

Appendix 9.5: Preliminary Ecological Appraisal Report (2014)



Liverpool FC Stadium Expansion

Preliminary Ecological Appraisal

March 2014

Liverpool Football Club and Athletic Grounds

Liverpool FC Stadium Expansion

Initial Bat Assessment

January 2014

Liverpool Football Club and Athletic Grounds

Anfield Road
Liverpool
L4 0TH

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Executive Summary

This report presents the findings of a preliminary ecological appraisal at Liverpool FC Stadium (Anfield) and the immediately surrounding area. This review was commissioned by Liverpool Football Club (LFC), and has been carried out by Mott MacDonald to support a planning application for expansion of the stadium.

The purpose of this report is to provide an initial assessment of the ecological importance of the site's habitats and the potential for it to support protected ecological features and species. The study has been carried out as an extended Phase 1 habitat survey following the methods laid out by Joint Nature Conservation Committee (JNCC, 2010). The report comprises two phases: a desk study consultation exercise and a walkover field survey which was undertaken on 30 October 2013.

Beyond the potential for roosting bats, which is assessed in a separate report, all habitats within the site boundary, including amenity grassland, introduced shrubs and areas of hardstanding and bare ground, have been assessed as having little or no ecological value and no further surveys have been recommended. However, as a precaution it is recommended that any vegetation clearance works or building demolition is undertaken outside of the bird breeding season (i.e. clearance/demolition activities are best carried out between September and February).

Additionally, any trees immediately adjacent to the site or overhanging it, which are not to be removed as a part of any proposed works, should be protected in accordance with British Standard "*Trees in relation to construction - Recommendations*" BS5837:2012. Protection should be installed prior to the commencement of any works.

1 Introduction

1.1 Project Background

Mott MacDonald Limited (MML) was instructed by Liverpool Football Club (LFC), in October 2013, to undertake a Preliminary Ecological Appraisal (PEA) of Anfield Football Stadium and the surrounding area. For the purposes of this report, the site is considered to be land within the boundary shown on the drawing in Appendix A.

The PEA was commissioned to support an Environmental Impact Assessment (EIA) and planning application for the future expansion of the stadium.

1.2 Scope of the Report

The purpose of this report is to provide an initial assessment of the ecological importance of the site's habitats and the potential for it to support protected ecological features and species. The scope of this study is to:

- Undertake a desk-top study to identify any existing information regarding protected or notable species and sites with a nature conservation designation within a 2 km radius of the site, extended to 5 km for bat species and 10 km for Natura 2000 and Ramsar sites;
- Carry out an extended Phase 1 habitat survey to provide a description of the existing broad habitat types on the site, and to establish the presence or potential presence of any protected or notable species;
- Produce a report detailing the findings of the desk-top study, the preliminary ecological appraisal and any key ecological constraints to the proposed development;
- Provide recommendations for further ecological survey work necessary to produce an ecological baseline for the site;
- Identify any mitigation measures that may be required to offset potential development impacts; and,
- Identify any measures that may be available to enhance biodiversity within the proposed development in line with national and local planning policy.

1.3 Site Description

Anfield Stadium is located between Walton Breck Road and Anfield Road in the Anfield area of Liverpool (central Ordnance Survey (OS) Grid Reference: SJ 3624 9308).

Anfield Stadium is located approximately 3 km north east of Liverpool city centre in a mainly residential area, with terraced housing positioned on three sides of the stadium. To the north-east, along Anfield Road, is an area of hardstanding and bare ground beyond which lies Stanley Park. Stanley Park is a large area of public open space which includes amenity sports pitches as well as a large lake and mature trees and lies immediately adjacent to Anfield Cemetery. In total the park and cemetery create an area of approximately 80 ha of green space.

The north-west boundary of the site abuts houses located on Alroy Road and Gilman Street, with the south-west boundary running along the northern side of Walton Breck Road. The south-east boundary follows the rear boundary walls of properties situated on Skerries Road before cutting across Anfield Road to the boundary with Stanley Park. Finally, the north-east boundary of the site directly abuts Stanley Park. A site location plan is provided in Appendix A.

1.4 Proposed Development

The proposed development comprises the expansion and redevelopment of the existing Anfield Stadium at Anfield and will include:

- i. An application for full planning permission to erect a new Main Stand with associated player, media, conferencing and banqueting facilities and the provision of its surrounds to provide high quality public realm, improved circulation space and an improved public connection between Walton Park Road and Stanley Park, along with additional car parking spaces on the former Anfield Comprehensive School.
- ii. An application for outline planning permission to redevelop the Anfield Road Stand, principally to create additional spectator facilities to increase the capacity of the stadium.

Overall the development will increase the capacity of the stadium from c.45,000 to c.60,000.

2 Methodology

2.1 Desk Study

A desk study was undertaken, as recommended in the Chartered Institute of Ecology and Environmental Management (CIEEM) 'Guidelines for Preliminary Ecological Appraisal' (2013), to determine the presence of any designated nature conservation sites and protected or notable species that have been recorded within a 2 km radius of the site. This radius was extended to 5 km for bats, as recommended by English Nature's Bat Mitigation Guidelines (Mitchell-Jones, 2004), and 10 km for International and European conservation sites including: Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar Sites. This involved consulting the following organisations and ecological databases:

- Merseyside BioBank (MBB); and,
- Multi Agency Geographical Information for the Countryside (MAGIC) website for statutory conservation sites.

2.2 Field Survey

An extended Phase 1 habitat survey was undertaken on the 30 October 2013 which involved a combination of mapping the habitat types present on Site following the Joint Nature Conservation Committee Phase 1 survey methodology (JNCC, 2010); and an assessment of those habitats for their potential to support protected or notable species following CIEEM guidance (CIEEM, 2013). During the mapping procedure all dominant species of flora were identified along with sub-dominant species where possible. Any protected or notable species present were recorded either by direct observation or indirectly from the presence of their field signs. At all times general habitat assessments were made for the possibility of the site to support protected or notable species.

This survey provides information relating to the habitats found within the site perimeter as well as the potential presence of legally protected or notable species. A plant species list was recorded for each broad habitat type identified, with nomenclature based on Stace (2010). This survey cannot, therefore, be considered to provide a wholly comprehensive account of the ecological interest of the Site and it should be noted that this report does not constitute an Ecological Impact Assessment. The survey does, however, provide a "snapshot" of the ecological interest present on the day of the survey visit.

