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Figure 1 – Elm Point Mitigation Area

Figure 2 – Location of Bird- and Bat-boxes

1 INTRODUCTION

1.1 Preamble

- 1.1.1 Marches Ecology was commissioned by Clwydian Group Ltd to undertake annual monitoring of the mitigation area at Elm Point¹, Abbey Road, Wrexham Industrial Estate, Wrexham (approximate OS Grid Ref. SJ 385 505). Management of the mitigation area is undertaken by Ecological Land Management (ELM). This report presents the findings of the monitoring and provides a record of the management undertaken based on information provided by ELM. It covers Year 2 of the monitoring/ management. This report will be submitted to the Wrexham County Borough Council (WCBC) ecologist in accordance with the Ecological Management Plan (EMP) and to Natural Resources Wales (NRW) in accordance with Condition 12 of the Great Crested Newt licence. The mitigation area is shown on *Figure 1*.

1.2 Project Background

- 1.2.1 The mitigation area was originally established by WCBC as part of a mitigation package for Great Crested Newts (*Triturus cristatus*). A number of buildings within the site were to be demolished along with some remediation works. Mitigation measures were therefore required to avoid intentional/ reckless killing of individual animals and to compensate for the loss of habitat used by the species. The remainder of the site was enclosed with amphibian exclusion fencing with translocation of amphibians from this area completed in 2012/ 2013. This work was completed under Welsh Government licence no. GCN/2658/WG/IND.
- 1.2.2 Clwydian Group Ltd leased and took control of the site in 2015. Responsibility for creation and ongoing management of the mitigation area was therefore transferred to Clwydian Group Ltd. An amended licence was provided by NRW in February 2015 (Licence no. 63019:OTH:EPS:2015). This amendment included a change of licensee.
- 1.2.3 Habitat creation work within the mitigation area was undertaken by Clwydian Group Ltd (on behalf of WCBC at that time) during February 2015. This principally involved spreading sub-soil and hardcore material to create the required landform and substrates. It was decided at this time to allow natural regeneration of the mitigation area while acknowledging that monitoring would need to assess the success of colonisation by certain key plants. Some vegetative material from within the development plot was also translocated to the mitigation area where this was deemed to be suitable.
- 1.2.4 Five bird and six bat-boxes were installed in the mitigation area in December 2015. Two clusters of three bat-boxes (Two Schwegler 2FN and four 2F-DFP) and five bird-boxes (Four Schwegler 1B and two 1N – Robin box) were provided.
- 1.2.5 Clwydian Group Ltd submitted a planning application for an industrial unit with offices in November 2015 (Planning ref. P/2015/0886). Consent was granted in January 2016. The development was commenced in February 2016 and external works were largely completed by December 2016.
- 1.2.6 The current licences for the site (Licence nos. 63019c:OTH:EPS:2017 and 76782:OTH:EPS:2017) were provided by NRW in August 2017 due to a future requirement to divide the site (including the mitigation area) between two land-owners. These licenses

¹ Previously known as 'Redwither Central'.

cover the periods from 30th August 2017, the former expiring on 28th February 2018 and the latter on 31st December 2018.

1.3 Ecological Management Plan

- 1.3.1 An Ecological Management Plan (EMP) was submitted as part of the Great Crested Newt licence application (Marches Ecology 2012). The EMP sets out a ten-year management strategy for the mitigation area. The EMP states the following:

'The mitigation area is largely to be provided to mitigate and compensate for any potential impacts on the Favourable Conservation Status of the local Great Crested Newt (Triturus cristatus) population/s as a result of the proposed demolition/ clearance works at the Redwither Central site. As such management of this area concentrates on this key species. However provision is also made in this area to compensate for impacts on certain habitats and other species (in particular grassland, scrub, locally scarce plants, bats and birds).'

- 1.3.2 The EMP identifies Great Crested Newts as the primary feature of importance while the secondary features are listed as follows:

- Bats;
- Birds;
- Grizzled and Dingy Skipper butterflies;
- Species-rich neutral grassland; and
- Locally Scarce plants.

- 1.3.3 A monitoring protocol for the mitigation area is established based on annual inspections and a review of the management undertaken in that year. The EMP proposes submission of the annual report in August of each year though it is now deemed more appropriate for the report to be provided in November. The EMP is subject to five-yearly review with the planning authority, NRW and the organisation responsible for management of the mitigation area. The first review would currently be timetabled for 2021.

