ALTEMAR

Marine & Environmental Consultancy

South Dublin County Council
Tallaght,
County Dublin

17th July 2023

RE: Ref SD22A/0457- Request for Further Information (RFI)

Dear Sir/Madam,
Following the submission of a Planning Application for the proposed development (SD22A/0457), a Request for Further Information (RFI) was issued by South Dublin County Council to Tom Phillips + Associates dated on 13th February 2023. It should be noted that detailed discussions have taken place within the project team to address the ecological points raised in the RFI. This has included discussions in relation to, but not limited to, the lighting on site, construction management and the proposed development construction/operation. Specifically in relation to Appropriate Assessment and Ecology i.e. points 5, 10 & 13A of the RFI stated that:

Point. 5 Japanese Knotweed

A. A detailed survey undertaken by an approved environmental consultant for the presence of Japanese Knotweed.

B. An Invasive Species Management Plan as to how the Japanese Knotweed will be addressed. This should be provided by suitably qualified specialist who can demonstrate experience and technical abilities in invasive species management and control.

Please note that Japanese Knotweed can be far more extensive than the visible parts on the surface and that the underground parts of the plant may extend laterally up to 7 metres beyond this.

Altemar Response – I am an environmental consultant (MCIEEM) with 28 years survey experience in Ireland. I am the former Project Manager for the EU Life+ CAISE[1] Project on Invasives for Inland Fisheries Ireland. This was an EU funded Invasive Species project. This included developing ID guides for invasives and the control methods in aquatic and riparian ecosystems. No invasive species were found on site during the previous surveys on site. I also carried out an additional inspection of the proposed development site on the 7th June 2023. I can confirm that no invasive plant species listed on the third Schedule of regulation 49 & 50 in the European Communities (Birds and Natural Habitats) Regulations 2011 are noted on site or proximate to the site. An Invasive Species Management Plan is not required on site as no invasive species were noted on site.

Point. 6 Mammal Surveys.

It is noted from the Ecological Impact Assessment that mammal surveys were not undertaken during the appropriate time period. The applicant is requested to undertake these surveys during the appropriate period, and provide a report detailing the results. Any mitigation measures recommended must be adapted into the scheme."

Altemar Response – An additional mammal assessment was carried out by Dr Chris Smal and his report is seen in Appendix I. Several signs of fox *Vulpes vulpes* were observed. Follow up monitoring with trail cameras revealed that fox presence was frequent at the east and north-east. A fox was captured on camera on a regular basis alongside the conifer treeline adjacent to the apartments at the east. Foxes are not a protected species. The trail cameras also revealed presence of grey squirrels (*Sciurus carolinensis*) (invasive) and a hedgehog (*Erinaceus europaeus*) (protected). No badger (*Meles meles*) (protected) No otter (*Lutra lutr*a) (protected) were noted on site or along the fringes of the three ponds in the study area.

As a result of the additional survey, the following additional mitigation will be carried out as outlined in Appendix I:

1. Mitigation measures and recommendations
Standard mitigation measures, as would apply to any large scale development, should be adopted in the construction of this development. These include habitat retention where feasible, limiting season of disturbance to trees and vegetation so as

[1] https://www.fisheriesireland.ie/what-we-do/research/caisie

to reduce impacts on breeding species, to provide for habitat replacement and enhancement, and measures to reduce pollution and sedimentation into watercourses during construction and operation phases.

2. Protection of badgers

1 Any areas of scrub or scrubby woodland that require felling/clearing (and not due to be retained) should be checked for badger setts (by a faunal expert) prior to such operations commencing. *Reason: not all woodland areas could be thoroughly searched in this survey as a result of dense scrub cover. Also, there is potential for badgers entering the site and creating setts in the interim period before construction commences.*

2 If a lengthy period of time elapses prior to construction activities commencing (e.g. 18 months) a repeat full faunal study is recommended – as badgers may create new setts in the study area in the interim period before construction commences.

