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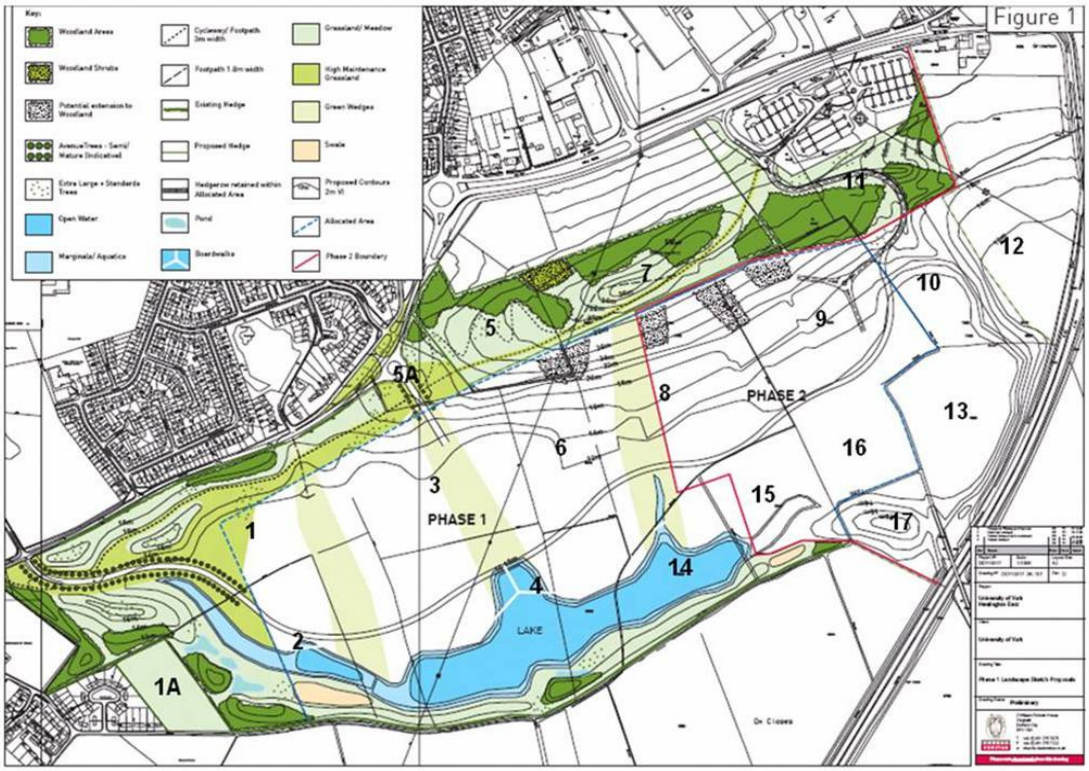
THE UNIVERSITY of York



HESLINGTON EAST
LANDSCAPE MANAGEMENT PLAN
For Structural Landscape

DRAFT

Version	*Date*	*Prepared by*	*Comments*
v.1	Oct 2007	R Hale	For internal review
Rev 2	Nov 2007	R Hale	To CYC for approval
Rev 3	Apr 2008	R Hale	To CYC for approval

Heslington East Landscape Management Plan

Contents

Appendices

Acknowledgements

The University of York commissioned landscape architects, an arboricultural consultant and engineers to help produce Landscape Master Plan strategies for the development of the University's campus expansion onto Heslington East. This Landscape Management Plan has been extracted from the work of:

- White Young Green Environmental
- Bureau Veritas
- Treesource

1. Introduction

The University's Heslington West campus provides a variety of different landscape character areas, from the very formal surroundings of Heslington Hall and the Yew Gardens through to the woodland and naturalistic margins of the campus, set in a classic parkland landscape with a serpentine lake at its centre. Due in no small part to careful planning and design during the early history of the University, the landscape is highly regarded by many and makes the campus (as a whole) an attractive and pleasant place both to live and work.

It is the University's intention that the Heslington East campus development will retain and enhance this reputation by creating a landscape which meets and respects the needs of all its users and neighbours, and unifies Heslington East with West. Accordingly, the University has developed a series of key principles for the landscape design for the Heslington East campus:

- **Easy to move around**: to put people before traffic;
- **High quality public realm**: to create attractive streets and spaces that encourage social activities;
- **Vitality**: to create a landscape setting that promotes intermingling;
- **Easy to understand**: to promote landmarks and views that help people find their way round;
- **A quality landscape**: to create a high quality landscape made up of distinctive character areas;
- **Contemplation**: to provide quiet places that allow for quiet study;
- **A distinctive place**: to create new covered walkways that provide a distinctive focus for movement;
- **A secure place**: to provide a Campus that is both welcoming and secure.

The following report details the University's proposals for Heslington East Landscape Management Plan in regards to the proposed development, construction and maintenance. Information given for Phase 1 developments is more detailed than the indicative information given for the subsequent development sites.

2. History and Background

The Heslington West campus is renowned for it=s skilfully designed contemporary landscape. Designed and built in the early 1960's, the landscape has matured and is now accepted as a classic piece of design. Robert Matthew Johnson- Marshall and Partners (RMJM) initiated the design of the grounds, the concept for the landscape being developed and followed through by Maurice Lee, Landscape Partner, RMJM.

The major elements for the landscape plan were the tree planting and construction of the lake. Originally three scales of trees were to be used: small ornamental trees in close proximity to the buildings; medium sized trees linking groups of buildings to the site and each other; and large trees which were primarily planted in shelter belts and also intended to relate the University to the surrounding landscape.

To improve the poor site drainage a new land drain system extending across the site was constructed. A surface balancing regulator was recommended to regulate the surface water flow from the site and discharge to the land drainage system off site. This developed into a large lake which became the >show piece= of the site.

After the mid 1980's the input of RMJM & Partners was reduced to provide a fresh outlook upon the management and 10 years ago Hal Moggridge (Colvin & Moggridge) was engaged to carry out a strategic review of the campus landscape, which assessed both the strategic and practical measures required to conserve and improve the landscape, several of which are listed below:

- define the lakeside landscape, keeping it free from vehicles & utilities
- reinforce the framework tree planting, creating avenues into the central campus
- open & conserve views across the lake
- have open space swept back across grass away from the waters edge
- plant a second generation of long-lived broadleaved deciduous trees
- undertake extensive grassland bulb planting.

The recognition that lakeside landscape, formal areas, tree belts and open space are to be protected from development was accepted by CYC in their Development Brief for the Campus adopted in 1999.

These recommendations are broadly reflected in the current management of the campus landscape and are adopted wherever practical.

3. Development Brief

The Development Brief for Heslington East which was adopted in 2004, defines the landscape objectives and character areas for the campus extension, and are the grounds on which outline planning permission is based.

The Landscape objectives state:

“Development of the campus extension will continue the tradition of respect for landscape and the careful design of spaces between buildings to create an attractive and safe environment for all. The Following objectives will guide the development:

a) Create and maintain a high quality parkland setting as the basis for a distinctive university environment
b) Ensure a strong relationship between topography, landscape, built form and the local environment, including the setting of Heslington Village
c) Provide areas of public open space specifically related to the Badger Hill and Heslington housing areas
d) Provide strong links to the existing campus, in terms of both design and physical communications

e) Develop a broad scale structure for planting as a context for built development and as the basis for an attractive environment conducive to study and recreation
f) Establish a major woodland and viewing area at Kimberlow Hill
g) Select appropriate hard and soft landscape materials to provide distinctive character areas across the site
h) Integrate major water bodies and wetlands as distinctive visual features, which also serve as balancing regulators and to direct movements between campuses
i) Maximise ecological and wildlife potential across the site by way of assessing the opportunities for habitat creation, conservation and/or enhancement within the landscape framework and detailing the design of these areas accordingly
j) Provide and maintain safe public access and opportunities for informal recreation
k) Employ principles of sustainability and manage the landscape under a comprehensive Landscape Management Plan".

A number of distinct landscape character areas were also identified within the Development Brief, as key components of achieving the above Landscape Objectives. The character areas are defined as follows:

Heslington Parish Church environs
"The sensitive redesign of this area will provide the key to establishing successful links between Heslington West and East. Proposals for the management of traffic and increased priority for pedestrians and cyclists will be integrated to conserve the context of the church and the village. There will be no development of buildings, roads, footpaths or cycleways on or across the Village Green."

Heslington Village Green Space
"The open space immediately to the east of Heslington village will function as informal parkland, filtering views of the development and conserving the green context of the village, whilst integrating the main (non-car) communications spine to the existing campus. Landscape design will be used to reinforce the main pedestrian and cycle links to the existing campus, minimise the visual intrusion of these links and discourage crosscutting to the village. Views to open countryside will be respected."

Field Lane Parkway and Kimberlow Hill
"The open space fronting onto Field Lane is to be developed as informal parkland for use by the whole community. This will contain west/east pedestrian and cycle links providing a connection to the Park & Ride and north/south links to provide access to the campus extension and its facilities. The design of this parkland will provide the opportunity of ensuring a positive relationship between Badger Hill and the campus development. Kimberlow Hill forms an extension to this linear park and provides the

opportunity for a significant area of woodland planting. This will form a background to development when viewed from the south, whilst also being designed to take advantage of the fine views from this local highpoint. Views from this elevated area to the Minster and the Wolds will be protected and framed by the emerging woodland."

Green Wedges
"The main development area will be subdivided by a series of green wedges running across the contour, breaking down the apparent mass of the development and providing a positive visual connection to the open countryside. They will provide green links for pedestrians and cyclists from adjacent communities to the central communications spine and the full range of facilities offered by Heslington East. The main access drive from Field Lane will be designed as a major gateway to the University to provide a strong sense of identity upon arrival."

Central Spine
"A central movement spine will be created to provide the opportunity for a connecting and unifying thread running west/east across the site. It will be broad in scale and designed with formal and informal gathering spaces and 'squares' associated with adjacent built development. It will accommodate foot, cycle and wheelchair movement, plus a public 'people-mover'".

Water
"Water is to play a vital role in the campus development, both as a visual feature and to serve as a balancing regulator. A lake formed on the lower land to the south of the site will provide a setting for both development and recreation, (see plan 8). The creation of the lake must be done in full consultation with the Environment Agency. Varied character areas associated with the water and the 'central spine' will be created. These will range from quite formal arrangements through to very informal where water and wetland habitats combine to provide an ecologically rich, low-key setting to buildings. The water features should be designed so that they shall deter access to Low Lane or Heslington village from the campus."

Low Lane
"The character of Low Lane as an informal agricultural lane will be conserved with additional planting used to reinforce the existing hedgerow and trees and provide filtered views of the campus development. The land between the lake and Low Lane should be left open. It is expected that a consultant aboriculturalist will be employed during the construction phase to oversee works and advise on tree protection management."

(Heslington East Development Brief February 2004)

This Landscape Management Plan recognises these objectives and character area principles.

4. Habitat Management Principles

The University aims to follow habitat management best practice principles in developing and maintaining the Heslington East campus.

Choice of Species
Preference will be given to native species with exotic species only being used in moderation and in formal settings. Wetland areas will be planted with plants typically found at pond edges or in wetland meadows, such as marsh marigold, purple loosestrife, snake's head fritillary, iris, ragged robin and pendulous sedges.

Woodland planting will comprise mixed species of trees and shrubs of varying heights offering a multi-layered environment into which deadwood piles, roosting and breeding boxes can be introduced.

Where existing veteran trees which are to be retained during the development of the site, the surrounding area and public access to it will be carefully managed to avoid damage to root systems and any unnecessary felling of branches.

Management practices
The careful timing of grounds management activities to avoid nesting seasons will reduce the impact on habitats and intrusive lighting will be kept to a minimum where possible subject to security requirements. Any plants and trees used will be grown in peat-free compost and soil improvers will come from sustainable composting of green waste.

To reduce dependence on chemicals, low intervention horticulture will be practised using sustainable materials, the natural regeneration of trees and hedges and the use of mulch beds to prevent weeds. When required, humane methods of pest control will be used, targeting only the pest species and reducing the any prolonged control impact on the surrounding environment. Non-native species will be removed and controlled.

Should storm damage occur, woodland areas will be allowed to adapt and regenerate without interference unless a health and safety risk is posed.

Habitat Creation
A variety of different habitats will be created by the provision of a mix of nest boxes, water features, green roofs, piles of leaves, grass and deadwood, wildflower meadows and supported by planting schemes which offer rich sources of pollen, year-round fruit and berries and complementary flowering patterns.

5. Tree and Planting Stock

In Summer 2007, the University commissioned a survey of existing trees and hedgerows on the Heslington East development site. Trees were categorised by an Arboricultural Consultant using the British Standard 5837: 2005 '*Trees in Relation to*

Construction - Recommendations' (see Appendix B) which identifies the quality and value of existing tree stock to inform decisions on tree removal or retention during development.

The survey details three categories of trees:

i) trees of fair quality and value i.e. that could make a significant contribution for at least 20 years. These are recommended for retention where they do not impact the development.

ii) trees displaying some structural weaknesses or minor pest/disease problem but not currently posing any risk. Whilst these could remain for a minimum of 10 years, they would not usually be retained if they posed a significant restraint on development; and

iii) those trees of poor condition and recommended for removal as any existing value would be lost in 10 years.

The categorisation and assessment of individual trees together with preliminary recommended management actions and indications of possible and probable losses during the development phases are detailed in Appendix A.

Nearly all of the trees surveyed showed signs of growing in a continually disturbed site, and many of the hedges surveyed have lapsed (i.e. no longer constitute a functioning hedge) or are beginning to develop gaps. Any preliminary work, the recommended further investigations into potential bat habitats and the production of a tree constraints plan will be aligned with the development plans for Heslington East and the work on Heslington West tree stock (as agreed with CYC) where appropriate.

Protection of Retained Trees

Although it is accepted and inevitable that some trees will be lost as a result of development, careless and unnecessary damage during construction must be avoided. Accordingly, the following approach to tree protection methodology will be adopted. This is reiterated within the Construction Environmental Management Plan.

> Retained trees will be protected in line with British Standard: 5837 "Trees in Relation to Construction".
>
> The part of the tree most susceptible to damage is the root system. BS 5837 advises that in order to avoid damage to the roots or root environment of retained trees, a root protection area (RPA) should be determined. The RPA is the minimum area which should be left undisturbed during construction. The RPA is designed to prevent any significant long term damage to the tree by protecting the root plate and to some extent the lower branches of the tree.
>
> The RPA for each retained tree in the vicinity of the proposed developments will be calculated with reference to Table 2 of BS 5837 which provides guidance on the minimum distance around each tree. The tree protection

fencing will then be set out using the RPA for each tree as calculated. No trenches are to be dug within the RPA.

The protective fencing should be at least 1.2m and of rigid construction, for example chestnut pale fencing attached to scaffold poles. It must be erected prior to work commencing on site and remain until construction activities have been completed. The protective zone should be considered sacrosanct.

During construction, the following rules are to be adhered to:

1. No roots are to be severed.
2. The soil must not be compacted.
3. Trenches or other excavation must not be dug within the RPA. Where unavoidable, loose organic matter can be carefully removed by hand tools. Any hollows must be filled with sharp sand, any digging to remove rocks or protrusions must be by hand, taking care not to sever any roots over 2.5cm in diameter. Stumps should be ground out rather than excavated to prevent damage to the retained tree roots.
4. No materials of any kind should be stored within the RPA. This could lead to soil compaction and/or toxic spillage.
5. No vehicles should be driven over or park within the RPA in any circumstances.

Tree nursery
A tree nursery has already been established on site, using locally sourced saplings of both deciduous and evergreen varieties, thus allowing the trees to become established within the local environmental conditions on site before being transplanted to the required development spot.

6. The Lake

The lake's practical function is to "act as a balancing and flood storage system that will compensate for the increased runoff resulting primarily from the construction of buildings and impermeable surfaces on the new development". However, in addition, the lake is also intended to provide an amenity for recreational use.

