Ecological Impact Assessment (EcIA) for the construction of an Astro Pitch at Sean Welsh Park

Technical Report

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South Dublin County Council

County Hall
Tallaght
DUBLIN 24

JBA Project Manager

Patricia Byrne
Block 660, Unit 8
Greenogue Business Plaza
Greenogue Business Park
Rathcoole
DUBLIN

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Contract

This report describes work commissioned by South Dublin County Council, by a letter dated 17th December 2020. Malin Lundberg, William Mulville and Patricia Byrne of JBA Consulting carried out the ecological surveys for this work. Hannah Mulcahy and Karen van Dorp carried out the impact assessment.

Prepared by ..... Hannah Mulcahy BSc MSc
Ecologist

Karen van Dorp BSc MSc (Hon)

Ecologist

Reviewed by ..... Dr Steven Heathcote BA (Hons) DPhil MCIEEM
Senior Ecologist

Purpose

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Abbreviations

AA	Appropriate Assessment
AADT	Annual Average Daily Traffic
CIEEM	Chartered Institute of Ecology and Environmental Management
EcIA	Ecological Impact Assessment
EPA	Environmental Protection Agency
NBDC	National Biodiversity Data Centre
NHA	Natural Heritage Area
NNIS	Non-Native Invasive Species
OSM	Open Street Map
pNHA	Proposed Natural Heritage Area
NPWS	National Parks and Wildlife Service
QI	Qualifying Interest
SAC	Special Area of Conservation
SPA	Special Protection Area
WFD	Water Framework Directive
ZoI	Zone of Influence

1 Introduction

JBA Consulting Engineers and Scientists Ltd (hereafter JBA) were appointed by South Dublin County Council to undertake an Ecological Impact Assessment (EcIA) in relation to the proposed Astroturf pitch in Sean Walsh Park, Dublin, County Dublin.

This EcIA was commissioned to identify any likely ecological constraints and proposes mitigation measures in relation to the ecological features likely to be impacted as a result of the works. It provides an assessment of the baseline ecological conditions in the area and of the nature, magnitude, and significance of the proposed work's impacts. In addition, it proposes appropriate mitigation measures to eliminate those impacts or, where this is not possible, to minimise their effects in such a way that they are no longer be deemed significant.

A separate AA Screening and an Environmental Impact Assessment (EIA) Screening report has been carried out for this proposed project.

1.1 Aims

The aims of this EcIA are to:

- Establish baseline ecological conditions to enable identification of potentially important ecological features within the zone of influence of the project
- Determine the ecological value of identified ecological features
- Assess the significance of impacts of proposed project on ecological features of value
- Identify avoidance, mitigation or compensatory measures
- Identify residual impacts after mitigation and the significance of their effects
- Identify opportunities for ecological enhancement and net gain of biodiversity

1.2 Site location

The proposed Astroturf pitch will be located beside Tallaght Stadium, and bordered by the N81 to the north, and the Old Bawn Community School to the south (Figure 1-1). The site is located in the north-west corner of Sean Walsh Park, currently composed of a flat, grassy area with a small woodland between the site and the school. Sean Walsh Park contains playing pitches and recreational areas, as well as areas managed for wildlife, and an aquatic environment in Whitestown Stream, and a number of ponds on-site. Whitestown Stream flows through the park in a west to east direction and is 200m south of the proposed Astro-pitch site.

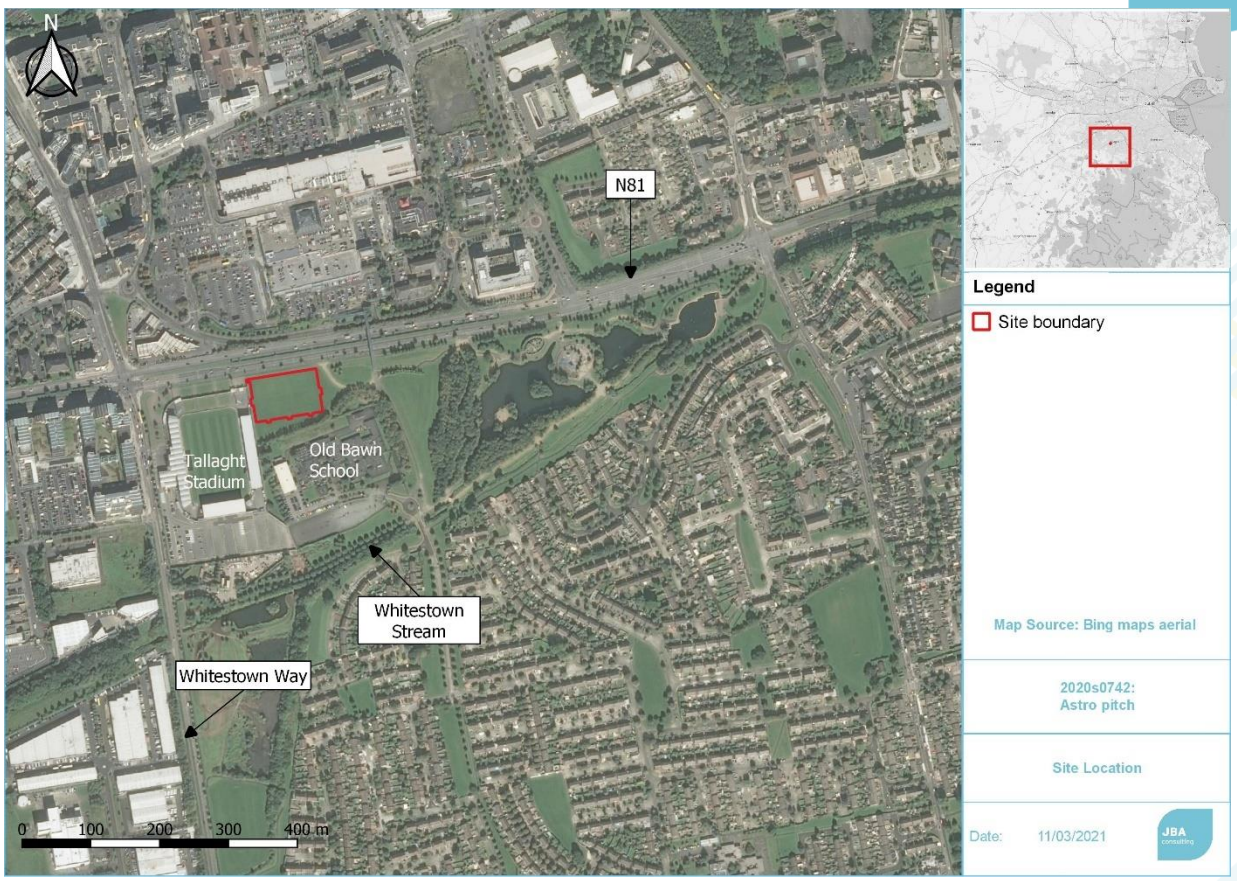

Figure 1-1: Site location (ESRI Satellite, 2021, OSM, 2021)

1.3 Proposed development

The proposed development will comprise of a 3G Artificial Grass Pitch with total dimensions 100x60m, with a playing surface of 52x92m. It will involve the installation of:

- Floodlighting comprised of a 250lux system (suitable for the FAI's low-level competition football and rugby training)
- A hardstanding/access path on the northern edge of the pitch
- A 5m high perimeter fencing surrounding the pitch
- A double gate access point with detox area
- 2 single gates; one on the eastern perimeter and one on the southwestern perimeter, to facilitate ball retrieval

The proposed drainage will consist of 80mm lateral drainage pipes across the width of the pitch laid at 10m centres connected into perimeter carrier drainage 150mm. This will drain into a SUDS soakaway to the south of the pitch.

The maximum excavation depths are:

- Pitch construction depth standard 420mm (300mm sub-base, 40mm engineering base layer (optional), 20mm shockpad, 60mm synthetic turf)
- Localised Floodlighting Column approx. 1.85m
- Fencing foundations approx. 900mm

It is envisaged that construction will take 14 weeks for a new-build full-size 3G pitch facility.

The proposed site layout is shown in Appendix A, drainage plan in Appendix B and lighting plan in Appendix C.

Access to the site during the construction phase will be from an existing park maintenance entrance on the N81 road. Access for the public during operation will be through Sean Walsh park.

2 Methodology

2.1 The EcIA team

This Ecological Impact Assessment was completed by experienced ecologists Hannah Mulcahy (BSc (Hons), MSc), Karen van Dorp (BSc MSc (Hons)) and Patricia Byrne (BSc (Hons), PhD, MCIEEM) from JBA Consulting. The assessment report has been reviewed by Steven Heathcote BA (Hons) DPhil MCIEEM.

These persons fulfil the Environmental Impact Assessment (EIA) Directive personnel requirements of 'competent persons'.

2.2 Policy and Legislation

Policy and legalisation for nature conservation, protected and priority species relevant to the proposed project is provided in Appendix E.

2.3 Methods

This EcIA assesses the ecological features present within the site and its surrounding area (the Zone of Influence; ZoI) in relation to the proposed works. This allows for identification of the potential impacts of the proposed works upon the ecological features of the site at an early stage, whilst identifying the potential ecological constraints upon the proposed works. The assessment is based on a desk-based assessment, which determines the baseline conditions at the site of the proposed works, and site surveys, which provided information on habitats and species present on the site and its surroundings.

This EcIA will outline the findings of the desk-based assessment and the surveys and identifies any potential impacts of the proposed works on ecological features within the ZoI of the site, and proposes mitigation measures to avoid or reduce impacts where necessary.