3. Protection of frogs and newts

Any amphibians in the ponds to be affected by the proposed development will require removal prior to any development at or near the ponds. Any mitigation operations for frogs and newts will require to be conducted by a faunal expert under licence from the NPWS.

It would be preferable to retain the ponds on site and for these ponds to be maintained, as they are at present, in order to protect frogs (and possibly smooth newts) present within them. If this is not possible then a series of mitigation procedures will be required:

"Alternative pools/ponds: existing or to be created

1 *Alternative suitable habitats in the locality should be identified – to serve as translocation sites for the amphibians affected by developments on site.*

2 *It may be necessary to create artificial pools/ponds within the site or on lands available to the developer nearby. Such ponds may be smaller in size than those presently on site, and could be created at several dispersed locations within the site or nearby.*

3 *The construction of artificial ponds should take place a minimum of 12 months before the existing ponds are removed or affected by works. Design, location, and planting should be conducted as advised by a zoologist and a botanical expert with expertise in pond design. The aquatic vegetation needs to be well established before the ponds would be considered suitable for the translocation of frogs and newts.*

4 *The artificial ponds will need to be constructed so that water levels can be maintained within them throughout all seasons of the year, so additional drainage channels to feed the pools/ponds may be required.*

5 *The artificial ponds created for frog/newt translocation would need to be constructed to the satisfaction of the NPWS.*

Retention of existing ponds

6 *Consideration should be given to retention of the "middle" pond as is and improving the marginal vegetation there; this pond could be used as one of the translocation sites for frogs from the larger pond at the east. This pond is only partially within the site boundary of the proposed cemetery.*

7 *Consideration should also be given to retention of the larger pond at the east as is or incorporating large portions of it into a landscape design that allows for much of the pond area to be retained and utilised as frog pond habitat.*

[NB works to reprofile this pond would entail loss of frog/newt habitat at the existing pond area – therefore, any works to reprofile the pond and recreate frog habitat there would require the same attention as to the creation of artificial ponds on site].

Translocation of amphibians from existing ponds

8 *Prior to any construction works at the ponds:*

Frog spawn and tadpoles will be present February to mid-summer; breeding adult newts, their eggs, or larvae will be present mid March to September.

a. *Any frog spawn, tadpoles, juveniles or adult frogs will need to be captured and removed from affected habitat by hand net (and using buckets for spawn), and these then translocated to the alternative suitable habitats that have been provided.*

b. *Smooth newts will need to be captured either by hand net or by trapping (with approved traps), and translocated to the alternative suitable habitats.*

c. *It may be necessary to drain the affected pond(s) to ensure that no amphibians remain before the pond(s) are infilled (in whole or in part). An ecologist with appropriate experience would need to monitor this drainage of the pond(s) and to translocate the remaining amphibians (under licence).*

d. *Such translocations should be conducted in advance of construction works affecting the ponds, with alternative pools/ponds being in place prior to translocations, as recommended above.*

e. *The above operations must be conducted under licence from NPWS by a suitably experienced ecologist.*

In practice, NPWS will approve licences for translocations of amphibians provided that suitable alternative sites are available for such translocations. It is suggested that a detailed programme of works, in relation to these translocations and provision of suitable alternative sites for amphibians , be provided to NPWS as part of the request for a licence.

9 *Post construction monitoring will be required to ensure that the new artificial ponds on site and existing ponds (where these have been retained in whole or in part) have been successful. Additional measures may be required to improve the artificial ponds created on site as breeding habitat for frogs and newts."*

The CEMP will be updated by an ecologist to incorporate the mitigation measures outlined, where relevant to the proposed project.

Point. 13 Aviation Safety

Aviation Safety
A. Due to the proximity to Casement Aerodrome, the developer should produce a Wildlife Aviation Impact Assessment and implement adequate bird control measures during the construction phase to mitigate the effects of birds on Air Corps flight operations."

