

## 12 Ecology and Nature Conservation

### 12.1 Introduction

This chapter provides an assessment of the ecological impacts associated with the proposed development at Beorma Quarter in Birmingham. The assessment identifies relevant ecological receptors and the potential effects that may result from the construction and operation of Phases two and three of the proposed development. Potential effects are assessed in regards to the Site itself and within the zone of influence. The significance of any ecological impacts will be determined, and mitigation measures required to offset such impacts will be described. Any residual impacts that are considered likely to remain following implementation of the described mitigation measures are also reported, along with potential cumulative effects that may occur in conjunction with other nearby developments.

An ecological impact assessment (EclA) was produced for the proposed development by The Ecology Consultancy in 2009. Due to the age of the data collected and the changes to the scheme design, further ecological survey work was undertaken during 2014 to provide updated baseline information to inform the assessment. The evaluation of potential ecological impacts has been informed by the results from the following reports:

- Update Preliminary Ecological Appraisal. Beorma Phase 2 and 3, Birmingham. The Ecology Consultancy, 2014a; Reference 140818);
- Bat Presence/Likely Absence Surveys. Beorma Phase 2 and 3, Birmingham. The Ecology Consultancy, 2014b; Reference 140818);
- Bat Survey Report. Beorma, Digbeth, Birmingham. The Ecology Consultancy, 2010a; Reference 10/155); and,
- Black Redstart Survey. Beorma, Digbeth, Birmingham. The Ecology Consultancy, 2010b; Reference 10/155).

## 12.2 Legislation and Policy Context

### 12.2.1 National Policy

#### **The Conservation of Habitats and Species Regulations 2010 (as amended)**

*The Conservation of Habitats and Species Regulations 2010* (as amended) is transposed from European legislation issued by Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the 'Habitats Directive'). The regulations provide for the designation and statutory protection of 'European sites' including Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) that form a wider network termed Natura 2000<sup>1</sup>. Protection is also given to certain species of flora and fauna, which are referred to as 'European Protected Species' (EPS)<sup>2</sup>.

#### **Wildlife and Countryside Act 1981 (as amended)**

*The Wildlife and Countryside Act 1981* (as amended) provides legal protection for a range of wild animal and plant species. It also contains measures to prevent the establishment of non-native animal and plant species that may be of detriment to native wildlife. The Act provides for the notification of statutory designated Sites of Special Scientific Interest (SSSIs), and details the legal requirements for their protection and management. Species relevant to the Site that are subject to protection under the Act include all bat and bird species. Black Redstart is afforded additional protection under schedule 1 of the act.

#### **The Natural Environment and Rural Communities (NERC) Act 2006**

The NERC Act 2006 makes provision for Natural England and other related public bodies to conserve, manage and enhance the natural environment within England and Wales. In particular, every public authority must have regard to the purpose of conserving biodiversity. The consideration for biodiversity in England is guided by Section 41 of the Act and the Secretary of State's published list of habitats and species which are of 'principal importance for the purpose of conserving biodiversity' (referred to as 'Habitats of Principal Importance' and 'Species of Principal Importance'), and should be regarded as a material consideration in the planning process.

---

1 [www.natura.org](http://www.natura.org)

2 <http://naturenet.net/law/europe.html>

**The Countryside and Rights of Way Act 2000 (CRoW) Act 2000**

The CRoW Act amended certain provisions of the *Wildlife and Countryside Act 1981* (as amended). These include increased measures for the management and protection for Sites of Special Scientific Interest (SSSI), the strengthening of wildlife enforcement legislation, and a duty upon all government bodies to consider biodiversity in the course of their actions.

**National Planning Policy Framework 2012 (NPPF)**

The NPPF outlines the Government's planning policies for England and provides planning practice guidance to encourage sustainable development. Planning law requires that applications for development are determined in accordance with the Local Plan for the area, and planning policies must reflect relevant EU obligations and statutory requirements. In order to achieve sustainable development, the Framework includes a number of policies in Chapter 11 'Conserving and enhancing the natural environment', which include the protection of international sites, national sites, regional and local sites and protected species through the planning process. The NPPF also emphasises the importance of ecological networks via preservation, restoration and re-creation.

**12.2.2 Regional and Local Policy****The Birmingham Plan - Unitary Development Plan 2005**

The Unitary Development Plan (UDP) contains policies and proposals that currently guide development and land use across the City, and is the existing Development Plan for Birmingham. The UDP will soon be replaced by The Birmingham Development Plan (BDP) and other key planning policy documents currently being prepared, known as Development Plan Documents, which will set out the statutory framework to guide decisions on development and regeneration in Birmingham up to 2031. The BDP was submitted to the Secretary of State for examination on 1 July 2014.

