



**Architectural
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Department**

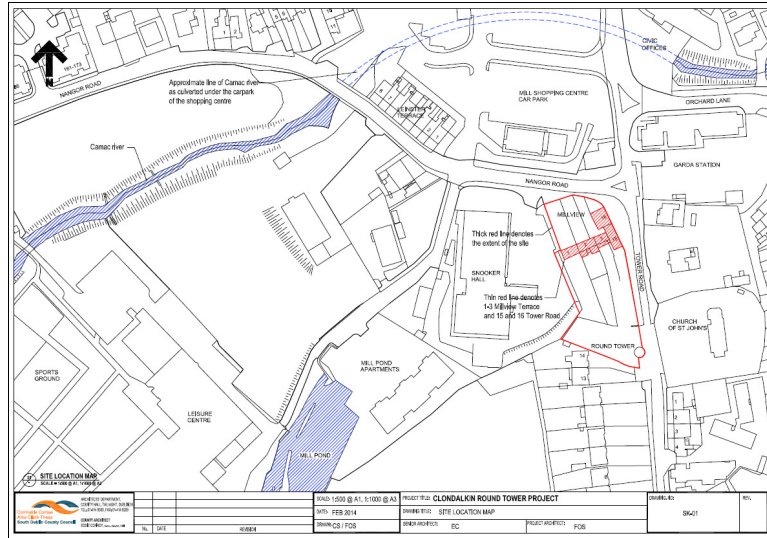


Appendix C

- (1) The ecological assessment and general habitat survey by Faith Wilson, Ecological Consultant, and**
- (2) The Screening Report for Appropriate Assessment as required under the EU Habitats Directive by Rosaleen Dwyer, Heritage Officer, South Dublin County Council**

CLONDALKIN ROUND TOWER

BASELINE ECOLOGICAL SURVEY



DRAFT REPORT

May 2014

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CLONDALKIN ROUND TOWER

BASELINE ECOLOGICAL SURVEY

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DODDER VALLEY PARK BAT SURVEY

1. INTRODUCTION

Faith Wilson (an independent ecological consultant and licensed bat specialist) was commissioned by South Dublin County Council to undertake a survey of bat and mammal activity of lands proposed for development at Clondalkin as outlined in red on **Figure 1** below. South Dublin County Council proposes to develop a museum and civic centre at this site which includes the round tower in Clondalkin village. The proposal includes the refurbishment of five existing old houses (15 and 16 Tower Road, and 1, 2 and 3 Millview Terrace), the construction of a new extension to the rear of these houses and a public garden. It is intended to progress the project to Part 8 Consultation process under the Planning & Development Act 2000. Applications for Ministerial and other approvals required in relation to the National Monument status of the round tower and its site will be made concurrently with the Part VIII process.

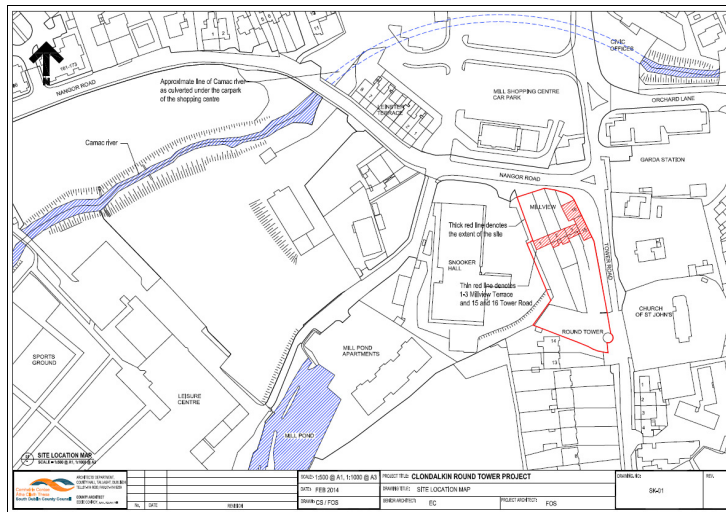


Figure 1. Proposed development site at Clondalkin outlined in red.

Survey Scope:

South Dublin County Council requested an ecological assessment and general habitat survey of the entire site (0.77 acres or 0.3 ha), including the five houses, trees and the boundaries, to detect any evidence of protected wildlife, to measure the proposed project's impact on wildlife and to demonstrate that the impact will be minimised. The results of the ecological survey/assessment should also guide the future design and development of the proposed public garden.

The assessment requested included:

- A small mammal assessment, including badgers and bats. The assessment included a survey of bat roosts in the buildings, trees and old walls, in conjunction with a monitoring survey for bat usage over the entire site, once bats are out of hibernation.
- An assessment of any other wildlife present on the site, given that the site has remained undisturbed for some time.

The requested survey was to include:

- a) A day-time visit to locate evidence of bats within accessible areas, and to detect any significant roosts by means of bat droppings, oil stains from fur, corpses and other field evidence.
- b) A post-sunset emergence survey and pre-sunrise survey to detect any occupied roosts and emergence points, activity and approximate number of bats.
- c) A report describing the results of the surveys and implications for developments including indications as to whether a derogation licence would be required. The report will advise the council on any constraints posed by the potential presence of bats or other wildlife, any opportunities to enhance roosts and the need for legal permits, should works be proposed that could affect bats and their roosts and other wildlife.

This report details the findings of the ecological surveys conducted within the site at Clondalkin and proposes suitable mitigation measures that may be required to reduce any potential impacts of the proposed development on biodiversity. An additional survey later in the field season will be conducted for completeness.

2. METHODOLOGY

2.1 Desk Study

A desk study was carried out to collate the available information on the general ecological environment. Records were sought from the National Biodiversity Data Centre for the general Clondalkin area.

The Bat Conservation Ireland database and other bat specialists were consulted regarding records of bat activity in the area.

2.2 Bat Survey

The bat survey was carried out on the 3rd April 2014 by Faith Wilson. The interiors and exteriors of all the buildings on the site were inspected for signs of roosting bats and nesting birds.

Bats are afforded protection under both national and international legislation as follows:

Wildlife Act 1976

In the Republic, under Schedule 5 of the Wildlife Act 1976, all bats and their roosts are protected by law. It is unlawful to disturb either without the appropriate licence. The Act was amended in 2000.

EU Habitat and Species Directive

The EU Directive on the Conservation of Natural habitats and of Wild Fauna and Flora (Habitats Directive 1992), seeks to protect rare species and their habitats, including all species of bats recorded in Ireland.

Bern and Bonn Convention

Ireland has also ratified two international conventions, which afford protection to bats amongst other fauna. These are known as the 'Bern' and 'Bonn' Conventions.

The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1982), exists to conserve all species and their habitats, including bats.

The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention 1979, enacted 1983) was instigated to protect migrant species across all European boundaries, which covers certain species of bat.

Trees within the site were assessed using the following standard criteria, which were created by bat specialists from Bat Conservation Ireland for use in the assessments of tree roosts on large infrastructural projects and are summarised in NRA (2006):

- Presence or absence of bat droppings (these can be hard to find amongst leaf litter or may be washed away following periods of wet weather),
- Bat droppings may also be seen as a black streak beneath holes, cracks, branches, etc.,
- Presence or absence of smooth edges with dark marks at potential entrances to roosts,
- Presence or absence of urine stains at potential entrances to roosts,
- Presence of natural cracks and rot holes in the trunk or boughs of the tree,
- Hollow trees,
- Presence or absence of creepers such as ivy or honeysuckle on trees (ivy clad trees are often used by bat species such as pipistrelles as roosts),
- Presence or absence of loose bark such as that of sycamore, or flaky bark on coniferous species such as cedars, cypress and Scot's pine,
- Presence or absence of bracket fungi which may indicate a rotten or potentially hollow centre to the tree,
- Known bat roosts previously identified,
- Trees with storm or machinery damage or broken boughs,
- Clutter level - where the branches and trunk are easily accessible, this is considered a better tree for bat roosts,
- Adjoining habitat - if there are a variety of feeding opportunities for bats, this increases the potential of a tree as a bat roost,
- Adjoining potential roosts / known roosts. This raises the likelihood of a tree being of benefit as bats may move roosts if the roost becomes too hot or cold during roosting and a nearby alternative roost is highly desirable.

Features within the site, which were likely to be important for bats, included the gardens, areas of scrub at the rear of the houses and the remnant hedgerows and treelines which surround the site as shown on **Figure 2** below.



Figure 2. Aerial overview of the proposed development site at Clondalkin showing the buildings within the site, mature trees, etc.

A bat detector survey was carried out at dusk on the 3rd April 2014 using three types of bat detectors - two *Batbox Duet* Heterodyne/Frequency Division detectors and a Pettersson D100 Heterodyne detector. The potential emergence of bats from buildings within the site at dusk was monitored and a walkover survey of the grounds was conducted. A dawn activity survey was also completed to determine if any bats returned to the buildings at dawn.

Bat activity is predominantly bi-modal, with bats taking advantage of increased insect numbers on the wing during the periods after dusk and before dawn, (there is usually a lull in activity in the middle of the night). While this holds true for 'hawking' species (bats that capture prey in the open air), 'gleaning' species such as brown long-eared (*Plecotus auritus*), Natterer's (*Myotis nattereri*) and Whiskered/Brandt's bats (*Myotis mystacinus/brandtii*) remain active throughout the night, as prey is available on foliage for longer periods.

2.3 Habitat and Botanical Survey

The habitats within the site were described to level three using the Heritage Council Guide to Habitats of Ireland (Fossitt (2000)). Species within the site were identified using Parnell and Curtis (2012).

A particular focus of the survey was to determine if any protected species of plant under the Flora Protection Order (1999) or listed in the Irish Vascular Plants Red Data Book are present on the site. Other botanical species of interest that provide information on the past use of the site such as those species used in the mediaeval period for culinary/medical uses that may remain on boundary walls were also searched for.

Invasive species present in the site were also identified and mapped. A particular focus of the survey was for those species listed in the Birds and Habitats Regulations 2011. These will be further examined during the second site survey as many of the species may not have been evident in April, which is early in the growing season.

Invasive species legislation

Until recently there has been no legal framework for the control or eradication of non-native invasive species in the Republic of Ireland. The Birds and Habitats Regulations (2011) which were signed on 21st September 2011 by the Minister for Arts, Heritage and the Gaeltacht Jimmy Deenihan, included new legislation on invasive and non-native species in Sections 49 and 50. Sections 49 and 50 have not yet been legally implemented as they have implications for members of the pet and horticultural trades and consultation with these groups is ongoing. It is expected that these new regulations will come into place within the next year.

The relevant text of these regulations are presented below for reference and those species, which were recorded on the site are highlighted in yellow.

2.2 Section 49. Prohibition on the introduction and dispersal of certain species.

Section 49 of the act states:

(1) Save in accordance with a licence granted under paragraph (7), any person who breeds, reproduces or releases or allows or causes to disperse or escape from confinement, any animal which—

(a) is not—

- (i) ordinarily resident in or is not a regular visitor to the State in a wild state, or
- (ii) of a kind that is domesticated or that is in the normal course the subject of human husbandry,

(b) is included in Part 2A of the Third Schedule in any place specified in relation to such animal in the third column of Part 2A of the Third Schedule, or
(c) is included in Part 2B of the Third Schedule in any place specified in relation to such animal in the third column of Part 2B of the Third Schedule,

shall be guilty of an offence.

(2) Save in accordance with a licence granted under paragraph (7), any person who plants, disperses, allows or causes to disperse, spreads or otherwise causes to grow in any place specified in relation to such plant in the third column of Part 1 of the Third Schedule, any plant which is included in Part 1 of the Third Schedule, shall be guilty of an offence.

(3) Subject to paragraph (4), 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.

(4) Where the defence provided by paragraph (3) involves an allegation that the commission of the offence was due to the act or default of another person, the person charged shall not, without leave of the court, be entitled to rely on the defence unless, within a period ending 28 days before the hearing, he or she has served on the prosecutor a notice giving such information identifying or assisting in the identification of the other person as was then in his or her possession.

(5)

(a) In this Regulation, an animal or plant listed in the Third Schedule shall mean such an animal or plant or a hybrid of any such animal or plant or any breed, strain, sport, variety, cultivar or other infraspecific taxon of such plant or animal in relation to the entire State or, where limited for such an animal or plant, the particular areas set forth in the Third Schedule for each such animal or plant.

(b) For the avoidance of doubt, an animal or plant of a species to which the Third Schedule refers shall include specimens of such species under any scientific synonym, vernacular name or trade name by which it may be referred to.

(6) In this Regulation, “confinement” means a place in which an animal is secure from escaping and from which its eggs, larvae, young, any life stage or resting stage, or any part from which an adult of the animal could develop are secure from being dispersed or escaping.

(7)

(a) One or more persons may make an application for a licence, under this paragraph, for the purposes of complying with the requirements of paragraph (1) or (2).

(b) The Minister may seek from the applicant any information that he or she considers necessary for consideration of the application.

(c) The Minister may grant or refuse to grant, or revoke, such a licence, and shall give reasons for his or her decision and for any conditions imposed under subparagraph (f).

(d) In making a decision under subparagraph (c), the Minister shall take account of the requirements of the Habitats Directive and the Birds Directive and in particular the requirements of Article 22(b) of the Habitats Directive, and he or she shall take account of such advice or information as he or she considers appropriate in relation to any animal or plant to which the licence application relates.

(e) The Minister shall grant a licence under this paragraph only if he or she is satisfied that the grant of the licence will not pose a threat to the objectives of the Birds Directive or the Habitats Directive.

(f) A licence granted under this paragraph shall be subject to such conditions, restrictions, limitations or requirements as the Minister considers appropriate.

(g) Any conditions, restrictions, limitations or requirements to which a licence under this paragraph is subject shall be specified in the terms of the licence.

(h) Paragraphs (1) and (2) do not apply to anything done under and in accordance with the terms of a licence granted by the Minister under subparagraph (c).

(8) For the purposes of this Regulation, "the State" includes the territorial waters of the State and the exclusive economic zone of the State.

(9) For the avoidance of doubt, the Minister may develop threat response plans under Regulation 39 for the purposes of this Regulation and, generally, for the purposes of addressing the exclusion, eradication or control of species referred to in the Third Schedule and any other species that the Minister considers poses a threat to the habitats or species protected under these Regulations.

(10) Where the Minister considers that a species poses a threat to the objectives of the Birds and Habitats Directives, including the protection of European Sites, of habitats, and of species of flora and fauna, including birds, he or she may authorise the destruction by appropriate means including, where appropriate, by shooting, of any of the animals referred to in paragraph (1)(a), or listed in Part 2 of the Second Schedule.

(11) Where an animal that is of a species referred to in Part 2B of the Third Schedule, or that is a hybrid of such a species, is one of a herd that is being farmed for slaughter for commercial meat production, it shall not be an offence under this Regulation to transport the animal from one place of enclosure to another for farming purposes or to transport the animal for sale or for slaughter for commercial meat production.

(12) For the purposes of paragraph (11), "slaughter" does not include the killing of an animal during or following hunting.

2.3 Section 50. Prohibition on dealing in and keeping certain species

Section 50 of the act states:

(1) Save in accordance with a licence granted under paragraph (7), and subject to Regulation 74, a person shall be guilty of an offence if he or she has in his or her possession for sale, or for the purposes of breeding, reproduction or propagation, or offers or exposes for sale, transportation, distribution, introduction or release—

(a) an animal or plant listed in Part 1 or Part 2 of the Third Schedule,

(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 Part 3 of the Third Schedule,

in any place in the State specified in the third column of the Third Schedule in relation to such an animal, plant or vector material.

(2) Save in accordance with a licence granted under paragraph (7), a person shall be guilty of an offence if he or she imports or transports—

(a) an animal or plant listed in Part 1 or Part 2 of the Third Schedule,

(b) anything from which an animal or plant referred to in Part 2 of the Third Schedule can be reproduced or propagated, or

(c) a vector material listed in Part 3 of the Third Schedule, into or in or to any place in the State specified in relation to such an animal or plant or vector material in relation to that animal or plant or vector material in the third column of the Third Schedule.