To ensure the lake remains healthy there will be a mix of deeper water and shallows with the shallow areas containing a mix of reed beds and aquatic planting. An approximate mix of 60% deep water and 40% shallows with planting will be achieved. To keep waterfowl numbers to acceptable levels, the lake margins will be specifically designed to be unattractive to waterfowl, particularly geese. The lake will not be stocked with fish but will be subject to natural colonisation, this will encourage the maintenance of good water quality.

Lake Ecology and Water Balance
The control and management of nutrient levels will be a core objective for lake water quality. A SuDS 'management train' approach will be applied to treat surface water

runoff from developed and landscaped areas before discharging to the lake (e.g. swales, filter drains, and wetlands). Zones of aquatic planting will also be cultivated within the lake to assist in the prevention of algal blooms.

A re-circulation facility will be included to enable further treatment of lake discharges and safeguard the downstream water environment. Abstracted ground water will help to maintain flow conditions through the lake and also be used to supplement water levels. This will reduce the seasonal fluctuations of the level of the lake.

In order to compensate for variable ground conditions the lake may require a partial or complete liner. This may comprise a geo-membrane with a 'bentonite' clay core. This lining technique requires an over burden of low nutrient subsoil to be placed over the liner to provide weighting and protection. This overburden will also allow aquatic plants to be introduced directly into the substrate.

Aquatic Planting

The establishment and maintenance of a wide diversity of higher aquatic plant species is important for maintenance of water quality conditions, reducing the potential for algal bloom development and maximising the visual and ecological qualities of the proposed lake. As the lake will serve a flood storage function and the selected aquatic plant species should be able to tolerate variation of water levels and periods of submersion following peak storm events.

Plants may need to be provided with protective fencing, particularly during the establishment phase. Many plants, particularly the reed type species, are generally resistant to waterfowl grazing once established and only temporary protection should be required. Routine maintenance of the aquatic plants will be required and there will be the harvesting of plants such as reeds during the autumn to prevent release of stored nutrients back to the lake during winter degradation. The harvested plants may be disposed of to a suitable composting facility.

Waterfowl Control

The lake will be designed to keep geese and other waterfowl to manageable numbers. Lake margins will be planted with a band of fringing emergent vegetation and bankside shrub plantings. This will assist in restricting access for geese from the lake to surrounding grassed areas.

Fish Stocking

Fish can have a profound and detrimental influence on the ability to maintain clear water conditions through their selective consumption of large zooplankton that may help in reducing algal density. In addition certain fish species that feed on the lake bed, such as adult carp and bream, may give rise to suspension of accumulated silts that may impact upon higher aquatic plants and visual quality and may contribute to remobilisation of nutrients with silt deposits. There are no proposals to utilise the lake as a recreational angling amenity and consequently there is not a requirement for fish stocking to support a fishery.

Leaf Litter Collection

A large proportion of silt accumulating with lakes is derived from leaf litter from surrounding trees. Leaf litter entering the lake can contribute to both nutrient and organic enrichment that may lead to degradation of water quality conditions. The development of a marginal fringe of emergent vegetation will assist in reducing the entry of some leaves into the lake.

7. Habitat Creation and Management

The development of Heslington East provides the opportunity to enhance and further create a wide range of wildlife habitats. Taking into account National and Local conservation priorities and species protected under the Wildlife and Countryside Act, it is proposed to create environments which will encourage the colonisation of the area by great crested newts, barn owls, kingfishers, water voles, bats and badgers as well as supporting a range of aquatic vertebrates such as dragonflies, damselflies and water beetles through the provision of the lake, ponds and wetland areas.

Table 1 details the objectives, anticipated timescales and monitoring activities for wildlife colonisation of the site.

Table 1: Objectives, anticipated timescales and monitoring activities for wildlife colonisation of the Heslington East campus

Species	Objective	Indicator	Timescale (yrs)	Monitoring
Great Crested Newt	Establishment of a medium-sized Great Crested Newt breeding population	A peak of 10-100 adult Great Crested Newts caught in six bottle trap surveys conducted in suitable weather conditions during March-May	5	Annual bottle-trap surveys of ponds from years 3 to 7, then every three years
Barn Owl	Establishment of breeding Barn Owls	≥1 pair of breeding barn Owls established	5	Annual inspection of nest boxes and other suitable nest sites during years 3 to 7, then every three years
Kingfisher	Establishment of breeding Kingfishers	≥1 pair of breeding Kingfishers established	5	Annual inspection of suitable nest sites
Water Vole	Establishment of Water Voles	Water Voles established	5	Annual surveys for signs of presence during years 3 to 7, then every three years
Bats	Establishment of a diverse community of bat species, including roosts	≥5 regularly occurring bat species and ≥1 regular roosting site	4	Annual surveys of bat activity and searches of suitable bat roost sites during years 3 to 7 , then every three years

8. Maintenance and Monitoring

In addition to the planned monitoring of wildlife colonisation described above, monitoring of soft landscape areas will also be undertaken as part of the planned management and maintenance of the development. It is also in our plans to develop a Field Study Centre associated with the site.

Lake & Wetland Areas
The final design of the lake will be based around requiring the minimum of maintenance intervention. As with all planted areas the aquatic plant introductions into the lake should be subject to a formal maintenance strategy. This will involve:

- selective removal of plants where excessive growth may have been displayed
- replacement of plants that may have failed in growth or have been consumed by waterfowl

Any required plant removals due to excessive growth should be removed by manual methods of collection. It is not recommended that aquatic herbicides are used to control any plants that show excessive growth. Filamentous algae will be removed manually where possible. However if it should prove problematical then alternative control approaches will be considered that may include the deployment of barley straw.

The main maintenance works that are likely to be required include:

- Routine litter collection
- Leaf litter collection during the autumn
- Maintenance of the introduced aquatic plants to include autumn harvesting
- Annual maintenance of any installed aeration system
- Routine maintenance of the surface drainage system to include emptying of catch pits and oil interceptors.

In addition to the routine maintenance of the planted areas, an annual autumn harvesting of a proportion of the above water vegetation should be undertaken. Some areas will remain uncut to provided habitat areas for wildlife during the winter months. There are two advantages gained from harvesting the plants:

- Nutrients bound up with the plant material are effectively removed from the system. If vegetation is left in place then nutrients are released back into the lake as the vegetation degrades during the winter.
- Plant material is often the main source of silt accumulations within a lake. The resulting silts with a high organic content can have implications to water quality, for example a demand for oxygen as they are degraded by bacteria. The removal of the vegetation reduces the organic loading to the lake.

The harvested vegetation may be disposed of to a local composting facility, although checks would need to be made that they can accept such material.

Routine monitoring will take place on at least an annual basis to assess water quality and ecological conditions within the water body and to audit management actions undertaken in the previous year.

Wetland Areas will be subject to annual monitoring of pond life quality and water regimes during the first five years then every three years. In addition, annual monitoring of plant species composition within the marsh areas will be undertaken during the first five years then every three years.

Linear Parks and Woodland zones

In areas designated as species rich-neutral grassland (not designated as 'amenity grassland), the sward will be cut to 4cm height in March and September each year and clippings removed. Annual monitoring of the sward species composition will be undertaken during the first five years then every three years.

Areas of meadow land will be established to include spring, summer and invertebrate meadows. The ground will be prepared by spraying off the area to be seeded with non-selective systemic herbicide i.e. glyphosate. Once all the nettles, docks and thistles have been removed, the fallow area will be ploughed and harrowed to produce a fine, firm seed bed. Overseeding will then be carried out and sowing take place in the Autumn. It is anticipated that Minster Meadows Standard Wild Flora Mix will be used (sourced locally from Hurrell and McLean) to seed the wildflower areas.

Following Autumn sowing, the summer meadows will be mown once a month from the following Spring to eradicate annual weeds. The following year the summer meadow will be left uncut until mid-August. This cycle of flowering and cutting will be repeated each year, although some areas may be left uncut to provide habitat for invertebrates and mammals during Autumn/Winter.

For the Spring flowering meadow, the first cut will be carried out in June, followed by monthly cuts until October.

Where patches of deciduous and evergreen woodland are to be established, larger blocks of planted trees will be protected from grazing by rabbit fencing until the plants are well established. Possible deer grazing of the saplings will be monitored and if this proves to be a substantial problem then deer-proof fencing will be erected. Smaller blocks of woodland will protect plants individually with plastic tree shelters. An area of about $1m^2$ will be kept weed-free around each planted sapling, using glyphosate herbicide, until the tree canopy closes (i.e. after 3-5 years where tree spacing is 2m).

The ground flora will be assessed 7-10 years after planting to assess the rate of colonisation of woodland herbs. If this has been poor, introduction of native species through seed and pot plants will be considered. In addition, annual monitoring will be undertaken for the first five years, then every three years, recording tree health

and species composition. Assessment of dead wood habitat quality will be undertaken two years after placement then every three years.

It is proposed to raise Kimberlow Hill to 36.0 metres AOD using material arising from the lake excavation. New woodland planting will be used to create small woodland groups with a range of densities, providing a more diverse habitat than is currently available. The new mixed woodland will cover an area of approximately 23 hectares. The raising and maintenance of Kimberlow Hill will need to take account the archaeological investigations and phasing.

Boundary zones

Work will be undertaken to restore and establish good-quality hedgerows which are rich in native woody species. Existing hedgerows will be retained where possible and protected from any nearby construction activities with suitable temporary fencing. Gaps in existing hedgerows will be planted with a diversity of native woody species. New hedges will first be cut six years after planting and then every three years, while existing hedges will be cut on a three-year rotation. Monitoring will be undertaken of hedgerow quality and species composition on an annual basis during the first five years then every three years. Thinning will be carried out on a three – five year basis or as required. Subject to the purpose of the hedge (e.g. boundary or formal garden), cutting will be carried out on different timescales ranging from twice annually to annually, with 1.2 metres being an absolute minimum height at which hedges would be cut.

9. Indicative Character Areas

The following section details the indicative Character Areas of the Heslington East development site and is in accordance with the Heslington East Landscape Masterplan. Figure 1 shows the relative indicative locations of the Character Areas, whilst each Character Area section details proposed features, materials, planting, and construction and maintenance details where currently available. Figure 2 shows the proposed planting scheme for the lake and lake shore areas. The locations should be regarded as indicative at this stage and will be confirmed within the respective soft landscaping submissions.

Fig. 1 Landscape Character Areas (White Young Green, Nov 2006)

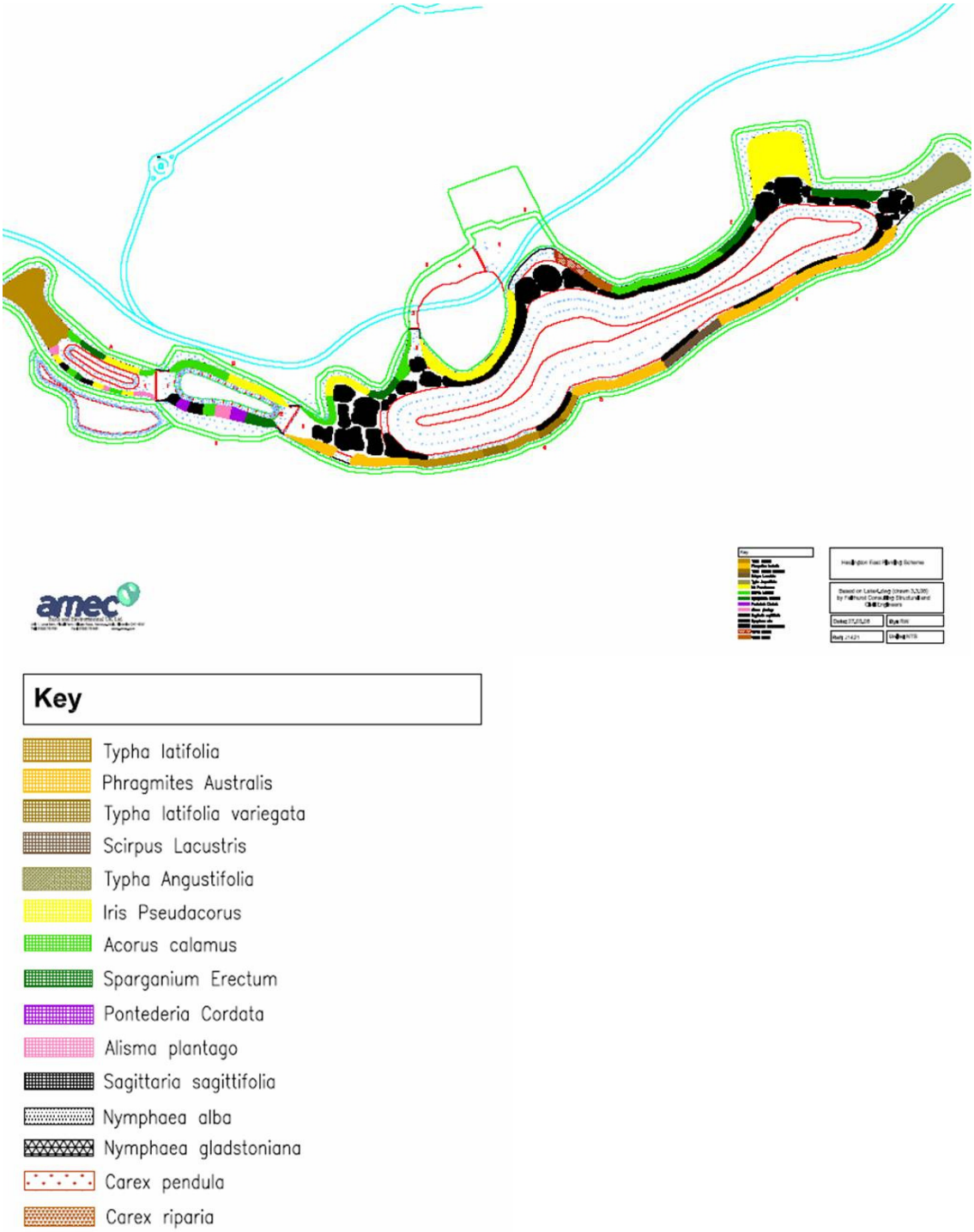


Fig. 2 Proposed planting of the lake and lake shore areas.