2.4 Guidance

This assessment was conducted in accordance with the following guidance documents:

- Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland: Terrestrial, Freshwater, Coastal and Marine (CIEEM 2018)
- Guidelines on the information to be contained in Environmental Impact Assessment Reports (Draft) Environmental Protection Agency (EPA 2017)
- Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA 2009)
- Environmental Impact Assessment of National Road Schemes – A Practical Guide (NRA, 2008b)
- Best Practise Guidance for habitat Survey and Mapping. The Heritage Council (Smith et al. 2011)

2.5 Baseline

To determine the baseline conditions at the site a review of all available information was made. When determining the pre-work conditions on-site, including the presence or absence of protected habitats and/or species, the *precautionary principle* was used where limited information was available. The following methods and reports were consulted during this process:

- A desk-based assessment was carried out to collate information regarding protected/notable species and statutorily designated nature conservation sites in, or within close proximity to, the study area
- A data search for protected and notable species was conducted using the National Biodiversity Data Centre Mapping System (National Biodiversity Data Centre, 2020). A 10km² grid square was used to encompass the study area and species records were extracted from the map at a 10km² resolution
- Information for statutory designated sites including Special Protection Areas (SPAs), Special Areas of Conservation (SACs), Ramsar Sites, Natural Heritage Areas (NHAs) and proposed NHAs (pNHA) was collected from the online resources provided by the National Parks and Wildlife Service (NPWS)

Other information on the local area was obtained, including:

- The Status of EU Protected Habitats and Species in Ireland. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland (NPWS 2008)
- The Status of EU Protected Habitats and Species in Ireland. Habitats Assessment Volume 2. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland (NPWS 2014a)
- The Status of EU Protected Habitats and Species in Ireland. Species Assessment Volume 3. Habitats Assessment Volume 2. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland (NPWS 2014b)
- Environmental Protection Agency online databases on water quality (available online at https://gis.epa.ie/EPAMaps/)
- Aerial photography available from www.osi.ie and Google Maps http://maps.google.com/
- Online data available on Natura 2000 sites as held by the National Parks and Wildlife Service (NPWS) from www.npws.ie; accessed on various dates
- National Biodiversity Data Centre – Species Distribution Maps (www.biodiversityireland.ie); accessed on various dates
- All Ireland Red Data lists for vascular flora, mammals, butterflies, non-marine molluscs, dragonflies & damselflies, amphibians and fish
- Water Framework Directive water maps (http://www.wfdireland.ie/maps.html and https://www.catchments.ie/)
- International Union for Conservation of Nature and Natural Resources (IUCN) Red List of Threatened Species (http://www.iucnredlist.org)

2.5.1 Zone of Influence

The Zone of Influence (ZoI) for the proposed works is based on a judgement of the likely extent of the ecological impacts. This will vary for different ecological features, depending on their sensitivities to environmental change. For the majority of the works, impacts will be limited to within the site boundary. However, for impacts relating to airborne emissions, surface and ground water and disturbance, the ZoI is extended to 10km.

2.5.2 Field Surveys and Data

An ecological baseline survey was carried out on the 18 December 2020 by JBA Ecologists by JBA Ecologists Patricia Byrne and William Mulville. The survey recorded habitats and flora in the area within and directly adjacent to the proposed development site, and the presence or likely presence of protected species, as well as the presence of suitable habitats for those species.

Survey methods were in general accordance with those outlined in the following documents:

- Best Practise Guidance for Habitat Survey and Mapping, by the Heritage Council (Smith et al., 2011a)
- Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes (NRA, 2009b)

Habitats have been named and described following A Guide to Habitats in Ireland by Fossitt (2000). Nomenclature for higher plants principally follows that given in Webb's An Irish Flora (Parnell and Curtis, 2012).

2.6 Screening of Ecological Features

The ecological features identified during the walkover surveys and from desk-based assessments were reviewed.

An EIA screening is being developed for the project and will be informed by this EcIA (JBA Consulting 2021a). An informal screening process is presented at the start of the results section to ensure that the assessment focuses only on features where the impact could have important consequences for biodiversity (valued ecological features). Any features which are important beyond the site level were

identified for further evaluation. Ecological features with little or no value beyond the site level were screened out and a short statement explaining this is given in the screening section.

An Appropriate Assessment (AA) Screening report has been produced separate to this EcIA (JBA Consulting 2021b), to assess the potential for effects on designated Natura 2000 sites. The AA Screening Report concluded there will not be any significant effects on European sites arising from the proposed development, either alone or in-combination with other plans or projects. Natura 2000 sites are therefore not considered in this report.

2.7 Assessment of the effects on ecological features

Ecological features include nature conservation sites, habitats, species assemblages/ communities, populations or groups of species. The assessment of the significance of predicted impacts on ecological features is based on both the 'value' of a feature, and the nature and magnitude of the impact that the project will have on it. The impact is based on the project which includes a certain amount of designed-in mitigation, including construction best practice measures that will be implemented with a high degree of certainty.

2.7.1 Valuation of receptors

The value of designated sites, habitats and species populations is assessed with reference to:

- Their importance in terms of 'biodiversity conservation' value (which relates to the need to conserve representative areas of different habitats and the genetic diversity of species populations)
- Any social benefits that habitats and species deliver (e.g. relating to enjoyment of flora and fauna by the public)
- Any economic benefits that they provide

The valuation of designated sites considers different levels of statutory and non-statutory protection. Assessment of habitat depends on several factors, including the size of the habitat, its conservation status and quality. The assessment also takes account of connected off-site habitat that may increase the value of the on-site habitat through association. Valuation of species depends on a number of factors including distribution, status, rarity, vulnerability, and the population size present.

Designated sites, habitats and species populations have been valued using the scale in Table 2-1.

Table 2-1 Examples of criteria used to define the value of ecological features

Level of Value	Examples of Criteria
International	An internationally important site e.g. Special Protection Area (SPA), Special Area of Conservation (SAC), Ramsar (or a site considered worthy of such designation). A regularly occurring substantial population of an internationally important species (listed on Annex IV of the Habitats Directive). Designated shellfish waters. Major fisheries area.
National	A nationally designated site e.g. Natural Heritage Area (NHA), a proposed Natural Heritage Area (pNHA), statutory Nature Reserve, or a site considered worthy of such designation. A viable area of a habitat type listed in Annex I of the Habitats Directive or of smaller areas of such habitat which are essential to maintain the viability of a larger whole. A regularly occurring substantial population of a nationally important species, e.g. listed on The Wildlife Act 1976 or The Wildlife (Amendment) Act 2000. A species included in the Irish Red Data Lists/Books. Significant populations of breeding birds.

Level of Value	Examples of Criteria
Regional/County (County Dublin)	Species and habitats of special conservation significance within County Dublin. An area subject to a project/initiative under the County's Biodiversity Action Plan. A regularly occurring substantial population of a nationally scarce species.
Local (works site and its vicinity)	Areas of internationally or nationally important habitats which are degraded and have little or no potential for restoration. A good example of a common or widespread habitat in the local area. Species of national or local importance, but which are only present very infrequently or in very low numbers within site area.
Less than local	Areas of heavily modified or managed vegetation of low species diversity or low value as habitat to species of nature conservation interest. Common and widespread species.

2.7.2 Magnitude of impacts

Ecological impacts can be categorised and assessed in a number of ways. They can be considered to be:

- **Positive** - A change which improves the quality of the environment
- **Neutral** - A change that does not affect the quality of the environment
- **Negative** - A change which reduces the quality of the environment. A negative impact can be sufficiently minimised or eliminated by the adoption of appropriate mitigation measures
- **Uncertain** - When the full consequences of a change in the environment cannot be described

In addition, the nature of impact can also be described in a number of ways, including:

- **Direct/Indirect** - a direct impact could include the loss of a species or habitat, whereas an indirect impact could be as a result of noise, dust or disturbance
- **Irreversible** - when the character, distinctiveness, diversity or reproductive capacity of an environment is permanently lost. Alternatively, impacts can be temporary in nature, with the baseline condition restored after a period of time; this could occur over the short-term (1-2 years), medium-term (2-10 years) or long-term (+10 years)
- **Cumulative** - The addition of many small impacts to create one larger, more significant impact
- **Synergistic** - Where the resultant impact is of greater significance than the sum of its constituents

These factors are assessed together to determine the magnitude of the impact on the status of a habitat or species population, and on the integrity of the site that supports them. Professional judgement is then used to assign the impacts on the receptors to one of four classes of magnitude, detailed in Table 2-2.

Table 2-2 Definition of magnitude

Magnitude	Definition
High	An irreversible or long-term impact on the integrity of a site or conservation status of a habitat, species assemblage/community, population, or group. If adverse, this is likely to threaten its sustainability; if beneficial, this is likely to enhance its conservation status.
Medium	An irreversible or long-term impact on the integrity of a site or conservation status

Magnitude	Definition
	of a habitat, species assemblage/community, population, or group. If adverse, this is unlikely to threaten its sustainability; if beneficial; this is likely to be sustainable but is unlikely to enhance its conservation status.
Low	A short-term but temporary impact on the integrity of a site or conservation status of a habitat, species assemblage/community, population or group that is within the range of variation normally experienced between years.
Negligible	A short-term but temporary impact on the integrity of a site or conservation status of a habitat, species assemblage/community, population or group that is within the normal range of annual variation.

2.7.3 Significance of impacts

The significance of an impact is a product of the value of the ecological feature and the magnitude of the impact on it, moderated by professional judgement. Table 2-3 shows a matrix which is used for guidance in the assessment of significance, with impacts being considered to be of major, moderate, or minor significance, or negligible. Impacts can also either be assessed as positive or negative using the same matrix.

Table 2-3 Significance of impacts matrix

Value of feature	Magnitude of impact			
	High	**Medium**	**Low**	**Negligible**
International	Major	Major	Moderate	Neutral
National	Major	Moderate	Minor	Neutral
Regional / County	Moderate	Minor	Minor	Neutral
Local	Minor	Minor	Negligible	Neutral
Less than local	Negligible	Negligible	Negligible	Neutral

2.7.4 Residual impacts

The project is assessed including some designed-in mitigation. This is done where mitigation is proven to be effective and will be implemented effectively with a high certainty. Where significant residual impacts are still identified, further mitigation measures will be proposed as part of the Ecological Impact Assessment process to avoid, reduce or minimise them. Each impact assessment section assigns a final significance level to the impact described, which considers and includes the implementation of any stated mitigation measures; these are the residual impacts.

2.8 Cumulative Impacts

Potential sources of cumulative impacts were identified based on the ecology of valued ecological features only for features where this is a residual or non-significant impact. Potential sources of cumulative impacts were sought within ranges, territories or catchments where there is the potential for a significant impact on a site or species.

The following Plans and Projects were identified as potential sources of cumulative impacts:

- South Dublin Development Plan 2017 - 2023 (FCC, 2017a)
- Tallaght Town Centre Local Area Plan 2020
- River Basin Management Plan for Ireland 2018-2021
- Greater Dublin Drainage (GDD)
- Killinarden Masterplan
- Planning Applications (compiled from myplan.ie)

2.9 Limitations and Constraints

This EcIA is based on site visits and existing data from the above-mentioned sources. The report necessarily relies on some assumptions and is inevitably subject to some limitations. These do not affect the conclusion, but the following points are recorded in order to ensure the basis of the assessment is clear:

- Information on the works and conditions on site are based on current knowledge at the time of writing. Any changes to the proposed works will require an assessment by a suitably qualified ecologist to determine if re-assessment is required
- The *precautionary principle* is used at all times when determining potential ecological sensitivity of the site
- *Myotis* bat species can be difficult to identify to species level depending on the quality of recordings. Where possible the species has been identified to species level.
- No static bat detector survey was undertaken within the proposed site boundary as this report was commissioned outside of the Bat Activity season (April-September). Data from a previous static bat detector survey conducted by JBA in August 2020 close to the proposed location has been used to give an estimate of the level of activity around the site. To further support this assessment a static bat detector survey will be carried out in bat active season before the proposed project take place. The data is not expected to change the outcome of this report.
- The habitat surveys were carried out outside of the plant growing season. However habitats were identified from vegetative features of plants

3 Existing Environment

These baseline conditions present information gathered from existing reports and desk-based sources as detailed in Section 2 and site visits.

