

Sustainability

Landscape Management Plan Brackenhurst Campus

February 2022



Nottingham Trent
University

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Rev	Issue Status	Prepared / Date	Approved/Date
1	Final	ST/22 February 2013	NTU/22 February 2013
2	Draft	CP/24 January 2014	NTU/26 January 2014
2	Final	CP/31 January 2014	NTU/31 January 2014
3	Final	CP/29 January 2015	NTU/ 30 January 2015
4	Final	SB/29 January	NTU/29 January
5	Final	ZT/19 January	NTU/19 January
6	Final	KDM/ January 2018	NTU/ January 2018
7	Final	OH/ 28 January 2019	NTU/ 28 January 2019
8	Final	HT/30 January 2020	NTU SR/30 January 2020
9	Final	SR/7 February 2022	NTU CM/ 10 February 2022



Section 1: Introduction & Background₂

1.0 INTRODUCTION & BACKGROUND

Location

Brackenhurst Campus is a 200-hectare country estate in Nottinghamshire, comprising gardens, farmland, woodland and hedgerows. It is located between Mansfield and Newark on Trent, just south of the town of Southwell.

The Campus fronts onto the A621 Nottingham Road, via which the site is accessed by bus and car. Nottingham City Transport (NCT) bus route Pathfinder 26 serves the Campus, providing access from Nottingham city centre via Burton Joyce. Buses to Brackenhurst Campus leave Nottingham City Centre every 30 minutes and the journey time is about 40 minutes.

Current Use

Brackenhurst Campus has been a centre for education and training for the land-based industries for more than 60 years. During this time, the character of the house, gardens, grounds and parkland has been retained, keeping a friendly atmosphere alongside a working environment.

In April 1993, the Farm Institute became a College of Further Education under the Further and Higher Education Funding Council. In April 1999, the College underwent a formal merger with Nottingham Trent University (NTU). It is now called the School of Animal, Rural and Environmental Sciences (ARES).

Brackenhurst Campus has lecture rooms, laboratories, residential accommodation, two large glasshouses, an animal unit with veterinary nursing centre, a cattle roundhouse and engineering and craft workshops, all the specialist equipment necessary to support the wide range of courses offered. The Equestrian Centre comprises an indoor and outdoor school, together with stabling for approximately 60 horses.

Over the past 10 years, the School has doubled in size, catering for an increasing number of students on diversified courses.

History

In 1827, Reverend Thomas Coats Cane bought about 37 acres of land, which included the fields or 'closes' surrounding the site of the existing Main Hall. The house was built in January 1828 but has been enlarged since. The roof balustrade, chimneys and tower were all added later. The original coach house was joined to the house in the middle of the 20th Century. The farm building and large trees, including the cedars, all date from the 1830s.

William Norton Hicking purchased the estate in 1899 and began to aggrandise the house and gardens, making considerable improvements to the garden. Between 1899 and 1919 he created the Dew Pond with its willow-pattern bridge, the boat house, the Japanese Wilderness, the Sunken Garden, the Orangery, the terrace, the ha-ha, the Rose Garden with its pergolas of tiles brought from Italy, the lodge, the ornamental gates and the walled kitchen garden. He also added various

pieces of imported Italian statuary around the grounds and planted two avenues of trees leading towards the Main Hall. The Dew Pond is believed to be the first in the country that filled naturally from rainwater.

By 1901 the house had been named Brackenhurst Hall. The oak panelling, now in many rooms, was bought from other houses and the Main Hall assumed its present appearance.

More and more land was bought and eventually Hicking owned 250 acres including Home Farm. He became a nationally known breeder of dairy cattle; the Brackenhurst gene was reputed to be the finest type of dairy shorthorn ever bred. The cows provided cream and butter for use in the kitchen.

Brackenhurst was also home to a regional weather station, from where the data was phoned through daily to a national centre.

The Main Hall was converted into the Nottinghamshire Farm Institute in 1949. The conference hall, laboratories and residential accommodation (The Willows, Sycamore and The Limes. No longer present) were opened in 1964.



The Gardens and Grounds Now

In 1928 the gardens were landscaped in the style of Sir Edwin Lutyens, including an Italianate courtyard, a sunken Dutch garden, Rose Garden, Japanese rock garden and a teardrop-shaped Dew Pond that was partly set in ornamental woodland, with a boathouse and 'willow pattern' bridge.

Figure 1 shows the most up to date plan of the grounds and gardens at Brackenhurst Campus. A gateway laid out in a semi-circular arrangement leads onto a stone gatehouse and tree-lined avenue, which historically provided the main access to the Main Hall. Mature shrubs and

broadleaved trees along Nottingham Road screen the Main Hall. Beyond these trees lies a formal Rose Garden, laid out in an elongated oval arrangement, with a semi-circular pond and low wall situated to the southern extent. The 80-year-old Rose Garden was restored by students in 2009, funded by donations from a former lecturer and students. The restorative work included planting a wide selection of roses and installation of a commemorative sundial and benches.