(3) Save in accordance with a licence granted under paragraph (7), a person shall be guilty of an offence if he or she publishes or causes to be published by any means, including on the internet, any advertisement, catalogue, circular or price list likely to be understood as conveying that such person imports into the State, buys, sells, distributes or provides for the introduction or release, or intends to buy or sell or distribute or introduce or release, in any place in the State as specified in the third column of the Third Schedule,—

(a) an animal or plant listed in Part 1 or Part 2 of the Third Schedule,

(b) anything from which such an animal or plant can be reproduced or propagated,

(c) a vector material listed in Part 3 of the Third Schedule.

(4) Subject to paragraph (5), it shall be a defence to a charge of committing an offence under paragraph (1), (2) or (3) to prove that the accused took all reasonable steps and exercised all due diligence to avoid committing the offence.

(5) Where the defence provided by paragraph (4) involves an allegation that the commission of the offence was due to the act or default of another person, the person charged shall not, without leave of the court, be entitled to rely on the defence unless, within a period ending 28 days before the hearing, he or she has served on the prosecutor a notice giving such information identifying or assisting in the identification of the other person as was then in his or her possession.

(6)

(a) This Regulation applies to an animal or plant listed in the Third Schedule.

(b) For the avoidance of doubt, an animal or plant listed or referred to in the Third Schedule shall apply to that animal or plant under any synonym or vernacular or trade name by which that animal or plant may be referred to.

(7)

(a) One or more persons may make an application for a licence, under this paragraph, for the purposes of complying with the requirements of paragraph (1), (2) or (3).

(b) The Minister may seek from the applicant any information that he or she

considers necessary for consideration of the application.

(c) The Minister may grant or refuse to grant, or revoke, such a licence, and shall give reasons for his or her decision and for any conditions imposed under subparagraph (e).

(d) In making a decision under subparagraph (c), the Minister shall take account of the requirements of the Habitats Directive and the Birds Directive and in particular the requirements of Article 22(b) of the Habitats Directive, and he or she shall take account of such advice or information as he or she considers appropriate in relation to any species to which the licence application relates.

(e) A licence granted under subparagraph (c) shall be subject to such conditions, restrictions, limitations or requirements as the Minister considers appropriate.

(f) Any conditions, restrictions, limitations or requirements to which a licence under this subparagraph is subject shall be specified in the licence.

(g) Paragraph (1), (2) or (3) do not apply to anything done under and in accordance with the terms of a licence granted by the Minister under subparagraph (c).

(8) For the purposes of this Regulation, “the State” includes the territorial waters of the State and the exclusive economic zone of the State.

(9) For the avoidance of doubt, the Minister may develop threat response plans under Regulation 39 for the purposes of this Regulation and, generally, for the purposes of addressing the exclusion, eradication or control of species referred to in the Third Schedule and any other species that the Minister considers poses a threat to the habitats or species protected under these Regulations.

(10) Where an animal that is of a species referred to in Part 2B of the Third Schedule, or that is a hybrid of such a species, is one of a herd that is being farmed for slaughter for commercial meat production, it shall not be an offence for a person to have such an animal in his or her possession for sale or transportation in the course of the business of farming such animals, including providing for their slaughter or, for the purposes of farming, to import or transport such an animal, and paragraph (3) shall not apply to the publication of any advertisement, catalogue, circular or price list regarding the purchase or sale of such an animal for slaughter for commercial meat production or to be farmed for that purpose.

(11) For the purposes of paragraph (10), “slaughter” does not include the killing of an animal during or following hunting.

The plant and animal species to which the regulations apply are presented in Schedule Three. Part 1 details the plant species, while Part 3 outlines those animal or plant vector materials and are presented below. Species recorded from within the site to date are highlighted in yellow.

Third Schedule: Part 1 Plants

Non-native species subject to restrictions under Regulations 49 and 50.

First column	Second column	Third column
Common name	Scientific name	Geographical application
American skunk-cabbage	<i>Lysichiton americanus</i>	Throughout the State
A red alga	<i>Grateloupia doryphora</i>	Throughout the State
Brazilian giant-rhubarb	<i>Gunnera manicata</i>	Throughout the State
Broad-leaved rush	<i>Juncus planifolius</i>	Throughout the State
Cape pondweed	<i>Aponogeton distachyos</i>	Throughout the State
Cord-grasses	<i>Spartina</i> (all species and hybrids)	Throughout the State
Curly waterweed	<i>Lagarosiphon major</i>	Throughout the State
Dwarf eel-grass	<i>Zostera japonica</i>	Throughout the State
Fanwort	<i>Cabomba caroliniana</i>	Throughout the State
Floating pennywort	<i>Hydrocotyle ranunculoides</i>	Throughout the State
Fringed water-lily	<i>Nymphoides peltata</i>	Throughout the State

First column	Second column	Third column
Common name	Scientific name	Geographical application
Giant hogweed	<i>Heracleum mantegazzianum</i>	Throughout the State
Giant knotweed	<i>Fallopia sachalinensis</i>	Throughout the State
Giant-rhubarb	<i>Gunnera tinctoria</i>	Throughout the State
Giant salvinia	<i>Salvinia molesta</i>	Throughout the State
Himalayan balsam	<i>Impatiens glandulifera</i>	Throughout the State
Himalayan knotweed	<i>Persicaria wallichii</i>	Throughout the State
Hottentot-fig	<i>Carpobrotus edulis</i>	Throughout the State
Japanese knotweed	<i>Fallopia japonica</i>	Throughout the State
Large-flowered waterweed	<i>Egeria densa</i>	Throughout the State
Mile-a-minute weed	<i>Persicaria perfoliata</i>	Throughout the State
New Zealand pigmyweed	<i>Crassula helmsii</i>	Throughout the State
Parrot's feather	<i>Myriophyllum aquaticum</i>	Throughout the State

First column	Second column	Third column
Common name	Scientific name	Geographical application
Rhododendron	<i>Rhododendron ponticum</i>	Throughout the State
Salmonberry	<i>Rubus spectabilis</i>	Throughout the State
Sea-buckthorn	<i>Hippophae rhamnoides</i>	Throughout the State
Spanish bluebell	<i>Hyacinthoides hispanica</i>	Throughout the State
Three-cornered leek	<i>Allium triquetrum</i>	Throughout the State
Wakame	<i>Undaria pinnatifida</i>	Throughout the State
Water chestnut	<i>Trapa natans</i>	Throughout the State
Water fern	<i>Azolla filiculoides</i>	Throughout the State
Water lettuce	<i>Pistia stratiotes</i>	Throughout the State
Water-primrose	<i>Ludwigia</i> (all species)	Throughout the State
Waterweeds	<i>Elodea</i> (all species)	Throughout the State
Wireweed	<i>Sargassum muticum</i>	Throughout the State

2.4 Bird Survey

Birds present within the site were identified on both sight (Svensson *et. al.* (2010)) and sound. The breeding season for birds had just commenced and birds were identified as a possible, probable or confirmed breeder using the standardised methods developed by the British Trust for Ornithology for the Bird Atlas Survey 2007 - 2011. The evidence used for each breeding category is presented below.

- **NON-BREEDER**

M Migrant

U Summering

- **POSSIBLE BREEDER**

H Observed in suitable nesting Habitat

S Singing male

- **PROBABLE BREEDER**

P Pair in suitable nesting habitat

T Permanent Territory (many individuals on 1 day or 1 individual over 1+ wk)

D Courtship and Display

N Visiting probable Nest site

A Agitated behaviour

I Brood patch of Incubating bird

B Nest Building or excavating

- **CONFIRMED BREEDER**

DD Distraction Display

UN Used Nest or eggshells found from this season

FL Recently FLedged young or downy young

ON Adults entering or leaving nest-site indicating Occupied Nest

FF Adults carrying Faecal sac or Food for young

NE Nest containing Eggs

NY Nest with Young seen or heard

2.5 Mammal Survey

Otter

The otter (*Lutra lutra*) is protected under both national and international wildlife legislation, where it is listed under the Wildlife Act 1976 (amended 2000) and Annex II and IV of the EU Habitats Directive respectively, and is listed as a Near Threatened species in the 2009 Irish Red Data List for Mammals.

An otter survey was conducted during the site visit in accordance with best practice as described in the 'Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes' (NRA 2009), 'Otter Breeding Sites. Conservation and Management. Conserving Natura 2000 Rivers Conservation Techniques Series No. 5, (Liles, 2003)' and 'Guidelines for

the treatment of otters prior to the construction of National Road Schemes' (NRA 2006).

The otter survey was undertaken in April, when vegetation cover was low, which allows otter signs and holts to be found. The site was surveyed for signs indicative of the presence of otters, including:

- otter spraints;
- footprints;
- actual, possible or potential resting sites, (these include underground 'holts' e.g. beneath the roots of bankside trees; or above ground 'couches' e.g. in reedbeds);
- feeding remains e.g. fish carcasses (though additional evidence would be required to positively confirm such as indicative of otter presence); and/or sightings, including otter Road Traffic Accidents (RTAs).

Badger

The badger (*Meles meles*) is protected under both national and international wildlife legislation, where it is listed under the Wildlife Act 1976 (amended 2000) and the Bern Convention respectively, and is listed as a species of Least Concern in the 2009 Irish Red Data List for Mammals.

The badger survey was undertaken in April, when vegetation cover was low, which allows badger signs and setts to be found. The survey was conducted during the site visit in accordance with best practice as described in the 'Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes' (NRA 2009) and 'Guidelines for the treatment of badgers prior to the construction of National Road Schemes' (NRA 2005).

2.6 Seasonal Constraints

The survey was conducted very early in the season when bats are only beginning to become active after hibernation and return to maternity roosts. Weather during the detector survey was however very suitable with temperatures of 12° in dry, still conditions.

The growing season for vascular plants had only just begun so an additional site visit is proposed later in the growing season for completeness.

The breeding season for birds had only just commenced so additional species may be recorded during the later site visits.

The low vegetation cover within the site afforded a detailed terrestrial mammal survey to be completed.

3. SURVEY RESULTS

3.1 Receiving Environment

The proposed development site is located in the heart of Clondalkin village and consists of five buildings and their associated gardens and grounds and a round tower. The round tower at Clondalkin was built on the site of a monastery founded by St Mochua in the 7th century and is one of four remaining towers in County Dublin, the other three are located at Swords, Lusk and Rathmichael. The tower stands at 27.5 metres high and is constructed of local calp limestone. The site is bounded to the east by Tower Road, to the north by Nangor Road, to the west by a snooker hall and to the south by private residences. A mill pond associated with the Clondalkin mills is located to the south west of the site and the River Camac is located approximately 150m to the west of the site.

3.2 Conservation Designations

The lands proposed for development are not currently the subject of any nature conservation designations. The closest designated site is the Grand Canal which is currently designated as a proposed Natural Heritage Area (Site Code: 002104). This site lies c. 700m to the north of the site.

3.3 Desktop Review

Bats

The Bat Conservation Ireland Database of bat records was searched for records of bats from the Clondalkin area. There are no records for any roosts from Clondalkin village itself. Records of roosts, ad hoc observations, EIS surveys and the results of surveys such as the BATLAS 2010 project and the All Ireland Daubenton's Monitoring Project from within a 5km radius of Clondalkin include the following species: Leisler's bat (*Nyctalus leisleri*), Common Pipistrelle (*Pipistrellus pipistrellus*), Soprano Pipistrelle (*Pipistrellus pygmaeus*) an unidentified Pipistrelle (*Pipistrellus* sp.), and Daubenton's bat (*Myotis daubentonii*).

Other fauna

The National Biodiversity Data Centre has records of white clawed crayfish (*Austropotamobius pallipes*), fox (*Vulpes vulpes*), hedgehog (*Erinaceus europaeus*), rabbit (*Oryctolagus cuniculus*) and common frog (*Rana temporaria*) from the Clondalkin area.

3.4 Bat Survey

Buildings

The attics of the five buildings within the site boundary were internally inspected where possible for evidence of roosting bats. A very small (<5) number of old *Pipistrelle* sp. droppings were found in the attic of Number 16 Tower Road, which would indicate that a bat had entered the building at some point but no roost of any significance was recorded.

Trees

No bat roosts were confirmed in any of the trees within the site. The majority of trees are immature and offer little in the way of roosting opportunities for bats.

Detector Survey

The detector survey recorded no bats emerging from or returning to any of the buildings at either dusk or dawn. There was also no bat activity recorded within the site boundary.

There was two distant passes of soprano pipistrelle recorded along Tower Road and it is possible that these bats may have emerged from the old farmhouse opposite the site or the adjoining church.

3.5 Mammal Survey

No large terrestrial mammals such as badger or otter were recorded from within the site boundaries. Both fox, brown rat, house mouse, and possibly field mouse would be expected to use the site on a regular basis and droppings of both house mouse and rat were recorded in the attics of the properties surveyed. Hedgehog may also occur.

3.6 Botanical Survey

Within the gardens of the properties there are small areas of grassland which appear quite species rich and contain a variety of native plants which would have been typical of the calcareous grasslands of rural Dublin which are now either built upon and developed or have been lost through agricultural intensification. Species recorded include: oxeye daisy (*Leucanthemum vulgare*), cowslip (*Primula veris*), mouse ear hawkweed (*Hieracium pilosella*), ladies bedstraw (*Galium verum*), yarrow (*Achillea millefolium*), common vetch (*Vicia cracca*), bush vetch (*Vicia sepium*), ribwort plantain (*Plantago lanceolata*), violets (*Vicia* sp.), Dove's-foot Crane's-bill (*Geranium molle*), primrose (*Primula vulgaris*) and red fescue (*Festuca rubra*), while commoner species included Yorkshire fog (*Holcus lanatus*), daisy (*Bellis perennis*), dandelion (*Taraxacum* agg.), forget me not (*Myosotis* sp.), red clover (*Trifolium pratense*), white clover (*Trifolium repens*), St. John's wort (*Hieracium* sp.), hogweed (*Heracleum sphondylium*), greater plantain (*Plantago major*) and groundsel (*Senecio vulgaris*).

The grassland at the rear of the cottages near the round tower appears to have been both grazed and mown in the past which has created some disturbance and hence had a greater proportion of weedy species as a result including docks (*Rumex* sp.), nettle (*Urtica dioica*), creeping buttercup (*Ranunculus repens*), red dead nettle (*Lamium purpureum*), ground elder (*Aegopodium podagraria*), germander speedwell (*Veronica chamaedrys*), herb robert (*Geranium robertianum*), sun spurge (*Euphorbia helioscopia*), Canadian fleabane (*Conyza canadensis*), fumitory (*Fumaria officinalis*) and red valerian (*Centranthus ruber*).

Typical tree and shrub species in the boundaries of the gardens include box (*Buxus sempervirens*), sycamore (*Acer pseudoplatanus*), elder (*Sambucus nigra*), ash (*Fraxinus excelsior*), hawthorn (*Crataegus monogyna*), willow (*Salix* sp.), bramble (*Rubus fruticosus* agg.), privet (*Ligustrum* sp.), and Escallonia (*Escallonia* sp.).

Other shrubs included hydrangea (*Hydrangea* sp.), cypress (*Cupressus* sp.), forsythia (*Forsythia* sp.), and a specimen monkey puzzle tree (*Araucaria araucana*) near the round tower.

The stone wall along the eastern boundary of the site and the round tower itself support some vegetation including pellitory of the wall (*Parietaria judaica*), prickly sow thistle (*Sonchus asper*), red valerian, bramble, wall rue (*Asplenium ruta-muraria*), cleavers (*Galium aparine*), ragwort (*Senecio jacobaea*), common polypody fern (*Polypodium vulgare*), Yorkshire fog, purple toadflax (*Linaria purpurea*), and ivy (*Hedera helix*).