Altemar Response –Altemar has been involved in over 20 projects for daa at Dublin Airport. These projects were both Airside and Landside within daa lands and varied considerably from small brownfield projects to large infrastructural elements including the South Apron project, Runway Overlay project, Airfield upgrades and we are currently involved in the daa drainage masterplan project, which is proposing work directly beneath the flight path of the main 10/28 runway. We have been involved in these projects from initial preliminary design and planning stages to carrying out Ecological Clerk of Works for the completed projects. This included overseeing construction works both airside and landside, and ensuring works complied with daa policies in relation to wildlife management and in particular limiting the risk of wildlife strikes and in particular bird strikes as a result of both airside and landside projects. Bryan liaised with daa engineers and contractors in relation ensuring mitigation measures were carried out.

We have prepared the Wildlife Aviation Impact Assessment for a proposed cemetery on the grounds of the Citywest Hotel, Saggart, Dublin 24 that accompanies this submission. The report outlines the Proposed Project, the proximity to Casement Aerodrome and its flight paths, details of the proposed landscape, drainage, CEMP, Flood Risk Assessment, mitigation measures, habitats on site and the birds currently utilising the site.

If you have any queries in relation to the above, please do not hesitate to get in contact.

Kindest Regards

Bryan Deegan MCIEEM
Managing Director
Altemar Ltd.
Marine and Environmental Consultants.

APPENDIX I-PROPOSED DEVELOPMENT (CEMETERY) AT CITYWEST, SAGGART, CO DUBLIN

BADGER / FAUNA SURVEY

Report prepared for

ALTEMAR LTD.

by

Dr. Chris Smal B.Sc. Ph.D. MIEEM

26th May 2023

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4. Introduction

A cemetery is being proposed on the grounds of the Citywest Hotel, Saggart, Co. Dublin. The proposal includes necessary infrastructure such as new access roads, car parks, reception building and storage area etc. The lands for the development are on a golf course, which was no longer in use by the time of this present survey (March/April 2023).

The site is located adjacent to the N7 dual carriageway – as shown in Figure 1 below.

This report presents the results of a mammal/badger survey conducted on 4th March 2023, with follow up visits in late March and also April 2023. Mammal surveys are best conducted in winter months when vegetation has died back and before scrub cover re-grows in spring (especially so for badgers *Meles meles* and otters *Lutra lutra*). [Bats were not included in this survey].

The survey included observations of other faunal species on site with comment on these species, with mitigation measures for these species if required. Of note, frog *Rana temporaria* breeding sites were found on site.

Dr. Smal is an acknowledged faunal expert in Ireland. He prepared the *Guidelines for the treatment of badgers prior to the construction of National Road schemes (NRA 2015)* and *Guidelines for the treatment of otters prior to the construction of National road schemes (NRA 2006)*. He has carried out research on badgers for the National Parks and Wildlife Service and the Department of Agriculture and also conducted *The Badger & Habitat Survey of Ireland* (1995).

Figure 2. Proposed site for cemetery and associated buildings and infrastructure. All delineations approximate.

5. Site survey

The principal survey was conducted on 4th March 2023. Weather conditions were good: cool, dry, overcast. The survey was conducted by Dr. Chris Smal. The site was searched for badger setts, signs of badger activity, signs of otters, and signs or dwellings of other mammals and non-avian fauna.

Survey of fauna was carried out by means of a thorough search within the site. Presence of mammals is indicated principally by their signs, such as dwellings, feeding signs or droppings - though direct observations are also occasionally made.

The nature and type of habitats present are also indicative of the species likely to be present. The field survey was supplemented by evaluation of relevant literature and existing information.

A strong mammal path at the far east (near the apartments) had the appearance of a badger path. Therefore trail cameras were erected there and in woodland at the north-east (camera on site for total 17 days at the far east, and for 13 days in woodland at north-east).

6. Survey constraints

Badger survey is best conducted in late winter when vegetation has died back. This survey was carried out with only limited vegetation growth (at this season) that might obscure mammal burrows and signs. The survey conducted in March 2023 was within the appropriate season for survey with limited cover of bramble *Rubus fruticosus* agg.

Most of the site was accessible. The former golf course area was comprised of grassland areas, fairways, greens and bunkers. The landscaping of the golf course area included plantings of deciduous and coniferous tree species, with older mature deciduous stands and older deciduous/mixed woodland.