A summary of legislation relevant to the ecology of the site is included in Appendices B and C.

2.3 Badger

The survey area was searched for evidence of badger (*Meles meles*), following the methodology as outlined by Harris, Creswell and Jefferies (1991). The search covered all land within the site, and up to and including a 30 m potential impact zone beyond the boundaries. Evidence of badger presence includes:

- Setts;
- Latrines;

- Prints and paths or trackways;
- Hairs caught on rough wood or fencing; and
- Other evidence including snuffle holes, feeding remains and scratching posts.

Where setts were present, their status and level of activity was noted. Sett status is broadly categorised as follows:

- **Main:** generally the largest sett within a badger clan's territory, with a relatively large number of sett entrances with well-worn pathways between them, and conspicuous spoil mounds. This type of sett will be occupied throughout the year and used for breeding;
- **Annexe:** normally found within 150m of the main sett comprising many entrances, this type of sett may not be occupied throughout the year, and can be used for breeding if there is more than one breeding sow within the clan;
- **Subsidiary:** similar to an annexe sett, but typically located further from the main sett. This type of sett will not be occupied throughout the year and lacks the well-worn paths associated with main and annexe setts; and
- **Outlier:** consisting of one or two entrances, this type of sett will be found furthest from the main sett and will only be used sporadically throughout the year.

The suitability of the existing habitats, as badger breeding and foraging habitat, was assessed during the preliminary ecological survey.

2.4 Limitations

Ecological surveys are limited to factors which affect the presence of plants and animals, such as time of year, migration patterns and behaviour. With a single visit it is possible that certain species may have been overlooked or under-recorded during the assessment as optimal survey periods vary from species to species. The Phase 1 report as presented is therefore unlikely to present a full and complete assessment of the biodiversity of the site.

The Phase 1 habitat survey was undertaken outside the recognised optimal period for baseline ecological surveys (April to September) and as a result additional surveys may be required, during optimal conditions, to fully assess the ecological status.

In addition the biological records obtained from third parties do not represent a full and complete species list for the area. They are mostly given by individuals on an ad hoc basis, often meaning there are areas of deficiency in the data.

A large number of buildings fall inside the site; however the residential properties located on Anfield Road, Lothair Road, Alroy Road, Rockfield Road and Back Rockfield Road were not assessed in detail as part of the survey. Additionally, the buildings on the site have been separately assessed for potential to support bats, the results of which can be found in the Mott MacDonald Initial Bat Assessment.

3 Desk Study Results

3.1 Introduction

All relevant ecological data received from the consultation exercise has been reviewed, the results of which are summarised below in Sections 3.2 and 3.3. Data older than 10 years is considered to be less important than more recent data due to the length of time that has elapsed since being collected (and the chance that they are no longer valid) and have therefore been excluded from the protected species table.

Legislation covering the various statutory and non-statutory sites is covered in Appendix D.

3.2 Designated Nature Conservation Sites

3.2.1 Statutory Sites

3.2.1.1 International and European Designated Sites

Reference to the MAGIC website (<http://magic.defra.gov.uk/>) and MBB indicates that there are six European nature conservation designated sites, three of which are Special Protection Areas (SPA) as well as being additionally internationally designated as Ramsar sites, with an additional three Special Areas of Conservation (SAC). Further details on the sites is provided in Table 3.1.

Table 3.1: Summarised details on the International and European designated sites within 10 km of the site

Site Name	Designation	Proximity to the Centre of Site	Description
Mersey Narrows and North Wirral Foreshore	Ramsar / SPA	4.5 km west	Mersey Narrows and North Wirral Foreshore is located on the north west coast of England at the mouths of the Mersey and Dee estuaries. The site comprises intertidal habitats at Egremont foreshore, man-made lagoons at Seaforth and the extensive intertidal flats at North Wirral Foreshore. Egremont is most important as a feeding habitat for waders at low tide whilst Seaforth is primarily a high tide roost, as well as a nesting site for terns. The most notable feature of the site is the exceptionally high density of turnstones.
Liverpool Bay / Bae Lerpwl	Marine SPA	6.3 km north-west	Liverpool Bay is one of the most important sea areas around the UK for populations of wintering seabirds, particularly common scoter and red throated diver, which arrive in large numbers in the autumn from their breeding sites in Northern Europe and sub-Arctic areas.
Dee Estuary	SAC	6 km west	The Dee Estuary is of special interest for its total populations of internationally important wintering waterfowl; its populations of individual waterfowl and tern species, whose numbers reach national and in some cases, internationally important levels; its intertidal mud and sandflats, saltmarsh and transitional habitats; the hard rocky sandstone cliffs of Hilbre Island and Middle Eye with their cliff vegetation and maritime heathland and grassland; its assemblage of nationally scarce plants; and its populations of Sandhill Rustic Moth, a Red Data Book species.

Site Name	Designation	Proximity to the Centre of Site	Description
Sefton Coast	SAC	7 km north-west	The Sefton Coast lies between the estuaries of the Mersey and Ribble in north-west England. The sand dunes, beaches and marshes of the Sefton Coast are one of the most important areas for nature conservation in Europe.
Mersey Estuary	Ramsar / SPA	7 km south	The Mersey is a large, sheltered estuary which comprises large areas of saltmarsh and extensive intertidal sand and mudflats, with limited areas of brackish marsh, rocky shoreline and boulder clay cliffs, within a rural and industrial environment. The intertidal flats and saltmarshes provide feeding and roosting sites for large and internationally important populations of waterfowl. During the winter, the site is of major importance for duck and waders. The site is also important during spring and autumn migration periods, particularly for wader populations moving along the west coast of Britain.
Ribble and Alt Estuaries	Ramsar / SPA	7 km north-west	A large area including two estuaries which form part of the chain of west coast sites which fringe the Irish Sea. The site is formed by extensive sand and mudflats backed, in the north, by the saltmarsh of the Ribble Estuary and, to the south, the sand dunes of the Sefton Coast. The tidal flats and saltmarsh support internationally important populations of waterfowl in winter and the sand dunes support vegetation communities and amphibian populations of international importance.

Source: <http://magic.defra.gov.uk/>

3.2.1.2 National and Local Designated Sites

A search for statutory designated nature conservation sites within 2 km of the site failed to identify any sites within the search radius. The closest statutorily designated site is Mersey Narrows Site of Special Scientific Interest (SSSI) located 4.5 km west of the site, on the west side of the River Mersey.

