

Ecological Assessments

Environmental Statements
(Biodiversity)

Species Surveys

Phase I Habitat Survey

National Vegetation
Classification

Planning Guidance

Habitat Regulation Assessment

Protected Species Licensing

42020 CEMP: Biodiversity

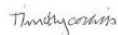
BREEAM LE01 - 05

Landscape Ecological Management Plan

MAG Argosy, Manchester



REPORT STATUS

Issue/revision	DRAFT	FINAL I	FINAL II
Project Location	MAG Argosy		
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1 INTRODUCTION

- 1.1.1 The Ecology Practice have been appointed by McLaren Group to prepare a Landscape Ecological Management Plan.
- 1.1.2 This report, hereafter known as the LEMP, is associated with the development of thirteen industrial units and associated infrastructure and landscaping at Argosy Drive, Manchester Airport.
- 1.1.3 The LEMP aims to as guide the establishment, management and maintenance of the landscape scheme during the first 30 years of operation / establishment and beyond and complies with BS 42020:2013 Section 11.1.

2 ROLES AND RESPONSIBILITIES

2.1.1 Details of the body or organization responsible for implementation of the plan:

- **Persons responsible for LEMP** – The Ecology Practice are responsible for producing and overseeing the LEMP, this includes the monitoring inspections as set out in section 7 below.
- **Landowner** – The landowner will be the responsible for implementing the LEMP for the 30 year period.
- **Contractor** – The contractor is to rectify any defects during the defect period. Completion of the landscaping works to be signed off by the client's agent or the project landscape architect.

3 NON-TECHNICAL SUMMARY

- 3.1.1 The purpose of this LEMP is to outline the appropriate landscape management measures to ensure the successful establishment of the soft landscape proposals and enhancement works associated with the site in the interests of visual amenity, environmental protection and establishment of the scheme as well as to monitor the success and challenges over the next 30 years.
- 3.1.2 Routine monitoring informs progress and facilitates the required management plan.

4 AIMS AND OBJECTIVES OF THE LEMP

- 4.1.1 The purpose of this LEMP is to outline the appropriate landscape management measures to ensure the successful establishment of the soft landscape proposals associated with the site development in the interests of visual amenity, environmental protection and establishment of the scheme.
- 4.1.2 Although this document sets out the long-term objectives and landscape management practices for the first 30 years of operation and establishment of the site, development it is not intended to be a 'frozen' or 'absolute' document that prescribes maintenance procedures for the entire lifespan of the course. The management of any natural environment is an imprecise science, concerned with intervention and monitoring to steer the specific landscape in a particular direction. In order to undertake such management assumptions must be made about the direction that scheme will take. Consequently, it is important that a management plan such as this is encouraged to evolve and develop in parallel with the landscape it oversees.
- 4.1.3 Therefore, the LEMP should be treated as a 'living' document to change and adapt as required as the conditions of the site change over time.

5 DESCRIPTION AND EVALUATION OF FEATURES TO BE MANAGED.

- 5.1.1 The proposed development will provide a biodiverse habitat on the border of the development that will also screen the development from the wider area. A two meter wide border of amenity grass will be laid next to any hard surfacing as a buffer before transitioning to a mixture of wildflowers and a native hedge mix interspersed with trees, creating a mixture of habitats for local wildlife.
- 5.1.2 High quality native species will be used to promote the local wildlife. The mixed native hedge will at a minimum be 1.5m thick to provide a dense border to screen the site with the trees providing additional height and points of focus. Wildflower seeding will be planted at the base of the hedge planting facing away from the site to provide additional visual amenity.
- 5.1.3 The 2m wide grass verges will be laid with turf to create an instant border.

6 ECOLOGICAL TRENDS AND CONSTRAINTS ON SITE THAT MIGHT INFLUENCE MANAGEMENT

- 6.1.1** No bat or bird boxes are to be installed on site due to the proximity to the airport.

7 MONITORING STRATEGY (INCLUDING ONGOING MONITORING AND REMEDIAL MEASURES)

- 7.1.1 The Local Planning Authority will be notified within one month of the habitat creation and enhancement works. A certificate of practical completion will be issued by the client's agent, landscape architect/ecologist following inspection of the completed works.
- 7.1.2 Monitoring of enhanced habitats will include before-and-after photos, condition assessments and species monitoring. Monitoring of new habitat creation will include site visits to identify failed establishment of habitats and where habitats do not meet criteria in the condition sheets.
- 7.1.3 Inspections will also identify where habitats are establishing successfully and meeting criteria.