Not all of the areas of these woodlands on site could be searched thoroughly due to dense scrub.

Attention was paid to signs that would indicate badger/mammal activity in all surveyed areas. Parts of the site – at the far east near the apartments and also areas near the Citywest Hotel – were clearly quite popular with walkers and dog walkers. Some of the paths observed had been created by humans and their dogs.

The ponds and a small stream on site were searched also.

7. Brief description of area and habitats

Figure 18. Fossitt Habitat Map.

Figure 3. Habitats on site (Altemar Ltd.).

The site is bounded by the N7 to the north, the adjacent apartment complex and Garters Lane at the east; the site adjoins the Citywest Hotel and its grounds to the south and west.

The site is composed of the former golf course lands and associated woodlands. The fairways and bunkers are shown in Figure 3 above. As pointed out earlier, the golf course was no longer in use at time of this survey but the grasslands had been maintained with grass on fairways recently cut.

Most of the remainder of the site was comprised of (mixed) broadleaved woodland. Whilst much of the woodland appears to be older 'estate' woodland, portions of these had been planted with younger understorey deciduous species. Narrower woodland belts along 'berms' separating the fairways appear to be recent plantings, associated with landscaping of the golf course. Tree species within woodlands and planted belts included oak *Quercus robur*, beech *Fagus sylvatica*, horse chestnut *Aesculus hippocastanum*, sycamore *Acer pseudoplatanus*, Scots pine *Pinus sylvestris*, sweet chestnut *Castanea sativa*, silver birch *Betula pendula*, and alder Alnus glutinosa. Other species noted were poplar (*Populus* sp.) maple (*Acer* sp.), larch *(Larix* sp.) firs and cypress.

A large artificial pond is present within the site at the east. The pond is fringed with bulrush *Typha latifolia*, sedges (*Carex* sp.) and rushes (*Juncus* sp.). Yellow flag *Iris pseudacorus* is also present. A, similar, smaller pond is located at the south-west of the site. Another pond is located next to the Citywest Hotel at the west of the area surveyed.

Adjacent to the site at the east is a complex of apartment buildings. The Citywest Hotel is situated at the west of the study area. There are car park areas and storage areas associated with the Hotel. At the north is a Gate Lodge, which was inhabited. A single roadway/track runs from the area of the Gate Lodge southwards through the site.

8. Fauna

The various mammal signs and signs of amphibians observed on site are shown in Figure 4 below. The surveyed area did not reveal numerous signs of fauna. No rabbit *Oryctolagus cuniculus* signs or Irish hare *Lepus timidus hibernicus* signs were seen on site.

Several signs of fox *Vulpes vulpes* were observed. Follow up monitoring with trail cameras revealed that fox presence was frequent at the east and north-east. A fox was captured on camera on a regular basis alongside the conifer treeline adjacent to the apartments at the east. A fox was also seen several times on a camera located in mature woodland at the north-east (photographs in the Appendices).

The trail cameras also revealed presence of grey squirrels *Sciurus carolinensis* and a hedgehog *Erinaceus europaeus*.

No badger *Meles meles* signs were found on site – such as bedding, snuffle holes or latrines. A few rooting signs were attributed to foxes. Most mammal paths on site appeared to be created by foxes or dogs. A strong path at the far east at the side/under the conifer treeline there was considered to be typical of a well worn badger path. For this reason, a trail camera was erected there but the only mammals observed on camera were foxes (as noted above) and a hedgehog.

Three mammal burrows were found on site; these are tabulated below. Burrow B1 at the far south-east was most likely a fox den, with fox prints present there. This was open and active. A larger burrow system (B2) is located in dense woodland at the south-east. The large spoil heaps there suggested that this was likely to have been a badger sett in the past but it was not active at time of survey. A small burrow (B3) was observed at the edge of the small stream channel nearby also.

No otter *Lutra lutra* signs were seen along the stream on site or along the fringes of the three ponds in the study area.

