

**MIRA TECHNOLOGY PARK SOUTH SITE,
WATLING STREET, WARWICKSHIRE**

BREEDING BIRD SURVEY

A Report to: ERI MTP Limited

Report No: RT-MME-154920-06 Rev A

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REPORT VERIFICATION AND DECLARATION OF COMPLIANCE

This study has been undertaken in accordance with British Standard 42020:2013 “Biodiversity, Code of practice for planning and development”.

Report Version	Date	Completed by:	Checked and Approved by:
Final	22/12/2021	Giselle Hynes (Ecological Consultant) and Helen Griffin ACIEEM (Senior Ecological Consultant)	Tim Hextell MCIEEM (Principal Technical Consultant)
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The information which we have prepared is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management’s Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

DISCLAIMER

The contents of this report are the responsibility of Middlemarch Environmental Ltd. It should be noted that, whilst every effort is made to meet the client’s brief, no site investigation can ensure complete assessment or prediction of the natural environment.

Middlemarch Environmental Ltd accepts no responsibility or liability for any use that is made of this document other than by the client for the purposes for which it was originally commissioned and prepared.

VALIDITY OF DATA

The findings of this study are valid for a period of 24 months from the date of survey. If works have not commenced by this date, an updated site visit should be carried out by a suitably qualified ecologist to assess any changes in the habitats present on site, and to inform a review of the conclusions and recommendations made.

NON-TECHNICAL SUMMARY

In May 2021, ERI MTP Limited Middlemarch Environmental Ltd to undertake a Breeding Bird Survey at the site of a proposed development located south of Watling Street near Caldecote. The survey information will form part of the baseline data for the site and will be submitted in support of a planning application.

The surveyed area was approximately 69 ha in size and dominated by large arable fields. Field margins comprised largely managed hedgerows and a stream flowed from north to south through the centre of the site. The Elms Farm complex situated within the eastern section of the site, comprised a residential dwelling and a range of barns, outbuildings and associated gardens. Two farm ponds were also present on site.

This site is, at its nearest point, located approximately 100 m south-west of Caldecote Hall and Gorse Ecosite, comprising parkland with mature trees and wet meadow which supports important populations of parkland and woodland birds including lesser spotted woodpecker, spotted flycatcher, tawny owl and barn owl. It is considered that some species recorded from this Ecosite could occur within the survey area.

The River Anker potential Local Wildlife Site is located to the west of the MIRA survey area and is linked hydrologically to it. It is considered that this potential corridor could also provide a valuable conduit for birds moving between the two locations. However, it is unlikely to support significant numbers of waterbird species.

The desk study data included records of the following bird species within a 1 km radius of MIRA Technology Park South Site: bullfinch, dunnock, grey wagtail, kestrel, mallard, mistle thrush, starling, stock dove, swallow, swift, willow warbler and wren. It is considered that many of these species could occur as breeding species.

The survey visits were undertaken on 31st May 2021 and 21st June 2021 by Tim Hextell MCIEEM (Principal Technical Consultant) and Hannah Lewis MCIEEM (Senior Ecological Consultant). Findings of the survey are summarised in Table A.

Total Number of Confirmed/Probable Breeding Species	27
Confirmed / Probable Breeding Species of Principal Importance in England	6 – Linnet, reed bunting, skylark, song thrush, starling and yellowhammer
Confirmed / Probable Breeding Local BAP Species	5 - Linnet, reed bunting, skylark, song thrush and yellowhammer
Confirmed / Probable Breeding RSPB Red List Species	5 – Greenfinch, linnet, skylark, starling and yellowhammer
Confirmed / Probable Breeding RSPB Amber List Species	7 – Common whitethroat, dunnock, reed bunting, song thrush, stock dove, tawny owl and wren
Significant Concentrations of Confirmed / Probable Breeding Species	Farmland bird species with linnet (2 territories), reed bunting (1), skylark (9) and yellowhammer (3)

Table A: Summary of Breeding Bird Survey Findings

A further six species were recorded using the site but were not considered to have bred.

Based on adapted site evaluation criteria originally produced by Fuller (1980), the breeding bird assemblage at the site is considered to be of local or district value. The majority of species recorded on site are considered to be fairly common and widespread generalist species which are able to exploit a wide range of habitats. However, the survey area also supported species which are closely associated with farmland habitats, particularly arable farmland with a good hedgerow network. Important farmland species which the survey area supported comprised linnet, reed bunting, skylark and yellowhammer. In addition, stock dove was recorded using the survey area as was yellow wagtail (although the latter species was not considered to be breeding but suitable nesting habitat exists). The farm complex towards the eastern boundary of the survey area also supported several breeding pairs of swallow.

The development of the MIRA Technology Park South Site is likely to lead to a loss of the majority of species which are considered to be farmland birds of conservation concern. However, many of the generalist species are likely to remain and proposed landscaping activities could see an increase in some species and potentially new species not currently breeding on site occurring in the future, particularly wetland birds.

