopy tree species found in the area is ash, but sycamore, alder and pine species are also evident.

10.82 Scrub and canopy trees are also evident along watercourses, such as the Flush River, to the north and east of the application site, providing a more sinuous, irregular pattern of vegetation, amid the largely regular alignment of field boundaries. The structure of this vegetation varies between intermittent scrub and canopy trees to small belts of woodland. There are no substantial areas of woodland in the landscape surrounding the application site. In the upland areas, predominantly to the south, there is very limited canopy tree planting. However, intermittent hedgerows, of hawthorn shrubs/small trees can be found flanking some roadways. Examples include along Flush Road, approximately 350m to the south; and along the A52, approximately 1km to the south. The open moorland areas typically comprise rough grassland, with limited areas of scrub, including gorse species.

#### *Landscape Designations*

10.83 A number of designated features are located in the vicinity of the application site, as shown on **Figure 10.3 Site Context Plan** and described below.

10.84 Effects on heritage assets and their setting are considered in more detail in Chapter 11: Cultural Heritage. However, the locations of Listed Buildings, Historic Gardens (as included in the Register of Historic Parks, Gardens and Demesnes of Special Historic Interest), Scheduled Monuments and Conservation Area are noted and considered in this chapter in terms of the potential for visual effects.

10.85 Listed Buildings include the following:

- Antrim War Memorial;
- Buildings in the vicinity of Mossley;
- Church of the Holy Evangelists, Carnmoney;
- Houses at Ballyvesey;
- Mills at Walkmill Bridge; and
- St Vincent de Paul Church, Legoniel.

10.86 Scheduled Monuments include the following:

- Lyles Hill enclosure; and
- Cave Hill – enclosures and McArts Fort.

10.87 Historic Gardens include the following:

- Zoological Gardens; and
- Belfast Castle.

10.88 Conservation Areas include the following:

- Merville Garden Village, Newtownabbey;
- Somerton Road/Chichester Park, Belfast; and
- Cathedral, Belfast.

10.89 There are no mapped PROW in the near vicinity of the application site. The Ulster Way is a circular long distance walking route. A revised route was launched in 2009, including a 'link' section (not waymarked) between Ballynure and Belfast. This section extends through an upland area to the north of Newtownabbey, including the south-facing slopes of this area, in the vicinity of Knockagh.

10.90 A number of mapped trails and areas of accessible land are associated with the Belfast Hills and are illustrated on **Figure 10.3**. These include areas of Cave Hill, Divis and Carnmoney Hill.

10.91 The nearest Area of Outstanding Natural Beauty (AONB) to the application site is the Lagan Valley AONB, located approximately 10.8km to the south of the application site, beyond the escarpment of the Belfast Hills. This AONB is designated for its riverbank scenery, meadows and woods forming a pastoral landscape; monuments and the remnants of fine estates; and industrial archaeology related to linen production and the Lagan Canal. The Antrim Coast and Glens AONB lies approximately 15km to the north of the application site at its nearest point.

10.92 Although Green Belt is a functional land use designation rather than landscape and visual designation, it is noted that the application site lies within the Green Belt, as shown in the Antrim Area Plan (1984-2001) Proposals Map.

10.93 As shown in **Figure 10.3** the application site lies outside, the Belfast Basalt Escarpment Area of High Scenic Value (AHSV), as shown in the Belfast Metropolitan Area Plan 2015, map no. 1/001 Belfast Countryside. This designation includes moorland and summits within the Belfast Hills. The nearest extent of this designation to the application site is approximately 1.25km to the east and approximately 880m to the south.

*Landscape Character – Northern Ireland*

10.94 Landscape Character Assessment in Northern Ireland is provided by the Northern Ireland Environment Agency (NIEA) Landscape Character Assessment. Within this assessment the application site lies predominantly within the Divis Summits Landscape Character Area (LCA 111). The access road area of the application site lies within the Three and Six Mile Water

Valleys Landscape Character Area (LCA 114). These LCA descriptions are included in full in **Appendix 10.3** and are summarised below.

*Divis Summits (LCA 111)*

10.95 The assessment notes the Key Characteristics of Divis Summits as follows:

- ***“Broad, rounded summits on the edge of the Antrim basalt plateau with a distinctive and dramatic escarpment overlooking Belfast;***
- ***Open, windswept marginal farmland, with expanses of moss on flat, waterlogged plateau;***
- ***Angular, straight field boundaries and narrow roads;***
- ***Pockets of small-scale farmland and paddocks on some edges of the moss;***
- ***Occasional groups of trees shelter isolated farmsteads;***
- ***Dense lines of hedgerow beech trees along some roads and farm tracks at lower elevations;***
- ***Derelict buildings; and***
- ***Quarries, both active and abandoned.”***

10.96 The more detailed Landscape Description makes additional comment. That which is of relevance to the application site or proposed development includes: the generally gentle slopes of those summits which do not form part of the eastern escarpment; tracks raised on embankments to cross the moss; prominent radio masts on the highest summits; and the irregular patchy pattern of landscape, with scrub and wasteland associated with abandoned workings.

10.97 The landscape is described as being ‘generally in a poor condition’ and makes further comment of relevance to the application site in that this is particularly the case in areas of mineral extraction. The removal of hedgerows is noted, including alongside roads, where character has been eroded by a combination of neglect and highway improvements, in part to accommodate mineral lorries. The assessment notes that basalt summits are particularly sensitive to change, as they are relatively exposed and that quarry sites are often in extremely prominent locations and their restoration should be considered a priority.

10.98 Principles for landscape management of relevance to the application site and proposed development include the following:

- ***“The restoration of abandoned quarry sites will improve views to this landscape; priority should be given to those in the most prominent positions on the escarpment slopes and those which are in the vicinity of important archaeological sites;***

- ***The character of the minor roads may be reinforced by conserving existing hedgerows and planting new hedges and lines of trees on the lower slopes;***
- ...
- ***The landscape on the edges of active quarry sites should be restored, particularly at entrances and the permanent boundaries, where there are often steep, odd-shaped bunds and abandoned plant;***
- ***Limiting routes for mineral lorries will help conserve narrow roads and remaining hedgerow trees from further erosion by heavy vehicles;***
- ***New hedgerow tree planting and the encouragement of natural regeneration, particularly near farmsteads, mineral sites and along roads on the lower slopes of the plateau will screen development and reinforce the landscape structure; and***
- ***If new planting is restricted to the lower slopes, the gradual transition to an open, uncluttered skyline on the rounded summits may be conserved.”***

10.99 The assessment notes that the only scope for built development in this area is in existing derelict sites, where there may be opportunities for restoration.

*Three and Six Mile Water Valleys (LCA 114)*

10.100 The Landscape Character Area Three and Six Mile Water Valleys is described as having the following key characteristics:

- ***“Gently rolling ridges within the broad lowland valleys of the Three Mile Water and Six Mile Water;***
- ***Large open pastures are divided by hedgerows with numerous hedgerow trees;***
- ***Densely settled, with many large farms and a variety of architectural styles;***
- ***Widespread, prominent and large scale industrial development is scattered throughout the valleys, especially on the outskirts of Newtownabbey;***
- ***Dense transport infrastructure including the M2, A6, A57 and the Ballymena to Belfast railway line; and***
- ***No coherent visual relationship between the buildings and their rural setting.”***

10.101 The Landscape Description of this Landscape Character Area provides additional comments of relevance to the application site and proposed development, including reference to: a much smaller scale field pattern on the valley floor near Newtownabbey; a secluded character to the valley floor landscape; a scarcity of large blocks of woodland; hedgerows which are often incomplete; the prominence of electricity pylons on local skylines; a variety of scales and styles of built development which emphasises its presence in the landscape and inhibit a coherent relationship between settlement and landscape context; Carnmoney Hill, which

forms a landmark; and long views from the M2 motorway to Newtownabbey and to Belfast Lough.

10.102 The condition of the landscape is described as being ‘generally poor’ owing principally to the incomplete hedgerow network and the often open and incoherent settings of built development, resulting in a degraded visual character. The area is noted as being relatively sensitive to large-scale development owing to long views along the valleys and from the surrounding elevated land and the potential for further hedgerow loss. The assessment notes that development could be accommodated if it were well integrated with existing field patterns, and the associated infrastructure links were designed to have minimal visual impact. The assessment notes that woodland planting would reduce the sensitivity of the landscape to large scale development.

10.103 The Principles for Landscape Management for this LCA note that woodland planting would be appropriate on the valley floor on the fringes of Newtownabbey and that:

***“Re-instatement and management of hedgerows will reverse the present degradation, over-maturity and loss which is apparent throughout the area.”***

10.104 In terms of Principles for Accommodating New Development, the assessment notes the need for a co-ordinated landscape strategy, including woodland, landform and hedgerow planting, to create a landscape structure and setting for large-scale development, as well as a coherent architectural style, drawing on vernacular features.

*Additional NIEA Landscape Character Areas*

10.105 Owing to the potential for the large built form within the proposed development to influence an extensive area of the surrounding landscape, NIEA LCAs within a radius of approximately 10km of the centre of the application site are also considered within this assessment. **Appendix 10.3** includes the published descriptions of these LCAs which are also shown in **Figure 10.4 Landscape Character Plan – Wide Area**. These LCAs include the following:

- Belfast/ Lisburn Landscape (97);
- Carrickfergus Upland Pastures (98);
- Upper Ballinderry Plateau Landscape (109);
- Derrykillulttagh (110);
- Belfast Basalt Escarpment (112);
- Expansive Crumlin Farmland (113);
- Tardree and Six Mile Water Slopes (115);
- Carrickfergus Shoreline (129); and

- Carrickfergus Farmed Escarpment (130).

*Localised assessment of Landscape Character*

10.106 To provide a finer grain of detail, a landscape character assessment of the local area, within approximately 1km of the application site, was undertaken in July 2012. This broadly concurs with the descriptions of the wider Divis Summits and Three and Six Mile Water Valleys landscape character areas, as summarised above. However, additional observations on more localised Landscape Character Types (LCTs), delineated into LCAs in **Figure 10.5: Landscape Character Plan – Local Area**, are noted below.

*Upland Moor (Landscape Character Areas: L1a Mcllwhans Southern Slopes; L1b Squires Hill Northern Slopes; and L1c Collinward Western Slopes)*

10.107 This LCT comprises open, large-scale, exposed areas to the south and east of the application site, generally forming gentle slopes on elevations above 300m AOD. The landform creates shallow curving horizons, with the lower edges of these areas bounded or traversed by relatively straight roadways that complement this simple linear pattern.

10.108 These areas predominantly comprise rough grassland, although areas of low scrub are occasionally evident. Streams follow natural courses and there are extensive areas of boggy ground. Long views can be obtained across the landscape, including across the valley landscape to the north. There is minimal pattern of enclosure, aside from roadway margins where gappy hedgerows and shallow embankments are evident, sometimes reinforced with post and wire fencing.

10.109 The open character of the landscape means that there is limited scope for mitigating potential visual influences. A line of pylons are a prominent feature on the eastern slopes of Mcllwhans (L1a). These and other infrastructural influences such as the covered reservoir on the summit of Mcllwhans and Collinward Quarry detract from the character of the landscape. Fly-tipping is evident, notably at field gateways, detracting from the condition of the landscape, although the expanses of moorland, beyond the varying forms of enclosure, remain relatively intact. For these reasons, it is considered that the character of LCAs L1a, L1b and L1c is of medium sensitivity to the type of development proposed.

*Marginal Farmland (Landscape Character Areas: L2a Mcllwhans Northern Slopes and L2b Flush River Headwaters)*

10.110 This LCT comprises open and exposed areas to the south-west and south-east of the application site, generally at lower elevations than areas of Upland Moor and forming a transitional landscape between those areas and Valley Farmland (see below).

10.111 Land cover predominantly comprises rough grassland for grazing but occasional small trees and areas of scrub are also evident. The key distinction between this landscape and Upland

Moor is the enclosure pattern of geometric field boundaries defined by post and wire fences, shallow embankments and ditches, with occasional gappy or neglected hedgerows.

- 10.112 The farmland often has an abandoned appearance and there are very few canopy trees. Watercourses are often integrated into ditches forming geometric field boundaries, although principal streams, such as Flush River, generally maintain their more sinuous natural course.
- 10.113 The landscape is not as broad in scale as areas of Upland Moor, owing to the enclosure pattern, and the additional influence of scattered small farmsteads and individual dwellings, a number of which shows signs of unkempt appearance and abandonment of built form, detracting from the condition of the landscape. Farm access tracks provide varied linear influences, sometimes following geometric field boundaries but also taking less rigid routes, in response to landform and watercourses.
- 10.114 Lines of pylons and overhead cables provide additional strong linear influences and prominent vertical infrastructure, detracting from the character of the landscape. Fly-tipping is evident and, in conjunction with the often abandoned appearance of farm buildings, grazing fields and field boundaries, results in a generally poor condition of the landscape. Therefore, overall, it is considered that the character of LCAs L2a and L2b is of medium-low sensitivity to the type of development proposed.

*Industrial (Landscape Character Area: L3 Hightown Quarry)*

- 10.115 This LCT and LCA incorporate the quarry and quarry access road within the application site.
- 10.116 This area lies between areas of Upland Moor and Marginal Farmland to the south, and areas of Valley Farmland to the north. As such, its perimeter features respond in part to these adjacent areas, with grassland and sparse scrub to the south providing minimal physical and enclosure; hedgerows with canopy trees and scrub vegetation to the north which provide some structural containment; and gappy scrub hedgerow to the south-west, flanking Flush Road.
- 10.117 The landform variation is very marked including: made-up grassed embankments set back from the quarry face edge to the south-west; sheer rock faces, contrasting with areas of excavated and made-up levelled ground and forming prominent detracting features within the wider landscape; spoil heaps and stockpiles of rock and gravel; and ramped access tracks on made-up ground.
- 10.118 The quarry rock faces form strong containing features within the application site, forming the basis for mitigation of new features within the landscape, although the quarry is largely open to the falling valley landform to the north, over which long views can be obtained.
- 10.119 The quarry is of an industrial scale and comprises a fragmented, manipulated and shifting landscape pattern and, as such, contrasts markedly with the more cohesive character of the intricate pattern of Valley Farmland hedgerows, to the north, and the expansive areas of

Marginal Farmland and Upland Moor, to the south. In addition, the excavated landform contrasts dramatically with the natural contours of the surrounding landform.

- 10.120 The access road, linking the quarry to Boghill Road to the north, aligns with the adjacent geometric field pattern, a pattern typical of farm access tracks in the area, but forms a broad, rigid, industrial-scale corridor, extending the industrial influence of the quarry through the adjacent farmland. The condition of the landscape is poor, owing to the transient condition of features within the quarry and fragmentation of natural features. The character of LCA L3 is therefore considered to be of low sensitivity to the type of development proposed.

*Valley Farmland (Landscape Character Area: L4 Flush River Valley)*

- 10.121 This landscape type is located to the west, north and east of the quarry site and includes the course of Boghill Road. It is dominated by a dense network of generally geometric field boundaries, well defined by substantial hedgerows, albeit often unmanaged and grown-out.
- 10.122 These hedgerows occasionally include canopy trees (typically beech species), which occasionally form lengthy unbroken stretches. The land use almost entirely comprises grazing farmland, although reservoirs at Hyde Park Dam and Boghill Dam form significant water bodies to the north of the application site.
- 10.123 Watercourses define the landform, with valley features associated with the Flush River and a western tributary, to the south of Boghill Road. The condition of the landscape is considered to be moderate, owing to the fact that the hedgerows are often gappy or, in some locations, absent altogether, with field boundaries defined only by post and wire fences.
- 10.124 Lines of pylons and overhead cables are evident across the landscape but, owing to the network of vegetation, are more readily visually assimilated into the landscape than on the more open and exposed upland areas. However, these features appear out of scale with the intimate character of the Valley Farmland, in contrast to the upland which has a much broader scale. The lines of pylons also create a layer of strong linear progression across the otherwise intricate pattern of the landscape. Additional industrial scale influence is provided by the open views of Hightown Quarry, obtained from the north which is prominent from across the area. For these reasons, it is considered that the character of LCA L4 is of medium sensitivity to the type of development proposed.

*Suburban Residential (Landscape Character Area: L5 Hyde Park/Hightown)*

- 10.125 This landscape type is formed of predominantly recent residential development on the south-western edge of Newtownabbey, contained to the south-west by Hyde Park Road and Upper Hightown Road. Housing is generally of large, two-storey, detached properties, with some three-storey townhouses, notably flanking a prominent public square in the Blackrock development.

- 10.126 Streets are generally broad, enhancing the sense of space, although ornamental planting is limited, often resulting in harsh transitions between street surface and built form.
- 10.127 A number of tracts of land adjoining the existing residential area are yet to be developed and some construction activity is on-going, giving a fragmented, transient character to the townscape.
- 10.128 As a result of the different stages of built development currently evident, the townscape is considered to vary between good to poor condition. The north-eastern approaches, along Hightown Road and Scullions Road, are also heavily influenced by industrial-scale built form in the vicinity of Mallusk Road.
- 10.129 The residential development presents a prominent urban edge, notably to Hydepark Road north-west of the junction with Boghill Road. This edge is subject to the infrastructural influences of lines of pylons traversing the landscape and townscape to the east and west. Overall, the character of LCA L5 is considered to be of medium-low sensitivity to the type of development proposed.