In September 2008, the Secretary of State agreed to save all but three policies in the UDP until they are replaced by Development Plan Documents. The UDP includes the following policies in Chapter 3 – Environment, that cover the topic of nature conservation, and are relevant to the proposed development:

*'3.38 Schemes including reclamation of derelict land, and new developments, particularly those on open land, will be expected to respect, and where possible enhance, the local environment, for example through the retention of existing trees and through planting and landscaping schemes using native species where appropriate, with the objective of maximising wildlife value. The retention and enhancement of existing tree cover, hedgerows, wildlife*

*habitats and geological features will be supported in order to ensure that the natural heritage of an area is not lost. Development proposals which lead to the loss of a valuable wildlife habitat should make provision for a replacement habitat of equal value.'*

*'3.39A A comprehensive Nature Conservation strategy has been prepared and adopted as Supplementary Planning Guidance. This identifies those parts of the City which are particularly valuable from a nature conservation aspect, acknowledges and recognises the value of green corridors and networks, and includes many areas which form part of the City's open space system (see also paragraph 3.47). Those parts of the City currently lacking in wildlife habitats are identified in the strategy as Wildlife Action Areas. Policies to ensure local biodiversity, appropriate management and adequate public access are included. These may be secured through the use of Section 106 agreements. In addition, the Birmingham and Black Country Biodiversity Action Plan provides additional information supporting the Nature Conservation Strategy.'*

#### **Nature Conservation Strategy - Supplementary Planning Guidance (SPG) 1996**

The Nature Conservation Strategy for Birmingham was adopted as Supplementary Planning Guidance in November 1996. The Strategy is a material consideration in the planning process and contains a number of policies that provide advice and guidance for the conservation of the City's biodiversity. The Strategy places emphasis on protecting the City's Critical Nature Capital, which includes sites, habitats and species that are of importance to nature conservation in Birmingham. Policies 10, 11, 12, 14, 15, 16, 20 are of particular significance to the site.

#### **Birmingham and Black Country Biodiversity Action Plan 2010**

The Birmingham and Black Country Biodiversity Action Plan (LBAP) is a document produced by a steering group of partners including representatives from Birmingham City Council. The LBAP has 16 Habitat Action Plans and 22 Species Action Plans, which identify habitats and species that are present within Birmingham and the Black Country, and are classed as nationally or locally rare. The Habitat and Species Action Plans set out a course of action with targets for improvement and conservation. The following action plans are of potential relevance to the Site:

- Habitat Action Plan – Buildings and the built environment.
- Species Action Plans – Bats and Black redstart.

### 12.3 Assessment Methodology and Significance Criteria

The assessment identifies and evaluates the significant ecological effects associated with the construction and operational phase of the proposed development. The potential impacts on ecological receptors as a result of the proposed development were determined following guidance and definitive standards. The methodology and assessment criteria that have been used to determine the consequence of significant impacts, are described below.

#### **Impact Assessment Methodology**

The assessment methodology has been prepared with reference to the Guidelines for Ecological Impact Assessment (EclA) published by the Institute of Ecology and Environmental Management (IEEM) in 2006. The following key stages were employed to carry out the assessment:

- Determination of the zone of influence of the development.
- Determination of potential ecological receptors within the zone of influence.
- Identification of the impacts that are likely to affect valued ecological receptors.
- Assessment of the ecological significance caused by potential impacts.
- Identification of appropriate avoidance, mitigation, compensation and enhancement measures for significant negative impacts.
- Evaluation of predicted residual impacts on valued receptors.
- Provision of advice for the potential consequences caused by significant ecological impacts.

The first stage of the assessment necessitated the review of proposed activities that will occur during the construction and operation phase of the project, and delineation of an appropriate area that may be affected by the proposed activities. The study boundaries included any areas that were affected either directly or indirectly by the construction and operation phase of the proposed development, and was defined as the zone of influence. The zone of influence will be largely confined to the Site, however, other potential impacts such as noise and light disturbance could extend up to 1km beyond the Site's boundary. Determination of the zone of influence requires consideration of the sensitivity of offsite habitats and species that may be affected by impacts associated with the proposed development.

The second stage requires the value of an ecological receptor to be determined within a defined geographical frame of reference. The value that is assigned to a receptor will establish its importance as an ecological feature. An ecological receptor may be of value in terms of the following:

- International;
- UK;
- National ( *i.e.* England);
- Regional (*e.g.* in West Midlands);
- County (or Metropolitan – *e.g.* in Birmingham);
- District (or Unitary Authority, City or Borough - *e.g.* in Birmingham);
- Local or Parish (*e.g.* the City or Digbeth Quarter); and,
- Zone of influence only (the Site).

Some ecological receptors have a pre-determined value that is assigned due to their importance for nature conservation. These receptors will include sites or features designated for their nature conservation interest. Examples include internationally or nationally designated sites such as Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Ramsar, Sites of Special Scientific Interest (SSSIs) or National Nature Reserves (NNRs), and locally designated sites such as Local Nature Reserves (LNRs), Sites of Nature Conservation Importance (SNCl), and locally designated wildlife sites.