Species such as lords and ladies (*Arum maculatum*), violets and primroses (which are typically associated with woodlands and now found at the base of hedgerows and treelines) were also recorded within the site.

Two invasive species listed under Schedule Three – Part 1 of the Birds and Habitats Regulations 2011 were recorded from within the site. A population of three-cornered leek (*Allium triquetrum*) is located in the south-western corner of the site and is currently not extensive. This species was commonly planted in gardens. A small stand of Spanish bluebell (*Hyacinthoides hispanica*) was also present in both the front and rear gardens and is also a remnant of the garden plantings as are columbine (*Aquilegia* sp.) and daffodils (*Narcissus* sp.).

Ground elder was used in the middle ages as a medicinal herb to treat gout and arthritis, while Pellitory of the wall was used as a remedy for afflictions such as gout, ulcers and kidney infections.

3.7 Bird survey

The following species were recorded during the site visits and all would be expected to breed either within the site or in the local area; robin, blue tit, starling, house sparrow, chaffinch, greenfinch, blackbird, song thrush, feral pigeon, wren and jackdaw. There is nesting potential for blue tit in holes in the stone wall along the eastern boundary of the site and old swallow nests were noted in the buildings in Millview Terrace (swallows had not arrived yet from their wintering grounds at the time of survey). Starling, feral pigeon and jackdaw would also be likely to nest in these buildings.

4. RECOMMENDATIONS

4.1 Protection of Bats

The attic of No. 16 Tower Road has been used in the past in a very minor way by roosting bats (*Pipistrelle* sp.) and although no bat activity was noted during the current survey it is likely that will change once the detector surveys later in the season are conducted.

Three species of bats (common and soprano pipistrelle and Leisler's bat) are known from the Clondalkin area and would be expected to avail of the hunting

opportunity within the site and possibly roost in the buildings. This will be confirmed in future surveys.

The proposed restoration and development of the buildings could impact on roosting bats and thus a bat derogation licence is required for disturbance/works to number 16.

The development of the site also has the potential to cause disturbance to bats through the installation of inappropriate lighting and the loss of foraging habitat. Mitigation measures to offset these impacts are outlined below:

Protection/retention of existing vegetation

The existing hedgerow/treeline along the site boundaries should be retained and enhanced with additional plating of native species such as hazel (*Corylus avellana*), guelder rose (*Viburnum opulus*), spindle (*Euonymus europaeus*), blackthorn (*Prunus spinosa*), wych elm (*Ulmus glabra*) which support a high diversity of invertebrates on which bats and other species forage.

Reduction of light disturbance

Design recommendations from the BCT (2010) for wildlife-friendly lighting include:

1. Do not "over" light. This is a major cause of obtrusive light and is a waste of energy. Use only the minimum amount of light needed for safety. There are published standards for most lighting tasks, adherence to which will help minimise upward reflected light.
2. Eliminate any bare bulbs and any light pointing upwards. The spread of light should be kept near to or below the horizontal.
3. Use narrow spectrum bulbs to lower the range of species affected by lighting.
4. Use light sources that emit minimal ultra-violet light. Insects are attracted to light sources that emit ultra-violet radiation.
5. Reduce light-spill so that light reaches only areas needing illumination. Shielding or cutting light can be achieved through the design of the luminaire or with accessories, such as hoods, cowls, louvers and shields to direct the light.
6. Reduce the height of lighting columns. Light at a low level reduces ecological impact. However, higher mounting heights allow lower main beam angles, which can assist in reducing glare.
7. For pedestrian lighting, use low level lighting that is directional as possible and below 3 lux at ground level.
8. Limit the times that lights are on to provide some dark periods for wildlife.
9. Use lighting design computer programs and professional lighting designers to predict where light spill will occur.

In general any lighting used on the bridge should only illuminate the bridge and should not overspill into the river below or onto adjoining vegetation thereby ensuring that a dark corridor for foraging and commuting bats is maintained.

4.2 Control/eradication of invasive species

Three cornered leek and Spanish bluebell which are both species listed in the Birds and Habitats Regulations 2011 were recorded in the site.

Best practice recommendations for the control and/or eradication of **three cornered leek** are:

Physical Control/digging

Remove small and scattered plants first and then target outer edges of larger infestations by digging. Best removed prior to seed when plants are fully grown and parent bulb exhausted. Corms must be buried at a depth of at least 2m, incinerated or disposed of to licensed landfill. The contaminated soil should be disposed of to licensed landfill.

Chemical Control

Follow-up with herbicide to deal with missed corms re-sprouting. Glyphosate can be used during the active growth period in late spring or summer and should be applied as foliar spray, wiper applicator or spot treatment.

Best practice recommendations for the control/eradication of **Spanish bluebells** are:

Non-chemical controls

It is best to dig out bluebells while they are in leaf, as the bulbs are almost impossible to find when the plants are dormant:

- Loosen soil around the bulbs to a good depth and remove all the bulbs and underground runners.
- Where shoots appear from underground runners among clumps of low-growing garden plants, carefully insert a garden fork to its full depth close to the shoot. Work the handle of the fork to loosen the bulb then, grasping the shoot, gently ease the bulb out of the earth.
- Choose moist soil conditions to carry this out and firm in disturbed garden plants.
- All parts of these plants are poisonous if ingested, and bulbs and foliage may cause skin irritation when handled.

Caution: do not dispose of bulbs by adding them to the garden compost heap and never discard unwanted bulbs in the countryside. Consign them to a black plastic sack and leave for a year before composting.

Chemical controls

Spanish bluebells are strongly resistant to weed killers and it appears that no garden weedkiller will kill them or even check their growth.

4.3 Protection for nesting birds

Vegetation that is to be removed should not be cleared until the bird breeding season is complete (March to August inclusive) to prevent disturbance/damage to nesting birds. Where possible as much of the existing vegetation in terms of boundary trees/shrubs/bramble, etc., should be retained as this provides cover,

breeding sites and feeding for a variety of birds and is not easily reinstated through planting regimes. A variety of artificial nesting opportunities for birds such as sparrow terraces, starter cups for swallows and house martins, bird boxes and swift boxes should be considered for inclusion in both the new buildings and planting scheme on the site. Existing nesting sites such as those found in the stone boundary wall should be retained and not repointed/filled unless the structural integrity of the wall is at risk.

4.4 Retention of vegetation/botanical interest

The proposed site layout for the site includes provision for an arbour walk, an orchard, a herb and physic garden and the reinstatement of the traditional cottage gardens as illustrated below on **Figure 3**.

It is recommended that native species already present on the site are included in the proposed planting regimes as appropriate e.g. native violets, primrose, lords and ladies, cleavers, vetches, native bluebells, etc. should be considered for beneath the arbour walk.

The species rich grassland at the front of the cottages could be lifted, stored and reinstated as turf within the new landscaping proposals with a small interpretative sign/display highlighting the loss of such native grasslands from the wider countryside.

Species associated with foodstuffs and medicinal uses from the mediaeval period which were recorded on site could be included in the physic and herb gardens.



Figure 3. Proposed site layout to include an arbour walk, an orchard, a herb and physic garden and the reinstatement of the traditional cottage gardens.

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South Dublin County

Habitats Directive Assessment

Screening of the Draft

Clondalkin Round Tower Project for

Appropriate Assessment

in accordance with the requirements of
Article 6(3) of the EU Habitats Directive

May 2014

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SECTION 1

1.1 INTRODUCTION

This document represents South Dublin County Council's Appropriate Assessment (AA) Screening Report for the Clondalkin Round Tower Project in South Dublin County. This report has been prepared in accordance with the requirements of Article 6(3) of the Habitats Directive (Directive 92/43/EEC).

Council directive 92/43/EEC on the conservation of natural habitats and of wild flora and fauna – 'The Habitats Directive' was transposed into Irish law by the European Community (Natural Habitats) Regulations 1997 (S.I. No. 94/1997).

Article 6 (3) of the 'Habitats' Directive 92/43/EEC states that;
Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the sites conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, If appropriate, after having obtained the opinion of the general public.

Article 6(4) states:
'if, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of economic or social nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted. Where the site concerned hosts a priority natural habitat type and/or a priority species the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest.

Article 6(3) therefore requires that an "appropriate assessment" be undertaken for any plan or project which is not necessary for the management of a Natura 2000 site and which has the potential to have an impact on the integrity of a Natura 2000 site *i.e.* a Special Area of Conservation (SAC) or a Special Protection Area for Birds (SPA), or on the conservation objectives of such a site.

Within the area of South Dublin County, there are two areas designated as SACs: Glenasmole Valley SAC and a portion of the larger Wicklow Mountains SAC that extends into the county area. There is also one SPA which is in the process of being designated - a portion of the Wicklow Mountains SPA. These three Natura 2000 sites are all located in the Dublin Mountains, bordering with County Wicklow.

In effect, the Commission's ruling requires a robust and thorough application by all consent authorities, including planning authorities, of the requirement to undertake an appropriate

assessment of the ecological implications of any plan or project, whether within or outside of a designated site, which may impact upon its stated conservation objectives.

1.2 METHODOLOGY

This Screening Statement for Appropriate Assessment has been prepared with regard to the following guidance documents where relevant:

- *Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC* (European Commission Environment Directorate General, 2001)
- *Managing Natura 2000 Sites: The Provisions of Article 6 of the Habitats Directive 92/43/EEC* (EC Environment Directorate General, 2000)
- *Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities Circular NPW 1/10 & PSSP 2/10*
- *Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities.* (Department of Environment, Heritage and Local Government, 2010 revision)
- *Guidelines for Good Practice, Appropriate Assessment of Plans under Article 6(3) Habitats Directive* (International Workshop on Assessment of Plans under the Habitats Directive, 2011)
- *Guidance Document on Article 6(4) of the Habitats Directive 92/43/EEC.* Clarification of the Concepts of Alternative Solutions, Imperative Reasons of Overriding Public Interest, Compensatory Measures, Overall Coherence. Opinion of the European Commission (European Commission, January 2007)

There are four stages in an Appropriate Assessment as outlined in the European Commission Guidance Document (2001), summarised below:

• Stage 1: Screening

The first step to establishing if an appropriate assessment is required is referred to as 'screening' and its purpose is to determine on the basis of a preliminary assessment and objective criteria if the plan or project, alone or in combination with other plans or projects, could have a significant effect on a Natura 2000 site in view of the sites conservation objectives. The process identifies any likely impacts upon a Natura 2000 Site, either alone or in combination with other projects or plans, and considers whether these impacts are likely to be significant.

• Stage 2: Appropriate Assessment

This step considers the impact of the project or plan on the integrity of the Natura 2000 Site, either alone or in combination with other plans or projects, to the site's structure and function and its conservation objectives. Additionally, where there are deemed to be adverse impacts, an assessment of the potential mitigation of those impacts is considered.

• Stage 3: Alternative Solutions

This stage examines alternative means of achieving the objectives of the project or plan that aim to avoid adverse impacts on the integrity of the Natura 2000 site.

• Stage 4: Imperative Reasons of Overriding Public Interest

This stage is the main derogation process outlined in Article 6(4) which examines whether there are imperative reasons of overriding public interest (IROPI) for allowing a plan or project which will have adverse effects on the integrity of a Natura 2000 site to proceed.

This screening exercise was based on a desk-top study drawing on information sources which included the following: NPWS on-line data for Natura 2000 sites; Ordnance Survey of Ireland mapping and aerial photography; geological, hydrological and soils data available from GSI; water quality data (EPA and SDCC); in-house data arising from site visits to proposed Project lands.

The current documents present the results of the first of these four stages *i.e.* Screening, to determine if the Clondalkin Round Tower Project will or will not have an impact on a Natura 2000 site. Its conclusion that significant impacts on Natura 2000 sites will not occur as a result of this Project, resulted in the screening process terminating at Stage 1.

SECTION 2 SCREENING MATRIX

2.1 DESCRIPTION OF THE PLAN OR PROJECT

2.1.1 Context

South Dublin County Council intends to develop a visitor's centre at the historic site of the round tower at Clondalkin village to explain the history of the site and the area of south west county Dublin. (Figure 1)



Fig.1. An aerial view of the proposed development site from the north. (Source: Screen shots from the website "bingmaps.com" on 4/2/2014)

Previously discovered artefacts show that the Clondalkin area was first settled in the Bronze Age. Later the village became the centre of an early Christian monastic settlement founded by St. Mochua, also known as Cronan, who died AD 630. This settlement grew in size and fame

and was the nucleus of the village as we know today. The round tower, the church of St. John, the fragmentary ruin of an earlier mediaeval church, the crosses, baptismal font and the street plan are the extant traces of this settlement, which would determine the future development of the site and the village around it.

Clondalkin village is unique in having a largely undisturbed mediaeval town plan, one of the most complete and intact round towers in the country - less than 10 kilometres from Dublin city centre. The under-use of the buildings on the site, their deteriorating condition, and the historical and architectural significance of this site in conjunction with its strategic position in the collective identity of the community and as part of the core of the emerging town centre, makes this proposed development an important element in the overall regeneration of Clondalkin.

The project proposes the repair and adaptation of the existing buildings, the design of one new building and the creation of new public spaces and public gardens in order to accommodate a visitors' centre for South Dublin County, all of which will be located on a site which includes the Clondalkin Round Tower. No works are proposed to the round tower itself which is in State ownership. Responsibility for its maintenance is devolved by the Minister of Arts Heritage and the Gaeltacht to the Office of Public Works.

This report addresses the design and conservation aspects of the project. It provides a comprehensive description of the site, the proposals and their impacts. It should be read in conjunction with the drawings and archaeological report prepared by Valerie J. Keeley Ltd.) for South Dublin County Council.

The vision for the site can be summarised as follows:

- To create a vibrant, high quality and accessible urban quarter in the heart of Clondalkin village.
- To provide a centre for learning and appreciation of the history and culture of south west county Dublin, a centre for innovation and creativity.
- To contribute to the regeneration of Clondalkin village and to provide a new economic engine for the village.

2.1.2 Location and description of the Project site

The site is located in the historic core of Clondalkin village. It is in the townland of Clondalkin, the parish of Clondalkin and the barony of Uppercross. The ordnance survey grid reference for the round tower is 706903, 731400 and the map sheet number is 3326-09. The site was on a country road until the end of the nineteenth century when the village extended to Tower Road and the area was gradually urbanised, the roads paved, a well and drinking water fountain were provided. The lands around the tower have since been developed with modern housing, office and commercial developments, mainly in the last fifty years.

The village is a palimpsest of many layers built over a period of at least 1400 years. The site for the proposed centre includes the round tower, the garden to the north and west of it, the three houses of Millview Terrace, the two houses of 15 and 16 Tower Road and their gardens (see Figure 1). The area of the site for this project is 3100 sq.m., or 0.77 of an acre, or 0.3 hectares.

The ground slopes down from south to north by about 3 meters across the full length of the site. In terms of the proposed works, the site includes the area shown in the image (see Figure 2) : the tower in the south-eastern corner, the garden to the north of it, numbers 1, 2 and 3 Millview Terrace crossing from west to east and numbers 15 and 16 Tower Road from south to north along the north-eastern edge of the site.



Fig. 2. An aerial view of the proposed development site. The round tower and entrance gate are in the south-eastern corner, 1, 2 and 3 Millview Terrace run west to east and numbers 15 and 16 Tower Road from south to north. North is up the page. A note on the numbering: both the National Inventory of Architectural Heritage (N.I.A.H.) and the Land Registry office number the houses on Millview Terrace in the opposite direction, 1 to 3 from east to west. The reason for this is not yet clear. (Source of this image: South Dublin County Council's OASIS database)

In a wider sense, the project considers the adjacent church, graveyard, Tower Road and mediaeval village plan as part of the urban precinct, although no works are proposed to them by this project. The site is situated at a key junction in the village, between the former mill buildings - now a modern commercial-retail district to the north, the historic precinct of the church of St. John's, the ruined mediaeval fragment of the previous church, the early Christian cross stones and stone baptismal font, the graveyard and the nineteenth century

school building and almshouses along Tower Road, the Clondalkin leisure centre, former mill ponds, the Camac river, Corkagh Park with its historic buildings and amenities and the Camac caravan park and visitor's centre to the west.