A number of other mammalian species are likely to be present in the area. These will include brown rat *Rattus norvegicus,* fieldmouse *Apodemus sylvaticus,* hedgehog and pygmy shrew *Sorex minutus*.

Copious frog spawn was observed at two of the ponds in the study area. The smooth newt *Lissotriton vulgaris* might be present in the ponds on site (newt recorded in the 10 km sq NBDC). The common or viviparous lizard *Zootoca vivipara* occurs in many habitats in Ireland and is quite likely to be present on site.

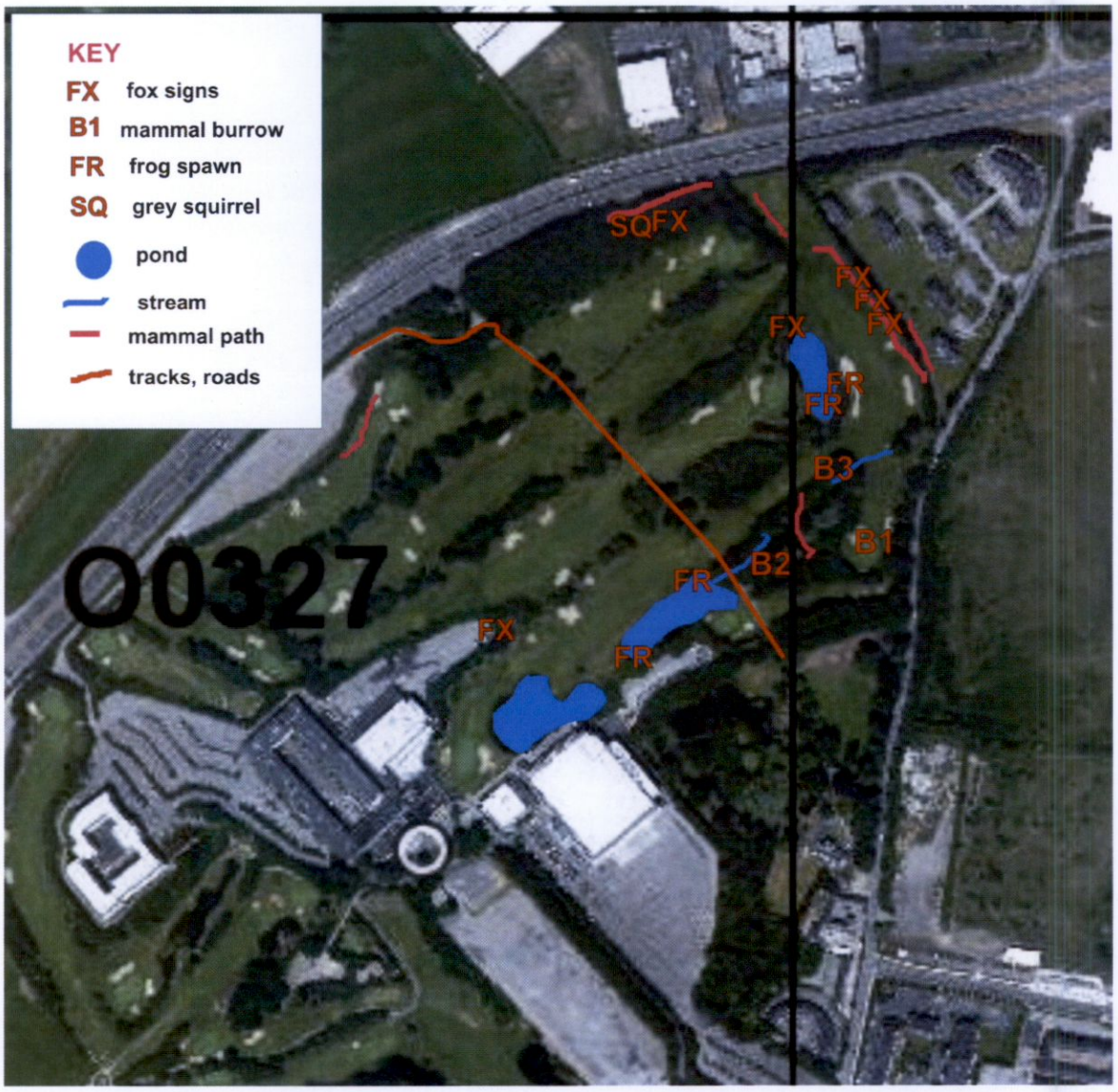

Figure 4. Aerial image of the site and surrounding area, with fauna signs shown. All locations shown are approximate.