#### *Site Appraisal*

- 10.130 A detailed site appraisal was carried out in August 2012, in winter conditions in April 2013 and in July 2013 to include the extended application site boundary. These exercises were undertaken to consider the landscape features and character of the application site. The findings of the site appraisal are set out below and illustrated on **Figure 10.6: Site Appraisal Plan (Aerial Photograph)** which shows the existing features including landform, areas of vegetation, watercourses, boundary features, buildings and roads on or in close proximity to the application site.
- 10.131 The application site comprises approximately 52.4 hectares (ha), including the irregularly-shaped quarry area in the southern area of the application site and the access route part of the application site. The access route includes the existing quarry access road (approximately 340m of private access road) and approximately 1.4km of the public highway of Boghill Road, extending from a point approximately 450m north-west of the entrance to the quarry access road as far as Hydepark Road. The access route part of the application site also includes approximately 240m of Hydepark Road, extending north-west and south-east from the junction with Boghill Road.
- 10.132 The application site is situated on undulating landform, with marked topographical variation within the quarry area of the application site. The landform slopes down to the west from the junction of Boghill Road with Hydepark Road, which lies at an elevation of approximately 183m AOD, into the valley of the Flush River, which Boghill Road traverses via Blacks Bridge at an elevation of 163m AOD. Boghill Road then climbs gradually to the west, meeting the junction with the quarry access road at approximately 179m AOD.

- 10.133 The quarry access road then traverses a tributary stream of the Flush River before climbing gradually south towards the quarry area of the application site, which lies at an elevation of approximately 220m AOD at the quarry entrance. It then rises through a series of terraces to an elevation of approximately 262m AOD at the base of the south-eastern quarry face.
- 10.134 The upper extent of the south-eastern/south-western quarry face reaches an elevation of approximately 290m AOD in the southern corner of the application site, in the vicinity of Flush Road, resulting in a quarry face of approximately 28m in height.
- 10.135 The upper extent of the north-eastern quarry face reaches an elevation of approximately 260m AOD, with a face of approximately 20m in height. The north-western face of the quarry is shorter in extent than those to the south-east and south-west, and rises to an elevation of approximately 260m, resulting in a quarry face of approximately 16m in height. To the north-east and south-west of this quarry face the landform opens out to the surrounding landscape. The stockpiling area to the north of the quarry lies at an elevation of approximately 225-235m AOD.
- 10.136 The quarry area of the application site has been used for mineral extraction, over a period of approximately 47 years, with full planning consent in place for on-going usage of the land for this purpose. Current usage is intermittent, as required to serve individual contracts. Mineral extraction has involved blasting, conveyance, crushing and removal by heavy goods vehicle of the rock, resulting in a heavily disturbed landscape, described in further detail below.

#### *Site Character*

- 10.137 The application site has a variety of landscape features, forming four distinct character areas as illustrated on **Figure 10.6: Site Appraisal Plan (Aerial Photograph)**. These character areas reflect the local area Landscape Character Areas, described above, but contain site-specific characteristics which are described further below.

#### *S1 – Boghill Road*

- 10.138 The roadway ranges between approximately 5-6m in width and follows an irregular course across the valley landform of the Flush River and between pasture fields. The road surface shows signs of water erosion and extensive repair work and no road markings are present. Numerous side lanes and gateways serve as field entrances.
- 10.139 A degree of structural containment is provided by banks up to approximately 0.75m in height and hedgerows of mixed native species which are often gappy or absent altogether. The containment provided by hedgerows is lessened in winter conditions. Where present, hedgerows vary in height (including the bank height) between approximately 1.5m and 4m. There are limited lines of hedgerow trees but where these occur, they include locally characteristic beech species.

10.140 The road traverses two streams: Flush River and a small western tributary; via bridges including stone walls of approximately 0.5m in height. The road is traversed by two lines of overhead cables supported by pylons which exert a strong infrastructural influence, as do the turning splays at the entrance to the quarry access road, which are up to approximately 75m in length and approximately 6m in width at their broadest extent.

10.141 Boghill Road has the character of a broad rural lane, although the lack of continuity in the hedgerows, the relative lack of hedgerow trees and the traversing pylon lines erode its rural character which is therefore considered to be of low-medium sensitivity to the type of development proposed.

#### *S2 – Quarry Access Road*

10.142 This roadway is entirely straight and over 6m in width, widening to approximately 30m in width near to the southern end where a gatehouse and weighbridge are located.

10.143 It is surfaced with bitumen macadam which is in good repair with central line markings and speed restriction markings, as well as Armco barriers near the Boghill Road junction.

10.144 These features, in combination with the industrial scale of the roadway, contribute to a more formal, industrial character than Boghill Road. The western side of the roadway is defined by a post and wire fence and intermittent hedgerow of native species. The eastern side of the roadway is defined by post and wire fence with no hedgerow.

10.145 The relative lack of containment, notably in winter conditions, results in the pasture fields which lie either side of the road, providing a strong rural influence, although to the east of the road, approximately 250m from the junction with Boghill Road, is an area of vehicle storage, shipping containers and barns/outbuildings associated with no.32 Boghill Road, which provide a further industrial influence on the roadway. Overall it is considered that the character of the roadway is subject to a number of industrial influences and that it is therefore of low sensitivity to the type of development proposed.

#### *S3 – Quarry*

10.146 This area is dominated by excavated landform, with the prominent quarry faces of bare rock, with quarried scree typically buttressing the lower extents, reaching up to approximately 28m in height.

10.147 These quarry faces provide a substantial degree of containment to this area of the application site, although the elevated terraced landform allows extensive views across the quarry to the north, where heaps of stockpiling or spoil do not curtail these views.

10.148 A range of associated landform features contribute to the disturbed, shifting pattern of the landscape in this area. These include: informal vehicle access/haulage routes, formed primarily of compacted gravel spoil and often taking the form of ramps; terraces formed of expanses of compacted gravel spoil, used for manoeuvring vehicles and for accessing the

quarry faces; and stockpiles and spoil heaps of quarried material, varying in size from rock of approximately 1-2m in width, to fine gravel. Informal standing water bodies are found on the terraces and as result of rain these extend and run into streams, creating additional movement in the landscape.

- 10.149 These features combine to create a collection of distinct, abrupt and essentially man-made landforms which result in a strong industrial character.
- 10.150 In addition to the height of the quarry faces, the scale of other landform features is large, with terraces up to approximately 100m in width and 10m in height; and stockpiles up to approximately 30m in width and 10m in height. The substantial massing and uniform colouration of these elements, as well as the voids in the landscape created by the quarry, are in contrast to the surrounding landscape texture of pasture fields and hedgerows to the north and the cohesive, open expanses of marginal farmland and moorland to the south.
- 10.151 The terracing of the landform and vehicle access routes creates an irregular linear pattern in the landscape as well as a tiered vertical pattern, notably when viewed from the north.
- 10.152 There is minimal vegetation present within the quarry area, the only limited colonisation being achieved by perennial herb species in areas that have not been recently disturbed. A stockpiling area lies to the north of the northern part of the quarry and is formed of gently sloping gravel, with a limited number of gravel stockpiles and limited areas of excavation. As a result of the above characteristics, it is considered that the character of the quarry area of the application site is of low sensitivity to the type of development proposed.

#### *S4 – Quarry Perimeter*

- 10.153 The area surrounding the quarry landscape predominantly comprises scrub and grassland, with a small area of deciduous woodland located on a raised area of land between the northern-eastern edge of the quarried area of the application site and the stockpiling area further to the north. This woodland provides a notable landscape feature at the quarry entrance although the effect of structural containment it provides to the north-eastern area of the quarry and the stockpiling area is reduced in winter conditions.
- 10.154 Further to the north, the stockpiling area is bounded to the north by areas of scrub woodland and hedgerows, as well as an area of pasture grassland, bounded by hedges, and two settling lagoons.
- 10.155 With the exception of this landform and vegetation and an embankment of made-up ground, up to approximately 4m in height, which lies to the south-west of the quarry, flanking Flush Road, the perimeter of the quarry provides limited visual containment and is physically relatively coherent with the adjacent landscape, with which it generally has a closer relationship than the interior of the quarry. There is some seasonal variation in the degree of physical containment provided by vegetation, although areas of gorse continue to provide a distinct physical containment in winter conditions. However, the perimeter area generally

comprises a more informal, unmanaged character than the marginal farmland to the south-east and south-west; and valley farmland to the north-west and north-east. It is also heavily influenced by lines of overhead cables and pylons, both east and west of the quarry area, which introduce a prominent vertical and horizontal pattern, as well as infrastructural influences. To a lesser extent, the perimeter fence of the quarry provides additional infrastructure. Overall, owing to this balance of factors, the character of this area is considered to be of medium-low sensitivity to the type of development proposed.

#### *Site Features*

- 10.156 As described above in relation to the different character areas of the application site, it also contains a number of distinct landscape features which are indicated on **Figure 10.6: Site Appraisal Plan (Aerial Photograph)** and summarised below.

#### *F1 – Hedgerows with Trees*

- 10.157 Hedgerows with trees flank Boghill Road, Flush Road and the western side of the quarry access road. In addition, short extents of hedgerow with canopy trees are located on the western and northern boundaries of the quarry area, flanking pasture fields.
- 10.158 Hedgerows within the application site are formed of a mixture of native species, dominated by hawthorn and gorse species, but also including ash maintained as a hedgerow shrub. Hedgerow trees include ash and beech species. The hedgerows are in moderate to poor condition, owing to the fact that they are often gappy or absent altogether. However, they have potential to form an important characteristic feature of the local landscape. A number of hedgerows along Boghill Road include embankments which are locally characteristic features. As a result of these considerations, the hedgerows within the application site are, overall, considered to be of medium sensitivity to the type of development proposed.

#### *F2 - Roadway*

- 10.159 The metalled roadways of Boghill Road and the quarry access road are of a moderate to good state of repair, providing functional amenity to local residents and other users. However, they are not attractive landscape features and they do not define locally distinctive character, with limited potential to do so. As such, they are considered to be of low sensitivity to the type of development proposed.

#### *F3 – Fencing*

- 10.160 The eastern flank of the quarry access road, parts of the perimeter of the quarry and intermittent stretches of Boghill Road are bounded by post and wire fencing. These are in varying states of repair and are not attractive landscape features. Furthermore, they do not represent locally distinctive character and have limited potential to do so. As a result, they are considered to be of low sensitivity to the type of development proposed.

*F4 - Scrub*

10.161 Evident in pockets around the perimeter of the quarry, scrub is formed primarily of gorse, although hawthorn is present and willow dominates in the lower-lying northern area of the quarry perimeter. As such, the scrub is characteristic of local landscape character, albeit a common, readily replicated feature. In addition, it provides one of few softening elements within the otherwise largely industrial character of the application site. Therefore, scrub within the application site is considered to be of medium sensitivity to the type of development proposed.

*F5 – Woodland*

10.162 An area of broadleaved woodland, predominantly formed of mature beech and sycamore species, with an understorey dominated by elder, nettle and bramble, is located on a mound on the northern edge of the quarry. Additionally, a belt of emerging woodland lies to the east of the quarry access road in the vicinity of the quarry entrance, including alder, birch, willow, hawthorn, blackthorn and hazel species, reaching a height of approximately 8m. This woodland provides an element of structural containment of the quarry landscape and is therefore considered to be of medium-high sensitivity to the type of development proposed. Newtownabbey and Antrim Borough Councils have confirmed that there are no Tree Preservation Orders within or adjacent to the application site.

*F6 – Rough Grassland and Ruderal*

10.163 These areas are located in association with areas of scrub around the perimeter of the quarry. They combine with the scrub to form a varied and locally characteristic vegetation structure, notably around the southern perimeter of the application site, where they are more closely associated with the adjacent landscape character. Therefore, these features are considered to be of medium sensitivity to the type of development proposed.

*F7 – Gravel Surfacing/Spoil/Stockpiling*

10.164 Areas of quarried gravel surfacing, spoil and stockpiling extend throughout the quarry area and form access tracks in the perimeter area. These features comprise shifting, transient features within the landscape. Whilst they provide a relatively coherent texture and colour to the quarry landscape they offer limited visual amenity or representation of local landscape character. These areas are therefore considered to be of low sensitivity to the type of development proposed.

*F8 – Quarry Cliff Faces*

10.165 These are dramatic vertical forms up to approximately 28m in height, providing containment to the quarry area, although they form prominent detracting features from the natural landform of the landscape context. They are transient features, with potential for further excavation and therefore, are considered to be of low sensitivity to the type of development proposed.

*F9 – Built Forms*

- 10.166 A number of structures are located in the northern area of the quarry and vicinity of the weighbridge at the quarry entrance. These are utilitarian, industrial forms including hoppers, conveyors and containers used for office accommodation, as well as abandoned farm buildings, and are considered to be of low sensitivity to the type of development proposed.

*F10 – Standing Water*

- 10.167 Small areas of standing water can be found within the quarry landform and a number of settling lagoons in the northern part of the quarry area of the application site, forming part of the drainage chain for the existing quarry use. Whilst these features do provide some structural variety within the quarry landscape and ponds within the northern area of the quarry site are of more structural value and visual interest, the water bodies within the quarry landscape are semi-transient water bodies of relatively low visual amenity, and standing water features within the application site are therefore overall considered to be of low sensitivity.

*F11 – Pasture Grassland*

- 10.168 Areas of pasture grassland are located to the north-west and west of the quarry area and to the east of the existing access road, to the north of the quarry area, in addition to narrow extents of fields flanking Boghill Road, notably to the north (up to c.20m in width within the boundary of the application site). Whilst these features form part of the locally characteristic pattern of hedgerows with fields, the field to the west of the quarry site is heavily influenced by the adjacent landform and rough grassland within the quarry, which interrupts the hedgerow forming the eastern boundary of the field.
- 10.169 The field to the north-east of the quarry site is still subject to the influence of the quarry and associated activity, but to a lesser degree, owing to the belt of woodland on their western flank and hedgerows with canopy trees to the south, which provide a degree of physical and visual buffering from the quarry access road and stockpiling areas, including in winter conditions. Grassland fields on Boghill Road form part of a relatively uniform and widely repeated landscape pattern of hedgerows and fields. As such, overall, these areas of pasture grassland are considered to be of moderate-low sensitivity to the type of development proposed.

*Site Appraisal Photographs*

- 10.170 A number of Site Appraisal Photographs (A-Y inclusive) were taken as part of several site visits, in August 2012, April 2013 and July 2013, and illustrate the features and character of the application site. The locations from which the photographs were taken are shown on **Figure 10.6: Site Appraisal Plan (Aerial Photograph)**.
- 10.171 **Site Appraisal Photograph A** was taken from the north-eastern extent of Boghill Road, in the vicinity of the junction with Hyde Park Road/Upper Hightown Road, looking south-east. The photograph illustrates the relatively open character of the road in this area, with limited

hedgerow cover visible to the right hand side of the road, and no hedgerow trees on either side of the road. This lack of roadside structural vegetation allows long views, including towards the quarry face, which is visible just below the horizon. This forms an industrial influence in the otherwise rural character of the scene.

- 10.172 **Site Appraisal Photograph B** was taken from Boghill Road, approximately 320m from the junction with Hydepark Road/Upper Hightown Road, looking west. In this photograph, there is again limited hedgerow cover to the right hand side of the road and there are no hedgerow trees on either side of the road. Long views are obtained directly ahead, towards Boghill, and to the right hand side of the photograph, new residential development flanking Hydepark Road can be seen, creating an urbanising influence on the otherwise rural character of the scene.
- 10.173 **Site Appraisal Photograph C** was taken from Boghill Road, approximately 40m to the west of Blacks Bridge, looking east. In this location, hedgerows can be seen flanking the roadway, with canopy trees visible above the hedgerow in the left hand side of the photograph. In the centre of the photograph the stonework of Blacks Bridge can be seen, providing a focal point at a bend in the road.
- 10.174 **Site Appraisal Photograph D** was taken from Boghill Road, in the vicinity of the bridge over a tributary of the Flush River, looking west. In this photograph there is limited roadside vegetation in the foreground, although beyond the stonework of the bridge approach, substantial hedgerows with canopy trees can be seen on both sides of the road, creating an enclosed character to the roadway.
- 10.175 **Site Appraisal Photograph E** was taken from Boghill Road approximately 130m to the east of the quarry access road, looking south. This photograph demonstrates the gappy character of the hedgerow in this location, allowing long-distance views towards the horizon of Mcllwhans and the south-east face of the quarry.
- 10.176 **Site Appraisal Photograph F** was taken from Boghill Road at the junction with the quarry access road, looking south. In this photograph the entry slip lanes to the quarry access road have no hedgerows, allowing open views across the adjacent fields and up towards the horizon, including Collinward, visible in the left hand side of the photograph. The quarry access road features a hedgerow on the right hand side but no hedgerow on the left hand side. This allows views of the farmyard storage area to the left of the access drive, in the middle distance, including a number of containers.
- 10.177 **Site Appraisal Photograph G** was taken from Boghill Road approximately 150m to the west of the quarry access road, looking east. The photograph demonstrates the rural character of the road in this location, with a hedgerow and bank visible on the right hand side of the photograph and a gappy hedgerow and bank visible on the left hand side of the photograph.

