invasiveplantsolutions

# INVASIVE ALIEN PLANT SPECIES :
# SITE ASSESSMENT REPORT & MANAGEMENT PLAN

DEVELOPMENT SITE @ MILLTOWN PARK, SANDFORD ROAD, DUBLIN 6

FOR

SANDFORD LIVING LIMITED

24 NOVEMBER 2025 | ISSUE 13

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| DC-04-20/SARMP/00 | 1st. ISSUE | 00 | 15/01/2021 | ISSUED TO CLIENT FOR COMMENT | KYRAN COLGAN | K.C. |
| DC-04-20/SARMP/01 | 2nd. ISSUE | 01 | 09/02/2021 | REVISED SITE BOUNDARY | KYRAN COLGAN | K.C. |
| DC-04-20/SARMP/02 | 3rd. ISSUE | 02 | 10/03/2021 | SECTION 5 & BOUNDARY UPDATE | KYRAN COLGAN | K.C. |
| DC-04-20/SARMP/03 | 4TH. ISSUE | 03 | 27/04/2021 | UPDATE FOLLOWING 2ND. SURVEY | KYRAN COLGAN | K.C. |
| DC-04-20/SARMP/04 | 5th. ISSUE | 04 | 30/07/2021 | FINAL SITE BOUNDARY REVISIONS | KYRAN COLGAN | K.C. |
| DC-04-20/SARMP/05 | 6th. ISSUE | 05 | 12/08/2021 | SECTION 15 UPDATED | KYRAN COLGAN | K.C. |
| DC-04-20/SARMP/06 | 7th. ISSUE | 06 | 20/08/2021 | SEC. 16 ILLUSTRATION UPDATED | KYRAN COLGAN | K.C. |
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| DC-03-25/SARMP/11 | 12th. ISSUE | 11 | 22/10/2025 | 2025 FOLLOW UP SURVEY &UPDATE | KYRAN COLGAN | K.C. |
| DC-03-25/SARMP/12 | 13th. ISSUE | 11 | 24/11/2025 | 2025 FINAL ISSUE | KYRAN COLGAN | K.C. |

| DEVELOPMENT SITE @ MILLTOWN PARK | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **PROJECT NO.** | DC-03-25 | **LOCATION : ITM** | **X** | 716944 | **Y** | 731255 | **TIME** | VARIOUS |
| **DATE OF ASSESSMENT** | 12/20, 04/21, 09/21, 04/22, 03/23, 04/23 & 10/25 | **WEATHER** | SUITABLE FOR I.A.P.S. SURVEY WORK | | | | | |

**EXECUTIVE SUMMARY**

In December 2020 Invasive Plant Solutions were retained by their client, Sandford Living Limited, to provide IAPS (invasive alien plant species) consultancy services in connection with their proposed residential development on lands at Milltown Park, Sandford Road, Dublin 6.

Our appointment came on foot of observations made in the Biodiversity chapter of the draft Environmental Impact Assessment Report for the lands, dated August 2020, prepared by JBA Consulting at that time. Their report identified the presence of non-native plant species on the lands but did not find particular evidence of any Invasive Alien Plant Species listed in Part 1 of the Third Schedule of the *European Communities (Birds and Natural Habitats) Regulations* 2011 (SI 477 of 2011, as amended).

Invasive Plant Solutions were commissioned to carry out further survey work, specifically focusing on the Third Schedule plants referenced above, to further validate the plants absence from the lands in question, and to satisfy the relevant authorities that no specific management measures would be required for any IAPS covered by the relevant legislation, codes of practice and guidance documents, including Dublin City Council's *Dublin City Invasive Alien Species Action Plan 2016 – 2020*.

A walk through survey of the site was carried out on 27 December 2020, and no evidence of Invasive Alien Plant Species was found on site at that time. A further follow up site survey was carried out between the 8th. and 9th. of April 2021. This survey detected the presence of spring emerging IAPS, namely Three Cornered Garlic and Spanish/Hybrid Spanish Bluebell, mainly concentrated within the woodland fringe running along the western end of the northern boundary, with an additional stand in the eastern sector of the site.

The client approved the immediate deployment of bio-security measures and the commencement of an active herbicide treatment regime, spanning across the months of April, May and June 2021. The purpose of these initial measures was to protect the plant stands from disturbance, by the erection and fencing and signage, and to mitigate the risk of seed dispersal and plant reproduction by the spot application of approved herbicide. The 2021 treatment programme was completed in June.

A follow up site survey was carried out on 28 September 2021, with no evidence of further IAPS found during the inspection.

A follow up site survey was carried out on 21 April 2022. Varying degrees of plant regrowth were recorded at the previously identified IAPS locations. In addition, a new infestation was identified which comprises primarily of Three Cornered Garlic but also contains a small quantity of Spanish Bluebell plants. This document was updated to include this new stand.

A follow up site survey was carried out on 8th. April 2023. Three Cornered Garlic and Spanish Bluebell plants had started to emerge from winter dormancy, with sheltered plants starting to come into flower. Varying degrees of Three Cornered Garlic and Spanish Bluebell regrowth were recorded at all previously identified IAPS locations. In addition, a number of new small infestations of Three Cornered Garlic were identified outside these locations.

The first treatment of the 2023 treatment programme was completed in the month of April, with a follow up treatment carried out in late May.

A further follow up site survey was carried out on 9th. October 2025. Given the time of year, at the end of the 2025 growing season, it was not possible to validate either the presence or extent of Three Cornered Garlic and Spanish Bluebell plants. A further site survey, to be carried out in early Spring 2026, will be required to establish the current status of the IAPS infestations.

In the event of development being approved in the short term, this management plan recommends the deployment of an IAPS infested soil remediation programme, comprising the bio-secure off-site disposal of all IAPS infested soils, under NPWS licence, to an approved and licenced waste acceptance facility. This process should be based on up to date survey information, to validate the full extent of IAPS present, carried out over the intervening period and immediately in advance of the remediation process commencing. The management plan also recommends that the remediation process should be carried out independently of, and in advance of, the primary development works commencing. It should be executed by, or carried out under the direct management of, an IAPS specialist.

In its ongoing implementation, this management plan is designed to ensure that bio-security measures are maintained at all IAPS locations, that a structured, multi annual, site monitoring and herbicide control programme is employed across the duration planning consent process, and that, if then necessary, an IAPS infested soil remediation process will be carried out and completed in advance of the commencement of any proposed development project.

# I.A.P.S. SITE ASSESSMENT REPORT

**SECTION 1 : INTRODUCTION**

This Site Assessment Report has been prepared for the client / agency referenced in Section 3 below, and is for their sole and exclusive use. The report reflects the particular site circumstances and conditions, as they presented on the days of inspection. Depending on the time of year of the site assessment, and particularly in advance of, the annual IAPS growing season, the evidence of invasive plant species on site may be limited. In these circumstances follow up site inspections, later in the growing season, may be recommended. This will be included in our Conclusions and Recommendations, at Section 13 of the report.

By their nature, IAPS are aggressive interlopers to our native habitat, are capable of aggressive and rapid dominance, and if left untreated generally result in extensive habitat impairment. It is therefore reasonable to conclude that, where IAPS are identified, but control measures are not applied, these plant species will spread beyond their observed extents.

In addressing invasive alien plant species the precautionary principle should always be applied to their assessment, management and control. All recommended management and control measures should be carried out strictly in accordance with a Site Specific Treatment Plan, and follow "best practice" principles, as set out in technical reference documents such as the UK Environment Agency's *The Knotweed Code of Practice*

Control measures should be implemented using a recognised professional service with expertise in this field of work, and take into account any and all sensitivities highlighted in this report. Particular care should be taken in circumstances where the invasive plant species are located within a designated site of ecological importance, such as an SAC, SPA or NHA, or are set within the context of known ecological sensitivities. Where the use of herbicides are proposed, these should be applied strictly in accordance with the manufacturers recommendations, by a registered Professional Pesticides User, and fully in compliance with the European Communities (Sustainable Use of Pesticides) Regulations, 2012, (S.I. 155 of 2012).

Under no circumstances should any IAPS be cut or dug out without the advice, direction and supervision of an invasive species specialist. Many plant species have extensive root / rhizome systems which spread beyond the footprint of the above ground plant, and some can regenerate themselves from very small fragments of root or stem. Some plants produce very substantial quantities of seeds, which remain viable for many years, while others produce a sap which causes severe skin damage.

The off-site removal of Japanese knotweed, its variants, soil infested with knotweed material, and other IAPS, is strictly controlled by legislation and requires a licence from the National Parks and Wildlife Service in advance of its removal, in accordance with the European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477).

**SECTION 2 : LEGISLATIVE CONTEXT**

Japanese Knotweed, *Fallopia japonica*, and other invasive plant species, are listed as Invasive Alien Plant Species in Part 1 of the Third Schedule of the *European Communities (Birds and Natural Habitats) Regulations* 2011 (SI 477 of 2011, as amended). In addition, soils and other material containing Knotweeds are classified in Part 3 of the Third Schedule as vector materials and are subject to the same strict legal controls. Failure to comply with the legal requirements set down can result in either civil or criminal prosecution, with very severe penalties accruing. A person who commits an offence under Regulations 49 & 50 is liable (a) on summary conviction, to a Class A fine or imprisonment for a term not exceeding six months, or both, or (b) on conviction on indictment, to a fine not exceeding €500,000.00, or imprisonment for a term not exceeding three years, or both. A person who knowingly incites, directs, procures, permits or assists another person to carry out an action that is an offence under these Regulations shall also be guilty of an offence. The relevant sections of the regulations are reproduced below.