Table of mammal burrows on site.

Reference on Figures	Grid reference (all GPS locations approximate).	description	comments
B1	O 04068 27535	Burrow with 2 entrances within fairway grassland. Medium spoil. Fox prints, no badger signs	Fox burrow, open, active.
B2	O 03990 27524	3 entrances, large spoil heaps. Sandy soil. All entrances disused.	Probably a former badger sett, as evidenced by large spoil heaps. Disused.
B3	c. O 04058 27612	Single entrance at edge of drain/stream.	Disused mammal burrow. No signs.

9. Species of conservation interest

10. Common species

Observed or expected on site are protected species such as hedgehog *Erinaceous europaeus*, pygmy shrew *Sorex minutus,* and common lizard *Lacerta vivipara,* These species are common and generally ubiquitous in Irish agricultural landscapes. It is an offence to intentionally interfere with or destroy the breeding or resting place of these species, though there are certain exemptions under the Wildlife Acts for road and housing developments and other construction works.

Species such as badger, otter, Irish stoat, Irish hare, hedgehog, pygmy shrew, common frog, smooth newt, and common lizard, are protected by the Wildlife Acts (1976 to 2012). Red and Sika deer are also protected (though may be hunted under licence).

Fox and grey squirrel are not protected species.

11. Badgers

The survey did not reveal presence of badgers on site. One disused burrow system suggested that badgers may have been present in the past, but there were no clear signs of badger activity on the site. Mammal paths observed on site appear to be those of dogs or foxes.

Badgers are known to have been killed by road traffic on the N7 in the general locality area (per. obs.) - such mortalities would have contributed to reducing badger numbers in this area. Badgers are known in the locality and have been recorded in the 10km square (NBDC). It is considered that badgers may create setts on site (or nearby) in the future. There remains a possibility that badgers from neighbouring social groups may, on occasion, forage on site.

12. Legal status and conservation issues - badgers

A number of mammalian species are protected under the Wildlife Act (1976) and Wildlife [Amendment] Acts (2000, 2012).[2]. These include the badger (which is also a Red Data Book species). The Wildlife [Amendment] Act (2000) protects all setts (as resting or breeding places). However, the badger is a relatively common species and ubiquitous through much of the Irish countryside (Smal, 1995).

It is standard best practice to make special provisions for badgers affected by development. Whilst the species is common in much of the Irish landscape, badgers are notable for their practice of constructing large underground tunnel and chamber systems

[2] Note that the Wildlife Act (1976) and the Wildlife Amendment Act (2000) allow exemptions for certain types of development [page 32, 2000 Act: "it shall not be an offence for a person - …while constructing a road, or building operation or work of engineering construction, or while constructing or carrying on such other operation or work as may be prescribed, *unintentionally* to kill or injure such an animal or *unintentionally* to destroy or injure the breeding place or resting place of such an animal…"]

(setts). Provisions are made for their humane removal or for their conservation on site where feasible or practicable.

13. Frogs and newts

The grassland areas of the former golf course are favourable foraging grounds for frogs. The two ponds (and east and at south-west) provide good breeding habitat for the species. The two ponds at which spawn was found in March 2023 were fringed with bulrush and rushes which provide shallows for breeding frogs. The 'third' pond in the survey area - next to the Citywest Hotel - had little vegetation within or on its margins and no frog spawn was seen there. The stream on site had few pools and was not considered to have potential as breeding site for frogs, but the channel would serve as a corridor for the species.

14. Legal status and conservation issues – common frogs and smooth newts

The common frog and the smooth newt are protected by the Wildlife Acts (1976 to 2012).