- 10.178 **Site Appraisal Photograph H** was taken from the southern end of the quarry access road, in the vicinity of the gated entrance to the quarry site, looking north. Again, the farmyard storage area is evident in the middle distance, owing to the lack of hedgerow on the right hand side of the access road. The absence of hedgerow containment creates an open character to the roadway, which emphasises the uncharacteristic broad width of the access roadway. In the distance, a number of urbanising influences can be perceived, including the prominent residential development flanking Hydepark Road.
- 10.179 **Site Appraisal Photograph I** was taken from the southern end of the quarry access road, south of the gated entrance to the quarry site, looking north. In this photograph, a belt of emerging woodland vegetation is visible to the east of the quarry access road, providing a degree of containment to the roadway. Further to the right, industrial and residential development can be seen beyond the hedgerow and fields, exerting urbanising influences on the otherwise rural character of the scene. In the extreme right hand side of the photograph there is no hedgerow vegetation and an abandoned, derelict character is apparent at the interface between the quarry site and the adjacent fields.
- 10.180 **Site Appraisal Photograph J** was taken from the entrance to the area of quarry perimeter to the west of the quarry access track, looking north. The photograph illustrates the falling landform, including an unmade track, areas of hard standing, grassland and ruderal species and, in the distance, settling lagoons. This area is well contained by hedgerows to the left and right hand sides of the photograph although the influences of past industrial use remain.
- 10.181 **Site Appraisal Photograph K** was taken from the western boundary of the application site, to the west of the quarry access track, looking west. This photograph illustrates the rural, pasture grassland character of this area. The application site forms the left hand side of the view and the application site boundary is not defined by any feature on the ground. Long distance views are obtained over the rural landscape to the west, although pylons provide prominent infrastructural influences.
- 10.182 **Site Appraisal Photograph L** was taken from the entrance area of the quarry site, looking south. This photograph illustrates the industrialised character of the quarry site, notably the built forms evident in the northern area of the quarry in the centre of the view. In the right hand side of the view, a more open and less industrial character is evident in the form of a predominantly grassed bank, with some sparse scrub, although this too is subject to the influence of the quarry infrastructure, including the gravel access tracks. Canopy trees contain the space in the left and right hand sides of the view, although an abandoned and derelict character is evident in these areas. The view also demonstrates the various levels of the quarry, visible in a series of gravel and rock ramps, terraces and quarry faces in the centre of the view.
- 10.183 **Site Appraisal Photograph M** was taken from the northern area of the quarry, looking south-east. This view demonstrates the industrial, albeit abandoned character of the northern area of the quarry, including a number of built forms and piles of gravel and spoil. The quarry faces

create a high degree of containment to this area of the quarry, including a large bank on the left hand side of the photograph. The enclosure provided by this landform is accentuated by vegetation, in the form of a woodland belt, including canopy trees and scrub understorey, on top of the bank. In contrast, the right hand side of the photograph is relatively open, with limited tree or scrub cover.

- 10.184 **Site Appraisal Photograph N** was taken from the western area of the quarry, looking north. Existing built form in the right hand side of the view, in addition to the heavily manipulated landform visible to left and right, demonstrate the industrial influence of the quarry on this area of the application site, although the photograph demonstrates the re-colonisation by vegetation of the gravel area in the foreground. Long distance views are obtained over falling landform towards Bog Hill in the left hand side of the photograph and in the right hand side of the photograph include prominent industrial development in Glengormley/Mallusk.
- 10.185 **Site Appraisal Photograph O** was taken from the lower tier of the southern area of the quarry, looking south. This view demonstrates the heavily disrupted landscape resulting from the quarrying activity, including the prominent south-western face of the quarry and the ramp towards the south-eastern face of the quarry. A large bank in the right hand side of the photograph provides some containment, albeit this lacks any reinforcement by structural vegetation.
- 10.186 **Site Appraisal Photograph P** was taken from the top of the access ramp to the south-eastern face of the quarry, looking south-east across the upper tier of the southern area of the quarry towards the south-eastern face. This photograph illustrates the relatively featureless character of the quarry floor in this area and the high degree of containment provided by the quarry faces. The exception to this is the open long-distance view obtained in the left hand side of the view out of the quarry across falling landform. Industrial development in Glengormley/Mallusk is perceptible in this view.
- 10.187 **Site Appraisal Photograph Q** was taken from the top of the bank to the west of the southern area of the quarry, looking north-west. In the left hand side of the view, the south-western quarry face is prominent, although where this merges with the existing landform, canopy trees are evident on the interface with agricultural fields, visible in the centre of the view. In the right hand side of the view, a more disturbed landscape is evident, with very limited vegetation allowing long distance views over falling landform, including prominent industrial development in Glengormley/Mallusk.
- 10.188 **Site Appraisal Photograph R** was taken from the south-western edge of the quarry site, looking north-east. A man made embankment flanking Flush Road is visible in the left and right hand sides of the view, providing physical and visual separation between the quarry and the roadway. Roadside vegetation in the form of scrub and small trees is evident although there is no vegetation other than rough grassland on the embankment itself, exacerbating its artificial character. Long distance views are obtained over the various levels of the quarry,

illustrated clearly in the centre of the view, towards high ground in the vicinity of Knockagh, with industrial development again prominent in the low-lying area in the left hand side of the view. Pylons are prominent in the left and right hand sides of the view, emphasising the industrial influences on the character of the landscape in this area.

- 10.189 **Site Appraisal Photograph S** was taken from the southern corner of the quarry site, looking north. This photograph again demonstrates the open, man-made character of the embankment flanking Flush Road, but also the more natural character of the area of gorse scrub and rough grassland in the area set behind the edge of the quarry face, in the right hand side of the photograph. In this photograph, the rolling profile of the Belfast Hills, visible in the distance in the right hand side of the photograph, is abruptly truncated by the south-east face of the quarry. The rolling landform is further interrupted by the prominent vertical forms of electricity pylons and communication masts at various points across the view. Long distance views over falling landform in the centre of the photograph include prominent industrial development in Glengormley/Mallusk.
- 10.190 **Site Appraisal Photograph T** was taken from the eastern edge of the quarry site, looking north-west. In the left hand side of the photograph the south-western face of the quarry is prominent, in part owing to the lack of any structural vegetation behind the quarry face in the extreme left hand side of the photograph. This lack of vegetation emphasises the prominence of the pylon visible in the left hand side of the photograph, set back from the edge of the quarry face. In the right hand side of the view, there is a much softer appearance to the perimeter area of the quarry, although there is a marked contrast between the canopy trees flanking fields in the right hand side of the view, with the sparse scrub cover visible in the centre of the view. Again, there are long distance views over falling landform in the centre of the photograph which includes prominent industrial development in Glengormley/Mallusk.
- 10.191 **Site Appraisal Photograph U** was taken from the north-eastern edge of the quarry site, looking south-west across the northern area of the quarry. The photograph illustrates the abrupt edge of the quarry face, in contrast with the smooth profile of Mcllhans; and the prominence of the pylons and other infrastructure in and around the quarry, including the built forms in the foreground of the view. To the right hand side of the view, an embankment with scrub and canopy tree planting provides containment of the northern area of the quarry.
- 10.192 **Site Appraisal Photograph V** was taken from the south-western edge of the stockpiling area, looking east. Woodland provides containment to the left hand side of the photograph although this is diminished by the lack of foliage in the winter conditions shown. The foreground is dominated by a shifting landscape of gravel with vehicular tracks, with limited containment provided by scrub and hedgerows to the left and right hand sides of the photograph, in addition to stockpiles and small-scale quarrying to the right hand side of the photograph. An electricity pylon in the right hand side of the photograph adds to the industrial character of the scene. Long distance views over falling landform in the centre of the photograph show the

prominent edge of residential development flanking Hydepark Road, as well as industrial development in Glengormley and Mallusk.

- 10.193 **Site Appraisal Photograph W** was taken from the south-eastern edge of the stockpiling area, looking north-west and shows clearly the heavily manipulated landform in this area, including levelled gravel and stockpiles as well as small scale quarrying in the right hand side of the photograph. Bog Hill is visible in the centre of the photograph in addition to more distant elevated landform to the north-west of the Six Mile Water valley. although pylons dominate the horizon across the photograph.
- 10.194 **Site Appraisal Photograph X** was taken from the top of the slope at the northern edge of the stockpiling area, looking north. The dominant characteristic of this view is the falling landform of the northern area of the quarry perimeter and landscape beyond. Areas of rough grassland, gorse and willow scrub and a settling lagoon are the key features of this area of the application site, beyond which can be seen a pattern of rural fields terminating at prominent residential and industrial development. Long distance views are obtained to all sides, including as far as Knockagh in the vicinity of the Antrim War Memorial, approximately 8.5km to the north-east of the application site.
- 10.195 **Site Appraisal Photograph Y** was taken from the northern edge of the quarry perimeter, looking south. An unmade gravel track extends across the photograph, leading to a settling lagoon, visible in the left hand side of the photograph with associated willow scrub. This vegetation provides limited containment in the winter conditions shown. In contrast, the centre of the photograph is dominated by dense gorse scrub. To the right a pasture field can be seen, beyond which vegetation flanking the quarry access road provides a degree of containment, even in the winter conditions shown.

#### *Visual Appraisal*

- 10.196 As described in the Methodology above, to understand the visual envelope of the proposed development and to develop an increasingly refined understanding of the likely visual effects, a number of exercises were undertaken as part of the iterative design and assessment process. These processes are summarised here.
- 10.197 Initially, a Zone of Theoretical Visibility (ZTV) computer model was run, to determine the likely visibility of the proposed built form within the surrounding landscape, accounting for topography. The resulting plan is illustrated in **Figure 10.7: Zone of Theoretical Visibility Plan**. This plan demonstrates that landform provides extensive containment of views of the proposed built form, notably in views from the south-west, south-east, north-west and longer distance views to the east and north-east. However, there is potential for the proposed built form to be seen from a number of directions, notably in a broad area to the north of the application site from where a large part of the proposed built form is potentially visible. From limited areas of elevated land to the south of the application site as well as a swathe of land to the west, views of a limited extent of the proposed built form would potentially be obtained,

- 10.198 A visual appraisal field visit was then carried out to assess views from representative viewpoints highlighted by the ZTV exercise, using a blimp at 95m above the proposed base height of 245m AOD and windsock at 47.3m above the proposed base height to account for the likely maximum height of the proposed EfW flue and building respectively within the proposed development.
- 10.199 The MBT building and flue and IBA buildings, at maximum heights of 18m, 20m and 12.6m, respectively, would not exceed the height of the adjacent quarry faces. This informed the decision to use the EfW building and flue as the features to be represented by the blimp and windsock to assist the visual appraisal exercise.
- 10.200 The visual appraisal confirmed the broad findings of the ZTV in terms of the likely visibility of the proposed built forms from the viewpoints assessed and provided a more detailed impression of the likely appearance of the proposed development. The findings of the blimp visual appraisal exercise contribute to the assessment of visual effects, as described in the section headed Likely Significant Effects below.
- 10.201 **Site Context Photographs** 1-29 inclusive, have been selected from in excess of 100 viewpoints assessed as part of the visual appraisal fieldwork. It was agreed with the DoE Landscape Branch in August 2013 that these views provide a representative selection of the range of identified sensitive viewpoints. The locations from which these photographs were taken are illustrated on **Figure 10.8: Visual Appraisal Plan**. The views illustrated in these photographs are described below. Where obtained, winter views (albeit without the blimp flight) are also included with the **Site Context Photographs** and commentary on them is provided below.
- 10.202 Selected views of the application site consist of near distance (0-500m) and long distance (501m and beyond) views.
- Near Distance Views (0-500m)*
- 10.203 **Site Context Photograph 1** was taken from Flush Road, approximately 285m to the south of the application site, looking north-eastwards. In this view, a partial view of the application site is obtained, comprising chiefly the shallow bank of moorland scrub in the south-eastern perimeter area of the application site. The blimp is visible above this horizon, although it is seen in the context of existing pylons and communications masts breaching the skyline across the panorama. The winter view from this location demonstrates that the loss of foliage from deciduous trees would make minimal difference in the view towards the blimp.
- 10.204 Moving north-westwards, **Site Context Photograph 2** was taken from Flush Road immediately to the south-west of the application site, looking north-eastwards. In this view, the blimp is visible in the centre of the photograph, above the short horizon formed of the bund within the south-western perimeter area of the application site, which allows only a partial view of the application site. An existing pylon is prominent above the horizon in the left hand

side of the photograph. The winter view from this location demonstrates that the loss of foliage from deciduous trees would make minimal difference in the view towards the blimp, although the appearance of the bund within the application site is starker in winter conditions.

- 10.205 Further to the north-west, **Site Context Photograph 3** was taken from Flush Road, in the vicinity of 133 Flush Road, approximately 470m from the application site, looking south-eastwards. In this view the blimp is visible above a hedgerow and pasture field in the right hand side of the photograph, which screens views of the existing features of the application site. The windsock is just visible above the horizon as are pylons in the right hand side of the photograph. The winter view from this location demonstrates that the loss of foliage from deciduous trees would make limited difference in the view towards the blimp - the summer vegetation softens the view very slightly.
- 10.206 Moving to the north-east, **Site Context Photograph 4** was taken from Boghill Road at the junction with the quarry access road, on the boundary of the application site and approximately 1km from the blimp, looking southwards. From this location, existing tree lines form substantial localised screening elements, with the result that, whilst an open view of the quarry access road and this part of Boghill Road is obtained, only a partial view of the quarry site, including its more elevated landform and rock faces, can be obtained. Both the blimp and windsock can be perceived above the horizon, albeit in the context of pylons visible in the centre of the photograph. The winter view from this location demonstrates that the loss of foliage from deciduous trees would make minimal difference in the view towards the blimp although views to the rest of the quarry site are less screened than in summer.
- 10.207 Further to the east, **Site Context Photograph 5** was taken from Boghill Road, approximately 300m to the east of the quarry access road and approximately 1.1km from the blimp, looking south. This view is representative of a residential view from 34 Boghill Road, as well as the view from the public highway. Whilst an open view can be obtained of this part of Boghill Road, intervening vegetation provides low-level screening of the less elevated parts of the quarry site. The blimp and windsock can both be seen above the horizon of the south-eastern quarry face and the flanks of Mcllwhans, in the context of pylons penetrating the skyline across the panorama. In this view, the quarry face and associated stockpiles/scree form a visible manipulated landform of rough texture, in contrast to the more settled appearance of the surrounding landscape, notably the flanks of Mcllwhans which are formed of smooth, grassed slopes. The winter view from this location demonstrates that the loss of foliage from deciduous trees would make limited difference in the view towards the blimp, although the appearance of the quarry site and its perimeter is less softened than in summer.
- 10.208 Moving north-eastwards, **Site Context Photograph 6** was taken from the junction of Boghill Road with Hydepark Road, on the boundary of the application site, approximately 1.6km from the blimp, looking south-westwards. This photograph is representative of views from Hydepark Road in this area, as well as from residential properties on Hydepark road. An open view of this part of Boghill Road and Hydepark Road is obtained, although again, intervening

vegetation provides low-level screening of the quarry part of the site. This screening includes vegetation within the quarry site visible to the left of the blimp, which can be seen above the horizon, in the context of existing pylons and telecommunications masts; and the windsock, which is visible on the horizon of Mcllwhans hill. In this view, the left hand extent of the quarry face forms a prominent rocky escarpment with a rough texture to the vertical faces, in contrast to the smooth, gently-sloping grassed landform of Mcllwhans and Squires Hill. The winter view from this location demonstrates that the loss of foliage from deciduous trees would make limited difference in the view towards the blimp although the appearance of the quarry site and its perimeter as well as the Boghill Road corridor is less softened than in summer.