2 METHODOLOGY

2.1 Monitoring

2.1.1 The first full season of monitoring was completed in 2016 and is reported in Marches Ecology (2016). This report covers the second year of monitoring.

2.1.2 The EMP states the following:

'No particular monitoring of the mitigation area is proposed, however it will be inspected annually by a suitably qualified ecologist and notes made on the success or otherwise of habitat creation/ management and any other issues arising. In the first three years after creation two inspections should be undertaken in May (in suitable weather conditions) to coincide with the flight period of Grizzled and Dingy Skippers and a second inspection should be undertaken in July/ August following grass cutting. Dependent on the success of the grassland creation and management monitoring visits to count Grizzled and Dingy Skippers may be justifiable in the future. Otherwise in the fourth year onwards there should be a single visit in May and one in July/ August'.

2.1.3 The three inspection visits were completed on:

- 18th May; the weather was 50-60% cloud with spells of bright sunshine, a light breeze and 18.5 °C. There was a delay for a heavy rain shower.
- 25th May; the weather was 0-40% cloud, bright sunshine with a light breeze and 23.7 °C.
- 17th October; the weather was 50% cloud with a moderate breeze and 16 °C.

The inspection visits were completed by Tom Knight of Marches Ecology. The last monitoring visit was late as the grass cutting was not undertaken until late September.

2.2 Review of Management

2.2.1 Management records for 2017 (November 2016 to October 2017 inclusive) were provided by ELM and are reviewed in this report.

3 MONITORING

3.1 General

3.1.1 The following observations were made during the three inspection visits:

- Scrub (particularly Bramble)/ young trees are colonising the grassland temporarily retained within the development site at the northwest end. Management/ cutting of the grassland is required.
- Where existing/ retained grassland is present the extent of *Rubus fruticosus* agg. (Bramble) scrub could be reduced with the cut material being removed. The cut material should be placed away from botanically valuable locations. Brash piles should be small and tidy. Some Bramble patches and *Rosa canina* agg. (Dog-rose) must be retained.



Brash piles should be small, tidy and removed from areas of greater potential botanical value, 18/05/17.

- The retained triangle of grassland at the northwest end is generally in good condition though it would benefit from the maintenance of some short sward areas. Two or three plants of *Crocsmia xcrocosmiiflora* (Montbretia) were noted in this area and may require control.



The retained triangle of grassland in the northwest corner, 18/05/17.

- The establishment of *Potentilla reptans* (Creeping Cinquefoil) in the area where vegetative material was translocated on 31st May 2016 is generally good. It would be beneficial to move more material in this way if it is available. This location also supports a small amount of *Lotus corniculatus* (Common Bird's-foot-trefoil) as well as species such as *Primula veris* (Cowslip) and *Hypericum hirsutum* (Hairy St. John's-wort).



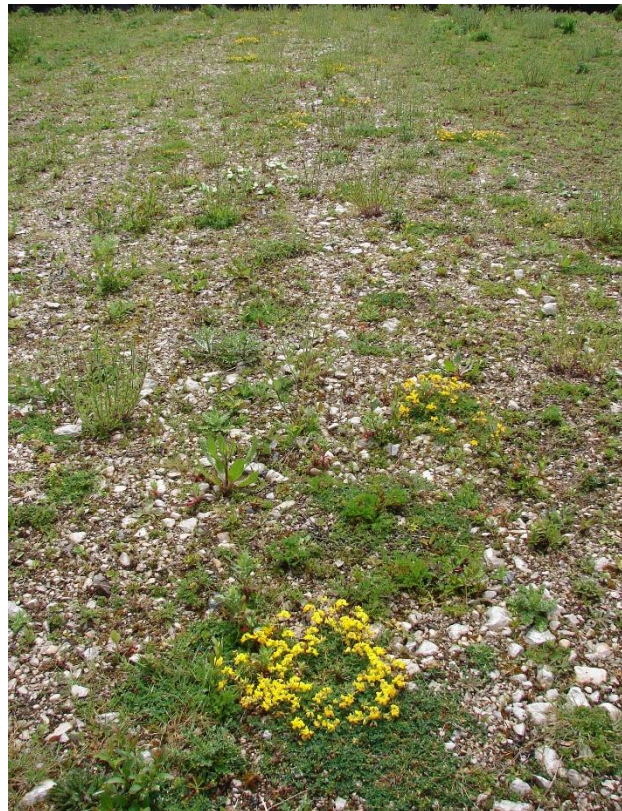
Some of the translocated Creeping Cinquefoil, 18/05/17.