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Lake and Wetland Areas

Field Refs: 1, 2, 4, 8, 14, 15	
Features The campus extension includes a large water area comprising a lake with associated wetlands. The lake is located in the lower lying areas of the site and its primary role is to be an integral part of the storm water management and drainage within the site. Water has been identified as a unifying theme to help provide a coherent identity for the overall expanded campus in contrast to the relatively formal, ornamental and intensively managed body of water at Heslington West. There will be a soft edge generally to the lake. The lake is to be informal and ecologically diverse and its amenity value for recreational use is to be optimised. Given the numerous functions that the aquatic planting must play, an outline basic planting scheme is presented using mainly reed type species that, once established, are resistant to the attentions of waterfowl and also assist in creating a barrier to the birds between the lake and their grazing areas. The majority of the scheme is based on the use of native plants. The planting and vegetation along the southern edge of the lake will reflect both the need to provide screening from the road and woodland habitat areas whilst maintaining sunlight access to the lake. Lakeside reedbeds will assist in maintaining the water quality of the lake by filtering surface water entering the lake from the development site. Access to the south shore of the lake will be limited to encourage wildlife habitation. It has not yet been agreed where the marsh flora will be sourced from. However, there are numerous species on Heslington West campus that could be transplanted across the site.	
Hard Materials/Planting *Boardwalks*	timber planks, raised timber handrails, elevated with planting. Recycled plastic boardwalks are a possible consideration if they can be sourced.
Typical trees and shrubs associated with wetland areas	Alnus glutinosa (Alder), Populus tremula (Aspen), Salix alba (White Willow), Salix caprea (Grey Willow), Salix cinerea (Goat Willow), Salix fragilis (Crack Willow)
Recommended Reeds and Aquatic Species	Phragmites australis (common reed), Typha latifolia (Bulrush), Iris pseudacorous (Yellow flag), Alismaplantago-aquatica (Water plantain), Sparaganium erectum (Branched bur-reed), Potamogeton natans (Broad-leaved pondweed) Typha latifolia (Greater Reedmace); Phragmites Australis (Common Reed); Typha latifolia variegata (Variegated Reedmace); Scirpus Lacustris (True bull rush); Typha Angustifolia (Lesser Reedmace); Iris Pseudacorus (Yellow Flag Iris); Acorus calamus (Sweet scented rush); Sparganium Erectum;

	Pontederia Cordata; Alisma plantago; Sagittaria sagittifolia; Nymphaea alba; Nymphaea gladstoniana; Carex pendula; Carex riparia; Persicaria amphibium (Amphibious persicaria), Potamageton natans (Floating pondweed); Hydrocharis morsus-ranae (Frog's bit); Caratophyllum demersum (Hornwort); Ranunculus aquaticus (Water crowfoot); Myriophyllum spicatum (Water milfoil); Stratoides aloides (Water soldier); Hottonia palustris (Water violet); Nuphar lutea (Yellow water lily)
Parkland Specimen Trees	Betula pendula (Silver Birch), Fraxinus excelsior (Ash), Fagus sylvatica (Beech), Prunus avium (Wild Gean), Acer campestre (Field Maple) Quercus robur (Common Oak), Quercus petraea (Sessile Oak), Sorbus aucuparia (Mountain Ash).
Wetland Areas	
Construction Pond margins will be highly convoluted with shallow slopes (maximum 1:2 gradient), including shelves at 0.5m depth intervals, and grading down to a maximum depth of 1m. The ponds will be rain-fed systems with a naturally fluctuating water level. Plant and animal communities will be allowed to develop through natural colonisation.	Maintenance Annual monitoring of pond life quality and water regimes will be undertaken during the first five years then every three years. Vegetation would be cut in late March and aim to cut again in early Autumn, probably September, taking into account site conditions and objectives. Timing may also depend on any invasive plant species that need controlling and whether this may be in conflict with wildlife interest on the site. Cuttings will be uplifted to avoid inhibiting plant growth and to restrict soil nutrient levels. In order to reduce the mortality of small mammals and ground welling birds, cutting will be from the centre outwards.
Diverse Marsh	
Construction A shallow scrape with a convoluted margin will be excavated to expose the subsoil at a depth that allows shallow flooding in the winter months (to be determined through a water budget calculation). The marsh will be rain-fed systems with a naturally fluctuating water level.	Maintenance Annual monitoring of plant species composition will be undertaken during the first five years then every three years. Vegetation would be cut in late March and aim to cut again in early Autumn, probably September, taking into account site conditions and objectives. Timing may also depend on any invasive plant species that need controlling

	and whether this may be in conflict with wildlife interest on the site. Cuttings will be uplifted to avoid inhibiting plant growth and to restrict soil nutrient levels. In order to reduce the mortality of small mammals and ground welling birds, cutting will be from the centre outwards.
Lake	
Construction Details on the construction of the lake will be contained in the Reserved Matter submission for the Lake.	Maintenance The final design of the lake will be based around requiring the minimum of maintenance intervention. As with all planted areas the aquatic plant introductions into the lake should be subject to a formal maintenance strategy. This will involve the selective removal of plants where excessive growth may have been displayed; and the replacement of plants that may have failed in growth or have been consumed by waterfowl. Any required plant removals due to excessive growth should be removed by manual methods of collection. The main maintenance works that are likely to be required include: • Routine litter collection • Leaf litter collection during the autumn • Maintenance of the introduced aquatic plants to include autumn harvesting • Annual maintenance of any installed aeration system • Routine maintenance of the surface drainage system to include emptying of catch pits and oil interceptors. Filamentous algae will be removed manually where possible. However if it should prove problematical then alternative control approaches should be considered that may include the deployment of barley straw or a low density stocking of grass carp (subject to necessary stocking consent approval). An annual autumn harvesting of a significant proportion of the above water

	vegetation will be undertaken. However, some areas will remain uncut to provided habitat areas for wildlife during the winter months Routine monitoring on at least an annual basis to assess water quality and ecological conditions within the waterbody and to audit management actions undertaken in the previous year.

Lake Shores

Field Refs: 1, 2, 4, 6, 8, 9, 14, 15, 16	
Features The north shore of the lake will be predominantly soft edged with a more sculptured edge in areas of built development. The area between the northern shore and the movement spine has been designated for low density building development; this will take the form of individual buildings within a natural landscape setting. Access to the lake edge will be via a series of paths and boardwalks which will encourage the recreational enjoyment of this amenity. There will be facilities provided for non-motorised water sports.	
Hard Materials/Planting *Materials for lake shores*	Soft materials which will blend into the view; hoggin/resin bonded gravel; tarmas/textured concrete; concrete setts; timber boarding; metal/wooden handrail barriers
Typical trees and Shrubs associated with Wetland areas	Alnus glutinosa (Alder); Poplus tremula (Aspen); Salix alba (White Willow); Salix caprea (Grey Willow); Salix cinerea (Goat Willow); Salix fragilis (Carck Willow)
Parkland Specimen Trees	Betula pendula (Silver Birch); Fraxinus excelsior (Ash); Fagus sylvatica (Beech); Prunus avium (Wild Gean); Acer campestre (Field Maple); Quercus Rober (Common Oak); Quercus petraea (Sessile Oak); Sorbus aucuparia (Mountain Ash)
Plants for Lake Shores	Iris laevigata variegate; Iris pseudiacorus (Yellow water iris); Iris sibirica (bog iris); Juncus effuses Spiralis (Corkscrew rush); Lythrum salicaria (Purple loosestrife); Lobelia cardinalis; Menyanthes trifoliate (Bog bean); Veronica beccabunga (Brooklime); Symphytum officinale (Comfrey); Valeriana officinalis (Common valerian); Oenanthe fistulosa (Common water dropwort); Lysimachia nummularia (Creeping Jenny); Butomus umbellatus (Flowering rush); Ranunculus lingua (Great Spearwort); Rumex hydrolapathum (Great water dock); Lycopus europaeus (Gypsywort); Eupatorium cannabinum (Hemp Agrimony); Caltha palustris (Kingcup); Cardamine pratensis (Lady's smock); Stachys palustris (Marsh woundwort); Filipendula ulmaria (Meadowsweet); Lythrum salicaria (Perple loosestrife); Lychis ulmaria (Ragged robin); Phalaris arundinacea (Reed canary grass); Osmunda regalis (Royal fern); Scutellaria galericulata (Skullcap); Veronica anagallis-aquatica (Spiked water speedwell); Tanacetum vulgare (Tansy); Nasturtium officinale (Water cress);

	Scrophularia aquatica (Water figwort); Myosotis scorpioides (Water forget-me-not); Mentha aquatica (Water mint); Lysimachia vulgaris (Yellow loosestrife)
Construction Details on the construction of the lake shores are contained in the Reserved Matter submission for the Lake.	Maintenance The lake shores are planned to be natural and low maintenance. The lake edge will be monitored and any signs of damage identified and repaired. Areas where wildfowl are entering and leaving the lake will be identified and restrictions put in place.

Linear Parks and Woodland zones

Field Refs: 1, 1A, 2, 3, 5, 5a, 6, 7, 8, 9, 10, 11, 13, 16, 17	
Features This character area comprises parkland to the west of the campus and woodland to the east. In fields 8 and 9 there are areas of high archaeological significance. These will be investigated over the first five years of the development. The open space fronting onto Field Lane and the west edge of the site is to be developed as informal parkland. This area will also contain west/east pedestrian and cycle links providing a connection to the Park & Ride, and north/south links to provide access to the campus extension and its facilities. Pedestrian routes and cycleways will be lit for security but without being visually intrusive and recognising its contribution to light pollution. The mix of woodland and parkland areas will be used to create an 'amenity' corridor of at least 100 metres width separating the development and Badger Hill. The semi-rural quality of Field Lane is retained in the new scheme and enhanced by the natural landscape of the adjacent linear park and woodland zones. There will be different forms of grassland treatment including mown; meadow and wildflower areas. Where possible existing hedges are to be protected. Kimberlow Hill forms an integral part of this linear park and provides the opportunity for a significant area of woodland planting to the east of the site. This will form a background to the development when viewed from the south, whilst also being designed to take advantage of the fine views from this local high point. Views from this elevated area to the Minster and the Wolds will be protected and framed by the proposed tree and woodland planting. The raising of Kimberlow Hill will form part of the Phase 1 development.	
Hard Materials/Planting *Footpath/cycleway*	Hoggin or loose granular material; Woodchip; Recycled seating/edging
Typical Woodland and Trees Species	Acer campestre (Field Maple); Alnus glutinosa (alder); Betula pendula (Silver Birch); Betula pubescens (Downy Birch); Corylus avellana (Hazel); Crataegua monogyna (Hawthorn); Fagus sylvatica (Beech); Fraxinus excelsior (Ash); Ilex aquifolium (Holly); Prunus avium (Wild Gean); Quercus petraea (Sessile Oak); Quercus robur (Common Oak); Sorbus aria (White Beam); Sorbus aucuparia (Mountain Ash), Yew, Buckthorn, Alder Buckthorn; Spindle
Shrub species	Cornus sanguinea (Dogwood); Ligustrum vulgare (wild privet); Rosa arvensis (Field Rose); Rosa canina (Dog

	Rose); Salix viminalis (Osier); Sambucus nigra (Elder); Ulex europaeus (Gorse); Viburnum opulus (Guelder Rose)
Bulb species	Hyacinthoides non-scripta (Bluebell); Pseudo Narcissus Lobularis; Crocus (Crocus) ; anemone nemerosa; digitalis purpurea; driopteris filix Mas; Lusula sylvatica; Allium ursinum;
Grass seed species	Achiella millefolium (Yarrow); Centaurea nigra (Common knapweed); Conopodium majus (pignut); Galium verum (Lady's bedstraw); Hypochoeris radicata (Cat's ear); Lathyrus pratensis (Meadow vetchling); Leontodon autumnalis (Autumn hawkbit); Leucanthemum vulgare (Oxeye daisy); Lotus corniculatus (Common bird's-foot trefoil); Plantago lanceolata (Ribwort plantain); Prunella vulgaris (Selfheal); Ranunculus acris (meadow buttercuo); Rhinanthus minor (Yellow rattle); Rumex acetosa (Common sorrel); Succisa pratensis (Devil's-bit scabious), Trifolium pratense (Red clover); Veronica chamaedrys (Germander speedwell); Vicia cracca (tufted vetch), Agrostis capillaris (Common bent), Anthoxanthum odoratum (Sweet vernal-grass), Cynosurus cristatus (Crested dog's-tail); Festuca ruba (Red fescue)
Species rich-neutral grassland throughout areas not designated as 'amenity grassland'	
Construction Areas of meadow land will be established to include spring, summer and invertebrate meadows. The ground will be prepared by spraying off the area to be seeded with non-selective systemic herbicide i.e. glyphosate. Once all the nettles, docks and thistles have been removed, the fallow area will be ploughed and then harrowed to produce a fine, firm seed bed. Overseeding will be carried out and sowing will take place in the Autumn. It is anticipated that Minster Meadows Standard Wild Flora Mix will be used (sourced locally from Hurrell and McLean) to seed the wildflower areas.	Maintenance The sward will be cut to 4cm height in March and September each year and clippings removed. High maintenance grasslands will be cut by gang mowers to maintain the desired quality Annual monitoring of sward species composition will be undertaken during the first five years then every three years. *Spring, summer and invertebrate meadows* Following Autumn sowing, the summer meadows will be mown once a month from the following Spring to eradicate annual weeds. The following year the summer meadow will be left uncut until mid-August. This cycle of flowering and cutting will be repeated each year, although some areas may be left uncut to provide habitat for invertebrates and mammals during

	Autumn/Winter. For the Spring flowering meadow, the first cut will be carried out in June, followed by monthly cuts until October.
Establishment of patches of oak woodland	
Maintenance Larger blocks of planted trees will be protected from grazing by rabbit fencing until the plants are well established. Possible deer grazing of the saplings will be monitored and if this proves to be a substantial problem then deer-proof fencing should be erected. Smaller blocks of woodland will protect plants individually with plastic tree shelters. An area of about 1m^2 will be kept weed-free around each planted sapling, using glyphosate herbicide, until the tree canopy closes (i.e. after 3-5 years where tree spacing is 2m). The ground flora will be assessed 7-10 years after planting to assess the rate of colonisation of woodland herbs. If this has been poor, introduction of native species through seed and pot plants will be conducted. Annual monitoring will be undertaken for the first five years, then every three years, recording tree health and species composition.	
Frequent, good-quality dead wood habitat	
Maintenance Assessment of dead wood habitat quality will be undertaken two years after placement then every three years.	
Raising of Kimberlow Hill	
Construction It is proposed to raise Kimberlow Hill to 36.0 metres AOD using material arising from the lake excavation and development. New woodland planting will be used to create small woodland groups of a range of densities, providing a more diverse habitat than is currently available. The new mixed woodland will cover an area of approximately 23 hectares.	Maintenance The raising and maintenance of Kimberlow Hill will need to take account of the archaeology and phasing implications.

Boundary Zones

Field Refs: 1, 1A, 2, 4, 5, 7, 10, 11, 13, 14, 15, 17	
Features The boundary zones consist of all the edges to the site (up to 10m in width) which contain mainly existing hedgerows. The northern and southern boundaries are quite different in character and the expectations for these will be delivered differently in the proposals. The northern boundaries have a clear distinct edge to the site which clearly separates and divides the site from the surrounding areas. There is a marked contrast between the 'urban' edge of the city of York and the surrounding countryside. At the western end this edge/boundary is defined by Field Lane. The southern boundary has a more seamless divide and these areas blend more naturally into the surrounding agricultural landscape. Entrances to the site will be given special treatment whilst elsewhere the aim is to retain existing strategic hedgerows and hedgerow trees along the A1079 and along Field Lane and Low Lane where possible. Where this is not possible, the University will mitigate the loss via the enhancement of existing hedgerows and introduction of new hedgerows where appropriate. Screening vegetation between the new entrance and Deramore Drive will be used in the early stages to minimise the impacts of the new developments. New swales, individual trees and hedgerows will be used to increase the nature conservation interest of the boundary zones and there will be a need to continue to survey the hedgerows and maintain them in a healthy and ecologically viable condition throughout their lifetime.	
Hard Materials/Planting	
Boundary materials	Loose granular material; wooden edging/fencing; hoggin/aggregate
Boundary zones tree species	Acer campestre (Field Maple); Betula pendula (Silver Birch); Carpinus betulus (Hornbeam); Corylus avellana (Hazel); Crataegus monogyna (Hawthorn); Fagus sylvatica (Beech); Fraxinus excelsior (Ash); Quercus robur (Common Oak); Sorbus aucuparia (Mountain Ash)
Typical trees for Hedgerows	Acer campestre (Field Maple); Ilex aquifolium (Holly); Quercus robur (Oak); Sorbus aucuparia (Mountain Ash); Fraxinus excelsior (Ash); Fagus sylvatica (Beech)
Boundary zone Shrub species	Cornus sanguinea (dogwood); Sambucus nigra (Elder); Ulex europaeus (Gorse); Viburnum opulus (Guelder

	Rose); Salix viminalis (osier); Ligustrum vulgare (Wild Privet); Rose canina (Dog rose); Rosa arvensis (Field Rose)
Hedgerow species	Crataegus monogyna (Hawthorn); Ligustrum vulgare (Wild Privet); Rosa canina (Dog Rose); Corylus avellana (Hazel); Prunus spinosa (Blackthorn)
Restoration and establishment of good-quality hedgerows rich in native woody species	
Construction Existing hedgerows will be retained where possible and protected from construction activities where necessary with suitable temporary fencing. Gaps in existing hedgerows will be planted with a diversity of native woody species (see above).	Maintenance New hedges will first be cut six years after planting and then every three years, while existing hedge will be cut on a three-year rotation. Thinning will be carried out on a three – five year basis or as required. Subject to the purpose of the hedge (e.g. boundary or formal garden), cutting will be carried out on different timescales ranging from twice annually to annually, with 1.2 metres being an absolute minimum height at which hedges would be cut. Annual monitoring will be undertaken of hedgerow quality and species composition during the first five years then every three years.