*49(2)* *Save in accordance with a licence granted* [by the Department of Arts, Heritage and the Gaeltacht]*, any person who plants, disperses, allows or causes to disperse, spreads or otherwise causes to grow in any place* [a restricted non-native plant]*, shall be guilty of an offence.*

*49(3)* *… it shall be a defence to a charge of committing an offence under paragraph (1) or (2) to prove that the accused took all reasonable steps and exercised all due diligence to avoid committing the offence.*

*50(1)* *Save in accordance with a licence, a person shall be guilty of an offence if he or she* […] *offers or exposes for sale, transportation, distribution, introduction or release—*

- *(a)* [any restricted non-native animal or plant species]*,*
- *(b)* *anything from which an animal or plant referred to in subparagraph (a) can be reproduced or propagated, or*
- *(c)* *a vector material listed in the Third Schedule,* [which includes] *soil or spoil taken from places infested with Japanese Knotweed….and its hybrids…*

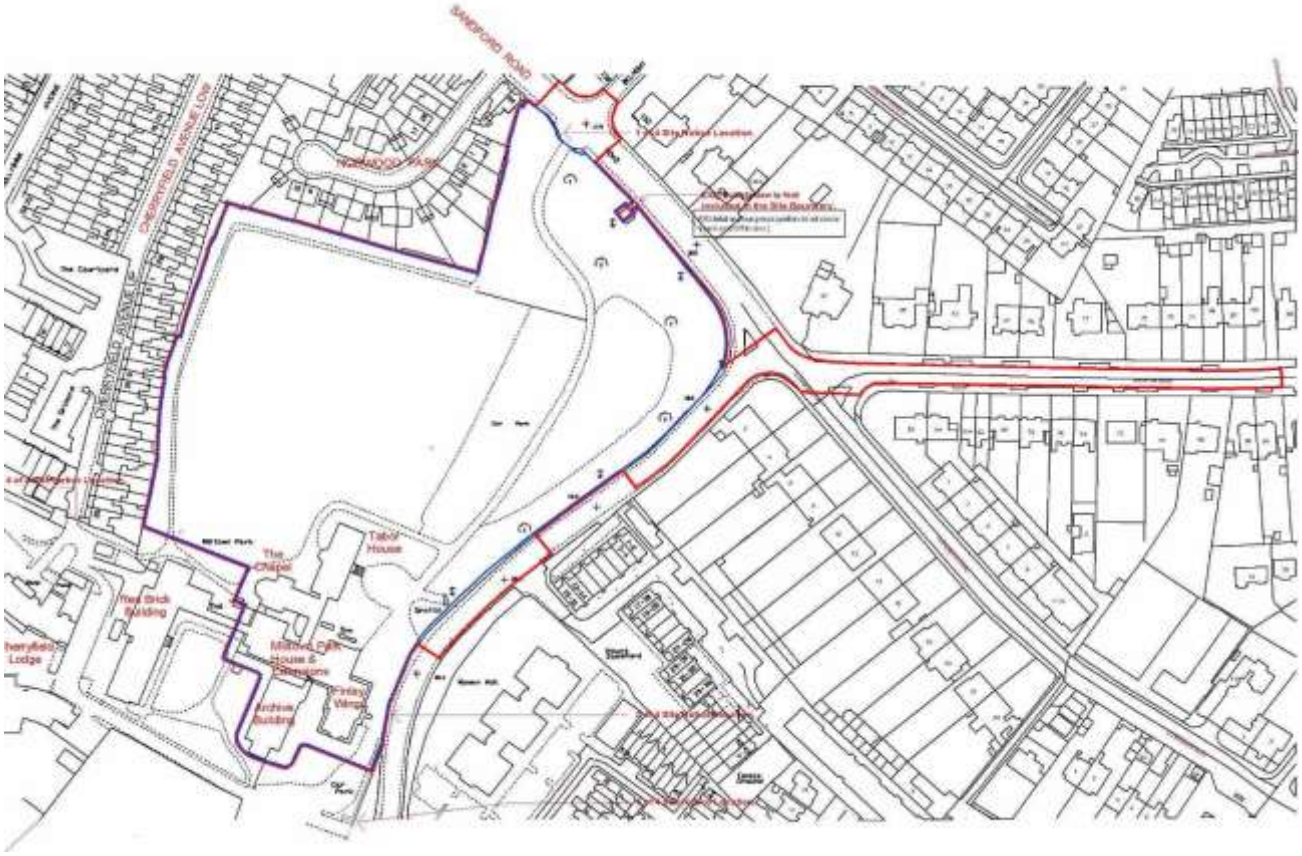
It is an offence under regulations 49(2) and 50(1) to spread, or cause to spread, Japanese Knotweed and other IAPS. An offence may only be avoided if the relevant party can prove that they took all reasonable steps to avoid causing an offence under the legislation. To comply with these regulations, therefore, this management plan relies solely on methodologies necessary to ensure strict compliance with the legislation.

## SECTION 3 : CLIENT & SITE DETAILS

| GENERAL DETAILS | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SITE ADDRESS** | DEVELOPMENT SITE @ MILLTOWN PARK, SANDFORD ROAD, DUBLIN 6 | | | | | | | | | | | |
| **CLIENT DETAILS** | **SANDFORD LIVING LIMITED**<br>RIVERSIDE ONE<br>SIR JOHN ROGERSON'S QUAY<br>DUBLIN 2 | | | | | **OWNERSHIP** | PUBLIC | | PRIVATE | X | | |
| | | | | | | **TEL / MOB** | 01 2963660 / 087 4475660 | | | | | |
| | | | | | | **EMAIL** | jmosullivan@lafferty.ie | | | | | |
| **CONSULTANTS / AGENTS** | **PROJECT MANAGERS –** LAFFERTY, DUNDRUM TOWN CENTRE, SANDYFORD ROAD, DUNDRUM, DUBLIN, D16 A4W6<br>**ARCHITECTS –** O'MAHONY PIKE, THE CHAPEL, MOUNT ST. ANNE'S, MILLTOWN, DUBLIN, D06 XN52<br>**PLANNING CONSULTANTS –** THORNTON 0'CONNOR, 1 KILMACUD ROAD UPPER, DUNDRUM, D14 EA89<br>**ENVIRONMENTAL CONSULTANTS –** DNV, 3D, CORE C, BLOCK 71, THE PLAZA, PARK WEST, DUBLIN 12, D12 F9TN<br>**ECOLOGICAL CONSULTANTS –** DNV, 3D, CORE C, BLOCK 71, THE PLAZA, PARK WEST, DUBLIN 12, D12 F9TN | | | | | | | | | | | |
| **CURRENT SITE USAGE** | AGRICULTURAL | | FORESTRY | | RESIDENTIAL | | COMMERCIAL | | INDUSTRIAL | | | |
| | PUBLIC SPACE | | GREENFIELD | | BROWNFIELD | | OTHER | X | **FORMER INSTITUTIONAL** | | | |
| **SITE AREA** | DEVELOPABLE SITE AREA = 4.26 Ha. | | | | | | | | | | | |
| **STATE AGENCIES INVOLVED** | CO. COUNCIL | | NPWS | | I.F.I. | | I.W. | | BORD NA MONA | | | |
| | E.S.B. | | IRISH RAIL | | G.N.I. | | OTHER | | | | | |
| **SITE DESCRIPTION** | THE DEVELOPMENT SITE IS A LARGE PARCEL OF LAND WHICH FORMED A SIGNIFICANT PART OF THE JESUIT RUN MILLTOWN INSTITUTE OF THEOLOGY AND PHILOSOPHY (SEE LAND HOLDING MAP REPRODUCED BELOW). IT COMPRISES FORMER INSTITUTIONAL BUILDINGS IN ITS SOUTHERN SECTOR, WITH ASSOCIATED HARD SURFACES, MATURE OPEN GRASSLAND AND WOODLAND FRINGES FORMING THE BALANCE OF THE HOLDING. THE SITE IS BOUNDED BY SANDFORD ROAD AND THE REAR OF RESIDENTIAL GARDENS ON NORWOOD PARK TO THE NORTH, BY MILLTOWN ROAD TO THE EAST, BY RETAINED JESUIT LAND AND BUILDINGS TO THE SOUTH AND BY THE REAR OF RESIDENTIAL GARDENS ON CHERRYFIELD AVENUE TO THE WEST<br>BOUNDARIES ARE GENERALLY CLEARLY DELINEATED, AND ARE TYPICALLY DEMARCATED BY FENCING, MASONRY AND STONE WALLS, INDIGENOUS OR PLANTED HEDGES, OR A COMBINATION OF THESE ELEMENTS. HOWEVER THE SOUTHERN AND SOUTH WESTERN BOUNDARIES OF THE SITE BISECT OPEN GROUND AND ARE NOT DEFINITIVELY MARKED OUT | | | | | | | | | | | |