The site is the last remaining substantial garden in the village. The round tower, the garden, the old houses, the church and graveyard are an important historical site and urban precinct which can act as a potential link to other historic sites, structures and amenities in and around Clondalkin, like Kilmahuddrick church (a.k.a. St. Cuthbert's), Ballymount castle, Deansrath house, Grange castle, Corkagh demesne, the Camac river and the Grand Canal.

The site is within walking distance of the Grand Canal to the north, the Camac and mill ponds to the west and the N7, Naas Road, to the south. The site is well serviced by public transport; Dublin Bus provides regular services to the village, the LUAS tram serves Monastery Road and Red Cow to the east and there is a regular ARROW train service to Clondalkin station to the north of the village. The village is easily accessible by private car and coach from the N7 national route and the M50 motorway. Clondalkin has many hotels, pubs, cafes and restaurants within walking distance of the site that could cater for visitors. This project has great potential to bring new life, interest, investment and visitors to Clondalkin village and to provide a centre where visitors can learn about the history of the site, the village and south county Dublin.

2.1.3 Structure and Content of the Clondalkin Round Tower Project Report

The purpose of the project report is to explain the proposed conservation and re-use of the existing buildings and the design rationale behind the proposed new garden and new building. The objective of the project report is to facilitate public consultation with the following stakeholder bodies and agencies: members of the public under Part VIII of the Planning and Development Acts; the Office of Public Works who act as guardians of the round tower; to obtain the necessary Ministerial Consents required by the National Monuments Acts; and to explain the purpose and rationale of this project to interested parties and potential funding agencies.

One particular aim of the report is to fully describe the site and its buildings, to describe their urban history, their condition and significance and to identify the causes of deterioration or problems, which presently affect the use of the buildings, their integrity and lifespan. The report identifies critical stabilisation works and future conservation and redevelopment works that are needed to stabilise the condition of the structures and to protect their heritage value and significance for future generations. These works will arrest the decay and will enable the buildings to be adapted for re-use.

The report also describes the rationale behind the new use of the buildings and the impact of the proposed works on the significance of the buildings, the round tower and the site. The report describes the site, the proposals and their impacts. It should be read in conjunction with the architectural drawings and the archaeological report prepared by Valerie J. Keeley Ltd.

The report includes specifications and methodologies and an assessment of the impact of the works on the heritage value and significance of the structures and site. Planning compliance, budget costs, testing and monitoring (asbestos, mechanical and electrical) and procurement will be addressed in future editions of the report, if the initial planning stage is successful.

Therefore the report is a live document which will be developed and revised at each stage of the project and which could ultimately be the building dossier for a completed development.

The report is based on research of the primary source historical documentation (photographs, drawings, maps, valuations, deeds, land registry and census data), and secondary source documentation (previous studies, reports, books, etc.) about the site and structures. The report is also based on the primary evidence – a survey and condition assessment of the site and of the buildings themselves. If the project is approved at Part VIII stage, a cost estimate will be refined following limited investigative opening up works to allow survey of primary structural elements, concealed material and for asbestos testing. Appropriate consents would be obtained in advance of any such works.

2.1.4 Vision and Rationale for the Plan Lands

At the scale of the village, the project proposes to enhance and connect a series of existing public spaces in Clondalkin village which are presently closed off, separated or disconnected from one another, difficult to access or hidden in backlands locations, behind existing buildings and otherwise out of sight. The project would allow access to and through the site and the village in several directions, linking the historic village and the newer commercial district to the north and linking the urban centre with the large swathe of amenity and recreation facilities to the west - the Mill ponds, the leisure centre, and parkland along the Camac river to Corkagh Demesne and Camac caravan park, using existing routes and the public and cultural functions of the proposed new use of the site to make connections within the site and as a draw to the site. The proposal hopes to underline the prominence of the Round Tower both by the physical response to the site and through the proposed use of the garden and five houses.

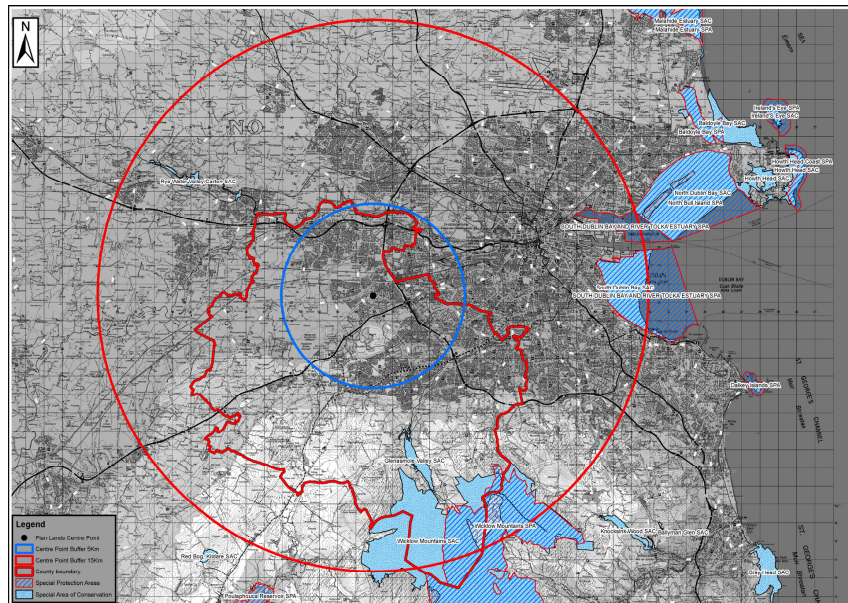
The project proposes the refurbishment of the five houses, the demolition of existing rere extensions at numbers 16, 2 and 3, the interconnection of the houses by partially opening up the party walls between them, and the development of a new garden between the houses and the round tower. It is proposed to partly restore the front gardens of Millview Terrace as cottage gardens. A small extension is proposed behind the three houses on Millview Terrace, which would link the three houses and provide space for new stairs, toilets and other services. The extension would open out to the new garden and would provide information, exhibition and performance space. No works are proposed to the round tower itself by this project.

2.2 ASSESSMENT OF RELEVANCE OF PROPOSED PLAN TO NATURA 2000 SITES

The Clondalkin Round Tower Project is not directly connected with or necessary to the management of Natura 2000 sites in South Dublin County or elsewhere.

Best practice recommends assessing Natura 2000 sites located within 15km of a proposed plan or project (see Figure 3). These Natura 2000 sites are listed in Table 1.

Figure 3 Relevance of Natura 2000 sites to the Clondalkin Round Tower Project Lands



For the Clondalkin Round Tower Project lands, the sites of relevance requiring screening assessment are the following:

- three Natura 2000 sites within South Dublin County (Glenasmole Valley SAC, Wicklow Mountains SAC, and Wicklow Mountains SPA)
- the suite of Natura 2000 sites located downstream of the Project lands in Dublin Bay (North Dublin Bay SAC, South Dublin Bay SAC, South Dublin Bay and River Tolka Estuary SPA, and North Bull Island SPA)
- one sites in County Kildare (Rye Water/Carton SAC)

There are no Natura 2000 sites located either within or directly adjacent to the proposed Project lands. For the Natura 2000 sites located within County Wicklow and County Kildare, there are no direct ecological or hydrological links (source-pathway-receptors) between the

proposed Project lands and these Natura 2000 sites. Negative impacts on these sites are therefore

TABLE 1. Natura 2000 sites within 15km of the proposed Clondalkin Round Tower Project site.

Natura 2000 sites within South Dublin County	Site Code	Other Natura 2000 sites within 15km of proposed Project site	Site Code
Glenasmole Valley SAC	001209	North Dublin Bay SAC	000206
Wicklow Mountains SAC	002122	South Dublin Bay SAC	000210
Wicklow Mountains SPA	004040	South Dublin Bay and River Tolka Estuary SPA	004024
		North Bull Island SPA	004006
		Rye Water Valley/Carton SAC, Co. Kildare	001398

highly unlikely by virtue of distance from the Clondalkin Round Tower Project site and the absence of source-pathway-receptors.

Within South Dublin County, the Clondalkin Round Tower Project lands are also distant from the Glenasmole Valley SAC which is approximately 8km SE of the Plan Lands. The Project Lands are also approximately 13km NW of the Wicklow Mountains SAC and Wicklow Mountains SPA. As the Round Tower Project Lands are located at such a distance, and in a separate river catchment area to these three Natura 2000 sites, there are no relevant source-pathway-receptors connecting the Project lands to these Natura 2000 sites. Negative impacts on these Natura 2000 sites are therefore also highly unlikely.

While there are no rivers or streams on the proposed Project lands which could act as a source-pathway-receptor between the Project lands and the suite of Natura 2000 sites downstream of the Project site, a possible hydrological connection is deemed to exist by virtue of the foul and surface water drainage systems in the Clondalkin area.

Surface water drainage is facilitated via a county-wide surface water drainage system which ultimately discharges into Dublin Bay. The Grand Canal Trunk Sewer (GCTS) services the plan lands; this sewer flows into the wastewater treatment works in Ringsend. The Council is cognisant of the need to ensure the requisite wastewater treatment provision to allow for development growth without which the development would conflict with the requirements of the Urban Wastewater Treatment Directive which requires the collection and high level treatment of wastewater, specifically those to be discharged to sensitive waters such as Dublin Bay (the terms of the recent EPA operating license reinforce this aspect).

2.3 AVOIDANCE OF IMPACTS

The preparation of the Clondalkin Round Tower Project was an iterative process which worked to inform the development of appropriate policies and objectives from the earliest stages of the plan's preparation process. As a result, there are a number of policies and objectives in place that relate to general environmental protection throughout the proposed Project lands.

The relevance of the proposed Project to the Natura 2000 network was assessed above in Section 2.2 where the only potentially relevant impact was seen to arise from a hydrological link (via the surface water drainage system and the Grand Canal Trunk Sewer) that exists between the Project lands and the Dublin Bay Natura 2000 sites.

The full range of policies and objectives contained within the South Dublin County Council Development Plan 2010 – 2016 will also apply to all development proposals such as the Clondalkin Round Tower Project. The SDCC County Development Plan contains a number of policies and objectives that relate to the protection of the environment, landscape, water quality, and Natura 2000 sites. The protection of SACs and pNHAs is specifically referred to in Policy LHA 6 of the CDP:

Policy LHA 6: *It is the policy of the Council to protect and preserve areas designated or proposed as Special Areas of Conservation (E.U. Habitats Directive) and proposed Natural Heritage Areas'.*

In addition, the requirements for appropriate assessment of potential impacts on Natura 2000 sites are detailed in Policy LHA 7:

Policy LHA 7: *It is the policy of the Council that projects giving rise to significant direct, indirect or secondary impacts on Natura 2000 sites arising from their size or scale, land take, proximity, resource requirements, emissions (disposal to land, water or air), transportation requirements, duration of construction, operation, decommissioning or from any other effects shall not be permitted on the basis of this Plan (either individually or in combination with other plans or projects); Except as provided for in Article 6(4) of the Habitats Directive, viz. There must be:*

- (a) No alternative solution available;*
- (b) Imperative reasons of overriding public interest for the plan to proceed and*
- (c) Adequate compensatory measures in place.*

All subsequent plan-making and adoption of plans arising from this Plan will be screened for the need to undertake Appropriate Assessment under Article 6 of the Habitats Directive. Where relevant, projects will be screened for the need to undertake Appropriate Assessment under Article 6 of the Habitats Directive.

A range of other policies in the County Development Plan 2010-2016 relate to water quality and waste water treatment, all of which aim to eliminate or reduce the potential for deterioration of water quality, both ground water and surface water (see Appendix 3). In particular, Policy WD2 of the County development Plan specifically relates to the requirement that sufficient capacity in public waste water treatment must precede development.

Policy WD 2 Wastewater Treatment Plants and Wastewater Collection Systems
It is the policy of the Council that development shall be preceded by sufficient capacity in the public wastewater treatment plants and appropriate extensions in the existing public wastewater collection systems.

For the Clondalkin Round Tower Project, its broad objectives were assessed to determine whether or not the potential existed for these to have a significant negative impact on the Natura 2000 network.

The nature of the proposed development centres on the repair and adaptation of five existing buildings on the site, the demolition of existing rear extensions and the design of one new building, the interconnection of the houses by partially opening up the party walls between them, and the creation of new public spaces and public gardens in order to accommodate a visitors' heritage centre for South Dublin County.

An ecological assessment has also been undertaken on the proposed Project site so as ensure that there will be no negative impacts on protected species such as bats by virtue of the proposed works to the site buildings and demolition activities. No active bat roosts were detected and mitigation measures proposed in the ecological survey will be adhered to enhance general biodiversity and potential bat usage of the site into the future.

The nature and extent of these proposed Project activities, in conjunction with the overarching policies in the County development Plan 2010-2016 which act to protect the County's environment (including Natura 2000 sites) are highly unlikely to result in negative impacts on Natura 2000 sites at a distance of over 15km from the Clondalkin Round Tower Project site.

Adherence to these County Development Plan's protective policies and objectives (relevant objectives listed in Appendix 3), will therefore act to avoid significant downstream impacts on Natura 2000 sites.

2.4 OTHER INSTRUMENTS CONSIDERED

The proposed Clondalkin Round Tower Project was considered in the context of a range of other higher level measures, all of which assist in mitigating any potential impacts of the proposed plan. These include the following National Plans, Regional Plans and Local Plans: Sustainable Development – A Strategy for Ireland (1997); National Spatial Strategy 2002-2020; National Climate Change Strategy, 2000; National Heritage Plan (2002); The Planning System and Flood Risk Management Guidelines 2009; Regional Planning Guidelines 2010 – 2020: A Platform For Change And Transport 21; Sustainable Residential Development In Urban Areas 2009; The Retail Planning Strategy For The Greater Dublin Area (2008-2016); South Dublin County Council Development Plan 2010 – 2016; Green City Guidelines' (UCD Urban Institute Ireland 2008).

SECTION 3 DESCRIPTION OF NATURA 2000 SITES

There are no Natura 2000 sites located within the proposed Clondalkin Round Tower Project site. The Natura 2000 sites located within 15km of the Project site are listed in Table 1. There are also two proposed Natural Heritage Area (pNHA) in the vicinity of the Project lands. The Grand Canal pNHA (Site Code: 002104) is located c.2km to the north of the Project site the Dodder Valley pNHA (Site Code: 000991) is located c. 5km south east of the Project lands. There are no other designated biodiversity areas in the vicinity of the proposed Clondalkin Round Tower Project site which have a recognised National, European Union or International protection status.

Full site descriptions of the Natura 2000 sites listed in Table 1 are provided in Appendix 1. A summary of the main elements of interest for each of these sites follows:

Glenasmole Valley SAC contains a high diversity of habitats and plant communities and lists three habitats listed on Annex I of the EU Habitats Directive: petrifying springs with tufa formation, semi-natural dry grassland and scrubland facies on calcareous substrate (*Festuco-Brometalia*) (important orchid sites), and *Molinia* meadows on calcareous, peaty, or clayey-silt-laden soils (*Molinion caeruleae*). Both petrifying springs and orchid-rich calcareous grasslands also qualify as Priority Habitats under the Habitats Directive. The presence of four Red Data Book plant species further enhances the value of the site as does the presence of populations of several mammal and bird species of conservation interest. The River Dodder flows through the valley and has been impounded here to form two reservoirs which supply water to south Dublin.

Draft Conservation Objectives:

- 1 To maintain the Annex 1 habitats for which the cSAC has been selected at favourable conservation status – *Petrifying springs with tufa formation, Semi-natural dry grassland and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (*important orchid sites), *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)
- 2 To maintain the extent, species richness and biodiversity of the entire site.
- 3 To establish effective liaison and co-operation with landowners, legal users and relevant authorities.