Green Vistas

Field Refs: 1, 2, 3, 4, 8, 14	
Features The main development area will be subdivided by a series of three green vistas running across the contours, breaking down the apparent mass of the development and providing a positive connection to open countryside. They will provide green links for pedestrians and cyclists to the Central Movement Ribbon and the full range of facilities offered by Heslington East. The east and west vistas will be informal in character with generally a mixture of hard and soft areas with semi-formal planting and mainly ornamental species of trees, shrubs and ground cover. There is a need to provide a hard edge to each side of the vista to allow for emergency and vehicle access. The central vista provides the central access down to the lakeside. This central development area is not considered as a habitat creation area, but the outer green vistas should support native species of tree. They will form part of the overall connectivity of habitats (especially where ditches and hedges run through them).	
Hard Materials/Planting *Trees for Squares and Green spaces*	Carpinus betuilus 'Fastigiata' (Hornbeam); Carpinus betulus 'Frans fontaine' (Hornbeam); Quercus robur 'Fastigiata' (Common Oak); Sorbus x thuringiaca 'Fastigiata' (Whitebeam hybrid); Sorbus aria 'Lutescens' (Whitebeam); Tilia cordata 'Rancho' (Small leafed lime)
Shrub planting	Cornus alba (dogwood); Acanthus spinosa; Hedera colchia (ground ivy); Juniperus squamata; Jasminum nudiflorum (Winter jasmine); choysia ternate 'Sundance'; Euonymus japonica 'Emerald gaiety'; Lonicera nitilda; Mahonia aquifolium; Ribes sanguineum; Weigelia florida; Hypericum 'hidcote'; Berberis thunbergii; Hebe 'Mrs Winder'; Taxus baccata (yew); Coryllus avellana (Hazel)

Internal Courtyards and Plazas

Field Refs: 1, 2, 3, 4, 6, 8, 9	
Features These are the smaller shared open spaces that lie directly between the campus buildings. The surrounding landscape shall reflect the heights of the adjacent buildings and be designed accordingly so that the landscape complements the buildings.	
Planting	
Typical trees for Squares and Green Spaces	Carpinus betuilus 'Fastigiata' (Hornbeam); Carpinus betulus 'Frans fontaine' (Hornbeam); Sorbus x thuringiaca 'Fastigiata' (Whitebeam hybrid); Betula pendula; Malus tschonoskil; Prunus avium 'Plena'
Shrubs for Squares and Green Spaces	Amelanchier lamarckii; Caryopteris x clandonensis 'Heavenly Blue'; Choysia ternate 'Sundance'; cornus stolonifera 'flaviramea'; Cotoneaster horizontalis 'variegatus'; Euonymus europaerus 'Red Cascade'; Weigela florida; Viburnum tinus; Viburnum bodnantense; Hebe 'Great Orme'; Hebe 'Mrs Winder'
Perennials for Squares and Green Spaces	Acanthus spinosa; Achillea 'Moonshine'; Bergenia x schmidtii; Euphorbia amydaloides 'Rubra'; Heuchera 'Bressingham White'
Bulb species	Hyacinthoides non-scripta (Bluebell); Pseudo Narcissus Lobularis; Crocus; Galanthus nivalis (snowdrop)

Heslington Parish Church Environs

Field Refs: Heslington Parish Church Environs	
Features The land between Heslington village and the north western end of the allocation requires careful design to provide an appropriate setting for the village. It will be necessary to consider in detail proposals for traffic and pedestrian treatments to ensure the best interface with Heslington Village and in particular the Heslington Parish Church Environs. Treatment will ensure the environment is enhanced and not compromised. The residents of Heslington have prepared the Heslington Village Design Statement (2004) which is contained in the supplementary document: Supporting Technical Information. Church Field should be managed in its entirety with existing trees protected and preserved to prolong their life expectancy. It is intended that Church Field will remain a place for informal recreation at the centre of the village. A new link road to the Science Park will reduce traffic passing in front of Heslington Hall, allowing this area to be remodelled. Screening vegetation will be used along the new link road to protect views of the church as far as it practically possible and to recognise the needs of the Heslington Conservation Area. Improved parking facilities will be provided for churchgoers off Field Lane and consideration will be given to the need for a safe school drop off point on Field Lane, and cycleways along Heslington Lane, Field Lane and University Road.	
Planting *Tree species*	Betula pendula (silver birch); Carpinus betulus (Hornbeam); Corylus avellana (Hazel); Fagus sylvatica (Beech); Fraxinus excelsior (Ash); Quercus robur (Common Oak); Sorbus aucuparia (Mountain Ash); Prunus avium 'Plena' (Flowering cherry)
Shrub planting	Hedera colchica; Choysia ternate 'Sundance'; Euonymus japonica 'Emerald gaiety'; Lonicera nitida; Mahonia aquifolium; Ribes sanguineum; Hebe 'Mrs Winder'; Taxus baccata
Bulb species	Hyacinthoides non-scripta (Bluebell); Pseudo Narcissus Lobularis; Crocus; Galanthus nivalis (snowdrop)

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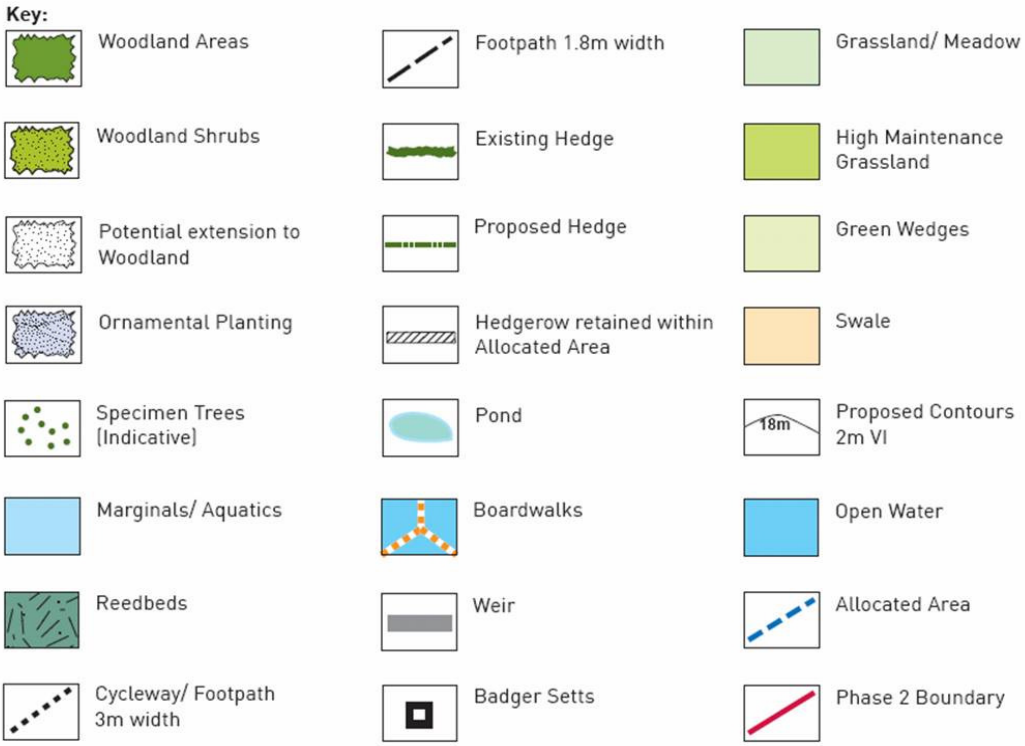
10. Site Proposals by Individual Field Reference

The following section details Heslington East landscape development proposals by individual field. For each field the following details are given:

- Location
- Current land use
- Proposed landscape
    - Indicative planting strategy (see key below)
    - Indicative Character Area(s) (as detailed in the previous section)
- Target Timescales

Indicative Planting Strategy
Figure 3 illustrates the location of the individual field references and indicates the planting/landscaping categories across the Phase 1 development site (Fig 3).



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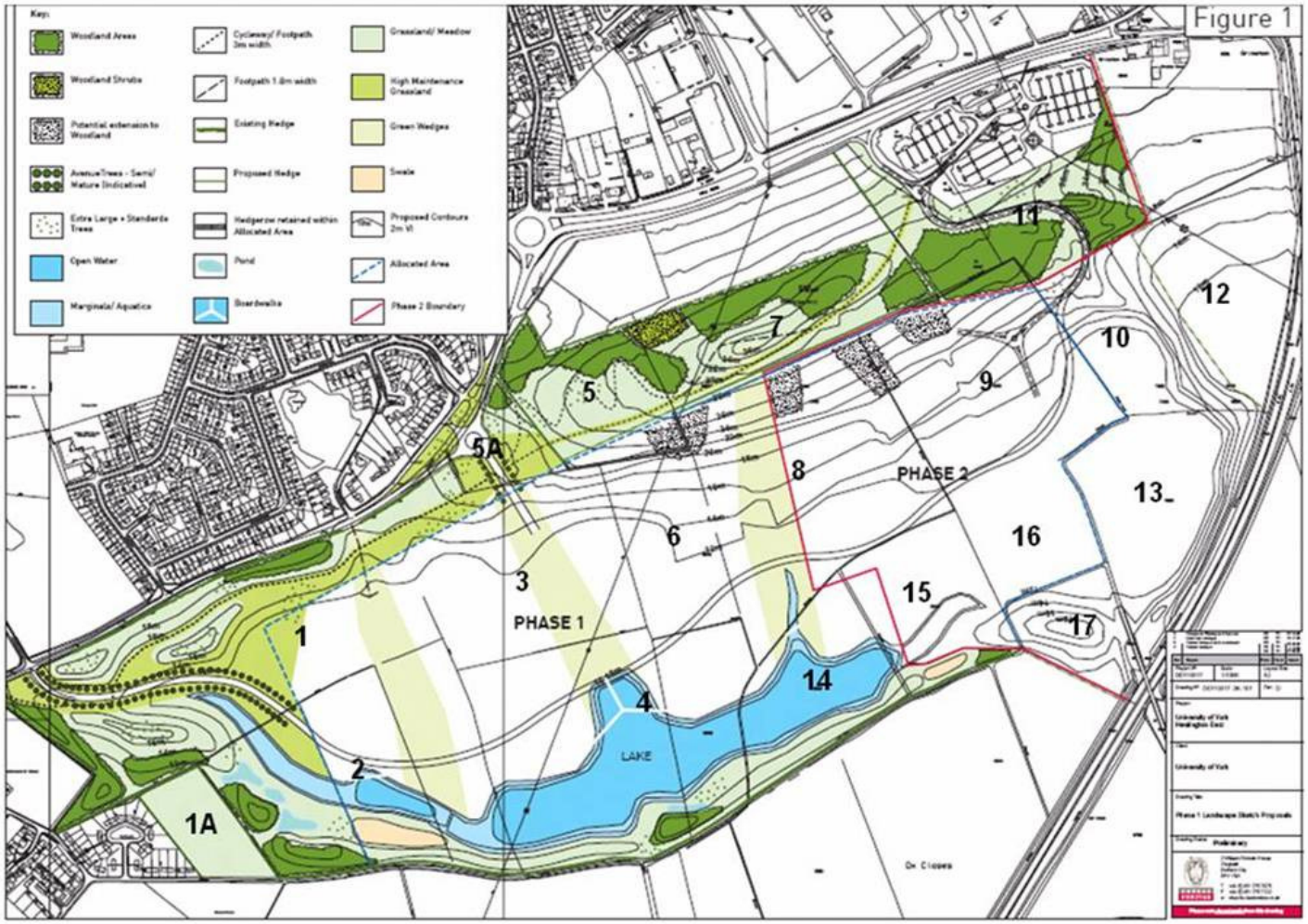
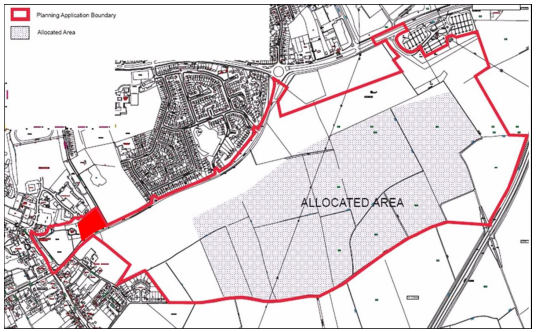
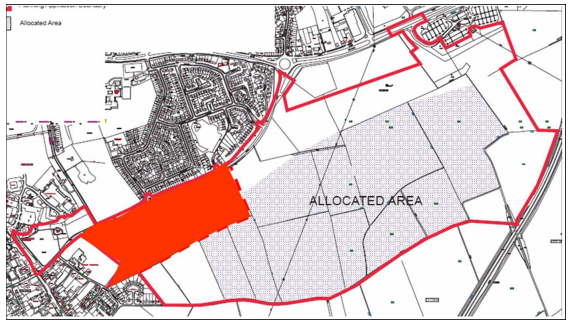


Figure 3: Location of Individual Field References and Indicative Planting Categories on the Phase 1 development site (Bureau Veritas, July 2007)

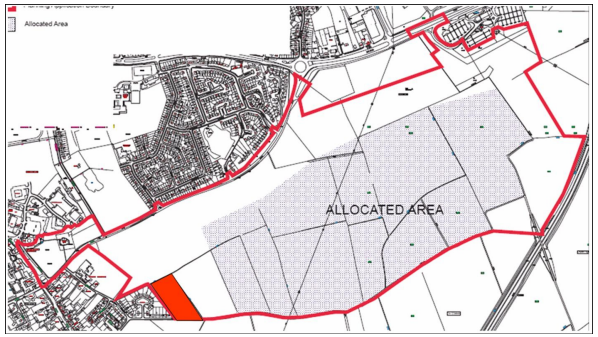
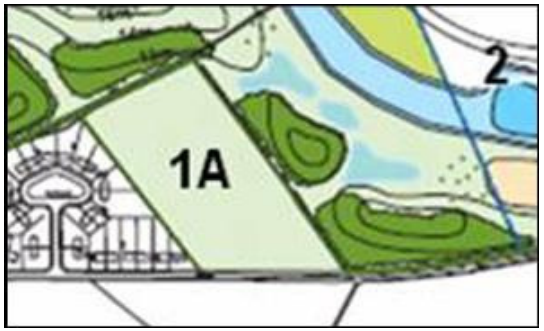
Field Reference: **Dean's Acre and the Green**

Current landscape	Proposed landscape	Target Timescales at Dec '07
Location  Existing use Amenity Grassland	Indicative Planting Strategy Tree and shrub planting to mask the visual impact of the new road particularly from the church. Character Area(s) Heslington Parish church environs Introduction of link road between Windmill Lane and Innovation Close.	Phase 1 Development site Key milestones t.b.c.