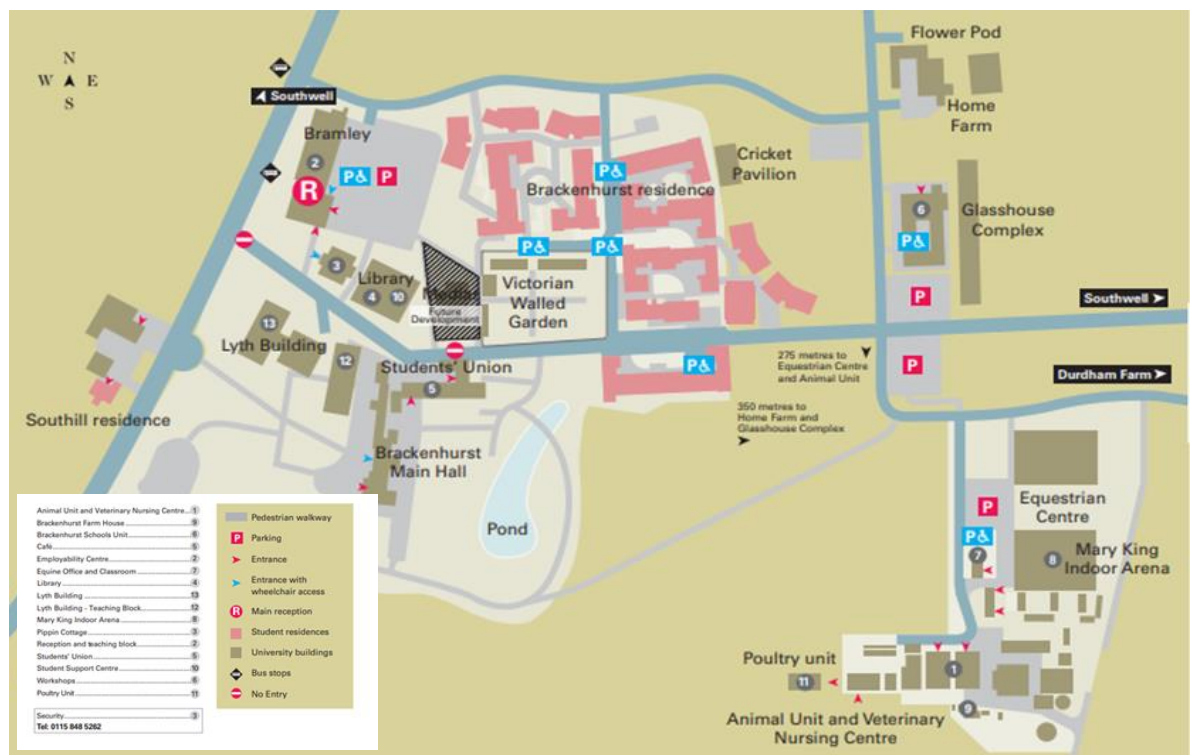
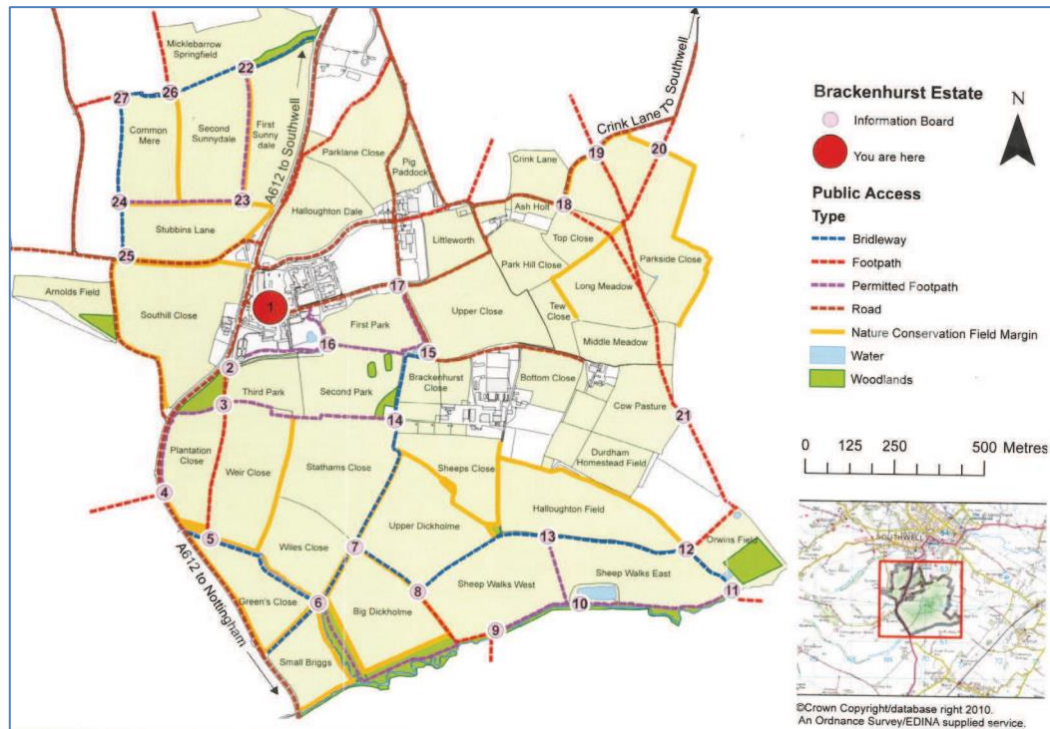


Figure 1: Brackenhurst Campus Plan 2022

East of the Main Hall, adjacent to the Orangery (used as the Students Union Cafe), lies the Sunken Garden. Measuring approximately 30 metres long and 15 metres wide, this rectangular garden is largely paved and formally laid out with flowerbeds and a central pond.

Immediately south of the Sunken Garden is a large formal lawn, which is accessible from the Main Hall via curved stone steps. Beyond this, to the east, lies the Japanese Wilderness and Dew Pond, which is filled from water collected from the roof of the Main Hall and fed through a drainage system. Excess water drains out of the system via outflow pipes into the ha-ha that surrounds the gardens. At the northern edge of the teardrop-shaped pond lies a timber-shingled boat house. The lake can be crossed in front of the boat house via a 'willow-pattern' bridge.



The historical importance of the Victorian Walled Garden is reflected in its Grade 2 listing. This still forms an important element of the Campus which is managed by a team of volunteers and used by students for various activities such as pruning and planting. The retained stove ranges and peach cages allow extended fruit production.

Between the main Campus, the workshops and glasshouse complex lies a football pitch and a cricket pitch with pavilion. A car park is also located here.

Beyond the gardens, the farm estate comprises arable and pastoral farmland hedges, field ponds and woodland. Sheepwalk's Pond and wildlife hide provides a wetland conservation area, located southeast of Brackenhurst Campus Farm, accessed via public footpaths and permissive paths. Several rights of way pass through the Campus grounds.

As part of the library construction project in 2012, four new hibernacula were introduced, adjacent to the Bramley car park and behind the Ash accommodation block which link through to the lagoon. A series of hedgerows completes the habitat corridor, ideal for Great Crested Newts. A woodland strip on the Brackenhurst Lane bund further improves connectivity.

A new heritage orchard is in the process of being established with sites being identified. NTU lecturers aim to plant every variety of apple tree developed in Nottinghamshire. Several planting days have already taken place, involving student and staff volunteers, with approximately 30 trees planted so far at South Hill house.

Farmland

Brackenhurst campus has a working farm that is home to around 40 Lincoln Red suckler beef cows and 2 stock bulls, producing around 40 calves per year. There are also approximately 160 ewes and with a busy lambing season there can be as many as 250 lambs a year. The farmland is also used to grow oil seed rape, wheat, field beans and barley.

The farmland forms part of an invaluable teaching resource for students studying a variety of courses available. Agriculture students learn valuable skills on the farm, helping to look after the animals and learning farming techniques. Countryside Management students also use the farm to learn about the diverse native habitats and to develop skills for the practical application of conservation and countryside management theory. The equestrian centre uses the bridle paths throughout the estate to hack out horses in practicable sessions for livery use and for equine grazing. Biodiversity surveying students use the estate for mammal trapping, bird ringing and bird boxes for research work.

A research project has installed camera traps in several locations across the site, providing a valuable insight into the kind of wildlife seen on site. Foxes, badgers, roe deer and hares were among the animals to be recorded on campus.



Photo of Roe Deer on Home Farm captured through camera trap

Hedgerows

Hedgerows on the Brackenhurst estate vary widely in terms of age, species-diversity, structure and condition. In general, the hedges are in good condition and form significant linear features within the landscape, increasing the connectivity between habitat patches of open water and woodland. As such, they support many species across the whole range of farmland wildlife.