8 MAINTENANCE AND MANAGEMENT

General Notes

- 8.1.1 The following sections outline the management and maintenance of the soft landscaping and the operational timings for each landscape element.
- MAINTENANCE OF NEW LANDSCAPE

8.2 EXISTING TREES

Existing Tree Management

- 8.2.1 All existing trees shall be inspected on a monthly basis and maintained as follows;
- Extensive pruning or surgery must be carried out by an approved member of the Arboricultural Association.
 - Remove dead, dying or diseased wood, broken branches and stubs.
 - Remove fungal growths and fruiting bodies.
 - Remove rubbish, windblown or accumulation in branch forks.
 - Remove climbing plants.
 - All the tools used should be appropriate, well maintained and sharp. Final pruning cuts – do not use chainsaws on branches of less than 50 cm diameter. When using handsaws, cut in one continuous operation to form a smooth cut surface. Do not use anvil type secateurs.
 - When removing branches do not damage or tear the stem.
 - Keep wounds as small as possible, cut cleanly back to sound wood leaving a smooth surface, and angled so that water will not collect on the cut area.
 - When cutting, cut at fork or at the main stem to avoid stumps wherever possible.
 - Large branches - remove only if unavoidable. Remove in small sections and lower to the ground with ropes and slings.
 - Dead branches and stubs – when removing do not cut into live wood.
 - Unsafe branches – remove epicormic shoots and potentially weak forks that could fail in adverse weather conditions.

- Disease of fungus – give notice if detected. Do not apply fungicide or sealant unless instructed.
- Bark Damage – wounds – do not attempt to stop sap bleeding. Gently remove ragged edges and remove splintered wood from deep wounds as small as possible.
- Give notice if there is any liquid or flux oozing from apparently healthy bark.
- Cavities in Trees – Cavities should be investigated. If bats are found present in the cavities, no further investigative work is to be carried out until a suitable trained ecologist has visited the site to investigate further and to agree a course of action with Natural England. Rubbish and rotten wood should be removed, subject to the above. The cavity should be probed to find the extent of any decay, and give notice. The cavities should not be covered.
- Stack all wood arising from the works in neat piles in areas to be agreed with the ecologist to provide invertebrate habitat opportunities.
- In general cut back selectively to lateral or sublateral buds or branches to retain flowing branch lines without leaving stumps.

8.3 NEWLY PLANTED INDIVIDUAL TREES

Performance expectation

- 8.3.1 Newly planted trees at Year 3 shall have an established single leader or multi-stemmed habit where intended. They shall be maintained to develop and retain a well-balanced crown, shape and character typical of the species.

Prescription

- 8.3.2 Establishment Period - Years 1 to 5 following planting:

- Inspect and adjust tree ties and staking/guying systems/ guards as required to ensure adequate support is provided to the tree without damaging the tree or restricting growth;

- Maintain 1m mulched tree surrounds in a weed free condition, and with neat edges to amenity grass areas, and allow for topping up mulch when required e.g., after two years;
- Water during prolonged dry spells to prevent tree deaths, during first two years following planting. Allow 50L/tree at each operation;
- Inspect annually and after storms to monitor health of trees;
- Carry out any works as required for health and safety immediately;
- Prune annually outside of the bird nesting season to ensure appropriate habit/form, remove obstructions to footpaths/cycle paths/roads/gardens, and remove dead/diseased/damaged wood;
- Replace any trees which have been removed, uprooted, destroyed or have died within 2 years after planting with trees of the same species and size as that originally planted and in the same place, unless the Local Planning Authority gives its written consent for any variation;
- Remove tree stakes and ties once the trees are fully established (approximately years 2-3 after planting).

8.3.3 Establishment Period - Years 5 to 10 following planting:

- Inspect trees annually to monitor the health of trees.
- Carry out any works in the dormant period and avoiding the bird nesting season (unless specifically agreed with a suitably qualified ecologist) and paying due regard to any other ecological constraints.
- All tree work must be undertaken by a suitably qualified arboriculturalist in accordance with BS 3998:2010;
- Prune as necessary where essential to remove obstructions.
- Pruning should ensure natural/ sympathetic habit/form is retained.
- Remove dead/diseased/damaged wood.

8.3.4 Establishment Period - Years 10 to 30 following planting:

- Inspect trees annually to monitor the health of trees.

- Carry out any works in the dormant period and avoiding the bird nesting season (unless specifically agreed with a suitably qualified ecologist) and paying due regard to any other ecological constraints.
- All tree work must be undertaken by a suitably qualified arboriculturalist in accordance with BS 3998:2010;
- Prune as necessary where essential to remove obstructions.
- Pruning should ensure natural/ sympathetic habit/form is retained.
- Remove dead/diseased/damaged wood.

8.4 NATIVE HEDGE

Performance expectation

- 8.4.1 Hedge planting should form a full dense hedgerow at between years 3-5, with 100% coverage and no gaps. Hedgerows should be free from noxious weeds, grass and herb species at the base after year 5 of the establishment programme.