The importance of ecological receptors are identified for their biodiversity value, , for example, through the consideration of rare or uncommon animal or plant species, population size, species distribution, Habitats of Principal Importance, Species of Principal Importance, Biodiversity Action Plans that include Habitat Action Plans (HAPs) and Species Action Plans (SAPs). However, BAPs, HAPs and SAPs are produced to guide conservation action and are not used as a standalone factor to determine value for an ecological receptor. The value of ecological receptors was also assessed with reference to their potential value, supporting value ( *i.e.* as they act as a buffer to another site), social, and economic value.

The third stage of the assessment involves determining the significance of the ecological impacts that have been identified as a result of the construction and operation phases of the proposed development. The assessment will identify the requirement for mitigation and/or

legal obligations that should be adhered to in order to maintain the ecological interest of the site.

Legally protected sites and species are subject to European and/or national legislation. Legal guidance should be followed in order to determine whether the proposed development will cause contravention of legal status or protection to a site or species, or have any significant effect on the integrity of an ecological receptor. The presence of any legally controlled plant species will also be assessed in terms of their negative benefit, and advice regarding legislation and potential ecological impacts due to their presence, will be provided.

### **Significance Criteria**

The scale of an ecological impact has been determined at the valuation stage, where both positive and negative impacts resulting from the construction and operation phase of the proposed development are determined. Cumulative impacts will be addressed by assessing the ecological impacts of the proposed development in the context of the predicted baseline conditions.

IEEM (2006) define a significant impact, in ecological terms, as an impact (positive or negative) on the integrity of a defined site or ecosystem and/or the conservation status of habitats or species within a given geographic scale.

Significant impacts on ecological receptors should be mitigated (or compensated for) in accordance with the guidance derived from policies applied at the scale relevant to the receptor.

In reasonable accordance with IEEM (2006), the degree of confidence awarded for the occurrence of predicted ecological impacts will be based on a four point scale and assigned to each potential ecological receptor, as follows:

- **Certain/near-certain** – probability estimated at 95% or higher.
- **Likely** – estimated above 50% but below 95%.
- **Unlikely** – estimated above 5% but below 50%.
- **Extremely unlikely** – probability estimated at less than 5%.

When identifying and describing biodiversity impacts, reference is made to the following parameters where possible:

- **Magnitude** – the size or amount of an impact, determined on a quantitative basis where possible;

- **Extent** – the area over which the impact occurs;
- **Duration** – the time for which the impact is expected to last prior to recovery or replacement of the resource or feature;
- **Reversibility** – an irreversible (permanent) effect is defined as one from which recovery is not possible within a reasonable timescale or for which there is no reasonable chance of action being taken to reverse it. A reversible (temporary) effect is one from which spontaneous recovery is possible or for which effective mitigation is both possible and enforceable;
- **Timing and frequency** – some impacts are only likely if they happen to coincide with a critical life-stage or season. Others may occur if the frequency of an activity is sufficiently high; and,
- **Characterisation of the change and impact** – in order to characterise the likely change and impact, it is necessary to take into account all the above parameters.

Therefore, the value of the receptor is used to determine the geographic scale at which the impact is significant. For example, an ecologically significant impact on a feature of value at the district level is regarded as a significant impact at up to the district level but is unlikely to result in significant impacts at a greater geographical scale.

Quantification of these impacts in relation to comparative assessment between environmental disciplines requires consistent assessment criteria to be used throughout. As such, the following parameters have been used in addition to IEEM (2006) guidance in order to determine the magnitude of a significant impact upon a receptor. The potential magnitude of the impact will be rated from major to negligible. The type of potential impact on an ecological receptor will be referenced in terms of their positive or negative effects on biodiversity (beneficial or adverse), and based upon expert assessment using one of the following criteria descriptors:

- **Major:** Adverse – loss of resource and/or quality, severe damage to key characteristics, features or elements. Beneficial – Large scale or major improvement of resource quality, extensive restoration or enhancement, major improvement of attribute quality;
- **Moderate:** Adverse – loss of resource, but not adversely affecting the integrity. Partial loss of/damage to key characteristics, features or elements. Beneficial – Benefit to, or addition of, key characteristics, features or elements, improvement to attribute quality;
- **Minor:** Adverse – Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to key characteristics, features or elements. Beneficial – Minor

benefit to, or addition of key characteristics, features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring; and,

- **Negligible:** Adverse – Very minor loss or detrimental alteration to one or more characteristics, features or elements. Beneficial – Very minor benefit to, or positive addition of, one or more characteristics, features or elements.

The ecological impact assessment will also be carried out using the criteria in *Table 12.1* below which is based on professional judgement. The impact significance is determined through cross-referencing the value of the receptor at its geographical level, and the magnitude of the impact.