3.2.2 Non-statutory Sites

There are two non-statutory nature conservation sites within 2 km of the site, detailed in Table 3.2.

Table 3.2: Summarised details on the local (non-statutory) nature conservation sites within 2 km of the site

Site Name	Designation	Proximity to the Centre of Site	Description
Melrose Cutting	Local Wildlife Site (LWS)	1.6 km north west	A disused railway cutting approximately 750 metres in length and 80 metres wide which supports a range of habitats and plant species typical of ex-industrial land. Narrow strips of silver birch (<i>Betula pendula</i>) and grey willow (<i>Salix cinerea</i>) scrub-woodland with a bracken (<i>Pteridium aquilinum</i>) and bramble (<i>Rubus fruticosus</i> agg.) understorey are found on both sides of the site for its entire length and these two species are encroaching into other areas. The site's main value is as a habitat mosaic.

Site Name	Designation	Proximity to the Centre of Site	Description
Leeds and Liverpool Canal	LWS	1.7 km west	It currently supports a very limited range of aquatic plants with only yellow water-lily (<i>Nuphar lutea</i>) and common duckweed (<i>Lemna minor</i>), together with the invasive species parrot's feather (<i>Myriophyllum aquaticum</i>) and water fern (<i>Azolla</i> sp.), recorded in recent years. Its marginal vegetation also lacks diversity, being composed almost entirely of lesser reedmace (<i>Typha angustifolia</i>), reed canary-grass (<i>Phalaris arundinacea</i>) and reed sweet-grass (<i>Glyceria maxima</i>), which together form several significant blocks of swamp habitat.

Source: Merseyside BioBank

3.3 Protected/notable Species

3.3.1 Birds

There are fourteen protected or notable bird species recorded within a 2 km radius of the site. Table 3.3 provides a selected summary of those species appropriate to the site which are listed on red or amber lists (Eaton *et al.*, 2009) or Schedule 1 of the Wildlife and Countryside Act 1981.

The United Kingdom's (UK) birds can be split in to three categories of conservation importance – red, amber and green. Red is the highest conservation priority, with species needing urgent action. Amber is the next most critical group, followed by green. Schedule 1 birds are afforded the highest level of protection.

Table 3.3: Summary of bird species and their protection within a 2 km radius of the site.

Species	No. of Records	Most Recent Record	Schedule 1 of WCA	NERC Section 41	Bird of Conservation Concern		UK BAP	Local BAP
					Red	Amber		
Sky Lark (<i>Alauda arvensis</i>)	3	1998	x	✓	✓	x	✓	✓
Swift (<i>Apus apus</i>)	5	1998	x	x	x	✓	x	✓
Linnet (<i>Carduelis cannabina</i>)	2	1997	x	✓	✓	x	✓	x
House Martin (<i>Delichon urbicum</i>)	3	2001	x	x	x	✓	x	✓
Black Redstart (<i>Phoenicurus ochruros</i>)	2	1999	✓	x	x	✓	x	x
Peregrine (<i>Falco peregrinus</i>)	2	2002	✓	x	x	x	x	x
Herring Gull (<i>Larus argentatus</i>)	1	1997	x	✓	✓	x	✓	x

Species	No. of Records	Most Recent Record	Schedule 1 of WCA	NERC Section 41	Bird of Conservation Concern		UK BAP	Local BAP
House Sparrow (<i>Passer domesticus</i>)	37	2001	x	✓	✓	x	✓	✓
Hedge Accentor (<i>Prunella modularis</i>)	10	1999	x	✓	x	✓	✓	x
Bullfinch (<i>Pyrrhula pyrrhula</i>)	1	1997	x	✓	x	✓	✓	x
Starling (<i>Sturnus vulgaris</i>)	10	1999	x	✓	✓	x	✓	✓
Song Thrush (<i>Turdus philomelos</i>)	11	1999	x	✓	✓	x	✓	✓
Lapwing (<i>Vanellus vanellus</i>)	2	1999	x	✓	✓	x	✓	✓

Source: Merseyside BioBank

3.3.2 Bats

There are seven recorded bat species, recorded to the species level, within a 5 km radius of the site as summarised in Table 3.4. Additionally, there are another 43 unidentified bat records within the 5 km radius.

Table 3.4: Summary of bat species within 5 km of the site.

Species	No. of records	Most recent record	Proximity of most recent record to the site	Proximity of nearest roost to site	UK BAP	Local BAP
Savi's Pipistrelle (<i>Hypsugo savii</i>)	1	1996	4.5 km west	N/A	x	x
Daubenton's bat (<i>Myotis daubentonii</i>)	3	1990	4.6 km north east	N/A	x	✓
Noctule (<i>Nyctalus noctula</i>)	13	2007	4.6 km north east	N/A	✓	✓
Common Pipistrelle (<i>Pipistrellus pipistrellus</i>)	31	2013	3.6 km north east	4.8 km north east	x	✓
Soprano Pipistrelle (<i>Pipistrellus pygmaeus</i>)	1	2007	4.6 km north east	N/A	✓	✓
Pipistrelle (<i>Pipistrellus</i> sp.)	58	2012	200m south	4.6 km north east	x	x
Brown Long-eared bat (<i>Plecotus auritus</i>)	21	1996	4.6 km north east	4.6 km north east	✓	✓

Source: Merseyside BioBank

3.3.3 Herptiles

No protected or notable records of any amphibians or reptiles were returned from the desk study within the 2 km radius of the site.

3.3.4 Other protected/notable species

In addition to the seven bat species outlined above, four other species of mammal, either classified as UK or Local Biodiversity Action Plan (BAP) species, were identified within 2 km of the site.

Table 3.4: Summary of other protected or notable species within a 2 km radius of the Site.

Species	No. of records	Most recent record	Proximity of most recent record to site boundary	UK BAP	Local BAP
European Water Vole (<i>Arvicola amphibius</i>)	2	1999	1.8 km west	✓	✓
European Hedgehog (<i>Erinaceus europaeus</i>)	6	2012	1.4 km west	✓	✗
Brown Hare (<i>Lepus europaeus</i>)	1	2010	Within 2 km	✓	✓
Red Squirrel (<i>Sciurus vulgaris</i>)	3	2007	2 km north-east	✓	✓

Source: Merseyside BioBank

4 Field Survey Results

4.1 Introduction

The ecological features within the site were surveyed by undertaking an extended Phase 1 habitat survey walkover carried out by Tom Oliver, a suitably experienced ecologist, on 30 October 2013. All habitats were mapped according to the Phase 1 Habitat survey methodology (JNCC, 2010). Particular attention was paid to the Site's potential to support protected species. The presence of any invasive plant species was also noted. The Phase 1 Habitat map is provided in Appendix E with associated Target Notes and photographs in Appendices F and G respectively. Target Notes are referred to as TN1, TN2 etc. in the following section. Table 4.1 details the weather conditions at the time of survey.