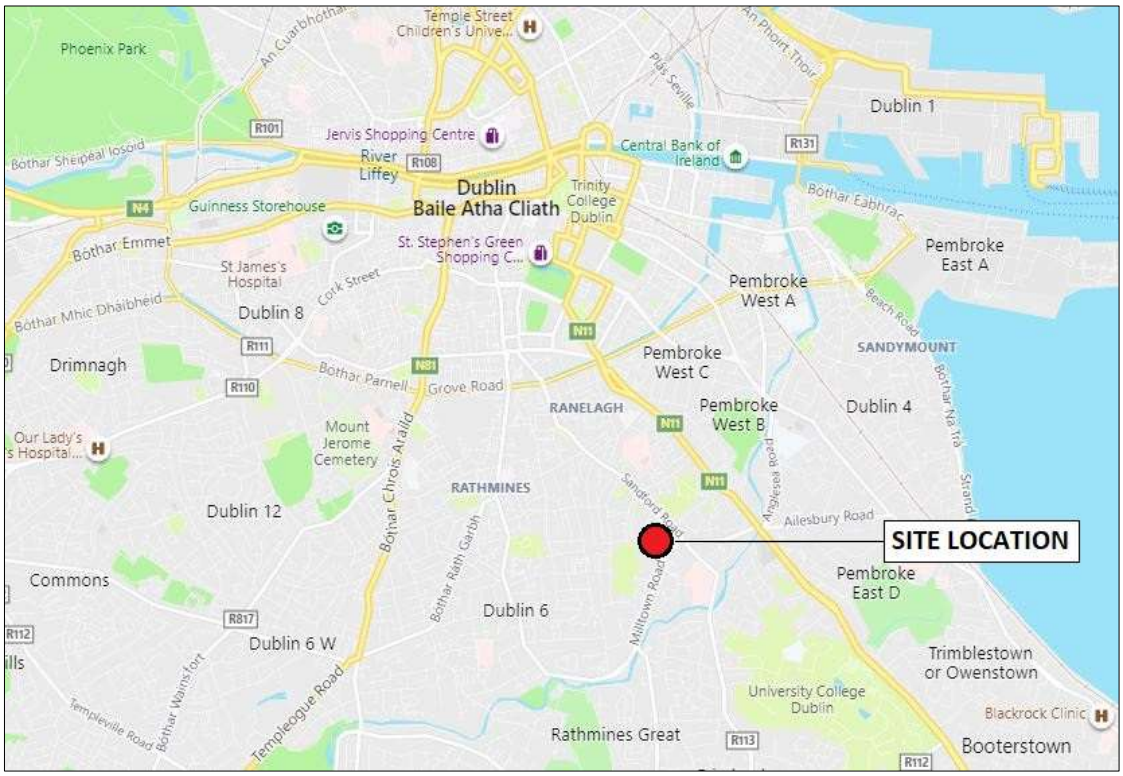
**LAND HOLDING MAP**

THE DEVELOPMENT BOUNDARY FOR THE PURPOSES OF A PROPOSED PLANNING APPLICATION IS OUTLINED IN RED WHILE THE LANDS WITHIN THE OWNERSHIP OF THE APPLICANT ARE OUTLINED IN BLUE




LAND HOLDING MAP REPRODUCED COURTESY OF O'MAHONY PIKE, ARCHITECTS

**SECTION 4 : SITE LOCATION MAP & AERIAL SITE LAYOUT**




SITE LOCATION MAP

**SITE LOCATION MAP REPRODUCED COURTESY OF BING MAPS**


AERIAL SITE LAYOUT

**AERIAL SITE LAYOUT PLAN REPRODUCED COURTESY OF GOOGLE MAPS**

## SECTION 5 : I.A.P.S. OVERALL INFESTATION DETAILS

| INVASIVE ALIEN SPECIES | | | | | | | |
|---|---|---|---|---|---|---|---|
| JAPANESE KNOTWEED | NO | GIANT KNOTWEED | NO | BOHEMIAN KNOTWEED | NO | HIMALAYAN KNOTWEED | NO |
| GUNNERA | NO | HIMALAYAN BALSAM | NO | GIANT HOGWEED | NO | RHODODENDRON | NO |
| AMERICAN SKUNK CABBAGE | NO | **THREE CORNERED GARLIC** | YES | **SPANISH BLUEBELL** | YES | HOTTENTOT FIG | NO |

**DESCRIPTION & EXTENT OF PRIMARY I.A.P.S. COLONISATIONS : 2020 - 2023**

**THREE CORNERED GARLIC (TCG)**

**TCG 1 -** A linear stand of Three Cornered Garlic within the woodland fringe, which runs along the north western boundary of the property. The stand is located at the base of the fence on the boundary between the subject site and the rear garden of No. 6 Norwood Park. Some plants still remain. They are healthy, with some coming into flower

**TCG 2 –** A circular stand of Three Cornered Garlic within the woodland fringe, which runs along the north western boundary of the property. The stand is located close to the boundary between the subject site and the rear gardens of No's. 4 & 5 Norwood Park. Some plants still remain. They are healthy, with some coming into flower

**TCG 3 -** A small single stand of Three Cornered Garlic growing on the western fringe of a stand of winter heliotrope, itself around the base of a mature tree, west of the main driveway. some plants still remain. they are healthy, with some coming into flower

**TCG 4 -** Two small single stands of Three Cornered Garlic growing in the grass margin immediately beside, and to the north of, the main driveway. Remaining plants are coming into flower

**TCG 5** – A large stand of primarily Three Cornered Garlic, but with a few Spanish Bluebell plants also present, located in the woodland clearing in the north eastern sector of the site, close to the electrical substation structure and the boundary with Sandford Road. The stand comprises a series of groups of plants distributed across the clearing, particularly where it was used historically for the disposal of plant cuttings and garden waste. Plants are currently coming into flower *

**TCG 6** - A small single stand of Three Cornered Garlic growing in the grassed margin running along the eastern edge of the main driveway, north of TCG 4. Plants are currently coming into flower **

**TCG 7** - A small stand of Three Cornered Garlic growing amongst trees within the woodland fringe running along the eastern edge of the main driveway. Plants are currently coming into flower **

* The infestation TCG 5 was newly identified during the April 2022 follow up survey
** The infestations TCG 6 & TCG 7 were newly identified during the March & April 2023 follow up surveys

**SPANISH BLUEBELL (HSB)**

**HSB 1 -** A scattered stand of hybridised Spanish Bluebell within the woodland fringe, which runs along the north western boundary of the property. the stand is mixed within native vegetation, close to the boundary between the subject site and the rear gardens of No's. 9 & 10 Norwood Park. Some plants still remain. They are healthy, with some currently coming into flower

**HSB 2** – A small single stand of hybridised Spanish Bluebell within the woodland fringe along the north western site boundary. Some viable plant material still remains, which is healthy, and currently coming into flower

**HSB 3 -** A stand of hybridised Spanish Bluebell on the edge of the woodland fringe, near the eastern boundary of the property. The stand is located at the junction between the main driveway to the west, and the beginning of a woodland path to the east, below a mature tree, and mixed within native vegetation. there is a small secondary stand just north of the main stand, on the eastern side of the woodland path. Some plants still remain. They are healthy, with some currently coming into flower

**DESCRIPTION & EXTENT OF PRIMARY I.A.P.S. COLONISATIONS : 2025**

**THREE CORNERED GARLIC (TCG)**

The most recent site survey, carried out in October 2025, could not establish the current presence or extent of the previously identified IAPS, as the timing of the survey was outside the 2025 growing window. Therefore any plants present would have already flowered and died back for the season, but it must be assumed that there are still viable plants present. A further survey in early Spring 2026 is required to validate the current plant status