3.1 Designated Sites

Table 3-1 lists the designated sites of International Importance (including Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and RAMSAR sites (wetlands of International Importance)), and National Importance (Natural Heritage Areas (NHAs), proposed Natural Heritage Areas (pNHAs), and Nature Reserves) and their distance from the proposed development site (Figure 3-1).

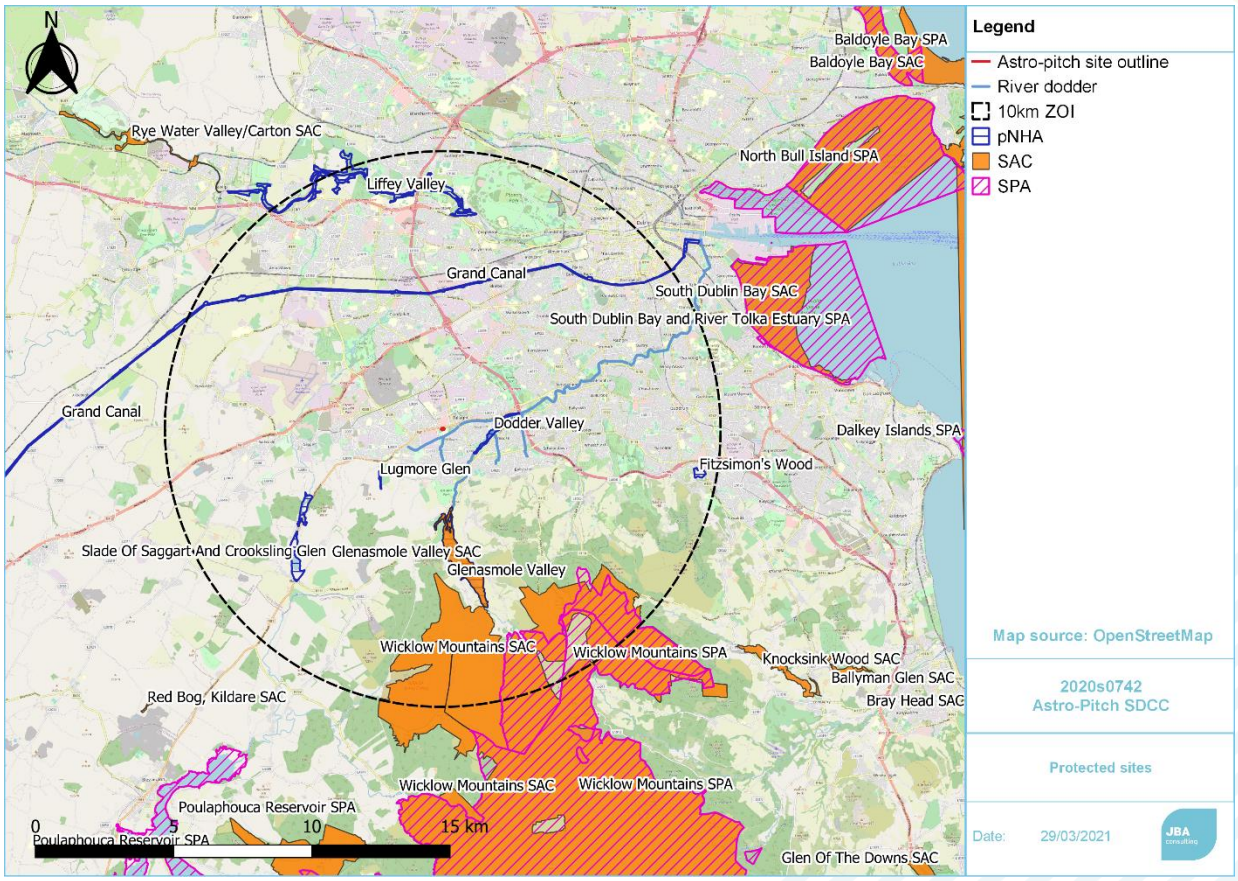

Figure 3-1: Designated sites

Table 3-1 Distance and importance of designated sites within the 10km ZoI

Site name	Code	Importance	Approximate direct distance from site
Lugmore Glen pNHA	001212	National	1.2km
Glenasmole Valley SAC	001209	International	1.3km
Glenasmole Valley pNHA	001209	National	1.3km
Dodder Valley pNHA	000991	National	1.8km
Slade Of Saggart and Crooksling Glen pNHA	000211	National	3.8km
Wicklow Mountains SAC	002122	International	5.0km
Wicklow Mountains SPA	004040	International	6.9km

Grand Canal pNHA	002104	National	5.5km
Liffey Valley pNHA	000128	National	8.4km
Fitzsimon's Wood pNHA	001753	National	9.8km

Table 3-2 summarises the site briefs, qualifying interests, relevant threats and pressures and their impacts and sources in relation to the Natura 2000 sites within the 10km ZoI.

Table 3-3 summarises the site briefs and ecological features of exclusively proposed Natural Heritage Areas within the 10km ZoI.

Table 3-2 Site briefs, QIs, project-relevant threats/pressures, and impacts in relation to the Natura 2000 sites within the ZoI

Site Name	Brief	Qualifying Interests	Threats / Pressures: Impact (High-H, medium-M, Low- L (Source- inside, outside, both)
Glenasmole Valley SAC	Glenasmole Valley lies at the northern foothills of the Dublin and Wicklow Mountains. It is a glaciated valley, with drift deposits, consisting of fluvioglacial sands and gravels of varying thickness and rich in Carboniferous limestone, occurring on the slopes. Spring lines occur along both sides of the northern part of the valley. The River Dodder flows through the valley and within the site the river has been impounded to form two reservoirs. Associated with the reservoirs are areas of swamp and marsh vegetation. The valley is heavily wooded, mostly with mixed woodland of both deciduous and coniferous species but also some native woodland. Dry calcareous pasture grassland, improved to varying degrees, is a main habitat of the valley sides and occurs in association with wet grassland and, in places of seepage, fen or marsh type vegetation (NPWS 2017b)	[6210] Orchid-rich Calcareous Grassland* [6410] Molinia Meadows [7220] Petrifying Springs* (NPWS, 2018b)	Human induced changes in hydraulic conditions: H (inside) Fertilisation: M (both) Diffuse pollution to surface waters due to household sewage and waste waters: M (outside) Invasive non-native species: M (inside) Diffuse pollution to surface waters due to abandoned industrial sites: M (outside) Discontinuous urbanisation: M (outside)
Wicklow Mountains SAC	The site comprises the largest complex of upland habitats in eastern Ireland, with important examples of blanket bog, wet heath and dry heath, extensive in area and mostly of good quality. Alpine heath occurs at high levels, along with calcareous and siliceous rocky habitats harbouring an arctic-alpine flora. A fine series of oligotrophic lakes occur and some have *Salvelinus alpinus*. Several oakwoods of moderate quality, typical of the dry acidic woods of eastern Ireland, are found. Seven Red Data Book plant species occur, including the rare *Alchemilla alpina* and *Nitella gracilis* at its only Irish station. The site supports significant populations of breeding *Falco columbarius* and *Falco peregrinus*. The site is important for rare breeding passerines of oakwoods, notably *Phoenicurus phoenicurus* and *Phylloscopus sibilatrix*. The site also has breeding *Turdus torquatus* and *Lagopus lagopus. Lutra lutra* occurs on several of the riverine systems. (NPWS 2017c)	[3110] Oligotrophic Waters containing very few minerals [3160] Dystrophic Lakes [4010] Wet Heath [4030] Dry Heath [4060] Alpine and Subalpine Heaths [6130] Calaminarian Grassland [6230] Species-rich Nardus Grassland* [7130] Blanket Bogs (Active)* [8110] Siliceous Scree [8210] Calcareous Rocky Slopes [8220] Siliceous Rocky Slopes [91A0] Old Oak Woodlands [1355] Otter (Lutra lutra)	Urbanised areas, human habitation: M (both) (Full list of threats and pressures are listed in NPWS, 2017c)
Wicklow Mountains SPA	This is an extensive upland site, comprising a substantial part of the Wicklow Mountains. The underlying geology of the site is mainly of Leinster granites, flanked by Ordovician schists, mudstones and volcanics. The area was subject to glaciation and features fine examples of glacial lakes, deep valleys and moraines. Most of site is over 300 m, with much ground over 600 m and the highest peak of Lugnaquillia at 925 m. The substrate over much of site is peat, with poor mineral soil occurring on the slopes and lower ground. Exposed rock and scree are features of the site. The dominant habitats present	[A098] Merlin *Falco columbarius* [A103] Peregrine *Falco peregrinus*	N/A

Site Name	Brief	Qualifying Interests	Threats / Pressures: Impact (High-H, medium-M, Low- L (Source- inside, outside, both)
	are blanket bog, heaths and upland grassland. Fine examples of native Oak woodlands are found in the Glendalough area. The site, which is within the Wicklow Mountains National Park, is fragmented into about 20 separate parcels of land. (NPWS, 2018)		

* = priority Annex I habitat

Table 3-3: Site briefs and ecological features of pNHAs within the ZoI

Site Name	Brief	Ecological Features
Lugmore Glen pNHA	This small wooded glen is located about 2 km south-east of Saggart in Co Dublin. It is quite a narrow valley cut in glacial drift. A small stream winds through the valley. It is a fine example of a wooded glen with a good representation of woodland plants. This type of semi-natural habitat is now scarce in Co Dublin. The presence of a rare plant species adds to the interest of the site	River and woodland
Dodder Valley pNHA	Dodder Valley contains a mix of habitats, including woodland scrub with well-developed understorey, wildflower meadows along the riverbanks and the river habitat. The site supports 48 species of birds and a Sand Martin riparian colony of up to 100 pairs are nesting in one section of the banks	River and woodland
Glenasmole Valley pNHA	Glenasmole Valley in south Co. Dublin lies on the edge of the Wicklow uplands, approximately 5 km from Tallaght. The River Dodder flows through the valley and has been impounded here to form two reservoirs which supply water to south Dublin	River and woodland and orchid-rich grassland
Slade Of Saggart And Crooksling Glen pNHA	This site is located in the south-west of the county and stretches from Brittas northwards to approximately 2 km south of Saggart. The northern half of the site comprises a river valley with steep tree-covered sides, while the southern side is flatter and contains two small lakes, the Brittas Ponds	Lake, river, and woodland
Liffey Valley pNHA	Liffey Valley is located on the north side of Dublin. The Liffey Valley site comprises a salmonid river between Leixlip Bridge on the Kildare-Dublin border and downstream of the weir at Glenaulin, Palmerstown, Co. Dublin. Terrestrial habitats include mixed deciduous woodland on both sides of the river, with Willow and Alder fringing the river in places	River, woodland, marsh
Grand Canal pNHA	The site comprises a canal channel and the banks on either side of it of the man-made canal between the River Liffey at Dublin and the River Shannon at Shannon Harbour, and the Barrow at Athy	Canal, hedgerow, tall herbs, calcareous grassland, reed fringe, open water, scrub and woodland
Fitzsimon's Wood pNHA	FitzSimons Wood contains a good example of a seminatural woodland and a pond that holds a populations of Smooth Newt.	Woodland, meadow, pond, scrub, smooth newt (DLR N.D.)