Wicklow Mountains SAC is an important complex, extensive, upland site covering much of the Wicklow Mountains and a portion of the Dublin Mountain range. Within the boundaries of South Dublin County, the SAC encompasses the mountains of Ballymorefenn, Corrig, Kilakee, and Cruagh, stretching south to the summit of Kippure Mountain at the border with County Wicklow. While the entire SAC lists ten habitats listed in Annex I of the EU Habitats Directive, the vegetation within the South Dublin County portion of the site mainly provides good examples of the typical upland habitats of heath, blanket bog and upland grassland. Several rare, protected plant and animal species also occur in this SAC.

Draft Conservation Objectives:

- 1 To maintain the Annex 1 habitats for which the cSAC has been selected at favourable conservation status:– Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea; Natural dystrophic lakes and ponds; Northern Atlantic wet heaths with *Erica tetralix*; European dry heaths; Alpine and Boreal heaths; Species-rich *Nardus* grasslands, on siliceous substrates in

mountain areas (and submountain areas, in Continental Europe); Blanket bog; Siliceous scree of the montane to snow levels; (*Androsacetalia alpinae* and *Galeopsietalia ladani*); Calcareous rocky slopes with chasmophytic vegetation; Siliceous rocky slopes with chasmophytic vegetation; Old sessile oak woods with *Ilex* and *Blechnum* in British Isles.

- 2 To maintain the Annex 2 species for which the cSAC has been selected at favourable conservation status: - *Lutra lutra*
- 3 To maintain the extent, species richness and biodiversity of the entire site.
- 4 To establish effective liaison and co-operation with landowners, legal users and relevant authorities.

Wicklow Mountains SPA (Site Code 4040) is an extensive upland site, comprising a substantial part of the Wicklow Mountains (See Appendix for full site description). The site, which is within the Wicklow Mountains National Park, is fragmented into about twenty separate parcels of land. Much of the site is State-owned and managed for nature conservation based on traditional landuses for the uplands. The site is of high ornithological importance as it supports very good examples of upland and woodland bird communities, several of which are very rare at a national level. Two species, Ring Ouzel and Red Grouse, are Red-listed and their status is of high conservation concern.

Main Conservation Objective:

To maintain the special conservation interests for the SPA at favourable conservation status – Merlin, Peregrine.

Rye Water Valley/Carlton (Site Code 001398)

This site is located between Leixlip and Maynooth in Co. Kildare. It extends along the Rye Water, a tributary of the River Liffey. The woodlands at Carlton Demesne are the site of a rare fungus, *Diderma deplanatum* and also support birds such as Blackcap, Woodcock, and Long-eared Owls. On or about the lake, birds such as Little Grebe, Coot, Moorhen, Tufted Duck, Teal, and Kingfisher have been recorded. Kingfisher are listed in Annex 1 of the EU Birds Directive. The mineral spring occurring on the site is also listed as an Annex 1 habitat of the EU Habitats Directive. The Rye Water is a spawning ground for Trout and Salmon while White-clawed crayfish *Austropotomobius pallipes* has been recorded at Leixlip. Rare snail species and dragonflies also occur in the marsh vegetation near to Louisa Bridge. The main importance of the site lies in the presence of several rare and threatened plant and animal species and of a rare habitat – thermal, mineral, petrifying spring.

Draft Conservation Objectives:

1. To maintain the Annex 1 habitats for which the cSAC has been selected at favourable conservation status:– *Petrifying springs with tufa formation
2. To maintain the Annex 2 species for which the cSAC has been selected at favourable conservation status: - *Vertigo angustior*, *Vertigo moulinsiana*
3. To maintain the extent, species richness and biodiversity of the entire site.
4. To establish effective liaison and co-operation with landowners, legal users and relevant authorities.

North Dublin Bay SAC (Site Code 000206) covers the inner part of north Dublin Bay, the seaward boundary extending from the Bull Wall lighthouse across to the Martello Tower at Howth Head (See Appendix for full site description). The North Bull Island is the focal point

of this site. This SAC site is an excellent example of a coastal site with all the main habitats represented. It holds good examples of ten habitats that are listed on Annex I of the E.U. Habitats Directive; one of these is listed with priority status. Several wintering bird species have populations of international importance, while some invertebrates on the site are of national importance. The site also contains a number of rare and scarce plants including some which are legally protected.

Draft Conservation Objectives:

1. To maintain the Annex 1 habitats for which the cSAC has been selected at favourable conservation status:– Mudflats and sandflats not covered by seawater at low tide; Annual vegetation of drift lines; Salicornia and other annuals colonising mud and sand; Atlantic salt meadows (*Glauco Puccinellietalia maritima*); *Petalophyllum ralfsii*; Mediterranean salt meadows (*Juncetalia maritimi*); Embryonic shifting dunes; Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes); Fixed coastal dunes with herbaceous vegetation (grey dunes); Humid dune slacks
2. To maintain the extent, species richness and biodiversity of the entire site.
3. To establish effective liaison and co-operation with landowners, legal users and relevant authorities.

South Dublin Bay SAC (Site Code 000210) lies south of the River Liffey and extends from the South Wall to the west pier at Dun Laoghaire (See Appendix for full site description). It is a fine example of a coastal system with extensive sand and mudflats. South Dublin Bay is also an internationally important bird site.

Draft Conservation Objectives:

1. To maintain the Annex 1 habitats for which the cSAC has been selected at favourable conservation status: - Mudflats and sandflats not covered by seawater at low tide.
2. To maintain the extent, species richness and biodiversity of the entire site.
4. To establish effective liaison and co-operation with landowners, legal users and relevant authorities.

South Dublin Bay and River Tolka Estuary SPA (Site Code 4024) comprises a substantial part of Dublin Bay. It includes the intertidal area between the River Liffey and Dun Laoghaire, and the estuary of the River Tolka to the north of the River Liffey, as well as Booterstown Marsh. A portion of the shallow marine waters of the bay is also included (See Appendix for full site description).

The site is an important site for wintering waterfowl, being an integral part of the internationally important Dublin Bay complex. It is of international importance for Light-bellied Brent Goose and of national importance for nine other waterfowl species. As an autumn tern roost, it is also of international importance. Furthermore, the site supports a nationally important colony of Common Tern. All of the tern species using the site are listed on Annex I of the E.U. Birds Directive, as are Bartailed Godwit and Mediterranean Gull.

Main Conservation Objective:

To maintain the special conservation interests for the SPA at favourable conservation status – Light-bellied Brent Goose, Oystercatcher, Ringed Plover, Golden Plover, Knot, Sanderling,

Dunlin, Bar-tailed Godwit, Redshank, Black-headed Gull, Roseate Tern, Common Tern, Arctic Tern, and Wetland and Waterbirds.

SECTION 4 ASSESSMENT OF POTENTIAL IMPACTS

4.1 ASSESSMENT OF PROPOSED CLONDALKIN ROUND TOWER PROJECT

In Section 2.2 (Assessment of relevance of proposed Plan to Natura 2000 Sites), a potential hydrological link was identified as being the primary source-pathway-receptor between the proposed Project site and Natura 2000 sites – primarily the Dublin Bay Natura 2000 sites. No other hydrological or ecological links to other Natura 2000 sites within 15km of the Project lands was identified as posing a potential threat. This hydrological link via the County's surface water drainage system thereby potentially provides a vehicle for the transfer of negative impacts to these Natura 2000 sites downstream of the Project lands which rely on water quality for the maintenance of their conservation objectives.

An assessment of the extent and nature of the proposed Project was undertaken and no significant impacts were identified.

The proposed Project was assessed following the factors as listed: - size and scale; land-take; distance from the Natura 2000 site or key features of the site; resource requirements (water abstraction etc.); emissions (disposal to land, water, or air); excavation requirements); transportation requirements; duration of construction, operation, decommissioning, etc.; habitat area; disturbance to key species; habitat or species fragmentation; species density; changes in key indicators of conservation value (water quality etc.); climate change; key relationships that define the structure of the site; key relationships that determine the function of the site.

The nature and extent of the works proposed, in conjunction with the over-arching policies of the South Dublin County Development Plan 2010-2016 within which framework the Clondalkin Round Tower Project is placed, all serve to ensure that no significant negative impact arises from the proposed Plan.

4.2 CUMULATIVE IMPACTS

The National Spatial Strategy 2002-2020 and the National Development Plan 2007-2013 set the national planning framework within which the proposed Clondalkin Round Tower Project has been prepared. Within South Dublin County itself, the County Development Plan 2010-2016 provides the local framework within the regional approach of the Regional Planning Guidelines 2010-2020. These documents have been subject to screening for Appropriate Assessment to ensure no significant impacts are likely. The proposed Clondalkin Round Tower Project has been prepared taking the objectives and policies of these plans into account.

The assessment for the proposed Clondalkin Round Tower Project indicates there will be no significant impacts arising from this plan. In relation to potential cumulative impacts from the proposed Project in conjunction with other plans and projects, it is a requirement that each of these, in addition to the proposed Project itself, will all be subject to screening for appropriate assessment to ensure there will be no significant negative impact on Natura 2000 sites. Taken together, adherence to this required approach will ensure no cumulative impacts will arise from these plans.

SECTION 5 CONCLUSIONS

This screening report has evaluated the proposed Clondalkin Round Tower Project to determine whether or not significant negative impacts on Natura 2000 sites are likely to arise by virtue of the Plan's implementation. The report finds that the Plan has been formulated to ensure that developments and effects arising from the Plan, either individually or in combination with other plans and projects, shall not give rise to significant effects on the integrity of any Natura 2000 site.

The Appropriate Assessment procedure for this proposed Plan is therefore concluded at this Screening Stage and a detailed (Stage 2) Appropriate Assessment is not required.

Appendix 1

Natura 2000 descriptions (as listed in Table 1)

SITE SYNOPSIS

SITE NAME: GLENASMOLE VALLEY

SITE CODE: 001209

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. The non-calcareous bedrock of the Glenasmole Valley has been overlain by deep drift deposits which now line the valley sides. They are partly covered by scrub and woodland, and on the less precipitous parts, by a herb-rich grassland. There is much seepage through the deposits, which brings to the surface water rich in bases, which induces local patches of calcareous fen and, in places, petrifying springs, a priority habitat listed on Annex I of the EU Habitats Directive.

Examples of calcareous fen and flush areas occur between the two reservoirs, where sedges (*Carex flacca* and *Carex panicea*) are joined by such species as Grass of Parnassus (*Parnassia palustris*), Few-flowered Spike-rush (*Eleocharis quinqueflora*), Zig-zag clover (*Trifolium medium*) and the scarce Fen Bedstraw (*Galium uliginosum*).

Orchid-rich grassland occurs in the drier parts of this site and in places grades into *Molinia* meadow, both of these habitats are listed on Annex I of the EU Habitats Directive. Species recorded in these habitats include Frog Orchid (*Coeloglossum viride*), Northern Marsh-orchid (*Dactylorhiza purpurella*), Fragrant Orchid (*Gymnadenia conopsea*), Marsh Helleborine (*Epipactis palustris*), Early-purple Orchid (*Orchis mascula*) and Greater Butterfly Orchid (*Platanthera chlorantha*).

Two Red Data Book species have also been found here, Green-winged Orchid (*Orchis morio*) and Small-white Orchid (*Pseudorchis albida*). The sward includes Sweet Vernal-grass (*Anthoxanthum odoratum*), Creeping Bent (*Agrostis stolonifera*) and Crested Dog's-tail (*Cynosurus cristatus*). Other species which occur are Common Bird's-foot-trefoil (*Lotus corniculatus*), Kidney Vetch (*Anthyllis vulneraria*), Common Restharrow (*Ononis repens*), Yellow-wort (*Blackstonia perfoliata*) and Autumn Gentian (*Gentianella amarella*).

Woodland occurs in patches around the site. On the east side of the valley, below the northern lake, a Hazel (*Corylus avellana*) wood has developed on the unstable calcareous slopes and includes Ash (*Fraxinus excelsior*), Downy Birch (*Betula pubescens*), Goat Willow (*Salix caprea*) and (Irish) Whitebeam (*Sorbus hibernica*). Spring Wood-rush (*Luzula pilosa*), Wood Speedwell (*Veronica montana*) and Brambles (*Rubus fruticosus* agg.) are included in the ground flora.

Wet semi-natural broad-leaved woodland is also found around the reservoirs and includes Alder (*Alnus glutinosa*) and Willow (*Salix* spp.) with Yellow Iris (*Iris pseudacorus*), Horsetail (*Equisetum* spp.), Brambles and localised patches of Japanese Knotweed (*Reynoutria japonica*), an introduced species.

The lake shore vegetation is not well developed, which is typical of a reservoir. There are occasional patches of Canary-grass (*Phalaris arundinacea*) and Purple-loosestrife (*Lythrum salicaria*), which are more extensive around the western shore of the northern lake, along with Common Marsh-bedstraw (*Galium palustre*) and Water Mint (*Mentha aquatica*). Other

vegetation includes Shoreweed (*Littorella uniflora*) and the scarce Water Sedge (*Carex aquatilis*).

As well as the Green-winged Orchid and Small-white Orchid, two other threatened species which are listed in the Irish Red Data Book also occur in the site, Yellow Archangel (*Lamiastrum galeobdolon*) and Yellow Bird's-nest (*Monotropa hypopitys*).

The site provides excellent habitat for bat species, with at least four species recorded: Pipistrelle, Leisler's, Daubenton's and Brown Long-eared Bat. Otter occurs along the river and reservoirs. These habitats also support Kingfisher, an Annex I species under the EU Birds Directive.

Glenasmole Valley contains a high diversity of habitats and plant communities, including three habitats listed on Annex I of the EU Habitats Directive. The presence of four Red Data Book plant species further enhances the value of the site as does the presence of populations of several mammal and bird species of conservation interest.

03.09.2001

SITE SYNOPSIS

SITE NAME: WICKLOW MOUNTAINS

SITE CODE: 002122

This site is a complex of upland areas in Counties Wicklow and Dublin, flanked by Blessington Reservoir to the west and Vartry Reservoir in the east, Cruagh Mt. in the north and Lybagh Mt. in the south. Most of the site is over 300m, with much ground over 600m and the highest peak of Lugnaquilla at 925m.

The Wicklow Uplands comprise a core of granites flanked by Ordovician schists, mudstones and volcanics. The form of the Wicklow Glens is due to glacial erosion. The Wicklow Mountains are drained by several major rivers including the Dargle, Liffey, Dodder, Slaney and Avonmore. The river water in the mountain areas is often peaty, especially during floods.

The topography is typical of a mountain chain, showing the effects of more than one cycle of erosion. The massive granite has weathered characteristically into broad domes. Most of the western part of the site consists of an elevated moorland, covered by peat. The surrounding schists have assumed more diverse outlines, forming prominent peaks and rocky foothills with deep glens. The dominant topographical features are the products of glaciation. High corrie lakes, deep valleys and moraines are common features of this area. The substrate over much of the area is peat, usually less than 2m deep. Poor mineral soil covers the slopes and rock outcrops are frequent.

The vegetation over most of the site is a mosaic of heath, blanket bog and upland grassland (mostly on peaty soil, though some on mineral soil), with stands of dense Bracken (*Pteridium aquilinum*) and small woodlands mainly along the rivers. Mountain loughs and corrie lakes are scattered throughout the site. The site supports many habitats that are listed on Annex I of the E.U. Habitats Directive.