Table 4.1: Survey weather conditions

Date	Temperature (°C)	Cloud Cover (%)	Wind (Beaufort Scale)	Precipitation
30-10-2013	14	70	F2	Small amount of rain in afternoon

4.2 Habitat Descriptions

The following broad habitat types, along with their associated JNCC habitat codes, were recorded within site during the field survey:

- Amenity grassland (J1.2);
- Bare ground (J4);
- Buildings (J3.6);
- Hardstanding (J5);
- Introduced shrub (J1.4); and,
- Parkland scattered trees – broad-leaved (A3.3).

These habitats are described below. They are ordered alphabetically, not in order of ecological importance. An accompanying extended Phase 1 habitat plan is provide in Appendix E.

4.2.1 Amenity grassland (J1.2)

There are two main areas of amenity grassland within the site, the current football pitch inside the stadium (Photo G.1) and the newly created area of public open space (POS) in the west corner of the site (Photo G.2; TN1). The football pitch is subject to an intensive growth and cutting regime and as such the grass species present within the sward were unidentifiable. However, the amenity grassland located in the area of POS consisted mainly of annual meadow-grass (*Poa annua*) with red fescue (*Festuca rubra*) and perennial ryegrass (*Lolium perenne*) also present. A few common forb species were identified within the swards including white clover (*Trifolium repens*), daisy (*Bellis perennis*), creeping buttercup (*Ranunculus repens*), greater plantain (*Plantago major*) and dandelion (*Taraxacum officinale* agg.).

4.2.2 Bare ground (J4)

The area north of Anfield Road was previously occupied by a number of large detached houses which have been demolished leaving two large areas of bare ground consisting of mixed hard-core rubble and earth.

4.2.3 Buildings (J3.6)

Three buildings located within the site were assessed for their potential to support protected or notable species (other than bats) as part of the field survey: the football stadium, the Conference and Events Department building and the Albert public house.

The football stadium (Photos G.3 – G.5) is constructed from a steel support structure with concrete and brickwork supporting walls. Much of the external structure is clad in corrugated metal sheeting with large glass window sections letting light into conference rooms or suites at various points. From the outside of the stadium numerous gaps are present into the overhanging sections of the seating. Inside the ground the gaps between the walls and metalwork are also present at the top of each stand along with the exposed metal framework.

The Conference and Events Department building (Photo G.6; TN2) is a three-storey brick office building with a gently pitched tiled roof and is located adjacent to the Shankly Gates on Anfield Road, inside the stadium complex. A single level garage is also attached to the main office building. The building is in a very good structural condition, with no holes in the brick work or missing roof tiles.

The Albert public house (Photo G.7; TN3) is a detached Victorian redbrick building with a tiled pitched roof fronting on to Walton Breck Road. The building is generally in a good state of repair with some minor damage visible around the pub name sign. The gable ends both have overhanging wooden soffits.

4.2.4 Hardstanding (J5)

The bulk of the ground cover around the stadium is comprised from hardstanding including blacktop car parks and access routes and concrete paving slabs (Photo G.8).

4.2.5 Introduced shrub (J1.4)

Some small areas of introduced shrub are present in the west corner of the Site in the area of POS (Photos G.9 – G.10). An ornamental shrub border along Gilman Road (TN4) includes lavender (*Lavandula latifolia*), rosemary (*Rosmarinus officinalis*), hydrangea (*Hydrangea* sp.), magnolia (*Magnolia* sp.) and ornamental rose (*Rosa* sp.) and is fenced off from the adjacent amenity grassland. Two other areas of introduced shrub bisect the amenity grassland creating a screen between Walton Breck Road and the grassland behind it. Cherry laurel (*Prunus laurocerasus*) and an ornamental bamboo (*Bambusa* sp.) are the main species present in these areas.

4.2.6 Parkland scattered trees – broad-leaved (A3.1)

Planted within the amenity grassland in the area of POS are some silver birch (*Betula pendula*) saplings along with more individual stands of bamboo. Additionally, a number of mature trees including ash (*Fraxinus excelsior*), cherry (*Prunus* sp.) and horse-chestnut (*Aesculus hippocastanum*) are present immediately adjacent to the site within Stanley Park.

4.3 Protected/Notable Species

4.3.1 Amphibians

Based on available aerial photography and OS mapping there are no ponds within 500m of the site. The nearest piece of standing water is the large boating lake located in Stanley Park, approximately 550m north-west of the site. No evidence of any amphibians was observed during the survey and the site offers negligible potential for amphibians.

4.3.2 Badgers

No direct or indirect evidence (including setts, latrines, footprints or hairs) of badgers using the site was found either within the site or in any of the accessible areas immediately adjacent to the site.

4.3.3 Bats

The site is being assessed for its potential to support roosting bats separately, the results of which can be found in the Mott MacDonald Initial Bat Assessment.

4.3.4 Birds

The football stadium and introduced shrub has the potential to support nesting birds. However, birds, particularly feral pigeons (*Columba livia*) are actively discouraged from the stadium through the use of netting and bird scaring techniques.

4.3.5 Invasive Species

No evidence of invasive species was observed anywhere across the site.

4.3.6 Invertebrates

The site is unremarkable in terms of habitat suitable for invertebrates, with the majority of it being comprised of buildings, hardstanding and amenity grassland which are common across the wider landscape.

4.3.7 Reptiles

No evidence of reptiles was observed during the survey and the site contains negligible habitat for this species group.

5 Interpretation and Recommendations

5.1 Designated Nature Conservation Sites

There are six European nature conservation sites within 10 km of the site, three of which are additionally internationally designated as Ramsar sites, the closest of which Mersey Narrows and North Wirral Foreshore SPA/Ramsar is located 4.5 km west of the site. There are no national or local statutory nature conservation sites within 2 km of the site, although there are two non-statutory sites: Melrose Cutting LWS (1.6 km north west) and Leeds and Liverpool Canal LWS (1.7 km west).

The zone of influence of the likely impacts during construction and operation of the development is likely to be limited to the curtilage of the site or very close to it. It is therefore considered that the proposed works will not directly impact upon any of the statutory or non-statutory sites nature conservation sites.