**Table 12.1:** *Significance of ecological impacts*

| Value of receptor                 | Magnitude of impact |                |                  |            |
|-----------------------------------|---------------------|----------------|------------------|------------|
|                                   | High                | Moderate       | Low              | Negligible |
| International                     | Major               | Major          | Major/Moderate   | Moderate   |
| National                          | Major               | Major/Moderate | Major/Moderate   | Minor      |
| Regional                          | Major/Moderate      | Moderate       | Moderate         | Minor      |
| Local                             | Moderate            | Moderate       | Moderate/Minor   | Minor      |
| Within immediate vicinity of site | Moderate            | Minor          | Minor/Negligible | Negligible |

**Survey Methodology**

Baseline ecological information for the site was collected from the following surveys and appropriate methods:

- **Desk study:** An ecological desk study for the presence of statutory and non-statutory sites, and records of legally protected species<sup>3</sup> and Species of Principal Importance<sup>4</sup> in the past ten years, were supplied within a 1km radius of the Site by EcoRecord (EcoRecord, 2014). Information was also sourced from Multiple Agency Geographic Information Centre

<sup>3</sup> Legally protected species include those listed in Schedules 1, 5 or 8 of the Wildlife and Countryside Act, 1981; Schedule 2 of the Conservation of Habitats and Species Regulations 2010; or in the Protection of Badgers Act, 1992

<sup>4</sup> Species of Principal Importance are those listed on Section 41 of the Natural Environment and Rural Communities Act, 2006

(MAGIC). The desk study is reported in Preliminary Ecological Appraisal (The Ecology Consultancy, 2014a).

- **Extended Phase 1 Habitat survey:** An update Phase 1 Habitat survey of the site was carried out 18 September 2014. Habitats were described and mapped following standard Phase 1 Habitat survey methodology (JNCC, 2010). The Site was also surveyed for the presence of invasive plant species as defined by Schedule 9 of the Wildlife and Countryside Act, 1981. The potential of the site to support protected species was assessed from field observations carried out at the same time as the habitat survey. See Preliminary Ecological Appraisal (The Ecology Consultancy, 2014a).
- **Bat surveys:** Bat presence/likely absence surveys were undertaken during June 2010 and updated in September 2014. The buildings on site were assessed for their potential to support roosting bats, following survey methodology set out by the Bat Conservation Trust; Guidelines (BCT, 2007) and Bat Survey - Good Practice Guidelines 2nd Edition (Hundt, 2012). See Bat Survey (The Ecology Consultancy, 2010a) and (The Ecology Consultancy, 2014b).
- **Black redstart survey:** A black redstart survey was undertaken between May and July 2010, following survey methodology set out by Gilbert et al., 1998. See Black Redstart Survey (The Ecology Consultancy, 2010b).

The limitations of the baseline survey methods are discussed in their respective reports. Despite these limitations, the survey effort is considered adequate to inform this impact assessment.

The previous Environmental Statement (The Ecology Consultancy, 2009) for Phase 1 of the proposed development was also used to evaluate the significance of ecological receptors that will be affected within the zone of influence.

## 12.4 Baseline Conditions

The following section outlines the baseline ecological conditions at the Site and within the zone of influence from the results of the above surveys.

### Designated Sites

The Site does not form part of a non-statutory designated site. There are two non-statutory designated sites located within a 1 km radius of the Site, details of which are provided in *Table 12.2* below.

**Table 12.2:** *Non-statutory designated sites within a 1 km radius of the Site*

| Site name and Designation   | Reason for Designation   | Area in hectares (ha) | Distance and Direction from Site |
|---|--|-----------------------|----------------------------------|
| Digbeth Branch Canal Site of Local Importance for Nature Conservation (SLINC) | Canal tunnel linking Grand Union Canal and Birmingham and Fazeley Canal. Limited aquatic flora and associated habitats with narrow strips of scrub, tall herb and neutral grassland. | 0.16                  | 400 m NE                         |
| Grand Union Canal Site of Local Importance for Nature Conservation (SLINC)    | Canal with relatively diverse associated corridor habitats including well wooded cuttings and narrow verges of neutral grassland and tall herb.                                      | 0.46                  | 700 m NE                         |

**Habitats**

The habitats on site consisted of a complex of buildings (some derelict, with residential and commercial use), hard-standing, introduced shrub and semi-improved (species poor) grassland. The introduced shrub was comprised of dense butterfly bush and one young rowan tree. Three small areas of semi-improved (species poor) grassland comprised of grass species considered to be typical of such habitat, with occasional Canadian fleabane and herb Robert. No invasive plant species were recorded on site.

The majority of the habitats on site were man-made and recently established. No notable or species-rich assemblages were recorded during the survey. As such, the habitats were assessed to be of value within the zone of influence only and as such, are considered to be of negligible integral ecological value.

**Species**

Bats

The desk study provided five records for bats within 1km of the Site, of which three records were for common pipistrelle, recorded nearest the Site at 580m north-east in 2008. Two records were provided for unconfirmed bat species, of which the nearest record was provided for a roosting unconfirmed bat species, located 320m north-east of the Site in 2010.

The buildings on site had a number of features that could support roosting bats including cracks, holes in the brickwork, and air vents which allow access to the internal space. The Site supported limited foraging habitat, comprised of a small area of scattered scrub and grassland. The Site was located within a well-lit urban environment, which was dominated by a high density of buildings and hard-standing. The surrounding area supported more suitable

foraging/commuting habitat including the River Rea located 330m south-east and small areas of opens green space located 700m south-west and 240m north-east from the Site.