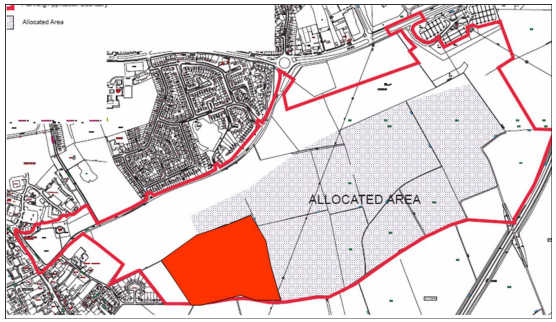
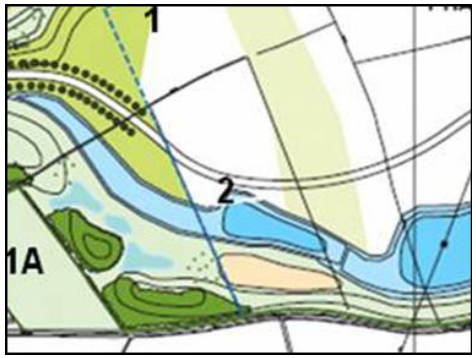
Field Reference: **1**

Current landscape	Proposed landscape (partially within Allocated Area)	Target Timescales at Dec '07
Location  Existing use Arable (Cereals)	 Indicative Planting Strategy Woodland Areas; Grassland/Meadow; High Maintenance Grassland; Extra Large and Standard Trees; Avenue Trees – semi/mature (indicative); Ornamental Planting(indicative within Allocated Area); Existing Hedgerow (H27); New Hedgerow; Green Vista; Cycleways/Footpaths (3m width); Marginals/Aquatics; Reed Beds Character Area(s) Linear Parks and Woodland zone (majority); Boundary Zones; Green Vista, Lake and wetlands, Lake Shores, Internal Courtyards and Plazas, UTS Movement Spine and Parking Areas and Access Roads	Phase 1 *Hedgerows* 3rd /4th Quarter 2008 Restoration of existing hedgerows & planting of new hedgerows *Woodland* 3rd Q2008 Ground preparation 4th Q 2008-1Q 2009 Planting *Dead wood* 2nd Q 2008 Creation of wood piles *Species-rich grassland* 3rd Q 2008 Ground preparation 3rd Q 2008 Sowing *Lake* 3rd Q 2008 Lake construction 1st /2nd Q 2009 Lake planting

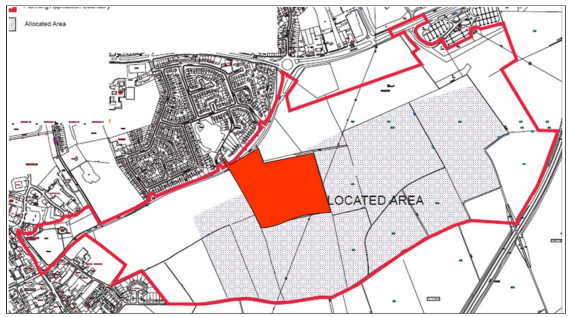
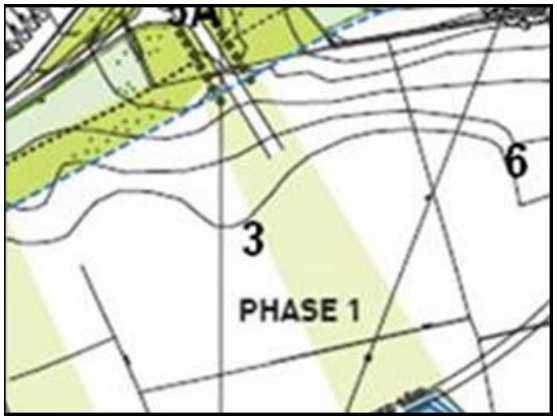
Field Reference: **1A**

Current landscape	Proposed landscape	Target Timescales at Dec '07
Location  Existing use Arable (Cereals)	 Indicative Planting Strategy Grassland/Meadow Character Area(s) Linear Parks and Woodland zones (majority) and Boundary Zones	Phase 1 *Hedgerows* 3rd /4th Quarter 2008 Restoration of existing hedgerows & planting of new hedgerows Land to be used as part of an Educational Field Study Centre

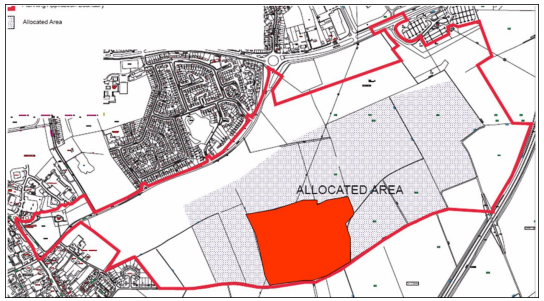
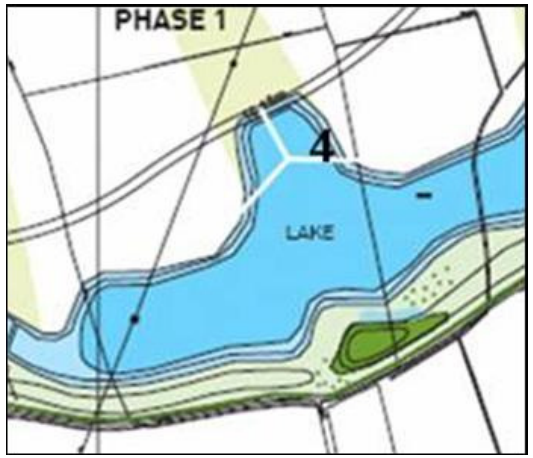
Field Reference: **2**

Current landscape	Proposed landscape (partially within Allocated Area)	Target Timescales at Dec '07
Location  Existing use Arable (Swede)	 Indicative Planting Strategy Open Water; Marginals/Aquatics; Reed Beds; Ponds; Swale; Woodland Areas; Grassland/Meadow; High Maintenance Grassland; Boardwalk; Extra Large & Standard Trees; Green Vista. Character Area(s) Lake and Wetlands; Lake Shores; Linear Parks and Woodland zones; Boundary Zones; Green Vistas, Internal Courtyard and Plazas; UTS Movement Spine; Central Pedestrian Ribbon and Parking areas and Access Roads.	Phase 1 *Hedgerows* 3rd /4th Quarter 2008 Restoration of existing hedgerows & planting of new hedgerows *Woodland* 3rd Q 2008 Ground preparation 4th Q 2008 Planting *Species-rich grassland* 3rd Q 2008 Ground preparation 3rd Q 2008 Sowing *Lake* 3rd Q 2008 Lake construction 1st /2nd Q 2009 Lake planting *Ponds & Marsh* 3rd Q 2008 Pond excavation & lining

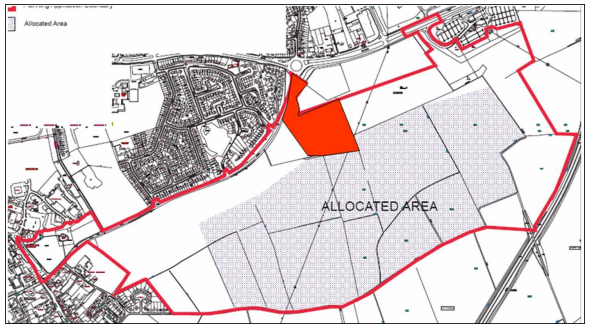
Field Reference: **3**

Current landscape	Proposed landscape (partially within Allocated Area)	Target Timescales at Dec '07
Location  Existing use Arable (Cereals)	 Indicative Planting Strategy Grassland/Meadow; High Maintenance Grassland; new Hedgerow; Extra Large & Standard Trees; Avenue Trees – semi/mature (indicative); Green Vista. Character Area(s) Linear Parks and Woodland zones; Internal Courtyards and Plazas; Green Vistas; Central Pedestrian Ribbon and Parking areas and Access Roads.	Phase 1 *Hedgerows* 3rd /4th Quarter 2008 Restoration of existing hedgerows & planting of new hedgerows *Species-rich grassland* 3rd Q 2008 Ground preparation 3rd Q 2008 Sowing

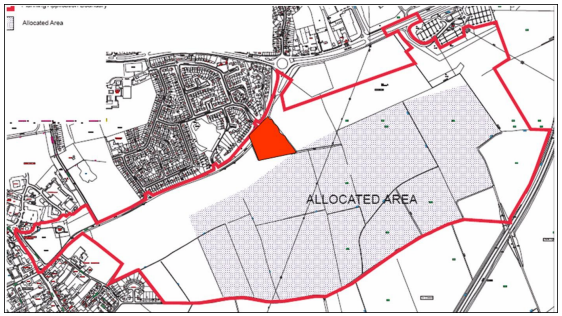
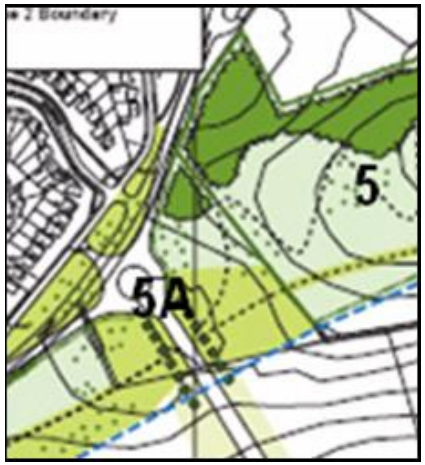
Field Reference: **4**

Current landscape	Proposed landscape (within Allocated Area)	Target Timescales at Dec '07
Location  Existing use Arable (Potatoes)	 Indicative Planting Strategy Open Water; Marginals/Aquatics; Reedbeds; Boardwalks; Pond; Woodland Areas; Existing Hedgerow (H1); Grassland/Meadow; Extra Large & Standard Trees; Green Vista. Character Area(s): Lake and Wetlands; Lake Shore; Boundary zones; Internal Courtyards and Plazas; Green Vistas; UTS Movement Spine; Central Pedestrian Ribbon; and Parking and Access Roads	Phase 1 *Hedgerows* 3rd /4th Quarter 2008 Restoration of existing hedgerows & planting of new hedgerows *Woodland* 3rd Q 2008 Ground preparation 4th Q 2008 Planting *Species-rich grassland* 3rd Q 2008 Ground preparation 3rd Q 2008 Sowing *Lake* 3rd Q 2008 Lake construction 1st /2nd Q 2009 Lake planting *Ponds & Marsh* 3rd Q 2008 Pond excavation & lining

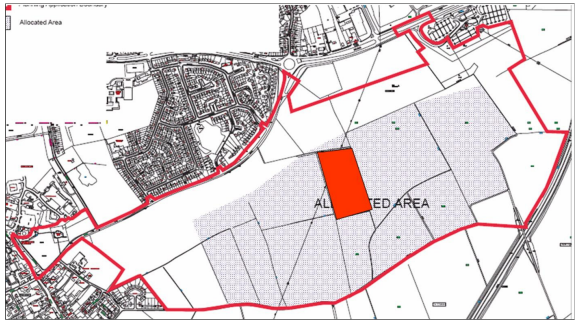
Field Reference: **5**

Current landscape	Proposed landscape (partially within Allocated Area)	Target Timescales at Dec '07
Location  Existing use Arable (Flax)	 Indicative Planting Strategy Woodland Areas; Woodland Shrubs; Grassland/Meadow; Extra Large & Standard Trees; Existing Hedgerows (H25, H26) and Proposed Hedgerow. Character Area(s): Linear Parks and Woodland Zones (majority); Boundary Zones and Parking areas and Access Roads.	Phase 1 development site *Hedgerows* 3rd /4th Quarter 2008 Restoration of existing hedgerows & planting of new hedgerows *Woodland* 3rd Q 2008 Ground preparation 4th Q 2008 Planting *Species-rich grassland* 3rd Q 2008 Ground preparation 3rd Q 2008 Sowing

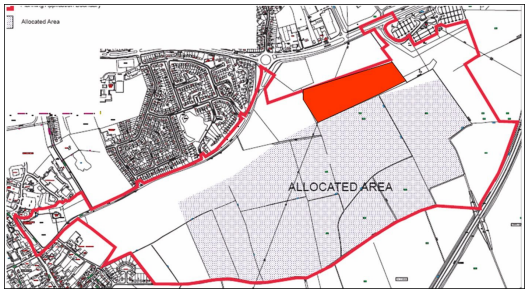
Field Reference: **5A**

Current landscape	Proposed landscape	Target Timescales at Dec '07
Location  Existing use Arable (Swede)	 Indicative Planting Strategy (BV) Woodland Areas; Grassland/Meadow; High Maintenance Grassland; Extra Large & Standard trees; Avenue Trees -Semi/Mature(indicative); Existing Hedgerow (H25) and proposed hedgerow along entrance. Character Area(s): Linear Parks and Woodland zones; and Parking areas and Access Roads.	Phase 1 development site *Hedgerows* There will be extensive hedgerow loss as a consequence of the construction of the Field Lane roundabout. 3rd /4th Quarter 2008 Restoration of existing hedgerows & planting of new hedgerows *Woodland* 3rd Q 2008 Ground preparation 4th Q 2008 Planting *Species-rich grassland* 3rd Q 2008 Ground preparation 3rd Q 2008 Sowing

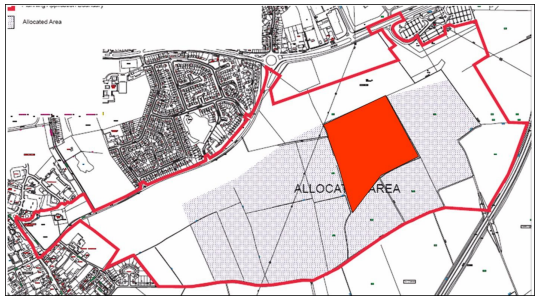
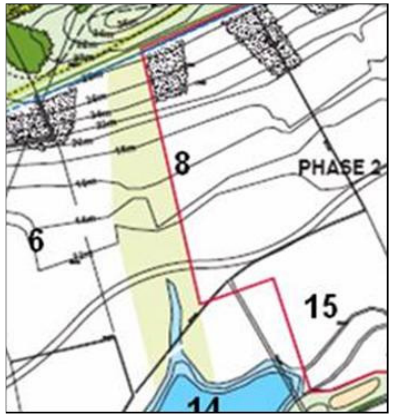
Field Reference: **6**

Current landscape	Proposed landscape (within Allocated Area)	Target Timescales at Dec '07
Location  Existing use Arable (Cereals)	 Indicative Planting Strategy Building development and potential extension to woodland area. Character Area(s): Linear Parks and Woodland zones; Internal Courtyards and Plazas (majority); Parking areas and Access Roads; Central Pedestrian Ribbon; UTS Movement Spine.	Phase 1 development site To be retained in agricultural use until development plans finalised.

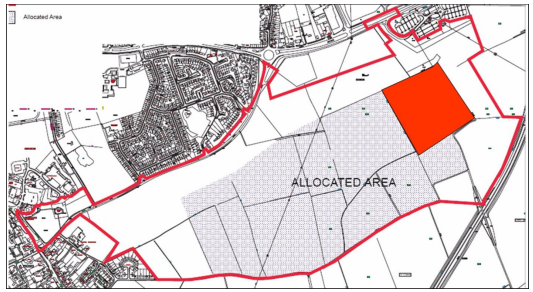
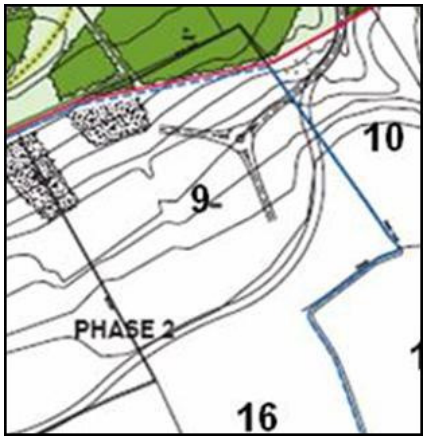
Field Reference: **7**

Current landscape	Proposed landscape	Target Timescales at Dec '07
Location  Existing use Arable (Cereals)	 Indicative Planting Strategy Woodland Areas; Woodland Shrubs; Grassland/Meadow; existing Hedgerow (H17, H3 & partial H4); proposed hedgerow along north boundary of field and cycleway/footpath (3m width). Character Area(s): Linear Parks and Woodland zones (majority) and Boundary zones. Raising of Kimberlow Hill	Phase 1 3rd Quarter 2008 Raising of Kimberlow Hill 4th Q 2008 Woodland 1st Q 2009 Planting

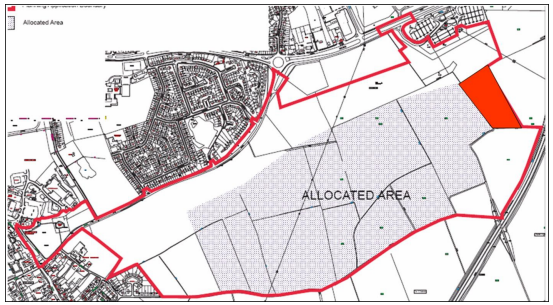
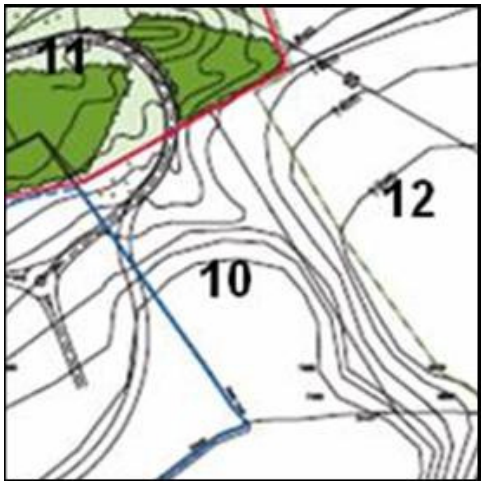
Field Reference: 8

Current landscape	Proposed landscape (within Allocated Area)	Target Timescales at Dec '07
Location  Existing use Arable (Cereals)	 Indicative Planting Strategy Reedbeds; Marginals/Aquatics; Green Vista; Ornamental Planting (indicative within Allocated Area) and potential extension to Woodland Areas. Character Area(s) Linear Parks and Woodland zones; Internal Courtyards and Plazas; Lake and Wetlands; Lake Shores; Green Vistas; UTS Movement Spine; Central Pedestrian Ribbon; Parking areas and Access Roads. Phase 1 Archaeology	Phase 1 Phase 1 Archaeology In fields 8 and 9 there are areas of archaeological significance. These will be investigated over the first five years of the development. Remain in Agricultural use until 2012 (est.)