- In the northwest corner of the site there is a bund along Abbey Road. Bramble, *Symphoricarpos alba* (Snowberry), *Cornus alba* (White Dogwood) and *Cotoneaster* sp. (*Cotoneaster*) remain present and will require further spot treatment. The planted native

shrubs are generally establishing well. Tall ruderals such as *Chamerion angustifolium* (Rosebay Willowherb), *Cirsium vulgare* (Spear Thistle) and *Rumex obtusifolius* (Broad-leaved Dock) are also colonising this area, probably from the adjacent bund. The spread of these ruderals will also require control. Creeping Cinquefoil is occasional to locally frequent in this area.

- Willow scrub along a low earth bund in the northwest corner of the site has been removed but will require ongoing management/ control. There are remnants of species-rich grassland beneath this scrub.
- Various bands of limestone and sub-soil were spread along the northern strip and triangle of the mitigation area. This area is generally establishing well with Creeping Cinquefoil occasional to locally frequent though there are large areas where this plant is absent. Small amounts of Common Bird's-foot-trefoil are also present. *Leucanthemum vulgare* (Oxeye Daisy) is increasing in frequency and abundance as is *Medicago lupulina* (Black Medick) and *Tripleurospermum inodorum* (Scentless Mayweed) appears to be decreasing. Tree seedlings remain locally frequent and may require management in the future as may tall ruderals, e.g. *Cirsium arvense* (Creeping Thistle) and *Rumex obtusifolius* (Broad-leaved Dock). It is possible that the distribution of Creeping Cinquefoil and Common Bird's-foot-trefoil in particular across this area may need to be increased through planting/ seeding.

This area was levelled using an excavator following initial creation to facilitate easier management. There is some concern that this has caused excessive compaction the effects of which will be monitored.



The northern part of the mitigation area showing scattered Common Bird's-foot-trefoil, 18/05/17.

- Creeping Cinquefoil is locally frequent on the two butterfly banks but it is located beneath tall ruderals. No Common Bird's-foot-trefoil was recorded. These features have been colonised by tall ruderals that require control. Planting of the food-plants may be required.
- Where sub-soil and or limestone hardcore has been spread along parts of the eastern side of the mitigation area some areas have been colonised by tall ruderals, particularly Creeping Thistle, Bramble and tree seedlings. Control may be required though continued cutting may help. Creeping Cinquefoil is absent from some areas though it can be locally abundant. Colonisation rates are variable and it is possible that seeding/ plug-planting may be required in the future. Some areas are beginning to develop with occasional *Centaurea nigra* (Common Knapweed) and Oxeye Daisy. In places where limestone only has been spread it remains largely bare.



Tall ruderal vegetation eastern side, 25/05/17.

- Where scrub had been cut back along the eastern site boundary this will require continued management to prevent re-growth of Bramble. The scrub/ overhanging branches along the eastern site boundary, particularly adjacent to the service-yard, could be cut back further to provide more open conditions for the grassland.
- There are some good patches of retained grassland towards the southeast corner of the site. In places *Agrimonia eupatoria* (Agrimony), Common Bird's-foot-trefoil and Creeping Cinquefoil are locally frequent. Ongoing management of scrub and young saplings will be required at this location.
- There is a species-rich patch of grassland at the southern end of the mitigation area from which a Grizzled Skipper was recorded. This area should be targeted for active management. A few plants of *Cotoneaster horizontalis* (Wall Cotoneaster) were noted at the southern end of the mitigation area and will require control. Ongoing management of scrub and young saplings will be required at this location.



Good habitat at the southern end of the mitigation area including frequent Common Bird's-foot-trefoil, 18/05/17.

- Felled tree stumps have started to re-grow in the southern corner of the mitigation area. This re-growth requires further control as does the surrounding stand of Thistles.
- The two hibernacula created for Great Crested Newts are in good condition.



The northern-most hibernacula, 17/10/17.

3.2 Bat-boxes

- 3.2.1 The approximate location of the bat and bird-boxes is shown on *Figure 2*. The bird and bat-boxes were inspected and cleaned/ maintained on 26th October 2017. *Table 1* below presents the results of the inspection of the bat-boxes. The number given in column 1 refers to the numbered locations presented on *Figure 2*.

Table 1 – Results of Bat-box Inspection

Number	Tree/ Description	Box type	Results
1	Semi-mature Oak	2 no. 2FN	No evidence. Both used by birds, one for roosting, one with partial nest & evidence of roosting.
2	Semi-mature Oak	1 no. 2F-DFP	No evidence. Used by birds, complete nest present.
3	Semi-mature Oak	2 no. 2F-DFP	No evidence. One used by birds for roosting.
4	Young Silver Birch	1 no. 2F-DFP	No evidence. Some use by birds for roosting.