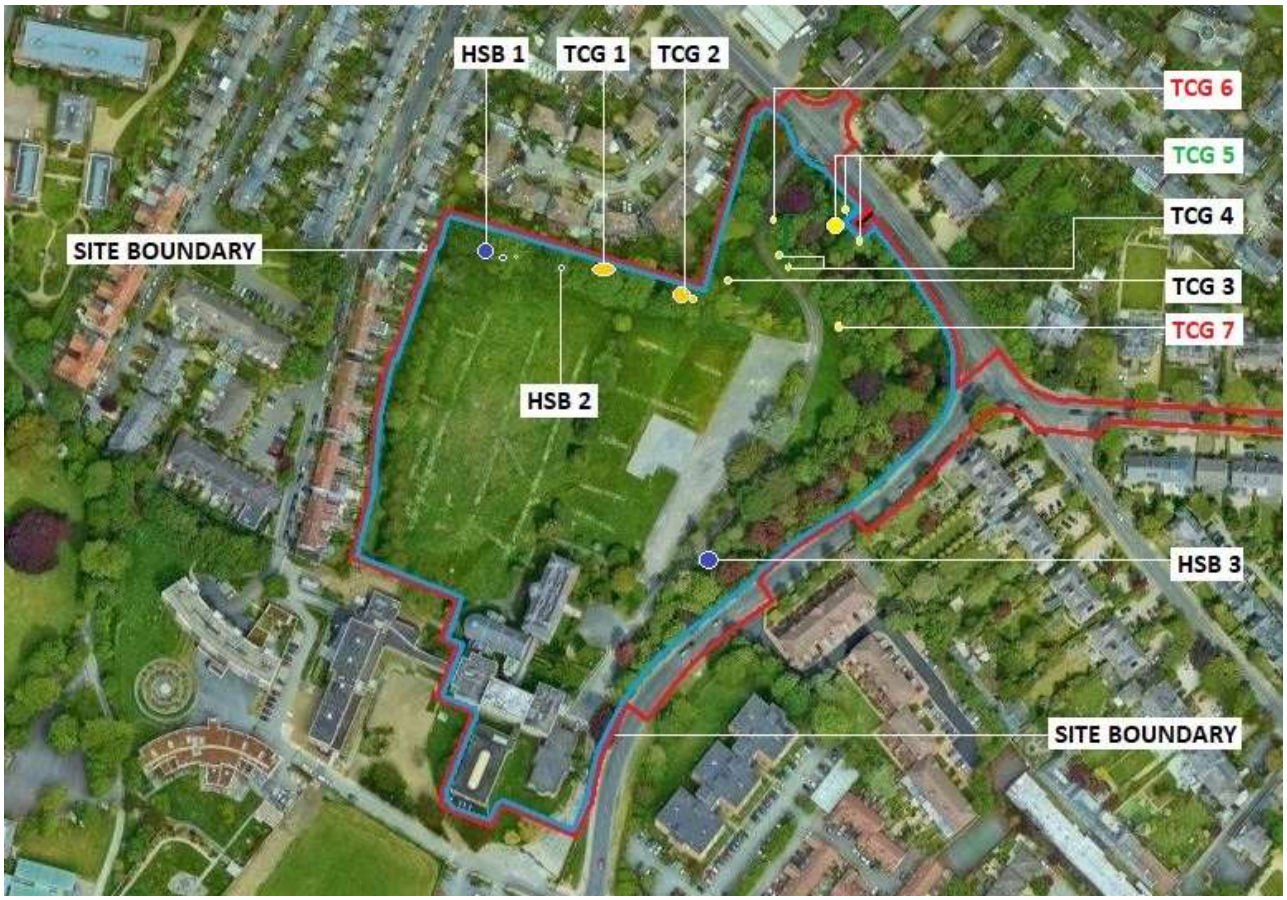
**SPANISH BLUEBELL (HSB)**

The most recent site survey, carried out in October 2025, could not establish the current presence or extent of the previously identified IAPS, as the timing of the survey was outside the 2025 growing window. Therefore any plants present would have already flowered and died back for the season, but it must be assumed that there are still viable plants present. A further survey in early Spring 2026 is required to validate the current plant status

| CONDITION OF INFESTATIONS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **GROWTH STAGE** | EMERGENT | | REGROWTH | | JUVENILE / SEMI MATURE | | **MATURE** | ✓ |
| **CONDITION** | **HEALTHY** | ✓ | DISTRESSED | | STUNTED | | BONSAI | |

## SECTION 5 : I.A.P.S. OVERALL INFESTATION DETAILS ( CONTD.)

**I.A.P.S. DISTRIBUTION MAP – MARCH 2023**




## SECTION 6 : I.A.P.S. INDIVIDUAL INFESTATION DETAILS

| INDIVIDUAL INFESTATIONS | | | | | |
|---|---|---|---|---|---|
| **INFESTATION DETAILS** | **NO.** | **ITM - X** | **ITM - Y** | **SIZE (M X M)** | **COMMENTS** |
| **INFESTATION 1** | TCG 1 | 716946 | 731305 | 10m x 1m | Linear stand located along the boundary line |
| **INFESTATION 2** | TCG 2 | 716981 | 731294 | 1 no. 3m x 8m | Circular stand near boundary, spreading east |
| **INFESTATION 3** | TCG 3 | 717000 | 731296 | 1 no. 0.5m dia. | Single stand under tree, beside winter heliotrope |
| **INFESTATION 4** | TCG 4 | 717020 | 731306 | 2 no. 0.5m dia. | 2 small plants in driveway grass margin |
| **INFESTATION 5** | HSB 1 | 716902 | 731313 | 6 no. 0.75m dia. | Series of scattered stands in north western woodland |
| **INFESTATION 6** | HSB 2 | 716929 | 731300 | 1 no. 0.5m dia. | Single stand in woodland, south of path |
| **INFESTATION 7** | HSB 3 | 716984 | 731167 | 3m x 4m | Stand under tree at pedestrian path in eastern sector |
| **INFESTATION 8*** | TCG 5 | 716984 | 731167 | 5m x 6m + 3m x 4m | Stands in woodland clearing in north eastern scetor |
| **INFESTATION 9**** | TCG 6 | 717007 | 731319 | 1 no. 0.25m dia. | Stand in grass margin east of the main driveway |
| **INFESTATION 10**** | TCG 7 | 717049 | 731278 | 1 no. 0.5m dia. | Stand in woodland fringe east of the main driveway |

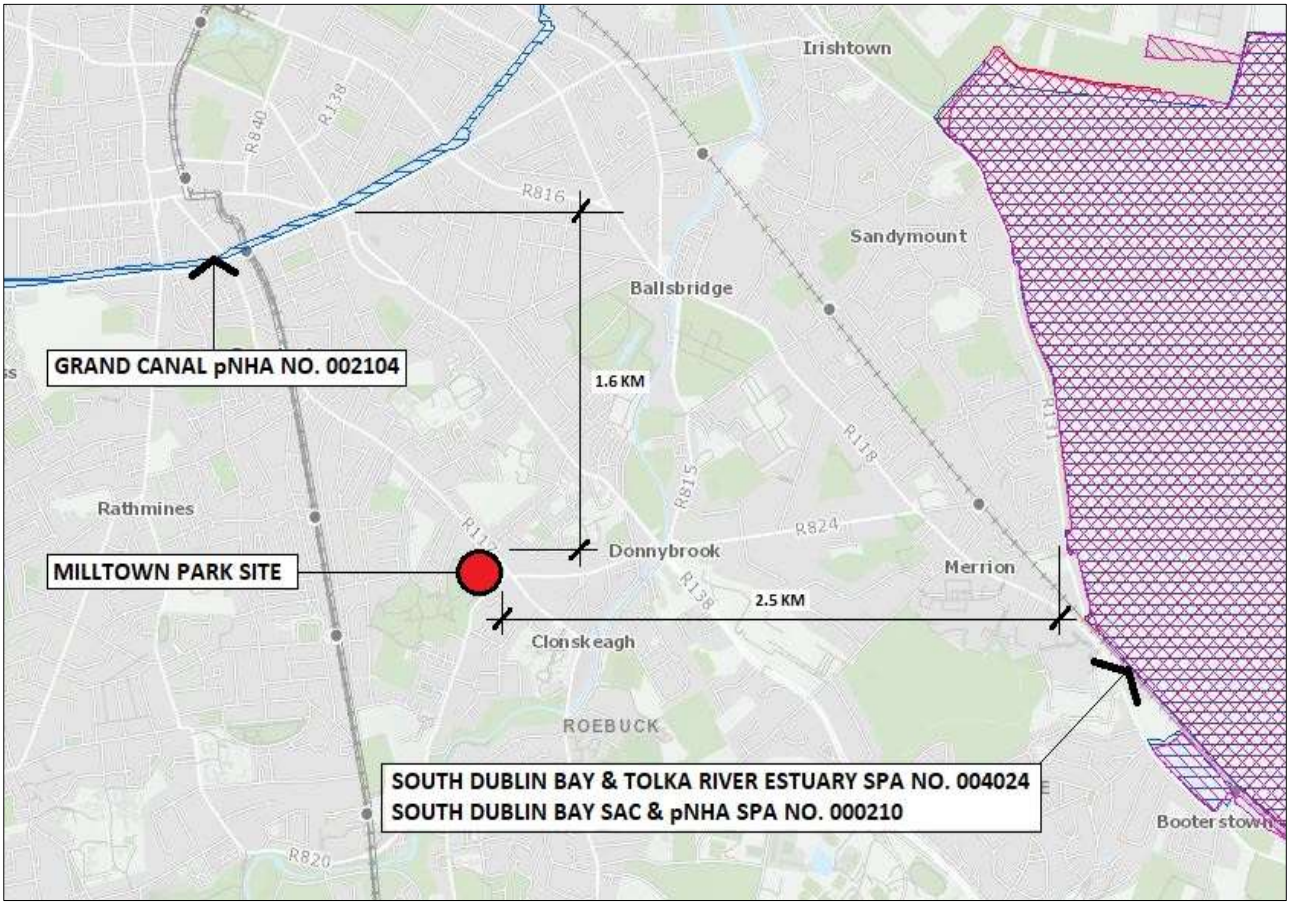
* The infestation TCG 5 was newly identified during the April 2022 follow up survey

** The infestations TCG 6 & TCG 7 were newly identified during the March & April 2023 follow up surveys

## SECTION 7 : I.A.P.S. - ENVIRONMENTAL IMPACT AND LOCAL SENSITIVITIES

| ENVIRONMENTAL CONTEXT | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| VISUAL IMPACT | MINIMAL | ✓ | MODERATE | n/a | SIGNIFICANT | n/a | SEVERE | n/a |
| ENVIRONMENTAL IMPACT | LIMITED | ✓ | MODERATE | n/a | SIGNIFICANT | n/a | SEVERE | n/a |
| TRANSLOCATION RISK | LOW | n/a | MEDIUM | ✓ | HIGH | n/a | ACUTE | n/a |
| PROXIMITY TO WATER BODY | DISTANT | ✓ | VICINITY | n/a | ADJOINING | n/a | WITHIN | n/a |
| NATURE OF WATER BODY | RIVER | ✓ | SEA | n/a | LAKE | n/a | CANAL | n/a |
| DESIGNATED STATUS | | | | | | | | |
| IS SITE IN A DESIGNATED AREA | SAC | NO | SPA | NO | NHA / pNHA | NO | NO. | |
| DESIGNATED AREA NEARBY | SAC | YES | SPA | YES | NHA / pNHA | YES | NO. | SEE BELOW |

