

Cardiff Parkway Developments Ltd
Cardiff Hendre Lakes
2019 Dormouse Survey Report

Environmental Statement Appendix 7.10

Issue | 3 February 2020

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 252199

Ove Arup & Partners Ltd
4 Pierhead Street
Capital Waterside
Cardiff CF10 4QP
United Kingdom
www.arup.com

ARUP

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1 Introduction

1.1 Project Background

Ove Arup & Partners Ltd. (Arup) has been commissioned by Cardiff Parkway Developments Ltd (CPDL) to undertake baseline ecological surveys to inform the design and environmental assessment of a proposed new train station and expansion of the business park at St. Mellons, Cardiff. CPDL is proposing to develop a scheme that is an employment led development including a new railway station and park & ride facility. The site, centred on National Grid Reference (NGR) ST251808, and surrounding area are shown on Figure 1.

The site currently consists of predominantly arable and pastoral farming on the western edge of St. Mellons. The site's field boundaries are formed by hedge and tree lines with reens throughout. There is a lake, recreational grassland and woodland to the west of the site. The wider landscape comprises residential and commercial properties, and broad-leaved woodland to the north and west. To the south the land is bisected by the railway line with further neighbouring agricultural land. To the east there is also agricultural land.

An extended Phase 1 Habitat Survey was undertaken in January 2017¹ to identify habitats on site and to assess the potential for legally protected species to be present. Arising from this survey and the associated, it was determined that suitable habitat was present for dormouse *Muscardinus avellanarius*; consequentially detailed species-specific surveys were undertaken in 2017, 2018 and 2019.

Dormice were confirmed to be present across the site north of the railway in 2017² and in land adjacent to Cypress Drive to the north during 2018³. This report describes the 2019 dormouse survey which was carried out across the site that was subject to survey in 2017 and 2018. This report details survey methodology and results.

1.2 Survey Objectives

The survey objectives were to:

- determine the presence or likely absence, and distribution of dormouse within the study area; and,
- provide a sufficient information to inform the assessment of impacts on dormice from the proposed development as part of the Environmental Impact Assessment.

¹ Arup (2017) Cardiff Hendre Lakes | 2017 Extended Phase 1 Habitat Survey Report

² Arup (2018) Cardiff Hendre Lakes | 2017 Dormouse Survey Report

³ Arup (2020) Cardiff Hendre Lakes | 2018 Dormouse Survey Report (Cypress Drive)

1.3 Legislative and Policy Context

The dormouse is protected as a European Protected Species (EPS), under the Conservation of Habitats and Species Regulations 2017 (as amended), commonly referred to as the Habitats Regulations. Under this legislation it is an offence to:

- deliberately or recklessly kill, injure or capture a dormouse;
- deliberately or recklessly disturb a dormouse such as to affect its ability to breed or its local distribution; or,
- damage, destroy or obstruct access to a breeding site or resting place (e.g. shelter) used by a dormouse.

Dormice are also fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Legal protection makes it an offence to:

- intentionally kill, injure or take (capture) a dormouse;
- possess or control alive or dead dormouse, or any part of a dormouse; or,
- intentionally or recklessly damage, destroy or obstruct access to any structure or place which dormouse use for shelter or protection, or disturb dormouse while they are using such a place.

The dormouse is identified as a species that are a priority for nature conservation (Priority Species) within the 'UK Post-2010 Biodiversity Framework' Biodiversity Action Plan (UKBAP).

The Environment (Wales) Act 2016 includes a duty on all public authorities to have regard to the conservation of biodiversity in the exercise of their functions. This duty applies to government bodies, local authorities and statutory undertakers. The Act also requires lists to be published of Habitats and Species considered to be of Principal Importance for the Conservation of Biological Diversity. These are referred as Section 7 habitats and species after the sections of the Act which require the publication of lists in each devolved area. Dormice are listed as a Section 7 Species considered of Principal Importance for the Conservation of Biological Diversity.

Local Biodiversity Action Plans (LBAPs) continue to provide a list of habitats and species of conservation significance for their relevant area. Particular attention has been given to the Cardiff LBAP⁴ and the Species Action Plan for dormouse.

⁴ Available online at: <https://www.outdoorcardiff.com/wp-content/uploads/Cardiff-LBAP-2008.pdf> [Accessed: 24/12/19].

2 Methodology

2.1 Desk Study

Biological records were obtained from the South East Wales Biodiversity Records Centre (SEWBReC)⁵ on 31st January 2017. These records include information on dormice within the site and up to 2 km radius from the centre of the site; data was restricted to the last 10 years. The full desk study results are provided in the Extended Phase 1 Habitat Survey Report¹.

Two previous dormouse surveys and reports produced by Arup, one covering the fields to the north and south of the railway within the main study area in 2017², and one covering Cypress Drive to the north in 2018³, were also reviewed.

2.2 Field Survey

To better understand the population size and distribution of the dormice within the site, a repeat nest tube survey was undertaken in 2019 in accordance with best practice guidance⁶. This comprised placing nest tubes within suitable dormouse habitat across the study area. Nest tubes were constructed of stiff double-walled black plastic sheet, 5x5 cm in cross sections and 25 cm long. A small plywood tray was placed inside, projecting 5 cm beyond the tubes entrance to allow easy access for animals. The opposite end of the tube was sealed with a wooden block mounted on the tray. Each tube was suspended by wire, fixed firmly underneath horizontal limbs of suitable trees and/or shrubs.