In order to ensure that the site continues to provide breeding bird habitats the following recommendations have been provided:

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- R1** The boundary features on site should be appropriately managed in order to ensure that the site continues to support a wide range of breeding bird species. The retained habitats should be protected and undisturbed during the construction phase.
- R2** The whole site should incorporate an appropriate nestbox scheme in order to provide a range of potential nesting locations for passerine species. Boxes for a range of species should be installed on retained trees within the sites and features should be incorporated into buildings/structures for species such as house sparrow, starling, swift and house martin. The potential for provision of swallow nest sites should also be explored in the southern section of the site.
- R3** Biodiversity enhancement measures, including planting of native species should be incorporated into landscaping proposals. Once the landscaping proposals are finalised a Landscape and Environment Management Plan should be prepared detailing how the retained and created habitats will be managed in the long-term. Any site landscaping should incorporate native or wildlife-friendly species, and features which will benefit breeding bird species. Proposed areas of 'Wildlife/Biodiversity value should be planned and managed appropriately in order to maximise their value to a range of species.
- R4** Any vegetation to be removed should be undertaken outside of the bird nesting season; this generally extends between March and September but is weather dependent.

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1. INTRODUCTION

1.1 PROJECT BACKGROUND

In May 2021, ERI MTP Limited Middlemarch Environmental Ltd to undertake a Breeding Bird Survey at the site of a proposed development located south of Watling Street near Caldecote.

Middlemarch Environmental Ltd has also carried out a number of additional ecological surveys at the site. The results of these surveys can be found in the following reports:

- Preliminary Ecological Assessment Report (RT-MME-154920-01 Rev B);
- Great Crested Newt Habitat Suitability Index Assessment and eDNA survey (RT-MME-1054920-02 Rev B);
- Badger survey (RT-MME-1054920-03 Rev B);
- Bat Surveys (RT-MME-1054920-04 Rev B);
- Bat Activity Surveys (RT-MME-1054920-05 Rev B); and,
- Reptile Survey (RT-MME-1054920-07 Rev A).

This report assesses the suitability of the habitat at the site for breeding birds, and presents the findings of a Breeding Bird Survey undertaken by experienced field ornithologists. The site is evaluated for its breeding bird interest and the potential impacts of the proposed development are assessed.

1.2 SITE DESCRIPTION AND CONTEXT

The proposed development site is located to the South of Watling Street near Caldecote in Warwickshire. Its central grid reference is approximately SP 358 951. The surrounding landscape is predominantly agricultural although the town of Nuneaton lies nearby to the south and the village of Caldecote is situated to the west. The northern boundary of the site is formed by Watling Street (the A5) and the south-western boundary by Weddington Lane (the A444). The south-eastern boundary abuts other fields, but a dismantled railway line, now the Weddington Way, is situated nearby, joining the proposed development site in the north-eastern corner of the site.

The site was approximately 69 ha in size and dominated by arable fields. Field margins comprised hedgerows and a stream flowed from north to south through the centre of the site. The Elms Farm is also situated within the site. This comprises a residential dwelling and a complex of barns and associated gardens. Two farm ponds are also present on site.

1.3 DOCUMENTATION PROVIDED

The conclusions and recommendations made in this report are based on information provided by the client regarding the scope of the project. Documentation made available by the client is listed in Table 1.1.

Document Name / Drawing Number	Author
Masterplan Option 10 B / 21092 SGP XX 00 DR A 111010 Rev M	SGP Architects + Masterplanners

Table 1.1: Documentation Provided by Client

2. METHODOLOGY

2.1 DESK STUDY

As part of the Preliminary Ecological Appraisal (Report RT-MME-154920-01 Rev B) an ecological desk study was undertaken. The consultees for the desk study were:

- Natural England - *MAG/C* website for statutory conservation sites;
- Warwickshire Biological Records Centre (in August 2020); and,
- Leicestershire and Rutland Environmental Record Centre (in October 2021).

Middlemarch Environmental Ltd then assimilated and reviewed the desk study data provided by these organisations. Relevant bird data are discussed in Chapter 3. In compliance with the terms and conditions relating to its commercial use, the full desk study data are not provided within this report.

2.2 FIELDWORK METHODOLOGY

The breeding bird survey was conducted in line with specifications detailed by the British Trust for Ornithology (Gilbert, 1998), although the methodology was tailored to site conditions. The methodology is a 'scaled down' version of the Common Bird Census (CBC) approach defined in Gilbert. Due to the lateness of commissioning only two survey visits were undertaken. The CBC methodology involved walking the entire survey site and passing within 50 m of every point (where vegetation and access allowed). The route was chosen so as to sample all habitats recorded within the survey area.

For each survey visit, the study area is walked at a slow pace in suitable weather conditions to locate and identify all individual bird species within the survey boundaries. Registrations of birds were plotted onto suitably scaled maps on each site visit and all activities were noted i.e. singing, alarm calling, nest-building, feeding young and other behaviours indicative of breeding activities. Subsequent analysis of field maps enabled the approximate territories of species to be calculated and the number of territories of individual species worked out. As specified by the CBC methodology all morning visits were undertaken between 0600 and 0700 British Standard Time (BST), and no later than 0900 BST, avoiding the first hour before sunrise. Timing of the survey visits was also dictated by weather conditions. Therefore the site was examined only in appropriate weather conditions. None of the visits were conducted in cold weather, heavy rain, poor visibility or strong winds. All surveys were undertaken by experienced field ornithologists.

3. DESK STUDY

3.1 RELEVANT NATURE CONSERVATION SITES

The desk study exercise included a search for statutory and non-statutory nature conservation sites of ornithological interest. A search radius of 10 km was used for European statutory sites, 5 km for UK statutory sites and 2 km for non-statutory sites. Relevant sites for which the citations include information regarding bird species are summarised in Table 3.1.