THE NEAREST DESIGNATED SITES ARE **THE GRAND CANAL pNHA NO. 002104,** WHICH IS APPROX. 1.6 KM TO THE NORTH OF THE MILLTOWN PARK SITE, AND **THE SOUTH DUBLIN BAY & TOLKA RIVER ESTUARY SPA NO. 004024 / THE SOUTH DUBLIN BAY SAC & pNHA NO. 000210,** WHICH ARE APPROX. 2.5 KM TO THE EAST OF THE SITE




RELATIONSHIP BETWEEN THE SITE & THE CLOSEST DESIGNATED SITES

**SECTION 8 : SITE PHOTOGRAPHS – DECEMBER 2020 SURVEY**

**OVERVIEW OF SITE**

OVERALL VIEW OF PROPERTY – SOUTH EASTERN SECTOR, LOOKING SOUTH

OVERALL VIEW OF PROPERTY – SOUTH WESTERN SECTOR, LOOKING SOUTH WEST

**SECTION 8 : SITE PHOTOGRAPHS – DECEMBER 2020 SURVEY (CONTD.)**

| **OVERVIEW OF SITE** |
|---|

OVERALL VIEW OF PROPERTY – NORTH EASTERN SECTOR, LOOKING NORTH

OVERALL VIEW OF PROPERTY – NORTH CENTRAL SECTOR, LOOKING NORTH WEST

**SECTION 8 : SITE PHOTOGRAPHS – DECEMBER 2020 SURVEY (CONTD.)**

| **OVERVIEW OF SITE** |
|---|

OVERALL VIEW OF PROPERTY – NORTH WESTERN SECTOR, LOOKING NORTH WEST

WESTERN SECTION OF SOUTHERN BOUNDARY – LOOKING WEST

**SECTION 8 : SITE PHOTOGRAPHS – DECEMBER 2020 SURVEY (CONTD.)**

**OVERVIEW OF SITE**

CENTRAL SECTION OF SOUTHERN BOUNDARY – LOOKING NORTH

EASTERN SECTION OF SOUTHERN BOUNDARY – LOOKING NORTH EAST

**SECTION 8 : SITE PHOTOGRAPHS – DECEMBER 2020 SURVEY (CONTD.)**

**OVERVIEW OF SITE**

SOUTHERN SECTION OF WESTERN BOUNDARY – LOOKING NORTH WEST

CENTRAL SECTION OF WESTERN BOUNDARY – LOOKING NORTH WEST

**SECTION 8 : SITE PHOTOGRAPHS – DECEMBER 2020 SURVEY (CONTD.)**

**OVERVIEW OF SITE**

WESTERN SECTION OF NORTHERN BOUNDARY – LOOKING NORTH

WESTERN SECTION OF NORTHERN BOUNDARY – LOOKING WEST

**SECTION 8 : SITE PHOTOGRAPHS – DECEMBER 2020 SURVEY (CONTD.)**

**OVERVIEW OF SITE**

CENTRAL SECTION OF NORTHERN BOUNDARY – LOOKING NORTH

EASTERN SECTION OF NORTHERN BOUNDARY – LOOKING EAST

**SECTION 8 : SITE PHOTOGRAPHS – DECEMBER 2020 SURVEY (CONTD.)**

**OVERVIEW OF SITE**

NORTHERN SECTION OF EASTERN BOUNDARY – LOOKING SOUTH EAST

SOUTHERN SECTION OF EASTERN BOUNDARY – LOOKING EAST

**SECTION 9 : SITE PHOTOGRAPHS - APRIL 2021 I.A.P.S.**

**THREE CORNERED GARLIC – TCG 1**

LINEAR STAND RUNNING ALONG BOUNDARY LINE – LOOKING NORTH EAST

LINEAR STAND RUNNING ALONG BOUNDARY LINE – LOOKING NORTH WEST

**SECTION 9 : SITE PHOTOGRAPHS - APRIL 2021 I.A.P.S. (CONTD.)**

**THREE CORNERED GARLIC – TCG 2**

MAIN BODY OF STAND NEAR NORTH WESTERN BOUNDARY LINE – LOOKING NORTH

SECONDARY GROWTH TO THE EAST OF MAIN STAND, COMING INTO FLOWER – LOOKING NORTH

**SECTION 9 : SITE PHOTOGRAPHS - APRIL 2021 I.A.P.S. (CONTD.)**

**THREE CORNERED GARLIC – TCG 3**

SINGLE STAND ON FRINGE OF WINTER HELIOTROPE – LOOKING SOUTH

CLOSE UP OF STAND ON FRINGE OF WINTER HELIOTROPE – LOOKING SOUTH

**SECTION 9 : SITE PHOTOGRAPHS - APRIL 2021 I.A.P.S. (CONTD.)**

**THREE CORNERED GARLIC – TCG 4**

TWO STANDS IN THE NORTH EASTERN DRIVEWAY GRASSED MARGIN – LOOKING SOUTH EAST

CLOSE UP OF NORTHERNMOST STAND – LOOKING NORTH EAST

**SECTION 9 : SITE PHOTOGRAPHS - APRIL 2021 I.A.P.S. (CONTD.)**

**HYBRIDISED SPANISH BLUEBELL - HSB 1**

OVERALL ZONE OF INFESTATION – LOOKING WEST

STANDS AROUND BASE OF TREE – LOOKING WEST

**SECTION 9 : SITE PHOTOGRAPHS - APRIL 2021 I.A.P.S. (CONTD.)**

**HYBRIDISED SPANISH BLUEBELL - HSB 2**

SINGLE STAND OF HYBRIDISED SPANISH BLUEBELL WITH WHITE FLOWERS – LOOKING NORTH

DETAIL OF WHITE FLOWERS OF HYBRIDISED SPANISH BLUEBELL

**SECTION 9 : SITE PHOTOGRAPHS - APRIL 2021 I.A.P.S. (CONTD.)**

**HYBRIDISED SPANISH BLUEBELL - HSB 3**

MAIN STAND, WITH SECONDARY STAND TO THE RIGHT AND BEYOND – LOOKING NORTH

CLOSER VIEW OF MAIN STAND – LOOKING NORTH

**SECTION 9 : SITE PHOTOGRAPHS - APRIL 2021 I.A.P.S. (CONTD.)**

**HYBRIDISED SPANISH BLUEBELL – VARIATIONS IN FLOWERS**

FLOWERS IN HSB 1 & 3 - BLUE

FLOWERS IN HSB 1 & 3 - PINK

**SECTION 10 : SITE PHOTOGRAPHS - APRIL 2021 FENCING & SIGNAGE**

## FENCING AT HSB 1 & TCG 2

HSB 1

TCG 2

**SECTION 10 : SITE PHOTOGRAPHS - APRIL 2021 FENCING & SIGNAGE (C0NTD.)**

## FENCING AT HSB 3 & TCG 4

HSB 3

TCG 4

**SECTION 10 : SITE PHOTOGRAPHS - APRIL 2021 FENCING & SIGNAGE (C0NTD.)**

## FENCING AT TCG 3

TCG 3


TYPICAL SIGNAGE

**SECTION 11 : SITE PHOTOGRAPHS - APRIL 2022 I.A.P.S. SURVEY**

## NEW I.A.P.S. STAND – TCG 5

LOCATION OF STANDS IN RELATION TO THE E.S.B. SUB-STATION

MAIN STAND, WEST OF THE E.S.B. SUB-STATION

**SECTION 11 : SITE PHOTOGRAPHS - APRIL 2022 I.A.P.S. SURVEY (C0NTD.)**

## NEW I.A.P.S. STAND – TCG 5

DISTRIBUTION OF PLANTS IN MAIN STAND, LOOKING SOUTH WEST

SECONDARY STANDS, IMMEDIATELY WEST OF THE E.S.B. SUB-STATION

**SECTION 11 : SITE PHOTOGRAPHS - APRIL 2022 I.A.P.S. SURVEY (C0NTD.)**

SECONDARY STANDS, IMMEDIATELY EAST OF THE E.S.B. SUB-STATION

SECONDARY STAND, EAST OF THE E.S.B. SUB-STATION

**SECTION 11 : SITE PHOTOGRAPHS - APRIL 2022 I.A.P.S. SURVEY (C0NTD.)**

## NEW I.A.P.S. STAND – TCG 5

THREE CORNERED GARLIC PLANTS, WITH A SPANISH BLUEBELL PLANT ADJACENT ON THE RIGHT

TYPICAL INDIVIDUAL SPANISH BLUEBELL PLANT

**SECTION 12 : SITE PHOTOGRAPHS - MARCH 2022 I.A.P.S. SURVEY**

## NEW I.A.P.S. STANDS – TCG 6 & TCG 7

TCG 6 – IN EASTERN ROADSIDE GRASS MARGIN NORTH OF TCG 4

TCG 7 – IN WOODLAND FRINGE ON EASTERN ROADSIDE SOUTH OF TCG 4

**SECTION 13 : SITE ASSESSMENT CONCLUSIONS & RECOMMENDATIONS**

1. Based on the outcome of the first six site surveys, carried out in December 2020, April & September 2021, April 2022, and March & April 2023, earlier issues of this report confirmed the continuing and, in certain instances, the expanded presence of IAPS on site, namely Three Cornered Garlic and Spanish Bluebell.
2. The most recent site survey, carried out in October 2025, could not establish the current presence or extent of the previously identified IAPS, as the timing of the survey was outside the 2025 growing window. Therefore any plants present would have already flowered and died back for the season, but it must be assumed that there are still viable plants present.
3. In applying the "precautionary principle", continued site monitoring should be maintained. Further site inspections should be scheduled during the 2026 growing period for Three Cornered Garlic and Spanish Bluebell. This report and management plan should be updated to take account of the results of these 2026 inspections and surveys
4. This report and management plan, and subsequent updates, should be circulated to any adjoining land owners that may be affected by the IAPS presence, and to the relevant prescribed authorities, where required or appropriate to do so
5. All areas of known, and new, infestation should remain securely fenced off, including a 5 – 7m buffer zone where appropriate. Fencing should be sturdy and incorporate warning / advisory signage. Where stands are small, or just individual stems, or have been previously treated and are dead stems, then advisory signage on sturdy timber posts may suffice
6. No ground maintenance, opening up or any other ground disturbance should take place within the fenced areas, without prior consultation with, and the clear direction of, an invasive plant species specialist, and then only under strict supervision and bio-security conditions
7. If access to the infested areas is necessary, and particularly if any essential work has to be carried out within the fenced locations, then this must only be done following formal approval in advance, and after the preparation and agreement of a "task specific" method statement. No viable plant material or rhizome should be disturbed in, or removed from, the zones of infestation
