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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. 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*.

1.1.2 While the EMP proposes submission of the annual report in August of each year it is now deemed more appropriate for the report to be provided in November. This is due to later cutting of vegetation and also to allow for the results of the inspection/ maintenance of bird and bat-boxes (scheduled in October) to be covered.

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 was due to be completed in October/ November 2016.

¹ Previously known as 'Redwither Central'.

- 1.2.6 The current licence for the site (Licence no. 63019a:OTH:EPS:2016) was provided by NRW in September 2016 due to some minor fence realignments. It covers the period from 27th September 2016 to 28th February 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 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 To allow for initial establishment of the created habitat and for the possible first use of the bird and bat-boxes the first full season of monitoring was completed in 2016. While some limited management was undertaken in 2015 the prescriptions of the EMP were fully implemented in 2016.

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 As 2016 is the first year of monitoring three inspection visits were completed on:

- 17th May; the weather was sunny with 40-50% cloud, a light breeze and 19.6 °C.
- 24th May; the weather was bright sunshine with 5% cloud, a light breeze and 18.3 °C.
- 12th September; the weather was 100% grey cloud with a light breeze and 20 °C.

The inspection visits were completed by Tom Knight of Marches Ecology.

2.2 Review of Management

2.2.1 Management records for 2016 (January to October inclusive) were provided by ELM and are reviewed in this report. In future annual reports the management records would cover the period November to the following October inclusive.

3 MONITORING

3.1 General

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

- Where existing/ retained grassland is present the extent of *Rubus fruticosus* agg. (Bramble) scrub could be reduced with the cut material being removed. Some Bramble patches must be retained.
- In the northwest corner of the site limestone hardcore has been spread between the retained grassland and the bund along the Abbey Road frontage. This is generally vegetating well though Bramble, *Symphoricarpos alba* (Snowberry) and *Cornus alba* (White Dogwood) are regenerating and will require spot treatment. 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.

Potentilla reptans (Creeping Cinquefoil) was found to be occasional in this area and was often present over bare limestone.



- Willow scrub along a low earth bund in the northwest corner of the site will require 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. Plant colonisation is patchy and remains sparse in

places. Tree seedlings, especially *Betula pendula* (Silver Birch), were locally frequent and may require management in the future as may tall ruderals, e.g. *Cirsium arvense* (Creeping Thistle). A number of grasses and forbs have colonised though it is often visually dominated by *Tripleurospermum inodorum* (Scentless Mayweed) and does provide a varied potential nectar source. Creeping Cinquefoil remains rare in this area. 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.

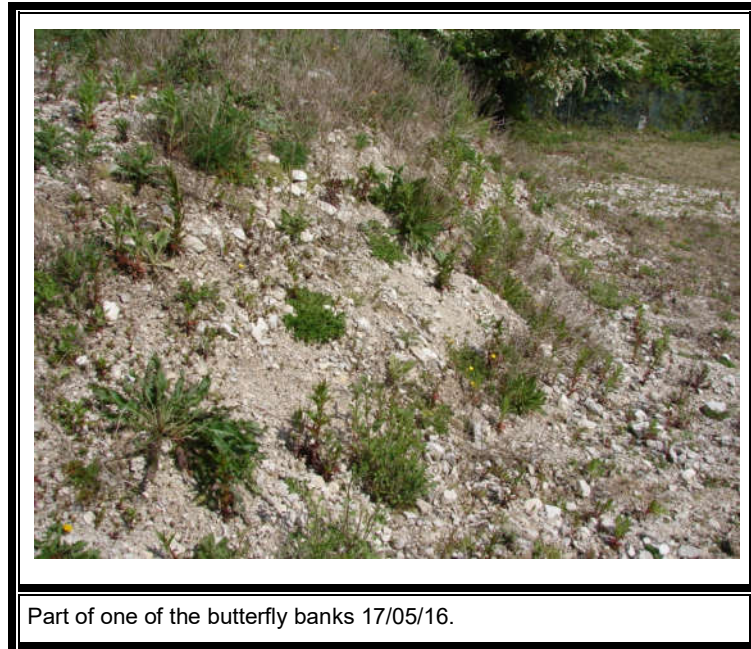
This area was levelled using an excavator following initial creation to facilitate easier management. There is some concern that this has caused excessive compaction the effects of which will be monitored.



Patchy establishment at northern end on 17/05/16 (above). Part of the same area on 12/07/16.



- None of the larval food-plants used by Grizzled and Dingy Skippers was recorded from the two butterfly banks. These features have been colonised by tall ruderals that may need 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. Colonisation rates are variable and it is possible that seeding/ plug-planting may be required in the future.