Site Name	Designation	Proximity to Survey Area	Relevant Bird Information
Caldecote Hall and Gorse	Ecosite	100 m south-west	This site is on the BTO schedule of sites of importance to birds. It comprises parkland with mature trees and wet meadow associated with the River Anker. Lesser spotted woodpecker <i>Dendrocops minor</i> , spotted flycatcher <i>Muscicapa striata</i> , and tawny owl <i>Strix aluco</i> have bred on site and barn owl <i>Tyto alba</i> may also be present.
River Anker	pLWS	390 m south-west	The site comprises an important wildlife corridor surrounded by semi-improved grasslands, woodland plantation, and arable fields. Marginal vegetation includes white dead-nettle <i>Lamium album</i> and cleavers <i>Galium aparine</i> . The site supports good populations of water vole <i>Arvicola amphibious</i> and otter <i>Lutra lutra</i> and includes an area of particular importance to birds.
Key: pLWS: potential Local Wildlife Site			

Table 3.1: Summary of Nature Conservation Sites of Ornithological Significance

3.2 SPECIES RECORDS

Records of bird species within a 1 km radius of the proposed development area provided by Warwickshire Biological Records Centre and Leicestershire and Rutland Environment Records Centre are summarised in Table 3.2.

Species	No. of Records	Most Recent Record	Proximity of Nearest Record to Study Area	Species of Principal Importance?	Local BAP?	Legislation / Conservation Status
Redwing <i>Turdus iliacus</i>	3	2010	70 m west	-	-	WCA1i, RSPB Red List
Fieldfare <i>Turdus pilaris</i>	6	2010	70 m west	-	-	WCA1i, RSPB Red List
House sparrow <i>Passer domesticus</i>	6	2013	70 m west	✓	-	RSPB Red List
Lesser redpoll <i>Acanthis cabaret</i>	3	2010	70 m west	✓	-	RSPB Red List
Yellowhammer <i>Emberiza citrinella</i>	2	2013	440 m south	✓	✓	RSPB Red List
Corn bunting <i>Emberiza calandra</i>	1	2007	Potentially on site	-	✓	RSPB Red List
Linnet <i>Linaria cannabina</i>	2	2016	440 m south	-	✓	RSPB Red List
Song thrush <i>Turdus philomelos</i>	9	2013	440 m south	-	✓	RSPB Red List

Table 3.2: Summary of Protected/Notable Bird Species Records Within 1 km of Survey Area (continues)

Species	No. of Records	Most Recent Record	Proximity of Nearest Record to Study Area	Species of Principal Importance?	Local BAP?	Legislation / Conservation Status
Bullfinch <i>Pyrrhula pyrrhula</i>	5	2013	70 m west	-	-	RSPB Amber List
Dunnock <i>Prunella modularis</i>	3	2013	440 m south	-	-	RSPB Amber List
Grey wagtail <i>Motacilla cinerea</i>	1	2009	770 m south	-	-	-
Kestrel <i>Falco tinnunculus</i>	6	2016	Potentially on site	-	-	RSPB Amber List
Mallard <i>Anas platyrhynchos</i>	3	2013	70 m west	-	-	-
Mistle thrush <i>Turdus viscivorus</i>	1	2009	770 m south	-	-	RSPB Red List
Starling <i>Sturnus vulgaris</i>	5	2016	440 m south	-	-	RSPB Red List
Stock dove <i>Columba oenas</i>	1	2013	440 m south	-	-	RSPB Amber List
Swallow <i>Hirundo rustica</i>	2	2013	440 m south	-	✓	-
Swift <i>Apus apus</i>	1	2013	440 m south	-	✓	RSPB Amber List
Willow warbler <i>Phylloscopus trochilus</i>	2	2013	440 m south	-	-	RSPB Amber List
Wren <i>Troglodytes troglodytes</i>	3	2016	134 m west	-	-	-
Key: #: Dependent on species. *Four figure or tetrad grid reference provided only. WCA 1i: Schedule 1 Part 1 of Wildlife and Countryside Act 1981 (as amended). Birds protected by special penalties at all times. Species of Principal Importance: Species of Principal Importance for Nature Conservation in England. Local BAP: Warwickshire Biodiversity Action Plan and/or Leicestershire Biodiversity Action Plan. RSPB Red / Amber list: Species listed within Birds of Conservation Concern 4						

Table 3.2 (Continued): Summary of Protected/Notable Bird Species Records Within 1 km of Survey Area

4. BREEDING BIRD SURVEY RESULTS

4.1 INTRODUCTION

The survey visits were undertaken on 31st May and 21st June 2021 by Tim Hextell MCIEEM (Principal Technical Consultant) and Hannah Lewis MCIEEM (Senior Ecological Consultant). Survey dates and weather conditions are listed in Table 4.1.

Date	Parameter			
	Temperature (°C)	Cloud (%)	Wind (Beaufort)	Precipitation
31/05/2021	16	10	F1-2	Nil
21/06/2021	15	10	F2	Nil

Table 4.1: Dates and Weather Conditions of Breeding Bird Surveys at MIRA Technology Park South Site

4.2 SURVEY CONSTRAINTS

Due to a late instruction the first survey visit was not completed until the end of May. The relatively late start of the surveys may have resulted in some early nesting species e.g. long-tailed tit, already having already completed their nesting activities for the year. However, species are likely to remain within breeding territories and as experienced field ornithologists undertook the survey works and were able to assess suitability of the site to support breeding birds this is not considered to be a significant constraint to providing a robust assessment of breeding birds using the MIRA Technology Park South Site survey area.