8. Where future development proposals could encroach onto the IAPS infested areas, a site specific ground remediation programme should be developed and deployed, which would provide for the removal and bio-secure disposal of all infested soils. This plan should include provision for vertical and horizontal ground protection along property boundaries, where appropriate, and any other relevant measures required to ensure strict bio-security compliance across the site & works.
9. All relevant staff and site visitors should be briefed on the identification, risks and dangers of the IAPS present, and on the specific measures, restrictions and protocols to be deployed on the site
10. The accompanying management plan and treatment methodology should be screened for potential impacts on ecological receptors and sensitivities, where they exist, to fully consider the requirements of *S.I. 155 of 2012 – the European Communities (Sustainable use of Pesticides) Regulations*
11. When using herbicides as part of the management plan and remediation programme, consideration must be given to the proximity of ecological receptors and designated sites. Non residual herbicides should be specified for treatment, where their use is deemed suitable and necessary
12. Invasive plant species, by their nature, are aggressive and can be introduced onto property inadvertently, via many different means and routes. We would encourage all parties to familiarise themselves with the identification of the primary invasive alien plant species present. Specialist advice should be sought where there is doubt as to the identity of any particular plants encountered
13. In light of the potential future re-development of the site in the short to medium term, Section 18 of this Site Assessment Report and Management Plan provides a short overview of additional management measures which should be deployed when, and if, site development / construction works are scheduled. These measures are designed to help mitigate the risk of IAPS being introduced onto the site from external sources. When preparing for the commencement of works these measures should be developed and expanded upon, as necessary, to meet the particular requirements of the final project

KYRAN COLGAN
Director

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# I.A.P.S. MANAGEMENT PLAN

## SECTION 14 : KNOTWEEDS - PROCESS OF TREATMENT SELECTION

| INVASIVE ALIEN SPECIES | | | | | | | |
|---|---|---|---|---|---|---|---|
| JAPANESE KNOTWEED | | GIANT KNOTWEED | | BOHEMIAN KNOTWEED | | HIMALAYAN KNOTWEED | |
| **SELECTION OF TREATMENT** | | | | | | | |

THE MATRIX BELOW HAS BEEN DEVELOPED BY THE U.K. ENVIRONMENT AGENCY, BASED ON BEST PRACTICE AND THE APPLICATION OF "THE PRECAUTIONARY PRINCIPLE". THIS PROCESS IS INTENDED TO ARRIVE AT THE OPTIMUM JAPANESE KNOTWEED MANAGEMENT SOLUTION, WHICH POSES THE LEAST BIO-SECURITY RISK, AND WHICH MANAGES THE PLANTS REMEDIATION PROCESS AS CLOSE AS PRECTICABLE TO IT'S EXISTING POSITION

## SECTION 15 : KNOTWEEDS - MANAGEMENT PLAN

| | | | | |
|---|---|---|---|---|
| **TREATMENT PLAN** | | | | |
| **METHODOLOGY** | N/A – NO KNOTWEEDS IDENTIFIED ON THE LANDS | | | |
| **MANAGEMENT ELEMENTS** | INITIAL / MULTI-ANNUAL HERBICIDE CONTROL | | ON-SITE BELOW GROUND SOIL CONTAINMENT CELL | |
| | DEEP BURIAL – GREATER THAN 5m | | EXCAVATE AND DISPOSE OFF-SITE | |
| **HERBICIDE TREATMENT** | FOLLIAR SPRAY | | STEM INJECTION | |
| | CUT AND STEM FILL | | SPOT SPRAY / LEAF WIPE / SWAB | |
| | **ADDITIONAL DETAILS**<br>N/A - NO KNOTWEEDS IDENTIFIED ON THE LANDS | | | |
| **HERBICIDE TYPE** | APPROVED FOR USE WITH JAPANESE KNOTWEED | | APPROVED FOR USE IN AQUATIC ENVIRONMENTS | |
| **BIO-SECURITY MEASURES** | FENCE OFF INFESTATIONS AND FIT WARNING SIGNS | | SET 5 – 7m SAFETY ZONE AROUND INFESTATIONS | |
| | | | | |
| **ILLUSTRATIONS** | N/A - NO KNOTWEEDS IDENTIFIED ON THE LANDS | | | |

## SECTION 16 : THREE CORNERED GARLIC & SPANISH BLUEBELL – MANAGEMENT & REMEDIATION PLAN

| | | | | |
|---|---|---|---|---|
| **TREATMENT PLAN** | | | | |
| **TREATMENT METHODOLOGY** | THE PREFERRED SOLUTION FOR MANAGING THREE CORNERED GARLIC & SPANISH BLUEBELL IS :<br>1. FENCE OFF THE IDENTIFIED THREE CORNERED GARLIC & SPANISH BLUEBELL LOCATIONS, USING SECURE FENCING AND APPROPRIATE ADVISORY/WARNING SIGNAGE – SEE APPENDIX 3 AND 4 FOR TYPICAL EXAMPLES<br>2. CARRY OUT A FURTHER INSPECTION OF THE LANDS DURING THE 2023 GROWING PERIOD, TO VALIDATE THE RESULTS OF THE CURRENT SITE SURVEY, AND TO SCREEN FOR THE INTRODUCTION ONTO THE SITE OF ADDITIONAL I.A.P.S.<br>3. UPDATE THIS I.A.P.S. ASSESSMENT REPORT & MANAGEMENT PLAN, AS NECESSARY, FOLLOWING EACH FOLLOW UP SITE SURVEY<br>4. INSTITUTE A MULTI-ANNUAL HERBICIDE TREATMENT PROGRAMME, COMMENCING IN SPRING 2021, CONSISTING OF THREE TREATMENT VISITS, ALL TO BE CARRIED OUT IN ADVANCE OF, AND DURING, THE FLOWERING PERIOD OF THE PLANTS<br>5. FOR PART OR ALL OF ANY OF THE THREE CORNERED GARLIC & SPANISH BLUEBELL SITES THAT COULD BE DISTURBED BY ELEMENTS OF THE PROPOSED FUTURE DEVELOPMENT OF THE SITE, THEN WHEN THE DEVELOPMENT PROGRAMME BECOMES CLEAR, AND WHERE ERADICATION HAS NOT BEEN FULLY VALIDATED, A DETAILED CONSTRUCTION STAGE MANAGEMENT PLAN SHOULD BE PREPARED TO PHASE OUT THE HERBICIDE TREATMENT PROCESS, AND TO REPLACE IT WITH THE PHYSICAL REMEDIATION OF ANY REMAINING INFESTED SOILS. THE PRECISE DETAILS AND TIMING OF THIS PLAN SHOULD TO BE BASED ON UP TO DATE SITE SURVEY INFORMATION, AND THE DETERMINATION OF THE LEVEL AND EXTENT OF ERADICATION ACHIEVED, CONSIDERED IN CONJUNCTION WITH THE FINAL DETAILED PROJECT DESIGN AND THE DEFINITIVE CONSTRUCTION / DEVELOPMENT WORKS PROGRAMME. AT THIS MOMENT, THE BIO-SECURE OFF-SITE DISPOSAL OF ANY REMAINING INFESTED SOILS WOULD BE CONSIDERED TO BE THE MOST APPROPRIATE REMEDIATION SOLUTION | | | |
| **MANAGEMENT ELEMENTS** | MULTI ANNUAL HERBICIDE CONTROL PROGRAMME | ✓ | ON-SITE BELOW GROUND SOIL CONTAINMENT CELL | |
| | DEEP BURIAL – GREATER THAN 5m | | EXCAVATE AND DISPOSE OFF-SITE | ✓ |
| | EXCAVATE AND TREAT IN ON-SITE TEMPORARY BUND | | CERTIFIED ROOT BARRIER MEMBRANE SYSTEMS | |
| **HERBICIDE TREATMENT TECHNIQUE** | FOLLIAR SPRAY | | STEM INJECTION | |
| | CUT AND STEM FILL | | SPOT SPRAY / LEAF WIPE / SWAB | ✓ |
| | **SPOT SPRAY**<br>TO CONSIST OF A TARGETED APPLICATION OF ROUNDUP BIACTIVE XE IN SOLUTION, AT A DILUTION RATE OF 1:40, OR ALTERNATIVE GLYPHOSATE BASED HERBICIDE, APPLIED BI-ANNUALLY IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS. SPRAY TO BE APPLIED ONLY TO THE TARGET PLANT, PRIOR TO SETTING SEED, AND APPLIED USING A PROPRIETRY SPRAY UNIT FITTED WITH AN ANTI DRIFT SHIELD. SPRAY ONLY TO BE APPLIED UNDER SUITABLE PREVAILING WEATHER CONDITIONS AND APPLIED AT A RATE AND PRESSURE WHICH MINIMISES RUN OFF FROM THE PLANT LEAVES AND FLOWERS. THE SITE HANDLING AND MIXING OF HERBICIDE SHOULD BE AVOIDED TO THE GREATEST EXTENT POSSIBLE | | | |
| **ADDITIONAL WORKS** | CUT AND BAG PLANT MATERIAL | | SHRED & DISPOSE OF VIABLE PLANT MATERIAL | |
| **HERBICIDE** | APPROVED FOR 3 CORNERED GARLIC | ✓ | APPROVED FOR USE IN AQUATIC ENVIRONMENTS | |
| **BIO-SECURITY MEASURES** | FENCE OFF INFESTATIONS AND FIT WARNING SIGNS | ✓ | SET SAFETY ZONE AROUND INFESTATIONS | ✓ |
| | ADVISE AFFECTED PARTIES / NOTIFY NEIGHBOURS | | BRIEF WORKERS AND VISITORS TO PROPERTY | ✓ |
| | IF MORE THAN 1 PARTY, AGREE WORKS IN ADVANCE | | MONITOR AND RECORD | ✓ |