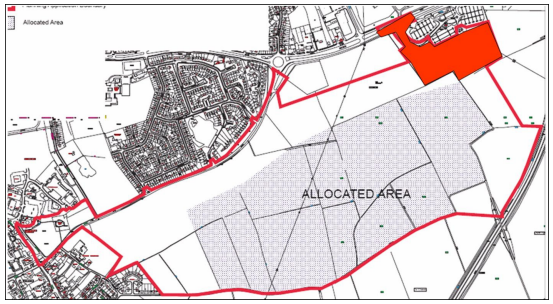
Field Reference: **9**

Current landscape	Proposed landscape (largely within Allocated Area)	Target Timescales at Dec '07
Location  Existing use Arable (Volunteer crop)	 Indicative Planting Strategy Grassland/Meadow; Potential Extension to Woodland Areas; Ornamental Planting (indicative within Allocated Area). Character Area(s) Linear Parks and Woodland zones; Lake shores; Internal Courtyards and Plazas; UTS Movement Spine; Central Pedestrian Ribbon; Parking areas and Access Roads. Phase 1 Archaeology	Phase 2 development site Phase 1 Archaeology In fields 8 and 9 there are areas of archaeological significance. These will be investigated over the first five years of the development. Remain in Agricultural use until 2012 (est.)

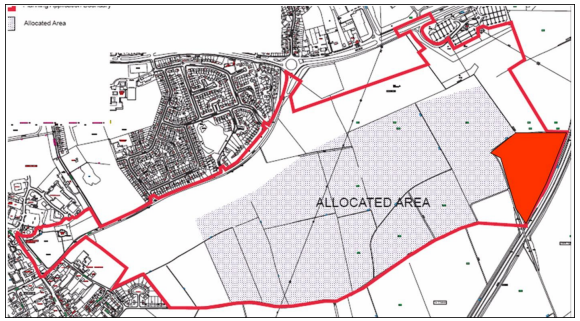
Field Reference: **10**

Current landscape	Proposed landscape	Target Timescales at Dec '07
Location  Existing use Arable (Set-aside)	 Indicative Planting Strategy Grassland/Meadow; Woodland Areas; Existing Hedgerows Character Area(s) Linear Parks and Woodland zones (majority); Boundary Zones; and UTS Movement Spine.	Phase 2 development site Remain in Agricultural use until 2012 (est.) The movement spine extension to Grimston Bar will pass through this area.

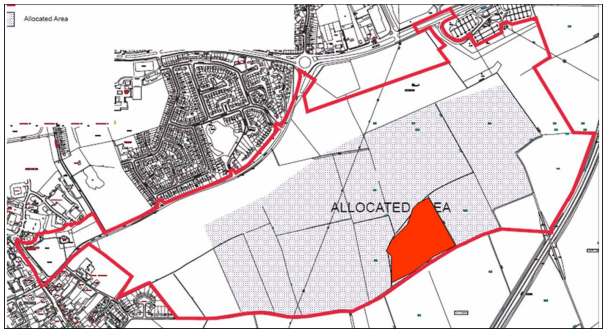
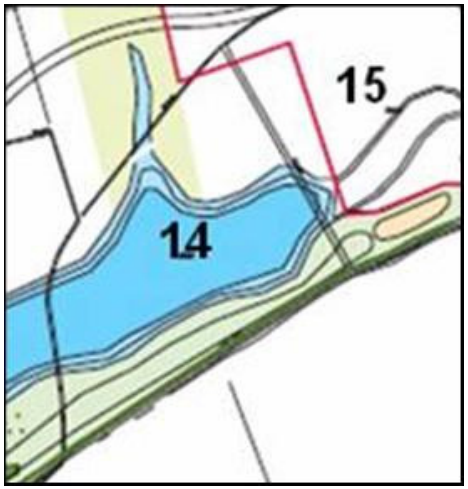
Field Reference: **11**

Current landscape	Proposed landscape	Target Timescales at Dec '07
Location  Existing use Arable (Set-aside), Improved Grassland and Mixed Plantation	 Indicative Planting Strategy Woodland Areas; Grassland/Meadow; Extra Large & Standard Trees; partial existing hedge (H4); proposed hedge eastern field boundary, Access Road and Cycleway/footpath. Character Area(s) Linear Parks and Woodland zones (majority); Parking areas and Access Roads, UTS Movement Spine.	Phase 2 development site Grimston Bar Park & Ride car park extension – to be completed by 2011 (est.)

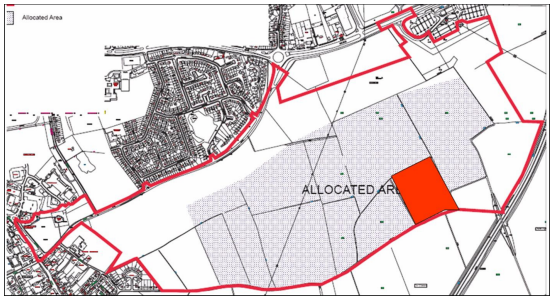
Field Reference: **13**

Current landscape	Proposed landscape	Target Timescales at Dec '07
Location  Existing use	 Indicative Planting Strategy Provisionally allocated for Sports Pitches but to be determined in Phase 2 landscape plan. Character Area(s) Linear Parks and Woodland zones (majority) and Boundary zones.	Phase 1 Remain in agricultural use Phase 2 External Sports pitches

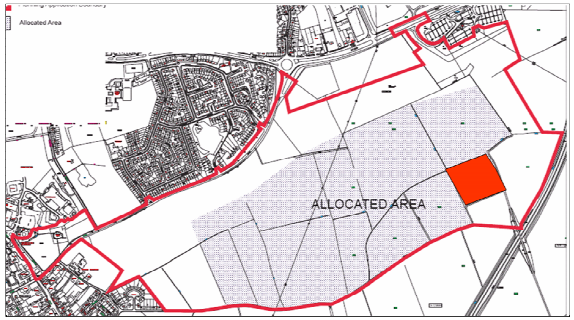
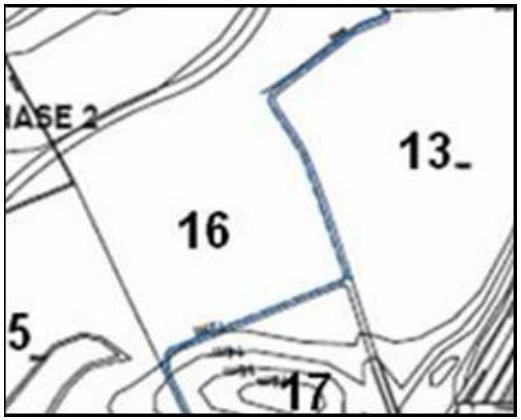
Field Reference: **14**

Current landscape	Proposed landscape (within Allocated Area)	Target Timescales at Dec '07
Location  Existing use Arable (Cereals)	 Indicative Planting Strategy Open water; Marginals/Aquatics; Reedbeds; Boardwalk; Pond; Hedgerow; Grassland/Meadow; Green Vista. Character Area(s): Lake and Wetlands; Lake Shores; Boundary zones and Green Vistas.	Phase 1 *Hedgerows* 3rd /4th Quarter 2008 Restoration of existing hedgerows & planting of new hedgerows *Species-rich grassland* 3rd Q 2008 Ground preparation 3rd Q 2008 Sowing *Lake* 3rd Q 2008 Lake construction 1st /2nd Q 2009 Lake planting *Ponds & Marsh* 3rd Q 2008 Pond excavation & lining

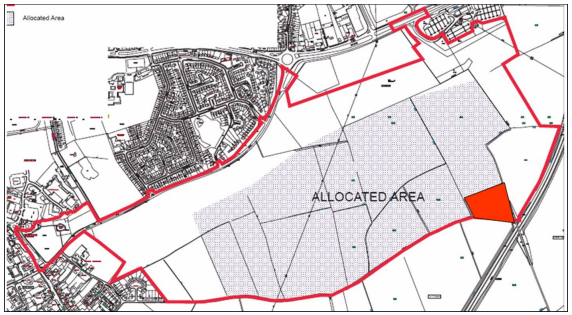
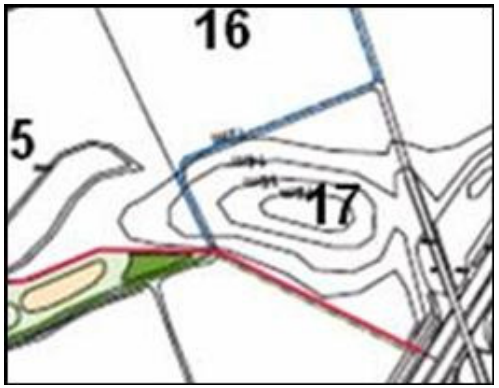
Field Reference: **15**

Current landscape	Proposed landscape (within Allocated Area)	Target Timescales at Dec '07
Location  Existing use Arable (Swede)	 Indicative Planting Strategy Open water; Marginals/Aquatics; Reedbeds; Grassland/Meadow; Hedgerow; Swale; Woodland Area. Character Area(s) Lake Shores; Lake and Wetlands; Boundary Zones and UTS Movement Spine.	Phase 2 development site Remain in agricultural use until 2012 (est.) Area for temporary tree nursery.

Field Reference: **16**

Current landscape	Proposed landscape	Target Timescales at Dec '07
Location  Existing use Arable (Volunteer crop)	 Indicative Planting Strategy Grassland/Meadow; Woodland Areas. Character Area(s) Linear Parks and Woodland zones; and Lakes Shores.	Phase 2 development site Retain land in agricultural use in phase 1

Field Reference: **17**

Current landscape	Proposed landscape	Target Timescales at Dec '07
Location  Existing use	 Indicative Planting Strategy Provisionally allocated for Sports Pitches but to be determined in Phase 2 landscape plan. Character Area(s) Linear Parks and Woodland zones (majority); and Boundary zones	Phase 2 Remain in agricultural use. Not in the allocation Phase 2 Landscape - Area providing buffering to the A64.

Appendix A

Tree and Hedgerow Schedules 2007

Contains:

- Figure 1: Map of Heslington East campus showing tree locations
- Figure 2: Map of Heslington East campus showing hedgerow locations
- Explanatory Notes
- Table 1: Tree schedule
- Table 2: Hedgerow schedule

Source:

Site:	University of York, Heslington East Campus
Client:	University of York
Brief:	Pre Development Survey
Surveyor & Arboricultural Consultant:	Joanne Ryan BSc (Hons) FArborA, Treesource
Assessment Date:	25 June, 31 July, 1 August 2007
Job Reference:	Heslington East/0807

Figure 1
Map of Heslington East Campus showing tree locations

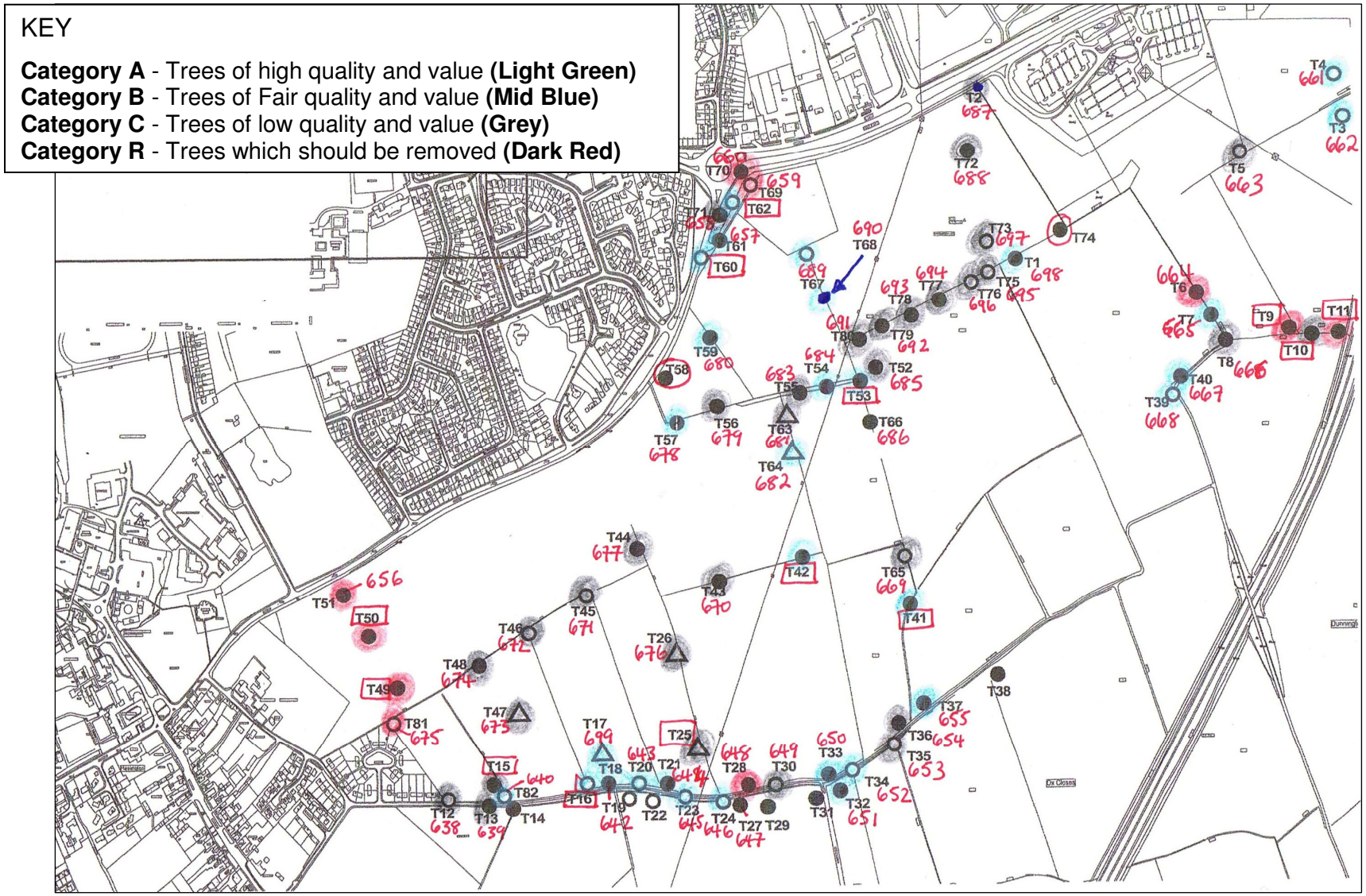
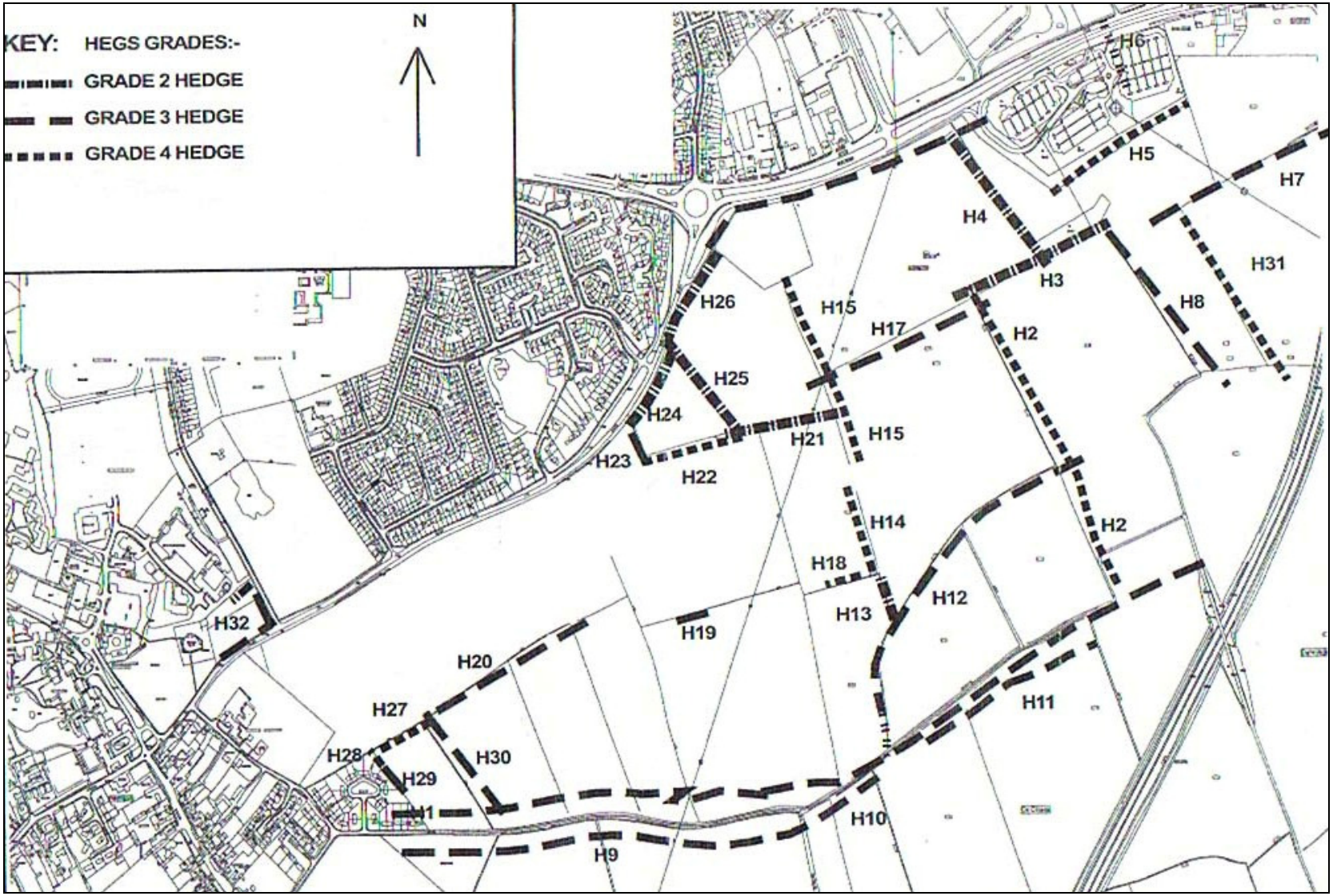