Some of the hedges are of great antiquity, forming parish boundaries or ancient drove routes. Others are more recent; particularly those on the Northwest block of fields and contain only two or three woody species.

A hedge-specific survey completed in 2000 identified 97 hedges on the estate of which over 79% were found to have a moderately high to very high biodiversity value, which gives them conservation priority status.

In 2019, a new hedgerow management plan was adopted, with a tri-annual cutting regime now in operation on all field-side hedges. This change is hoped to improve the availability of shelter and foraging fruits for farmland birds. Roadside hedges will continue to be cut annually for safety purposes.

Forty-three different native and non-native woody species and hybrids occur in Brackenhurst hedges. Many of the hedges at Brackenhurst show the full range of hedgerow habitat zonation with uncultivated field margins or roadside verge of more than 2m width on one or both sides, hedge bank or hedge and ditch.

The hedgerows directly and significantly support a range of species of conservation concern including badgers, hedgehogs, brown hares, stoats, weasels, the common shrew, the harvest mouse, the great crested newt, the smooth newt, frogs, and toads.

Campus Developments

The Sustainable Construction policy which requires BREEAM Excellent rating on new builds and 'Very Good' on major refurbishments has a strong emphasis on high quality landscaping which is continually providing the campus with some diverse spaces.

Library (2013)

The library achieved BREEAM Excellent rating, putting it in the top tier of sustainable buildings nationally. The library has achieved an increase in study space whilst using stimulating design with green credentials, utilising the energy from the onsite biomass boiler.

Glasshouse development (2014)

A 384m² Glasshouse built adjacent to the existing glasshouse facilities. At a cost of circa £100k, this provides plants for landscaping projects across of NTU's estate.

The Lyth Building (2020)

Lyth is the new centre piece of our stunning Brackenhurst Campus. Completed in 2020, Lyth offers state-of-the-art facilities and a wide range of inviting teaching and social spaces. The brand-new 200-capacity lecture theatre includes retractable seating, allowing for a more flexible approach to teaching and event management. The building also includes two SCALE-UP teaching rooms, a

purpose-built refectory, and a laboratory that has been specifically designed to encourage cross-disciplinary research.



The Lyth Building

The building embodies the principles of sustainability taught at the campus, constructed using a state-of-the-art timber frame, aspiring to achieve Post Construction BREEAM Excellent standard and an EPC A energy rating.

New Accommodation (2020)

The new accommodation complements the existing 300-bed provision on campus with a further 120 student rooms. Successfully receiving its Post Construction BREEAM Excellent certificate in 2021. This project funded the planting of a new woodland on the adjacent bund on Brackenhurst Lane. There is also the opportunity to use these rooms to support the hosting of future conferences and summer events.

Wider Landscaping Masterplan

There are long term wider landscaping plans for the campus currently being designed and approved at Senior Management level. These aim to improve the connectivity of the 'Three Teaching Zones' whilst enhancing the users experience and interest in the surrounding rural land.

In summer 2018, a feasibility study was completed to create a safe and attractive walking route from the far side of the campus cricket pitch to Southwell Leisure Centre. The 700m path will be made of recycled rubber and equipped with lighting and appropriate CCTV. This development is currently on hold due to the recent pandemic, but it is still being considered for future funding.

To unite the improvements on both Hicking Lane and the footpath to Southwell, a path will be established along the bottom cricket field, works for which have started in February 2022.

Soft landscaping and redesign of Hicking Lane and other central walking routes around the campus, will complement people's experience and interaction with their environment.

As of October 2019, a decision has been made to replace mown lawn path verges with native wildflower strips as appropriate across the estate.



Section 2: A Welcoming Place

2.0A WELCOMING PLACE

Good and Safe Access

Due to the rural setting of this Campus, a large proportion of students, staff and visitors access the site using private car. However, many of the students living in Nottingham access the Campus by the regular Pathfinder 26 bus service from Nottingham City Centre. The buses have spaces and ramps for wheelchair users.

Cycle paths run between Nottingham City Centre and Brackenhurst Campus, and the campus is also accessible by bike from Southwell. The University works continuously with local partners to improve and promote these alternative modes of transport, and conducts travel surveys every two years to monitor the progress of this work.

Students and staff are encouraged to take advantage of the bike hire or the Cycle to Work schemes, more details of which are included in **Section 6** below.

There are a total of 42 cycle parking spaces on campus. There is a cycle store of 18 spaces with restricted access which serves the student accommodation. There are also spaces for bikes near the Bramley reception and equestrian facilities. The Sustainability Team monitor cycle storage use to assess the ongoing need for new facilities, with 14 spaces recently installed at the new Lyth building.

Now that the historic gateway to Brackenhurst Hall is no longer in use, there is one key vehicle entrance from the A612. A further pedestrian entrance into the Campus provides access from the bus stops located outside of the campus.

Planting along the Nottingham Road frontage is positioned and maintained to ensure that good sight lines are retained, with clear views into the Campus at these main entrances. This planting helps to assimilate the built elements with the wider countryside. Immediately north of the main access road, an earth bund with native tree planting was constructed to help screen the buildings from the north. Many of these trees were planted as part of the BBC Breathing Places 'Tree O'clock' world record event held in 2009.

Access across the site complies with BS 8300 (design of buildings and their approaches to meet the needs of people with disabilities) to ensure that buildings are accessible to all. This includes level or ramped access into buildings, as well as dropped kerbs at most road crossings.

Where possible, paths across the estate have been made accessible to wheelchairs and pushchairs, however this is not always feasible, as many paths cross fields and rough terrain. When any new development is carried out, consideration is given to disabled access. Ramped access has been provided to the wildlife hide at Sheep Walks East, with further design features within the hide made to accommodate wheelchairs.

Signage

Clear standardised road signage is provided on Nottingham Road advertising the main entrance into the Campus. Once on Campus, standardised signage using the NTU logo and typeface can be found. All signage on campus has been reviewed during 2020/21 and a university wide project is now underway to update and improve this across the estate, starting with Brackenhurst campus.

Once on the main entrance road, visiting vehicles and cycles are directed to the staff car park located next to the Bramley building, the rest of the Campus can be accessed on foot from this point.

A new student carpark has been built in Upper Close field, a few minutes' walk away from the main area of campus, equestrian facilities and the animal unit. The car park features a permeable surface to slow surface water runoff, and a low bleed out LED lighting scheme.

Information boards for visitors are provided throughout the Campus, and considering current developments there are university-wide aspirations lead by the Brackenhurst user forum, for more information boards to be installed. The boards currently provide basic information about the site, together with contact details for on-site security. These information boards are to be updated as part of the university wide signage project underway in 2022.



Interpretation board

Beyond the buildings and gardens, fingerposts indicate public rights of way. Once on these routes, 27 interpretation boards throughout the estate give information to the public, staff, students and visitors on the history, ecology and management of the estate. Clear maps identify publicly accessible routes, interpretation board locations and features of interest. All of which are to be reviewed and updated as part of the wider University signage project. Leaflets containing this information are also distributed to Southwell Library, Southwell Tourist Information Centre and

Southwell Leisure Centre, whilst also being available at key reception desks at Brackenhurst Campus and publicly on NTU's Sustainability webpages.