A total of 333 nest tubes were erected in May 2019, within suitable habitat at locations shown in Figure 2. Nest tubes were spaced between 15 m and 20 m apart. Tubes were numbered, and the location recorded by GPS. An additional 50 tubes were deployed in August 2019 in an area where a possible dormouse nest was found during other ecological surveys on site, making the new total number of tubes deployed 383.

Nest tubes were inspected approximately every four weeks (monthly where possible) between the May and November 2019 (Table 1). The weather conditions during the survey are denoted in Table 2. The interior of each tube was visually inspected where possible. Where not possible or where vegetation was observed inside the tube, the open end of the tube was blocked with a cloth, the tube carefully removed from the vegetation and placed within a large plastic bag, and the nest tray carefully withdrawn. The contents of the nest tube were documented and photographed.

Survey effort was conducted using the recognised index of probability in accordance with guidance⁶, as shown in Table 1. As stated by the guidance, using 50 nest tubes as a standard, and Table 1 as an index of the 'value' of different months for surveying, a score can be devised as an indicator of the thoroughness

⁵ <http://www.sewbrec.org.uk/home.page>

⁶ Bright, P., Morris, P. & Mitchell-Jones, T. (2006). The Dormouse Conservation Handbook (second edition). English Nature, Peterborough.

of a survey. Thus, in the case of this survey, 333 tubes left out from May to November would score 160. 50 tubes left out between August and November score an additional 16 points. Therefore, adequate survey effort was achieved with a score of 176 points being achieved.

During the November survey, any tubes containing nests that may have been in use by dormice were left in situ. The nest tubes were then collected the following January.

Table 1: Survey schedule

Month	Visit	Dates	Index of Probability per 50 tubes (cumulative total)
May	1	21 st , 22 nd , 23 rd	4(4)
June	2	21 st , 28 th	2(6)
July	3	18 th , 22 nd	2(8)
August	4	13 th , 15 th	5(13)
September	5	18 th , 19 th , 20 th	7(20)
October	6	30 th , 31 st	2(22)
November	7	12 th , 27 th	2(24)

Table 2: Survey weather conditions

Date	Temp. (°C)	Wind Speed (Beaufort Scale)	Wind Direction	Cloud Cover (%)	Conditions
Visit 1 (May)					
21/05/2019	18	1	W	20	Sunny
22/05/2019	16	1	N/A	10	Sunny
23/05/2019	16	1	N/A	30	Sunny
Visit 2 (June)					
21/06/2019	17	2	NE	50	Sunny
28/06/2019	19	2	S	10	Sunny
Visit 3 (July)					
18/07/2019	17	1	W	100	Dry
22/07/2019	20	1	W	100	Light drizzle
Visit 4 (August)					
13/08/2019	16	2	W	30	Sunny
15/08/2019	17	2	E	70	Sunny
Visit 5 (September)					
18/09/2019	19	1	N	10	Sunny
19/09/2019	10	1	NE	0	Sunny

Date	Temp. (°C)	Wind Speed (Beaufort Scale)	Wind Direction	Cloud Cover (%)	Conditions
20/09/2019	20	1	E	0	Sunny
Visit 6 (October)					
30/10/2019	9	1	E	90	Dry
31/10/2019	7	1	W	100	Light drizzle
Visit 7 (November) and collecting tubes					
12/11/2019	6	3	N	25	Dry
27/11/2019	13	1	S	100	Light showers
Visit 8 (January) Collecting tubes					
22/01/2020	5	1	NW	100	Light drizzle

Surveys were undertaken by surveyors experienced in dormouse surveys, who either hold personal survey licences or are named as accredited agents on those licences.

Presence or absence was recorded during every survey at each tube; in addition, any other observations e.g. vandalism to the nest tubes, were also recorded. Field signs or features relevant to the survey were photographed and georeferenced.

2.3 Limitations and Assumptions

A small proportion of the tubes were not accessible during some of the visits either due to very dense vegetation or due to the presence of cattle on site. Despite this, at least 50 tubes were checked every month and therefore the probability score of finding evidence of dormice was achieved. Tubes that had not been accessible were inspected and collected the following January.

Six tubes (numbers 158-163) were not found the month after being deployed and therefore were replaced with numbers 286-291. Three extra tubes (3a, 40a and 208a) were deployed close to tubes 3, 40 and 208, as they were not found during one of the surveys but were later found. Therefore, the total number of tubes ultimately deployed was 380.

It was not possible to undertake a nut search in addition to the nest tube survey, due to the absence of fruiting hazel on site. However, the level of effort employed for the nest tube survey is considered sufficient to determine the presence/likely absence of dormice within the site, following established guidance.

3 Results

3.1 Desk Study

SEWBRcC⁵ records show that there were 11 records of dormouse within 2 km of the site, with the closest being 880m away. The full desk study results are provided in the Extended Phase 1 Habitat Survey Report¹.

The previous Arup dormouse surveys^{2,3} recorded that 12 of a total of 127 tubes contained confirmed or probable dormouse nests within the main study area in 2017. These were located to the north of the railway. In 2018, along Cypress Drive, two of a total of 50 tubes contained dormouse nests, and one live dormouse was found within one of those nests.

3.2 Field Survey

Dormice or signs of dormice were encountered on a total of 225 occasions throughout the 2019 surveys, within 116 of the (380) nest tubes. Therefore, 31% of the nest tubes on site had been occupied by dormice. Dormice were encountered within the tubes on 30 occasions. The locations of these results are shown on Figure 3 and a summary is given in Table 3 below.

Four natural dormouse nests (outside of the dormouse nest tubes) were identified during the January site visit. Their locations are also shown on Figure 3.