3.3 Birds

Bird-boxes

- 3.3.1 *Table 2* below presents the results of the inspection of the bird-boxes.

Table 2 – Results of Bird-box Inspection

Number	Tree/ Description	Box type	Results
5	Young Silver Birch	1 no. 1B	Complete nest present.
6	Young Oak	1 no. 1B	Complete nest present.
7	Semi-mature Hawthorn	1 no. 1B	Complete nest present, largely constructed with Badger hairs.
8	Semi-mature Goat Willow	1 no. 1N	Complete nest present.
9	Semi-mature Goat Willow	1 no. 1N	Not used, no nest.

3.4 Little Ringed Plovers

- 3.4.1 Little Ringed Plovers (*Charadrius dubius*) were not recorded from the site this year.

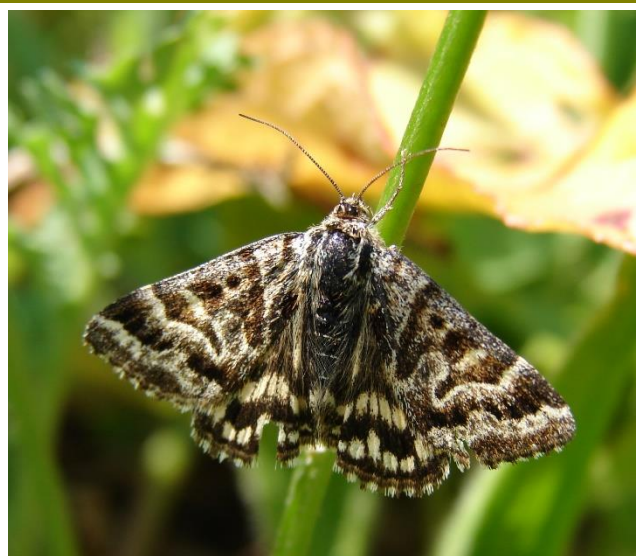
3.5 Grizzled and Dingy Skipper

- 3.5.1 The highest known count for Grizzled (*Pyrgus malvae*) and Dingy Skippers (*Erynnis tages*) across the whole site prior to the demolition and clearance works was five of each recorded in 2012.
- 3.5.2 Four Grizzled Skippers were recorded on 18th May; three were present at the northwest end (one in the mitigation area and two in the grassland temporarily retained within the development site); the second was present at the southeast end of the site. Two Grizzled Skippers were recorded on 25th May; one in the mitigation area and one from the grassland temporarily retained within the development site at the northwest end.



Grizzled Skipper, 25/05/17.

- 3.5.3 A single Dingy Skipper was recorded on both the 18th and 25th May from the grassland temporarily retained within the development site at the northwest end.
- 3.5.4 No Grizzled or Dingy Skippers were recorded from any of the habitat creation areas.
- 3.5.5 Small numbers of Common Blue (*Polyommatus icarus*) and Small Copper (*Lycaena phlaeas*) were noted in areas of created habitat at the northern end of the mitigation area (as well as from areas of retained grassland). Mother Shipton (*Callistege mi*) was recorded from the triangle of retained grassland in the northwest corner.



Mother Shipton, 25/05/17.

3.6 Locally Scarce Plants

3.6.1 Fourteen Locally Scarce/ Rare plants were originally recorded from the whole Elm Point site (Marches Ecology 2011). Most of these plants are recognised as non-native. The EMP listed seven Locally Scarce (LS)/ Rare (LR) plants that had been recorded from the mitigation area as follows:

- *Senecio erucifolius* (Hoary Ragwort).
- *Helminthotheca echioides* (Bristly Ox-tongue).
- *Carex spicata* (Spiked Sedge).
- *Vulpia myuros* (Squirrel-tail Fescue).
- *Lepidium campestre* (Field Pepperwort).
- *Hypericum hirsutum* (Hairy St. John's-wort).
- *Senecio viscosus* (Sticky Groundsel).

The status of these plants was given in Green (2006). More recently a Rare Plant Register has been produced for Denbighshire (Williams 2014). Of the plant species listed above, and the fourteen recorded from the whole site, only Field Pepperwort (LR²) and Squirrel-tail Fescue (LS³) are included in Williams (2014).