*Long Distance Views (501m and above)*

- 10.209 Moving to the north-west, **Site Context Photograph 7** was taken from the junction of Blackrock Boulevard and Hydepark Road, looking southwards. This viewpoint is considered to provide a long-distance view as, although it lies approximately 400m from the nearest extent of the application site on Hydepark Road, there is no view of the proposed access road or junction of Boghill Road and Hydepark Road and the viewpoint lies is approximately 1.7km from the blimp. In this photograph, representative of views from the Blackrock residential development, intervening landform and vegetation allow only a partial view of the application site. However, the blimp and windsock can both be perceived above the horizon, in the context of existing pylons and the rough texture and dark colouration of the quarry face, which forms an abrupt contrast with the surrounding landscape, notably the smooth grassland of Mcllwhans. The winter view from this location demonstrates that the loss of foliage from deciduous trees would make limited difference in the view towards the blimp, although views to the rest of the quarry site are less screened than in summer.
- 10.210 Site **Context Photograph 8** was taken from Flush Road, in the vicinity of residential properties approximately 1km from the blimp, looking south-eastwards. In this photograph, low-level screening of the application site is provided by existing vegetation. However, the more elevated landform and rock faces within the quarry site can be seen, with the north-eastern extent of the south-eastern quarry face forming a stark rocky skyline, in contrast to the smoother profile of the wider upland horizon. The blimp and windsock are both visible above these features, in the context of existing pylons on the horizon. The winter view from this location demonstrates that the loss of foliage from deciduous trees would make limited difference in the view towards the blimp, although views to the rest of the quarry site are less softened than in summer.
- 10.211 Moving to the south, **Site Context Photograph 9** was taken from Flush Road in the vicinity of the access road to Squires Hill and the A52, approximately 1.3km from the blimp, looking northwards. In this view, intervening landform curtails views towards the majority of the application site, although the south-eastern perimeter of the application site is visible on the horizon of the middle-ground. The blimp can be seen above this area of moorland scrub and grassland, in the context of pylons across the panorama. The winter view from this location

demonstrates that the loss of foliage from deciduous trees would make no difference in the view towards the blimp or the quarry perimeter

- 10.212 **Site Context Photograph 10** was taken from Upper Hightown Road in the vicinity of Collinward, approximately 1.7km from the blimp, looking west. This view is representative of that experienced by road users in the Belfast Hills to the east of the application site. In this view, the blimp and windsock are both visible above the skyline, in the context of existing pylons and the manipulation of the landscape in the form of the jagged quarry horizon. The winter view from this location demonstrates that the loss of foliage from deciduous trees would make limited difference in the view towards the blimp although views to the perimeter of the quarry site are less softened than in summer.
- 10.213 Moving northwards, **Site Context Photograph 11** was taken from the junction of Hightown Road with Hydepark Road/Upper Hightown Road, looking south-west. This viewpoint is considered to provide a long-distance view as although within 250m of the nearest extent of the application site on Hydepark Road, there is no view of the proposed access road or junction of Boghill Road and Hydepark Road and it is approximately 1.6km from the blimp. The blimp is visible above the horizon of Mcllwhans, albeit in the context of a number of prominent vertical forms in the vicinity of the viewpoint. The windsock can be perceived below the horizon, set against the flanks of Mcllwhans. In winter the loss of foliage from deciduous trees would make limited difference in the view towards the blimp although views to the perimeter of the quarry site are slightly less screened than in summer.
- 10.214 To the north-east, **Site Context Photograph 12** was taken from Hightown Road, at the junction with Hightown Park, approximately 2.9km from the blimp, looking south-west. In this representative view from this part of Glengormley, the blimp can be seen above the horizon, albeit set in the context of existing development and roadway infrastructure. In winter, the loss of foliage from deciduous trees on the horizon would provide slightly greater visibility towards the proposed development.
- 10.215 Further to the south-east, **Site Context Photograph 13** was taken from the western flanks of Cave Hill, approximately 3km to the east of the blimp looking north-westwards. This viewpoint is representative of recreational usage within the Belfast Hills to the east of the application site. In this photograph, the landform of Collinward curtails views of the application site, although the blimp can be seen above the landform, set against the backdrop of Lough Neagh and seen in the context of pylons and communication masts on the horizon, as well as the landform and machinery of on-going excavation works at Collinward Quarry in the centre of the photograph. The winter view from this location demonstrates that the loss of foliage from deciduous trees would make no difference in the view towards the blimp, although views to the perimeter of the quarry site are slightly less softened than in summer.
- 10.216 Moving northwards, **Site Context Photograph 14** was taken from a Belfast Hills waymarked footpath on the southern flanks of Carnmoney Hill, approximately 3.5km from the application

site and approximately 4.9km from the blimp looking south-west. This was the only view of the blimp that could be obtained from footpaths in this area. In this view the blimp can be perceived above the horizon of Mcllwhans, although the emerging woodland planting in the foreground is likely to screen this view within 5 years, assuming approximately 1m growth every 3 years. The winter view demonstrates that the loss of foliage from deciduous trees would be likely to make the proposed development visible in winter. However, it is likely that further growth of the emerging woodland vegetation over 15-20 years would filter the view so densely that the proposed development would not be perceptible.

10.217 Moving to the north-west, **Site Context Photograph 15** was taken from Glebe Manor, on the western flanks of Carnmoney Hill, approximately 2.9km from the application site and approximately 4.6km from the blimp, looking south-westwards. This photograph is representative of views from the more elevated residential areas in this part of the urban area of Newtownabbey. The dark colour of the quarry area can be perceived above the ridgeline of Hightown and below the horizon formed by the flanks of Mcllwhans. The blimp can be perceived above this horizon, in the context of pylons, as well as more localised infrastructure, including street lamps in the near-distance and industrial development in the vicinity of Glengormley and Mallusk. The winter view from this location demonstrates that the loss of foliage from deciduous trees would make no difference in the view towards the blimp although views to the perimeter of the quarry site are slightly less softened than in summer.

10.218 Moving further to the west, **Site Context Photograph 16** was taken from Ballyhenry Avenue, adjacent to Ballyhenry Primary School, approximately 2km from the application site and approximately 3.7km from the blimp, looking south-westwards. This photograph is representative of views from the lower-lying areas of residential development within Newtownabbey. A glimpsed view of the quarry area of the application site can be obtained between the localised screening of built form and vegetation. The blimp can be seen above the flank of Mcllwhans hill. The winter view from this location demonstrates that the loss of foliage from deciduous trees would make no difference in the view towards the blimp.

10.219 Moving to the north-west, **Site Context Photograph 17** was taken from the bridge of Ballycraig Road over the A8(M), approximately 2.7km from the application site and approximately 4.3km from the blimp, looking southwards. This relatively open view of the quarry area is representative of residential properties and road users in the area and the blimp can be perceived above the horizon of Mcllwhans hill, in the context of pylons. The dark face of the quarry is prominent against the otherwise pale surfaces of adjoining landform. The winter view from this location demonstrates that the loss of foliage from deciduous trees would make no difference in the view towards the blimp, although views to the perimeter of the quarry site are slightly less softened than in summer.

10.220 Moving to the west, **Site Context Photograph 18** was taken from the junction of Ballyvesey Road with Ballycraig Road South, approximately 3.2km from the application site and approximately 4.3km from the blimp, looking southwards. This photograph is representative of

views obtained from road users in this area of the ridgeline extending north-west from Carnmoney Hill and Sentry Hill. A relatively open view of the quarry area is obtained from this viewpoint, with the blimp visible above the horizon, in the context of pylons, as well as the prominent utilitarian built forms of industrial/commercial built development in Glengormley and Mallusk. The south-east quarry face is prominent as a result of its dark colour and the jagged escarpment it forms at the left hand edge of the quarry in this view. The winter view from this location demonstrates that the loss of foliage from deciduous trees would make no difference in the view towards the blimp, although views to the perimeter of the quarry site are slightly less softened than in summer.

- 10.221 Moving to the south, **Site Context Photograph 19** was taken from the recreation centre on Park Road, Mallusk, approximately 2.5km from the application site and approximately 3.5km from the blimp, looking southwards. This photograph is representative of views from a public open space, on the low-lying land of the Ballymartin Water valley floor as well as from the nearby M2 motorway. The blimp is visible above the horizon, in the context of pylons, with the windsock visible on the horizon of the south-eastern quarry face. Again, the quarry face is prominent owing to its dark colouration and rough texture, in comparison to the smooth swathes of grassland evident on Mcllwhans to the right of the quarry. The winter view from this location demonstrates that the loss of foliage from deciduous trees would make no difference in the view towards the blimp, although views to the perimeter of the quarry site and industrial development in the middle ground are slightly less softened than in summer.
- 10.222 Moving to the south-west, **Site Context Photograph 20** was taken from Sealstown Road, in the vicinity of Mallusk, approximately 1.8km from the application site and approximately 2.9km from the blimp, looking southwards. This photograph is representative of glimpsed views from roadways and a small number of residential properties in this area. A partial view of the quarry area is obtained, with both the blimp and windsock visible above the horizon, albeit in the context of existing pylons. The quarry face is prominent owing to its dark colouration and rough texture, in comparison to the broader expanses of paler colouration on the hillside of Mcllwhans to the right. The winter view from this location demonstrates that the loss of foliage from deciduous trees would make no difference in the view towards the blimp, although views to the perimeter of the quarry site are less screened than in summer.
- 10.223 Moving southwards, **Site Context Photograph 21** was taken from Boghill Road, to the east of Boghill, approximately 1.5km from the application site and approximately 2.1km from the blimp, looking south-eastwards. This photograph is representative of views from residential properties and roadways in the area. Intervening vegetation and landform provides low-level screening of the quarry area, although the south-eastern face of the quarry is visible and prominent owing to its rough texture and relatively dark colouration in contrast to the surrounding landscape. The blimp and windsock are both visible above the horizon in this photograph, set in the context of a number of features breaking the skyline, including pylons and more localised telegraph poles flanking Boghill Road. In winter the loss of foliage from

deciduous trees would make no difference in the view towards the blimp, although views to the quarry site and its perimeter would be less screened and softened than in summer.

- 10.224 Moving to the south, **Site Context Photograph 22** was taken from Aughnabrack Road approximately 1.3km from the quarry area of the application site, looking eastwards. In this view, landform and localised vegetation provide partial screening of the quarry area, above which the blimp and windssock are visible, in the context of pylons on the horizon. The winter view from this location demonstrates that the loss of foliage from deciduous trees would make no difference in the view towards the blimp, although views to the quarry site and its perimeter would be less screened and softened than in summer.
- 10.225 Moving further to the south, **Site Context Photograph 23** was taken from Divis summit, approximately 4.8km from the blimp, looking northwards. In this view, the blimp can just be perceived against the backdrop of distant landform, set in the context of other development in Newtownabbey, as well as wind turbines on elevated land in the vicinity of Rea Hill. In winter views from this location, the loss of foliage from deciduous trees would make no difference in the view towards the blimp.
- 10.226 Moving to the west of the application site, **Site Context Photograph 24** was taken from Seven Mile Straight, at Loanends, approximately 6.7km from the blimp, looking east. In this view, representative of those from the landscape extending west from the application site towards Lough Neagh, the blimp can be seen above the horizon, in the context of numerous telegraph poles in the foreground, as well as a communications mast on Collinward. In winter views from this location the loss of foliage from deciduous trees would make no difference in the view towards the blimp.
- 10.227 Moving northwards, **Site Context Photograph 25** was taken from Paradise Walk, south of Parkgate, approximately 9.5km from the blimp, looking south-east. The blimp can just be perceived above the horizon, in the context of pylons, the communication masts on Squires Hill and Collinward and wind turbines in the vicinity of Mallusk and Rae Hill. In winter views from this location, the loss of foliage from deciduous trees would make no difference in the view towards the blimp.
- 10.228 Moving eastwards, **Site Context Photograph 26** was taken from a lane connecting Ballymartin Road with Carnanee Road, approximately 6.9km from the blimp, looking south-east. The blimp can be perceived above the quarry horizon and is seen in the context of pylons and communications masts on the adjacent elevated landform. This view is representative of those obtained from the nearby M2 in this direction. In winter views from this location, the loss of foliage from deciduous trees would make no difference in the view towards the blimp although views to the perimeter of the quarry site and industrial development in the middle ground are slightly less softened than in summer.
- 10.229 In the landscape of the valley of the Three Mile Water to the north of the application site, **Site Context Photograph 27** was taken from the B59, west of Houston's Roundabout,

approximately 4.6km from the application site and approximately 6.1km from the blimp, looking southwards. This photograph is representative of views from the valley of the Three Mile Water, including those obtained from the A8 southbound. In this photograph, intervening landform and vegetation partially screen the application site, although the blimp can be perceived above the horizon which is also penetrated by pylons, including those in the nearer distance. The winter view from this location demonstrates that the loss of foliage from deciduous trees would make no difference in the view towards the blimp, although views to the pylons in the near to middle distance would be less softened than in summer.

10.230 Moving eastwards onto the northern flanks of the valley of the Three Mile Water, **Site Context Photograph 28** was taken from Cullyburn Road in the vicinity of Ballyhowne, approximately 5.3km from the application site and approximately 7km from the blimp, looking south-westwards. This photograph is representative of views from the Ulster Way on the elevated land to the north of Old Carrick Road. In this photograph, which illustrates a relatively open view towards the quarry area in which the dark quarry face is prominent, the blimp can be seen just above the horizon of Mcllwhans. The winter view from this location demonstrates that the loss of foliage from deciduous trees would make no difference in the view towards the blimp, although views to the perimeter of the quarry site would be less softened than in summer.

10.231 Finally, moving further north-east up onto elevated land in the vicinity of Knockagh, **Site Context Photograph 29** was taken from Knockagh Road, which at this point forms part of the Ulster Way, approximately 7.5km from the application site and approximately 9.1km from the blimp, looking south-westwards. This photograph is representative of views from this area, including from the Antrim War Memorial, although views from that specific location can only be obtained through gaps in the hedge adjoining the monument. A relatively open view of the quarry area is obtained, with the slopes of Mcllwhans forming the context to these views. The blimp can just be perceived above the horizon of Mcllwhans, above the south-western quarry face in which the dark colour forms an abrupt contrast with the adjacent grassland of Mcllwhans. The winter view from this location demonstrates that the loss of foliage from deciduous trees would make no difference in the view towards the blimp. Prominent communications masts can be seen in the wider landscape of the Belfast Hills as seen in the left hand side of the winter photograph.

#### *Summary of Visual Appraisal*

10.232 The visibility of the application site, accounting for the maximum heights of the proposed built form of the EfW flue and building (245m AOD +95m and 245m AOD +47.3m, respectively), varies considerably dependent on orientation and distance from it. The ZTV exercise and visual appraisal using blimp and windsock indicate that the areas in which the proposed development is most likely to be seen include:

- Elevated landform to the south, on the more elevated parts of the Belfast Hills;

- Low-lying landform to the north, including the vicinity of Boghill Road and the south-western urban edge of Newtownabbey, bounded to the north by the ridgeline extending north-west from Carnmoney Hill;
- Land falling towards Lough Neagh to the west, where topography of the Belfast Hills enables views to be obtained; and
- Elevated landform to the north of the Three Mile Water, including in the vicinity of My Lord's Mountain and Knockagh.

10.233 Areas in which the proposed development is less likely to be seen are:

- the urban area to the north-east of Hydepark Road, approximately as far as the A6 within Glengormley;
- in the valley of the Three Mile Water, beyond the ridgeline extending north-west of Carnmoney Hill; and
- in areas to the north-west, south and east where the intervening landform of the Belfast Hills curtails views.

10.234 Conclusions noted below on the different levels of visibility of the blimp and windsock during the visual appraisal exercise have been incorporated into the mitigation-by-design approach to the strategies for landscape mitigation and building colouration (discussed later in this chapter).

10.235 From the north-east, the windsock and blimp are prominent above the quarry skyline and Mcllhans skyline in nearer distance views from lower elevations, including from the residential edge of Newtownabbey in the Hydepark and Hightown neighbourhoods, and in longer distance views from the ridgeline extending north-west from Carnmoney Hill. The blimp is visible above the horizon and the windsock is set against the backdrop of the slopes of Mcllhans in longer distance views from higher elevations on the ridgeline to the north of the valley of Three Mile Water, including in the vicinity of Knockagh. The backdrop of the slopes of Mcllhans and the sky comprise broader expanses of paler colours than the exposed stonework of the quarry faces. The lower areas of the quarry site, the access road and Boghill Road are generally screened by intervening vegetation and landform in mid- to long-distance views.

10.236 From the east and south-east, the blimp and windsock are visible above the quarry edge and intervening landform, immediately to the east of the quarry area of the application site in elevated long-distance views, including from Upper Hightown Road in the vicinity of Collinward. At greater distance, at Cave Hill, only the blimp is visible. In these views the backdrop is formed of agricultural land to the north-west of the application site, descending to Lough Neagh and towards Ballyclare. Again, this backdrop includes broad expanses of relatively pale colour including fields, hedgerows and the waterscape of the Lough, which are generally pale, owing to the very long distance (approximately 10-20km) at which they are

seen, with the exception of the denser vegetation. The lower parts of the quarry area, as well as the access road and Boghill Road, are screened by intervening landform and vegetation from this direction.

- 10.237 From the south, the blimp is visible above the quarry edge in near- to middle-distance views, as far as the A52 in the vicinity of The Flush, against the backdrop of the sky. Immediately to the south-west of the application site, from Flush Road, localised landform and vegetation provide a high level of screening to the application site below the level of the blimp. From further to the south, the blimp is visible against the backdrop of land to the north of the M2 from Divis summit, set in the context of a landscape dotted with other built forms.
- 10.238 From the north-west and north, including from Flush Road and Boghill Road, as well as locations at longer distances, including the recreation ground at Park Road, Mallusk (representative of views from the M2), the windsock and blimp are both visible above the quarry horizon. The quarry face forms the backdrop to views. Localised screening, including landform and planting within the quarry area of the application site, curtails views to the lower-lying areas of the quarry site. Existing vegetation in the rural landscape screens views of the access road and Boghill Road. In views from the urban area in the vicinity of the B95 and further to the north, the site is perceived in the context of built form and infrastructure in the wider urban area.
- 10.239 Views towards the application site, the blimp and windsock are generally seen in the context of a number of existing detracting vertical elements. These include pylons and communications masts, which are prominent in views from almost all locations and which provide vertical features penetrating the visual horizon.
- 10.240 The existing quarry faces form a scar across the landform on the north-eastern flank of Mcllwhans, constituting a detracting element in views, notably from locations to the north-west, north and north-east. The prominence of the quarry faces in these locations derives from the dark colouration and dense texture of the exposed rock, which provides an abrupt contrast to the predominantly grassed landcover of Mcllwhans.
- 10.241 In views from lower elevations, the landform of the quarry, notably the jagged horizon towards the north-eastern extent of the south-eastern quarry face, forms a prominent escarpment, in contrast with the otherwise smooth profile of the upland landform. The manipulation of the landform, seen in the rock faces as well as stockpiling, is in contrast to the settled appearance of hedgerows, fields and moorland in the surrounding landscape.
- 10.242 It is noted, from the fieldwork undertaken, that instances arise when views from all locations, including those as near as Boghill Road and Hyde Park Road, are intermittently affected by atmospheric conditions, entirely preventing views towards the blimp.