It is standard best practice to make special provisions for frogs and newts affected by development. Whilst frogs are relatively common in the Irish countryside, provisions are made for their conservation on site where feasible or practicable.

15. Otters

Otter presence was not observed on site. Otters do travel into hinterlands to forage on breeding frogs in spring, but no signs of otters were found in the survey area.

Otters are protected under the Irish Wildlife Acts and are also listed under Annex II and Annex IV of the EU Habitats Directive. The otter is also included in the Mammal Red List as Near Threatened (Marnell *et al*, 2019).

16. Assessment and considerations

The site is of limited interest for mammalian fauna (NB bats are not included in this assessment).

There appears to have been badger presence in the past but this species was not confirmed as being present on site presently. However, the site and surrounds do have potential for badger activity. No otter activity was observed on site.

The principal species of interest identified on site in this survey are common frogs and, potentially, smooth newts. Copious quantities of frog spawn were observed at two of the ponds in the study area. The surrounding (golf course) grasslands do provide favourable foraging habitat for frogs.

The EclA reports that:

> "It is understood that the proposed development will reprofile the area in the vicinity of the pond [at the far east] and connect to the existing watercourse to the east of the site".
>
> "A single large artificial pond is located on the eastern portion of the site. It is proposed to remove this pond." "There is also a smaller pond on the southern portion of the redline and it is proposed to partially infill this pond". [NB this refers to the 'middle pond' within the survey area (refer Figure 4)].

It is considered that the removal of these ponds, in full or in part, is likely to have a significant long-term impact on the frog populations on site. The loss of foraging habitat on the golf course grasslands could also have a significant adverse impact, whilst such impacts would be ameliorated by areas of grass and low vegetation within the proposed cemetery. If smooth newts are present within the existing ponds, then the potential impacts would be similar on this species.

Best practice mitigation measures are required to ensure continuance of these species on site after construction.

17. Mitigation measures and recommendations

Standard mitigation measures, as would apply to any large scale development, should be adopted in the construction of this development. These include habitat retention where feasible, limiting season of disturbance to trees and vegetation so as to reduce impacts on breeding species, to provide for habitat replacement and enhancement, and measures to reduce pollution and sedimentation into watercourses during construction and operation phases.

18. Protection of badgers

3 Any areas of scrub or scrubby woodland that require felling/clearing (and not due to be retained) should be checked for badger setts (by a faunal expert) prior to such operations commencing. *Reason: not all woodland areas could be thoroughly searched in this survey as a result of dense scrub cover. Also, there is potential for badgers entering the site and creating setts in the interim period before construction commences.*

4 If a lengthy period of time elapses prior to construction activities commencing (e.g. 18 months) a repeat full faunal study is recommended – as badgers may create new setts in the study area in the interim period before construction commences.

19. Protection of frogs and newts

Any amphibians in the ponds to be affected by the proposed development will require removal prior to any development at or near the ponds. Any mitigation operations for frogs and newts will require to be conducted by a faunal expert under licence from the NPWS.

It would be preferable to retain the ponds on site and for these ponds to be maintained, as they are at present, in order to protect frogs (and possibly smooth newts) present within them. If this is not possible then a series of mitigation procedures will be required:

Alternative pools/ponds: existing or to be created

10 Alternative suitable habitats in the locality should be identified – to serve as translocation sites for the amphibians affected by developments on site.

11 It may be necessary to create artificial pools/ponds within the site or on lands available to the developer nearby. Such ponds may be smaller in size than those presently on site, and could be created at several dispersed locations within the site or nearby.

12 The construction of artificial ponds should take place a minimum of 12 months before the existing ponds are removed or affected by works. Design, location, and planting should be conducted as advised by a zoologist and a botanical expert with expertise in pond design. The aquatic vegetation needs to be well established before the ponds would be considered suitable for the translocation of frogs and newts.

13 The artificial ponds will need to be constructed so that water levels can be maintained within them throughout all seasons of the year, so additional drainage channels to feed the pools/ponds may be required.