- Where scrub had been cut back along the eastern site boundary this will require continued management to prevent re-growth of Bramble. The scrub along the eastern site boundary 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), *Lotus corniculatus* (Common Bird's-foot-trefoil) and Creeping Cinquefoil are locally frequent. Young Silver Birch saplings are frequent in this corner and it would be advantageous to remove these trees/ scrub to increase the area of grassland 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.



Fragments of species-rich grassland at southern end of site. Birch saplings for removal can be seen in background.

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



One of the two hibernacula created within the mitigation area (26/10/16).

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 2016. *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, probably for roosting.
2	Semi-mature Oak	1 no. 2F-DFP	No evidence. Both used by birds, probably for roosting.
3	Semi-mature Oak	2 no. 2F-DFP	No evidence.
4	Young Silver Birch	1 no. 2F-DFP	Approximately 30 droppings most of which were probable <i>Myotis</i> sp. All were fairly recent. Small number of bird droppings.

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.
8	Semi-mature Goat Willow	1 no. 1N	Complete nest present.
9	Semi-mature Goat Willow	1 no. 1N	Partially built nest present – probably not used.

Little Ringed Plover

3.3.2 Two Little Ringed Plovers (*Charadrius dubius*) were noted at the site on 06/04/16 and then again on 04/05/16. At this time one of the birds was seen to sit in an area of potentially suitable nesting habitat within the development site, between a soil stock-pile and the main car park.



3.3.3 By the first monitoring inspection on 17/05/16 these birds were no longer present. Parts of the mitigation area provide potentially suitable nesting habitat and it is feasible that this species could use the site in the future. The Little Ringed Plover is included on *Schedule 1* of the *Wildlife and Countryside Act 1981*, as amended.

3.4 Grizzled and Dingy Skipper

3.4.1 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.

- 3.4.2 Two Grizzled Skippers were recorded on 17th May; one was present at the northwest end and was seen both in the mitigation area and grassland temporarily retained within the development site; the second was present at the southeast end of the site. A total of three Grizzled Skippers were recorded on 24th May; two from the grassland temporarily retained within the development site at the northwest end; and one from the southeast end of the site.



Grizzled Skipper 17/05/16.

- 3.4.3 A single Dingy Skipper was recorded on 24th May from the mitigation area at the northwest end of the site. This individual was fresh and as such more may have emerged at a later date.



Fresh Dingy Skipper 24/05/16.

3.5 Locally Scarce Plants

3.5.1 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).

3.5.2 Field Pepperwort remains occasional within the southern part of the mitigation area. *Catapodium rigidum* (Fern-grass) was also recorded from this area having not been noted previously. Fern-grass is LS according to Williams (2014). Squirrel-tail Fescue was not recorded.

3.5.3 Hoary Ragwort, Sticky Groundsel, Bristly Ox-tongue and Hairy St. John's-wort were also noted in the mitigation area.

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).

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 *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 2015/Jan/Feb)	Spring (March/Apr/May)	Summer (June/July/Aug)	Autumn (Sept/Oct)
Cut 50% of grassland				30/09/16
Spot treat/ hand pull weeds from grassland		01/6/16	30/8/16	
Control scrub in grassland area				Not completed.
Herbicide application around planted shrubs		01/6/16		
Strimming between planted shrubs until established		01/6/16		
Remove litter from mitigation area				Not completed.

4.1.3 Most of the prescribed management has been completed. The control of scrub within grassland areas/ stump treatment and litter removal is scheduled for this winter period and will therefore be detailed in the annual report next year.

4.2 Translocation of Creeping Cinquefoil

- 4.2.1 A few small areas within the development site where Creeping Cinquefoil was found to be abundant during the first inspection visit were noted. It was proposed to translocate as much of this vegetation as possible to the mitigation area adjacent to the retained grassland within the northwest corner from which Grizzled Skippers have been recorded.
- 4.2.2 Translocation was undertaken on 31st May 2016 using an excavator with a toothed bucket (to scrape the material up) and a dumper. The weather immediately following the translocation was hot and dry. Russells Construction was tasked with daily watering of the plants until they were established.
- 4.2.3 While some plants were lost due to the arid conditions experienced after the translocation this area was visited during the third inspection and it appears that establishment of Creeping Cinquefoil had largely been successful. A few plants of Agrimony also appear to have established. A single Grizzled Skipper was observed visiting this area shortly after the vegetation had been moved.



Part of the area subject to Creeping Cinquefoil translocation 12/07/16.