## *Lighting*

### *Assessment of dark landscapes and existing lighting*

10.243 The character of the night sky in the area surrounding the application site has been assessed in a night-time light sources assessment which identified the visibility of existing light sources from a selection of representative potential sensitive receptor points noted in relation to the visual appraisal.

10.244 Indicative information on the nature and prominence of the various light sources has been plotted on **Figure 10.9: Existing Light Source Plan**. Light in the vicinity of the application site was experienced in the form of night-time sky glow, typically emanating from urban areas, or direct glare from particular points of light. In some situations a combination of both sky glow and direct glare was evident. In summary, the appraisal identified the principal existing sources of light in the vicinity of the application site as including:

- the conurbation of Newtownabbey and Belfast, perceived as sky glow from a wide range of locations in the surrounding area; and as direct glare, emitting particularly from industrial development in the vicinity of Glengormley/Mallusk as well as the city centre and port of Belfast, and as particularly experienced from elevated land, including the northern area of the Belfast Hills, the ridgeline extending north-west from Carnmoney Hill and the rising landform to the north of the valley of the Three Mile Water;
- small settlements and individual properties, scattered across the rural areas, although to a lesser extent in the moorland areas of the Belfast Hills; perceived predominantly as direct glare from individual properties in the form of external lighting where present, as well as in the less obtrusive form of window lighting; and
- vehicle routeways, on which headlights and overhead lighting are visible, notably major arterial routes within the urban area and on the A8 and M2 to the north of the application site.

10.245 Particularly prominent sources of direct glare were identified at a number of locations, notably:

- Various floodlights associated with industrial development in the vicinity of Glengormley/Mallusk;
- Road junctions including A8/M2 in Glengormley; and Corr's Corner and Houston's Corner on the A8 north of Newtownabbey;
- Construction/street lighting associated with residential development north of Hyde Park Road;
- Floodlighting associated with industrial works at Roughfort Bridge and Mallusk Quarry; and

- Aircraft warning lights on communications masts on the summits within the Belfast Hills, including Divis/Black Mountain, Mount Gilbert, Squires Hill and Collinward.

10.246 The appraisal demonstrates that the landscape surrounding and including the application site is subject to a range of light sources, with sky glow readily perceived across the area and sources of direct glare noticeable from a range of public viewpoints, notably when looking into the urban area of Newtownabbey from elevated areas, including the ridgeline of Carnmoney Hill and Sentry Hill, the Belfast Hills and rising landform to the north of the Three Mile Water valley. Moving into the wider countryside to the south-west of the Belfast-Newtownabbey conurbation results in increasing opportunities for 'dark skies'.

*Landscape character and sensitivity to lighting*

10.247 The sensitivity of the character of the local landscape to the introduction of lighting associated with the proposed development has been considered. Sensitivity to lighting depends not only on the value attached to the landscape and its structural qualities, but also on factors including visibility and remoteness, with the degree of enclosure afforded by landform and vegetation being key considerations, along with patterns of fields and settlements.

10.248 The urban areas of Newtownabbey to the north-east of the application site are well-lit within a cohesive development of built form, with the exception of open spaces within the urban areas. Therefore, it is considered that these areas would broadly correspond to Institute of Lighting Professionals (ILP) Environmental Zone E3: "Medium district brightness areas: Small town centres or urban locations" and that the character of these areas is of low sensitivity to the introduction of further sources of lighting.

10.249 The rural area to the west, north and east of the quarry area of the application site, is influenced by topographical variation and a dense network of vegetation, including canopy trees. As such, whilst there are a number of light sources in the vicinity, including varying levels of direct glare perceived from individual properties scattered across the landscape, as well as from properties on the elevated urban edge of Newtownabbey and direct glare and sky glow evident from the wider urban area; there are pockets of this landscape from which these light sources are of less influence. These pockets would include certain locations within the valley of Flush River to the east of the application site. In these instances, localised topography and vegetation provides some screening of lighting effects from the urban area to the north-east. As a result, it is considered that this area would broadly correspond to ILP Environmental Zone E2: "Low district brightness areas: Rural, small village, or relatively dark urban locations" and be of medium sensitivity to the introduction of further sources of lighting, although there are small areas, as noted above, where the sensitivity of the landscape character to the introduction of further sources of lighting is higher, owing to the sense of remoteness from lighting associated with existing development.

10.250 To the south of the application site, the elevated landform of the wider Belfast Hills area, whilst including limited light sources in the near vicinity, as a result of its elevated location and

relative lack of vegetation, offers views of the wider urban area, with many sources of direct glare, in addition to a broad expanse of sky glow. In addition, this area is subject to the prominent light sources of communications masts situated on the upland summits. As a result, whilst this area lies further from the urban edge, it is still considered to broadly correspond to ILP Environmental Zone E2 although, owing to the relative openness of the landscape and its sense of remoteness, it is considered to be of medium-high sensitivity to the introduction of further sources of lighting.

- 10.251 The same zone is considered to apply to the elevated land extending north-west from Sentry Hill, west of the A8, where the light sources within the conurbation to the south and south-east are still visible, in addition to more local light sources. In this area the existing lighting in the vicinity of Glengormley and Mallusk within the Newtownabbey urban area is a prominent influence on the character of the night sky, partly as a result of the elevated landform reducing the sense of remoteness. Therefore, this area is considered to be of medium-low sensitivity to the introduction of further lighting.
- 10.252 A similar landscape structure and ILP zone prevails in the elevated land to the north of the valley of the Three Mile Water, although the increased distance from the Newtownabbey urban area results in a lower level of influence on the character of the night sky from lighting in the urban area. However, from certain locations, the landscape in this area is subject to the influence of direct glare from the centre of the urban area of Belfast, thereby limiting its sense of remoteness and reducing its sensitivity to the introduction of new light sources to medium-low.
- 10.253 To the west of the application site, the more intimate, enclosed character of the landscape to the west of Boghill, in terms of both vegetation and landform, and the distance from and topographical screening of the urban areas of Newtownabbey and Belfast limit the levels of direct glare experienced. However, some localised direct glare is perceived from sources of light associated with the scattered farm buildings and other rural properties. Overall, whilst this area is also considered to broadly correspond to ILP Environmental Zone E2, it is considered to be of medium-high sensitivity to the introduction of further sources of lighting owing to the sense of remoteness from urban areas.

*Likely receptors of lighting associated with proposed development*

- 10.254 Given the extent of visibility of the application site, there is a relatively wide range of locations from which the potential to be receptors of lighting associated with the proposed development would be experienced. These locations include:
- residential receptors in the existing urban area of Newtownabbey, notably on the south-western urban edge, in the vicinity of Blackrock and Hightown;
  - elevated areas within the Belfast Hills, to the east and south of the application site;

- elevated rural areas on the ridgeline extending north-west from Carnmoney Hill and on elevated land to the north of the Three Mile Water valley; and
- certain locations within the rural area to the west and north-west of the application site, although this is likely to be more limited owing to the screening effect of vegetation within the lower lying agricultural landscape.

10.255 Assessment of the most significant effects of lighting on these areas is described under the heading of Likely Significant Effects.

### **Landscape Strategy**

10.256 The proposed development is described in Chapter 3. The landscape strategy for the proposed development seeks to achieve a number of aims, including the mitigation of adverse effects on specific groups of receptors, as well as the enhanced re-integration of the quarry site with its surrounding landscape. Notwithstanding the careful siting of buildings within the existing excavated and terraced quarry setting to minimise their prominence and achieve partial screening, complete screening of the EfW, MBT and IBA buildings, as well as the EfW flue, is not likely to be feasible owing to their mass, height and form. Extensive planting of screening vegetation would neither be practical nor appropriate in terms of the landscape character of the application site, which lies on a transitional landscape between valley farmland and moorland – such planting would in itself result in adverse effects on landscape character. Furthermore, it is not considered appropriate to further manipulate the landform of the quarry site to screen the built forms – the use of the different levels of the quarry is specifically intended to absorb the proposed built forms to the maximum extent. The landscape strategy aims to enhance the landscape of the quarry site and its perimeter by settling and re-integrating it with the surrounding landscape, rather than manipulate it further, as would be the result of major mitigation earthworks.

10.257 Further manipulation of the quarry site would also result from on-going quarrying on the application site, for which there is permission. The consented excavation works include for extensive quarrying across the agricultural fields to the north-west of the existing quarry site, (the 'Western Extraction Area') and consented restoration works in this area include for major landform and creation of an artificial reservoir of substantial size (approximately 19ha) . This would create a fundamental change in the character of the landscape adjacent to the existing quarry. The proposed development seeks to avoid such a degree of change in the character of the landscape, intending instead to draw or 'knit together' the surrounding landscape character, with its subtle variations, into the quarry site.

10.258 As such, the landscape proposals and landscape and visual mitigation-by-design of the built form of the proposed development propose a positive strategy which seeks to:

- **Anchor and absorb the proposed built forms** into the landscape and provide **softening of the quarry landscape** through the introduction of landscape features and planting in species groups and patterns appropriate to the variety of adjacent landscape

characteristics, and thereby achieve an improved 'knit' of the quarry landscape with its surroundings;

- In this way, **reinforce the transitional character** of the application site between the higher moorland landscapes to the south and the lower-lying farmland landscapes to the east, north and west;
- Provide **limited areas of planting** of carefully controlled species mixes (approved by the scheme ecologists) to create the transitional effect desired in an efficient manner, without the need for blanket screen planting of these vegetation types across the application site;
- **Retain and manage** the remaining majority of the application site consisting of naturally regenerating grass and sparse scrub areas;
- **Soften near-distance views** from adjacent publicly accessible viewpoints within the proposed development (for example the visitor centre and adjoining car park) looking towards the proposed large building masses through the use of planted timber screen fencing and hydro-seeding of scrub planting on steep banks;
- Offset the widening of Boghill Road by **enhancing its rural character** with retention of trees wherever possible and providing native, locally characteristic tree and hedgerow planting, particularly on its southern side to screen and soften views towards the quarry area of the application site;
- Achieve the majority of mix planting with **transplant seedlings** or, within the quarry site, **hydro-seeding** that will have the optimum potential to mature in the prevailing soil conditions;
- Plant larger trees, achieved with localised soil improvement to tree pits, to **create an attractive setting for the visitor centre and surrounding publicly accessible area**, including fastigate specimens to complement the vertical patterns evident in the design of the visitor centre;
- Use **recessive colouration** in a rectilinear pattern on the proposed built forms, to convey the sense of built form being 'anchored' in its setting, break up the perception of massing of built form and minimise the prominence of massing against the backdrop of: the quarry faces (a relatively fine grain of darker shades is used on parts of the buildings seen against this backdrop); and McIlwhans hillsides, the sky and the wider rural landscape (for which a broader grain of paler shades is proposed); and
- Use the existing multi-level quarry setting to **absorb the vertical massing** of the different buildings, notably the EfW building and flue, MBT building and flue, RDF bale store and IBA building.

10.259 In addition, the proposed and existing vegetation and habitats within the application site would be subject to an on-going positive management regime, to provide an integrated approach to the management of the landscape, ecology and amenities associated with the proposed

development. This on-going management would secure the long-term enhancement of the landscape components of the proposed development in order to maximise on-going landscape amenity and biodiversity. Existing landscape features will be reinforced wherever possible and new landscape features introduced in order to strengthen the existing landscape setting and assimilate the proposed development into that setting. These components will be enhanced and protected for the benefit of landscape character, visual amenity and nature conservation, with the objective of ensuring the long-term care of an attractive, sustainable environment.

### **Likely Significant Effects**

- 10.260 It is considered inevitable that for any development of the scale proposed, some effect on landscape character and features and on views from surrounding locations would be apparent.
- 10.261 **Appendix 10.4** Landscape Effects Table and **Appendix 10.5** Visual Effects Table record in detail the landscape and visual effects of the proposed development on a wide range of receptors, with notes explaining the justifications for the conclusions reached.
- 10.262 From the conclusions reached in these appendices, the most significant landscape and visual effects of construction and the completed development are summarised below. It should be noted that visual receptors used within this assessment are representative, focusing primarily on those locations where effects of the proposed development are likely to be experienced, and therefore the assessment of visual effects does not include each and every possible location in the surrounding area.

### *Construction*

- 10.263 It is anticipated that the construction period of the proposed development would span some 41 months, with enabling works targeted for commencement in January 2015 and full service commencement in May 2018. Inevitably there would be temporary landscape and visual effects, resulting from construction. It is likely that these would be more significant than following completion, given the additional movement and fragmentation of forms generated by construction activity within the application site, as well as the unfinished nature of the built forms during construction. This is in contrast to the more 'settled' appearance of the operational state of the proposed development.
- 10.264 Visual effects are likely to arise from large items of machinery, such as cranes, and the structures under construction. Construction site compounds would be located in the existing stockpiling area in the northern part of the quarry area of the application site where existing landform and vegetation will provide some screening, and would include for the storage of materials and welfare facilities for construction workers as well as areas for parking. A maintenance area would be located in the north-western part of the quarry area of the application site.

10.265 These features often constitute the most significant temporary visual effects of any scheme. Views nearest to these compounds and the structures under construction would experience the most significant temporary adverse effect, although it is noted that the application site has extensive low-level screening on its boundaries, which would mitigate, to some extent, adverse visual effects of the construction of the proposed development.

10.266 For many visual receptors, only the construction of the upper parts of the proposed development will be visible, so that construction activity as experienced in these views is likely to be a relatively short-term temporary process. The effects of construction must be considered in the context of the existing use of the application site as a quarry, including shifting patterns of landform, vehicle movements, exposed machinery and a heavily manipulated landscape character. In addition, the application site already includes certain features that are readily associated with construction site activities such as mounds of gravel, informal vehicle haulage routes, areas of hard standing and fences. Existing heavy vehicle traffic on roadways immediately to the north and east of the application site forms part of the context to construction activity on the application site.

*Visual Effects of Construction on Residential Properties before Mitigation*

10.267 As noted in **Appendix 10.5**, the residential properties most likely to experience adverse effects of construction before mitigation are:

- Properties on/accessed from Boghill Road east of quarry access road (4 no.);
- Properties at the junction of Hydepark Road and Boghill Road (2 no.);
- Properties on/accessed from Boghill Road west of quarry access road (6 no.); and
- Properties on/accessed from Flush Road, north-west of quarry area of application site (3 no.).

10.268 The first two groups of properties are located adjacent to or in close proximity to construction works proposed for Boghill Road, in addition to having partial views to the construction works at the quarry area of the application site. The second two groups of properties have relatively near-distance views to the quarry area of the application site, with relatively limited screening owing to slightly elevated topography,

10.269 The construction traffic and works to Boghill Road are likely to be perceived from properties situated to the east of the quarry access road and adjacent to it, as well as the majority of construction work within the elevated areas of quarry, particularly for those properties west of the quarry access road, including on Flush Road. It is therefore considered that these properties would experience a high magnitude of change in view as a result of the construction of the proposed development and would experience temporary adverse visual effects of construction, before mitigation, of major significance.

10.270 A number of other properties are likely to experience relatively significant adverse effects of construction before mitigation. These include:

- Properties in the vicinity of Blackrock, Hydepark Road; and
- Properties at Mayfield Manor, Hydepark Road.

10.271 These constitute a relatively limited number of properties. With the exception of properties which are set back from the frontage to Hydepark Road, behind other built forms, these properties all have relatively open views to the quarry area of the application site. It is therefore considered that these properties would experience a medium-high magnitude of change in view as a result of the construction of the proposed development. They would therefore experience temporary adverse visual effects of construction, before mitigation, of moderate-major to major significance.

*Visual Effects of Construction on Heritage Assets before Mitigation*

10.272 As noted in **Appendix 10.5**, a relatively limited number of the representative heritage assets listed are likely to experience adverse visual effects of the construction of the proposed development. The heritage assets most likely to experience such effects are the group of listed buildings at Ballyvesey to the north of the application site, which, where localised vegetation does not obscure views, have a relatively open view of the quarry area of the application site, albeit from a distance of approximately 3.9km.

10.273 It is therefore considered that they are likely to experience a low-medium magnitude of change in view as a result of the construction of the proposed development and therefore that they would experience temporary adverse visual effects of construction, before mitigation, of moderate to moderate-major significance.

*Visual Effects of Construction on Commercial/Industrial Properties before Mitigation*

10.274 As noted in **Appendix 10.5**, there are limited commercial premises likely to experience adverse visual effects of the construction of the proposed development. Those most likely to experience such effects are properties on McKinney Road, flanking Hydepark Road, which have external hardstanding works areas fronting Hydepark Road (a limited number – neutral effects will be experienced by those properties which are set back from the frontage to Hydepark Road, behind other built forms). From this location relatively open views to the quarry area of the application site can be obtained. It is therefore considered that visual receptors in this location are likely to experience a medium-high magnitude of change in view as a result of the construction of the proposed development and therefore experience temporary adverse visual effects of construction, before mitigation, of minor-moderate to moderate significance.

*Visual Effects of Construction on Open Space Facilities/Waymarked Trails before Mitigation*

- 10.275 As noted in **Appendix 10.5**, there are limited open space facilities or waymarked trails that are likely to experience adverse visual effects of the construction of the proposed development. The location most likely to experience such effects is the recreation centre at Park Road, Mallusk, which has a relatively open view to the quarry area of the application site.
- 10.276 It is considered that visual receptors in this location are likely to experience a low-medium magnitude of change in view as a result of the construction of the proposed development and therefore that they would experience temporary adverse visual effects of construction, before mitigation, of moderate to moderate-major significance. Other open space and waymarked trail locations in the surrounding area, notably those on the Belfast Hills to the east and south of the application site, including in the designated Area of High Scenic Value; and locations on the Ulster Way on rising landform in the vicinity of Ballyhowne and Knockagh, would experience only a very low or neutral magnitude of change in view, resulting in temporary adverse visual effects of construction, before mitigation, of no more than minor-moderate significance.