Therefore no recommendations are made with respect to any of the statutory or non-statutory nature conservation designations.

5.2 Habitats

The ecological importance of the habitats present on the site has been assessed against their presence in the United Kingdom (UK) and Local Biodiversity Action Plans (BAPs), on Section 41 of the Natural Environment and Rural Communities Act (NERC, 2006) and their ability to support protected or notable species.

There are no UK BAP habitats present on the site, although there is one habitat present within the site found on the North Merseyside BAP: Urban Trees. This particular priority habitat focuses on the retention of existing native trees in the urban environment and the increase in overall numbers of native trees of local provenance. Additionally they have aesthetic value and form part of the visual screening of the existing stadium. Due to some of the size and maturity of the trees they are not easily replaceable without extensive cost. Therefore the following recommendation is made with regard to the scattered trees within the site:

- Any trees on the site, immediately adjacent to it or overhanging the site, which are not to be removed as a part of any proposed works, should be protected in accordance with British Standard "*Trees in relation to construction - Recommendations*" BS5837:2012. Protection should be installed prior to the commencement of any works.

5.3 Protected/Notable Species

5.3.1 Amphibians

The desk study failed to identify any records of great crested newts within 2 km of the site and based on aerial photography and OS mapping there are no ponds within 500m of the site. The site mainly contains buildings and hardstanding habitats which are completely unsuitable for great crested newts and other amphibians. Even though the areas of introduced shrub could be utilised by great crested newts and other

amphibians as terrestrial habitat these habitats are completely isolated from breeding ponds and are recently created habitats so will not have historic populations.

It is therefore considered that great crested newts and any other amphibians will be absent from the site and therefore there are no recommendations relating to this species group.

5.3.2 Badgers

No direct or indirect evidence of badgers using the site was found on site or in any of the accessible areas immediately adjacent to the site (up to 50m), including setts, latrines, footprints or hairs indicating that badgers are absent from the site.

The site and the vast majority of the immediately surrounding habitats are completely unsuitable for badgers and therefore there are no recommendations relating to badgers.

5.3.3 Bats

The site is being assessed for its potential to support roosting bats separately and the interpretation and recommendations relating to bats can be found in the Mott MacDonald Initial Bat Assessment.

5.3.4 Birds

The desk study identifies a number of different urban bird species, although only feral pigeon was noted during the survey. The buildings, introduced shrub and remaining mature trees within the site have some low potential to support nesting birds but there is better quality nesting habitat located immediately adjacent to the site in Stanley Park.

Despite the site providing limited bird breeding habitat, birds could still be adversely impacted by vegetation clearance and building demolition activities. All nesting birds are protected under the Wildlife and Countryside Act (1981) which makes it illegal to kill, injure or take any wild bird or take, damage or destroy the nest or eggs of any wild bird. It is therefore recommended that:

- Any vegetation clearance work or building demolition is undertaken outside of the bird breeding season (i.e. clearance activities are best carried out between September and February). If vegetation clearance work or building demolition is planned between March and August it is recommended that the vegetation and buildings are checked immediately prior to removal by a suitably qualified ecologist. Any active nests identified must be retained with a 5m buffer until such time as the nest is deemed to be no longer supporting young by a suitably qualified ecologist.

5.3.5 Invasive Species

No direct or indirect evidence of invasive plant species was found on site or in any of the accessible areas immediately adjacent to the site and any invasive species appear to be absent at this time. However, due

to the amount of fly-tipping, which often includes invasive species, that occurs in urban areas it is recommended that:

- All open areas of the site, particularly the areas of bare ground, are secured and routinely checked for fly-tipped waste to ensure that invasive species do not get transported on to the site and establish themselves.

5.3.6 Invertebrates

The habitats found on site are generally of poor quality and low ecological interest, frequently occurring across the wider landscape, with the vast majority of the site unsuitable for anything other than common invertebrate species.

Therefore no further recommendations have been made with regard to invertebrates.

5.3.7 Reptiles

The desk study failed to highlight any reptile species within 2 km of the site and there is negligible suitable habitat within the site to support reptiles. Additionally the site is isolated from other suitable areas of reptile habitat and as such reptiles are not anticipated to be present on the site.

Therefore no further recommendations have been made with regard to reptiles.

6 Conclusions

A PEA was undertaken to assess the potential presence of protected and notable habitats and species (excluding bats) within the site. Survey work and desk top studies have identified that there are limited habitats on Site that have ecological value, with the only real ecological constraint being the low potential for nesting birds to be present within the buildings and introduced shrubs.

No further ecological surveys have been recommended at this time, although as a good practice precautionary measure it would be advisable to demolish the buildings and remove the vegetation on site outside of the breeding bird season (i.e. demolition and vegetation removal should take place between September and February) to preclude the very low possibility of contravening the protection given to nesting birds by the Wildlife and Countryside Act (1981).

The baseline data should be used to inform and develop any masterplan for the site and due to the current lack of ecological features on the site there is potential to create a net gain for biodiversity within any development.

Table 6.1 below provides a summary of the findings, implications and recommendations going forward with this scheme. Only protected and/or notable habitats and species considered as presenting a potential constraint to the development of the site have been outlined.

Table 6.1: Summary of Conclusions

Habitat/Species	Location	Relevant Legislation	Recommendation
Mature trees	Open ground north of Anfield Road	North Merseyside BAP Habitat	Any trees on the site, immediately adjacent to it or overhanging the site, which are not to be removed as a part of any proposed works, should be protected in accordance with British Standard " <i>Trees in relation to construction - Recommendations</i> " BS5837:2012. Protection should be installed prior to the commencement of any works.
Birds	Buildings and introduced shrub	Wildlife and Countryside Act. 1981	Any vegetation clearance work or building demolition is undertaken outside of the bird breeding season (i.e. clearance activities are best carried out between September and February). If vegetation clearance work or building demolition is planned between March and August it is recommended that the vegetation and buildings are checked immediately prior to removal by a suitably qualified ecologist. Any active nests identified must be retained with a 5m buffer until such time as the nest is deemed to be no longer supporting young by a suitably qualified ecologist
Invasive Plants	Not currently found on the site	Schedule 9 of the Wildlife and Countryside Act. 1981	All open areas of the site, particularly the areas of bare ground, are secured and routinely checked for fly-tipped waste to ensure that invasive species do not get transported on to the site and establish.