Bat presence/likely absence surveys confirmed that bats roosts are likely to be absent from the buildings on site. During the surveys, a single common pipistrelle was recorded foraging in the south-west corner of the Site and three passes by common pipistrelle bats were noted outside the zone of influence.

Pipistrelle bats are the most common and widespread of all British bat species<sup>5</sup> and are generally considered to be in favourable conservation status<sup>6</sup>. As such, the bat assemblage associated with the site is of value within the zone of influence only. This is due to the presence of low numbers of a single common species of bat, poor quality roosting and foraging habitat on site, and the likely absence of a bat roost within the buildings on site.

All bat species are protected under the *Conservation of Habitats and Species Regulations 2010* (as amended) and Schedule 5 of the *Wildlife and Countryside Act 1981* (as amended).

#### Black redstart

The desk study returned 33 records for black redstart within a 1km radius of the site. The nearest record to the Site was provided for the presence of breeding black redstart 200m north-west from the Site in 2007. The species was recorded present at the same location in 2009.

The derelict buildings on site supported a number of perches and ledges that could support nesting black redstart. The Site contained limited, low quality foraging habitat comprised of scattered scrub. The surrounding area supported a high density of tall buildings immediately adjacent to the site, and a network of canals located 330m, 420m, 980m and 1.1km distant, which offer numerous opportunities for nesting and foraging black redstart in the local area.

Black redstart surveys during spring/summer 2010 confirmed the presence of one singing adult male during one of the survey visits, however the species was not considered to have utilised the survey area as a breeding site.

Black redstart is an Amber-list Bird of Conservation Concern<sup>7</sup> due to the decline in breeding numbers and it's rarity as a breeding bird in the UK. West Midland Bird Club has indicated that

---

5 [http://www.bats.org.uk/data/files/Species\\_Info\\_sheets/commonpipistrelle\\_11.02.13.pdf](http://www.bats.org.uk/data/files/Species_Info_sheets/commonpipistrelle_11.02.13.pdf)

6 <http://jncc.defra.gov.uk/pdf/Article17/FCS2007-S1309-Final.pdf>

7 Amber List species are those with Unfavourable Conservation Status in Europe; those whose population or range has declined moderately in recent years; those whose population has decline historically but made a substantial recent recovery; rare breeders; and those with internationally important or localised populations

Birmingham and the Black Country held a nationally significant breeding population<sup>8</sup>. Black redstart is also listed in the Birmingham and Black Country Biodiversity Action Plan.

The presence of a singing male demonstrates that the site may form part of a wider territory, or help to maintain the distribution of this species in the region. However, the absence of confirmed breeding and recent records on site, and the limited extent of foraging habitat present, indicates that the black redstart assemblage associated with the Site is of local value.

Black redstart is listed on Schedule 1 of the *Wildlife and Countryside Act 1981* (as amended).

#### Other bird species

The desk study returned records for ten other bird species within a 1km radius of the Site; none of those records were submitted for sightings within the zone of influence; those that are relevant include house sparrow, dunnock and starling, which were considered most likely to utilise the Site due to the presence of suitable habitat. The nearest records to the Site were provided for house sparrow and dunnock, at 200m north from the Site in 2007.

The derelict buildings on site provided numerous visible access points and nesting sites for a range of common bird species, and the limited area of introduced shrub had potential to support low numbers of widespread nesting and foraging birds including house sparrow, dunnock and starling. The surrounding area was highly urbanised, with numerous buildings immediately adjacent to the Site and suitable nesting and foraging habitat located 700m south-west and 240m north-east from the Site in small areas of open green space. The Site was considered unsuitable for nesting and/or foraging swift, kestrel, and peregrine falcon.

The black redstart survey in 2010 confirmed the presence of a pair of nesting dunnock. A number of other widespread species were confirmed present but not breeding on site these include: house sparrow, goldfinch, blue tit, wren, blackbird, wood pigeon, magpie and carrion crow.

Of those species recorded on site, dunnock and house sparrow are Species of Principal Importance<sup>9</sup>. Dunnock is an Amber-list Bird of Conservation Concern<sup>10</sup> due a short-term decline in its breeding population and house sparrow is a Red-list Bird of Conservation

---

8 <http://www.bbcwildlife.org.uk/sites/default/files/bbcbapfinal2010.pdf>

9 Species of Principal Importance as listed on Section 41 of the National Environment and Rural Communities Act, 2006

10 Amber List species are those with Unfavourable Conservation Status in Europe; those whose population or range has declined moderately in recent years; those whose population has decline historically but made a substantial recent recovery; rare breeders; and those with internationally important or localised populations

Concern<sup>11</sup> due to the long-term decline in its breeding population. However, both species are still common and widespread species in the UK.

Due to the limited extent of nesting and foraging habitat on site, the low number of records provided in the local area, and the widespread distribution and abundance of species that were recorded, the assemblage of other common bird species associated with the Site is of value within the zone of influence only.