*Visual Effects of Construction on Roads and Railways before Mitigation*

- 10.277 As noted in **Appendix 10.5**, the roadway location not represented by other types of receptors most likely to experience adverse visual effects of construction, is Boghill Road at the junction with the quarry access road. Being a minor rural road, it is considered to be of medium sensitivity. This location would have an open view of construction work on Boghill Road as well as flanking the quarry access road and would have a relatively open view of construction work within the quarry area of the application site. As a result it is considered that visual receptors in this location are likely to experience a high magnitude of change in view as a result of the construction of the proposed development and therefore that they would experience temporary adverse visual effects of construction, before mitigation, of moderate-major significance.
- 10.278 As a result of having relatively open views of the quarry area of the application site, it is considered that the following minor rural roads, also considered to be of medium sensitivity, would experience at least a medium magnitude of change as a result of construction and therefore temporary adverse visual effects of construction, before mitigation, of at least moderate significance:
- Flush Road north-west of the quarry area of the application site (southbound only) (note that owing to the proximity to the application site and relatively elevated views on the valley side to the north of the Flush River tributary, this receptor will experience a medium-high magnitude of change, resulting in adverse effects of moderate to moderate-major significance);

- Aughnabrack Road (westbound only) (localised vegetation limits locations from where views obtained);
- Upper Hightown Road in vicinity of Collinward (localised vegetation limits locations from where views obtained);
- Flush Road south of the application site (northbound only); and
- Flush Road south-west of the application site.

*Effects of Construction on Landscape Features before Mitigation*

10.279 Many of the landscape features within the application site are of low sensitivity and therefore, have limited potential for adverse effects resulting from the construction process. However, there are likely to be adverse effects on certain features and, as noted in **Appendix 10.5**, the landscape features most likely to experience adverse effects as a result of the construction of the proposed development are the hedgerows with trees flanking Boghill Road.

10.280 Substantial loss of vegetation is inevitable with the construction of a widened and realigned roadway where, whilst trees have been retained wherever possible, there is limited scope for designing around vegetation (unlike in other types of scheme). Approximately 1243m of hedgerow incorporating 56 no. trees will be removed, along with embankments where applicable, to facilitate the construction of the new roadway. There are relatively limited extents of hedgerow that can be retained and as such, it is considered that the existing hedgerows will experience a high magnitude of change, resulting in temporary adverse effects on this medium sensitivity receptor of moderate-major adverse significance. It is considered that these effects can be substantially offset by the proposed planting of hedgerows and hedgerow trees, discussed below in relation to effects of operation and residual effects.

*Effects of Construction on Landscape Character before Mitigation*

10.281 As noted above, it is considered that the quarry area of the application site already incorporates characteristics of construction activity, including shifting patterns of landform, vehicle movements, exposed machinery and a heavily manipulated landscape. In addition, the application site already includes certain features that are readily associated with construction site activities, such as stockpiles/mounds of gravel (including the proposed construction compound area), informal vehicle haulage routes, areas of hard standing and fences.

10.282 It is therefore considered that, as noted in **Appendix 10.5**, at the application site level of landscape character, there would be limited adverse effects on the quarry area itself, the quarry perimeter and the quarry access road. However, landscape character area S1 Boghill Road would change markedly in character as a result of the construction activity involved in re-aligning the roadway. A high magnitude of change would be experienced by this medium-low sensitivity site-level landscape character area, resulting in temporary adverse effects of construction, before mitigation, of moderate to moderate-major adverse significance.

- 10.283 At the level of local landscape character assessment, adverse effects resulting from construction are likely in all of the landscape character areas identified, with the most significant adverse effects anticipated in landscape character area L4 Flush River Valley, of the Valley Farmland landscape character type. As noted in **Appendix 10.4**, in addition to construction work within the quarry setting, which will not be markedly out of character for that setting, but which will indirectly affect the character of the valley farmland character type; construction will result in the introduction of road-building activity along Boghill Road which will be a detracting element in the rural character. As a result, it is considered that a medium-high magnitude of change will be experienced by this landscape character area, resulting in temporary adverse effects of construction, before mitigation, of moderate to moderate-major adverse significance.
- 10.284 At the level of national landscape character assessment, adverse effects of construction are anticipated in a relatively limited number of landscape character areas (owing principally to the lack of visibility of the proposed development from several of the surrounding landscape character areas).
- 10.285 The landscape character areas most likely to experience adverse effects of construction are Divis Summits (111) and Three and Six Mile Water Valleys (114). As noted in **Appendix 10.5**, these are both considered to be of medium-high sensitivity and likely to experience a medium magnitude of change as a result of the construction of the proposed development.
- 10.286 Both Divis Summits and Three and Six Mile Water Valleys will be affected directly by the construction activity on Boghill Road, including loss of hedgerows. Three and Six Mile Water Valleys would also be indirectly affected by the construction activity within the quarry which is likely to be visible over a large part of the character area.
- 10.287 The construction phase within the quarry would not be markedly out of character in Divis Summits, notably considering the highly prominent on-going quarrying activity on the western flanks of Collinward, approximately 1.8km to the east of the quarry area of the application site, clearly perceptible from the most sensitive areas of the Landscape Character Area, namely the basalt summits; as well as stockpiling and vehicle manoeuvring at the fuel depot on the A52 at The Flush, also widely visible from the surrounding area.
- 10.288 From the majority of upland locations in Divis Summits, there would be limited visibility of the construction process within the application site. It is therefore considered that construction activity would lead to a medium-high magnitude of change, both direct and indirect, on Three and Six Mile Water Valleys, resulting in temporary adverse effects of moderate-major significance; and lead to a medium magnitude of direct change in Divis Summits, resulting in temporary adverse effects of moderate to moderate-major adverse significance.

### *Operation of Proposed Development*

10.289 The operational state of the proposed development is described further within Chapter 3: Description of Project, in design drawings accompanying the application and in the section above headed Landscape Strategy. In this section, the effects of operation of the proposed development are assessed at Year 1 i.e. at completion. This does not account for the maturing of planting included within the landscape proposals, which forms part of the 'mitigation by design' approach. The maturing of planting is accounted for below, under the assessment of Residual Effects.

### *Photomontages at Year 1 of Operation*

10.290 To illustrate the appearance of the proposed development in views from representative locations in the surrounding area, **Photomontages P1-10** have been prepared and are described below.

10.291 Photomontage 1 shows the view from Boghill Road, approximately 300m to the east of the quarry access road and approximately 1.1km from the EfW flue, looking south. In this view, the upper parts of the EfW building and flue are visible above the skyline. However the perception of massing is broken up by the articulation of the built forms and the broad-scale patterns of colouration on the upper parts of the building which also associate with the higher level setting of the sky and expanses of Mcllwhan's hillside. Against the setting of the quarry face, the proposed built forms cannot be readily perceived as a result of their finer grain of colouration. The EfW flue is seen in the context of pylons to both the left and right hand sides of the view. The larger grain colouration on the upper part of the EfW frontage facing this viewpoint also associates closely with the quarry horizon, appearing to extend the landform profile across the built form, thereby further anchoring the building into its setting. The MBT flue also extends above the horizon, although it appears in the context of numerous significantly more prominent pylons and communication masts to the left hand side of the view and its colouration minimises its prominence.

10.292 Photomontage 2 shows the view from the junction of Boghill Road with Hydepark Road, on the boundary of the application site and approximately 1.6km from the EfW flue, looking south-westwards. In this view, the built forms, with the exception of the flues, do not appear above the horizon and appear to recede into the backdrop of the quarry faces, notably to the left of the EfW building, as a result of the fine grain of colouration used. Vegetation on the near extent of the quarry perimeter also serves to soften views of the lower level built forms, helping anchor them into the landscape. The upper parts of the EfW are set against the backdrop of Mcllwhans and the broader scale of colour panelling associates well with the hillside and hedgerows. The EfW flue is seen in the context of pylons, and does not appear significantly out of scale with them. In the foreground, the extensive replacement of hedgerows with trees and roadside wildflower grassland verges can be seen.

10.293 Photomontage 3 shows the view from the junction of Blackrock Boulevard and Hydepark Road, approximately 500m from the application site and approximately 1.7km from the EfW

flue, looking southwards. In this view, the EfW building and flue are visible above the skyline, although the perception of massing is broken up by the articulation of the built forms and the broad scale patterns of colouration which also associate with the higher level setting of the sky and expanses of McIlwhan's. The larger grain colouration on the upper part of the EfW frontage facing this viewpoint also associates closely with the quarry horizon, appearing to extend the landform profile across the built form, thereby further anchoring the building into its setting. The colour and pattern of this part of the building, whilst clearly of a different scale, also echo the prominent array of walls and roofing of agricultural buildings in the middle ground of the view. Other buildings within the proposed development cannot be readily perceived as a result of their finer grain of colouration. The EfW flue is seen in the context of pylons and does not appear significantly out of scale with them.

10.294 Photomontage 4 shows the view from Flush Road, in the vicinity of residential properties approximately 860m from the quarry area of the application site, looking south-eastwards. In this view, the EfW building and flue are visible above the skyline, although the perception of massing is broken up by the articulation of the built forms and the broad scale patterns of colouration which also associate with the higher level setting of the sky. Other, lower-level buildings cannot be readily perceived as a result of their finer grain of colouration which appears to recede into the quarry backdrop below the horizon. The EfW flue is seen in the context of pylons and does not appear significantly out of scale with them, notably those seen to the right of the EfW building. The colouration of the EfW flue also breaks up and lightens its perceived form as it rises into the sky. The larger grain colouration on the upper part of the EfW frontage facing this viewpoint also associates closely with the quarry horizon, appearing to extend the landform profile across the built form, thereby further anchoring the building into its setting.

10.295 Photomontage 5 shows the view from Flush Road in the vicinity of Squires Hill and the A52, approximately 950m from the quarry area of the application site, looking northwards. This view is representative of the nearest available views from the Area of High Landscape Value. In this view, only the flue and small elements of the roof of the EfW can be perceived above the horizon of the quarry. The smaller elements associate readily with the pale coloured built forms in the middle ground of the view. The flue colouration assists the built form in receding into the backdrop of distant agricultural landscape and sky and the strong vertical form of the flue is broken up by the differences in colouration, which also associate with the horizontal pattern of the backdrop. The flue is seen in the context of two lines of pylons with which it appears to be of equivalent scale.

10.296 Photomontage 6 shows the view from the western flanks of Cave Hill, approximately 2.7km to the east of the quarry area of the application site, looking north-westwards. This view is also representative of those from the Area of High Landscape Value. In this view, the upper part of the EfW can just be perceived above the landform of the quarry and is seen against the backdrop of distant landscape, with which the large scale panels of colouration associate appropriately, as well as reducing the perceived massing of the built form. The EfW flue can be perceived against the context of Lough Neagh and the elevated landscape beyond,

although it is of similar prominence to pylons visible against the backdrop of Mcllwhan's to the left and substantially less prominent than the communication masts visible on the hilltops of Collinward to the right and Squires Hill, Divis and Black Mountain to the left. The colouration of the EfW flue also breaks up and lightens its perceived form as it rises into the sky.

- 10.297 Photomontage 7 shows the view from Glebe Manor, on the western flanks of Carnmoney Hill, approximately 2.9km from the application site and approximately 4.6km from the EfW flue, looking south-westwards. In this view, owing to articulation of massing and colouration, the built form can barely be perceived against the backdrop of the quarry face, with which the finer grain of colouration on the lower level built forms integrates effectively; and the flanks of Mcllwhan's, with which the broader scale of colouration on the upper part of the EfW associates closely. The EfW flue can be perceived above the horizon but is seen in the context of pylons with which it is of a similar height and prominence.
- 10.298 Photomontage 8 shows the view from the bridge of Ballycraigy Road over the M8, approximately 2.7km from the application site and approximately 4.3km from the EfW flue, looking southwards. In this view, owing to articulation of massing and colouration, the built form is substantially absorbed into the backdrop of the quarry faces, with which the finer grain of colouration on the lower level built forms integrates effectively; and the flanks of Mcllwhan's, with which the broader scale of colouration on the upper part of the EfW associates closely. The EfW flue can be perceived above the horizon but is seen in the context of pylons to which it is of a similar height and prominence, notwithstanding its more solid appearance. Vegetation on the near side of the quarry perimeter softens the appearance of built form at the lower levels, helping anchor it into the landscape.
- 10.299 Photomontage 9 shows the view from the recreation centre on Park Road, Mallusk, approximately 2.5km from the application site and approximately 3.5km from the EfW flue, looking southwards. This view is representative of views from the M2 in this vicinity. In this view, the EfW building and flue are visible although the perception of massing is broken up by the articulation of the built forms and the broad scale patterns of colouration which also associate with the higher level setting of the sky, into which the pale colouration on the upper part of the built form recedes. Other, lower-level built forms cannot be readily perceived as a result of their finer grain of colouration which appears to recede into the quarry backdrop below the horizon. The EfW flue is seen in the context of pylons and does not appear out of scale with them, notably the line of pylons extending away from the viewpoint which are a dominant feature in the view. The larger grain colouration on the upper part of the EfW frontage facing this viewpoint also associates closely with the quarry horizon, appearing to extend the landform profile across the built form, thereby further anchoring the building into its setting.
- 10.300 Photomontage 10 shows the view from Knockagh Road, which at this point forms part of the Ulster Way, approximately 7.5km from the application site and approximately 9.1km from the EfW flue, looking south-westwards. In this view, the proposed built form cannot be readily

perceived against the backdrop of quarry faces and the flanks of Mcllhans. The EfW flue can just be perceived against the hillside but is read as part of a pattern of slender vertical form set by the existing pylons.

*Visual Effects of Operation on Residential Properties before Mitigation*

10.301 As noted in **Appendix 10.5** and as for construction, the residential properties most likely to experience adverse effects of operation before mitigation are:

- Properties on/accessed from Boghill Road east of quarry access road (4 no.);
- Properties at the junction of Hydepark Road and Boghill Road (2 no.);
- Properties on/accessed from Boghill Road west of quarry access road (6 no.); and
- Properties on/accessed from Flush Road, north-west of quarry area of application site (3 no.).

10.302 The first two groups of properties are located adjacent to or in close proximity to the Boghill Road along which heavy goods vehicles will access the proposed development, in addition to having partial views of the proposed built form at the quarry area of the application site. The second two groups of properties have relatively near-distance views to the quarry area of the application site, with relatively limited screening owing to slightly elevated topography,

10.303 From these locations, the quarry face is perceived as a detracting, contrasting element in landscape owing to colour, texture and landform. The proposed built forms of the EfW, MBT and RDF bale store, whilst likely to also appear as detracting elements, would appear at lower levels to be well assimilated against the backdrop of the quarry faces, owing to their layout and massing, carefully integrated into the existing quarry landform; and their colouration.

10.304 The flue and the upper parts of the EfW building would appear as new utilitarian forms above the quarry horizon, although the considered approach to recessive building colouration would minimise their prominence against the backdrops of the sky (in relation to the flue, as seen from both locations, and the EfW building, as seen from properties on Boghill Road); and Mcllhans hillside (in relation to the EfW building, as seen from properties at the junction of Boghill Road and Hydepark Road).

10.305 Furthermore, the built form would be seen in the context of existing pylons and overhead transmission cables across the surrounding landscape. A variety of landscape measures including woodland and scrub planting would further anchor the buildings within the landscape and would soften the appearance of the quarry landscape. As a result of these factors, it is considered that these properties would experience a medium magnitude of change in views as a result of the operation of the proposed development, before mitigation, leading to adverse visual effects of moderate-major significance.

10.306 A number of other properties are likely to experience relatively significant adverse effects of operation of the proposed development before mitigation. These include:

- Properties in the vicinity of Blackrock, Hydepark Road; and
- Properties at Mayfield Manor, Hydepark Road.

10.307 These constitute a relatively limited number of properties. With the exception of properties set back from the frontage to Hydepark Road, behind other built forms, these properties have relatively open views to the quarry area of the application site.

10.308 It is therefore considered that, accounting for the factors described above in relation to the likely changes in views in the quarry area, these properties would experience a medium-low magnitude of change in view as a result of the operation of the proposed development, and therefore would experience adverse visual effects of operation, before mitigation, of moderate to moderate-major significance.

*Visual Effects of Operation on Heritage Assets before Mitigation*

10.309 As noted in **Appendix 10.5** and as for construction, a relatively limited number of the representative heritage assets listed are likely to experience adverse visual effects of the operation of the proposed development. The heritage assets most likely to experience such effects are the group of listed buildings at Ballyvesey, which, where localised vegetation does not obscure views, have a relatively open view of the quarry area of the application site, albeit from a distance of approximately 3.9km.

10.310 From this location, the quarry face is perceived as a detracting, contrasting element in the landscape owing to colour, texture and landform in comparison to the adjacent fields, hedgerows and moorland grassland of the rural landscape. The proposed built forms, whilst likely to also appear as detracting elements, would appear at lower levels to be well assimilated against the backdrop of the quarry face owing to: their layout and massing, careful integration into the existing quarry landform; and their colouration.