3.1.1 Screening of designated sites

An AA Screening report has been produced for the construction of the Astro pitch in Sean Walsh Park separate to this EcIA (JBA Consulting 2021b) to assess the potential for effects on designated Natura 2000 sites within the ZoI of the works. Following initial screening, and based upon best scientific judgement, this report concluded that there will be **no likely significant effects** from the Project on the following Natura 2000 sites within the Zone of Influence, either alone or in combination with any other plans or projects:

- Glenasmole Valley SAC
- Wicklow Mountains SAC
- Wicklow Mountains SPA
- South Dublin Bay and River Tolka Estuary SPA
- South Dublin Bay SAC
- North Bull Island SPA
- North Dublin Bay SAC

The below protected sites can be screened in as they are within in the Zone of Influence of 10km and are considered further in this study:

- Lugmore Glen pNHA
- Dodder Valley pNHA
- Glenasmole Valley pNHA
- Slade Of Saggart And Crooksling Glen pNHA
- Liffey Valley pNHA
- Grand Canal pNHA
- Fitzsimon's Wood pNHA

3.2 Water bodies within the Vicinity of the Proposed Site

3.2.1 Surface Water

The Whitestown Stream is located approximately 200m to the south of the proposed Astroturf pitch site and runs in a west to east direction through Sean Walsh Park. The stream flows in an easterly direction for 1.2km, where it enters artificial ponds in Sean Walsh Park. From here, the watercourse continues as the River Poddle for 1.7 km before joining the River Dodder in Dodder Valley Park, west of the M50. The River Dodder (040) [IE_EA_09D010620], which originates from Dublin Mountains, flows in a northeasterly direction for another 14km before it has its outfall into River Liffey by the Grand Canal Docks before reaching Dublin Bay and the Irish Sea (Figure 3-2). The River Dodder has a At Risk water quality status (EPA, 2020).

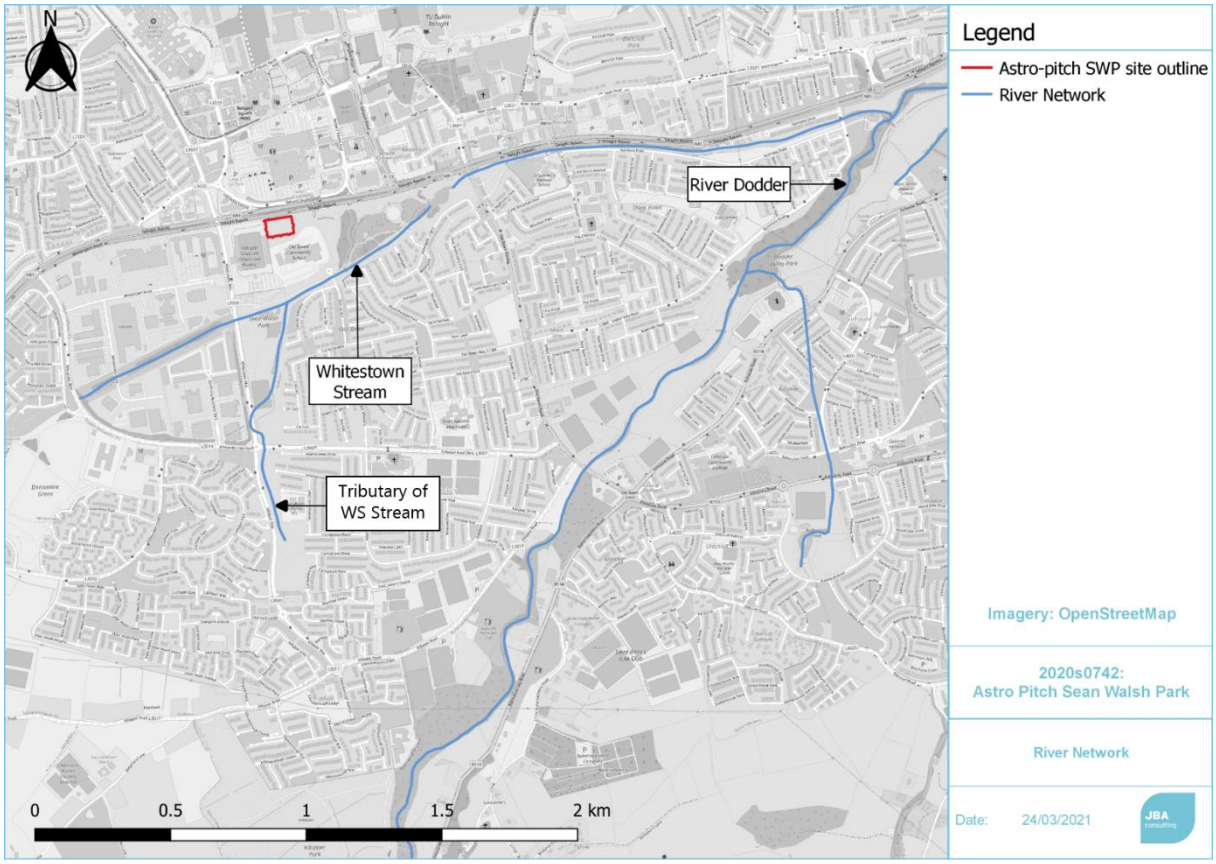

Figure 3-2: River network (OSM, 2021)

3.2.2 Groundwater

The bedrock consists of Dark limestone & shale overlain by a subsoil of till derived from limestone, with made ground on top. The subsoil permeability is Low. The groundwater body which underlies Sean Walsh park is Not at Risk and ground water vulnerability is Low. There are no habitats in or adjacent to the site that are reliant on groundwater.

3.3 Survey results

A habitat survey was carried out on the 18th December 2020 by JBA Ecologists Patricia Byrne and William Mulville. Habitats and species recorded at the site are presented in detail in the following sections. The value of each habitat is based on the site visit. Habitats recorded in and around the site boundary are listed in Table 3-4 and a habitat map is found in Figure 3-3.

3.3.1 Habitats recorded on site

Table 3-4: Habitats recorded on site

Habitat	Fossitt Code
Amenity grassland (improved)	GA2
Dry calcareous and neutral grassland	GS1
(Mixed) Broadleaved woodland	WD1
Treelines	WL2

Figure 3-3: Habitat map (ESRI Satellite, 2021)

3.3.2 GA2 - Amenity grassland (improved)

The location of the proposed Astroturf pitch is currently composed of grassland managed for amenity and therefore has very little species richness. During the survey only Rye Grass *Lolium perenne*, and Creeping Buttercup *Ranunculus repens* were recorded.

This habitat can be considered of less than local importance. The majority of the works for the proposed Astro pitch will take place in this habitat which will be replaced by the artificial surface.

Figure 3-4: Amenity grassland and neutral grassland area with Bamboo

3.3.3 GS1 - Dry calcareous and neutral grassland

A small area of neutral grassland was recorded between the school boundary and the woodland strip. This grassland contained species such as False Oat Grass *Arrhenatherum elatius*, Cocksfoot *Dactylis glomerata*, Rush Juncaceae spp, Thistle species, and a patch of ornamental Bamboo.

This habitat can be considered less than local importance, and it will not be disturbed by the proposed works.

3.3.4 WD1 - (Mixed) Broadleaved woodland

A strip of broadleaved woodland borders the east and north boundary of the school. This woodland is composed of Ash *Fraxinus excelsior*, Alder *Alnus glutinosa*, and Birch with an understorey of Bramble *Rubus fructicosus*, Cow Parsley *Anthriscus sylvestris*, Common Hogweed *Heracleum sphondylium*, and Thistle species.

A small area of woodland is can be found near the path which contains Alder, Birch, Ash, Beech *Fagus sylvatica* with an understorey of Bramble, Cow Parsley, Creeping Buttercup *Ranunculus repens*, Ivy *Hedera hibernica*. Ornamental plants include Cotoneaster species and a palm.

This habitat can be considered less than local importance, and it will not be disturbed by the proposed works.

3.3.5 WL2 - Treelines

A treeline composed of Beech and Birch trees borders the south of the site between the proposed pitch and the Old Bawn Community School (Figure 3-5). This habitat can be considered less than local importance, and it will not be disturbed by the proposed works.

Figure 3-5: Beech Treeline (L) and Mixed broadleaf woodland (R)

3.4 Protected Species

Records of protected fauna including invertebrates, amphibians, fish, birds, and mammals collated from the NBDC database, present within the surrounding 10km square grid over the past 10 years are listed in Appendix E. This includes their level of protection, if they are Red or Amber listed on the International Union for the Conservation of Nature and Natural Resources (IUCN) Red List and the date of the last record of this species at this location.

3.4.1 Bats

The following bat species protected under the Wildlife Acts (As Amended) have been recorded within 10km of the proposed site:

- Brown Long-eared Bat *Plecotus auritus*
- Daubenton's Bat *Myotis daubentonii*
- Lesser Noctule *Nyctalus leisleri*
- Natterer's Bat *Myotis nattereri*
- Pipistrelle *Pipistrellus pipistrellus* sensu lato
- Soprano Pipistrelle *Pipistrellus pygmaeus*

No static bat detector survey was undertaken within the proposed site boundary as this report was commissioned outside of the Bat Activity season (April-September). However static detector surveys were undertaken by JBA during August 2020 in Killinarden Park, along the Whitestown Stream and Sean Walsh Park (see Table 3-5).