A total of five dead dormice were found, between October 2019 and January 2020, within or adjacent to tubes 130, 139, 188, 289 and 353. The reason for their deaths are unknown, though no signs of injury or disease were visible.

Wood mice or signs of wood mice were encountered on a total of 122 occasions throughout the 2019 surveys, within 87 of the nest tubes. Wood mice were often found later in the year to have inhabited nests that had been made and/or previously inhabited by dormice. Where a dormouse nest was present, this was recorded as a positive dormouse record.

A number of tubes contained bird droppings, indicating that the tubes had been used as a perch or shelter by small birds.

Photographs of dormice and their nests and wood mice and their nests and food caches are given at the end of this report.

Table 3: Confirmed dormouse presence

Nest Tube Number	Survey Visit	Notes
3	September	Dormouse nest present. Animal absent.
3a	September	Dormouse nest present. Animal absent. Two tubes labelled number 3.
3	October	Female dormouse, young adult, 16g.
3	November	Beginnings of dormouse nest.

Nest Tube Number	Survey Visit	Notes
5	May	Adult male dormouse, non-breeding, 18g, white tail tip. Woven nest present.
5	June	Adult male dormouse, 20g. Testes slightly visible.
5	July	Woven nest. No dormouse present.
5	August	Dormouse nest. Seems less used. Dormouse not present. Damp and insects present.
5	September	Dormouse nest present. Animal absent.
5	October	Old dormouse nest, no mouse.
5	November	Old dormouse nest taken over by wood mice.
6	October	Old dormouse nest.
6	November	Dormouse nest.
6	January	Old dormouse nest.
9	September	Well-formed dormouse nest. Adult female dormouse, 20g.
9	October	Old dormouse nest.
9	November	Unoccupied dormouse nest.
9	January	Old dormouse nest.
10	October	Old dormouse nest, no mouse.
17	October	Woven nest, no mouse.
17	November	Beginnings of dormouse nest - not complete.
17	January	Old dormouse nest with 2 wood mice present.
20	November	Dormouse nest.
20	January	Dormouse nest.
26	September	Potential dormouse nest loose and not well formed, however a green leaf was in the nest along with some shredded woody stems.
27	September	Dormouse nest. Green leaves around structures nest. Animal absent.
33	September	Start of a dormouse nest. Some structure of grass. No animal present.
33	January	Old dormouse nest.
35	January	Old dormouse nest with a dead wood mouse.
38	January	Dormouse nest.
39	September	Dormouse nest present. Very tightly packed. No animal present.
39	January	Old dormouse nest.
40	January	Old dormouse nest.
42	September	Dormouse nest present. Animal absent.
42	January	Dormouse nest.
47	September	Potential start of dormouse nest.
47	January	Start of dormouse nest.
51	January	Dormouse nest.
52	January	Old dormouse nest.
54	August	Dormouse nest present. No dormouse present. However, fresh leaves in nest.
54	September	Dormouse nest present. Animal absent.
54	January	Old dormouse nest.
55	September	Dormouse nest present. Juvenile wood mouse present.
55	January	Old dormouse nest.

Nest Tube Number	Survey Visit	Notes
56	January	Potential old dormouse nest.
58	July	Woven nest. No dormouse present.
58	September	Dormouse nest present. No animal present. Nest has tight woven grass.
58	January	Old dormouse nest.
59	July	Start of a woven nest. No dormouse present.
59	August	Dormouse jumped out of tube. Woven nest present.
59	September	Dormouse nest.
59	January	Old dormouse nest with pygmy shrew present.
60	August	Dormouse escaped. Droppings in nest.
60	September	Dormouse nest. Animal not present.
60	January	Old dormouse nest.
62	July	Woven nest. Dormouse ran out of tube.
62	August	Dormouse nest but no dormouse present. New leaf in nest.
62	September	Wood mouse in tube, in a half-finished dormouse nest made of woven grass.
63	June	Adult male dormouse, testes scrotal, white tail tip, 17g.
63	July	Woven nest. No dormouse present.
63	August	Empty dormouse nest.
63	September	Dormouse nest present. Animal absent.
63	January	Old dormouse nest.
64	January	Old dormouse nest.
66	September	Dormouse nest with green leaves.
66	January	Old dormouse nest.
68	June	Adult female dormouse, non-breeding, 19g, in a woven nest.
68	July	Woven nest. No dormouse present.
68	August	Dormouse nest. No dormouse present.
68	September	Dormouse nest with adult wood mouse in it.
68	January	Old dormouse nest.
70	January	Old dormouse nest.
71	June	Dormouse nest. Woven nest with lots of fresh leaves.
71	July	Woven nest present. Fresh green leaves. No dormouse present
71	August	Dormouse nest with fresh green leaves.
71	September	Dormouse nest present. Animal absent. Still some structure and shredded grass.
71	January	Old dormouse nest.
73	January	Old dormouse nest taken over by wood mice.
75	January	Old dormouse nest with 3 wood mice in.
77	January	Potential old dormouse nest with 2 wood mice in.
79	January	Dormouse nest.
80	January	Old dormouse nest.
81	January	Dormouse nest with a wood mouse present.
85	January	Potential old dormouse nest.
87	January	Dormouse nest.
88	January	Start of dormouse nest.