10.311 The flue and the upper parts of the EfW building would appear as new utilitarian forms above the horizon. However, the considered approach to recessive building colouration would minimise their prominence against the backdrop of the sky.

10.312 Furthermore, the built forms would be seen in the context of existing pylons and overhead cables, both in the vicinity of the quarry site and close to the receptor; communications masts on the Belfast Hills; as well as industrial development in Mallusk.

10.313 A variety of landscape measures including the planting of woodland and scrub would further anchor the buildings within the landscape and would soften the quarry landscape.

10.314 As a result of these factors, it is considered that these properties are likely to experience a low-very low magnitude of change in view as a result of the operation of the proposed

development, and therefore that they would experience adverse visual effects of operation, before mitigation, of minor-moderate to moderate significance.

*Visual Effects of Operation on Commercial/Industrial Properties before Mitigation*

10.315 As noted in **Appendix 10.5** and as for construction, there are limited commercial premises likely to experience adverse visual effects of the operation of the proposed development. Those most likely to experience such effects are properties on McKinney Road, flanking Hydepark Road, which have external hardstanding works areas fronting Hydepark Road (a limited number – neutral effects will be experienced by those properties which are set back from the frontage to Hydepark Road, behind other built forms). From this location relatively open views to the quarry area of the application site can be obtained.

10.316 For the same reasons as the nearby residential receptors noted above (Mayfield Manor and Blackrock Park, Hydepark Road), visual receptors in this location are likely to experience a medium-low magnitude of change in view as a result of the operation of the proposed development, and therefore they would experience adverse visual effects of operation, before mitigation, of minor to minor-moderate significance.

*Visual Effects of Operation on Open Space Facilities/Waymarked Trails before Mitigation*

10.317 As noted in **Appendix 10.5** and as for construction, there are limited open space facilities or waymarked trails that are likely to experience adverse visual effects of the operation of the proposed development.

10.318 The location most likely to experience such effects is the recreation centre at Park Road, Mallusk, which has a relatively open view to the quarry area of the application site.

10.319 From this location, located approximately 3.5km from the proposed EfW flue, the quarry face is perceived as a detracting, contrasting element in landscape owing to colour, texture and landform.

10.320 The proposed built forms, whilst likely to also appear as detracting elements, would appear at lower levels to be well assimilated against the backdrop of the quarry faces owing to their layout and massing, carefully integrated into the existing quarry landform; and their colouration. The flue and the upper parts of the EfW building would appear as new utilitarian forms above the horizon, although the considered approach to recessive building colouration would minimise their prominence against the backdrop of the sky.

10.321 Furthermore, these built forms would be seen in the context of existing pylons and overhead cables, both in the vicinity of the quarry site and close to the receptor; communications masts on the Belfast Hills; as well as industrial development in Mallusk. A variety of landscape planting measures including woodland and scrub would further anchor the buildings within the landscape and would soften the quarry landscape.

10.322 It is therefore considered that visual receptors at this location are likely to experience a low-very low magnitude of change in view as a result of the operation of the proposed development, leading to adverse visual effects of operation, before mitigation, of minor-moderate to moderate significance.

10.323 Other open space and waymarked trail locations in the surrounding area, notably those on the Belfast Hills to the east and south of the application site, including in the designated Area of High Scenic Value; and locations on the Ulster Way on rising landform in the vicinity of Ballyhowne and Knockagh, would experience only a very low or neutral magnitude of change in view, resulting in adverse visual effects of operation, before mitigation, of minor-moderate to neutral significance.

*Visual Effects of Operation on Roads and Railways before Mitigation*

10.324 As noted in **Appendix 10.5** and as for construction, the roadway location not represented by other types of receptors, most likely to experience adverse visual effects of operation, is Boghill Road at the junction with the quarry access road. Being a minor rural road, it is considered to be of medium sensitivity. This location would have an open view of heavy goods vehicles servicing the proposed development on Boghill Road as well as on the quarry access road and would have a relatively open view of the proposed built form within the quarry area of the application site. From this location, the quarry face is perceived as a detracting, contrasting element in the landscape owing to colour, texture and landform.

10.325 The proposed built forms, including the lower parts of the EfW, would appear well assimilated against the backdrop of the quarry faces owing to: their layout and massing, careful integration into the existing quarry landform; and their colouration.

10.326 The flue and upper parts of the EfW building would appear as new utilitarian forms above the horizon, although their colouration would minimise their prominence against the backdrop of the sky and they would be seen in the context of existing pylons and overhead cables. The buildings would be anchored within the landscape and the quarry landscape softened by a variety of landscape planting measures including woodland and scrub. As a result it is considered that visual receptors in this location are likely to experience a medium magnitude of change in view as a result of the operation of the proposed development, and therefore they would experience adverse visual effects of operation, before mitigation, of moderate significance.

10.327 As a result of having relatively open views of the quarry area of the application site, it is considered that the following minor rural roads, also considered to be of medium sensitivity, would experience at least a low magnitude of change as a result of operation, and therefore adverse visual effects of operation, before mitigation, of at least minor-moderate significance:

- Flush Road north-west of the quarry area of the application site (southbound only) (note that owing to the proximity to the application site and relatively elevated views on the valley side to the north of the Flush River tributary, this receptor will experience a

medium-low magnitude of change, resulting in adverse effects of minor-moderate to moderate significance);

- Aughnabrack Road (westbound only) (localised vegetation limits locations from where views obtained);
- Upper Hightown Road in vicinity of Collinward (localised vegetation limits locations from where views obtained);
- Flush Road south of the application site (northbound only); and
- Flush Road south-west of the application site.

10.328 Similar considerations as those used in the assessment of effects from Boghill Road would apply to these locations, although there are additional considerations. From Flush Road to the south of the application site, views northwards of the quarry site are largely obscured by intervening landform. However, the upper part of the proposed EfW flue would appear as a new feature above the horizon, although recessive colouration would minimise its prominence against the backdrop of the sky and it would be seen in the context of existing pylons and communication masts. From Flush Road immediately to the south-west of the application site, similar considerations apply, but in this case the existing bunding and the proposed scrub planting flanking the roadway would actually provide potential for substantial localised screening of the built form of the EfW flue.

#### *Plume Visibility*

10.329 In terms of the general appearance of the EfW and MBT exhaust gases, there is the potential for plumes to be visible under certain circumstances. This is caused by water vapour in the exhaust gases from the proposed development condensing as the exhaust gases cool, so that the plume appears white.

10.330 However, the water vapour in the gases mixes with the ambient air as the plume disperses, such that the plume ceases to be visible once the water vapour content is low enough. If the exhaust gases are hot and dry, or if the weather conditions promote rapid dispersion and slow cooling, it is more likely that the steam will disperse before it condenses, so that the plume is not visible at all. There are a number of considerations:

- In calm, cold conditions the plume may be visible rising vertically, whereas in windier conditions the plume will trail horizontally from the top of the flue, with almost no vertical lifting occurring.
- The plume will not be a continuous block, but may undulate and will break up and become more diffuse as it travels away from the flue tip.
- The wind direction will determine the direction travelled by the plume. On this basis a viewer to the south of the plant will see a trailing plume to the east (i.e. seen side on)

when the wind is from the west, but will see only a very small plume when the wind is from the south (i.e. the plume will be seen end on).

- The colour of the plume will appear to vary, being white when viewed with the sun behind the viewer, and grey when the sun is in front of the viewer. The plume will also be more prominent when viewed against a clear blue sky, compared to a cloudy sky, and when there is low level cloud the top of the flue may be within this and the plume will be obscured by cloud.

10.331 As a result, plumes are by their nature variable in length, height and appearance (or absent altogether) given the weather conditions at any particular time.

10.332 An assessment of likely plume visibility has been provided in Chapter 14, with the relevant data included in Appendix 14.8. This demonstrates that in daylight hours (when any plume is most likely to be noticed), the EfW will only result in a visible plume for approximately 20% of the time and that, when visible, this will be on average about 50-62m long. A visible plume may extend further than this on rare occasions and it is only likely to be in excess of 200m for less than 0.5% of daylight hours. The MBT will only result in a visible plume for approximately 12.5-15% of daylight hours and, when visible, this will be less than 19m in length, on average.

10.333 It is important to note that the plumes would not be seen as continuous, but instead as dispersed in nature as they become more fragmented downwind and the water droplets that make up the plumes start to evaporate. As a result of this and the relatively limited likely visibility and extent of plumes, it is considered that the intermittent changes in view resulting from the plumes would not result in significant adverse effects on receptors.

*Effects of Operation on Landscape Features before Mitigation*

10.334 As noted in **Appendix 10.4** and as for construction, the landscape features most likely to experience adverse effects before mitigation as a result of the operation of the proposed development are the hedgerows flanking Boghill Road. Following the removal of hedgerows and embankments where applicable, to facilitate the construction of the new roadway, approximately 2542m of native mixed species hedgerow will be planted in, incorporating and linking retained extents wherever possible, in addition to approximately 106 canopy trees. Nevertheless, as planted stock will not be established at year 1, it is considered that in relation to the baseline, hedgerows will experience a medium magnitude of change, resulting in adverse effects on this medium-sensitivity receptor of moderate adverse significance.

10.335 It is considered that there is potential for the enhancement of a number of other landscape features within the quarry area of the application site. In particular, this includes the potential to extend and enhance:

- standing water features, in the form of the proposed attenuation basins adjacent to the visitor centre, resulting in a medium magnitude of change, leading to a minor-moderate beneficial effect on this low sensitivity receptor;

- areas of woodland, resulting in a low magnitude of change, leading to a minor-moderate to moderate beneficial effect on this medium-high sensitivity receptor; and
- areas of scrub and rough grassland and ruderal, resulting in a low magnitude of change, leading to a minor-moderate beneficial effect on these medium sensitivity receptors.

10.336 As a result, it is considered that overall there is potential for the adverse effects on landscape features associated with Boghill Road resulting from the construction of the proposed development to be offset by the improved range and amenity of landscape features created as part of a cohesive green infrastructure network within the proposed development and a positive management regime.

*Effects of Operation on Landscape Character before Mitigation*

10.337 In terms of site-level landscape character, it is considered that, as noted in **Appendix 10.4**, notwithstanding the proposed planting of hedgerows and canopy trees, at year 1 of operation, there is likely to be a medium magnitude of change in landscape character area S1 Boghill Road, largely due to the loss of vegetation structure and the creation of a wider, less locally characteristically aligned roadway.

10.338 As a result it is considered that this landscape character area is likely to experience adverse effects of minor-moderate to moderate adverse significance. However, it is considered that there is potential for enhancement of the character of some areas of the application site. At year 1 of operation, the reinforcement and extension of various types of vegetation in landscape character area S4 Quarry Perimeter, will result in a low magnitude of change, leading to beneficial effects of minor to minor-moderate significance.

10.339 At the level of local landscape character assessment, as noted in **Appendix 10.4**, it is considered that there will be adverse effects on the character of all of the landscape character areas identified, although these will generally be less significant than for construction, as a result of the more settled appearance of the landscape resulting from operation, in addition to the introduction of landscape proposals.

10.340 The landscape character area considered most likely to experience adverse effects of operation at year 1 is L4 Flush River Valley. New hedgerows and structural canopy tree planting flanking Boghill Road and landscaping within the quarry perimeter area will, over time, assist in offsetting the loss of the hedgerows and the revised roadway alignment and increased width; as well as reducing the indirect effect of the utilitarian influence on the character area of the prominent built forms within the proposed development, and the direct effect of the modest increase in heavy goods vehicles passing through the character area.

10.341 Nevertheless, the heavy goods vehicle traffic along Boghill Road will form a prominent element in the character of the Flush River Valley and mean that there is no reduction in magnitude of change post-construction. As a result, it is considered that this landscape

character area will experience a medium magnitude of change, leading to adverse effects on landscape character of moderate adverse significance.

- 10.342 At the level of national landscape character assessment, adverse effects of operation are anticipated in a limited number of landscape character areas (owing principally to the lack of visibility of the proposed development from many of the surrounding landscape character areas).
- 10.343 As noted in **Appendix 10.4**, the two character areas most likely to experience adverse effects of operation are Divis Summits (111) and Three and Six Mile Water Valleys (114). Both Divis Summits and Three and Six Mile Water Valleys will be affected directly by the increased width and use of Boghill Road for heavy goods vehicles servicing the proposed development, as well as the loss of hedgerow structure, pending the growth of newly planted stock flanking the re-aligned Boghill Road.
- 10.344 In terms of indirect effects, the visual appraisal indicates that the proposed development would be perceptible from Three and Six Mile Water Valleys. There are numerous viewpoints within the landscape character area from which the proposed built form would be seen, although its prominence against the backdrop of the quarry faces, the sky and McIlwhans would be minimised by its setting and colouration
- 10.345 Where it could be perceived, the proposed development would be seen as a utilitarian influence, but set in the context of a wide range of other utilitarian influences visible from this Landscape Character Area, including extensive industrial development at Glengormley/Mallusk; and pylons and communication masts within the landscape character area and on the Belfast Hills, and especially the existing quarry site which is already prominent in views across the Landscape Character Area.
- 10.346 The proposed development would have potential to create an impression of the large-scale massing of the built form industrial development within Glengormley/Mallusk encroaching on an area currently not subject to large scale massing of built form. However, mitigation by design of setting amid the quarry context, as well as landscaping and building colouration will minimise this impression and create a development which appears in contrast to the broad, unmitigated massing and colouration of industrial built forms in Glengormley/Mallusk.
- 10.347 It is considered that as a result of the operation of the proposed development before mitigation, Three and Six Mile Water Valleys would experience a medium-low magnitude of change and consequently, adverse effects of moderate significance.
- 10.348 In relation to landscape character area Divis Summits, the operation of the proposed development will introduce substantial massing in the quarry area of the application site where there has been limited built form to date. It will introduce a tall, slender flue and the bulk of the EfW plant, both of which will be partly visible above the quarry skyline from the wider character area.

10.349 However, the design approach to the built form partially offsets this change, as it has been sited and designed specifically to integrate with the quarry landscape and, where it protrudes above it, recessive colouration, including utilising a range of different hues to break up the massing of the built form has been used to minimise its prominence in the landscape. The proposed development would result in the partial restoration of a quarry site, including the proposed landscape enhancements.

10.350 These would be of particular benefit to the perimeter of the quarry area, being specifically designed to respond positively to and integrate with the variety of adjacent landscape character types, creating a gradual transition to the more open skyline (noting the existing visual clutter in the form of pylons and communications masts). As a result, it is considered that Divis Summits would, at operation of the proposed development, and before mitigation, experience a medium-low magnitude of change, thereby resulting in adverse effects on character of moderate significance.

*Effects of Lighting introduced as part of Operation of Proposed Development*

10.351 Notwithstanding the over-riding requirement for adequate lighting to ensure safe and effective operational use of the proposed development, a carefully considered approach has been taken to minimise levels of obtrusive light resulting from the operation of the proposed development, which aims to provide the minimum required levels of lighting for the minimum amount of time.

10.352 There is a requirement for aircraft warning lighting on the flue formed of 2 sets of 4 red, medium-intensity lights each, at the top of the flue and half way up the flue. This lighting would inevitably be perceived from a wide area but would be seen in the context of prominent existing aircraft warning lighting on communications masts within the Belfast Hills to the south of the application site, notably those at Divis/Black Mountain.

10.353 Internal lighting within the proposed development would be contained within solid-sided structures, with the exception of the northern façade of the IBA facility, which is contained entirely by intervening landform. As such, it is considered that there would be negligible adverse effects of internal lighting on the character of the night sky.

10.354 External lighting would be used to illuminate vehicle routeways and service areas surrounding buildings. Much of this lighting would be screened from the surrounding area by existing landform and the proposed built form, notably that lighting proposed to the north-west and south-east of the EfW building; to the south-west, south-east and north-east of the bale storage building; and to the south-east of the MBT building.

10.355 On this basis, the two principal areas from which it is anticipated that light will be visible in the surrounding area are the west of the EfW building and the north-west of the bale store building; and the north-west and north-east of the MBT building and the access roadway between the quarry entrance and the MBT building, including for the use of this roadway by

vehicles exiting the upper level (MBT and waste baling) of the quarry site. Lighting in the western part of these areas would emit direct glare through the gap in landform to the west of the EfW building, towards the north-west. This lighting would be mitigated to a considerable extent by existing and proposed scrub and woodland planting vegetation in this area, when in foliage, thereby forming natural 'curtains' to the direct glare emitted by the proposed lighting. Lighting in the eastern area would emit direct glare over falling landform to the north-west and north-east, although again, existing and reinforced planting on the elevated landform north-east of the IBA building and to the west of the access route would, when in foliage, assist in mitigating these emissions. Furthermore, proposed hydro-seeding to the north-west and north-east of the MBT, as well as specimen tree planting to the north-west of the gatehouse/weighbridge, would further assist in restricting these emissions.