Equal Access for All

Brackenhurst Campus is an important resource for the public and community groups as well as students and academics. It forms an important element of University life and is also a facility used extensively by the local community.

In addition to the gardens, the Campus includes sports pitches, a publicly accessible library with student-designed landscaping, an Equestrian Centre, glasshouses, and a wide range of academic, residential, administrative and other specialist buildings. The estate also incorporates a working farm and associated agricultural land as well as woodland.

Robin Hood Way crosses the site, following Brackenhurst Campus Lane, whilst further public footpaths pass through the Campus, providing access to the countryside. Permissive access to other parts of the Campus is granted subject to a simple code of conduct.

Public involvement is actively encouraged to ensure that the community maximise the opportunities available at Brackenhurst Campus. School groups and community groups use the site for environmental education activities including pond dipping and farm walks. Further details are provided in **Section 8**.

Volunteer groups comprising current and past students as well as the wider community, help to maintain the historic gardens and conduct wildlife surveys. Such activities are vital to the long-term conservation of the grounds.



Section 3: Health, Safety and Security

3.0 HEALTH, SAFETY AND SECURITY

Appropriate Provision of Quality Facilities and Activities

Brackenhurst Campus provides staff, students and visitors with a range of high-quality facilities to meet a wide range of professional, educational and recreational needs. There are traditional teaching and learning spaces as well as educational animal, agricultural and horticultural facilities. There are also toilets, sports facilities, indoor and outdoor social spaces and a dining hall that are all kept safe and clean.

The security team, as well as many other members of staff, are trained first aiders and are always available.

The new refectory in Lyth offers a range of freshly prepared, snacks and meals, from across the globe every week including great value breakfasts and healthier choices. The NTU Catering Team work in partnership with the Sustainability Team and Procurement Teams to consider ethical, social and environmental factors when making decisions on the food and drink products served.



Staff and students using the Orangery

Safe Equipment and Facilities

The University recognises that it is necessary to ensure that this remains a safe environment for all prospective site users. To maintain a safe environment, the Estates Department runs a programme of cyclical inspections to identify and address potential issues. Any site user can report a problem to the maintenance department. Issues are then sought to be resolved as quickly as possible.

Equipment used to maintain the grounds is subject to an annual inspection, to ensure that it is safe to use. Built features within the grounds are also subject to inspections and appropriate action taken.

All mature trees within the grounds are surveyed every three years by external consultants FPCR Environment and Design Ltd and advice given on their condition. This has identified any trees which are dead, dying or dangerous. Trees are then maintained accordingly. The most recent survey took place in January 2018 with discussions taking place to undertake the next survey during 2022.

Water safety is a priority and as such, the risks posed by water bodies have been assessed and responded to appropriately to ensure that the grounds can be safely used. Where ponds are steep-sided or deep, appropriate barriers are installed and the land maintained around them. At Sheepwalk's Pond, access is managed to allow safe views of the lake from the boardwalk and wildlife hide, but fencing and planting prevents access to the water, while signage warns of the water depth. Safe access to the Dew Pond is maintained in a similar way, by routing paths away from the water's edge. Safety checks are made to all barriers as part of the maintenance regime.

Personal Security

Security at Brackenhurst Campus is on-hand 24 hours a day, seven days a week, providing surveillance and peace of mind to all site users. The Security Team is based in Pippin Cottage and is contactable by all Campus users using 0115 848 5262 which can be found on the Campus information boards across the site.

The Campus is monitored by CCTV cameras, which are recorded 24 hours a day and can be viewed by the Security Team. The network of cameras provides excellent coverage of the Campus.

The on-site Landscape Services Team work with the Security Team to ensure views from CCTV cameras are obstacle-free and good site-lines are maintained along footpaths and other access routes.

Streetlights provide appropriate levels of lighting along roads and paths around the main Campus. Where hedges are located alongside these routes, these are maintained to a maximum of 1.5m in height to provide good lines of site. Lighting installed on the path between the main campus and Equestrian centre uses LED technology, these lights save energy and cause minimal light pollution whilst improving the safety of the path.

Any incidents of crime are recorded, and annual statistics produced. This allows the Security Team to review progress, and take appropriate action to develop security policy, and reduce the likelihood of any future incidents.

Health and Safety

The Landscape Services Manager has the responsibility for ensuring safe working practices within the grounds. Risk Assessments and safe working practices are in place and are reviewed regularly.

Control of Substances Hazardous to Health (COSHH) Assessments are recorded and updated as required. The Landscape Services Team are trained in their responsibilities under Health and Safety legislation.

NTU's Health and Safety Management Team have developed their own health and safety policy and procedures. All necessary precautions are taken to ensure that the grounds can be used with minimal risk of accident or injury. Suitable and sufficient management practices are in place to address health and safety issues.

Staff working on the grounds are provided with all necessary protective clothing and equipment. All necessary training is provided to staff covering topics such as chainsaw use, tree climbing, fire training and first aid. Staff are provided with details of risk assessments and information leaflets relevant to any risks relevant to their job.

Accident and Incident Reporting

As a requirement of the Health and Safety at Work legislation NTU ensures that all accidents and near misses are reported on-site using a standard report procedure. Results are monitored centrally by the University, who instruct accident investigations if necessary.

Dog Fouling

Due to the rural setting of the Brackenhurst Campus and the public rights of way it is accepted that dog-walkers will pass through and use the site, such use by members of the public is welcomed by NTU. Three dog waste bins were installed in 2016 for these public rights of way.

The character of the main part of the Campus, which accommodates most of the buildings, contrasts to the more rural nature of the remainder of the site. All areas around the main buildings should be kept free of dog faeces therefore dog owners are required to clear up after their dog.

The Brackenhurst Walks leaflet asks users to keep dogs under control and remove any litter from the site. Compliance with these requests is monitored by regular maintenance inspections carried out by the Security and Landscape Services Team.

Brackenhurst user forum and Kennel club are currently establishing dog walking routes and code of conduct for the harmonious use of the Brackenhurst campus.



Section 4: Cleanliness

4.0 CLEANLINESS

Litter and Waste Management

The appearance of the Campus is a priority for NTU and is recognised as a basic requirement for attracting new students. The Landscape Services Team are responsible for maintaining the landscape, while the Facility Support Team empty litter and recycling bins, at the same time conducting litter picks and leaf sweeping when necessary. Bramley car park is checked every day with other car parks more on an ad hoc check. All the entrances are manually cleaned/picked daily.

Volunteers also help to maintain and clean the gardens. To encourage site users to keep the Campus litter-free, bins are provided at strategic points throughout the Campus. Following a review of external litter bin facilities during 2020/21 there is now an estate wide project to replace current litter bins with new ones. This is taking place in a phased approach with Clifton Campus being first to receive these.