5 DISCUSSION/ CONCLUSIONS

5.1 General/ Management

- 5.1.1 It is too early in the development of the created habitat to draw any particular conclusions regarding its success or otherwise. 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.
 - Some ruderal stands/ tree seedlings within retained and created habitat require management (before they set seed).
 - 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 Future inspection visits should monitor any use of the site by Little Ringed Plovers. Should this species return it would be appropriate to adapt management accordingly.
- 5.1.4 Prescribed management has largely been undertaken in accordance with the EMP. Cutting of the grassland should probably be undertaken earlier in the year than was the case in 2016.

5.2 Bird and Bat-boxes

- 5.2.1 As would be expected a high occupancy rate was recorded for the bird-boxes. Little evidence of use of the bat-boxes was recorded. It is possible that the bat-boxes may meet with more success once development works have been completed and again when the created habitat has become more established. 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 is perilously low. It will be important to maintain/ provide sufficient area of suitable habitat at all times if these populations are to be given a chance to survive/ flourish.

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) have been recorded from the mitigation area.

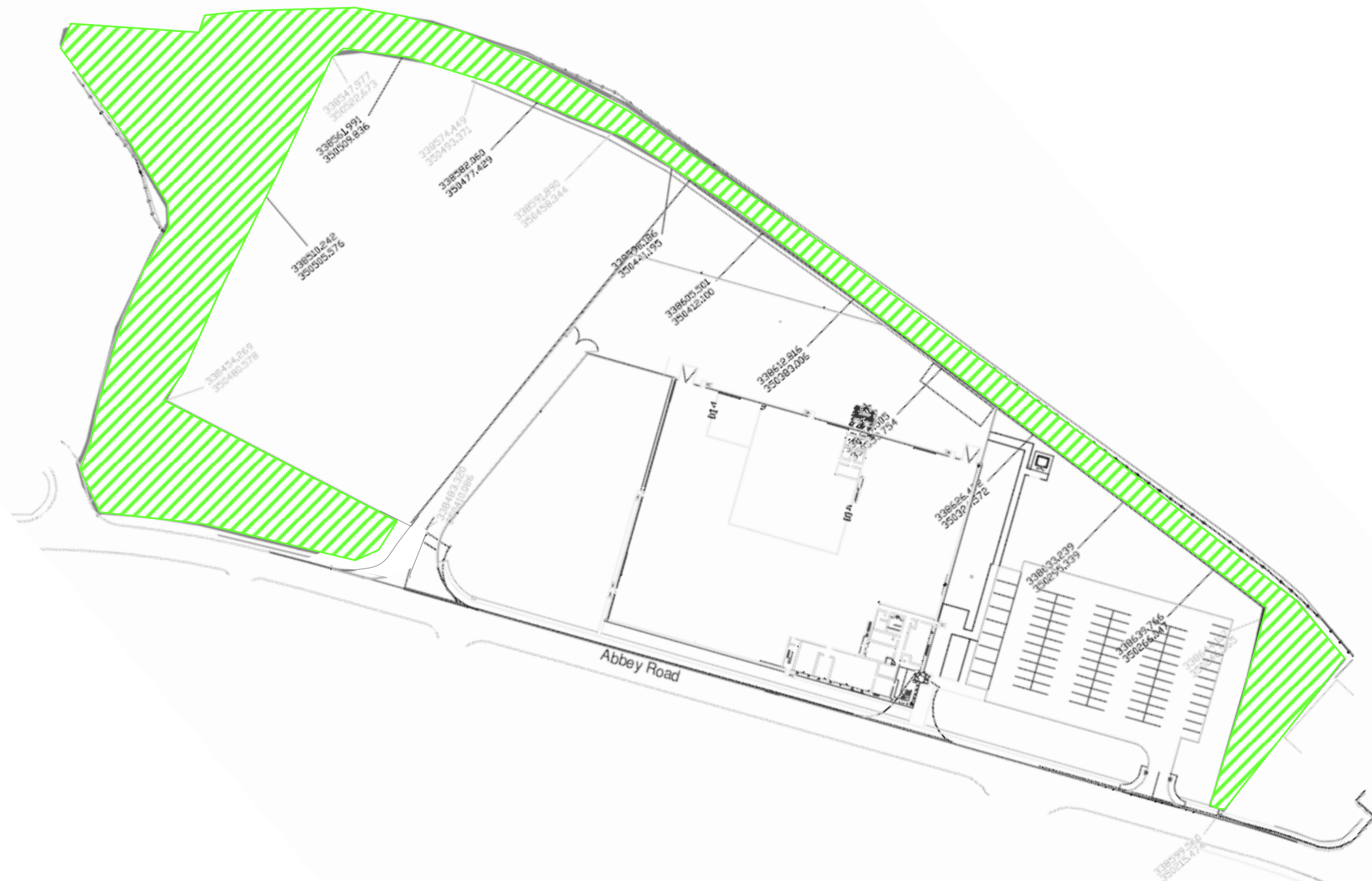
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Base mapping provided by Russells Construction.