4.3 SURVEY RESULTS

During the survey visits a total of 33 bird species were recorded using this site. Of these species, 27 were either confirmed to have bred or probably did so based on habitat suitability and observed patterns of behaviour. Confirmed and probable breeding species are listed in Table 4.2, and approximate territory locations are plotted on Drawing 154920-06-01 in Chapter 7.

Species	Scientific Name	Conservation Status	No. of Territories
Blackbird	<i>Turdus merula</i>	-	5
Blackcap	<i>Sylvia atricapilla</i>	-	2
Blue tit	<i>Cyanistes caeruleus</i>	-	4
Carrion crow	<i>Corvus corone</i>	-	1
Chaffinch	<i>Fringilla coelebs</i>	-	3
Collared dove	<i>Streptopelia decaocto</i>	-	1
Common whitethroat	<i>Sylvia communis</i>	Amber.	4
Dunnock	<i>Prunella modularis</i>	Amber.	5
Goldfinch	<i>Carduelis carduelis</i>	-	2
Great tit	<i>Parus major</i>	-	1
Greenfinch	<i>Carduelis chloris</i>	Red.	3
Linnet	<i>Carduelis cannabina</i>	SPI. LBAP. Red.	2
Magpie	<i>Pica pica</i>	-	1
Nuthatch	<i>Sitta europaea</i>	-	1
Pheasant	<i>Phasianus colchicus</i>	-	1
Pied wagtail	<i>Motacilla alba</i>	-	1
Reed bunting	<i>Emberiza schoeniclus</i>	SPI. LBAP. Amber.	1
Robin	<i>Erithacus rubecula</i>	-	4
Skylark	<i>Alauda arvensis</i>	SPI. LBAP. Red.	9

Table 4.2: Confirmed and Probable Breeding Species Recorded at MIRA Technology Park South Site (continues)

Species	Scientific Name	Conservation Status	No. of Territories
Song thrush	<i>Turdus philomelos</i>	SPI. LBAP. Amber.	2
Starling	<i>Sturnus vulgaris</i>	SPI. Red.	2
Stock dove	<i>Columba oenas</i>	Amber.	1
Swallow	<i>Hirundo rustica</i>	-	3
Tawny owl	<i>Strix aluco</i>	Amber.	1
Woodpigeon	<i>Columba palumbus</i>	-	5
Wren	<i>Troglodytes troglodytes</i>	Amber.	9
Yellowhammer	<i>Emberiza citrinella</i>	SPI. LBAP. Red.	3

Key:

SPI England: Species of Principal Importance in England.
LBAP: Warwickshire Biodiversity Action Plan.

Notes for RSPB Red List Criteria

Species that meet any of the following criteria are red listed:

IUCN: Global Conservation Status. Species listed by Birdlife International as being Globally Threatened using IUCN criteria.

HD: Historic Decline. A severe decline in the UK between 1800-1995, without substantial recent recovery.

BDp: Breeding Population Decline. Severe decline in the UK breeding population size, of more than 50% over the last 25years (BDp1) or the entire period used for assessments since the first BoCC review, starting in 1969 ("longer term") (BDp2).

WDp: Non-breeding Population Decline. Severe decline in the UK non-breeding population size, of more than 50%, over 25 years (WDp1) or the longer term (WDp2).

BDr: Breeding Range Decline. Severe decline in the UK range, of more than 50%, as measured by number of 10 km squares occupied by breeding birds, over 25 years (BDr1) or the longer term (BDr2).

Notes for RSPB Amber List Criteria

Species that meet any of the following criteria, but none of the red listed criteria, are amber listed:

SPEC: European Conservation Status. Categorized as a Species of European Conservation Concern.

Hdrec: Historic Decline – Recovery. Red listed for Historical Decline in a previous review but with substantial recent recovery (more than doubled in the last 25 years).

BDMp: Breeding population Decline. As for red list criteria BDp1 and BDp2 but with moderate decline (by more than 25% but less than 50%).

WDMp: Non-breeding population Decline. As for red list criteria WDp1 and WDp2, but with moderate decline (by more than 25% but less than 50%).

BDMr: Breeding Range Decline. As for red list criteria BDr1 and BDr2 but with moderate decline (by more than 25% but less than 50%).

BR and WR rarity: UK breeding population of less than 300 pairs (BR), or non-breeding population of less than 900 individuals (WR).

BL and WL Localisation: At least 50% of the UK breeding (BL) or non-breeding (WL) population found in 10 or fewer sites.

BI and WI International Importance: At least 20% of the European breeding (BI) or non-breeding (WI) population found in the UK.

Table 4.2 (Continued): Confirmed and Probable Breeding Species Recorded at MIRA Technology Park South Site

The remaining species recorded using the site are not considered to have bred, and were using the site as a temporary foraging resource or passing through at the time of the survey visits. Non-breeding species recorded during the survey are listed in Table 4.3.