Figure 2
Map of Heslington East Campus showing hedgerow locations



Explanatory Notes

Species
The species identification is based on visual observations and the common English name of what the tree or shrub appeared to be is listed in the schedule, with the botanical listed in Appendix 3.

Stem Diameter
Stem diameter is measured at 1.5m above ground level or immediately above the root flare for multi-stemmed trees. (E) indicates estimated stem diameter.

Height and Crown Spread
Tree height and crown spread was estimated.

Maturity
Young (Y) - less than one third life expectancy
Middle Aged (MA) - one third to two thirds life expectancy
Mature (M) - last one third of life expectancy
Over Mature (OM)
Veteran (V)

Category
In line with recommendations laid out in British Standard 5837: 2005 *Trees in Relation to Construction - Recommendations*, the following categories have been used:
Category A - Trees of high quality and value **(Light Green)**
Category B - Trees of Fair quality and value **(Mid Blue)**
Category C - Trees of low quality and value **(Grey)**
Category R - Trees which should be removed **(Dark Red)**

Table 1
Tree Schedule

Tree No.	Species	Height (m)	Stem Diameter (mm)	Branch Spread (m)		Height of Crown Clearance (m)	Age Class	Physio-logical Condition	Structural Condition	Preliminary Recommended Management (if retained)	Estimated Remaining Contribution (Years)	BS5837 Category Grading	Comments**
									** Please note: comments in *blue italics* are made by the University of York, not Jo Ryan or Treesource				
698 (T1)	Sycamore	10	-	N S E W	6 7 5 7	2	M	Good.	Small pruning wounds – some showing decay beneath. Basal shoots.	Remove basal shoots.	20	B	*Retain*
687 (T2)	Sycamore coppice	10	-	N S E W	4 5 4 4	0	MA	Good.	Four stems. Included (inward-growing) bark on one stem towards road.	Consider re-coppicing.	20	C	*Not in application site* *Retain*
662 (T3)	Poplar	15	480	N S E W	3 5 6 5	0	MA	Good.	Good.	-	20	B	Part of a shelterbelt. *Not in application site* *Retain*
661 (T4)	Poplar	15	450	N S E W	5 5 3 5	0	MA	Good.	Good.	-	20	B	Part of a shelterbelt. *Not in application site* *Retain*
663 (T5)	Ash	10	300 (E)	N S E W	8 6 5 6	1.5	MA	Fair.	Coppice with six stems. Small diameter deadwood.	Remove deadwood.	>20	C	*Retain*

Tree No.	Species	Height (m)	Stem Diameter (mm)	Branch Spread (m)		Height of Crown Clearance (m)	Age Class	Physio-logical Condition	Structural Condition	Preliminary Recommended Management (if retained)	Estimated Remaining Contribution (Years)	BS5837 Category Grading	Comments**
664 (T6)	Oak	6	-	N S E W	4 2 5	1	M	Fair.	Stem snapped in past. Advanced brown decay down stem.	Possible bat roost - check. Fell.	<10	R	*Retain*
665 (T7)	Oak	12	-	N S E W	6 6 5 6	2	M	Good.	Ivy on stem. Minor branch snags in crown.	Remove ivy.	>20	B	*Retain*
666 (T8)	Oak	12	880	N S E W	5 6 5 7	1.5	M	Poor. Large amount of epicormic shoots from stem and branches.	Minor branch snags in crown. Pruning wound (500mm diameter) on NW at 1m, showing some decay beneath.	-	20	C	*Retain*
No Tag T9	Ash	12	-	N S E W	3 3 3 3	0	MA	Poor.	Advanced decay in upper crown. Many dead branches. Ivy on lower stem.	Fell.	<10	R	*Retain*
No Tag T10	Ash	10	-	N S E W	3 3 3 4	0	MA	Fair.	Small diameter deadwood in upper crown. Decay on upper branches. Basal Shoots.	-	<20	C	*Retain*

Tree No.	Species	Height (m)	Stem Diameter (mm)	Branch Spread (m)		Height of Crown Clearance (m)	Age Class	Physio-logical Condition	Structural Condition	Preliminary Recommended Management (if retained)	Estimated Remaining Contribution (Years)	BS5837 Category Grading	Comments**
No Tag T11	Ash	14	-	N S E W	5 4 4 6	1	MA	Fair-Poor.	Many dead branches and snags Fruiting body of decay fungus *Inonotus hispidu*s on upper stem. Basal shoots.	Possible bat roost – check. If retained reduce height to below decay fungus.	<20	C/R	*Retain*
638 (T12)	Sycamore	7	400 (E)	N S E W	5 5 5 5	4	MA	Fair. Small leaves	Deadwood and branch snags.	Remove deadwood.	<20	C	*Retain*
639 (T13)	Sycamore	6	-	N S E W	4 6 5 7	3	MA	Poor. Thin crown.	Ivy on stem.	-	<20	C	*Retain*
No Tag T15	Sycamore	10	-	N S E W	4 5 3 3	0	MA	Fair. Thin crown.	Ivy on stem. Basal shoots.	Remove ivy.	>20	C	*Retain*
No Tag (T16)	Sycamore	8	-	N S E W	6 7 6 6	2.5	MA	Good.	Branch snags. Basal shoots.	No access.	>20	B	*Retain*
699 (T17)	Oak	13	970	N S E W	6 6 7 8	2	M	Good.	Deadwood and stubs in crown.	Remove deadwood.	>20	B	*Possible loss due to lake*

Tree No.	Species	Height (m)	Stem Diameter (mm)	Branch Spread (m)		Height of Crown Clearance (m)	Age Class	Physio-logical Condition	Structural Condition	Preliminary Recommended Management (if retained)	Estimated Remaining Contribution (Years)	BS5837 Category Grading	Comments**
642 (T18)	Sycamore	8	450 (E)	N S E W	5 5 5 7	2	MA	Fair. Thin crown.	Deadwood Basal shoots to 2m.	Remove deadwood over footpath.	20	C	*Retain*
643 (T20)	Sycamore	8	-	N S E W	6 6 8 9	3.5	MA	Good.	Basal shoots.	-	>20	B	*Retain*
644 (T21)	Sycamore	12	900 (E)	N S E W	6 8 7 7	2	M	Good.	Two stems at 2m. Branch stubs. Basal shoots to 2m.	-	>20	B	*Retain*
645 (T23)	Sycamore	8	400 (E)	N S E W	6 7 7 5	2	MA	Fair.	Basal shoots to 2m	-	>20	B	*Retain*
646 (T24)	Sycamore	7	400 (E)	N S E W	4 5 6 4	2	MA	Fair.	Basal shoots to 2m	-	>20	B	*Retain*
No Tag T25	Sycamore	9	-	N S E W	4 4 4 4	-	MA	Poor. Upper crown dying.	Foliage in lower 5m.	-	<10	C	*Probable loss due to lake*
676 (T26)	Sycamore	12	-	N S E W	5 7 5 6	3	MA	Fair. Small leaves.	Basal shoots. Small diameter deadwood and snags in crown.	Removal basal shoots.	>20	C	*Probable loss due to Cluster 1 development*

Tree No.	Species	Height (m)	Stem Diameter (mm)	Branch Spread (m)		Height of Crown Clearance (m)	Age Class	Physio-logical Condition	Structural Condition	Preliminary Recommended Management (if retained)	Estimated Remaining Contribution (Years)	BS5837 Category Grading	Comments**
647 (T27)	Sycamore	10	-	N S E W	7 7 10 7	2	M	Good.	Basal shoots to 2m	-	>20	B	*Retain*
648 (T28)	Sycamore	8	-	N S E W	5 7 6 7	2	MA	Poor.	Deadwood and decayed branches. Dead bark.	-	<10	R	*Retain*
649 (T30)	Sycamore	8	-	N S E W	5 6 7 6	2	MA	Poor. Thin crown		-	<20	C	*Retain*
651 (T32)	Sycamore	8	450 (E)	N S E W	5 7 6 5	2	MA	Fair.		-	20	B	*Retain*
650 (T33)	Sycamore	10	720	N S E W	5 6 8 6	2.5	MA	Fair.	Good.	-	20	B	*Retain*
652 (T34)	Sycamore	7	-	N S E W	4 5 4 4	2	MA	Fair.	Basal shoots to 2m.	-	20	B	*Retain*
653 (T35)	Sycamore	6	250 (E)	N S E W	2 3 3 3	2	Y	Fair-Poor. Thin crown.	Good. Basal shoots to 2m	-	<20	C	*Retain*
654 (T36)	Sycamore	8	400 (E)	N S E W	4 5 5 3	3	MA	Fair. Small leaves.	Good. Pruned to west near overhead utility lines. Basal shoots to 2m.	-	<20	C	*Retain*

Tree No.	Species	Height (m)	Stem Diameter (mm)	Branch Spread (m)		Height of Crown Clearance (m)	Age Class	Physio-logical Condition	Structural Condition	Preliminary Recommended Management (if retained)	Estimated Remaining Contribution (Years)	BS5837 Category Grading	Comments**
655 (T37)	Sycamore	10	740	N S E W	9 8 9	4	MA	Good.	Small diameter deadwood.	-	>20	B	*Retain*
668 (T39)	Oak	8	-	N S E W	4 4 5 5	3	M	Fair.	Deadwood in crown.	Remove deadwood if necessary.	>20	B	*Retain*
667 (T40)	Oak	9	-	N S E W	5 7 6 5	-	M	Fair/poor. Thin crown.	Deadwood in crown. A small number of old pruning wounds.	Remove deadwood if necessary.	>20	B	*Retain*
No Tag T41	White willow	14	-	N S E W	6 6 6 6	2	MA	Good.	Stem splits into three at 3m. Minor small diameter deadwood in crown.	-	20	B	*Possible loss due to lake*
No Tag T42	Oak	11	>800 (E)	N S E W	8 8 6 8	1	M	Fair.	Deadwood and snags in crown. Split branch.	Check split branch for bats. Remove deadwood and split branch if no bats.	>20	B	*Look to retain*
670 (T43)	Oak	9	640	N S E W	6 8 7 5	1	M	Fair.	Pruning wound on stem with decay beneath. Tree leans to SE.	Remove deadwood. Monitor lean.	>20	C	*Probable loss due to Cluster 1 development*

Tree No.	Species	Height (m)	Stem Diameter (mm)	Branch Spread (m)		Height of Crown Clearance (m)	Age Class	Physio-logical Condition	Structural Condition	Preliminary Recommended Management (if retained)	Estimated Remaining Contribution (Years)	BS5837 Category Grading	Comments**
677 (T44)	Sycamore	13	-	N S E W	7 6 7 7	1	M	Good.	Tree leans to N. Buttress decayed on SW. Basal shoots. Some deadwood and stubs. Pruning wounds to 200mm diameter.	Remove deadwood.	20	C	*Loss due to service road*
671 (T45)	Oak	12	-	N S E W	6 4 4 8	2	MA	Fair.	Deadwood and branch snags in crown.	Remove deadwood and lowest branch with split.	>20	C	*Probable loss due to Cluster 1 development*
672 (T46)	Oak	7	-	N S E W	4 4 3 5	0.5	MA	Good.	Large amount of deadwood and decay throughout crown.	Possible bat habitat – check.	20	C	*Probable loss due to College 2 development*
673 (T47)	Oak	16	750	N S E W	8 7 7 9	1.5	M	Fair.	Old pruning wounds showing decay beneath. Dead branches some to 150mm diameter.	Remove deadwood and lowest branch to SW.	>20	C	*Probable loss due to lake*
674 (T48)	Oak	14	-	N S E W	9 6 6 6	1	M	Fair.	Old pruning wounds at 2-3m. Large number of snags and deadwood.	Remove deadwood.	>20	C	*Probable loss due to lake*

Tree No.	Species	Height (m)	Stem Diameter (mm)	Branch Spread (m)		Height of Crown Clearance (m)	Age Class	Physio-logical Condition	Structural Condition	Preliminary Recommended Management (if retained)	Estimated Remaining Contribution (Years)	BS5837 Category Grading	Comments**
No Tag T49	-	-	-	N S E W				Dead.				R	*Remove*
No Tag T50	?	10	-	N S E W		5	MA	Moribund.	Poor.		<5	R	No access. *Remove*
656 (T51)	Oak	11	950	N S E W	8 6 5 6	4	M	Poor. Deadwood and dieback in crown.	Fruiting bodies of decay fungus *Inonotus dryadeus* at base on west and south	Remove deadwood.	<10	R	*Remove*
685 (T52)	Sycamore	10	-	N S E W	5 5 5 4	0	M	Fair. Small leaves.	Deadwood at site of pruning wounds.	Remove deadwood.	20	C	*Retain*
No Tag T53	Sycamore coppice	10	-	N S E W	5 5 5 5	3	MA	Good.	Good.	-	>20	B	Part of hedge H21 which could all be incorporated into a shelterbelt or woodland. *Retain*