The following bat species were recorded from these surveys:

- Common Pipistrelle *Pipistrellus pipistrellus*
- Soprano Pipistrelle *Pipistrellus pygmaeus*
- Lesser Noctule *Nyctalus leisleri*
- Myotis spp.

Table 3-5: Static bat data from Sean Walsh Park

Date	Species	Count
11 August 2020	Leisler's Bat *Nyctalus leisleri*	16
	Common Pipistrelle *Pipistrellus pipistrellus*	7
	Soprano Pipistrelle *Pipistrellus pygmaeus*	10
	Myotis sp.	96
12 August 2020	Leisler's Bat *Nyctalus leisleri*	18
	Common Pipistrelle *Pipistrellus pipistrellus*	14
	Soprano Pipistrelle *Pipistrellus pygmaeus*	32
	Myotis sp.	141
13 August 2020	Leisler's Bat *Nyctalus leisleri*	16
	Common Pipistrelle *Pipistrellus pipistrellus*	12
	Soprano Pipistrelle *Pipistrellus pygmaeus*	14
	Myotis sp.	202
14 August 2020	Leisler's Bat *Nyctalus leisleri*	18
	Common Pipistrelle *Pipistrellus pipistrellus*	29
	Soprano Pipistrelle *Pipistrellus pygmaeus*	67
	Myotis sp.	103
15 August 2020	Leisler's Bat *Nyctalus leisleri*	16
	Common Pipistrelle *Pipistrellus pipistrellus*	26
	Soprano Pipistrelle *Pipistrellus pygmaeus*	53
	Myotis sp.	132
16 August 2020	Leisler's Bat *Nyctalus leisleri*	15
	Common Pipistrelle *Pipistrellus pipistrellus*	27
	Soprano Pipistrelle *Pipistrellus pygmaeus*	34
	Myotis sp.	157
17 August 2020	No data - poor weather	NA

Location of static bat detector in Sean Walsh Park is illustrated in Figure 3-6.

Figure 3-6: Location of Static Bat detector in Sean Walsh Park (Esri Satellite, 2021)

During the site walkover survey, no potential bat roosting features were observed on the site.

The treeline and woodland that borders the Community school present suitable foraging habitat and there is also suitable foraging and commuting habitat in the surrounding area (Sean Walsh Park), and a treeline/watercourse corridor between the site and Killinardan Park along Whitestown Stream.

This site can be considered of less than local importance as it is likely only used opportunistically by foraging bats and is likely not a commuting route due to its lack of linear features and small size. To further support this assessment a static bat detector survey will be carried out in bat active season before the proposed project take place. The data is not expected to change the outcome of this report.

3.4.2 Terrestrial mammals

The following terrestrial mammal species protected under the Wildlife Acts (As Amended) have been recorded within 10km of the proposed site:

- West European hedgehog *Erinaceus europaeus*
- Eurasian pygmy shrew *Sorex minutus*
- Eurasian Badger *Meles meles*
- Eurasian Otter *Lutra lutra*
- Red Squirrel *Scirius vulgaris*
- Pine Marten *Martes martes*

No evidence of terrestrial mammals was recorded during the survey, but it is only likely that some mammals from this list are living in the woodland area on the site; particularly those species that have adapted to urban environments (such as Hedgehog and Badger), as well as Foxes, Shrews and rodents.

Otter

Although otter have been recorded in urban rivers, and a sightings of otter have been recorded along the River Dodder, There is no suitable habitats for otter therefore it can be considered of less than local importance for these mammals.

Pine Marten and Red Squirrel

These mammals are extremely shy and woodland specialists therefore due to the urban environment and lack of habitat the park can be considered of less than local importance for these mammals.

Other mammals

The site may occasionally be used by some Badger, Hedgehog and shrews, but due to lack of habitat and lack of evidence of these mammals, the site can be considered of less than local importance for these mammals.

3.4.3 Birds

A Kingfisher *Alcedo atthis* was observed during a survey close to the site (at Whitestown Stream, upstream, close to the road). It is unlikely that this bird is using the proposed site due to lack of habitat.

No birds were seen using the proposed Astroturf pitch site during the survey, but Mallard *Anas platyrhynchos*, Mute swan *Cygnus olor*, Moorhen *Gallinula chloropus*, Tufted duck *Aythya fuligula*, Heron *Ardea cinerea*, and Black-headed gull *Chroicocephalus ridibundus* can all be found year-round in Sean Walsh Park. Garden birds such as Robin *Erithacus rubecula*, Swallow *Hirundo rustica*, Blue tit *Cyanistes caeruleus*, House sparrow *Passer domesticus*, Bullfinch *Pyrrhula pyrrhula*, and Long-tailed tit *Aegithalos caudatus* are likely to use the woodland on site.

This site can be considered of less than local importance for these birds.

3.4.4 Invertebrates

The following invertebrate species protected under the Wildlife Acts (As Amended) have been recorded within 10km of the proposed site:

- Freshwater White-clawed Crayfish *Austropotamobius pallipes*

However this species is recorded upstream near the source of the River Dodder, and there is no suitable habitat for crayfish on this site, and therefore can be considered of less than local importance for these species.

Invertebrate species recorded during a survey in August within the extent of Sean Walsh Park were: butterfly species Red admiral, Speckled wood, Large White, Holly blue, Common blue and Peacock, and bee species Buff-tailed bumblebee, Common Carder bee, and Red-tailed bumblebee.

This site can be considered of less than local importance for invertebrates due to lack of flowering plants and natural habitat these species depend on.

3.4.5 Invasive Non-Native Species (INNS)

During the survey two non-native species were recorded, including Bamboo and Cotoneaster.

Cotoneaster is an introduced garden plant that spreads rapidly across local areas as their seeds are eaten by birds. Bamboo is also an introduced garden plant but spreads vegetatively. Both species pose a threat to local biodiversity as they readily invade disturbed ground and can out-compete native species.

These species were both recorded in the grassy clearing in the woodland and will not be affected by the proposed project. Neither of these species are listed under Regulation 49(2) in the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations, 2011 (S.I. No. 477 of 2011).

The records of Invasive Non-native Species collated from the NBDC (2019) database, present within the surrounding 10km over the past 10 years are listed in Appendix F.

3.5 Screening of Ecological Features

The screening of ecological features for detailed consideration in the EcIA is given in Table 3-6. Those features screened out are not considered further in this assessment. Ecological features that are screened in are assessed for potential impact during construction and operation in Section 4.

Table 3-6 Summary of ecological features and the screening assessment

Ecological feature	Value	Screening	Reasoning
Designated sites			
Glenasmole Valley SAC	International	Screened out	No pathways/distance (concluded in AA Screening)
Wicklow Mountains SAC	International	Screened out	No pathways/distance (concluded in AA Screening)
Wicklow Mountains SPA	International	Screened out	No pathways/distance (concluded in AA Screening)
Lugmore Glen pNHA	National	Screened in	
Dodder Valley pNHA	National	Screened in	
Glenasmole Valley pNHA	National	Screened in	
Slade Of Saggart And Crooksling Glen pNHA	National	Screened in	
Liffey Valley pNHA	National	Screened in	
Grand Canal pNHA	National	Screened in	
Fitzsimon Woods pNHA	National	Screened in	
Habitats			
Amenity grassland (improved)	Less than local	Screened out	Low value
Dry calcareous and neutral grassland	Less than local	Screened out	Low value, not affected by works
(Mixed) Broadleaf woodland	Less than local	Screened out	Low value, not affected by works
Treelines	Less than local	Screened out	Low value, not affected by works
Species			
Terrestrial mammals	Less than local	Screened out	Low value
Bats	Less than local	Screened out	Low value
Breeding Birds	Less than local	Screened out	Low value
Invertebrates	Less than local	Screened out	Low value
Invasive Non-Native species	Not regulated species	Screened out	Not in works area

The valued ecological features assessed in detail in the subsequent sections are therefore:

- Lugmore Glen pNHA
- Dodder Valley pNHA
- Glenasmole Valley pNHA
- Slade Of Saggart And Crooksling Glen pNHA
- Liffey Valley pNHA
- Grand Canal pNHA
- Fitzsimon Woods pNHA

4 Potential Impacts

4.1 Introduction

The impacts on the screened-in ecological features are assessed in this section. The initial assessment considers the potential impact pathways and whether these apply to the ecological features. The impact assessment considers the Project and the anticipated effects in the absence of any mitigation. The impacts will be considered through Construction Phase Impacts and Operation Phase impacts, in accordance with to CIEEM guidelines (CIEEM 2016).

The key construction and operational impacts assessed are:

- Impacts to air quality during construction

4.2 Designated sites

Protected Site	Importance	Distance	Surface water pathway connection?
Lugmore Glen [001212]	National	1.2km	No
Dodder Valley [000991]	National	1.8km	No (Whitestown stream 220m from site)
Glenasmole Valley [001209]	National	2.0km	No
Slade Of Saggart And Crooksling Glen [000211]	National	3.8km	No
Grand Canal [002104]	National	5.5km	No
Liffey Valley[000128]	National	8.4km	No
Fitzsimon's Wood [001753]	National	9.8km	No

4.2.1 Glenasmole Valley pNHA

This pNHA lies upstream of the River Dodder and therefore will not be impacted by via surface water pathways. Glenasmole is 2 km away it could be impacted by airborne pollution. However it is not expected that any release of pollutants during construction will be significant due to the small scale of the works and construction vehicle emissions are expected to be less than 20 AADT which is considered negligible compared to that from road traffic (CIEEM 2021). The site is more than 1km away and will not be impacted by noise pollution.

Therefore there will be no impacts to Glenasmole Valley.

4.2.2 Lugmore Glen pNHA

This pNHA lies in a separate river catchment to this project and therefore will not be impacted by via surface water pathways. Lugmore Glen lies 1.2 km away it could be impacted by airborne pollution. However it is not expected that any release of pollutants during construction will be significant due to the small scale of the works and construction vehicle emissions are expected to be less than 20 AADT which is considered negligible compared to that from road traffic. The site is more than 1km away and will not be impacted by noise pollution.

Therefore there will be no impacts to Lugmore Glen.