NTU has an on-site waste segregation rate of 43% (December 2021) and diversion from landfill of 99%. Food waste from across Clifton, City and Brackenhurst campuses is collected and anaerobically digested by a third party to generate power.

Clothing recycling banks are located on Brackenhurst Campus outside the Halls of Residence, giving staff, students and visitors the opportunities to donate unwanted clothes, footwear and books to the British Heart Foundation (BHF).

NTU Sustainability Team has worked with UPP and the Students' Union to promote the locations for donations across three of its campuses. In 2019, the project was the winner in the Retail Partner category at the British Heart Foundation Hero Awards.

Since being set up over 60,000 bags of donations plus furniture and electrical items have been collected raising over £800,000 for BHF research and circulatory diseases and their risk factors.

NTU has a fully integrated Environmental Management System (EMS), further details of which can be found in **Section 6**. As part of this system, a series of policies have been written to promote the sustainability objectives of the EMS. NTU waste guides are available on the Sustainability webpages as well as posters and labelling of bins, encouraging the use of the recycling banks.

In September 2019, NTU rolled out additional bin signage on all internal bins. The signage gave clarity on the waste acceptance criteria the result of which has shown an improvement not only with waste segregation rates but also quality of material.

In September 2018, the Sustainability Team launched WARPit, an online furniture and equipment reuse portal. All NTU staff can use WARPit to redistribute their unwanted furniture. Since September 2018 internal reuse has saved 2,937,316,722g of CO₂, £6,034 donated to charity, 124,727,142kg of waste diverted from landfill and increased resource efficiency. Internal estimated savings from the reuse scheme are £58,058 for NTU.



Section 5: Maintenance

5.0 MAINTENANCE

General Landscape Services

The Landscape Services Team is responsible for the upkeep of the grounds, helping to enhance the outward appearance of the Campus. The team meets on a regular basis to discuss priorities at relevant times of the year, such as clearance of leaves in autumn and cutting of grass in summer. In addition to a short-term annual programme of maintenance requirements, a longer-term programme is in place to address more-complex issues, as outlined in **Appendix B**. NTU recognises the importance of maintaining the grounds to a high standard as these influences how the public view the site, including the views of potential future students. The team also works closely with students and academics to support the teaching and learning experience. In recent years students have been encouraged and supported in their work placements with the Landscape Services Team.

The ongoing Landscape Services operations fulfil the maintenance requirements of the diverse landscapes of the campus, however certain areas of Brackenhurst Campus require a more specific maintenance regime, which is covered in more detail below.

The student let Conservation Society also undertake tasks across the site on an ad hoc basis, including hedge laying, pond clearing and brush cutting along with habitat creation projects.



Brackenhurst formal garden behind Main Hall

Formal Gardens Maintenance

The formal gardens comprise the Rose Garden, Sunken Garden, Japanese Wilderness, formal lawns and Dew Pond. These are bounded by a ha-ha to the south and east. These gardens present

a maintenance challenge due to their formal nature and historic character. Whilst modern landscapes are usually designed so they are not a maintenance burden, historic gardens had no such aims, as country estates such as Brackenhurst Campus would be served by many gardeners who were tasked with the job of keeping such features as the lawns, topiary and roses in pristine condition.

As the current Landscape Services Team is limited in terms of resources, it is vital that priorities are identified and programmed appropriately to ensure the conservation of heritage assets. These priorities are outlined in **Appendix B**.

This document will help to serve as a guide for the Landscape Services Team, which can be used to prioritise short-term and long-term tasks, to ensure that the heritage contained within the gardens and grounds is conserved. The conservation and restoration objectives in relation to heritage are addressed further in **Section 7**.

Victorian Walled Garden Maintenance

The walls, glasshouse, peach case and bothies of the Victorian Walled Garden are Grade 2 listed and therefore it is important that they are maintained to a high standard. This feature remains a vital resource that is used throughout the year by students and academics.

The Friends of Brackenhurst meet on a regular basis to volunteer at the Walled Garden. The session is led by ARES staff working to maintain and improve the Walled Garden throughout the year.



Victorian Walled Garden at Brackenhurst

Arboriculture Maintenance

An assessment of tree condition is undertaken for the entire site by external consultants FPCR Environment and Design Ltd every three years. Adapting the assessment to also include educational uses of the trees is currently being explored. Plans for the site identify the location of every tree or group of trees, identifying them by a code. A database linked to the plans lists the species and condition of each tree, identifying any maintenance work that needs to be carried out. The Landscape Services Team uses this active database as a tool to manage the tree stock. Landscape Services staff carry out on-going surveys of 'at risk' trees.

This Arboricultural policy is extended to the parkland trees within the curtilage of the listed Main Hall. The trees in first, second and third park fields comprise an important aspect of the view from the Hall, making their management and succession an important task. The Brackenhurst Farm and Landscaping teams are in discussion about successional planting for these trees.

In addition to their amenity value, trees are also important for education and Brackenhurst Campus prides itself on being an outdoor classroom. Students are taught chainsaw skills as well as tree management techniques, such as coppicing, pollarding and crown reduction. Teaching staff work closely with the Landscape Services Team, who can advise on which trees require appropriate maintenance.



Brackenhurst grounds

Hedgerow Management

Between 1947 and 1985 the East Midlands lost an estimated 16,000 miles of hedgerows due to pressures on farmers to intensify their production. Although hedgerow removal has slowed markedly it continues and despite rear-guard hedge-planting operations there is still a net annual loss of hedgerows in the UK.

Hedgerows on campus are managed to ensure continued sustainable management and protection. This regime includes a tri-annual cutting rotation to maximise the habitat available for farmland birds. The hedge cutting regime is amended and carried out by the Rural Estate Manager in consultation with expert ecologists from the wider ARES staff team.

At Brackenhurst, there is a duty of care for public safety and access related to the management of hedges that border roads and public rights of way. These hedges require cutting annually or in some cases several times a year.

Building Maintenance

Buildings on the Campus are diverse in terms of age, scale, style and use. These range from the original Main Hall built in 1828 to the modern Lyth recently completed. These buildings have specific uses for teaching, research, administration or residential purposes, but all share the same setting.

All buildings are built and maintained to a high standard by Estates Services. Listed buildings often require special permission for maintenance works to ensure that the method of working and materials used is appropriate to the building. An on-site maintenance team is responsible for the upkeep of the buildings.



Undergraduate students gaining practical vehicle management knowledge

Equipment Maintenance

A programme of equipment inspections is in place to ensure that all work equipment is safe to use, as required by the Provision and Use of Work Equipment Regulations 1998 (PUWER). Appliances are PAT tested to comply with the Health and Safety at Work Act (1974), which places a duty on employers to ensure that electrical appliances are safe to use. Six monthly inspections are carried

out on tree climbing equipment under LOLER (Lifting Operations and Lifting Equipment Regulations [1998]).