Nest Tube Number	Survey Visit	Notes
89	January	Dormouse nest.
90	January	Dormouse nest.
91	January	Potential start of dormouse nest.
92	January	Dormouse nest.
93	January	Start of dormouse nest.
94	January	Dormouse nest with wood mouse present.
101	January	Old dormouse nest with 4 wood mice present.
102	January	Dormouse nest.
105	January	Dormouse nest.
106	January	Start of dormouse nest.
107	August	Adult male dormouse present, testes scrotal, 17g.
107	September	Old dormouse nest with a wood mouse present.
107	January	Remnants of a dormouse nest.
110	January	Old dormouse nest with 4 wood mice present.
111	January	Old dormouse nest.
113	August	Dormouse nest. Woven. No dormouse present.
113	September	Dormouse nest.
113	January	Dormouse nest.
114	September	Dormouse nest.
114	January	Dormouse nest.
115	January	Old dormouse nest.
117	September	Dormouse nest present. Animal absent.
117	January	Remnants of a dormouse nest.
119	September	Dormouse nest.
119	January	Old dormouse nest with wood mouse in it.
120	January	Dormouse nest.
121	September	Dormouse nest. Animal not present. Very densely packed.
121	January	Dormouse nest.
123	January	Old dormouse nest.
124	January	Dormouse nest that looked fairly fresh.
126	January	Start of dormouse nest.
127	January	Old dormouse nest with a wood mouse present.
128	September	Adult dormouse escaped.
128	January	Dormouse nest.
129	January	Start of dormouse nest.
130	January	Dead dormouse with white tail tip in nest.
133	August	Dormouse nest. Woven. No dormouse present.
133	September	Dormouse nest.
133	January	Dormouse nest.
134	January	Old dormouse nest.
135	September	Start of potential dormouse nest.
135	January	Start of dormouse nest.
139	January	Dead dormouse outside of nest.

Nest Tube Number	Survey Visit	Notes
142	January	Dormouse nest.
144	January	Start of dormouse nest.
145	January	Dormouse nest.
150	January	Dormouse nest.
151	September	Dormouse nest present. Animal absent.
152	September	Dormouse nest.
152	January	Potential old dormouse nest.
153	January	Old dormouse nest.
154	January	Start of dormouse nest.
155	September	Start of a dormouse nest. Not animal present.
155	January	Dormouse nest.
179	November	Old dormouse nest with a wood mouse in.
188	September	Start of dormouse nest. No dormouse present.
188	October	Dormouse ran out of tube. Had a white tail tip. Nest present.
188	November	Dormouse nest with green leaves. No mouse.
188	January	Dead dormouse in nest.
190	January	Old dormouse nest with a wood mouse present.
201	September	Dormouse nest. Animal not present.
206	August	Potential start of dormouse nest. Green leaves and some shredded bark. No dormouse present.
207	October	Potential dormouse nest, although just leaves. No mice.
208	October	Two tubes next to each other, each with a dormouse nest. No mice. One tube moved further along.
208a	October	See above.
208	November	Possible old dormouse nest, been occupied by wood mice. No mice.
208a	November	Possible old dormouse nest but been occupied by wood mice. No mice.
210	August	Potential start of dormouse nest. Leaves and shredded bark. No dormouse present.
211	July	Dormouse nest. Woven grass and fresh leaves present. No dormouse present.
211	August	Dormouse nest. Green leaves and woven structure. No dormouse present
211	October	Dormouse nest, no mouse.
211	November	Torpid adult dormouse in nest. Not weighed.
211	January	Old dormouse nest.
212	October	Dormouse nest, no mouse.
212	November	Potential old dormouse nest. No mice.
218	October	Torpid adult female dormouse, not weighed, woven nest present.
218	November	Old dormouse nest. No mice.
220	October	Dormouse nest, no mouse.
220	November	Woven nest. No mouse.
220	January	Old dormouse nest.
224	October	Dormouse nest, no mouse.
224	November	Fairly new dormouse nest, no mouse.

Nest Tube Number	Survey Visit	Notes
224	January	Old dormouse nest.
236	October	Adult male dormouse, non-breeding, 24g, shortened tail. Woven nest present.
236	November	Dormouse nest in fairly good condition. No mouse.
236	January	Old dormouse nest.
242	October	Young adult female dormouse, 17g, non-breeding. Woven nest present.
242	November	Dormouse nest. No occupant.
242	January	Old dormouse nest.
287	September	Woven nest present. No dormouse.
287	October	Potential old dormouse nest. No mouse.
289	September	Woven nest present with fresh green leaves.
289	October	Dead dormouse in woven nest.
289	November	Old dormouse nest but still dry.
289	January	Old dormouse nest.
291	September	Dormouse escapee. Woven nest present.
291	October	Old dormouse nest. No mouse.
291	November	Old dormouse nest, not in use.
293	October	Dormouse nest. Woven structure. No dormouse. Fresh droppings.
293	November	Empty dormouse nest.
293	January	Old dormouse nest.
296	July	Adult male dormouse present, 21g, testes scrotal, nest of fresh green leaves present with some woven grass.
296	August	Dormouse jumped out of tube. Dormouse nest present. Green leaves and woven structure.
296	September	Escaped adult dormouse.
296	October	Old dormouse nest. Has now been occupied by birds.
297	November	Dormouse nest.
302	June	Woven nest with leaves on outside.
302	July	Woven nest. No dormouse present.
302	August	Empty dormouse nest. Dormouse not present. Insects present.
302	September	Dormouse nest.
302	October	Old dormouse nest, no mouse.
304	September	Dormouse nest. Animal absent.
304	October	Old dormouse nest.
308	November	Potential dormouse nest.
308	January	Old dormouse nest with a wood mouse present.
322	October	Woven nest. No mouse.
322	November	Beginnings of dormouse nest.
322	January	Old dormouse nest taken over by wood mice.
324	November	Old dormouse nest.
333	October	Dormouse nest but with three wood mice in now.
333	November	Dormouse nest. No occupant.
333	January	Old dormouse nest.
339	September	Woven nest. No dormouse present.