Species	Scientific Name	Conservation Status
Common buzzard	<i>Buteo buteo</i>	-
Cormorant	<i>Phalacrocorax carbo</i>	-
Grey heron	<i>Ardea cinerea</i>	-
Kestrel	<i>Falco tinnunculus</i>	Amber.
Rook	<i>Corvus frugilegus</i>	Amber.
Yellow wagtail	<i>Motacilla flava</i>	SPI. LBAP. Red.

Table 4.3: Non-breeding Species Recorded at MIRA Technology Park South Site

5. DISCUSSION AND CONCLUSIONS

5.1 SUMMARY OF DESKTOP STUDY FINDINGS

The ecological desk study data collected for the site highlighted the presence of two nearby nature conservation sites for which bird species are listed in the site designation.

Caldecote Hall and Gorse Ecosite

This site is, at its nearest point, located approximately 100 m south-west of the site and comprises parkland with mature trees and wet meadow. It supports important populations of parkland and woodland birds including lesser spotted woodpecker, spotted flycatcher, tawny owl and barn owl.

The habitats present within the MIRA Technology Park South Site survey area are considered to be unsuitable to support lesser spotted woodpecker but could provide suitable habitats for both tawny owl and spotted flycatcher. Barn owl could also occur on site as suitable breeding habitat is present with mature trees and the farm buildings complex providing potential nesting locations, whilst field margins, including those along arable fields, offer potential hunting areas.

River Anker

This potential Local Wildlife Site is located to the west of the MIRA survey area and is linked hydrologically to it. It is considered that this potential corridor could provide a valuable conduit for birds moving between the two locations. However, it is unlikely to support significant numbers of waterbird species.

Species Records Within 1 km of MIRA Technology Park South Site

The desk study data included records of the following bird species within a 1 km radius of MIRA Technology Park South Site: bullfinch, dunnock, grey wagtail, kestrel, mallard, mistle thrush, starling, stock dove, swallow, swift, willow warbler and wren.

Of these species, it is unlikely that grey wagtail would occur at MIRA Technology Park South Site due to their niche habitat requirement of rocky, fast flowing streams – a habitat type not present on site. The existing stream which bisects the site is rather enclosed with dense tall ruderal vegetation and hedgerows alongside and therefore considered sub-optimal for this species.

The remaining species for which desk study records were provided could potentially occur on site. Bullfinch, dunnock, willow warbler and wren are species that breed in areas of scrub, hedgerow and woodland edge, of which there is suitable habitat within the survey area, particularly the hedgerows and the band of scrub on the eastern site boundary.

The open, arable habitats, with mature trees at the site boundaries, are also favourable for kestrel, mistle thrush, stock dove and swallow. Meanwhile, the urban nature of the surrounding area is favourable to swift and starling, which are generally associated with human settlements.

5.2 SURVEY FINDINGS AND EVALUATION

5.2.1 Breeding Species

Farmland Bird Species

The breeding bird surveys highlighted the presence of a range of species closely associated with farmland habitats. The most notable of these species being linnet (2 territories), reed bunting (1), skylark (9) and yellowhammer (3). Skylarks were widely scattered across site with territories recorded in all of the fields present. In addition, further territory-holding birds were recorded to the north of the A5 Watling Street and to the south-west beyond the A444, with both areas possessing additional open fields occupied by arable crops and which are considered to provide optimal breeding habitat. Skylarks rely on open habitats for breeding and choose areas that are not in close proximity to hedgerows and trees. This is to enable the birds to detect predators from a further distance and also to put a greater distance between young/eggs and predators such as corvids and birds of prey perched in trees.

A minimum of two linnet territories were recorded within the survey area being located towards the western side of the site. Linnet is a species associated with hedgerows and scrub and is a common, though decreasing, species within the county of Warwickshire. Provision of weed-rich areas such as arable margins

together with thick hedgerows and dense/scattered scrub are important factors for breeding linnets. The survey area is considered to offer abundant suitable habitat for this red-listed species of conservation concern.

A single reed bunting territory was identified within the large north-eastern field. Although this species is primarily associated with wetland habitats it can be found in arable farmland with oilseed rape crops being most favoured. Although two waterbodies and a small watercourse occur within the survey area these features are considered to be sub-optimal to support this species due to a lack of appropriate management, with the ponds being enclosed by dense scrub and young trees.

Three territories of yellowhammer were recorded during the field surveys. This species relies on mixed farmland habitats with well-established hedgerows and areas of cereals or 'weedy vegetation' in which to feed. This is a declining species in the county, though still reasonably common where suitable habitat occurs. Reasons for the decline are unclear but changes in farming practices are likely to be a significant factor.

The surveyed farmland at the MIRA Technology Park South Site is considered to offer good quality habitat for all four of these farmland species i.e. linnet, reed bunting, skylark and yellowhammer, although their presence and site usage will be highly influenced by crop types and associated management.

In addition to the above farmland bird species, two other species which are often aligned with farmland habitats were noted, namely swallow and stock dove. Swallow were recorded nesting within the farm complex in the east of the site and were recorded foraging widely in the surrounding area. Although swallow is still a common species within the county it has shown signs of a decline and the loss of suitable nest sites i.e. farm outbuildings, is believed to be one of the major causes. At least three pairs were noted actively nesting on site.

A single stock dove territory was identified within the survey area, centred to the east of the site. This is a species that nests in buildings, structures and tree cavities which sees it in competition with other hole-nesting species. Seed-rich farmland and parkland habitats are favoured but it can occur within a range of additional habitat types such as suburban fringes. The presence of suitable nesting locations is a factor in its distribution with much of the survey area lacking suitable locations to support more than the odd pair.