4.2.3 Slade Of Saggart And Crooksling Glen pNHA

This pNHA lies in a separate river catchment to this project and therefore will not be impacted by via surface water pathways. This pNHA lies 3.8 km away it could be impacted by airborne pollution. However it is not expected that any release of pollutants during construction will be significant due to the small scale of the works and construction vehicle emissions are expected to be less than 20 AADT which is considered negligible compared to that from road traffic. The site is more than 1km away and will not be impacted by noise pollution.

Therefore there will be no impacts to Slade Of Saggart And Crooksling Glen.

4.2.4 Grand Canal pNHA

This pNHA lies in a separate river catchment to this project and therefore will not be impacted by via surface water pathways. This pNHA lies 5.5 km away it could be impacted by airborne pollution. However it is not expected that any release of pollutants during construction will be significant due to the small scale of the works and construction vehicle emissions are expected to be less than 20 AADT which is considered negligible compared to that from road traffic. The site is more than 1km away and will not be impacted by noise pollution.

Therefore there will be no impacts to Grand Canal pNHA

4.2.5 Liffey Valley pNHA

This pNHA lies in a separate river catchment to this project and therefore will not be impacted by via surface water pathways. This pNHA lies 8.4 km away it could be impacted by airborne pollution. However it is not expected that any release of pollutants during construction will be significant due to the small scale of the works. Construction vehicle emissions are expected to be less than 20 AADT which is considered negligible compared to that from road traffic. The site is more than 1km away and will not be impacted by noise pollution.

Therefore there will be no impacts to Liffey Valley pNHA

4.2.6 Fitzsimon's Wood pNHA

This pNHA lies in a separate river catchment to this project and therefore will not be impacted by via surface water pathways. This pNHA lies 9.8 km away it could be impacted by airborne pollution. However it is not expected that any release of pollutants during construction will be significant due to the small scale of the works and construction vehicle emissions are expected to be less than 20 AADT which is considered negligible compared to that from road traffic. The site is more than 1km away and will not be impacted by noise pollution.

Therefore there will be no impacts to Fitzsimon's Wood pNHA

4.2.7 Dodder Valley pNHA

The nearby Whitestown Stream flows into the Dodder Valley pNHA approximately 3km downstream from Killinarden Park. The Whitestown Stream is located 220m away from the proposed project, and no construction vehicles will be near this waterbody. Therefore there will be no impacts to this site surface water pathways.

This pNHA lies 1.4 km away to the south, therefore it could be impacted by airborne pollution. However it is not expected that any release of pollutants during construction will be significant due to the small scale of the works and construction vehicle emissions are expected to be less than 20 AADT which is considered negligible compared to that from road traffic. The site is more than 1km away and will not be impacted by noise pollution.

Therefore there will be no impacts to Dodder Valley pNHA

4.3 Summary

No potential significant impacts have been identified for any protected or importance sites, habitats or species and therefore no mitigation measures are required. Recommendations for improvements for local biodiversity are outlined in the next section.

4.4 Cumulative impacts

No impacts from the proposed project have been identified on the valued ecological features, therefore it is not possible for there to be any cumulative impacts. Works to upgrade nearby Killinarden Park will be concurrent with the construction of the Astro Pitch, however any impacts from these upgrade works have been mitigated for and there will be no residual impacts. Therefore, there will be no cumulative or in-combination impacts with this project and the upgrade works in Killinarden Park.

5 Recommendations

No specific mitigation measures are required as a result of this proposed project to develop an Astro-turf Pitch. However further recommendations have been proposed to enhance the site local biodiversity. These measures are not certain to be implemented, but would represent opportunities for enhancement for biodiversity or prevent impacts on features of less-than-local (i.e. site level) importance.

5.1 General avoidance recommendations during construction

The design of the works follows the basic principles outlined below to eliminate the potential for impacts on ecological features and to minimise such impacts where total elimination is not possible.

General avoidance measures that should be incorporated within the scheme include:

- Limit the hours of construction to daylight hours, to limit disturbance to nocturnal and crepuscular animals.
- Due to the potential presence of bats the use of lighting at night during construction should be avoided. If the use of lighting is essential, then a directional cowl should be fitted to all lights to prevent light spill and to be directed away from treelines/groups of trees.
- Contractors must ensure that no harm comes to wildlife by maintaining the site efficiently and clearing away materials which are not in use, such as wire or bags in which animals can become entangled.
- Any pipes should be capped when not in use (especially at night) to prevent animals becoming trapped. Any excavations should be covered overnight to prevent animals from falling and getting trapped. If that is not possible, a strategically placed plank should be placed to allow animals to escape.

5.2 Tree Planting

It is recommended that additional tree planting, particularly of native tree and shrub species, be carried out as part of these works. It is recommended that the planting be carried out along the treeline of Beech and Birch that forms a boundary between the site and the community school

This measure is in line with SDCC commitment of planting more trees as part of capital projects (SDCC 2016).

5.3 Lighting

The floodlighting has been designed to minimise the vertical light spill onto the woodland area to the south through the use of cowling (Appendix C). This is to keep the woodland as a dark space for nocturnal species.

5.4 Installation of Bat Boxes

As an additional opportunity to enhance the site for bats, it is recommended that while the woodland matures, at least 4 bat boxes be installed in dark areas around the park

Example of suitable bat boxes include the 1FF Schwegler Bat Box with Built-in Wooden Rear Panel and the 2F Schwegler Bat Box (General Purpose).

Guidance on installing bat boxes can be found here: https://www.bats.org.uk/our-work/buildings-planning-and-development/bat-boxes/putting-up-your-box

Simple bat boxes suitable for Pipistrelle's and Leisler's bats can be bought online or constructed by local community groups e.g. Men's Sheds. Note that some bat box designs (that are enclosed at the base) require annual cleaning out, which must be carried out by a Bat Specialist or NPWS Ranger.

Guidance on installing bat boxes is detailed in the following resource document:

http://www.batcon.org/images/InstallingYourBatHouse_Building.pdf

A summary on installing bat boxes can be summarised as:

- Suggested locations include areas with mature trees located near other treelines and water edges.

- All bat boxes should be mounted at least 3-4 metres above the ground
- Mount on the south facing side of the tree where the box exposed to the sun for part of the day
- Do no install bat boxes on a tree that is near any lighting column

5.5 Bird boxes

It is recommended that bird nesting boxes be installed around the edges of the woodland area on trees to enhance the site for nesting bird species.

Bird nesting boxes come in a range of entrance sizes that are suitable for different species dependant on their size. A selection of the following is recommended:

- 25mm hole for Blue Tit and smaller birds
- 32mm hole for Great Tit and slighting larger small birds
- Open-fronted nest box for Robins
- 45mm hole for Starlings and larger birds.

5.6 All Ireland Pollinator Plan

It is recommended that actions from the All-Ireland Pollinator Plan be implemented through the operation and management of this pitch. Measures outlining pollinator-friendly management of Sports Club are detailed in this guidance document:

https://pollinators.ie/wp-content/uploads/2021/01/Pollinator-Sports-Clubs-guide-WEB.pdf

This document outlined 5 ways to make sports clubs more biodiversity friendly. This can be summarised as:

- Manage some off-pitch grass for pollinators;
- Manage existing native hedgerows for biodiversity;
- Plant biodiversity-friendly trees, shrubs and flowers;
- Reduce use of herbicides;
- Provide nesting places for wild bees;

.

6 Conclusion

It has been identified that there are no impacts from the proposed works on significant ecological features. The works will permanently impact low-value habitats in an area that is of low value for protected species. The works provide an opportunity to significantly enhance the site for biodiversity if appropriate measures are included in the works.

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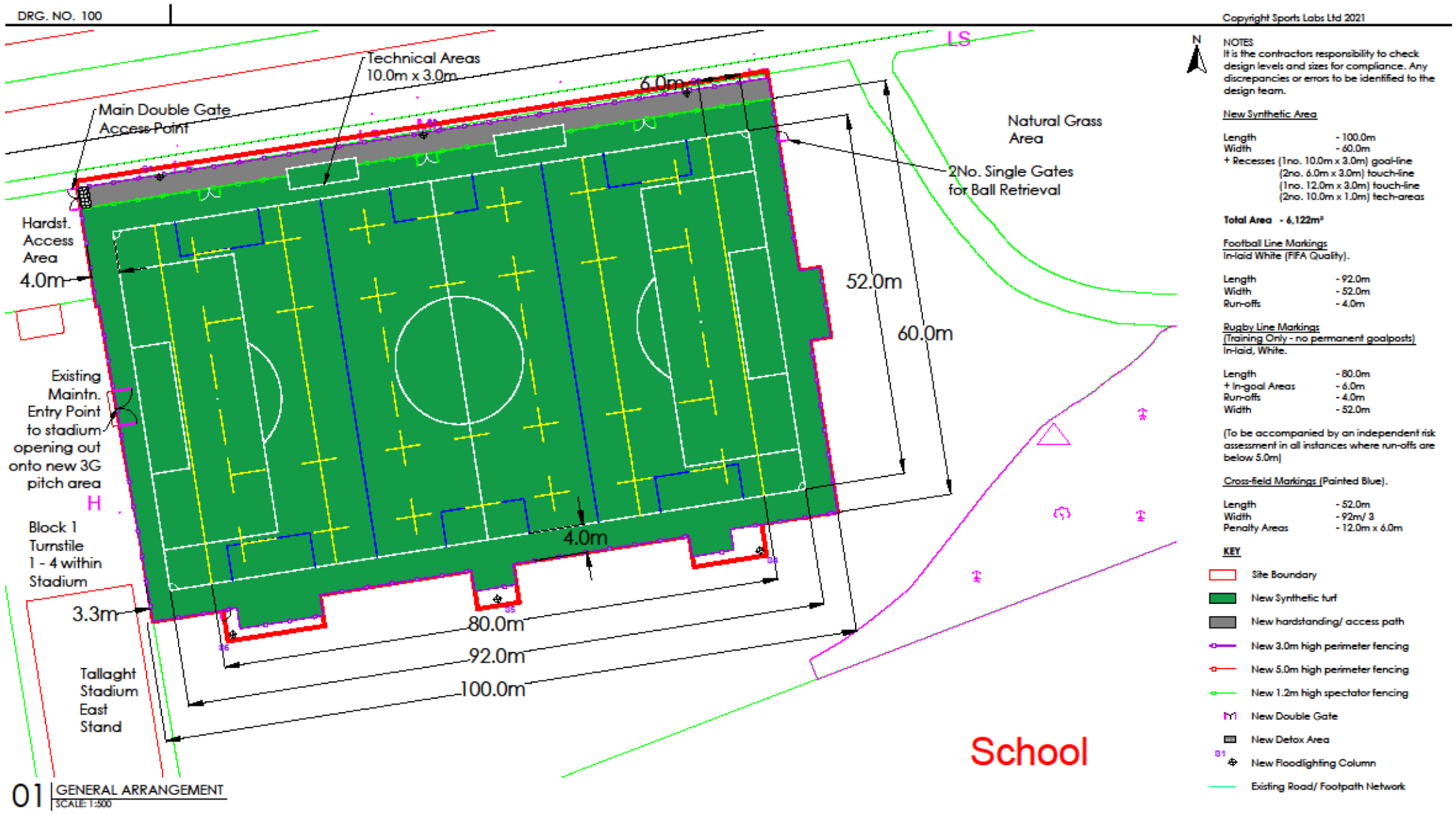
Appendices

A Site Layout Plan



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NOTES
It is the contractors responsibility to check design levels and sizes for compliance. Any discrepancies or errors to be identified to the design team.