Nest Tube Number	Survey Visit	Notes
339	October	Old dormouse nest with 6 wood mice.
339	November	Old dormouse nest with 2 wood mice.
343	November	Active adult female dormouse in nest, not weighed.
343	January	Old dormouse nest.
353	October	Woven nest. No mouse.
353	November	Dead dormouse, outside of nest. No signs of injury.
358	November	New woven nest with leaves. No mouse.
358	January	Torpid adult dormouse in nest.
369	September	Juvenile male dormouse with nest, just leaves no woven structure, 16g.
369	October	Old dormouse nest looks to have been taken over by wood mice. No mice present.
369	November	Old dormouse nest taken over by wood mice.
371	November	Active adult male and adult female dormice in nest, not weighed.
371	January	Old dormouse nest.
372	October	Dormouse an out of tube. Nest present.
372	November	Old dormouse nest, not in use.

4 Conclusions

The surveys have confirmed the presence of dormice within suitable habitats across a number of areas of the site. This includes land to the north and south of the railway, and land adjacent to Cypress Drive.

It is likely that dormice use all suitable interconnected habitat, including hedgerows, woodland, trees and scrub, across the site. A European Protected Species Licence will be required from Natural Resources Wales prior to any work taking place on the site that may affect dormouse or their habitat.

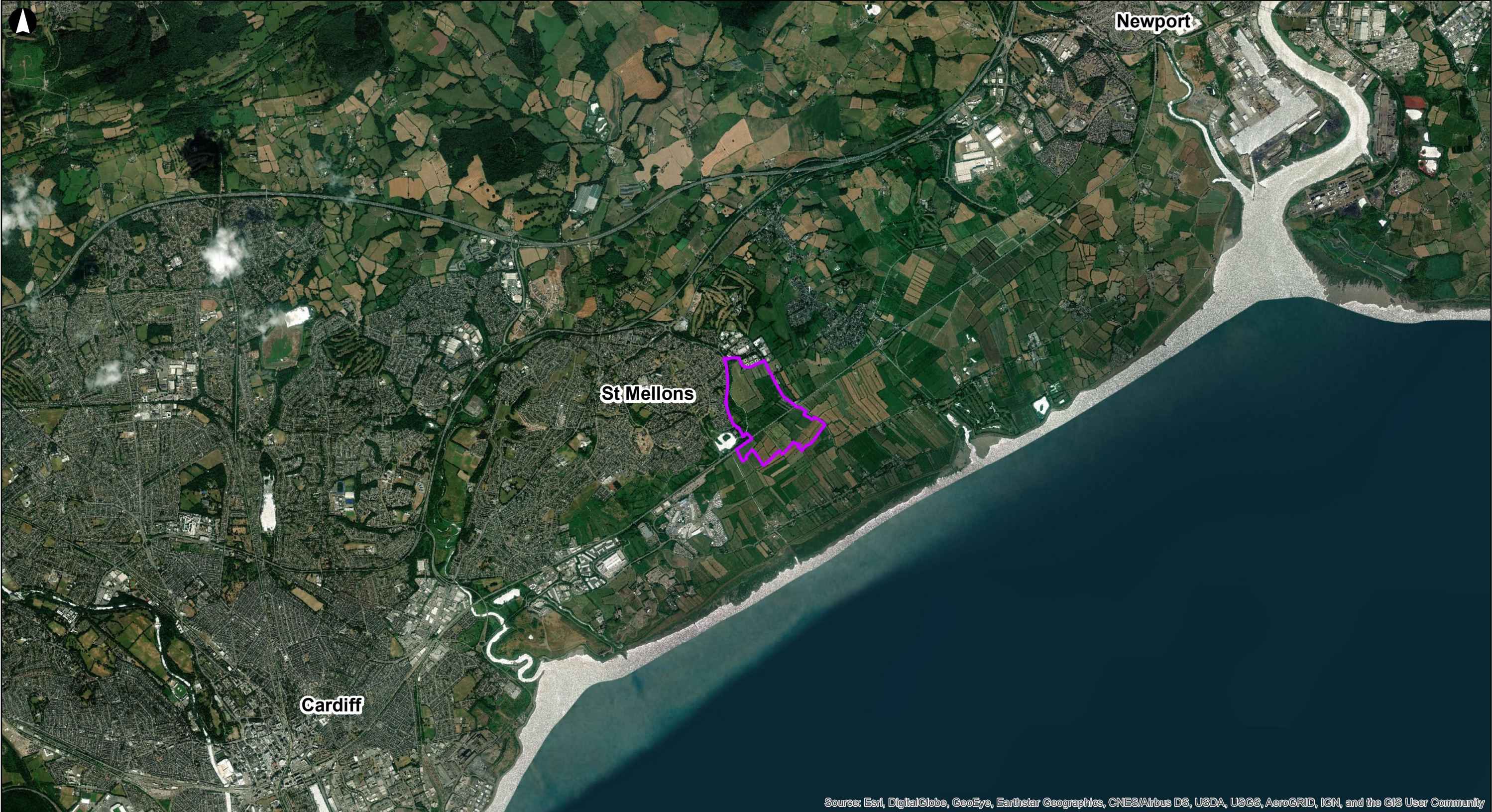
This report is the result of survey work undertaken between May 2019 and January 2020. This report refers, within the limitations stated, to the condition or proposed works of the site at the time of the surveys. Changes in legislation, guidance, best practice, etc. may necessitate a re-assessment/survey. No warranty is given as to the possibility of future changes in the condition of the site.