14 The artificial ponds created for frog/newt translocation would need to be constructed to the

satisfaction of the NPWS.

Retention of existing ponds

15 Consideration should be given to retention of the "middle" pond as is and improving the marginal vegetation there; this pond could be used as one of the translocation sites for frogs from the larger pond at the east. This pond is only partially within the site boundary of the proposed cemetery.

16 Consideration should also be given to retention of the larger pond at the east *as is* or incorporating large portions of it into a landscape design that allows for much of the pond area to be retained and utilised as frog pond habitat.

[NB works to reprofile this pond would entail loss of frog/newt habitat at the existing pond area – therefore, any works to reprofile the pond and recreate frog habitat there would require the same attention as to the creation of artificial ponds on site].

Translocation of amphibians from existing ponds

17 Prior to any construction works at the ponds:

Frog spawn and tadpoles will be present February to mid-summer; breeding adult newts, their eggs, or larvae will be present mid March to September.

a. Any frog spawn, tadpoles, juveniles or adult frogs will need to be captured and removed from affected habitat by hand net (and using buckets for spawn), and these then translocated to the alternative suitable habitats that have been provided.

b. Smooth newts will need to be captured either by hand net or by trapping (with approved traps), and translocated to the alternative suitable habitats.

c. It may be necessary to drain the affected pond(s) to ensure that no amphibians remain before the pond(s) are infilled (in whole or in part). An ecologist with appropriate experience would need to monitor this drainage of the pond(s) and to translocate the remaining amphibians (under licence).

d. Such translocations should be conducted in advance of construction works affecting the ponds, with alternative pools/ponds being in place prior to translocations, as recommended above.

e. The above operations must be conducted under licence from NPWS by a suitably experienced ecologist.

In practice, NPWS will approve licences for translocations of amphibians provided that suitable alternative sites are available for such translocations. It is suggested that a detailed programme of works, in relation to these translocations and provision of suitable alternative sites for amphibians, be provided to NPWS as part of the request for a licence.

18 Post construction monitoring will be required to ensure that the new artificial ponds on site and existing ponds (where these have been retained in whole or in part) have been successful. Additional measures may be required to improve the artificial ponds created on site as breeding habitat for frogs and newts.

19 Protection of other fauna
Generally, measures to protect other species, such as hedgehog and pygmy shrew etc. are considered impractical.

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21. Appendix: Photographic record

Plate 1. Part of golf course and drain at east of the site.

Plate 2. Part of golf course at north-east, with conifer treeline at far east, area of pond on left of photograph.

Plate 3. Apartments located just to east of the site.

Plate 4. Mammal path alongside the conifer treeline at far east, adjacent to the apartments.

Plate 5. Pond within golf course area at east.

Plate 6. Copious frog spawn at edge of the pond shown above.

Plate 7. Area of golf course, mature tree stands, and view of Citywest Hotel in background; view to west.

Plate 8. 'Middle' pond in golf course area. View of Citywest Hotel in background.

Plate 9. Frog spawn at edge of the pond shown above.

Plate 10. Citywest Hotel. The western most pond is in foreground.

Plate 11. Pond with view of surrounding woodland. View to south.

Plate 12. Mammal burrow at far south-east of site (burrow B1). Within golf course grassland.

Plate 13. Large spoil heaps at burrow B2. Several entrances and sandy spoil.

Plate 14. Woodland area at south-east of site. Burrow B2 is situated in this area.

Plate 15. Burrow B3 at edge of drain at far south-east of the site.

Plate 16. Woodland in central part of the study area.

Plate 17. Golf course area, mid-south of study area. Treelines have been planted along several 'berms' which divide the golf course area.

Plate 18. Woodland belt at far north of site, view to south.

Trail camera photographs

Plate 19. Fox at far east of site, next to conifer treeline. One of many trail camera photographs of a fox at this location.

Plate 20. as above.

Plate 21. as above.

Plate 22. Fox in woodland at far north-east, not far from the N7 dual carriageway.

Plate 23. Grey squirrel. Site as above.