The NTU fleet of vehicles used in the maintenance of the gardens are managed by Campus Services who ensure that they are serviced, tested and inspected as required. Specialist vehicles, such as tractors are either owned or leased. ARES staff also manage the vehicles used on the farm and for teaching purposes. Servicing and maintenance of lease vehicles is included in the lease fee. An onsite vehicle wash-down facility and engineering workshops help to maintain vehicles and equipment and keep them clean, safe and fit for purpose.

Maintenance Planning

The Landscape Services Team are flexible to changing conditions, undertaking tasks as needed such as gritting roads in icy conditions and clearing tree debris after strong winds. Day-to-day maintenance is discussed as a team, with objectives and actions agreed with the Landscape Services Manager. Works having health and safety implications are given highest priority. The Landscape Services Team also have a tree replacement policy, aiming to plant a new tree for every tree removed through maintenance.

Cyclical maintenance activities, such as shrub bed maintenance, planting of summer bedding, mowing and strimming are all undertaken by the Landscape Services Team. An example planning document for this work is provided in **Appendix A**.

Until now, the long-term maintenance programme has been driven by recent building developments at the Campus, such as the Library and glasshouse complex and more recently the new student accommodation and Lyth developments. The longer-term maintenance requirements are driven by promotion of higher education as well as the conditions of features on the Campus.



Section 6: Environmental Management

6.0 ENVIRONMENTAL MANAGEMENT

Managing Environmental Impact

NTU is committed to recognising and reducing its impact on the environment. Positive developments in environmental awareness and research are making a big difference and are complemented by a comprehensive environmental policy that is available to staff, students and members of the public via NTU's Sustainability webpages.

Since 2020, all NTU staff are offered a Sustainability Awareness training, this is delivered either face to face or via MS Teams by members of the Sustainability Team or alternatively as an online awareness training module.

As of 2021, NTU is named as the UK's 3rd most environmentally friendly and ethical University in the People & Planet League and 4th in the University of Indonesia Green Metric World University Ranking.

The University has several policies (some listed below) relevant to environmental sustainability. These are reviewed annually by senior management. All of which are available on NTU's Sustainability webpages and include:

- Environmental Policy.
- Biodiversity Policy.
- Carbon Reduction Policy.
- Plastic Pledge.
- Student and Staff Engagement Strategy.
- Sustainable Construction Policy.
- Sustainable Procurement Policy.
- Waste Policy; and
- Water Policy.

From 2017 to 2020 NTU had a 29% carbon reduction target (relative to staff and student numbers), by the academic year 2020/21 against a baseline of 2005/6. The target of 29% reflected the efforts already made by NTU to reduce its carbon emissions, and NTU's fair share contribution to meeting the HE sectors 43% absolute carbon reduction target by 2021. The latest data for December 2020 shows the target has been achieved, with a relative reduction of 60%.

NTU has measured and reported on Scope 1 and 2 emissions since 2006 and Scope 3 emissions since 2012 which positions the University well to now set a comprehensive Net Zero Carbon (NZC) emission target. NTU has pledged to achieve NZC emissions by 2040 and will foster a Zero Carbon Culture across the NTU community to help achieve this.

ISO14001

Initially established through the 'EcoCampus' scheme, NTU's Environmental Management System (EMS) is aligned with the ISO14001 standard, initially gaining certification in November 2012.

ISO14001 is an international standard and provides a framework for identifying and controlling environmental aspects, improving environmental performance and ensuring legal compliance.

Composting and Elimination of Peat Use

To help minimise the wider environmental impact of our landscaping work, peat free alternatives or peat-reduced compost are used on Campus, including compost made on site.

Due to the extensive grounds at Brackenhurst Campus a large quantity of horticultural waste is produced. This is recycled to produce compost or mulching material. Landscape Services staff segregate woody material used for mulching and softer material such as autumn leaves for enriching soil. A chipper shredder is used to break down landscape waste such as tree pruning.

Landscape Services use peat alternatives across the site in maintenance activities. However, peat is used for teaching, research and experimental practices by the School. The Campus is involved in active research into peat alternatives as growing media and undertaking growth trials on a range of plants.

Pesticides and Herbicides

Integrated Pest Management (IPM) is used across all Landscape activities as an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices.

The use of pesticides is minimal and used where tasks dictate and in accordance with legislative guidance. Herbicides are used for weeding control in certain areas, as well as some turf fungicides and insecticides, where appropriate to do so. All ground maintenance staff have been fully trained in the safe application of herbicides and hold appropriate certification. Biological controls are also applied withing the glasshouse setting as needed.

Pathfinder number 26

During term-time, the number 26 Pathfinder bus connects Brackenhurst Campus to Nottingham City Centre. With the bus departing every 30 minutes, a sheltered bus stop at the campus exit provides students who live off-site with easy access to the city.

In Spring 2019, NTU funded the replacement of the bus passenger shelter on the A612 after an NTSU campaign for better facilities. The new shelter for the Pathfinder 26 bus services has 5 times the footprint of the previous providing a significantly larger space for waiting passengers. There is also upgraded lighting for added safety.

The 26 Pathfinder fleet was replaced at the beginning of the 2019/20 year by the latest clean buses with Euro IV engines which emit a fraction of the emissions compared to the previous fleet.

Cycling

The University runs the Ucycle Nottingham project, which encourages staff and students to cycle more often. The project runs a range of activities including infrastructure improvements on and between Campuses, events and activities to raise awareness of the benefits of cycling and a bike hire scheme for staff and students.

200 men and women's bikes are available in different sizes and can be hired for the academic year for just £49 (plus a £60 refundable deposit). The cost of the cycle hire includes a maintenance session, access to free Ridewise training and advice and information (through information packs and general on-going support such as drop-in surgeries).

During 2020 the Sustainability Team purchased two e-bikes for staff to trial free as an alternative mode of transport and they are looking at purchasing more during 2022.

NTU's Sustainability webpages provide staff, students, stakeholders and the wider public with up-to-date information on cycle facilities, such as maps showing locations of cycle compounds, cycle routes, lockers and showers. The website also provides information to the public on topics such as buying a bike, bike maintenance and cycle clothing.

Currently 42 spaces are provided for bicycles on campus. Some of these are housed in restricted access shelters with swipe card access and CCTV. In line with the emerging Brackenhurst Cycling Plan, facilities at the campus are in the process of being upgraded, providing more covered and restricted access cycle parking.

In addition to bike hire, NTU staff can get a tax-free bike and accessories up to the value of £1,000 with the help of Cycle to work scheme.

Electric Vehicles

NTU owns and maintains two electric vans at Brackenhurst Campus, used by maintenance and security departments. Landscape Services also use and maintain their own John Deere electric powered gator for on-site maintenance.