Other species

In terms of other species recorded during the field surveys, the most notable are considered to be common whitethroat, greenfinch and starling.

Common whitethroat, an amber species of conservation concern, mustered four territories. This is still a common and widespread species where suitable habitat occurs i.e. farmland with hedgerows, scrubby habitats and woodland edge.

Greenfinch, a red listed species of conservation concern, was recorded from three locations on the western periphery of the survey area. The recorded territories/breeding activity of this species was centered on the mature gardens associated with the residential properties located in this area. This is rather a typical habitat for this declining finch, although farmland with a good hedgerow structure is also favoured.

Another species of note was starling. This species of principal importance and red-listed species of conservation concern mustered 2 territories with nesting sites recorded in trees on the eastern edge and central section of the surveyed areas. Another declining species as a result of poor survival rates and loss of nest sites (removal of trees with holes and sealing of buildings being primary factors), the two pairs recorded within the survey area were observed leaving their nest sites to go and forage outside of the study site. Foraging adults require soil invertebrates for chicks and ostensibly feed within short grassland habitats which are lacking on site.

Woodland is a habitat that is lacking within the MIRA Technology Park South Site with the exception of the linear features just to the east of the site (and forming a walkway along a disused railway line) but linking into the well-timbered hedgerow which forms the eastern periphery of the study area. This small amount of habitat enabled the presence of individual territories of both nuthatch and tawny owl to occur, though it is conceded that the bulk of the site possesses negligible habitat for either species. Two blackcap territories were associated with this linear habitat feature. Blackcap is a very common and widespread species but is

mostly a bird of woodland and parkland with a well-developed understorey. Suitable breeding habitat is only present on the north-eastern edge of the survey area.

The garden areas associated with the farm complex in the east of the survey area, and a further three locations on the north-western periphery of the MIRA Technology Park South Site survey area where residential properties with associated mature gardens occur, provided suitable breeding habitat for species closely associated with this habitat type consisting of greenfinch, collared dove, song thrush and pied wagtail. Pied wagtail is a bird which is closely associated with human habitation, often occurring around farmyards, industrial estates and retail parks. The buildings/structures provide safe nesting locations whilst associated amenity grassland areas provide foraging locations. Unsurprisingly, a pied wagtail territory was associated with the farm complex in the east of the site. In addition, birds were also recorded to the north of the farm complex but were considered to be foraging on site and flying north to the MIRA Technology Park presumably to nesting locations. Pied wagtail is a common and widespread species in the county.

The breeding bird surveys highlighted the presence of a range of reasonably common and widespread generalist species such as blackbird, blue tit, chaffinch, great tit, magpie, robin, woodpigeon and wren (this species has just been added to the amber list of species of conservation concern, though is still common and widespread in the county and can be found in a wide variety of habitat types). These species are able to exploit a wide range of habitats, though do require cover of some sort be it hedgerows, scrub, tall ruderal vegetation or garden habitats. Unsurprisingly, the majority of territorial activity was centred on the networks of hedgerows and peripheral habitats recorded within the survey area.

5.2.2 Non-breeding Species

Common buzzard was noted flying over the site, though no evidence of nesting activity was recorded. This is a species that has become very common within the county over the last 20-30 years and is now a widespread familiar species occurring within a wide variety of habitats. Birds will hunt at some distance from a nest site and it is considered likely that this species is nesting in the surrounding area where suitable nesting locations are available in mature trees, a feature which is largely absent on site.

A single cormorant was observed flying over the site during the survey. This species requires large areas of open water for feeding of which there are none on site. It does breed at one or two locations within the county, although non-breeding birds can be encountered throughout the summer months.

Two grey herons were recorded during the survey visits. This species breeds at a few colonies in the county, though not known to be in close proximity to the survey area. The two small waterbodies on site and the watercourse which flows through the centre provide potential feeding areas for a species that will exploit all type of aquatic features throughout the breeding season.

A single adult kestrel was briefly noted on the south-western boundary of the survey area during the end of May site visit but not subsequently. This is a declining species of amber conservation concern. The survey area offers some suitable hunting habitat but potential nesting locations are rather limited. Extensive suitable habitat for this declining species occurs in the wider area.

Rooks were occasionally recorded during the field surveys flying over site and occasionally foraging amongst the arable fields. A rookery occurs to the west of the survey area within suitable well-timbered habitats.

During the late May site survey, a male yellow wagtail was recorded briefly in the south-western corner of the site amongst a newly emerging crop. This fast-declining species is typically associated with wetland habitats although in recent years it has switched to breeding amongst arable crops though breeding activity will very much depend on crop type and associated management. It is considered that the MIRA Technology Park South Site could provide suitable nesting habitat although none was recorded during the subsequent survey visit.

Evaluation

In terms of evaluating the site for its breeding bird significance the following criteria have been taken into account:

- The species richness of the bird assemblage of the site, i.e. how many different types of species the site supports.

- The presence of species listed as being of Principal Importance in England, species on local and national Biodiversity Action Plans (BAPs) and Red or Amber listed Species of Conservation Concern.
- The occurrence of significant concentrations of a bird species, particularly if these comprise a significant proportion (1% or more) of the national breeding population.