Figures

Figure 1 Site Location

Figure 2 Nest Tube Locations (2,2a and 2b)

Figure 3 Dormouse Survey Results (3, 3a and 3b)



Legend

Study Area Boundary

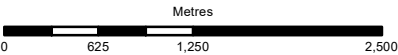


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ARUP

4 Pierhead Street
Cardiff CF10 4QP
Tel +44 29 2047 3727 Fax +44 29 2047 2277
www.arup.com



Client

Cardiff Parkway Developments Ltd

Job Title

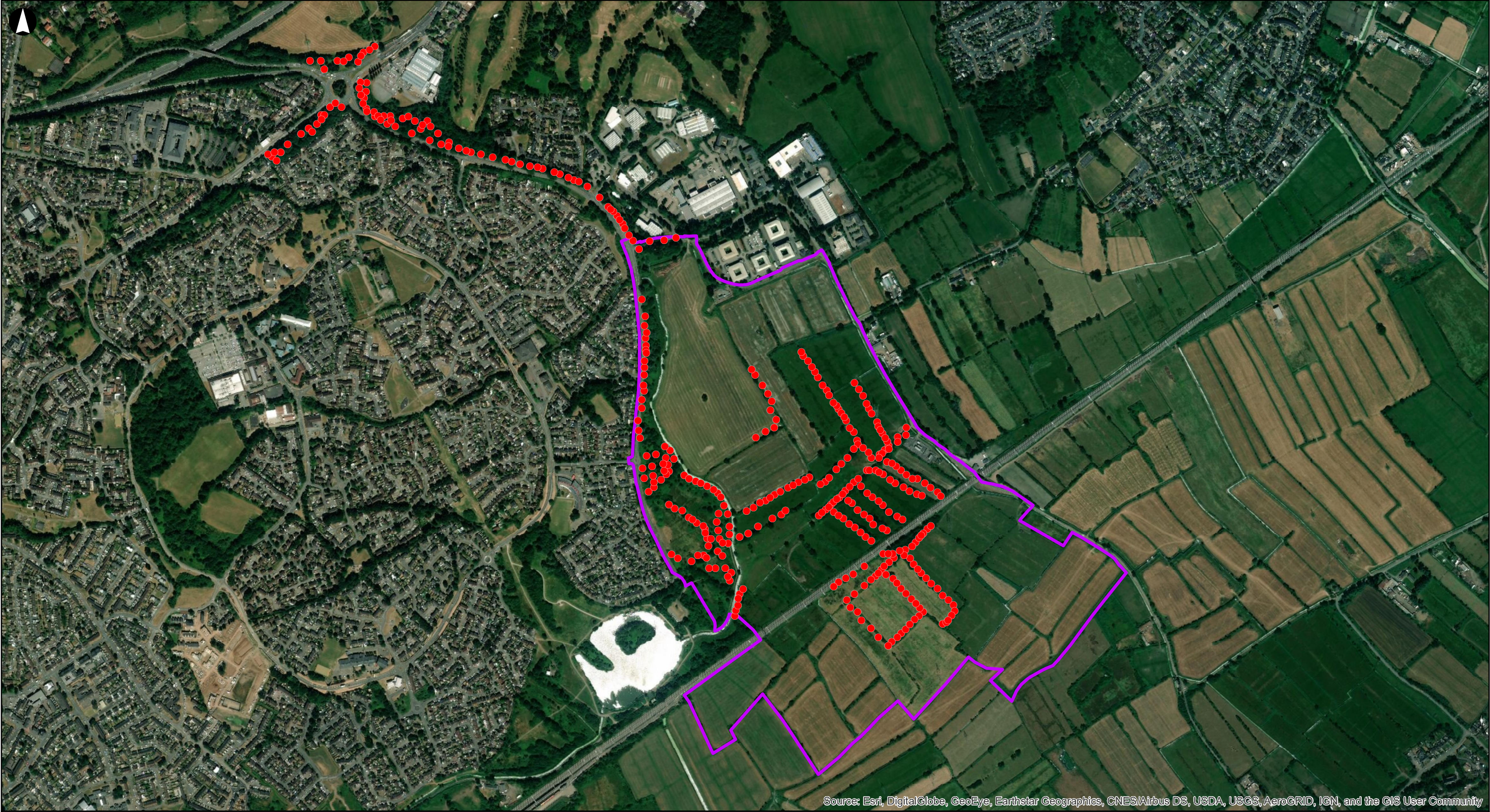
Cardiff Parkway

Site Location

Scale at A3

1:50,000

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Legend

● Dormouse Tubes

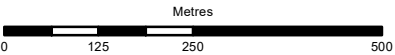
— Study Area Boundary

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ARUP