- 10.356 As a result of these considerations, in terms of effects on the character of the night sky as experienced from sensitive locations in the surrounding area, it is considered that the area most likely to experience adverse effects as a result of the introduction of lighting associated with the proposed development is the local rural area to the west, north and east of the quarry area of the application site, which would be subject to the sources of direct glare noted above (albeit mitigated to some extent by existing and proposed vegetation), as well as the proposed aircraft warning lighting (although this would be in the context of existing aircraft warning lighting on prominent structures across the Belfast Hills).
- 10.357 As noted above, it is considered that the character of the night sky in this area is of medium to medium-high sensitivity to lighting, owing to the relatively limited existing light sources in the immediate vicinity, dependent on localised screening. It is considered that before mitigation, there is potential for lighting within the proposed development to result in a medium magnitude of change, resulting in adverse effects on the character of the night sky in this area of moderate to moderate-major significance.
- 10.358 It is considered that elevated areas on the ridgeline on the existing urban edge of Newtownabbey, to the north-west of Carnmoney Hill and to the north of the Three Mile Water valley are already subject to high levels of external lighting in views towards the application site, notably from the urban area of Newtownabbey and the aircraft warning lighting evident on existing structures on the Belfast Hills. As a result, it is considered that there would be negligible adverse effects on the character of the night sky from these locations.
- 10.359 From areas of the Belfast Hills to the east and south-east of the application site, it is considered that the landform of the quarry would almost entirely screen direct glare from the proposed development, with the exception of the aircraft warning lighting noted above. Where existing topography allows views of lighting within the proposed development, this would be perceived in the context of prominent existing light sources in the Belfast Hills. Therefore, this lighting, in conjunction with the aircraft warning lighting, would not be considered to result in more than a low-very low magnitude of change in the character of the night sky in this medium-high sensitivity area, resulting in adverse effects on the character of the night sky of a minor-moderate significance.

## Mitigation Measures

### *Construction*

10.360 As a mitigation-by-design measure for the construction process, compounds and stockpiles are already confirmed as being located in the least visible locations within the application site, screened by intervening landform and vegetation. Where practical, additional means employed to further reduce the temporary landscape and visual effects of construction are proposed as follows:

- the use of hoarding around the construction site to screen construction activity from the ground level;
- controlling the lighting of construction compounds and machinery to minimise upward and outward light pollution through lantern design, direction and baffling. In addition, ensuring that the minimum area only is lit, for the minimum period;
- agreeing appropriate working hours with DoE Planning to ensure that adverse visual effects of construction are not experienced by residential receptors at times when they could reasonably expect a cessation of construction activity, for example evenings, the majority of weekends and bank holidays (it is noted that the concrete pouring for the EfW bunker is likely to be a short-term exception to this measure);
- limiting movements of material between stockpiles so that these do not shift over time, thereby adding to the sense of fragmentation of the landscape structure; and
- all retained vegetation on the application site would be protected during construction by fencing, to be installed before the commencement of any phase of development; and in compliance with BS5837:2012 - Trees in relation to design, demolition and construction – Recommendations.

### *Operation*

10.361 As noted above, the design of the proposed development already aims to provide mitigation of landscape and visual effects as an intrinsic part of the proposals. As the planting within these proposals continues to establish, over the course of 20 years, it will further anchor and assimilate the proposed built forms within the landscape.

10.362 With regard to lighting in the proposed development, the potential effects of lighting will be further reduced by design. This will include, where possible, exterior lighting mounted on walls and buildings to reduce clutter at street level. However, where lighting columns are required along roads and paths, the fittings would utilise horizontal cut-off lanterns to reduce the spillage of light into adjacent areas. Lighting columns and fittings will be chosen to prevent excessive light pollution at night, with the use of the lowest feasible lux levels, and the lighting layout has been carefully designed to take account of the position of existing and proposed trees on the application site to avoid future management problems. It is considered that the

lighting associated with the proposed development would be to some extent contained by the existing vegetation and landform within the application site. Proposed planting would also, over time, provide some screening to minimise the likelihood of the lighting introduced as part of the development spilling or glaring into adjacent areas.

*Photomontages at Year 20 of Operation*

10.363 These photomontages show the influence of the proposed planting on the scheme. This is most noticeable on Boghill Road where extensive linear planting of hedgerows and hedgerow trees is proposed. This is evident in Year 20 Photomontage 2 where the proposed planting screens views towards the quarry site and provides a positive setting to the roadway. A different approach is evident in the quarry site and its perimeter where additional planting is intended to provide softening of the setting to the built form, and contrasts in vertical and horizontal form, as well as extend some of the character of adjacent areas into the quarry site, without in itself forming inappropriate and uncharacteristic new features in the landscape. This planting is obviously less perceptible in winter and thus the photomontages demonstrate the worst case scenario, not only in terms of reduction of existing screening outside the application site but also in terms of the relative inconspicuousness of proposed planting within the application site.

10.364 However, the softening effect of the proposed planting in the quarry site can be seen in a number of photomontages at Year 20: Photomontage 1 (on the quarry horizon, on the slopes below the MBT building and to the right of the EfW building); Photomontage 3 (on the quarry horizon, including the backdrop to the MBT flue and at the interface of the EfW flue with the horizon, softening the contrast in horizontal and vertical forms); Photomontage 4 (softening and anchoring the MBT building and the bank on the nearside of the EfW building, as well as on the right hand side of the EfW building); Photomontage 5 (extending the pattern of scrub into the application site to the right of the EfW flue); Photomontage 6 (extending the pattern of scrub towards the left hand side of the EfW building); Photomontage 7 (extending the pattern of woodland and scrub along the quarry rim to the left of and above the MBT building); Photomontage 8 (softening the quarry horizon above the EfW and MBT buildings); Photomontage 9 (softening the quarry horizon above the MBT building and immediately to the right of the EfW building); and Photomontage 10 (extending the pattern of scrub along the quarry horizon towards the existing pattern on Mcllwhan's hillside and towards the EfW building from the right hand side).

10.365 It should be noted that the Year 20 Photomontages do not account for any additional growth in existing vegetation in the surrounding countryside and therefore illustrate the minimum extent of vegetation anticipated.

**Residual Effects**

10.366 Residual effects of construction are considered to be those occurring, taking into account the proposed construction mitigation measures noted above. In relation to operation, the assessment of residual effects takes into account the contribution resulting from the

establishment of planting over 20 years and other aspects of the proposals included within the landscape strategy for the proposed development.

*Residual Effects of Construction*

*Residual Visual Effects of Construction*

- 10.367 As noted in **Appendix 10.5**, as a result of the proposed mitigation of construction, it is considered that there is potential for the anticipated adverse visual effects of construction to be slightly reduced in significance.
- 10.368 Accordingly, the magnitude of change in view from those properties most likely to experience adverse effects, namely residential properties on/accessed from Boghill Road east of quarry access road (4 no.); properties at the junction of Hydepark Road and Boghill Road (2 no.); properties on/accessed from Boghill Road west of quarry access road (6 no.); and properties on/accessed from Flush Road, north-west of quarry area of application site resulting from construction post-mitigation is considered to be medium-high, leading to residual adverse visual effects of construction of moderate-major to major significance.
- 10.369 The magnitude of change of view from residential properties in the vicinity of Blackrock, Hydepark Road; and properties at Mayfield Manor, Hydepark Road, will be reduced to medium, leading to residual adverse visual effects of construction of moderate-major significance.
- 10.370 In terms of heritage assets, the magnitude of change in view experienced from those properties most likely to experience adverse effects, namely listed buildings at Ballyvesey will be reduced to low, leading to residual adverse visual effects of construction of moderate significance.
- 10.371 With regard to commercial/industrial properties, those properties most likely to experience adverse effects, namely those properties on McKinney Road flanking Hydepark Road, which have external hardstanding works areas fronting Hydepark Road, will experience a reduction in magnitude of change to medium, leading to residual adverse visual effects of construction of minor-moderate significance.
- 10.372 In terms of open space facilities/waymarked trails, the magnitude of change in views from the location most likely to experience adverse effects, namely open space at the recreation ground at Park Road, Mallusk will be reduced to low, leading to residual adverse visual effects of construction of moderate significance.
- 10.373 With regard to roadways, the magnitude of change in views from Boghill Road at the junction with the quarry access road, resulting from construction, will be reduced to medium-high, resulting in residual adverse visual effects of construction of moderate to moderate-major significance.

10.374 Furthermore, the magnitude of change of views from: Flush Road north-west of the quarry area of the application site (southbound only) will be reduced to medium, resulting in residual adverse visual effects of construction of moderate significance; and the magnitude of change in views from Aughnabrack Road (westbound only) (localised vegetation limits locations from where views obtained); Upper Hightown Road in vicinity of Collinward (localised vegetation limits locations from where views obtained); Flush Road south of the application site (northbound only); and Flush Road south-west of the application site will be reduced to medium-low, leading to residual adverse visual effects of construction of minor-moderate to moderate significance.

*Residual Effects of Construction on Landscape Features*

10.375 As noted in **Appendix 10.4**, in terms of the hedgerows flanking Boghill Road, which are the landscape features most likely to experience significant adverse effects of construction, it is not considered that the proposed construction mitigation measures would limit the magnitude of change in the hedgerow extent and structural quality. The magnitude of change will remain high, resulting in residual adverse effects of construction on these features of moderate-major significance.

*Residual Effects of Construction on Landscape Character*

10.376 As noted in **Appendix 10.4**, the use of the construction mitigation measures will provide some localised mitigation of adverse effects of construction on landscape character such that, at a site specific level, the magnitude of change in the identified landscape character area S1 Boghill Road will be reduced to medium-high, resulting in residual adverse visual effects of construction of moderate significance.

10.377 In terms of identified local landscape character areas, the magnitude of change in the landscape character area L4 Flush River Valley, will be reduced to medium, resulting in residual adverse visual effects of construction of moderate significance.

10.378 At the national level, it is considered that in the landscape character area Three and Six Mile Water Valleys, the magnitude of change resulting from construction will be reduced to medium-low, resulting in residual adverse visual effects of construction of moderate significance. For the landscape character area Divis Summits, it is considered that the magnitude of change will be reduced to medium-low, leading to residual adverse visual effects of construction of moderate significance.

*Residual Effects of Operation*

*Residual Visual Effects of Operation*

10.379 As noted in **Appendix 10.5**, it is considered that at 20 years of operation, the establishment and maturing of planting within the landscape scheme for the proposed development will have slightly reduced the magnitude of change experienced in views from a range of receptors.

- 10.380 This is as a result of strengthening the vegetated landscape setting to the development, further anchoring the built form into the landscape and integrating the landscape of the quarry with the variety of adjacent landscapes, as described above under the heading of Landscape Strategy.
- 10.381 There is also some potential for the reinforced vegetation to soften the appearance of built forms, albeit not screening them. Planting growth rates vary dependent on species, soil and climatic conditions but a reasonable assumption of approximate growth rate for new planting is approximately 1m every three years. Over 20 years therefore, it is anticipated that 6-8m of growth can be achieved from shrub and tree species. Planting flanking Boghill Road will provide localised screening, notably at the junction with Hydepark Road.
- 10.382 Accordingly, the magnitude of change of view from those properties most likely to experience adverse effects, namely residential properties on/accessed from Boghill Road east of quarry access road (4 no.); residential properties on/accessed from Boghill Road west of the quarry access road (6 no.); and residential properties on/accessed from Flush Road, north-west of the quarry area of the application site (3 no), resulting from operation after 20 years growth is considered to be medium-low, leading to residual adverse visual effects of operation of moderate to moderate-major significance. Views towards the quarry site from properties at the junction of Hydepark Road and Boghill Road (2 no.) will be screened through the establishment of proposed planting of hedgerow and canopy trees.
- 10.383 The magnitude of change of view from properties in the vicinity of Blackrock, Hydepark Road; and properties at Mayfield Manor, Hydepark Road, will be reduced to low, leading to residual adverse visual effects of operation of moderate significance.
- 10.384 In terms of heritage assets, the magnitude of change in view experienced from those properties most likely to experience adverse effects, namely listed buildings at Ballyvesey, will be reduced to very low, leading to residual adverse visual effects of operation of minor-moderate significance.
- 10.385 With regard to commercial/industrial properties, those most likely to experience adverse effects, on McKinney Road, flanking Hydepark Road, which have external hardstanding works areas fronting Hydepark Road, will experience a reduction in the magnitude of change in view to low, leading to residual adverse visual effects of operation of minor significance.
- 10.386 In terms of open space facilities/waymarked trails, the magnitude of change in views from the open space at the recreation ground at Park Road, Mallusk will be reduced to very low, leading to residual adverse visual effects of operation of minor-moderate significance.
- 10.387 With regard to roadways, the magnitude of change in views from Boghill Road at the junction with the quarry access road will be reduced to medium-low, resulting in residual adverse visual effects of operation of minor-moderate to moderate significance.

10.388 Furthermore, the magnitude of change of views from Flush Road north-west of the quarry area of the application site (southbound only) will be reduced to low, resulting in residual adverse visual effects of operation of minor-moderate significance; and the magnitude of change in views from Aughnabrack Road (westbound only) (localised vegetation limits locations from where views obtained); Upper Hightown Road in vicinity of Collinward (localised vegetation limits locations from where views obtained); Flush Road south of the application site (northbound only); and Flush Road south-west of the application site will be reduced to low-very low, leading to residual adverse visual effects of operation of minor to minor-moderate significance.

*Residual Effects of Operation on Landscape Features*

10.389 As noted in **Appendix 10.4**, it is considered that at year 20, the establishment of planted vegetation, subject to positive on-going management, will result in the potential for beneficial effects on a number of landscape features within the application site. The most beneficial effects are likely to include the following:

- hedgerows flanking Boghill Road, which will, with the establishment of proposed planting, create cohesive hedgerows either side of the road, with locally characteristic beech canopy trees – in relation to the current state of the gappy hedgerows, it is considered that a low magnitude of change will be experienced, resulting in residual beneficial effects of minor-moderate significance;
- scrub and woodland, which in the perimeter of the quarry area of the application site will create a cohesive integration with different character areas in the surrounding landscape, as well as providing enhanced softening and anchoring of the proposed built form in views, including from planting within the quarry area – it is considered that a medium magnitude of change in these two features will lead to beneficial residual effects of moderate to moderate-major significance for woodland and moderate significance for scrub;
- rough grassland and ruderal, which will be managed positively to develop, including as colonising vegetation within the quarry and in the form of wildflower verges to certain extents of Boghill Road – it is considered that a medium magnitude of change will lead to beneficial residual effects of moderate significance; and
- standing water, in the form of attenuation basins plus the retained settling lagoons, which, under positive management, will establish over 20 years into more attractive landscape features – it is considered that a medium-high magnitude of change will lead to beneficial residual effects of minor-moderate to moderate significance.

*Residual Effects of Operation on Landscape Character*

10.390 As noted in **Appendix 10.4**, the establishment of vegetation within the landscape proposals over 20 years, under a positive management regime, will lead to a further reduction in

adverse effects on landscape character areas within the application site and potential for beneficial effects.

- 10.391 The initial adverse effects on the character of S1 Boghill Road resulting from the loss of extents of hedgerows and the widening and re-alignment of the roadway, will be offset by the establishment of the proposed hedgerows, which will replace the existing gappy hedgerows with a cohesive hedgerow structure including locally characteristic beech canopy trees.
- 10.392 However, it is noted that the traffic of heavy goods vehicles servicing the proposed development will continue to have an adverse effect upon the character of the roadway (although it is noted that traffic levels are anticipated to be less than when the application site has been used for quarrying activity). It is considered that a low magnitude of change in character will result in an adverse residual effect of minor to minor-moderate significance. It is considered that on-going establishment of vegetation in S4 Quarry Perimeter will improve the integration of the quarry area of the application site with the various character areas in the adjoining landscape. As a result, the magnitude of change in character in this area is considered to be low-medium, leading to residual beneficial effects of minor-moderate significance.
- 10.393 In terms of identified local landscape character areas, as noted in **Appendix 10.4**, the magnitude of change in the landscape character area most likely to experience adverse effects, namely L4 Flush River Valley, is considered to be reduced to low. This is as a result of the potential for offsetting the initial adverse effects on the character of Boghill Road, and the reduction of the indirect effect of the utilitarian influence on the character area of the prominent built form within the quarry area of the application site. As a result, it is considered that the residual adverse effects on this landscape character area will be of minor-moderate significance.
- 10.394 At the national landscape character area level, as noted in **Appendix 10.4**, there is potential for further reduction in adverse effects of the proposed development following the establishment of the planting within the proposed development. In particular, hedgerow replanting along Boghill Road, including the introduction of locally characteristic beech canopy trees will have potential over 20 years to offset the initial loss of vegetation and roadway widening and realignment and to soften the influence on landscape character of on-going vehicle movements.
- 10.395 In addition, the establishment over 20 years of the landscape planting proposals in the perimeter area of the quarry will provide stronger integration of the quarry and the proposed built form into the surrounding landscape, resulting in a reduction of direct effects on the landscape character area Divis Summits and indirect effects of the visual influence of these features on Three and Six Mile Water Valleys.
- 10.396 It is therefore considered that at year 20, there will be a low magnitude of change in the character of Three and Six Mile Water Valleys, resulting in residual adverse effects of

operation of minor-moderate to moderate significance; and a low-very low magnitude of change in the character of Divis Summits, resulting in residual adverse effects of operation of minor-moderate significance.

*Residual Effects of Lighting introduced as part of Operation of proposed development*

- 10.397 As a result of the lighting mitigation measures proposed, it is considered that the magnitude of change in the character of the night sky in the local rural area to the west, north and east of the quarry area of the application site will be reduced. It is therefore considered that after mitigation, there is potential for lighting within the proposed development to result in a low magnitude of change, resulting in adverse effects on the character of the night sky in this area of minor-moderate to minor-moderate to moderate significance.