All wild birds, their nests and eggs are protected under Sections 1-8 of the *Wildlife and Countryside Act 1981* (as amended).

## 12.5 Assessment of Impacts

### Construction phase

#### Designated Sites

The Site is not part of, or in the immediate vicinity of, any non-statutory designated sites. Two non-statutory designated sites are present within a 1km radius of the Site; Digbeth Branch Canal (SLINC) and Grand Union Canal (SLINC), which are located 400m and 700m north-east of the Site, respectively. Both sites are considered to be outside the zone of influence due to the distance and nature of the urban environment between the Site and the SLINCs. As such, the construction phase of the proposed development will have **no significant impact** on the conservation status of the designated sites that are located within a 1km radius. This assessment is **near-certain**.

#### Habitats

Phase 2 of the proposed development will involve the demolition of two existing buildings that had prior use as residential accommodation and recreational space. Phase 3 of the proposed development will result in the demolition of a cluster of three existing shops, garage blocks. Site clearance works for phases 2 and 3 will result in the direct loss of 366m<sup>2</sup> of introduced shrub, 68m<sup>2</sup> of bare ground and 48m<sup>2</sup> of semi-improved (species poor) grassland. Site clearance encompassing Phase 2 and 3 are scheduled to take place between 2015 and 2016, which will involve the permanent removal the habitats identified on site. The habitats on site are of negligible integral value to biodiversity and are considered to be of value within the zone of influence only. As such, in the absence of habitat creation measures, the loss of

---

<sup>11</sup> Red List species are those with Unfavourable Conservation Status in Europe; those whose population or range has declined severely in recent years; those whose population has decline historically but made a substantial recent recovery; rare breeders; and those with internationally important or localised populations

such habitats will result in **no significant adverse impacts** on the conservation status of habitats to be lost as a result of development. This assessment is **near-certain**.

### Species

#### *Bats*

The conservation status of bats is dependent on the presence of undisturbed roost sites, suitable foraging areas and suitable habitat to provide connectivity and links between roosts and foraging areas. Phase 2 of the proposed development will result in the permanent removal of buildings potentially of value to roosting bats, however, surveys carried out in 2010 and 2014 demonstrated that roosting bats are unlikely to be present. Site clearance will also involve the permanent removal of poor-quality foraging habitat comprising a small area of introduced shrub and species-poor grassland. The proposed works will not affect more suitable habitat in the local area, such as the canals and small areas of open green space to the north-east of the Site that provide commuting and foraging habitat.

The complete removal of these habitats will take place in 2015-2016, and is a permanent effect. The poor-quality of habitat and the absence of recorded bat activity in the vicinity of the site indicate there will be **no significant adverse effects** on the conservation status of bat populations which are significant in the zone of influence of the project only. This assessment is **near-certain**.

There remains a low residual possibility of a bat roost supporting single or low numbers of *Pipistrellus* sp. being present on site during the construction phase. This will be addressed through the mitigation measures outlined below (Section N.7), in order to ensure legal compliance.

#### *Black redstart*

The conservation status of black redstart is dependent on the features suitable for nest construction being present and a sufficient extent of sparsely vegetated habitat to provide a foraging resource. Phase 2 of the proposed development will result in the permanent removal of buildings that offer potential nesting opportunities and approximately 0.1ha of low quality foraging habitat that may be used by black redstart. Phase 2 and 3 of the proposed development could result in indirect temporary disturbance from demolition and construction activities to black redstart that may have begun nesting on, or in the immediate vicinity of the Site prior to the commencement of works.

The complete removal of suitable nesting and foraging habitats will take place in 2015-2016, and is a permanent effect. Disturbance will be temporary and last for the duration of demolition and construction period. The removal of habitats on site and potential disturbance

that may result will be a **minor adverse effect** on their conservation status and is significant at the local level. Such an effect is at most **likely**, considering there are several records for black redstart in the vicinity of the site, however suitable habitat on site is of limited extent and quality, and more suitable habitat is located in the local area.

Black redstart are protected from killing or injury and/or disturbance during the breeding season under the *Wildlife and Countryside Act 1981* (as amended), which will be addressed through the mitigation measures outlined below (Section N.7),

#### Other bird species

The conservation status of other, more widespread bird species present at the site is also dependent on the presence of suitable nesting and foraging habitat, and the absence of high levels of disturbance during the nesting period. Phase 2 of the proposed development will result in the permanent removal of approximately 0.1ha of nesting habitat and low quality foraging habitat for species including house sparrow and dunnock. Bird species recorded at the site are well-adapted to urban/suburban environments, and are likely to be widely distributed within the local area.

The complete removal of suitable nesting and foraging habitats will take place in 2015-2016, and is a permanent effect. Phase 2 and 3 of the proposed development could result in the indirect temporary disturbance to common bird species that may have begun nesting in the immediate vicinity of the Site prior to the commencement of works. This disturbance will last for the duration of demolition and construction period. Low numbers of common species will be affected by the proposed development. As such there will be **no significant adverse effects** on the conservation status of populations of widespread bird species that are significant in the zone of influence of the project only. This assessment is **near-certain**.