3.6.2 Field Pepperwort remains occasional within the southern part of the mitigation area. *Catapodium rigidum* (Fern-grass) was again recorded from this area and was also recorded from the northern part of the mitigation area. Fern-grass is LS according to Williams (2014). Squirrel-tail Fescue was not recorded.



Fern-grass, 18/05/17.

² Locally Rare - found in 1-3 Wells sites in Denbighshire (Williams 2014).

³ Locally Scarce – found in 4-15 Wells sites in Denbighshire (Williams 2014).

- 3.6.3 Hoary Ragwort, Sticky Groundsel, Bristly Ox-tongue and Hairy St. John's-wort were also noted in the mitigation area.
- 3.6.4 Some other interesting plants have colonised the created habitat including *Blackstonia perfoliata* (Yellow-wort).

4 MANAGEMENT

4.1 Management Undertaken by ELM

4.1.1 Marches Ecology (2012) provides an Action Plan with details of all of the required management tasks. Briefly the required management includes the following:

- Cut created grassland in July, with additional cut in first two years.
- Cut 50 % of retained grassland in July.
- Spot-treat/ hand-pull weed species in areas of created grassland.
- Control scrub in grassland areas.
- Apply herbicide around planted shrubs and replace any losses.
- Remove litter from mitigation area.

4.1.2 The information contained within *Table 3* below was provided by ELM and summarises the management undertaken in the relevant period.

Table 3 – Management Completed by ELM

Task	Management Period			
	Winter (Nov/Dec 2016/Jan/Feb)	Spring (March/Apr/May)	Summer (June/July/Aug)	Autumn (Sept/Oct)
Cut 50% of grassland				21 & 22/09/17
Control scrub in grassland area				25/09/17
Herbicide application around planted shrubs/ non-native plants		11/05/17		
Strimming between planted shrubs until established		09/06/17		
Remove litter from mitigation area				25/09/17.

4.1.3 All of the prescribed management has been completed. Boundary marker posts to delineate the mitigation area from the development plot were also installed on 7th August 2017.

5 DISCUSSION/ CONCLUSIONS

5.1 General/ Management

5.1.1 Based on the observations listed in *Section 3.1* the following requires monitoring or appropriate management:

- Bramble/ scrub development requires management in some parts of the retained grassland.
- Scrub including non-native ornamental species requires management in many parts of the created habitat.
- Scrub/ over-hanging branches along the eastern side should be cut back.
- Some ruderal stands/ tree seedlings within retained and created habitat require management (before they set seed). The grass cutting was undertaken in September which is too late. Furthermore, some of the areas that were not cut last year were not cut this year either. Further hand-pulling/ spot treatment may also be required.
- It is possible that planting/ seeding of Creeping Cinquefoil/ Agrimony/ Common Bird's-foot-trefoil may be required in some parts of the mitigation area (e.g. butterfly banks) to enhance its suitability for Grizzled and Dingy Skippers. This requirement is likely to at least partly depend on when the northern part of the site is brought forward for development (and therefore the temporarily retained grassland within this part of the site is lost).
- The created habitat has been compacted following levelling with an excavator. The effects of this compaction require monitoring.

5.1.2 Some parts of the mitigation area remain suitable for Great Crested Newts. The value of this habitat is likely to increase as the created habitat becomes more established.

5.1.3 Prescribed management has largely been undertaken in accordance with the EMP. Cutting of the grassland should be undertaken earlier in the year than was the case in 2016 and 2017. Spot treatment/ hand pulling of weed species from areas of grassland should also be undertaken.

5.2 Bird and Bat-boxes

5.2.1 As would be expected a high occupancy rate was recorded for the bird-boxes. No evidence of use of the bat-boxes was recorded. Whether it would be potentially beneficial to move any of the bat-boxes can be reviewed in future years.

5.3 Grizzled and Dingy Skipper

5.3.1 Both Grizzled and Dingy Skipper remain present at the site though the population size of both remains perilously low. As stated in Marches Ecology (2016) it will be important to maintain/ provide sufficient area of suitable habitat at all times.

5.4 Locally Scarce Plants

5.4.1 Some of the plants previously identified as Locally Scarce are still present within the mitigation area. One Locally Rare and one Locally Scarce plant species (in accordance with the current Rare Plant Register) remain present within the mitigation area.