Table 5.1 presents a summary of the above criteria based on the current field survey data for MIRA Technology Park South Site.

Total Number of Confirmed/Probable Breeding Species	27
Confirmed / Probable Breeding Species of Principal Importance in England	6 – Linnet, reed bunting, skylark, song thrush, starling and yellowhammer
Confirmed / Probable Breeding Local BAP Species	5 – Linnet, reed bunting, skylark, song thrush and yellowhammer
Confirmed / Probable Breeding RSPB Red List Species	5 – Greenfinch, linnet, skylark, starling and yellowhammer
Confirmed / Probable Breeding RSPB Amber List Species	7 – Common whitethroat, dunnoek, reed bunting, song thrush, stock dove, tawny owl and wren
Significant Concentrations of Confirmed / Probable Breeding Species	Farmland bird species with linnet (2 territories), reed bunting (1), skylark (9) and yellowhammer (3)

Table 5.1: Summary of Breeding Bird Evaluation Criteria, MIRA Technology Park South Site

Fuller (1980) describes a method for assessing the ornithological interest of sites, whereby the importance is defined by the assemblage of breeding species present. Table 5.2 provides a summary of the geographical valuation criteria identified by Fuller. For the purposes of this assessment, Fuller's geographical levels have been adapted, so that Fuller's "local" importance is assumed to correspond to District importance as described in CIEEM's Guidelines for Ecological Impact Assessment (CIEEM, 2006). Since the publication of the evaluation criteria in 1980, declines have been observed in many bird populations, and for this reason it is therefore judged appropriate to recalibrate the categories slightly to reflect this change.

Level of Importance	Number of Breeding Species	
	Fuller (1980)	Adapted Criteria
Local	25-49 Species	<25
District	-	25-49
County	50-69	50-69
Regional	70-84	70-84
National	85+	85+

Table 5.2: Breeding Bird Assemblage Evaluation Criteria Based on Fuller (1980)

The total of 27 confirmed/probable breeding species identified during the field surveys indicates that the site is likely to be of Local/District value in terms of its breeding bird interest. The majority of species recorded on site are considered to be fairly common and widespread generalist species which are able to exploit a wide range of habitats. However, the survey area also supported species which are closely associated with farmland habitats, particularly arable farmland with a good hedgerow network. Important farmland species which the survey area supported comprised linnet (2 territories), reed bunting (1), skylark (9) and yellowhammer (3). In addition, stock dove was recorded using the survey area as was yellow wagtail (although the latter species was not considered to be breeding but suitable nesting habitat does exist). The farm complex towards the eastern boundary of the survey area also supported several breeding pairs of swallow.

The potential impacts of the proposed development on breeding birds are considered further in Section 5.3.

5.3 POTENTIAL IMPACTS ON BREEDING BIRDS FROM PROPOSED DEVELOPMENT

The proposal is for the construction of seven commercial units with associated access and parking. The entrance to the site from the A5 will utilise the existing site entrance on the roundabout to the existing Horiba

MIRA site to the north. The exit onto the Weddington Lane will require the creation of a new site entrance and junction. The stream that runs centrally through the site will be retained in situ. A new crossing will be created over this to allow vehicular access to the western half of the site. Two internal hedgerows will be lost, but the external site boundary features will be preserved intact except the new entrance proposed onto Weddington Lane. Pedestrian and cycle access is proposed onto the site via the Weddington Walk on the disused railway line at the northeast corner of the site. A band of soft landscaping with planting and pools is proposed along this pedestrian walkway, around the eastern, western and southern boundaries of the site, and along the west of the stream. Whilst some of these pools are proposed for site drainage, it is understood that some are proposed for ornamental and wildlife purposes. No construction work is currently proposed on the westernmost field included in the survey area for this study.

Construction Phase Impacts

The main habitat type to be lost during the construction phase of the proposed development is arable land, and also the loss of two internal hedgerows. However, it is understood that under current proposals, the site boundary features will be mostly preserved intact. It is understood that the westernmost arable field will not be part of the site development and will be retained. The current proposals for the site will see the loss of the majority of the arable farmland which will result in the loss of the majority of skylark territories within the survey area. In addition, it is also considered that under these proposals the existing linnet, reed bunting and yellowhammer territories will be lost. The westernmost field occupied an area of just under 10 ha in extent. It is considered that this field could continue to support skylark territories (one was recorded here during the breeding bird surveys but given its size it is possible that it could support up to three territories, although this will depend upon crop types and management activities). There is also a possibility that this area could support displaced yellowhammer and linnet territories, though again this will be influenced by a variety of factors. Site development is likely to see farmland specialist species dispersing into surrounding area of suitable habitat, of which extensive areas occur to the north and south of the A5 Watling Street.

It is also considered that with the loss of the farm buildings in the south-east of the survey area the breeding swallows which nest here will be displaced.

In terms of the remaining species recorded during the breeding bird surveys, it is considered that they will be temporarily impacted by site works with disturbance by site activities being the most significant. The current survey has identified that the majority of the breeding bird species are associated with boundary features, particularly on the eastern and southern site boundaries. Therefore, the retention and protection of these features means that the majority of species recorded are likely to continue to breed on site.