## SECTION 17 : MANAGEMENT & TREATMENT PROGRAMME

| PROGRAMME | | |
|---|---|---|
| **STAGE 1**<br>SPRING/SUMMER 2021/22 | • DEPLOY BIOSECURITY MEASURES, COMPRISING SECURE FENCING AND ADVISORY / WARNING SIGNAGE<br>• CARRY OUT THREE SPOT SPRAYING TREATMENTS AT THREE CORNERED GARLIC & SPANISH BLUEBELL STANDS<br>• CARRY OUT FOLLOW UP SITE SURVEY, TO INSPECT FOR NEW, EMERGING AND SPREADING I.A.P.S.<br>• UPDATE ASSESSMENT REPORT AND MANAGEMENT PLAN, BASED ON THE OUTCOME OF THE SEPTEMBER SURVEY | **COMPLETE 04/21**<br>**COMPLETE 06/21**<br>**COMPLETE 09/21**<br>**COMPLETE 11/21** |
| **STAGE 2**<br>SPRING 2023 | • CARRY OUT A SITE SURVEY, TO MONITOR REGROWTH AT EXISTING I.A.P.S. STANDS AND IDENTIFY ANY NEW STANDS<br>• UPDATE THIS ASSESSMENT REPORT AND MANAGEMENT PLAN ACCORDINGLY<br>• DEPLOY ANY ADDITIONAL BIO-SECURITY MEASURES REQUIRED AT NEW I.A.P.S. LOCATIONS<br>• ADD ANY NEWLY IDENTIFIED I.A.P.S. STANDS TO THE MULTI-ANNUAL TREATMENT PROGRAMME | **COMPLETE 03/23**<br>**COMPLETE 03/23**<br>**COMPLETE 04/23**<br>**COMPLETE 43/23** |
| **STAGE 3**<br>SPRING/SUMMER 2023 | • CONTINUE IMPLEMENTATION OF THE MULTI-ANNUAL HERBICIDE TREATMENT PROGRAMME, WITH MINIMUM BI-ANNUAL TREATMENT AND INSPECTION VISITS, SCHEDULED AS REQUIRED AND AS NECESSARY, UNTIL FULL ERADICATION HAS BEEN VALIDATED | **COMPLETE 05/23** |
| **STAGE 4**<br>SUMMER 2025 | • CARRY OUT A SITE SURVEY, TO MONITOR REGROWTH AT EXISTING I.A.P.S. STANDS AND IDENTIFY ANY NEW STANDS<br>• UPDATE THIS ASSESSMENT REPORT AND MANAGEMENT PLAN ACCORDINGLY<br>• DEPLOY ANY ADDITIONAL BIO-SECURITY MEASURES REQUIRED AT NEW I.A.P.S. LOCATIONS<br>• ADD ANY NEWLY IDENTIFIED I.A.P.S. STANDS TO THE MULTI-ANNUAL TREATMENT PROGRAMME | **COMPLETE 10/25**<br>**COMPLETE 10/25**<br>**COMPLETE 10/25**<br>**COMPLETE 10/25** |
| **STAGE 5**<br>SPRING 2026 | • CARRY OUT A SITE SURVEY, TO MONITOR REGROWTH AT EXISTING I.A.P.S. STANDS AND IDENTIFY ANY NEW STANDS<br>• UPDATE THIS ASSESSMENT REPORT AND MANAGEMENT PLAN ACCORDINGLY<br>• DEPLOY ANY ADDITIONAL BIO-SECURITY MERASURES REQUIRED AT NEW I.A.P.S. LOCATIONS<br>• ADD ANY NEWLY IDENTIFIED I.A.P.S. STANDS TO THE MULTI-ANNUAL TREATMENT PROGRAMME | **PENDING 03/26**<br>**PENDING 03/26**<br>**PENDING 03/26**<br>**PENDING 03/26** |
| **STAGE 6**<br>SPRING/SUMMER 2026 | • CONTINUE IMPLEMENTATION OF THE MULTI-ANNUAL HERBICIDE TREATMENT PROGRAMME, WITH MINIMUM BI-ANNUAL TREATMENT AND INSPECTION VISITS, SCHEDULED AS REQUIRED AND AS NECESSARY, UNTIL FULL ERADICATION HAS BEEN VALIDATED<br><br>• IF PLANNING PERMISSION IS GRANTED AND DEVELOPMENT OF THE SITE IS SCHEDULED, IN ADVANCE OF FULL ERADICATION BEING VALIDATED, PREPARE AND IMPLEMENT A CONSTRUCTION STAGE I.A.P.S. MANAGEMENT PLAN, TO REMEDIATE THE RESIDUAL INFESTED SOILS, IN ADVANCE OF THE COMMENCEMENT OF ENABLING WORKS AND CONSTRUCTION ACTIVITIES | **PENDING 2026** |

## SECTION 18 : I.A.P.S. – ADDITIONAL CONSTRUCTION STAGE I.A.P.S. MANAGEMENT MEASURES

| REMEDIATION PLAN | |
|---|---|
| **OVERVIEW** | THERE IS AN EXISTING AND ONGOING RISK TO ALL PROPERTIES FROM THE INTRODUCTION OF INVASIVE ALIEN PLANT SPECIES ONTO THEIR LANDS FROM THE OUTSIDE. THE PRIMARY PATHS OF INTRODUCTION ARE VIA :<br><br>1. PHYSICAL SPREAD OF I.A.P.S. PLANTS FROM ADJACENT / ADJOINING LANDS<br>2. AIRBORNE DISPERSAL OF SEEDS OR OTHER VIABLE I.A.P.S. MATERIAL<br>3. IMPORTED SOILS AND OTHER FILL/LANDSCAPING MATERIALS CONTAINING VIABLE SEED OR OTHER I.A.P.S. MATERIAL<br>4. SOIL ON MACHINERY AND VEHICLES CONTAMINATED WITH VIABLE SEEDS OR OTHER I.A.P.S. MATERIAL<br>5. TOOLS AND FOOTWEAR CONTAINING VIABLE SEED OR OTHER I.A.P.S. MATERIAL<br><br>CONSTRUCTION WORKS, BY THEIR VERY NATURE, POSE A HEIGHTENED RISK OF THE INTRODUCTION OF I.A.P.S. ONTO DEVELOPMENT SITES, PARTICULARLY VIA ITEMS 3. – 5. ABOVE. THEREFORE STRICT SITE MONITORING / MANAGEMENT PROCEDURES SHOULD BE DEPLOYED THROUGHOUT THE CONSTRUCTION STAGE OF THE SITE DEVELOPMENT PROGRAMME.<br><br>FOR INFORMATION PURPOSES, THE SCHEMATIC OF THE MILLTOWN PARK DEVELOPMENT PROPOSAL IS INCLUDED BELOW |
| **PRIMARY MANAGEMENT MEASURES** | THE CONTRACTOR SHOULD PROVIDE A PROJECT SPECIFIC I.A.P.S. STANDARD OPERATING PROCEDURE DOCUMENT, IN ADVANCE OF WORK COMMENCEMENT. THE DOCUMENT SHOULD BE PREPARED BY AN I.A.P.S. SPECIALIST, AND SHOULD COVER THE BIO-SECURITY MEASURES TO BE TAKEN, INCLUDING THE MAINTENANCE OF RECORDS, TO SCREEN FOR THE INTRODUCTION OF I.A.P.S. AND TO ENABLE THEIR TRACING, IF SUCH AN INTRODUCTION OCCURS, INCLUDING :<br>• CONFIRMATION THAT ALL MACHINERY / VEHICLES ARE FREE OF I.A.P.S., PRIOR TO THEIR FIRST INTRODUCTION TO SITE<br>• CERTIFICATION FROM THE SUPPLIERS THAT ALL BATCHES OF IMPORTED SOILS AND OTHER FILL/LANDSCAPING MATERIALS ARE FREE OF I.A.P.S.<br>• A REGULAR SCHEDULE OF SITE INSPECTIONS ACROSS THE I.A.P.S. GROWING SEASONS, FOR THE FULL DURATION OF THE CONSTRUCTION WORKS PROGRAMME |
| **ILLUSTRATIONS** |  <br>**PROPOSED SITE PLAN – DRAWING REPRODUCED COURTESY OF O'MAHONY PIKE ARCHITECTS** |