Tree No.	Species	Height (m)	Stem Diameter (mm)	Branch Spread (m)		Height of Crown Clearance (m)	Age Class	Physio-logical Condition	Structural Condition	Preliminary Recommended Management (if retained)	Estimated Remaining Contribution (Years)	BS5837 Category Grading	Comments**
684 (T54)	Sycamore	16	-	N S E W	5 5 5 6	0	M	Good.	Basal shoots.	-	>20	B	Part of hedge H21 which could all be incorporated into a shelterbelt or woodland. *Retain*
683 (T55)	Sycamore	16	-	N S E W	6 6 6 6	0	M	Fair.	Basal decay on SW of stem to 3m. Many basal shoots.	Remove basal shoots and re-assess decay.	20	C	Part of hedge H21 which could all be incorporated into a shelterbelt or woodland. *Retain*
679 (T56)	Sycamore	17	-	N S E W	7 7 7 8	1	M	Good.	Basal shoots. Some basal decay on NE & SW	Remove basal shoots and re-assess.	20	C	*Retain*
678 (T57)	Sycamore	12	-	N S E W	4 5 6 6	3	M	Good. Small diameter deadwood in crown.	Basal shoots. Branch snags and pruning wounds in crown. Ivy on stem.	Remove basal shoots and ivy.	>20	B	*Retain*
T58													Unable to locate tree.
680 (T59)	Sycamore	12	-	N S E W	5 4 4 5	1	M	Good.	Basal shoots.	Remove basal shoots.	>20	B	*Probable loss due to new Field Lane roundabout*

Tree No.	Species	Height (m)	Stem Diameter (mm)	Branch Spread (m)		Height of Crown Clearance (m)	Age Class	Physio-logical Condition	Structural Condition	Preliminary Recommended Management (if retained)	Estimated Remaining Contribution (Years)	BS5837 Category Grading	Comments**
No Tag T60	Sycamore	8	-	N S E W	4 3 5 4	3	MA	Fair.	Small amount of deadwood.	-	>20	B	*Retain*
657 (T61)	Sycamore	7	-	N S E W	5 5 4 5	3	MA	Good.	Good.	-	>20	B	*Retain*
No Tag T62	Sycamore	9	-	N S E W	5 5 5 4	3	MA	Fair. Small leaves.	Good.	-	20	B	*Retain*
681 (T63)	Sycamore	16	920	N S E W	5 6 5 6	3	M	Fair.	Small amount of deadwood in crown. Pruning wounds on stem, some showing decay beneath.	-	>20	C	*Probable loss due to car park and access roads*
682 (T64)	Sycamore	14	-	N S E W	5 6 5 5	0	M	Fair.	Basal shoots. Deadwood and snags in crown.	Remove basal shoots and deadwood.	>20	B	*Look to retain in car park*
669 (T65)	Sycamore	10	-	N S E W	3 2 5 4	1.5	MA	Good.	Basal Shoots. Small diameter pruning wounds showing decay beneath.	Remove basal Shoots.	>20	C	*Possible loss*
686 (T66)	Sycamore	14	-	N S E W	5 6 6 6	2	M	Good.	Basal shoots. Small diameter deadwood and snags in crown.	Remove deadwood.	>20	B	*Retain*

Tree No.	Species	Height (m)	Stem Diameter (mm)	Branch Spread (m)		Height of Crown Clearance (m)	Age Class	Physio-logical Condition	Structural Condition	Preliminary Recommended Management (if retained)	Estimated Remaining Contribution (Years)	BS5837 Category Grading	Comments**
689 (T67)	Sycamore	9	-	N S E W	5 4 4 5	2	MA	Good.	Old pruning wounds and stubs in crown.	Prune old stubs.	>20	B	*Retain*
690 (T68)	Sycamore	10	-	N S E W	5 4 5 4	2	MA	Fair.	Old pruning wounds. Basal shoots.	Remove basal shoots and lowest branch to NW.	20	B	Tree moved on map to between 689 (T67) and 691 (T80) *Retain*
659 (T69)	Sycamore	10	-	N S E W	8	4	MA	Moribund	Poor	-	<5	R	*Retain*
660 (T70)	Sycamore	6	-	N S E W	1 4	1	MA	Moribund	Poor	-	<5	R	*Retain*
658 (T71)	Sycamore	10	-	N S E W	5 5 8 7	3	MA	Fair.	Basal shoots to 3m. Pruning wounds on west and east with decay beneath.	Remove basal shoots and investigate extent of decay on wounds.	20	C	*Retain*
688 (T72)	Sycamore	11	950	N S E W	6 7 9 8	3	M	Fair.	Deadwood and stubs in crown. Pruning wounds showing decay beneath.	Remove basal shoots and deadwood.	>20	C	*Not in application site* *Retain*

Tree No.	Species	Height (m)	Stem Diameter (mm)	Branch Spread (m)		Height of Crown Clearance (m)	Age Class	Physio-logical Condition	Structural Condition	Preliminary Recommended Management (if retained)	Estimated Remaining Contribution (Years)	BS5837 Category Grading	Comments**
697 (T73)	Sycamore	8	480	N S E W	5 4 4 4	2	MA	Fair.	Small pruning wounds showing decay beneath. Deadwood in crown.	Remove deadwood.	<20	C	*Retain*
T74													Could not locate tree
695 (T75)	Sycamore	10	-	N S E W	5 4 4 5	2	MA	Good.	Basal shoots. Numerous pruning wounds to 300mm diameter at 1.5-2m on stem.	Remove basal shoots.	20	C	*Retain*
696 (T76)	Sycamore	12	-	N S E W	6 5 5 4	3	MA	Fair.	Basal shoots. Numerous pruning wounds at 2-2.5m on north of stem showing decay beneath.	Remove basal shoots.	<20	C	*Retain*
694 (T77)	Sycamore	12	-	N S E W	 8 6 6	0	M	Good.	Pruning wounds showing decay beneath – two wounds to 250mm diam. Small diameter deadwood in crown. Basal shoots.	Remove basal shoots.	>20	C	*Retain*

Tree No.	Species	Height (m)	Stem Diameter (mm)	Branch Spread (m)		Height of Crown Clearance (m)	Age Class	Physio-logical Condition	Structural Condition	Preliminary Recommended Management (if retained)	Estimated Remaining Contribution (Years)	BS5837 Category Grading	Comments**
693 (T78)	Sycamore	12	-	N S E W	5 5 5 5	1	M	Good	Pruning wounds on lower stem showing decay beneath. Small diameter deadwood in crown. Basal shoots.	Remove basal shoots.	>20	C	*Retain*
692 (T79)	Sycamore	14	-	N S E W	6 5 8 6	4	M	Fair.	Many pruning wounds showing decay beneath. Basal decay to south. Basal shoots.	Remove basal shoots.	20	C	*Retain*
691 (T80)	Sycamore	14	-	N S E W	6 6 6 7	4	M	Good.	Basal shoots. Deadwood in crown. Pruning wounds – mainly on south of tree - showing decay beneath.	Remove basal shoots and deadwood.	20	C	*Retain*
675 (T81)	Oak	6	-	N S E W				Dead				R	*Remove*
640 (T82)	Sycamore	9	-	N S E W	7 7 9 10	3	MA	Fair.	Deadwood in crown. Ivy on stem. Basal shoots.	Remove deadwood.	>20	B	*Retain*

Table 2
Hedgerow Schedule

Hedge No.	Species Composition	Height (m)	Width (m)	Age Class	Physiological Condition	Structural Condition	Management Recommendations	Comments**
H1	Hawthorn*, Dogwood, Alder, Willow, Blackthorn, Rowan, Sycamore, Oak	2-5	3	Y-MA	Good.	Hedge mainly hawthorn and dogwood to west, developing into a shelterbelt with a greater species mix to the east. Some gaps for farm vehicle access.	Fill in gaps.	*Retain*
H2	Hawthorn* Elder	2-3.5	3	M	Good.	Some gaps 2-10m wide.	Fill in gaps. May require laying.	*Retain in Phase 1*
H3	Hawthorn*, Field maple, Plum	4	4	MA	Good.	Good. Shelterbelt behind hedge. Some gaps 3-5m wide.	Fill in gaps.	*Retain*
H4	Hawthorn*, Prunus, Elder	3-5	4	M	Good.	Good. Appears unmanaged. Hedge beginning to develop into trees.	Prune to maintain as a hedge/barrier.	*Retain*
H5	Hawthorn	3	3	MA	Good.	Good.		*Some loss to create car park*
H6	Hazel, Sea buckthorn, Rose, Field maple	1.5	2	MA	Good.	Shrubs planted in blocks and maintained at 1.5m as a barrier between car park areas and access road.		*Retain*
H7	Hawthorn*, Blackthorn, Malus, Elder	4-6	8	MA	Good.	No recent pruning evident on north of hedge. Trimmed on south. Some gaps to east.	Fill in gaps.	*Retain*
H8	Hawthorn*, Hazel, Prunus, Guelder rose, Goat willow	3		MA		Maintained hedge. Largely stock-proof except where guelder rose is growing and where farm vehicle openings (2-5m wide) are located.	Fill in gaps.	*Some loss for access road*

Hedge No.	Species Composition	Height (m)	Width (m)	Age Class	Physiological Condition	Structural Condition	Management Recommendations	Comments**
H12	Hawthorn*, Sycamore coppice, Oak, Elder	2	3	Y-MA	Fair. Hedge suppressed in parts by weed growth.	Weeds particularly vigorous to east. Gaps to 20m wide in places.	Control weeds. Fill in gaps. Consider laying existing hedge.	*Some loss for lake*
H13	Hawthorn*, Sycamore coppice, Rose	2	1	Y	Good.	Fair. Many weeds and several gaps.	Fill in gaps.	*Retain in Phase 1*
H14	Hawthorn*, Oak, Rose, Sycamore coppice	1.5	1	MA	Poor. Dead in places and suppressed by weeds in places.	Fair. Maintained at 1.5m for 20m. Gaps appear to south.	Possible removal.	*Retain in Phase 1*
H15	Hawthorn*, Sycamore, Elder	1.5-2	1	MA	Good.	Fair. Hedge maintained at 1.5m high. Gaps at base below 0.5m where stems clear of foliage. Hedge narrows in places.	Consider laying hedge if gaps along hedge bottom need closing. Possible removal.	*Retain in Phase 1*
H17	Hawthorn*, Elder	1.5	2	MA	Good.	Good. Gaps in places.	Fill in gaps.	*Retain*
H18	Hawthorn	1.5	2	MA	Good.	Good. Does not form a continuous boundary. Extends for 10m from east.		*Retain in Phase 1*
H19	Hawthorn	2-3	3	MA	Good.	Fair. Does not form a continuous boundary. Extends for 20m and contains a small number of gaps.		*Remove for Cluster 1*
H20	Hawthorn*, Elder, Sycamore	2	3	MA-M	Good.	Fair. Some gaps to 10m wide.	Fill in gaps.	*Remove for College 2*
H21	Hawthorn	4-6		M		Poor. Lapsed hedge. Gaps to 10m wide. Many plants now individual trees. Area planted with some young oak trees.	Possibly widen the planting area to develop into a shelterbelt or copse.	*Retain*
H22	Hawthorn* Elder, Sycamore, Rose	2-3			Good.	Many gaps and weeds– some to 12m wide. To eastern side beyond Tree 679. Gaps in places at base.	Fill in gaps. Lay existing hedge to form a dense barrier.	*Some loss for access road*
H23	Hawthorn	2.5	2	MA	Good.	Continuous hedge without gaps.		*Some loss for access road*

Hedge No.	Species Composition	Height (m)	Width (m)	Age Class	Physiological Condition	Structural Condition	Management Recommendations	Comments**
H24	Hawthorn, Sycamore, Ash, Field maple, Whitebeam	3-6	3	Y		Small number of gaps. Shelterbelt planting with some hawthorn towards west.		*Some loss for new roundabout*
H25	Hawthorn Sycamore	6		M		Lapsed hedge. Southern 35m comprises individual shrubs with gaps between. Northern section of H25 comprises individual hawthorn shrubs and sycamore coppice with gaps.	Lay existing hedge plants. Plant up gaps. Retain coppice sycamore as trees within hedge.	*Some loss for new roundabout*
H26	Hawthorn* Elder	3	2	MA	Good	Good. Farm vehicle opening by pylon and traffic lights.	Fill in gap.	*Retain*
H27	Hawthorn* Willow	1.5	1	Y	Good.	Suppressed by weeds. Some gaps in hedge.	Control weeds. Fill in gaps.	*Retain*
H28						No Access		*Retain*
H29	Aspen, Sycamore, Cypress, Rose, Brambles, Corkscrew willow,	2-6	3-6	MA	Good.	Not a continuous hedge. Old hedge-line now brambles and planted with garden species.		*Retain*
H30	On west of ditch: Hawthorn*, Raspberry, Sycamore On east of ditch: Willow coppice, Birch	2 4	2 4	MA Y	Good Good			*Retain*
H31	Hawthorn	2	2	MA	Good	Good – a continuous and well maintained hedge.		*Retain*
H32								

* Denotes dominant species.

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Appendix B

BS5837 2005 Cascade Chart for Tree Quality Assessment

TREES FOR REMOVAL			
Category and definition	**Criteria**		
Category R Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboriculture management.	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other R category trees (I.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning). • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby (e.g. Dutch elm disease), or very low quality trees suppressing adjacent trees of better quality. NOTE Habitat reinstatement may be appropriate (e.g. R category tree used as a bat roost: installation of bat box in nearby tree).		
TREES TO BE CONSIDERED FOR RETENTION			
Category and definition	**Criteria - Subcategories**		
	1. Mainly arboriculture values	**2. Mainly landscape values**	**3. Mainly cultural values, including conservation**
Category A **Those of high quality and value:** in such a condition as to be able to make a substantial contribution (a minimum of 40 years in suggested).	Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboriculture features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (e.g. avenues or other arboriculture features assessed as groups).	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture).

Category and definition	Criteria - Subcategories		
	1. Mainly arboriculture values	**2. Mainly landscape values**	**3. Mainly cultural values, including conservation**
Category B **Those of moderate quality and value:** those in such a condition as to make a significant contribution (a minimum of 20 years is suggested)	Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage).	Trees present in numbers, usually as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboriculture features (e.g. trees of moderate quality within an avenue that includes better, A category specimens), or trees situated mainly internally to the site, therefore individually having little visual impact on the wider locality.	Trees with clearly identifiable conservation or other cultural benefits.
Category C **Those of low quality and value:** currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150mm.	Trees not qualifying in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit.	Trees with very limited conservation or other cultural benefits.
	NOTE Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150mm should be considered for relocation.		

Source: Treesource Ref: Heslington-East/0807

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Appendix C

Planting Strategy Categories

1. Woodland Areas
2. Woodland Shrubs
3. Ornamental Planting (indicative within Allocated Area)
4. Extra Large & Standard Trees
5. Avenue Trees – Semi/Mature (indicative)
6. Existing Hedge
7. Proposed Hedge
8. Hedgerow retained within Allocated Area
9. Grassland/Meadow
10. High Maintenance Grassland
11. Green Vistas
12. Sports pitches
13. Swale
14. Open Water
15. Marginals/Aquatics
16. Reedbeds
17. Pond
18. Boardwalk
19. Cycleway/footpath (3m width)
20. Footpath (1.8m width)
21. Some vegetation to be removed

Sources: Bureau Veritas (Jul 2007) & White Young Green (Nov 2006)