New Synthetic Area

Length	- 100.0m
Width	- 60.0m
+ Recesses (1no. 10.0m x 3.0m)	goal-line
(2no. 6.0m x 3.0m)	touch-line
(1no. 12.0m x 3.0m)	touch-line
(2no. 10.0m x 1.0m)	tech-areas

Total Area - 6,122m²

Football Line Markings
In-laid White (FIFA Quality).

Length	- 92.0m
Width	- 52.0m
Run-offs	- 4.0m

Rugby Line Markings
(Training Only - no permanent goalposts)
In-laid, White.

Length	- 80.0m
+ In-goal Areas	- 6.0m
Run-offs	- 4.0m
Width	- 52.0m

(To be accompanied by an independent risk assessment in all instances where run-offs are below 5.0m)

Cross-field Markings (Painted Blue).

Length	- 52.0m
Width	- 92m/ 3
Penalty Areas	- 12.0m x 6.0m

KEY

- Site Boundary
- New Synthetic turf
- New hardstanding/ access path
- New 3.0m high perimeter fencing
- New 5.0m high perimeter fencing
- New 1.2m high spectator fencing
- New Double Gate
- New Detox Area
- S1 New Floodlighting Column
- Existing Road/ Footpath Network

REVISION	DETAILS	BY	DATE	CHECKED

sportslabsconsult
info@sportslabsconsult.com

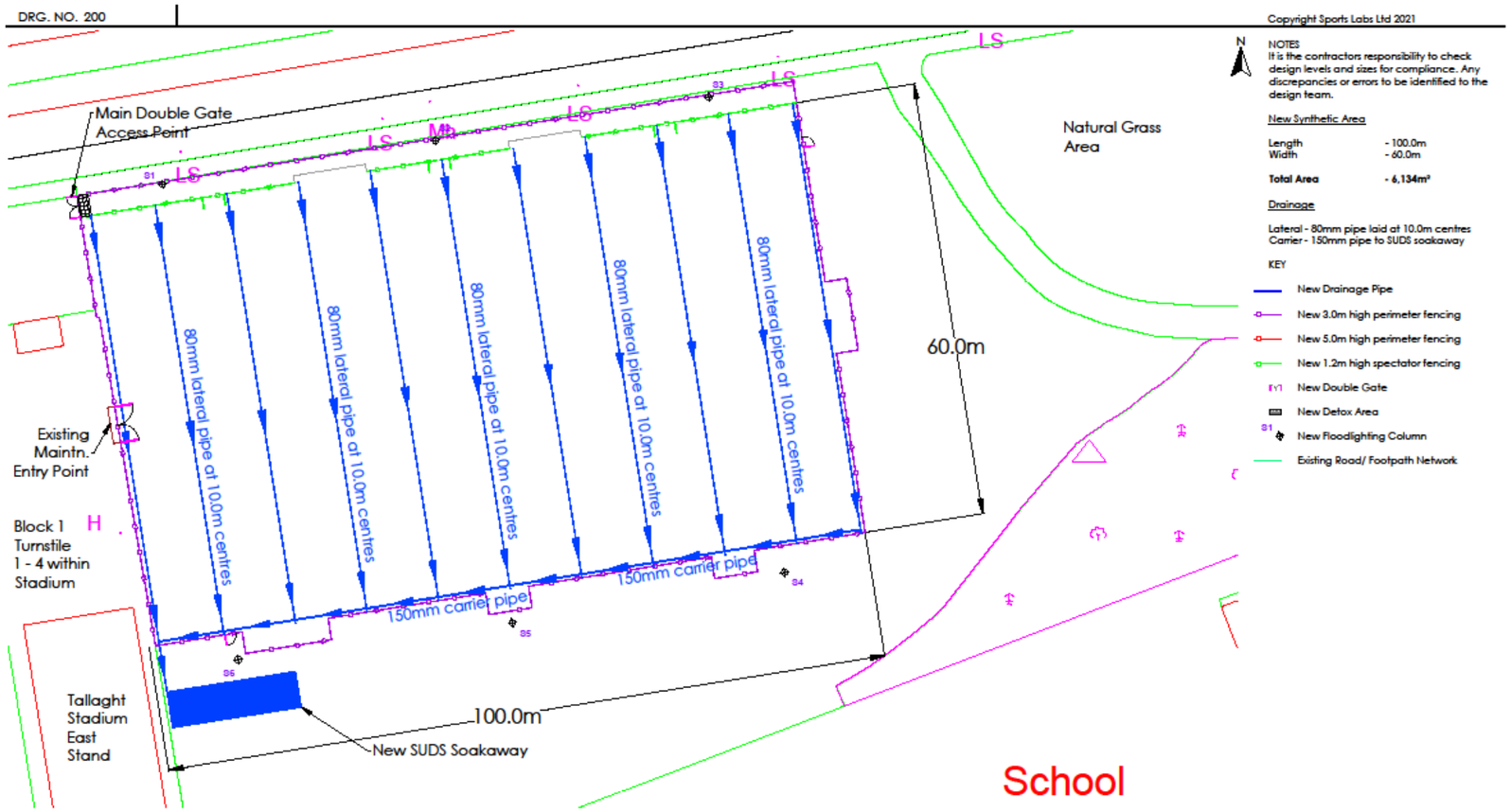
TALLAGHT 3G
GENERAL ARRANGEMENT
NEW 3G PITCH

Scale bar 1:1000

Date: 03/2021	Job No. 2936	Drawn by: RG
Scale: 1:500 @ A3		Checked by: DD

100

B Drainage Plan



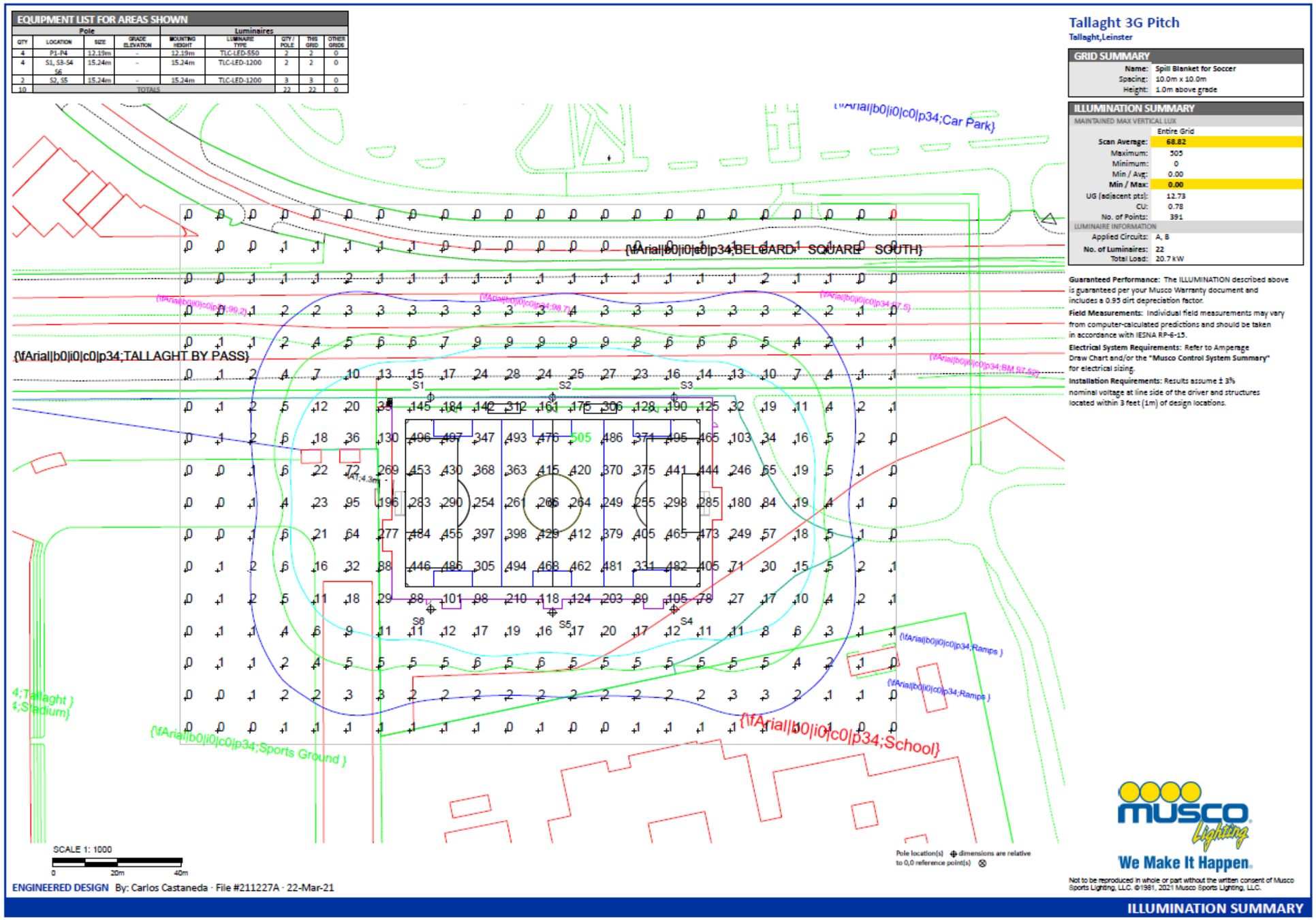
sportslabsconsult
info@sportslabsconsult.com

TALLAGHT 3G
DRAINAGE
NEW 3G PITCH

Job No. 2936

200

C Lighting Plan (maintained vertical Lux)