4 Pierhead Street
Cardiff CF10 4QP
Tel +44 29 2047 3727 Fax +44 29 2047 2277
www.arup.com



Client

Cardiff Parkway Developments Ltd

Job Title

Cardiff Parkway

Dormouse Tube Locations
Whole Site

Scale at A3

1:10,000

Job No

252199-00

Drawing Status

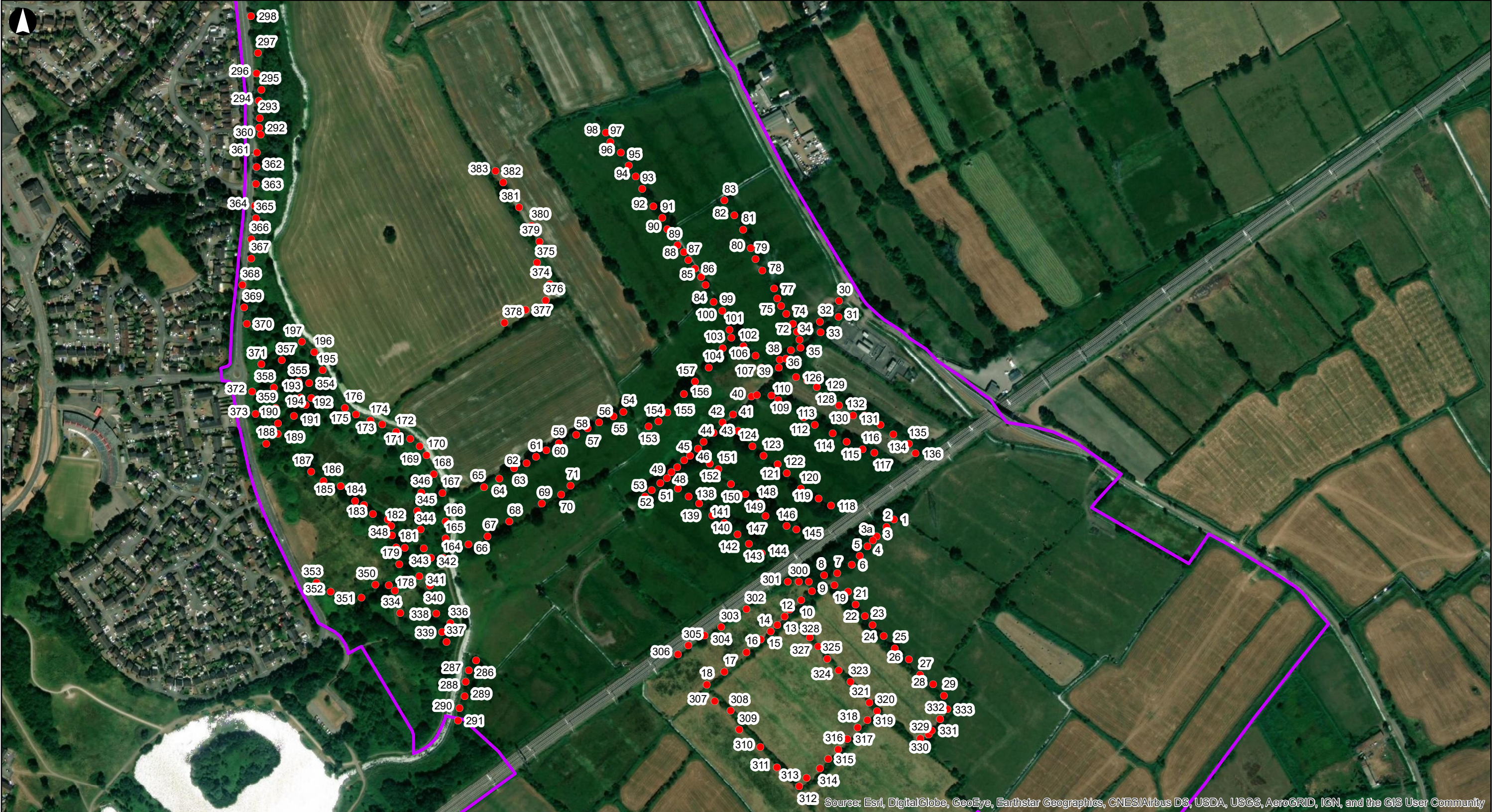
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Issue

F1



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

● Dormouse Tubes

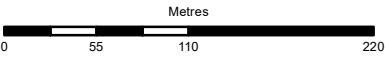
— Study Area Boundary

F1	2020-01-03	KSJ	PW	PC
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Issue	Date	By	Chkd	Appd
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Client