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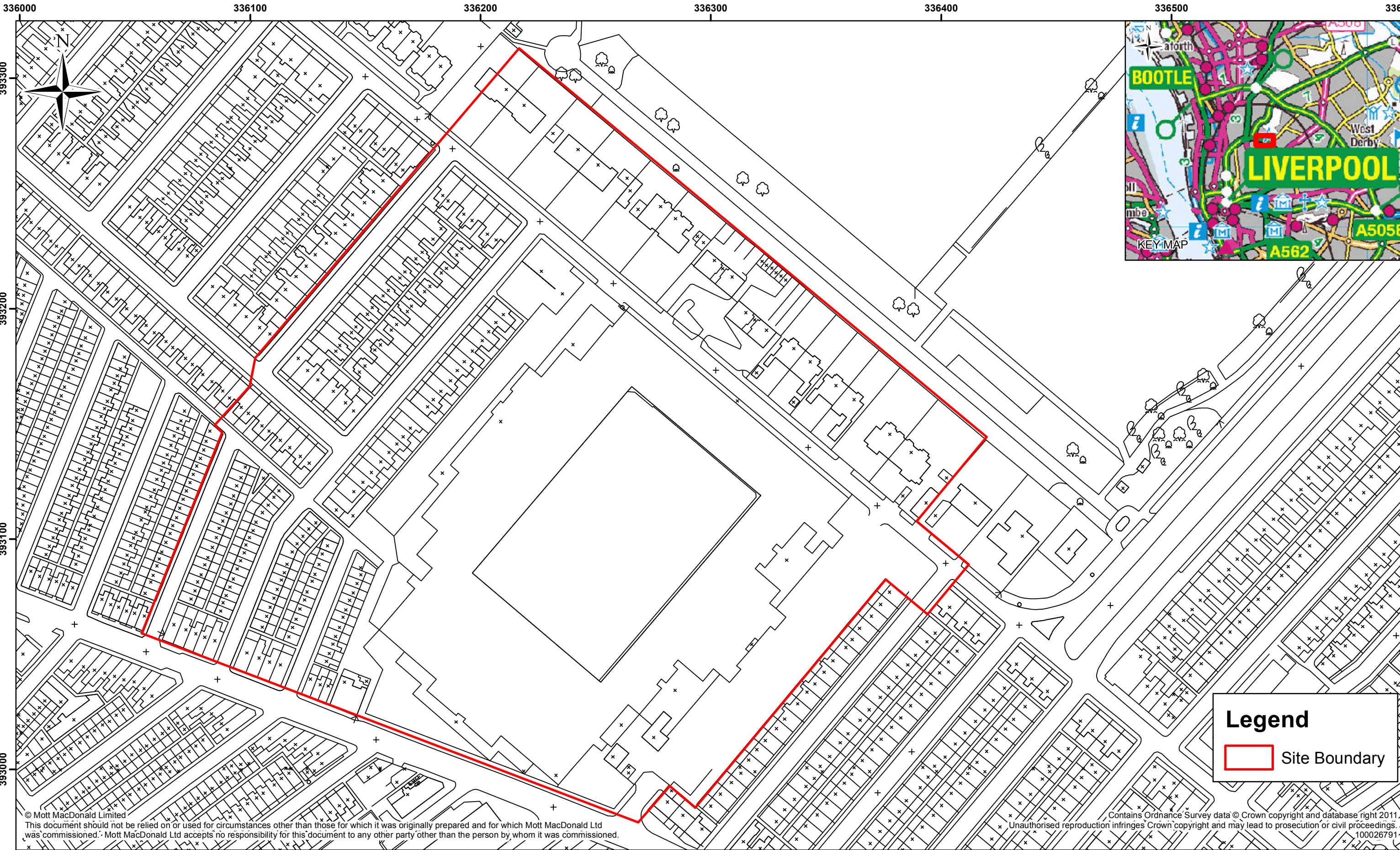
UK Biodiversity Action Plan (UKBAP) website: <http://jncc.defra.gov.uk/default.aspx?page=5155>

Where's the path website: <http://wtp2.appspot.com/wheresthepath.htm>

Appendices

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Appendix A. Site Location Plan



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Legend

Site Boundary

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02550100

Metres

Rev	Date	Drawn	Description	Ch'k'd	App'd	Title:	Drawn	JW
P1	21/01/2014	JW	Drawing created	TIO	AL	LFC Expansion Project - Site Boundary	Checked	TIO
							Approved	AL
							Scale at A3 1:1,500	
							Rev P1	Status INF

Drawing Number

MMD-317415-EN-DR-00-XX-3001

Appendix B. General Legislation and Policy Overview

B.1 The Conservation of Habitats and Species Regulations 2010 (as amended)

The Conservation of Habitats and Species Regulations 2010 (as amended) consolidate all the various amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994 in respect of England and Wales. The 1994 Regulations transposed Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) into national law.

The Regulations place duty upon the relevant authority of the UK government to identify sites which are of importance to the habitats and species listed in Annexes I and II of the Habitats Directive. Those sites which meet the criteria are, in conjunction with the European Commission, designated as Sites of Community Importance, which are subsequently identified as Special Areas of Conservation (SAC) by the European Union member states. The regulations also place a duty upon the UK government to maintain a register of European protected sites designated as a result of EC Directive 79/409/EEC on the Conservation of Wild Birds (The Birds Directive). These sites are termed Special Protection Areas (SPA) and, in conjunction with SACs, form a network of sites known as Natura 2000.

The Regulations make it an offence (subject to exceptions) to deliberately capture, kill, disturb, or trade in the animals listed in Schedule 2, or pick, collect, cut, uproot, destroy, or trade in the plants listed in Schedule 4. However, these actions can be made lawful through the granting of licenses by the appropriate authorities. Licenses may be granted for a number of purposes (such as science and education, conservation, preserving public health and safety), but only after the appropriate authority is satisfied that there are no satisfactory alternatives and that such actions will have no detrimental effect on wild populations of the species concerned.

B.2 The Wildlife and Countryside Act (WCA) 1981 (as amended)

The WCA, as amended, consolidates and amends pre-existing national wildlife legislation in order to implement the Bern Convention and the Birds Directive. It complements the Conservation of Habitats and Species Regulations 2010 (as amended) offering protection to a wider range of species. The Act also provides for the designation and protection of national conservation sites of value for their floral, faunal or geological features, termed Sites of Special Scientific Interest (SSSIs). Schedules of the Act provide lists of protected species, both flora and fauna, and detail the possible offences that apply to these species. All relevant species specific legislation is detailed later in this Appendix.