6 REFERENCES

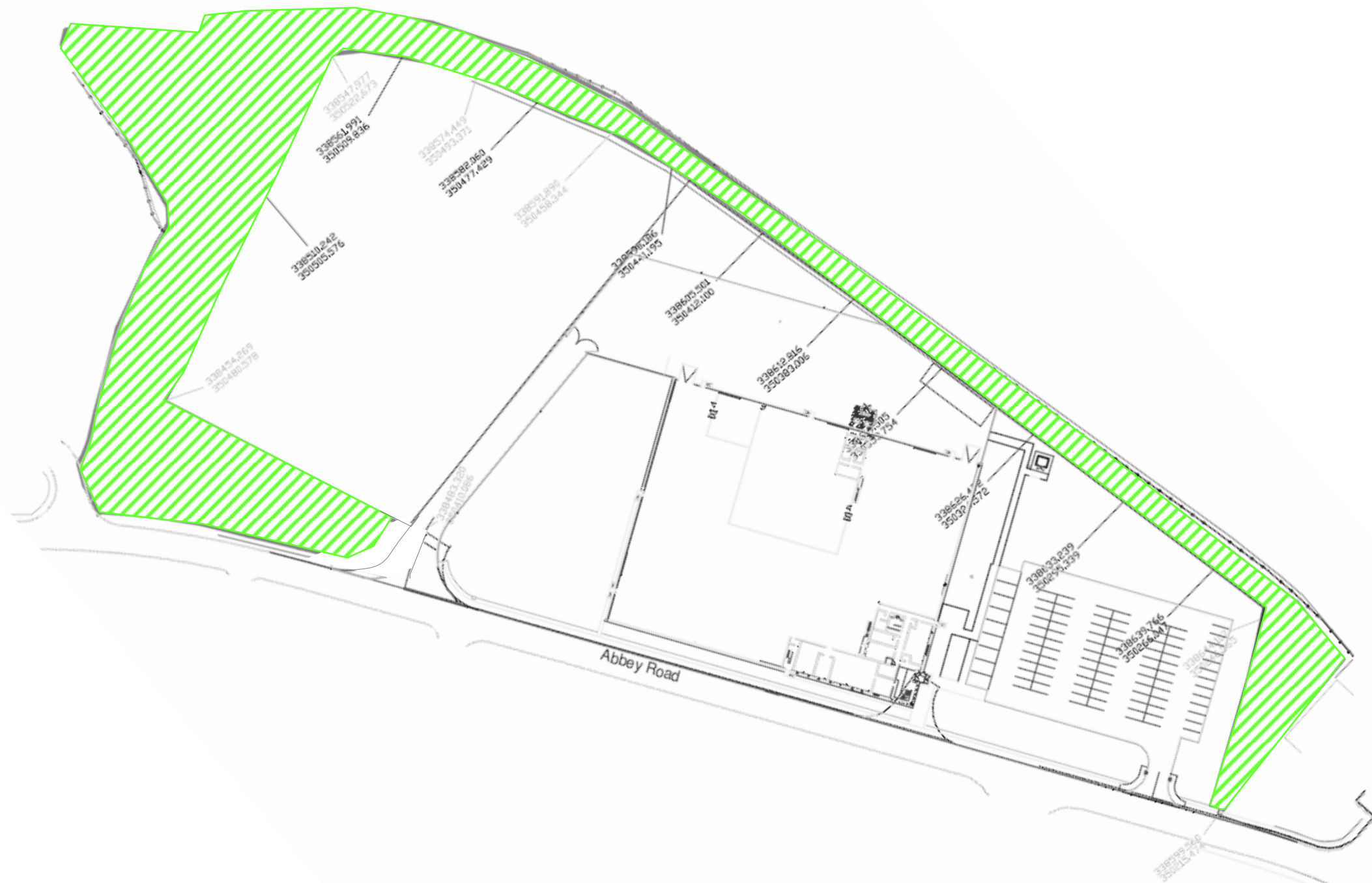
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Base mapping provided by Russells Construction.

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C261 Elm Point Mitigation Area – Annual Monitoring and Management, Year 2

Figure 1 – Elm Point Mitigation Area

Drawn by: ME
Checked by: TK
Date: 06.11.17

Key

 Mitigation Area (approximate)



Base mapping provided by a CUBE architecture and design plan entitled 'New Factory and Offices for Clwyd Compounders Ltd, Wrexham – Existing Site Plan, Drawing No. AS450-10-, dated July '15.

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C261 Elm Point Mitigation Area – Annual Monitoring and Management, Year 2

Figure 2 – Location of Bird- and Bat-boxes

Drawn by: ME
 Checked by: TK
 Date: 06.11.17

Key

- ▲ Bird-box
- ▲ Bat-box(es)
- 1 Reference number