Cardiff Parkway Developments Ltd

Job Title

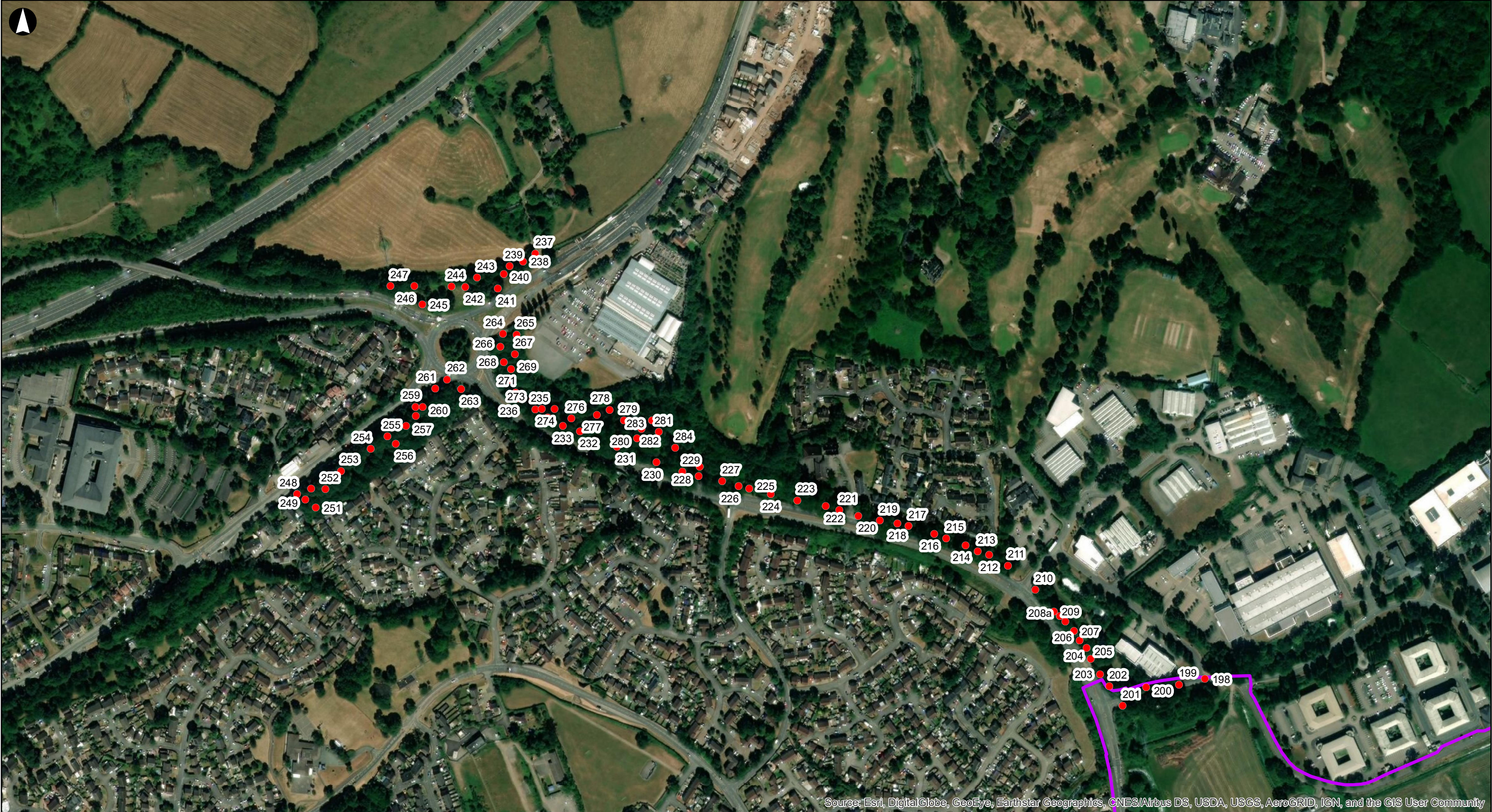
Cardiff Parkway

Dormouse Tube Locations
South

Scale at A3
1:4,500

Job No 252199-00	Drawing Status For Issue
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Drawing No 002a	Issue F1
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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

● Dormouse Tubes

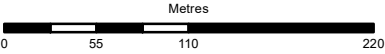
— Study Area Boundary

F1	2020-01-03	KSJ	PW	PC
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Issue	Date	By	Chkd	Appd
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Client
Cardiff Parkway Developments Ltd

Job Title
Cardiff Parkway

Dormouse Tube Locations
North

Scale at A3
1:4,500

Job No 252199-00	Drawing Status For Issue
Drawing No 002b	Issue F1



Legend

▲ Dormouse Present

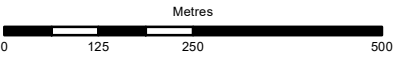
Study Area Boundary

F1	2020-01-03	KSJ	PW	PC
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Issue	Date	By	Chkd	Appd
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4 Pierhead Street
Cardiff CF10 4QP
Tel +44 29 2047 3727 Fax +44 29 2047 2277
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Client
Cardiff Parkway Developments Ltd

Job Title
Cardiff Parkway

Dormouse Survey Results
Whole Site

Scale at A3
1:10,000

Job No 252199-00	Drawing Status For Issue
Drawing No 003	Issue F1



Legend

▲ Dormouse Present

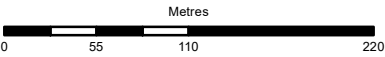
Study Area Boundary

F1	2020-01-03	KSJ	PW	PC
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Issue	Date	By	Chkd	Appd
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4 Pierhead Street
Cardiff CF10 4QP
Tel +44 29 2047 3727 Fax +44 29 2047 2277
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Client
Cardiff Parkway Developments Ltd

Job Title
Cardiff Parkway

Dormouse Survey Results
South

Scale at A3
1:4,500

Job No 252199-00	Drawing Status For Issue
Drawing No 003a	Issue F1



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

▲ Dormouse Present

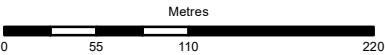
Study Area Boundary

F1	2020-01-03	KSJ	PW	PC
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Issue	Date	By	Chkd	Appd
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4 Pierhead Street
Cardiff CF10 4QP
Tel +44 29 2047 3727 Fax +44 29 2047 2277
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Client
Cardiff Parkway Developments Ltd

Job Title
Cardiff Parkway

Dormouse Survey Results
North

Scale at A3
1:4,500

Job No 252199-00	Drawing Status For Issue
Drawing No 003b	Issue F1

Photographs



Photograph 1: Adult male dormouse found in Tube 5 during the May survey.



Photograph 2: Adult male dormouse with white tail tip found in Tube 63 during the June survey.



Photograph 3: Dormouse nest found in Tube 71 during the June survey.



Photograph 4: Dormouse nest and droppings found in Tube 60 during the August survey.



Photograph 5: Adult male wood mouse found in Tube 58 during the August survey.



Photograph 6: Wood mouse nest found in Tube 359 during the November survey.



Photograph 7: Wood mouse food cache found in Tube 193 during the October survey.



Photograph 8: Natural dormouse nest found during the January visit.