The two dominant vegetation communities in the area are heath and blanket bog. Heath vegetation, with both wet and dry heath well represented, occurs in association with blanket

bog, upland acid grassland and rocky habitats. The wet heath is characterised by species such as Ling (*Calluna vulgaris*), Cross-leaved Heath (*Erica tetralix*), Cottongrasses (*Eriophorum* spp.), Tormentil (*Potentilla erecta*), Mat-grass (*Nardus stricta*), Bent grasses (*Agrostis* spp.) and bog mosses (*Sphagnum* spp.). In places the wet heath occurs in conjunction with flush communities and streamside vegetation, and here species such as Heath Rush (*Juncus squarrosus*) and *Carex* spp. are found. Dry heath at this site is confined to shallow peaty soils on steep slopes where drainage is better and particularly in sheltered conditions. It is characterised by species such as Ling, Gorse (*Ulex* spp.), Bell Heather (*Erica cinerea*), Bilberry (*Vaccinium myrtillus*), Purple Moor-grass (*Molinia caerulea*) and lichens (*Cladonia* spp.). In places the heath grades into upland grassland on mineral soil, some examples of which correspond to the E.U. Habitats Directive Annex I priority habitat species-rich *Nardus* grassland.

Blanket bog is usually dominated by Cottongrasses, Ling and bog mosses (*Sphagnum* spp.). On steeper slopes there is some flushing and here Purple Moor-grass, Heath Rush, and certain *Sphagnum* species become more common. The Liffey Head blanket bog is among the best of its kind in eastern Ireland, with deep peat formations and an extensive system of dystrophic pools developed among the hummocks and hollows on the bog surface. The vegetation is largely dominated by Ling and Cross-leaved Heath, with Cottongrasses (*Eriophorum vaginatum* and *E. angustifolium*), Deergrass (*Scirpus cespitosus*) and Bog Asphodel (*Narthecium ossifragum*). In drier areas, Bilberry and Cowberry (*Vaccinium vitis-idaea*) are common, while the scarce Bog Rosemary (*Andromeda polifolia*) is also found. Blanket bog occurs over extensive areas of deeper peat on the plateau and also on gentle slopes at high altitudes. Peat erosion is frequent on the peaks - this may be a natural process, but is likely to be accelerated by activities such as grazing.

Due to the underlying rock strata, the water of the rivers and streams tends towards acidity. The water is generally oligotrophic and free from enrichment. The lakes within the area range from the high altitude lakes of Lough Firrib and Three Lakes, to the lower pater-noster lakes of Glendalough, Lough Tay and Lough Dan. Spectacular corrie lakes (such as Loughs Bray (Upper and Lower), Ouler, Cleevaun, Arts, Kellys and Nahanagan) exhibit fine sequences of moraine stages. The deep lakes are characteristically species poor, but hold some interesting plants including an unusual form of Quillwort (*Isoetes lacustris* var. *morei*), a Stonewort (*Nitella* sp.) and Floating Bur-reed (*Sparganium angustifolium*). The Red Data Book fish species Arctic Char has been recorded from Lough Dan, but this population may now have died out.

Alpine vegetation occurs on some of the mountain tops, notably in the Lugnaquilla area, and also on exposed cliffs and scree slopes elsewhere in the site. Here alpine heath vegetation is represented with species such as Crowberry (*Empetrum nigrum*), Cowberry, Dwarf Willow (*Salix herbacea*), the grey-green moss *Racomitrium lanuginosum* and scarce species such as Mountain Clubmoss (*Diphasiastrum alpinum*), Firmoss (*Huperzia selago*), and Starry Saxifrage (*Saxifraga stellaris*). Some rare arctic-alpine species have been recorded, including Alpine Lady's-mantle (*Alchemilla alpina*) and Alpine Saw-wort (*Saussurea alpina*).

Small areas of old oakwood (Blechno-Quercetum petraeae type) occur on the slopes of Glendalough and Glenmalure, near L. Tay and L. Dan, with native Sessile Oak (*Quercus petraea*) 100-120 years old. On wetter areas, wet broadleaved semi-natural woodlands occur, which are dominated by Downy Birch (*Betula pubescens*). Mixed woodland with non-native tree species also occurs.

The site supports a range of rare plant species, which are listed in the Irish Red Data Book: Parsley Fern (*Cryptogramma crispa*), Marsh Clubmoss (*Lycopodiella inundata*), Greater Broom-rape (*Orobancha rapum-genistae*), Alpine Lady's-mantle, Alpine Saw-wort, Lanceolate Spleenwort (*Asplenium billotii*), Small White Orchid (*Pseudorchis albida*) and Bog Orchid (*Hammarbya paludosa*). The latter three species are legally protected under the Flora (Protection) Order, 1999. The rare Myxomycete fungus, *Echinostelium colliculosum*, has been recorded from the Military Road.

Mammals and birds which occur are typical of the uplands. Deer are abundant, mainly hybrids between Red and Sika Deer. Other mammals include Hare, Badger and Otter, the latter being a species listed on Annex II of the E.U. Habitats Directive. Pine Marten has recently been confirmed as occurring within the site. Among the birds, Meadow Pipit, Skylark, Raven and Red Grouse are resident throughout the site. Wheatear, Whinchat and the scarce Ring Ouzel are summer visitors. Wood Warbler and Redstarts are rare breeding species of the woodlands. Dipper and Grey Wagtail are typical riparian species. Merlin and Peregrine Falcon, both Annex I species of the EU Birds Directive, breed within the site. Recently, Goosander has become established as a breeding species.

Large areas of the site are owned by NPWS, and managed for nature conservation based on traditional landuses for the uplands. The most common landuse is traditional sheep grazing. Other land uses include turf-cutting, mostly hand-cutting but some machine-cutting occurs. These activities are largely confined to the Military Road, where there is easy access. Large areas which had been previously hand-cut and are now abandoned, are regenerating. In the last 40 years, forestry has become an important landuse in the uplands, and has affected both the wildlife and the hydrology of the area. Amenity use is very high, with Dublin city close to the site.

Wicklow Mountains is important as a complex, extensive upland site. It shows great diversity from a geomorphological and a topographical point of view. The vegetation provides examples of the typical upland habitats with heath, blanket bog and upland grassland covering large, relatively undisturbed areas. In all ten habitats listed on Annex I of the EU Habitats Directive are found within the site. Several rare, protected plant and animal species occur.

12.10.2001

SITE SYNOPSIS

SITE NAME: WICKLOW MOUNTAINS SPA

SITE CODE: 004040

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 being over 600 m; the highest peak is Lugnaquilla (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 are blanket bog, heaths and upland grassland. The bog habitat is usually dominated by Ling (*Calluna vulgaris*), Cross-leaved Heath (*Erica tetralix*), Cottongrasses (*Eriophorum vaginatum* and *E. angustifolium*), Deergrass (*Scirpus cespitosus*)

and Bog Asphodel (*Narthecium ossifragum*). Bog mosses (*Sphagnum* spp.) are well represented. On shallower peats, dry heath is represented by such species as Ling, Gorse (*Ulex* spp.), Bell Heather (*Erica cinerea*), Bilberry (*Vaccinium myrtillus*), Purple Moor-grass (*Molinia caerulea*) and lichens (*Cladonia* spp.). Fine examples of native Oak woodlands are found in the Glendalough area, and include Sessile Oak (*Quercus petraea*) trees of 100-120 years old. Glendalough Lake is a good example of an oligotrophic system.

The site supports good examples of both upland and woodland bird communities. The open peatlands provide excellent foraging habitat for Merlin (5-10 pairs) and Peregrine (c. 10 pairs). The Merlins nest in old crows nests, whilst the Peregrines nest on cliffs and crags. Other birds of the open peatlands and scree slopes include Ring Ouzel, now a very rare bird in Ireland, and Red Grouse. The Wicklow uplands are the only regular location in Ireland where Goosander breeds, with the Glendalough lakes being a regular site. This species was proved to be breeding only as recently as 1994 and it is now well established. Whinchat, a localised species in Ireland, breeds within the site.

The Glendalough Oak woods are a regular location for several rare breeding passerines. Redstart is recorded most years and 1-2 pairs probably breed. Wood Warbler is another annual visitor, with perhaps up to 5 pairs in some years. Recently, Garden Warbler has been recorded, whilst Blackcap has a very strong breeding population.

The site, which is within the Wicklow Mountains National Park, is fragmented into about twenty separate parcels of land. Much of the site is State-owned and managed for nature conservation based on traditional landuses for the uplands. The most common landuse is traditional sheep grazing. Other land uses include turf-cutting, mostly by hand though some machine-cutting also occurs. Grazing by sheep and deer in the woodlands can be damaging as it prevents or reduces regeneration. Dublin City is close to the site and amenity use is very high; if not properly controlled, recreational activities could cause disturbance to some bird species.

This site is of high ornithological importance as it supports very good examples of upland and woodland bird communities. Several of the species which occur are very rare at a national level. Two species, Ring Ouzel and Red Grouse, are Red-listed and their status is of high conservation concern. Also of note is that Merlin and Peregrine are both listed on Annex I of the E.U. Birds Directive.

25.8.2004

SITE SYNOPSIS

SITE NAME : NORTH DUBLIN BAY SAC

SITE CODE : 000206

This site covers the inner part of north Dublin Bay, the seaward boundary extending from the Bull Wall lighthouse across to the Martello Tower at Howth Head. The North Bull Island is the focal point of this site. The island is a sandy spit which formed after the building of the South Wall and Bull Wall in the 18th and 19th centuries. It now extends for about 5 km in length and is up to 1 km wide in places.

A well-developed and dynamic dune system stretches along the seaward side of the island. Various types of dunes occur, from fixed dune grassland to pioneer communities on foredunes. Marram Grass (*Ammophila arenaria*) is dominant on the outer dune ridges, with Lyme Grass (*Leymus arenarius*) and Sea Couchgrass (*Elymus farctus*) on the foredunes. Behind the first dune ridge, plant diversity increases with the appearance of such species as Wild Pansy (*Viola tricolor*), Kidney Vetch (*Anthyllis vulneraria*), Bird's-foot Trefoil (*Lotus corniculatus*), Rest Harrow (*Ononis repens*), Yellow Rattle (*Rhinanthus minor*) and Pyramidal Orchid (*Anacamptis pyramidalis*). In these grassy areas and slacks, the scarce Bee Orchid (*Ophrys apifera*) occurs.

About 1 km from the tip of the island, a large dune slack with a rich flora occurs, usually referred to as the 'Alder Marsh' because of the presence of Alder trees (*Alnus* spp). The water table is very near the surface and is only slightly brackish. Saltmarsh Rush (*Juncus maritimus*) is the dominant species, with Meadow Sweet (*Filipendula ulmaria*) and Devil's-bit (*Succisa pratensis*) being frequent. The orchid flora is notable and includes Marsh Helleborine (*Epipactis palustris*), Common Twayblade (*Listera ovata*), Autumn Lady's-tresses (*Spiranthes spiralis*) and Marsh orchids (*Dactylorhiza* spp.)

Saltmarsh extends along the length of the landward side of the island. The edge of the marsh is marked by an eroding edge which varies from 20 cm to 60 cm high. The marsh can be zoned into different levels according to the vegetation types present. On the lower marsh, Glasswort (*Salicornia europaea*), Saltmarsh Grass (*Puccinellia maritima*), Annual Sea-blite (*Suaeda maritima*) and Greater Sea-spurrey (*Spergularia media*) are the main species. Higher up in the middle marsh Sea Plantain (*Plantago maritima*), Sea Aster (*Aster tripolium*), Sea Arrowgrass (*Triglochin maritima*) and Sea Pink (*Armeria maritima*) appear. Above the mark of the normal high tide, species such as Scurvy Grass (*Cochlearia officinalis*) and Sea Milkwort (*Glaux maritima*) are found, while on the extreme upper marsh, Sea Rushes (*Juncus maritimus* and *J. gerardii*) are dominant. Towards the tip of the island, the saltmarsh grades naturally into fixed dune vegetation.

The island shelters two intertidal lagoons which are divided by a solid causeway. The sediments of the lagoons are mainly sands with a small and varying mixture of silt and clay. The north lagoon has an area known as the "Salicornia flat", which is dominated by *Salicornia dolichostachya*, a pioneer Glasswort species, and covers about 25 ha. Tassel Weed (*Ruppia maritima*) occurs in this area, along with some Eelgrass (*Zostera angustifolia*). Eelgrass (*Z. noltii*) also occurs in Sutton Creek. Cordgrass (*Spartina anglica*) occurs in places but its growth is controlled by management. Green algal mats (*Enteromorpha* spp., *Ulva lactuca*) cover large areas of the flats during summer. These sediments have a rich macrofauna, with high densities of Lugworms (*Arenicola marina*) in parts of the north lagoon. Mussels (*Mytilus edulis*) occur in places, along with bivalves such as *Cerastoderma edule*, *Macoma balthica* and *Scrobicularia plana*. The small gastropod *Hydrobia ulvae* occurs in high densities in places, while the crustaceans *Corophium volutator* and *Carcinus maenas* are common. The sediments on the seaward side of North Bull Island are mostly sands. The site extends below the low spring tide mark to include an area of the sublittoral zone.

Three Rare plant species legally protected under the Flora Protection Order 1987 have been recorded on the North Bull Island. These are Lesser Centaury (*Centaureum pulchellum*), Hemp Nettle (*Galeopsis angustifolia*) and Meadow Saxifrage (*Saxifraga granulata*). Two

further species listed as threatened in the Red Data Book, Wild Sage (*Salvia verbenaca*) and Spring Vetch (*Vicia lathyroides*), have also been recorded. A rare liverwort, *Petalophyllum ralfsii*, was first recorded from the North Bull Island in 1874 and has recently been confirmed as being still present there. This species is of high conservation value as it is listed on Annex II of the E.U. Habitats Directive. The North Bull is the only known extant site for the species in Ireland away from the western seaboard.

North Dublin Bay is of international importance for waterfowl. During the 1994/95 to 1996/97 period the following species occurred in internationally important numbers (figures are average maxima): Brent Geese 2,333; Knot 4,423; Bar-tailed Godwit 1,586. A further 14 species occurred in nationally important concentrations - Shelduck 1505; Wigeon 1,166; Teal 1,512; Pintail 334; Shoveler 239; Oystercatcher 2,190; Ringed Plover 346; Grey Plover 816; Sanderling 357; Dunlin 6,238; Blacktailed Godwit 156; Curlew 1,193; Turnstone 197 and Redshank 1,175. Some of these species frequent South Dublin Bay and the River Tolka Estuary for feeding and/or roosting purposes (mostly Brent Goose, Oystercatcher, Ringed Plover, Sanderling, Dunlin).

The tip of the North Bull Island is a traditional nesting site for Little Tern. A high total of 88 pairs nested in 1987. However, nesting attempts have not been successful since the early 1990s. Ringed Plover, Shelduck, Mallard, Skylark, Meadow Pipit and Stonechat also nest. A well-known population of Irish Hare is resident on the island. The invertebrates of the North Bull Island have been studied and the island has been shown to contain at least seven species of regional or national importance in Ireland (Orders Diptera, Hymenoptera, Hemiptera).

The main landuses of this site are amenity activities and nature conservation. The North Bull Island is the main recreational beach in Co Dublin and is used throughout the year. Much of the land surface of the island is taken up by two golf courses. Two separate Statutory Nature Reserves cover much of the island east of the Bull Wall and the surrounding intertidal flats. The site is used regularly for educational purposes.

North Bull Island has been designated a Special Protection Area under the E.U. Birds Directive and it is also a statutory Wildfowl Sanctuary, a Ramsar Convention site, a Biogenetic Reserve, a Biosphere Reserve and a Special Area Amenity Order site. This site is an excellent example of a coastal site with all the main habitats represented. The holds good examples of ten habitats that are listed on Annex I of the E.U. Habitats Directive; one of these is listed with priority status. Several of the wintering bird species have populations of international importance, while some of the invertebrates are of national importance. The site contains a numbers of rare and scarce plants including some which are legally protected. Its proximity to the capital city makes North Dublin Bay an excellent site for educational studies and research.