D Habitat Map

E NBDC protected species within 10km² of the site in past 10 years

Species	Date of last record	Designation
Mammals		
Brown Long-eared Bat (Plecotus auritus)	05/07/2012	EU Habitats Directive >> Annex IV || Protected Species: Wildlife Acts
Daubenton's Bat (Myotis daubentonii)	21/08/2014	EU Habitats Directive >> Annex IV || Protected Species: Wildlife Acts
Eurasian Badger (Meles meles)	14/05/2018	Protected Species: Wildlife Acts
Eurasian Pygmy Shrew (Sorex minutus)	25/04/2010	Protected Species: Wildlife Acts
Eurasian Red Squirrel (Sciurus vulgaris)	26/12/2018	Protected Species: Wildlife Acts
European Otter (Lutra lutra)	24/08/2014	EU Habitats Directive >> Annex II || Protected Species: EU Habitats Directive >> Annex IV || Protected Species: Wildlife Acts
Lesser Noctule (Nyctalus leisleri)	18/09/2012	EU Habitats Directive >> Annex IV || Protected Species: Wildlife Acts
Natterer's Bat (Myotis nattereri)	14/09/2011	EU Habitats Directive >> Annex IV || Protected Species: Wildlife Acts
Pine Marten (Martes martes)	01/05/2017	EU Habitats Directive >> Annex V || Protected Species: Wildlife Acts
Pipistrelle (Pipistrellus pipistrellus sensu lato)	15/10/2012	EU Habitats Directive >> Annex IV || Protected Species: Wildlife Acts
Red Deer (Cervus elaphus)	09/11/2015	Protected Species: Wildlife Acts
Soprano Pipistrelle (Pipistrellus pygmaeus)	05/08/2012	Protected Species: EU Habitats Directive || Protected Species: EU Habitats Directive >> Annex IV || Protected Species: Wildlife Acts
West European Hedgehog (Erinaceus europaeus)	14/07/2018	Protected Species: Wildlife Acts
Reptiles		
Common Lizard (Zootoca vivipara)	21/08/2018	Protected Species: Wildlife Acts
Crustaceans		
Freshwater White-clawed Crayfish (Austropotamobius pallipes)	19/08/2013	Protected Species:EU Habitats Directive >> Annex II || Annex V
Birds		
Barn Swallow (Hirundo rustica)	15/09/2017	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern - Amber List
Black-headed Gull (Larus ridibundus)	20/11/2017	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern - Red List
Common Coot (Fulica atra)	20/11/2017	Protected Species: Wildlife Acts: EU Birds Directive >> Annex II, Section I Bird Species || Annex III, Section II Bird Species || Threatened Species: Birds of Conservation Concern - Amber List
Common Goldeneye (Bucephala clangula)	31/12/2011	Protected Species: Wildlife Acts: EU Birds Directive >> Annex II, Section II Bird Species || Threatened Species: Birds of Conservation Concern - Amber List
Common Kestrel (Falco tinnunculus)	31/12/2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern - Amber List
Common Kingfisher (Alcedo atthis)	31/12/2011	Protected Species: Wildlife Acts: EU Birds Directive >> Annex I Bird Species || Threatened Species: Birds of Conservation Concern - Amber List
Common Linnet (Carduelis cannabina)	31/12/2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern - Amber List
Common Pheasant (Phasianus colchicus)	23/03/2016	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species || Protected Species: EU Birds Directive >> Annex III, Section I Bird Species
Common Sandpiper (Actitis hypoleucos)	31/12/2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern - Amber List
Common Snipe (Gallinago gallinago)	31/12/2011	Protected Species: Wildlife Acts: EU Birds Directive >> Annex II, Section I Bird Species >> Annex III, Section III Bird Species || Threatened Species: Birds of Conservation Concern - Amber List
Common Starling (Sturnus vulgaris)	08/06/2017	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern - Amber List
Common Swift (Apus apus)	07/05/2016	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern - Amber List
Common Wood Pigeon (Columba palumbus)	02/08/2016	Protected Species: Wildlife Acts: EU Birds Directive >> Annex II, Section I Bird Species || Annex III, Section I Bird Species

Species	Date of last record	Designation
Eurasian Curlew (Numenius arquata)	26/12/2016	Protected Species: Wildlife Acts: EU Birds Directive >> Annex II, Section II Bird Species || Threatened Species: Birds of Conservation Concern,- Red List
Eurasian Teal (Anas crecca)	31/12/2011	Protected Species: Wildlife Acts: EU Birds Directive >> Annex II, Section I Bird Species || Annex III, Section II Bird Species || Threatened Species: Birds of Conservation Concern - Amber List
Eurasian Tree Sparrow (Passer montanus)	31/12/2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern - Amber List
Eurasian Woodcock (Scolopax rusticola)	31/12/2011	Protected Species: EU Birds Directive >> Annex II, Section I Bird Species || Annex III, Section III Bird Species || Threatened Species: Birds of Conservation Concern - Amber List
Great Cormorant (Phalacrocorax carbo)	31/12/2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern - Amber List
Great Crested Grebe (Podiceps cristatus)	31/12/2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern - Amber List
Herring Gull (Larus argentatus)	20/11/2017	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern - Red List
House Martin (Delichon urbicum)	15/09/2017	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern - Amber List
House Sparrow (Passer domesticus)	28/04/2016	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern - Amber List
Lesser Black-backed Gull (Larus fuscus)	31/12/2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern - Amber List
Little Egret (Egretta garzetta)	20/11/2017	Protected Species: EU Birds Directive >> Annex I Bird Species
Little Grebe (Tachybaptus ruficollis)	20/09/2016	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern - Amber List
Mallard (Anas platyrhynchos)	20/11/2017	Protected Species: EU Birds Directive >> Annex II, Section I Bird Species || Annex III, Section I Bird Species
Merlin (Falco columbarius)	31/12/2011	Protected Species: EU Birds Directive Annex I Bird Species || Threatened Species: Birds of Conservation Concern - Amber List
Mew Gull (Larus canus)	31/12/2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern - Amber List
Mute Swan (Cygnus olor)	20/11/2017	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern - Amber List
Northern Lapwing (Vanellus vanellus)	31/12/2011	Protected Species: EU Birds Directive >> Annex II, Section II Bird Species || Threatened Species: Birds of Conservation Concern - Red List
Northern Wheatear (Oenanthe oenanthe)	31/12/2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern - Amber List
Peregrine Falcon (Falco peregrinus)	31/12/2011	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex I Bird Species
Red Grouse (Lagopus lagopus)	31/12/2011	Protected Species: EU Birds Directive >> Annex II, Section I Bird Species | Annex III, Section I Bird Species || Threatened Species: Birds of Conservation Concern - Red List
Rock Pigeon (Columba livia)	31/12/2011	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species
Sand Martin (Riparia riparia)	07/05/2016	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Sky Lark (Alauda arvensis)	31/12/2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern - Amber List
Spotted Flycatcher (Muscicapa striata)	31/12/2011	Protected Species: Wildlife Acts. Threatened Species: Birds of Conservation Concern - Amber List
Tufted Duck (Aythya fuligula)	20/11/2017	EU Birds Directive >> Annex II, Section I Bird Species || Annex III, Section II Bird Species || Threatened Species: Birds of Conservation Concern - Amber List
Whooper Swan (Cygnus cygnus)	31/12/2011	Protected Species: EU Birds Directive >> Annex I Bird Species || Threatened Species: Birds of Conservation Concern - Amber List
Yellowhammer (Emberiza citrinella)	31/12/2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern - Red List
Amphibian		
Common Frog (Rana temporaria)	12/05/2018	EU Habitats Directive >> Annex V || Protected Species: Wildlife Acts

F Invasive Non-Native Species within 10km² of the site over the last ten years

Species name	Date of last record	Designation
Birds		
Greylag Goose (Anser anser)	31/12/2011	Invasive Species >> Regulation S.I. 477 (Ireland) || Wildlife Acts || Protected Species: EU Birds Directive || Annex II, Section I Bird Species || Annex III, Section II Bird Species || Threatened Species: Birds of Conservation Concern - Amber List
Flowering plants		
American Skunk-cabbage (Lysichiton americanus)	05/04/2020	Medium Impact Invasive Species || Invasive Species: EU Regulation No. 1143/2014 || Regulation S.I. 477 (Ireland)
Butterfly-bush (Buddleja davidii)	29/07/2019	Medium Impact Invasive Species
Cherry Laurel (Prunus laurocerasus)	10/04/2020	High Impact Invasive Species
Fringed Water-lily (Nymphoides peltata)	15/06/2016	High Impact Invasive Species || Invasive Species: Regulation S.I. 477 (Ireland)
Giant Knotweed (Fallopia sachalinensis)	01/12/2017	High Impact Invasive Species || Invasive Species: Regulation S.I. 477 (Ireland)
Indian Balsam (Impatiens glandulifera)	31/12/2017	High Impact Invasive Species || Invasive Species: Regulation S.I. 477 (Ireland)
Japanese Knotweed (Fallopia japonica)	11/09/2019	High Impact Invasive Species || Invasive Species: Regulation S.I. 477 (Ireland)
Rhododendron ponticum	21/05/2020	High Impact Invasive Species || Invasive Species: Regulation S.I. 477 (Ireland)
Sycamore (Acer pseudoplatanus)	15/05/2020	Medium Impact Invasive Species
Three-cornered Garlic (Allium triquetrum)	30/05/2020	Medium Impact Invasive Species || Invasive Species: Regulation S.I. 477 (Ireland)
Wild Parsnip (Pastinaca sativa)	11/07/2015	Medium Impact Invasive Species
Mammals		
Brown Rat (Rattus norvegicus)	09/10/2015	High Impact Invasive Species || Regulation S.I. 477 (Ireland)
Eastern Grey Squirrel (Sciurus carolinensis)	31/12/2017	High Impact Invasive Species || EU Regulation No. 1143/2014 || Invasive Species: Regulation S.I. 477 (Ireland)
European Rabbit (Oryctolagus cuniculus)	19/10/2018	Medium Impact Invasive Species
Fallow Deer (Dama dama)	20/12/2016	High Impact Invasive Species || Invasive Species: Regulation S.I. 477 (Ireland) || Protected Species: Wildlife Acts
Sika Deer (Cervus nippon)	02/11/2016	High Impact Invasive Species || Invasive Species: Regulation S.I. 477 (Ireland) || Protected Species: Wildlife Acts

Offices at
Dublin
Limerick

Registered Office
24 Grove Island
Corbally
Limerick
Ireland

t: +353 (0) 61 345463
e:info@jbaconsulting.ie

JBA Consulting Engineers and Scientists Limited
Registration number 444752

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