Prescription

- 8.4.2 Establishment Period - Years 1 to 5 following planting:
- Undertake formative pruning in order to promote dense growth;
 - Carry out any works as required for health and safety immediately;
 - Maintain hedges at intended height with a natural hedge line. Trim twice annually at the end of each growth period (late Spring and late Summer) until established;
 - Maintain a full planted screen at all times;
 - Regularly check plants/guards/stakes/protective fencing as required to ensure adequate support is provided to the planting without damaging the plants or restricting growth. Aim to remove these after year 3 and have all removed by year 5;
 - Water during prolonged dry spells to prevent plant deaths, during first two years following planting;

- Ensure the soil is topped by mulch and in a weed free condition, and with neat edges to amenity grass areas, and allow for topping up mulch when required e.g. after two years;
- Maintain the inside of shrub guards in a weed free condition by hand weeding;
- Check the hedge in early spring and replace any plants which have been removed, uprooted, destroyed or died within 2 years after planting immediately to avoid gaps forming in the hedge. Replacements should be true to type and of a similar size to existing plants at the time of re-planting unless the Local Planning Authority gives its written consent for any variation;

8.4.3 Post-Establishment – (from approximately Year 6 onwards):

- Prune/trim every two years to allow for flowering and woody growth.
- Maintain hedges at intended height with a natural hedge line;
- Ensure an annual top up of the specified mulch to prevent excessive moisture loss from the soil, add nutrients and maintain an enhanced visual aesthetic.
- Carry out any works in the dormant period and avoiding the bird nesting season (unless specifically agreed with a suitably qualified ecologist) and paying due regard to any other ecological constraints.
- Prune as necessary where essential to remove obstructions.
- Pruning should ensure natural/ sympathetic habit/form is retained.
- Remove dead/diseased/damaged wood.

8.5 AMENITY GRASS (2M TURF)

Performance expectation

- 8.5.1 Maintain a medium - short, dense, vigorous sward free from disease, weeds and pests and free from significant variations in ground level (grooves/divots/mounds etc). Sward is to cover at least 95% of the relevant area.

8.5.2 Ongoing maintenance:

- Cut grass with mulching mowers (also known as 'cut and drop') to maintain a height of 50-75mm (average 16-19 cuts per growing season). Allow for the mowing regime to be adjusted to ensure there is no excessive cutting during dry periods and that mowing continues until the grass stops growing;
- Relax the management regime where appropriate, e.g. under tree groups and adjacent to hedges, to twice annual cuts in autumn and early spring;
- Remove inorganic litter, twigs and debris prior to each cut;
- Strimming to be carried out where grass abuts hard landscape obstacles (such as fence posts, kerbs edges etc), ensuring no damage occurs to obstacles;
- For trees in amenity grass areas a 1m dia. (50mm deep) circle of mulch shall be maintained within an edged circle cut into surrounding turf;
- Monitor grass erosion and regularly reinstate damaged or worn areas in accordance with the original specification. Any major divots/grooves are to be filled with topsoil and re-seeded at the earliest opportunity;
- Annually edge grass where this abuts planting beds;
- Ensure grass does not encroach onto hard surfaces by annual edging.

8.6 WILDFLOWER SEEDING

Performance expectation

- 8.6.1 Maintain wildflower seeded area appropriate to the seed type used in each area – dictated by the underlying ground conditions. Planting is to cover at least 85% of the relevant area.

Prescription

- 8.6.2 Establishment Period – Following planting

- Remove litter & debris prior to each cut;

- During the first 2 years undertake regular management of the area to maintain a short height of no longer than 70mm, until the end of the second winter after sowing;
- Remove all clipping from each cut to a designated location on site;
- During the first 2 years weed management by regular mowing is the best management technique available. Consistent management through cutting at a set time each year and removing all waste will determine what type of meadow develops;
- The control of pernicious perennial weeds through the use of a contact herbicide on individual plants or manual pulling may be necessary to remove weed populations during the establishment phase. The contractor must be mindful to re-seed bare areas created by this action to reduce establishment of weeds from windblown populations nearby;
- Year 3 onwards; cut to be taken at the end of August/ beginning of September each year; Cut planting down to 70-100mm height;
- Arisings will be left to dry in situ to shed seed for up to seven days, after which arisings will be removed to a designated point on site for creation of habitat piles.
- Lightly mow the sward down to 70-100mm as required throughout the winter months.
- Remove all clipping from each cut to a designated location on site;
- Success of meadow creation to be evaluated at the end of the 2nd year and the need for alterations to management or additional seeding assessed. Decisions on the utilisation of particular grassland management techniques should be informed by regular monitoring of sward structure and diversity. Monitoring should also be undertaken for the purpose of identifying and controlling the distribution of ragwort, which should be hand-pulled and removed from the site.

8.6.3 Ongoing Maintenance:

- Remove litter and debris prior to each cut;
- Mow single, annual hay cut down to 70-100mm height; taken at the end of July / start of August following seed production by wildflower species;

- Arisings will be left to dry in situ and shed seed for up to seven days, after which arisings will be raked, baled and removed from site to avoid raising fertility levels;
- Increase mowing intensity within 1m of hard surfaces to maintain a neat appearance. Mow during the growing season to maintain a sward height between 50-250mm;
- Informal paths to be mown down to 20mm once established through the Linear Parkland;
- Decisions on the utilisation of particular grassland management techniques will be informed by regular monitoring of sward structure and diversity;
- Monitoring should also be undertaken for the purpose of identifying and controlling the distribution of ragwort, which should be hand-pulled and removed from the site.
- Re mulch as required to prevent colonising of weeds;
- Ensure thorough watering.

LANDSCAPE MAINTENANCE OPERATIONS –

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the ecology Practice

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