Four electric charging points exist at Bramley car park currently used by fleet vehicles with a new electric vehicle charging plan currently being progressed. An additional two electric charging points have been moved from the Orangery to the Floristry where they are mainly used by the Maintenance team.



Brackenhurst electric mini- van

Photo Voltaic (PV) Panels

NTU has invested in over 200 kW solar PV panels across the estate providing circa 241,517 kWh of electricity per year and generating approximately £90,000 per year in revenue and energy savings. The roof of the Equestrian Centre accommodates NTU's largest number of PV panels on the estate to date. The 100-kW electricity generated by these panels is supported by an installation on the Research Unit supplying 50 kWh, with plans for more to follow.

Combined Heat and Power (CHP) Plant

There are two CHP units on Brackenhurst Campus, fuelled by natural gas. These supply the halls of accommodation and Main Hall providing heating as well as cooling in the summer. They generate 210 kW of electricity and 300 kW of heat for the Campus per year.

All NTU's electricity is purchased from a green energy provider.



Inside the Combined Heating Plant at Brackenhurst Campus

Biomass

A Biomass boiler installed during 2012 adjacent to the glasshouses has the potential to save up to 410 tonnes of carbon dioxide per year. It is currently used to heat the hot water for the accommodation block, the Medlar building and the library.

The Biomass boiler has been extended with a new CHP to provide low carbon heating for both new buildings on the campus (Lyth building and new student accommodation).

Wind Turbines

During 2013/14 NTU submitted proposals to install 2 wind turbines at Brackenhurst Campus and in the process make Brackenhurst the UK's first carbon-neutral campus. The turbine project was subsequently rejected at appeal by the Secretary of State.

NTU will continue to look for opportunities to generate renewable sources of energy at Brackenhurst.

Embracing Sustainability Strategy Board

The Embracing Sustainability Strategy Board ensures that the University's strategy is implemented across the NTU estate, to improve environmental performance. The areas of focus include reducing carbon emissions and waste generated, sustainable transport, sustainable procurement and enhancing biodiversity. The Board oversees the staff and student engagement activities in these areas.

Engagement

In January 2019 NTU launched Green Rewards, a programme for all students and staff to sign up to and take part in. Participants earn rewards for taking actions that reduce their impact on the environment, positively impact the local community and boost their own health and wellbeing.

As of January 2022, we have 1,519 students and 1,147 staff signed up to the Green Rewards platform with 202,581 actions completed which have led to a saving of 408,841kg of CO₂.

As of January 2022, 22 staff are currently signed up to our “Sustainability Ambassadors” Scheme. The scheme consists of department representatives who are encouraged to engage with the Sustainability Team and report any issues and suggestions across campus landscape and operations. Termly meetings are held with the group, and a Microsoft Teams Network allows continual discussion.

The Sustainability Team run monthly staff awareness courses for all colleagues, including new starters. The training allows staff to gain an understanding of sustainability at NTU, understand their responsibilities as staff members and find out ways they can get involved with sustainability projects and events.

Fairtrade

NTU has been awarded Fairtrade University status for the last 11 years. Fairtrade products are available in all Campus shops and catering outlets and used in all meetings hosted by the University and the Students' Union.

Fairtrade Fortnight events are held at NTU each year to raise awareness of the impact of Fairtrade amongst staff and students. This is led by the Fairtrade Steering Group who demonstrate a strong commitment to increasing Fairtrade consumption on all NTU Campuses.

The Sustainability Team and Fairtrade Steering Group achieved the new Fairtrade Universities and Colleges Award (FTUC) under the updated criteria in 2019.



Section 7: Biodiversity, Landscape & Heritage

7.0 BIODIVERSITY, LANDSCAPE AND HERITAGE

Management of Natural Features, Wild Fauna and Flora

The estate supports a vast array of wildlife making it an ideal outdoor classroom. Species present on site include great crested newts, hares and a yellow hammer population. Habitats include ancient woodland, species rich hedgerows and several ponds providing valuable wetland habitat for amphibians, birds and bats.



Badger on site

Over 250 bird and bat boxes are provided on trees throughout the grounds and bird feeders provide valuable nourishment. Students can take part in the annual Big Garden Big Watch (an RSPB initiative) from the comfort of The Orangery, hosted by NTSU.

Where safe to do so, dying trees are left for biodiversity benefits. Tree stumps are cut high to encourage stag beetles and sculpted to retain water.

Management techniques employed across the estate ensure that the potential for biodiversity is maximised, resulting in a diverse range of habitats. An example of such management can be seen at Sheepwalks East and West, which are reversion grassland fields sown as part of an Environmental Stewardship Agreement with DEFRA. The grassland was sown in 2003 with a mix of slow growing grasses that have received no fertiliser or pesticides. These fields are not grazed between December and July when the hay is cut. The fields are closely monitored to see what impact this farming regime has on fauna and flora that colonise on the area.

As part of the conservation remit of the University, horticultural staff at the School are responsible for looking after a seed bank on behalf of the Heritage Seed Library. This involves growing rare and old varieties of vegetables that are in danger of being lost to cultivation. They are often old

strains of vegetables where seed has been saved and handed down through the generations in local communities and families or may be Victorian varieties that are no longer offered in catalogues.

The Brackenhurst Estate is home to a number of bat species including pipistrelle, Daubenton's, noctule and brown long-eared bats. The pond at Sheepwalk East provides an ideal habitat for the Daubenton's Bat as they can forage over the open water.

Most of the ponds within the built environment of the Campus have significance as breeding locations for Great Crested Newts (GCN) and all the ponds add to the richness of the site's biodiversity. The Dew Pond is currently the principal breeding stronghold of the site's GCN population. Since 2017 NTU have partnered with Natural England to produce a landmark new plan for GCNs at Brackenhurst, with the aim of making our campus the best example of farmland GCN habitat in the region. This partnership has resulted in a Phased License, the first of its kind in the UK that establishes a plan to build new ponds, enhance existing ponds, and amend the management of hedgerows, field margins and woodlands that connect the aquatic habitat. The Sustainability Team and ARES farm team have embarked on the construction of these habitat features during 2018, with the full habitat network due for completion in 2025.



Proposed improved Great Crested Newts habitat over the Brackenhurst campus

The site is regularly monitored for invasive species that threaten native habitat structure. An example of this was noted in November 2015, where one of the mitigation ponds in the centre of the site was affected by *Crassula helmsii*. Works have since been completed to bury the invasive

Crassula within the area with material from adjacent ponds. The Landscape Management Team at Brackenhurst have remained vigilant to the threat of *Crassula* on site.

Hedgehog Friendly Campus (HFC)

In 2020, NTU signed up to become a HFC, providing an exciting opportunity to engage with students and staff on actions NTU can take to make the campus more Hedgehog friendly. We successfully achieved the bronze award in February 2021 and the silver award in February 2022.