23.11.1999

SITE SYNOPSIS
SITE NAME: SOUTH DUBLIN BAY
SITE CODE: 000210

This site lies south of the River Liffey and extends from the South Wall to the west pier at Dun Laoghaire. It is an intertidal site with extensive areas of sand and mudflats, a habitat listed on Annex I of the E.U. Habitats Directive. The sediments are predominantly sands but grade to sandy muds near the shore at Merrion gates.

The main channel which drains the area is Cockle Lake. There is a bed of Eelgrass (*Zostera noltii*) below Merrion Gates which is the largest stand on the east coast. Green algae (*Enteromorpha* spp. and *Ulva lactuca*) are distributed throughout the area at a low density. Furoid algae occur on the rocky shore in the Maretimo to Dún Laoghaire area. Species include *Fucus spiralis*, *F. vesiculosus*, *F. serratus*, *Ascophyllum nodosum* and *Pelvetia canaliculata*.

Lugworm (*Arenicola marina*) and Cockles (*Cerastoderma edule*) and other annelids and bivalves are frequent throughout the site. The small gastropod *Hydrobia ulvae* occurs on the muddy sands off Merrion Gates.

South Dublin Bay is an important site for waterfowl. Although birds regularly commute between the south bay and the north bay, recent studies have shown that certain populations which occur in the south bay spend most of their time there. The principal species are Oystercatcher (1215), Ringed Plover (120), Sanderling (344) and Dunlin (2628), Redshank (356) (average winter peaks 1996/97 and 1997/98). Up to 100 Turnstones are usual in the south bay during winter. Brent Geese regularly occur in numbers of international importance (average peak 299). Bar-tailed Godwit (565), a species listed on Annex I of the EU Birds Directive, also occur.

Large numbers of gulls roost in South Dublin Bay, e.g. 4,500 Black-headed Gulls in February 1990; 500 Common Gulls in February 1991. It is also an important tern roost in the autumn, regularly holding 2000-3000 terns including Roseate Terns, a species listed on Annex I of the E.U. Birds Directive. South Dublin Bay is largely protected as a Special Protection Area. At low tide the inner parts of the south bay are used for amenity purposes. Baitdigging is a regular activity on the sandy flats. At high tide some areas have windsurfing and jet-skiing.

This site is a fine example of a coastal system with extensive sand and mudflats, a habitat listed on Annex I of the E.U. Habitats Directive. South Dublin Bay is also an internationally important bird site.

25.2.2000

SITE SYNOPSIS

SITE NAME: SOUTH DUBLIN BAY AND RIVER TOLKA ESTUARY SPA

SITE CODE: 004024

The South Dublin Bay and River Tolka Estuary SPA comprises a substantial part of Dublin Bay. It includes the intertidal area between the River Liffey and Dun Laoghaire, and the estuary of the River Tolka to the north of the River Liffey, as well as Booterstown Marsh. A portion of the shallow marine waters of the bay is also included.

In the south bay, the intertidal flats extend for almost 3 km at their widest. The sediments are predominantly well-aerated sands. Several permanent channels exist, the largest being Cockle Lake. A small sandy beach occurs at Merrion Gates, while some bedrock shore occurs near Dun Laoghaire. The landward boundary is now almost entirely artificially embanked. There is

a bed of Dwarf Eelgrass (*Zostera noltii*) below Merrion Gates which is the largest stand on the east coast. Green algae (*Enteromorpha* spp. and *Ulva lactuca*) are distributed throughout the area at a low density. The macro-invertebrate fauna is well-developed, and is characterised by annelids such as Lugworm (*Arenicola marina*), *Nephtys* spp. and Sand Mason (*Lanice conchilega*), and bivalves, especially Cockle (*Cerastoderma edule*) and Baltic Tellin (*Macoma balthica*). The small gastropod Spire Shell (*Hydrobia ulvae*) occurs on the muddy sands off Merrion Gates, along with the crustacean *Corophium volutator*.

Sediments in the Tolka Estuary vary from soft thixotropic muds with a high organic content in the inner estuary to exposed, well-aerated sands off the Bull Wall. The site includes Booterstown Marsh, an enclosed area of saltmarsh and muds that is cut off from the sea by the Dublin/Wexford railway line, being linked only by a channel to the east, the Nutley stream. Sea water incursions into the marsh occur along this stream at high tide. An area of grassland at Poolbeg, north of Irishtown Nature Park, is also included in the site.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Light-bellied Brent Goose, Oystercatcher, Ringed Plover, Golden Plover, Grey Plover, Knot, Sanderling, Dunlin, Bar-tailed Godwit, Redshank, Black-headed Gull, Roseate Tern, Common Tern and Arctic Tern. The E.U. Birds Directive pays particular attention to wetlands, and as these form part of the SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

The site is an important site for wintering waterfowl, being an integral part of the internationally important Dublin Bay complex – all counts for wintering waterbirds are mean peaks for the five year period 1995/96-99/2000. Although birds regularly commute between the south bay and the north bay, recent studies have shown that certain populations which occur in the south bay spend most of their time there. An internationally important population of Light-bellied Brent Goose (525) occurs regularly and newly arrived birds in the autumn feed on the Eelgrass bed at Merrion.

Light-bellied Brent Goose is also known to feed on the grassland at Poolbeg.

The site supports nationally important numbers of a further nine species: Oystercatcher (1,263), Ringed Plover (161), Golden Plover (1,452), Grey Plover (183), Knot (1,151), Sanderling (349), Dunlin (2,753), Bar-tailed Godwit (866) and Redshank (713). Other species occurring in smaller numbers include Great Crested Grebe (21), Curlew (397) and Turnstone (75).

South Dublin Bay is a significant site for wintering gulls, especially Black-headed Gull (3,040), but also Common Gull (330) and Herring Gull (348). Mediterranean Gull is also recorded from here, occurring through much of the year, but especially in late winter/spring and again in late summer into winter. Both Common Tern and Arctic Tern breed in Dublin Docks, on a man-made mooring structure known as the E.S.B. dolphin – this is included within the site. Small numbers of Common Tern and Arctic Tern were recorded nesting on this dolphin in the 1980s. A survey of the dolphin in 1999 recorded Common Tern nesting here in nationally important numbers (194 pairs). This increase was largely due to the ongoing management of the site for breeding terns. More recent data highlights this site as one of the most important Common Tern sites in the country with over 400 pairs recorded here in 2007.

The south bay is an important tern roost in the autumn (mostly late July to September). Birds also use the Dalkey Islands to the south. The origin of many of the birds is likely to be the

Dublin breeding sites (Rockabill and the Dublin Docks) though numbers suggest that the site is also used by birds from other sites, perhaps outside the state. More than 10,000 terns have been recorded, consisting of Common, Arctic and Roseate terns. The wintering birds within this site are now well-monitored. More survey, however, is required on the wintering gulls and the autumn terns.

Boosterstown Marsh supports an important population of Borrer's Saltmarsh-grass (*Puccinellia fasciculata*), a rare, Red Data Book species that is listed on the Flora (Protection) Order, 1999.

The South Dublin Bay and River Tolka Estuary SPA is of international importance for Light-bellied Brent Goose and of national importance for nine other waterfowl species. As an autumn tern roost, it is also of international importance. Furthermore, the site supports a nationally important colony of Common Tern. All of the tern species using the site are listed on Annex I of the E.U. Birds Directive, as are Bartailed Godwit and Mediterranean Gull.

1.5.2008

SITE SYNOPSIS

SITE NAME: NORTH BULL ISLAND SPA

SITE CODE: 004006

This site covers all of the inner part of north Dublin Bay, with the seaward boundary extending from the Bull Wall lighthouse across to Drumleck Point at Howth Head. The North Bull Island sand spit is a relatively recent depositional feature, formed as a result of improvements to Dublin Port during the 18th and 19th centuries. It is almost 5 km long and 1 km wide and runs parallel to the coast between Clontarf and Sutton. Part of the interior of the island has been converted to golf courses.

A well-developed and dynamic dune system stretches along the seaward side of the island. Various types of dunes occur, from fixed dune grassland to pioneer communities on foredunes. Marram Grass (*Ammophila arenaria*) is dominant on the outer dune ridges. Species of the fixed dunes include Wild Pansy (*Viola tricolor*), Kidney Vetch (*Anthyllis vulneraria*), Bird's-foot Trefoil (*Lotus corniculatus*), Pyramidal Orchid (*Anacamptis pyramidalis*) and, in places, the scarce Bee Orchid (*Ophrys apifera*). A feature of the dune system is a large dune slack with a rich flora, usually referred to as the 'Alder Marsh' because of the presence of Alder (*Alnus glutinosa*) trees. The water table is very near the surface and is only slightly brackish. Sea Rush (*Juncus maritimus*) is the dominant species, with Meadowsweet (*Filipendula ulmaria*) and Devil's-bit Scabious (*Succisa pratensis*) being frequent. The orchid flora is notably diverse in this area.

Saltmarsh extends along the length of the landward side of the island and provides the main roost site for wintering birds in Dublin Bay. On the lower marsh, Glasswort (*Salicornia europaea*), Common Saltmarsh-grass (*Puccinellia maritima*), Annual Seablite (*Suaeda maritima*) and Greater Sea-spurrey (*Spergularia media*) are the main species. Higher up in the middle marsh Sea Plantain (*Plantago maritima*), Sea Aster (*Aster tripolium*), Sea Arrowgrass (*Triglochin maritima*) and Thrift (*Armeria maritima*) appear. Above the mark of the normal high tide, species such as Common Scurvygrass (*Cochlearia officinalis*) and Sea Milkwort (*Glaux maritima*) are found, while on the extreme upper marsh, Sea Rush and Saltmarsh Rush (*Juncus gerardi*) are dominant.

The island shelters two intertidal lagoons which are divided by a solid causeway. These lagoons provide the main feeding grounds for the wintering waterfowl. The sediments of the lagoons are mainly sands with a small and varying mixture of silt and clay. Tasselweed (*Ruppia maritima*) and small amounts of Eelgrass (*Zostera* spp.) are found in the lagoons. Common Cord-grass (*Spartina anglica*) occurs in places. Green algal mats (*Enteromorpha* spp., *Ulva lactuca*) are a feature of the flats during summer. These sediments have a rich macro-invertebrate fauna, with high densities of Lugworm (*Arenicola marina*) and Ragworm (*Hediste diversicolor*). Mussels (*Mytilus edulis*) occur in places, along with bivalves such as *Cerastoderma edule*, *Macoma balthica* and *Scrobicularia plana*. The small gastropod *Hydrobia ulvae* occurs in high densities in places, while the crustaceans *Corophium volutator* and *Carcinus maenas* are common. The sediments on the seaward side of North Bull Island are mostly sands and support species such as Lugworm and the Sand Mason (*Lanice conchilega*). The site includes a substantial area of the shallow marine bay waters.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Light-bellied Brent Goose, Shelduck, Teal, Pintail, Shoveler, Oystercatcher, Ringed Plover, Golden Plover, Grey Plover, Knot, Sanderling, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Turnstone and Black-headed Gull. The site is also of special conservation interest for holding an assemblage of over 20,000 wintering waterbirds. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

The North Bull Island SPA is of international importance for waterfowl on the basis that it regularly supports in excess of 20,000 waterfowl. It also qualifies for international importance as the numbers of three species exceed the international threshold – Light-bellied Brent Goose (1,548), Black-tailed Godwit (367) and Bartailed Godwit (1,529) (all waterfowl figures given are average maxima for the five winters 1995/96 to 1999/00). The site is the top site in the country for both of these species. A further 14 species have populations of national importance – Shelduck (1,259), Teal (953), Pintail (233), Shoveler (141), Oystercatcher (1,784), Ringed Plover (139), Golden Plover (1,741), Grey Plover (517), Knot (2,623), Sanderling (141), Dunlin (3,926), Curlew (937), Redshank (1,431) and Turnstone (157). The populations of Pintail and Knot are of particular note as they comprise more than 10% of the respective national totals.

Species such as Grey Heron, Cormorant, Wigeon, Goldeneye, Red-breasted Merganser and Greenshank are regular in winter in numbers of regional or local importance. Gulls are a feature of the site during winter, especially Black-headed Gull (2,196), Common Gull (332) and Herring Gull (331) also occur here. While some of the birds also frequent South Dublin Bay and the River Tolka Estuary for feeding and/or roosting purposes, the majority remain within the site for much of the winter. The wintering bird populations have been monitored more or less continuously since the late 1960s and the site is now surveyed each winter as part of the larger Dublin Bay complex.

The North Bull Island SPA is a regular site for passage waders, especially Ruff, Curlew Sandpiper and Spotted Redshank. These are mostly observed in single figures in autumn but occasionally in spring or winter. The site formerly had an important colony of Little Tern but breeding has not occurred in recent years. Several pairs of Ringed Plover breed, along with

Shelduck in some years. Breeding passerines include Skylark, Meadow Pipit, Stonechat and Reed Bunting. The island is a regular wintering site for Short-eared Owl, with up to 5 present in some winters.

The site has five Red Data Book vascular plant species, four rare bryophyte species, and is nationally important for three insect species. The rare liverwort, *Petalophyllum ralfsii*, was first recorded from the North Bull Island in 1874 and its presence here has recently been re-confirmed. This species is of high conservation value as it is listed on Annex II of the E.U. Habitats Directive. A well-known population of Irish Hare is resident on the island

The main landuses of this site are amenity activities and nature conservation. The North Bull Island is one of the main recreational beaches in Co. Dublin and is used throughout the year. Two separate Statutory Nature Reserves cover much of the island east of the Bull Wall and the surrounding intertidal flats. North Bull Island is also a Wildfowl Sanctuary, a Ramsar Convention site, a Biogenetic Reserve, a Biosphere Reserve and a Special Area Amenity Order site. Much of the SPA is also a candidate Special Area of Conservation. The site is used regularly for educational purposes and there is a manned interpretative centre on the island.

The North Bull Island SPA is an excellent example of an estuarine complex and is one of the top sites in Ireland for wintering waterfowl. It is of international importance on account of both the total number of waterfowl and the individual populations of Lightbellied Brent Goose, Black-tailed Godwit and Bar-tailed Godwit that use it. Also of significance is the regular presence of several species that are listed on Annex I of the E.U. Birds Directive, notably Golden Plover and Bar-tailed Godwit, but also Ruff and Short-eared Owl.
22.5.2008

SITE SYNOPSIS

SITE NAME: BALLYMAN GLEN

SITE CODE: 000713

Ballyman Glen is situated approximately 3 km north of Enniskerry. It is orientated in an east-west direction with a stream running through the centre. The glen is bounded mostly by steeply sloping pasture with Gorse (*Ulex europaeus*) and areas of wood and scrub. This site is a candidate SAC selected for alkaline fen and petrifying springs, both habitats listed on Annex I of the EU Habitats Directive.

The glen contains a small strip of fen, which runs along the county boundary and extends into County Dublin. This fen is very alkaline and is associated with petrifying spring/seepage areas that have given rise to thick deposits of marl. The vegetation of the main part of the fen is dominated by Greater Tussock-sedge (*Carex paniculata*), Tall Fescue (*Festuca arundinacea*), Butterworts (*Pinguicula vulgaris* and *P. lusitanica*), Black Bog-rush (*Schoenus nigricans*) and Broad-leaved Cottongrass (*Eriophorum latifolium*). The site is particularly notable for its orchids, which includes Early Marsh-orchid (*Dactylorhiza incarnata*), Narrow-leaved Marsh-orchid (*D. traunsteineri*) and Marsh Helleborine (*Epipactis palustris*). In addition, twenty species of sedge have been recorded in the area, including the scarce Long-stalked Yellow-sedge (*Carex lepidocarpa*). The fen area is being invaded by Downy Birch (*Betula pubescens*).

Associated with the fen, and also with the woodland elsewhere in the site, are petrifying springs. These lime-encrusted seepage areas are rich in bryophytes including such diagnostic species as Great Horsetail (*Equisetum telmateia*), *Cratoneuron commutatum* and *C. filicinum*.