B.3 The Countryside and Rights of Way (CROW) Act 2000

The CROW Act, introduced in England and Wales in 2000, amends and strengthens existing wildlife legislation detailed in the WCA. It places a duty on government departments and the National Assembly for Wales to have regard for biodiversity, and provides increased powers for the protection and maintenance of SSSIs. The Act also contains lists of habitats and species (Section 74) for which conservation measures should be promoted, in accordance with the recommendations of the Convention on Biological Diversity (Rio Earth Summit) 1992.

B.4 Natural Environment and Rural Communities Act (NERC) 2006

The Natural Environment and Rural Communities Act 2006 requires public bodies, including local authorities, 'to have regard to the conservation of biodiversity in England' when carrying out their normal functions. Also under this Act a list of species of 'principal importance to biodiversity within England' was drawn up which acts as an aid to guide public bodies in implementing their duty. The Local Authority therefore must consider the impact on protected species of the proposed development. The enhancements recommended within the recommendations section of this report illustrate ways in which this Biodiversity Duty can be met.

B.5 National Planning Policy Framework

At national level, Section 11 of the National Planning Policy Framework (NPPF), which relates to conserving and enhancing the natural environment, requires Local Authorities in England to take measures to:

- Protect the habitats of these species from further decline;
- Protect the species from the adverse effect of development; and,
- Refuse planning permission for development that harms these species unless the need for, or benefit of, the development clearly outweighs that harm.

Planners must ensure that they comply with wildlife legislation by fully assessing the potential impacts on protected species and habitats from the proposed development. This assessment must be finalised prior to planning permission and must be submitted with the planning application. The Planning Authority can then ensure that the necessary protected species and habitats surveys have been completed.

B.6 UK Biodiversity Framework

The UK Post-2010 Biodiversity Framework covers the period 2011 - 2020 and replaces the UK Biodiversity Action Plan (UKBAP) 1994 – 2010. Its aim is to address the underlying causes of biodiversity loss and improve and enhance biodiversity and ecosystem services. The UKBAP contains a list of priority habitats and species of conservation concern in the UK, and outlines biodiversity initiatives designed to enhance their conservation status. The UKBAP priority habitats and species background information is still widely used at country level and as a material consideration in the planning process. Local BAPs (LBAPs) are also still widely used which complement the UKBAP targeted towards species of conservation concern characteristic of each county.

Appendix C. Species Specific Legislation

C.1 Breeding Birds

All breeding birds are protected under the Wildlife and Countryside Act 1981 (as amended), which prohibits the intentional killing, injuring or taking of any wild bird (and) the taking, damaging or destroying eggs or of the nest (whilst being built or in use). Schedule 1 bird species are afforded greater protection under the Wildlife and Countryside Act 1981 (as amended). It is an offence to disturb Schedule 1 birds or the dependant young of Schedule 1 birds in the vicinity of their nest site.

Appendix D. Designated Sites Legislation

D.1 Ramsar Sites

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. Originally intended to protect sites of importance especially as waterfowl habitat, the Convention has broadened its scope over the years to cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. The Convention adopts a broad definition of wetland, namely "areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres". Wetlands "may incorporate riparian and coastal zones adjacent to the wetlands, and islands or bodies of marine water deeper than six metres at low tide lying within the wetlands". Ramsar sites will be one of six designations contributing to our ecologically coherent network of Marine Protected Areas.

The UK's ratification of the Convention extends to its Overseas Territories and Crown Dependencies.

D.2 Natura 2000

Natura 2000 is the name of the European Union-wide network of nature conservation sites established under the EC Habitats and Birds Directives. This network will comprise Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). Marine Natura 2000 sites contribute to our ecologically coherent network of Marine Protected Areas.

D.2.1 Special Areas of Conservation (SAC)

SACs are designated under the EC Habitats Directive. The Directive applies to the UK and the overseas territory of Gibraltar. SACs are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs in terrestrial areas and territorial marine waters out to 12 nautical miles are designated under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) and beyond 12 nautical miles are designated under the Offshore Marine Conservation (Natural Habitats &c.) Regulations 2007 (as amended). SACs will be one of six designations contributing to our ecologically coherent network of Marine Protected Areas.

Sites which have been submitted to the European Commission by Government, but not yet formally adopted by the Commission, are referred to as candidate Special Areas of Conservation (cSACs). Sites which have been adopted by the EC, but not yet formally designated by governments of Member States are known as Sites of Community Importance (SCIs). In the UK, designation of SACs is devolved to the relevant administration within each country. In UK offshore waters JNCC is responsible for identification and recommendation to Government of SACs.

D.2.2 Special Protection Areas (SPAs)

SPAs are classified by the UK Government under the EC Birds Directive. The Directive applies to the UK and the overseas territory of Gibraltar. SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union. SPAs in terrestrial areas and territorial marine waters out to 12 nautical miles are classified under the Wildlife and Countryside Act 1981 and beyond 12 nautical miles are designated under the Offshore Marine Conservation (Natural Habitats &c.) Regulations 2007 (as amended). SPAs will be one of six designations contributing to our ecologically coherent network of Marine Protected Areas.

D.3 Sites of Special Scientific Interest

Sites of Special Scientific Interest (SSSI) (England, Scotland and Wales) have developed since 1949 as the national suite of sites providing statutory protection for the best examples of the UK's flora, fauna, or geological or physiographical features. These sites are also used to underpin other national and international nature conservation designations. Most SSSIs are privately-owned or managed; others are owned or managed by public bodies or non-government organisations. The SSSIs designation may extend into intertidal areas out to the jurisdictional limit of local authorities, generally Mean Low Water in England and Northern Ireland; Mean Low Water of Spring tides in Scotland. In Wales, the limit is Mean Low Water for SSSIs notified before 2002, and, for more recent notifications, the limit of Lowest Astronomical Tides, where the features of interest extend down to LAT. There is no provision for marine SSSIs beyond low water mark, although boundaries sometimes extend more widely within estuaries and other enclosed waters. Under the Marine and Coastal Access Act 2009 there is the ability to de-designate an area of a SSSI in England or Wales that is below the low water mark if it would be more appropriately managed as a Marine Conservation Zone. SSSIs will be one of six designations contributing to our ecologically coherent network of Marine Protected Areas.

Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs have been renotified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and the Nature Conservation (Scotland) Act 2004.

D.4 National Nature Reserves (NNRs)

NNRs contain examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats or to provide special opportunities for scientific study of the habitats communities and species represented within them. NNRs are declared by the statutory country conservation agencies under the National Parks and Access to the Countryside Act 1949 and the Wildlife and Countryside Act 1981.

D.5 Local Nature Reserves (LNRs)

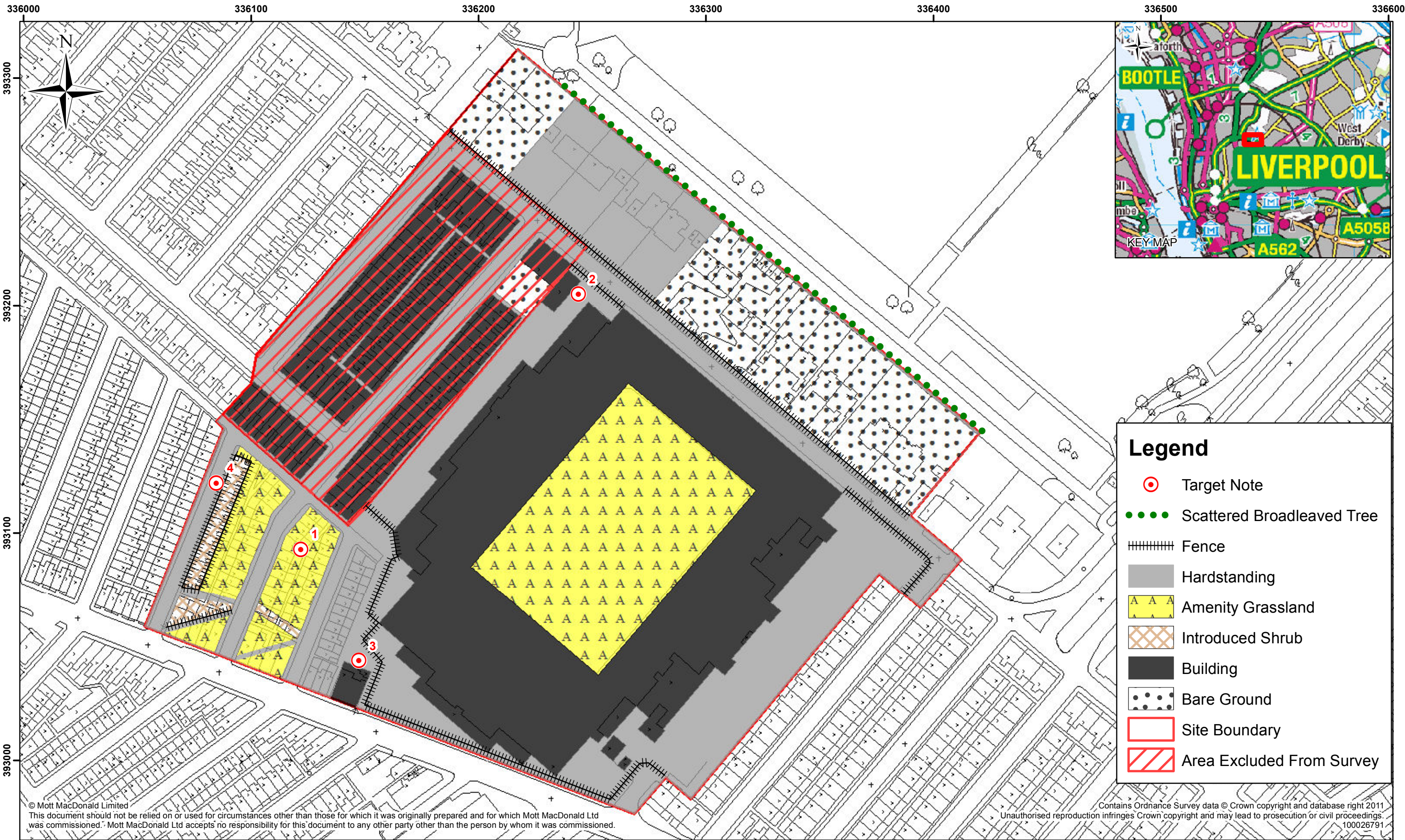
Local Nature Reserves (LNRs) (in England, Scotland and Wales) may be declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency. LNRs are declared and managed for nature conservation, and provide opportunities for research and education, or simply enjoying and having contact with nature.

D.6 Wildlife Sites

Local authorities for any given area may designate certain areas as being of local conservation interest. The criteria for inclusion, and the level of protection provided, if any, may vary between areas. Most individual counties have a similar scheme, although they do vary.

These sites, which may be given various titles such as 'Listed Wildlife Sites' (LWS), 'Local Nature Conservation Sites' (LNCS), 'Sites of Importance for Nature Conservation' (SINCs), or Sites of Nature Conservation Importance' (SNCIs), together with statutory designations, are defined in local and structure plans under the Town and Country Planning system and are a material consideration when planning applications are being determined.

Appendix E. Phase 1 Habitat Plan

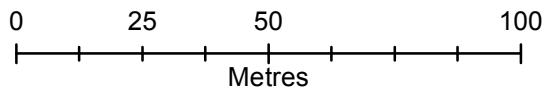


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P1	21/01/2014	JW	Drawing created	TIO	AL

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	Checked	TIO
	Approved	AL
	Scale at A3 1:1,500	
	Rev P1	Status INF

Appendix F. Target Notes

Table F.1: Phase 1 Habitat Survey Target Notes

Target Note (TN)	Details	Photo Reference
1	Amenity grassland which replaces the houses previously located here	G.2
2	The Conference and Events Department building	G.6
3	The Albert public house	G.7
4	Introduced scrub habitat which mainly contains shrubby ornamentals	G.9 – G.10

Appendix G. Photographs

Photo G.1: The football pitch is subject to an intensive growth and cutting regime.



Photo G.2: The amenity grassland located in the area of POS.



Photo G.3: View of the Centenary Stand.



Photo G.4: View down Anfield Road including the Anfield Road Stand and the Shankly Gates.



Photo G.5: The Kop Stand



Photo G.6: The Conference and Events Department building



Photo G.7: The Albert public house.



Photo G.8: Parking area behind the Centenary Stand.



Photo G.9: Introduced shrub border along Gilman Road.



Photo G.10: More ornamental planting is also present in the POS dividing the grass into separate areas.