All species of wild bird are protected from killing and injury, and their nests from damage or destruction under the *Wildlife and Countryside Act 1981* (as amended). The potential presence of nesting birds on site during the construction phase will be addressed through the mitigation measures outlined below (Section N.7), in order to ensure legal compliance.

#### **Operational phase**

##### Designated Sites

During operation, the proposed development could cause an increase in the level of human disturbance in the immediate vicinity of the development (*i.e.* population, traffic, noise). However, both sites (Digbeth Branch Canal SLINC and Grand Union Canal SLINC) are considered to be outside the zone of influence, due to the distance and nature of the urban environment between the Site and the SLINC. As such, the construction phase of the

proposed development will have **no significant impact** on the conservation status of the designated sites that are located within a 1km radius. This assessment is **near-certain**.

#### Habitats

All habitat previously present on the Site will have been removed during the construction phase. As a result, **no significant adverse effects** will occur at the operational phase of the development. This assessment is **near-certain**.

#### Species

##### *Bats*

The operational phase of the proposed development will result in an increase in light pollution that has the potential to disturb single or low numbers of pipistrelle bats that may be foraging and/or commuting in the zone of influence. However, pipistrelle bats are well adapted and widespread in urban environments, and lighting proposals will ensure that the proposed illumination avoids the green and brown roofs which will provide foraging habitat at the operational stage. The lighting scheme will also avoid illumination of bat boxes to be installed as replacement roost sites. As such, the operational phase of the proposed development will have **no significant adverse effects** on the conservation status of bat populations which are significant in the zone of influence of the project only. This assessment is **near-certain**.

##### *Other species*

Operation of the proposed scheme is not considered likely to result in significant adverse effects on any other ecological receptors.

## **12.6 Assessment of Cumulative Impacts**

The potential cumulative effects of the development proposal for Beorma Quarter were considered in conjunction with the list of consented schemes. The area immediately surrounding the site is within the city of Birmingham and dominated by existing urban development. Connaught Square and Eastside Birmingham City University Phase 2 developments result in the removal of habitat potentially suitable for black redstart. Given the limited extent and low quality of foraging habitat to be lost as a result of construction of phases two and three of Beorma Quarter and assuming that both of these developments provide appropriate mitigation for the appropriate replacement of black redstart habitat, no significant adverse effects are likely to result from either the construction or operational stages of the proposed scheme when the cumulative impacts of the developments identified are considered. This assessment is near certain.

## 12.7 Enhancement, Mitigation and Residual Effects

### Mitigation Measures

#### Sites

No adverse impacts will affect the conservation status of any statutory or non-statutory designated sites located in a 1km radius of the proposed development. As such, no mitigation measures are proposed for designated sites.

#### Habitats

The habitats present on site were of low intrinsic biodiversity value and no significant impacts will result from the proposed development. As such, no mitigation measures are proposed for the removal of habitats on site.

#### Species

##### *Bats*

In order to address the low residual possibility of a bat roost supporting single or low numbers of *Pipistrellus* sp. being present on site during the construction phase, mitigation measures will be employed, which will ensure legal compliance with protected species legislation relating to bats. Mitigation measures will consist of a watching brief and soft strip demolition method during the proposed works.

The watching brief will involve a licensed bat ecologist supervising the removal by hand of any features on the buildings with potential to support roosting bats. If bats, or evidence of bats are discovered, works must cease immediately and a European Protected Species Mitigation licence must be sought from Natural England in order to proceed on the basis that suitable mitigation and proportional enhancement has been provided for the loss of a roost.

##### *Black redstart*

In order to address the potential presence of nesting black redstart on or in the immediate vicinity of the Site prior to and during the construction phase of the proposed development, it is advised that the clearance of buildings and vegetation is undertaken outside of the main bird nesting season (March to late August, inclusive) to avoid any potential offences relating to nesting birds.

If clearance must be undertaken within the active season, a suitably qualified Ecologist must check the Site and the adjacent structures for nesting black redstart immediately prior to

works commencing. The visits should be conducted an hour before sunrise and follow the standard breeding bird survey methodology (Gilbert et al, 1998). As construction works may encourage black redstart to the site by creating suitable habitat, it is recommended that an Ecologist will visit the site at regular intervals (every one to two weeks) during construction to monitor whether black redstarts are nesting on or in the immediate vicinity of the Site.

If black redstart are found to be nesting on-site and may be impacted by the works (including disturbance risk), all works in the immediate vicinity must stop and the advice of an Ecologist must be sought immediately. No works that could impact upon or disturb the nest (either directly or which causes the bird to abandon the nest) may take place until the chicks have fledged and are independent of the parent birds. The appointed ecologist will be able to advise on the area to be subjected to restricted clearance works and type of activity that is permissible in this area. The required buffer area will be dependent on the location of the nest and the proposed works. The frequency of site visits made by the ecologist may also need to be increased in this instance to ensure activity near the nest is closely monitored.