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**MILLTOWN PARK DEVELOPMENT SITE**
SANDFORD ROAD
DUBLIN 6

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**APPENDIX 1**
Three Cornered Garlic I.D. Sheet

NNSS
GB non-native species secretariat

www.nonnativespecies.org

Produced by Alison Jukes, Max Wade, Vicky Ames and Kelly McKee of RPS

# Non-Native Garlics

## Species Description

**Scientific names:** *Allium* species
**AKA:** Gerllyg (Welsh)
**Native to:** Mediterranean, Caucasus and Iran
**Habitat:** Roadsides, hedge banks, riverbanks, field margins, rough and waste ground and in woodland

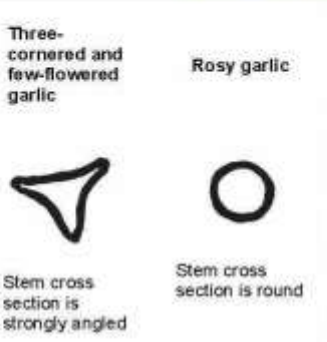
Garlics are perennial herbs with bulbs and grass-like leaves, usually smelling of garlic when fresh and crushed. The most widespread invasive garlics in the UK are Three-cornered Garlic *Allium triquetrum* and Few-flowered Garlic *Allium paradoxum*. Other invasive species include Rosy Garlic *Allium roseum* and Keeled Garlic *Allium carinatum*.

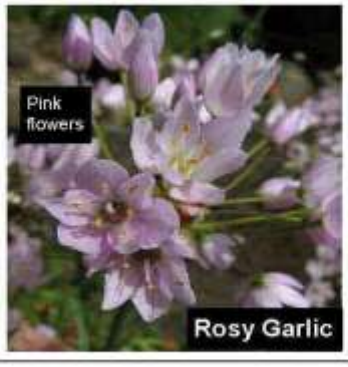
The seeds of Three-cornered Garlic are spread naturally by ants. It was established initially in Guernsey in 1849 and is now naturalised and increasingly abundant and widespread in milder areas of the UK, especially in the south and west, with scattered, sometimes short-lived, populations elsewhere.

Few-flowered Garlic spreads by means of bulbils (small bulbs produced above ground). It was first recorded in the wild near Edinburgh in 1863 and can be very invasive in disturbed habitats. It is increasingly abundant throughout its range, especially in southern Scotland and is most common in the east of Britain.

Rosy Garlic was first recorded in the wild in 1837 and is spreading, especially in south-west England. Keeled Garlic has been naturalised since at least 1806, but there is little evidence of a significant increase in range over the last 50 years.

## Key ID Features


# Identification throughout the year

Three-cornered garlic flowers April to June.

Few-flowered garlic flowers April to May.

Rosy garlic flowers May to June.

Keeled garlic flowers in August.

Leaves are not present over winter as these species die back in cold winters and come up from bulbs in the spring.

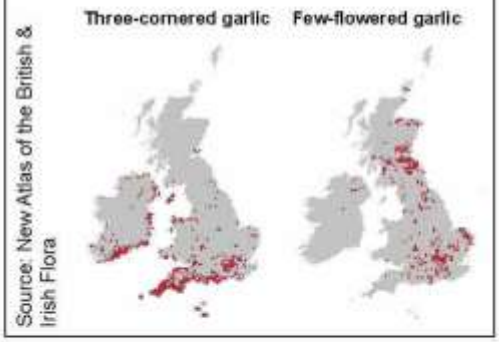
# Distribution

Three-cornered garlic is widespread in milder areas, especially the south-west, and has increased in numbers and range.

Few-flowered garlic has a mainly eastern distribution and is increasing throughout its range.

Rosy garlic is scattered in the south and west and is spreading.

Keeled garlic is scattered throughout the lowlands but does not seem to be increasing.




# Similar Species

There are a number of native onion and garlic species in the UK with ramsons and wild onion being the most common. There are many species with leaves which are similar to the non-native garlics but the onion/garlic smell is distinctive.



References and further reading:

Preston *et al.* (2002) "*New Atlas of the British & Irish Flora*". Oxford University Press

Sell, P & Murrell, G (1996) "*Flora of Great Britain and Ireland, Volume 5: Butomaceae-Orchidaceae*". Cambridge University Press

Stace, C (1997) "*New Flora of the British Isles*". Cambridge University Press

Photos from: Becky Dewdney-York, Nhu Nguyen, William Vann, Max Wade

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**MILLTOWN PARK DEVELOPMENT SITE**
SANDFORD ROAD
DUBLIN 6

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**APPENDIX 2**
Spanish Bluebell I.D. Sheet

WIKIPEDIA

# *Hyacinthoides hispanica*

***Hyacinthoides hispanica*** (syn. *Endymion hispanicus* or *Scilla hispanica*), the **Spanish bluebell**, is a spring-flowering bulbous perennial native to the Iberian Peninsula. It is one of around 11 species in the genus *Hyacinthoides*, others including the common bluebell (*Hyacinthoides non-scripta*) in northwestern Europe, and the Italian bluebell (*Hyacinthoides italica*) further east in the Mediterranean region.[1]

It is distinguished from the common bluebell by its paler and larger blue flowers, which are less pendulous and not all drooping to one side like the common bluebell; plus a more erect flower stem (raceme), broader leaves, blue anthers (where the common bluebell has creamy-white ones) and little or no scent compared to the strong fragrant scent of the northern species. Like *Hyacinthoides non-scripta*, both pink- and white-flowered forms occur.

The Spanish bluebell was introduced in the United Kingdom. Since then, it has hybridised frequently with the native common bluebell and the resulting hybrids are regarded as invasive. The resulting hybrid *Hyacinthoides* × *massartiana* and the Spanish bluebell both produce highly fertile seed but it is generally the hybrid that invades areas of the native common bluebell. This has caused the common bluebell to be viewed as a threatened species.

The Spanish bluebell is also cultivated as a garden plant, and several named cultivars exist with flowers in various shades of white, pink and blue.

***Hyacinthoides hispanica***

**Scientific classification**

| | |
|---|---|
| Kingdom: | Plantae |
| *Clade*: | Angiosperms |
| *Clade*: | Monocots |
| Order: | Asparagales |
| Family: | Asparagaceae |
| Subfamily: | Scilloideae |
| Genus: | *Hyacinthoides* |
| Species: | ***H. hispanica*** |

**Binomial name**

***Hyacinthoides hispanica***

(Mill.) Chouard ex Rothm.

## References

1. *World Checklist of Selected Plant Families* (http://apps.kew.org/wcsp/home.do). The Board of Trustees of the Royal Botanic Gardens, Kew. retrieved 2011-07-05. search for "Hyacinthoides"

### General

- The-Tree.org: Bluebell (https://web.archive.org/web/20060427035443/http://www.the-tree.org.uk/EnchantedForest/WoodlandFlowers/bluebell.htm) (includes key to identification of hybrids)
- Huxley, A. (1992). *New RHS Dictionary of Gardening* vol. 2: 604. Macmillan.

## External links

- Media related to *Hyacinthoides hispanica* at Wikimedia Commons



**Wikipedia – Spanish Bluebell information page**

## Native bluebells *(Hyacinthoides non-scripta)*

- Distinctive 'droop' like the top of a shepherd's crook
- Sweet, cool perfume
- Narrow bell-shaped flowers with rolled back tips
- Creamy white pollen

If your bluebells have all of these characteristics then they're native bluebells.

## Spanish bluebells (*Hyacinthoides hispanica)* and hybrids

- Upright stems
- No scent
- Conical bell-shaped flowers with open tips
- Blue pollen

If the bluebells you see have some or all of these characteristics then they're not a pure native bluebell.

**Berkshire Buckinghamshire & Oxfordshire Wildlife Trusts – Spanish Bluebell identification**

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**MILLTOWN PARK DEVELOPMENT SITE**
SANDFORD ROAD
DUBLIN 6

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**APPENDIX 3**
Sample Site Signage – I.A.P.S.


**SAMPLE SIGN 1**


**SAMPLE SIGN 2**

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**MILLTOWN PARK DEVELOPMENT SITE**
SANDFORD ROAD
DUBLIN 6

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**APPENDIX 4**
Sample Site Fencing

**SAMPLE FENCING 1 – POST AND WOVEN MESH FENCING**


**SAMPLE FENCING 2 – HEAVY DUTY HERAS FENCING**