During construction, it is anticipated that the site will be subject to extensive disturbance as a result of vegetation clearance and the movement of construction apparatus and contractors within the site. To avoid impacts on breeding birds, all vegetation removal should be timed to occur outside of the peak bird nesting season (avoiding the period 1st March to 31st August). Provided that this key window is avoided, disturbance impacts on nesting birds will be minimized. However, species which are more susceptible to human disturbance such as common whitethroat may be lost during the construction phase.

Operational Phase Impacts

It is understood that once the proposed construction activities are complete and the units are operational, there is likely to be more disturbance to bird species. As a result of this, there is likely to be a change in the status of species which are more tolerant to people, such as blackbird, robin and tit species, potentially at the expense of hedgerow and scrub specialist species such as common whitethroat. However, it is understood that alongside the development, the site will see areas of meadowland and woodland created with the existing central watercourse retained and subject to ecological enhancements together with a series of pools, ponds and attenuation features created. In addition, boundary hedgerows will also be retained together with the existing eastern corridor. It is anticipated that many of the species noted breeding on site during the breeding bird surveys are likely to continue to occur, many of them being associated with built/urban fringe environments or able to habituate to human presence. Providing an appropriate landscaping design is implemented it is considered that there is the potential to provide new feeding, roosting and nesting locations for birds of conservation concern such as starling and potentially house sparrow (the latter species not currently recorded on site). The proposed wildlife ponds and associated habitats are liable to be a highly valuable space for breeding birds and, depending upon design and landscaping, could provide habitats for species not currently breeding within the survey area. In addition, design of this area could provide undisturbed habitats for more sensitive species to use.

There will be a significant increase in human activity on site compared to that which already occurs i.e. no formal public access, but there is likely to be extensive areas of greenspace that are likely to have limited human access. The presence of greenspace around units/structures and continuation of existing external boundaries should provide areas where human interference is rather limited. In addition, birds will likely become habituated to specific and regular human activity e.g. movements of vehicles into and out of employment areas. In addition, it is considered that users of the development are unlikely to wander away from formal paths, routes and the built environment and therefore species using greenspace are considered unlikely to be adversely impacted for any significant periods of time.

During the operational phase of the development, it is considered that appropriate habitat management will be important to ensure that habitats continue to be of the greatest possible value to breeding birds. Of particular importance is the maintenance of boundary hedgerows/perimeter screening ecotones, as many of the species recorded on site will utilize 'edge' habitats. In addition, targeted management of proposed greenspace within the whole development site is likely to see a potential uplift in the breeding bird communities of the site.

Post-development management of the retained and created habitats on site will ensure the habitats remain suitable for breeding birds in the long-term, as recommended in Chapter 6.

To enhance the site and to compensate for the loss of suitable breeding habitats within the site, bird boxes should be installed onto the new units and retained trees within the site. The specification of bird boxes listed in Chapter 6 have been selected based on the species known to use the site, or likely use the site, for breeding.

6. RECOMMENDATIONS

All recommendations provided in this section are based on Middlemarch Environmental Ltd's current understanding of the site proposals, correct at the time the report was compiled. Should the proposals alter, the conclusions and recommendations made in the report should be reviewed to ensure that they remain appropriate.

- R1** The boundary features on site should be appropriately managed in order to ensure that the site continues to support a wide range of breeding bird species. The retained habitats should be protected and undisturbed during the construction phase.
- R2** The whole site should incorporate an appropriate nestbox scheme in order to provide a range of potential nesting locations for passerine species. Boxes for a range of species should be installed on retained trees within the sites and features should be incorporated into buildings/structures for species such as house sparrow, starling, swift and house martin. The potential for provision of swallow nest sites should also be explored in the southern section of the site.
- R3** Biodiversity enhancement measures, including planting of native species should be incorporated into landscaping proposals. Once the landscaping proposals are finalised a Landscape and Environment Management Plan should be prepared detailing how the retained and created habitats will be managed in the long-term. Any site landscaping should incorporate native or wildlife-friendly species, and features which will benefit breeding bird species. Proposed areas of 'Wildlife/Biodiversity value should be planned and managed appropriately in order to maximise their value to a range of species.
- R4** Any vegetation to be removed should be undertaken outside of the bird nesting season; this generally extends between March and September but is weather dependent. If this is not possible, the area concerned should be checked immediately prior to removal by a suitably experienced ecologist. Nesting and nest building birds are protected under the Wildlife and Countryside Act WCA 1981 (as amended).

7. DRAWINGS

Drawing C154920-06-01 – Breeding Bird Survey Results

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APPENDIX 1

LEGISLATION

The Conservation of Habitats and Species Regulations 2010 (as amended) places a duty on public bodies to take measures to preserve, maintain and re-establish habitat for wild birds.

Nesting and nest building birds are protected under the Wildlife and Countryside Act WCA 1981 (as amended).

Subject to the provisions of the act, if any person intentionally:

- kills, injures or takes any wild bird;
- takes, damages or destroys the nest of any wild bird while that nest is in use or being built; or
- takes or destroys an egg of any wild bird, he shall be guilty of an offence.

Some species (listed in Schedule 1 of the WCA) are protected by special penalties. Subject to the provisions of the act, if any person intentionally or recklessly:

- disturbs any wild bird included in Schedule 1 while it is building a nest or is in, on or near a nest containing eggs or young; or
- disturbs dependent young of such a bird, he shall be guilty of an offence.

Several bird species are Species of Principal Importance for Nature Conservation in England, making them capable of being material considerations in the planning process.