In order to compensate for the loss of potential nesting and foraging habitat that may contribute to the wider foraging resource of black redstart in the local area, suitable foraging and nesting habitat will be created on site. Approximately 1350m<sup>2</sup> of habitat suitable for foraging black redstart and other urban bird species will be created on-as part of the development. Extensive green/brown roofs will be provided to enhance the value of the site for black redstart, comprising approximately 640m<sup>2</sup> of green roof and 710m<sup>2</sup> of brown roof which will include a low-nutrient crushed-brick substrate supporting a variety, and low-density coverage of ruderal plants (Drawing number 922.102). The following features will be incorporated into the green and brown roofs:

- Relatively small areas of very sparsely vegetated aggregate base terrain, comprising crushed brick and shredded bark with sedum circles. These areas will be relatively undisturbed by people.
- The sparsely vegetated terrain will be nutrient poor and subject to drought stress, conditions which can favour the kind of plants that will support the invertebrates on which Black Redstart feed, particularly during the breeding season.
- Sedum plant plugs and 'Living Roof Wildflower Mixture' and 'Special Cornflower Mixture' seeds will be introduced onto parts of the new extensive green/brown roofs, although parts of the brown roof will also be left to colonise naturally. The species chosen are typical of drought stressed and nutrient poor conditions.

Six nest boxes designed specifically to attract black redstart, such as the open fronted woodcrete box (2HW) produced by Schwegler will be installed on or incorporated within the

fabric of the buildings. In addition, a variety of holes and ledges at various heights from 3m to 50m above ground level will be incorporated into structures as nest sites. If the above mitigation is implemented, there will be **no significant adverse effects** on the conservation status of black redstart populations which are significant at the local level. This assessment is **near-certain**.

#### *Other bird species*

In order to address the potential presence of other bird species on or in the immediate vicinity of the Site prior to and during the construction phase of the proposed development, as with black redstart it is advised that the clearance of buildings and vegetation is undertaken outside of the main bird nesting season (March to late August, inclusive). Where this is not possible, a search for nesting birds up to 48 hours prior to vegetation clearance taking place must be undertaken by an experienced ecologist. If nesting birds are found at any time during clearance works, work must cease in the immediate vicinity of the nest and an ecologist must be consulted. In order to compensate for the loss of potential nesting and foraging habitat on site that may contribute to the urban territory for common and widespread species of birds, suitable foraging and nesting habitat will be created on site.

The brown and green roof planting described above will also provide a foraging resource for other breeding bird species. Additional habitat will be provided by ground-level landscape planting comprising ornamental planted beds, semi-mature trees and ground cover shrubs (Drawing Reference 922.02). Artificial nest boxes will be installed throughout the site following construction to provide nesting opportunities for bird species found in urban area including house sparrow and starling. Six Schwegler woodcrete 'sparrow terraces' and six Schwegler 3SV Starling Boxes will be installed throughout the development.

#### **Residual Effects**

There are not predicted to be any significant residual adverse impacts on ecology and nature conservation as a result of the proposed development (*Table 12.3*). The habitat creation measures described above are designed to enhance the value of the site for the ecological receptors identified as being present (or potentially present) at the site. These include foraging habitat and roosting opportunities for pipistrelle bats and foraging/nesting habitat for black redstart and other breeding birds. In addition to mitigating for the minor adverse effect on black redstart, these measures will result in the overall enhancement of the site in terms of its biodiversity value.

**Table 12.3: Summary of Residual Effects**

| Receptor           | Value             | Predicted construction impact before mitigation | Predicted operational phase impact before mitigation | Mitigation  | Predicted Residual Impact |
|--------------------|-------------------|---|--|---|---------------------------|
| Designated Sites   | Zone of Influence | Not Significant                                 | Not Significant                                      | N/A   | Negligible                |
| Habitats           | Zone of Influence | Not Significant                                 | Not Significant                                      | N/A but post-development habitat creation measures will provide a net gain in ecologically valuable habitat     | Minor Positive            |
| Bats               | Zone of Influence | Not Significant                                 | Not Significant                                      | Watching Brief/Soft Strip & EPSL if required.   | Negligible                |
| Black Redstart     | Local             | Minor Adverse                                   | Not Significant                                      | Clearance outside of the nesting season, watching brief and provision of green/brown roofs                      | Minor Positive            |
| Other Bird Species | Zone of Influence | Not Significant                                 | Not Significant                                      | Clearance outside of the nesting season, watching brief and provision of green/brown roofs & landscape planting | Minor Positive            |

### 12.8 Summary

Based upon the appraisal of ecology and nature conservation impacts discussed above, the residual impacts associated with the **Construction Phase** are deemed to be of **LOW** significance and short-term and temporary in nature. The residual impacts associated with the **Operational Phase** are deemed to be of **LOW** significance and long-term or permanent and positive in nature.