Wet woodland and scrub occur along the margins of the stream for most of the length of the glen, extending outwards in areas to create inaccessible and species-rich patches of woodland. The canopy is dominated by Alder (*Alnus glutinosa*), Willow (*Salix* spp.) and Ash (*Fraxinus excelsior*). The woodland has a dense shrub layer which includes Hawthorn (*Crataegus monogyna*) and Spindle (*Euonymus europaeus*), and a diverse ground flora with Marsh Hawks-beard (*Crepis paludosa*), Sanicle (*Sanicula europaea*), Herb-Robert (*Geranium robertianum*), Bugle (*Ajuga reptans*), Horsetails (*Equisetum* spp.), Meadowsweet (*Filipendula ulmaria*) and some sedges (*Carex* spp.). Areas of marsh are found in the wetter areas by the stream, particularly at the western end of the site.

There is an area of broad-leaved woodland on the steeper southern slopes of the glen. Common species occurring here are Ash and Sycamore (*Acer pseudoplatanus*), with Brambles (*Rubus fruticosus* agg.) colonizing the more open areas. An area of land that slopes towards the fen has been used as a landfill site for domestic refuse. The site is also used a clay pigeon shoot and shattered clay pigeons are scattered throughout the area. Fens are rare in Wicklow/Dublin and this is one of only two sites in Wicklow for the Narrow-leaved Marsh-orchid. The fen vegetation is well developed, with an unusually large number of sedge species present. The presence of alkaline fen and of petrifying spring/seepage areas on the site is particularly notable, as these habitats are listed, the latter with priority status, on Annex I of the EU Habitats Directive.
30.10.2002

SITE SYNOPSIS

SITE NAME: KNOCKSINK WOOD

SITE CODE: 000725

Knocksink Wood is situated in the valley of the Glencullen River north-west of Enniskerry. The fast-flowing Glencullen River winds its way over granite boulders along the valley floor. The steep sides of the valley are mostly covered with calcareous drift.

Some of the slopes are dominated by Sessile Oak (*Quercus petraea*) with a sparse shrub layer of Holly (*Ilex aquilinum*) and Hazel (*Corylus avellana*), while on the ground there is a carpet of Great Wood-rush (*Luzula sylvatica*). Other areas are characterised by mixed woodland, with Oak, Ash (*Fraxinus excelsior*), Beech (*Fagus sylvatica*), Sycamore (*Acer pseudoplatanus*) and the occasional conifer occurring.

The ground flora includes Ivy (*Hedera helix*) and Brambles (*Rubus fruticosus* agg.), and often luxuriant ferns, such as Hart's Tongue (*Phyllitis scolopendrium*), Soft Shield-fern (*Polystichium setiferum*), and mosses. Lichens occur abundantly on some trees.

A notable feature of the slopes are the frequent and extensive springs and seepage areas within the woodland. These petrifying springs are listed as a priority habitat on Annex I of the EU Habitats Directive. Associated with the springs and the river are stands of wet alluvial forest, also a habitat listed with priority status on Annex I of the EU Habitats Directive. The wet woodland is dominated by Ash and Alder (*Alnus* spp.) and is assigned to the group *Carici*

remotae-Fraxinetum. Other species which occur include Willow (*Salix* spp.), Birch (*Betula pubescens*) and Hazel. Islands in the river and open gravelly areas provide further habitat diversity.

A number of scarce or rare plants occur within the site including Blue Fleabane (*Erigeron acer*), Ivy-leaved Bellflower (*Wahlenbergia hederacea*) and Yellow Archangel (*Lamium galeobdolon*).

This site has one of the most diverse woodland invertebrate faunas in Ireland, incorporating wet woodland organisms threatened internationally within the EU. Vertebrates noted in the vicinity, either by tracks, sett or sight, include Red Squirrel, Badger, Rabbit and Deer. The woodland supports large populations of birds, including many common passerines (Robin, Blackbird, Song Thrush, Wren, Chaffinch) and crows, such as Rook, Hooded Crow, Magpie, Jackdaw and Raven. A Buzzard has been noted in the area and Dipper are occasionally seen in the river. The importance of this site lies in the diversity of woodland habitats which occur. The presence of rare or threatened plants and invertebrates adds to the interest. Much of this site has been designated a Statutory Nature Reserve and there is presently an educational centre within the site.
7.8.2003

Appendix 2

Identification of Natura 2000 Sites and their Relevance to the Proposed Project Site

Site Name and Code	Distance from Proposed Plan	Natura 2000 Features of Interest	Do any potential source-pathway-receptor links exist between the proposed development and the Natura 2000 site?
Glenasmole Valley SAC (001209)	8 km	*Petrifying springs with tufa formation Semi-natural dry grassland and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (*important orchid sites) <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>)	No. The Glenasmole Valley SAC is located in the Dublin Mountains which is situated at an altitude higher than that of the proposed Project site lands and in a separate river catchment area which does not drain through the proposed Project lands. There are therefore no hydrological links connecting the Natura 2000 site to the lands of the proposed Project site. In addition, there are no direct ecological pathways linking the two areas.
Wicklow Mountains SAC (002122)	10 km	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea Natural dystrophic lakes and ponds Northern Atlantic wet heaths with <i>Erica tetralix</i> European dry heaths; Alpine and Boreal heaths Species-rich <i>Nardus</i> grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe) Blanket bog	No. The Wicklow Mountains SAC is located in the Dublin Mountains which is situated at an altitude higher than that of the proposed Project lands and in a separate river catchment area which does not drain through the proposed Project lands. There are therefore no hydrological links connecting the Natura 2000 site to the lands of the proposed Project site. In addition, there are no direct ecological pathways linking the two areas.

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Wicklow Mountains SPA (004040)	10 km	Merlin (<i>Falco columbarius</i>) Peregrine (<i>Falco peregrinus</i>)	No. The Wicklow Mountains SPA is located in the Dublin Mountains which is situated at an altitude higher than that of the proposed Project lands and in a separate river catchment area which does not drain through the proposed Project lands. There are therefore no hydrological links connecting the Natura 2000 site to the lands of the proposed Project site. In addition, there are no direct ecological pathways linking the two areas.
North Dublin Bay SAC (000206)	>15 km	Mudflats and sandflats not covered by seawater at low tide Annual vegetation of drift lines Salicornia and other annuals colonizing mud and sand Spartina swards (<i>Spartinion maritima</i>) Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) Petalwort (<i>Petalophyllum ralfsii</i>) Mediterranean salt meadows (<i>Juncetalia maritimi</i>) Embryonic shifting dunes Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) Fixed coastal dunes with herbaceous vegetation (grey dunes) Humid dune slacks	While a potential hydrological link connects the proposed Project lands to this Dublin Bay Natura 2000 site, the overarching policies and objectives outlined in the South Dublin County Development Plan 2010-2016 in relation to water supply, ground water and surface water quality, waste water treatment, and capacity of Ringsend Waste Water treatment plant, will together ensure no significant impact arises from the Project site.
South Dublin Bay	> 10km	Mudflats and sandflats not covered by seawater at low	While a potential hydrological link connects the proposed

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SAC (000210)		tide	Project lands to this Dublin Bay Natura 2000 site, the overarching policies and objectives outlined in the South Dublin County Development Plan 2010-2016 in relation to water supply, ground water and surface water quality, waste water treatment, and capacity of Ringsend Waste Water treatment plant, will together ensure no significant impact arises from the Project site.
South Dublin Bay and River Tolka Estuary SPA (004024)	>10 km	<p>Light-bellied Brent Goose (<i>Branta bernicla hrota</i>)</p> <p>Oystercatcher (<i>Haematopus ostralegus</i>)</p> <p>Ringed Plover (<i>Charadrius hiaticula</i>)</p> <p>Golden Plover (<i>Pluvialis apricaria</i>)</p> <p>Knot (<i>Calidris canutus</i>)</p> <p>Sanderling (<i>Calidris alba</i>)</p> <p>Dunlin (<i>Calidris alpina</i>)</p> <p>Bar-tailed Godwit (<i>Limosa lapponica</i>)</p> <p>Redshank (<i>Tringa totanus</i>)</p> <p>Black-headed Gull (<i>Larus ridibundus</i>)</p> <p>Roseate Tern (<i>Sterna dougalli</i>)</p> <p>Common Tern (<i>Sterna hirundo</i>)</p> <p>Arctic Tern (<i>Sterna paradisaea</i>)</p> <p>Wetlands & Waterbirds</p>	<p>While a potential hydrological link connects the proposed Project lands to this Dublin Bay Natura 2000 site, the overarching policies and objectives outlined in the South Dublin County Development Plan 2010-2016 in relation to water supply, ground water and surface water quality, waste water treatment, and capacity of Ringsend Waste Water treatment plant, will together ensure no significant impact arises from the Project site.</p>

North Bull Island SPA (004006)	>15 km	<p>Light-bellied Brent Goose (<i>Branta bernicla hrota</i>)</p> <p>Shelduck (<i>Tadorna tadorna</i>)</p> <p>Teal (<i>Anas crecca</i>)</p> <p>Pintail (<i>Anas acuta</i>)</p> <p>Shoveler (<i>Anas clypeata</i>)</p> <p>Oystercatcher (<i>Haematopus ostralegus</i>)</p> <p>Golden Plover (<i>Pluvialis apricaria</i>)</p> <p>Grey Plover (<i>Pluvialis squatarola</i>)</p> <p>Knot (<i>Calidris canutus</i>)</p> <p>Sanderling (<i>Calidris alba</i>)</p> <p>Dunlin (<i>Calidris alpina</i>)</p> <p>Black-tailed Godwit (<i>Limosa limosa</i>)</p> <p>Bar-tailed Godwit (<i>Limosa lapponica</i>)</p> <p>Curlew (<i>Numenius arquata</i>)</p> <p>Redshank (<i>Tringa totanus</i>)</p> <p>Turnstone (<i>Arenaria interpres</i>)</p> <p>Black-headed Gull (<i>Larus ridibundus</i>)</p> <p>Wetlands & Waterbirds</p>	<p>While a potential hydrological link connects the proposed Project lands to this Dublin Bay Natura 2000 site, the overarching policies and objectives outlined in the South Dublin County Development Plan 2010-2016 in relation to water supply, ground water and surface water quality, waste water treatment, and capacity of Ringsend Waste Water treatment plant, will together ensure no significant impact arises from the Project site.</p>
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Appendix 3

List of County Development Plan objectives and policies that are relevant to water protection in South Dublin County.

Policy LHA 21 River and Stream Management

It is the policy of the Council to implement a strategy (prepared on a regional basis) for the management of rivers and streams throughout the County.

Policy LHA 22 Watercourses

It is the policy of the Council to protect, maintain, improve and enhance the natural and organic character of the watercourses in the County and to promote access, walkways and other recreational uses of their associated public open space, subject to a defined strategy of nature conservation and flood protection.

2.3.4 Strategy: **The strategy of the Council for the development of Water Supply and Drainage in the County is as follows:**

- *Continue the sustainable development and improvement of the water supply and foul drainage systems throughout the County to meet the anticipated water and drainage requirements of the area.*
- *Protect surface water catchments and manage catchment areas where appropriate to protect the surface water drainage infrastructure of the County.*
- *Implement the provisions of national policy and legislation in the control of water pollution.*
- *Ensure that existing and proposed developments are not subject to undue risk of flooding.*
- *Conserve treated water by active leakage detection, non-domestic metering and development of infrastructure.*
- *Actively pursue and resolve water leakage.*

Policy WD 1 Water Supply and Drainage

It is the policy of the Council to co-operate with adjoining authorities to continue the sustainable development and improvement of the water supply and drainage systems throughout the County to meet the anticipated water and drainage requirements of the area, in accordance with the recommendations set out in the 'Greater Dublin Strategic Water Supply Study' and the 'Greater Dublin Strategic Drainage Study', and the proposed 'Dublin Region Water Services Strategic Plan', when adopted.

Policy WD 2 Wastewater Treatment Plants and Wastewater Collection Systems

It is the policy of the Council that development shall be preceded by sufficient capacity in the public wastewater treatment plants and appropriate extensions in the existing public wastewater collection systems.

Policy WD 3 Quality of Surface Water and Groundwater

It is the policy of the Council that the ongoing development of the County shall be undertaken in such a way as not to compromise the quality of surface water (and associated habitats and species) and groundwater.

Policy WD 4 Soil and Groundwater Contamination

It is the policy of the Council to require adequate and appropriate investigations to be carried out into the nature and extent of any soil and groundwater contamination and the risks associated with site development work, where brownfield development is proposed.

Policy WD 5 Water Quality Management Plans

It is the policy of the Council to promote the implementation of water quality management plans for ground and surface waters in the county as part of the implementation of the EU Water Framework Directive, and in accordance with the policies and objectives and programme of measures of the Eastern River Basin Management Plan and any further amendments.

Policy WD 6 Sustainable Urban Drainage Systems (SuDS)

It is the policy of the Council to ensure that all development proposals incorporate Sustainable Urban Drainage Systems (SuDS).

Policy WD 7 Storm Overflows

It is the policy of the Council to minimise the number and frequency of storm overflows of sewage to watercourses and to establish, in co-operation with the adjoining local authorities, a consistent approach to the design, improvement and management of these intermittent discharges to ensure that the needs of the Region's receiving waters are met in a cost effective manner.

Policy WD 8 Water Pollution Abatement Measures

It is the policy of the Council to implement the provisions of water pollution abatement measures in accordance with National and EU Directives and legislative requirements in conjunction with other agencies as appropriate.

Policy WD 9 Bohernabreena Reservoirs and Catchment Area

It is the policy of the Council to protect the Bohernabreena Reservoirs and catchment area, cSAC and buffer zone, in the interests of public health and to restrict development in the catchment.

Policy EE 15 Natural Features in Enterprise Priority Areas

It is the policy of the Council where existing streams, watercourses, are located on land zoned for Enterprise Priority One, Enterprise Priority Two and Enterprise Priority Three purposes they should be protected and incorporated within the overall design for the area, thereby contributing to and connecting into the overall green network policy for the County. Riparian corridors should be kept free from development and be used as amenity for workers and visitors on the site, taking due care to protect and enhance the corridor's native biodiversity resource.

Policy EE 33 Sustainable Development of Agricultural Diversification

It is the policy of the Council to support the sustainable development of agriculture and agriculture diversification, such as organic foods, rural tourism and small to medium-sized enterprises subject to the retention of the holding for primarily agricultural use and the proper planning and sustainable development of the area including protecting and maintaining biodiversity, wildlife habitats, water quality, rural landscape character, scenic amenities and nature conservation.

Policy EE 35 Rural Related Enterprises

It is the policy of the Council to facilitate the development of acceptable rural related enterprises, including equine enterprises, in accordance with the terms of Zoning Objective 'B' (to protect and improve rural amenity and to provide for the development of agriculture) and to minimise pollution from agricultural sources by means of development management and water pollution legislation and regulations.

4.1.2 Additional Protection Measures - Planning Conditions

The Planning Authority has not granted permission for any development within the two SACs. However, in order to ensure that there are no direct, indirect, or cumulative impacts on the SACs and that their conservation status of the protected habitats are maintained and that their listed conservation objectives are adhered to, the following measures will be strictly applied for all planning applications within the sensitive areas above and adjacent to the County's two SACs in the Dublin Mountains.

- All planning applications received by the Planning Authority for these areas will be subject to rigorous Appropriate Assessment screening and full AA investigation where required. Where impacts are seen to be likely, or where reasonable doubt exists to potential for impact, no application will be allowed to proceed.
- Appropriate Assessments will be based upon contemporary scientific data regarding hydrology and ecology wherever appropriate.

- For any permitted development, strict conditions will apply regarding the type, installation, monitoring, and servicing of all newly-granted waste water treatment systems in the catchment area of the two SACs.

Policy H33 (see Section 4.1) which refers to one-off rural housing in this area, also reinforces the necessity to have due regard in any application in this sensitive area, to the requirements for assessment as demanded under the Habitats Directive.