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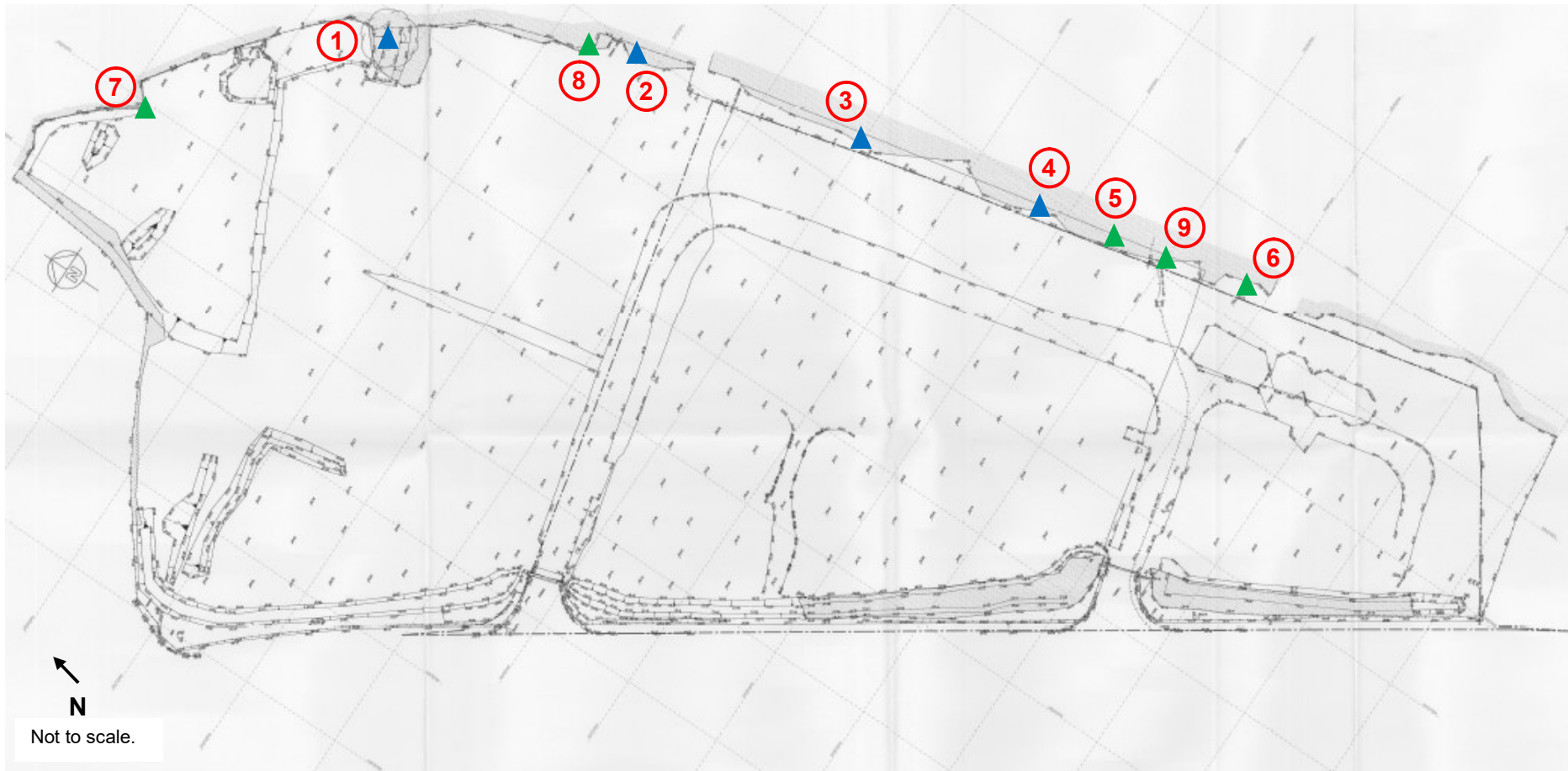
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Figure 1 – Elm Point Mitigation Area

Drawn by: ME
Checked by: TK
Date: 16.11.16

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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Figure 2 – Location of Bird- and Bat-boxes

Drawn by: ME
 Checked by: TK
 Date: 16.11.16

Key

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