Actions that have been completed because of this campaign include:

- Annual celebration of Hedgehog Awareness Week.
- Pond audits to ensure hedgehogs and other wildlife can escape if they were to fall in. If they cannot, then steppingstones have been added to the pond.
- Strimmers and mowers now having stickers on them asking operators to check for hedgehogs before they use them; and
- Increasing areas of the estate left to 'rewild'.

Water Conservation

As described in **Section 1**, the Dew Pond is filled naturally from rainwater collected from the Main Hall. Other waterbodies found across the Campus also rely on surface runoff.

Rainwater collected from the largest glasshouse on site is stored in an adjacent reservoir and used to water plants within the glasshouse complex.

Summer bedding schemes use water-retaining granules or gel to reduce drying-out.

Water used by the wash-down facility, located at the engineering workshops, is pumped around the system and re-used.

Conservation of Landscape Features

Planting at Brackenhurst Campus has more value than just amenity. The 200-hectare site is home to a wide range of planting, from formal planting around the Main Hall to woodland and meadow planting in the wider estate.

Native species are largely used for planting and replacement of trees, woodland and hedgerows to promote biodiversity through creation of appropriate wildlife habitats. Recent tree and hedgerow planting adjacent to Nottingham Road are examples of this. However, a diverse mix of native and non-native planting can be found in the glasshouses, the Victorian Walled Garden and the formal gardens.

The formal gardens not only provide an important setting for the Main Hall, but also provide inspiration for horticulture and garden design students. Planting responds to the historic nature of the estate to ensure that an appropriate setting is provided. Replacement planting in the formal

gardens is consistent with species previously planted. Avenue planting carried out south of the Main Hall, beyond the ha-ha, is designed to replicate a historic avenue which is identified on the Ordnance Survey map from 1919.

Several native fruit trees have been planted around the farm estate in each of the last three years. The varieties used are all locally sourced and represent traditional Nottinghamshire strains of a range of fruit trees.

First shown on the 1919 OS map, an avenue of elm trees is identified immediately north of the Main Hall, roughly laid out in a north-south alignment, which would have lined the new drive proposed by Hicking. Due to a dispute with a neighbouring farmer, the drive was never built. These trees were previously felled, but in recent years, 34 elm trees have been planted to replicate this avenue.

Students are actively encouraged to volunteer with plant conservation as well as replanting. The Conservation Society based at the Brackenhurst campus are active in carrying out conservation work required. Students and volunteers from the wider community participate in many events related to the natural environment, such as woodland planting.

The suite of glasshouses and poly-tunnels, opened in 2006, are excellent facilities which can be utilised by staff and students for horticulture. An additional large glasshouse was completed in 2014. In contrast to these modern additions, the Victorian Walled Garden offers a more traditional setting to learn planting techniques.



Staff and students can use the glasshouse facility

The glasshouse facility at Brackenhurst Campus now provides capacity to support landscape schemes across all three campuses. In previous years, the University has won 'In Bloom' awards.

Whilst other development has taken precedence recently, it is the aim of the management team to enter Brackenhurst Campus for further recognition over the coming years.

The glasshouse has a turnover of approximately 30,000 plants, plugs, seasonal bedding as well as any other propagated material from seed or cuttings, satisfying a large majority of all soft landscaping requirements across NTU campuses.

Within the field directly east of the Main Hall (First Park), the remains of ridge and furrow (most likely a result of farming practices during the Second World War) is clearly visible. The Elm Avenue is found within Third Park (directly south of the Main Hall). All three fields bordering the ha-ha retain their original parkland character due to the management techniques employed. No intensive agricultural methods are utilised in these areas to ensure that the ridge and furrow is not damaged or lost and mature parkland trees are retained

Hedgerows

NTU academic staff and students carry out an on-going programme of hedge laying, gapping and planting as part of formal studies on campus. Students also carry out hedgerow management on a voluntary basis.

The student led Conservation Society focus on habitat management tasks across the Estate, including finishing hedgerow laying after formal student practical sessions.

Some hedgerows surveys take place each year but is usually in the form of training and learning events rather than a formal and systematic survey for monitoring purposes.



Hedgerow between fields at Brackenhurst

Conservation of Buildings and Structures

The Campus boasts a rich heritage, comprising the Main Hall as well as associated buildings and grounds dating from 1828. Many of these buildings and features are still in existence. **Section 1** of

this document gives a concise history of the site and describes the historic features. The University recognises the importance of conserving these and has invested significantly in past years to preserve these.

The following list provides details of the Grade 2 listed buildings and features contained within the Campus:

- Brackenhurst Hall and Attached Coach House
- The Orangery and Garden Wall
- Garden Walls and Bothies 100 metres Northeast of Brackenhurst Hall
- Lodge to Brackenhurst Hall
- Gateway and Railings at Brackenhurst Hall
- South Hill House
- Brackenhurst Campus Farmhouse

In addition to the above features, the Ordnance Survey map from 1919 identifies the following features.

- The Rose Garden
- The Sunken Garden
- The Japanese Wilderness
- The Dew Pond, Boat House and Willow Pattern Bridge
- A Well
- A Summer House
- The Cricket Pavilion
- An Orchard
- An Avenue of Trees (south of the Main Hall)
- Parkland
- A Weather Station

Other than the Orchard (which has been replaced by student accommodation), the Weather Station and the Summer House, the features listed above are still in place. Conservation work by the building's maintenance team, prioritises jobs to ensure the long-term survival of these features for all current and future site users to enjoy.

Due to the historic nature of Brackenhurst Campus, conservation work plays an important part of the overall maintenance. The upkeep of the formal gardens' forms part of the day-to-day maintenance regime for the Campus, but certain elements of the gardens and grounds require a longer-term conservation and restoration strategy.

The Landscape Services Team works to a priority list for conservation and restoration work. Future aims include the restoration of the pergola in the Rose Garden and the gates to the Walled Garden, subject to available funding.

During 2021, NTU worked with external heritage consultants who have issued a first draft *Brackenhurst Conservation Statement* providing guidance on future maintenance and improvements required, challenges and opportunities and an action plan detailing a summary of interventions to be undertaken.

Rose Garden Pergolas

As described in **Section 1**, the Rose Garden was restored in 2009, funded by donations from a former lecturer and students. The restorative work included planting roses and the installation of a sundial and benches, but insufficient funds were available to restore the Italian style pergolas, which date from between 1899 and 1919. Funding is yet to be sourced.

The two pergolas are situated on the west side of the Rose Garden and comprise red clay tile piers with oak cross-members. The path linking them is a mixture of York stone flags, brick basket weave and circular section edge tiles. The northern pergola remains accessible, although is covered with ivy. The other pergola is currently unstable and so protective fencing prevents access beneath it. Both pergolas are likely to require taking down and rebuilding. Due to their non-standard construction, it is likely that reinforcement to the piers will be required. The oak cross-members will also require replacement. The uneven path may require relaying for safe pedestrian and wheelchair access. This work is likely to require external grant funding, which is still being sought. Planning will consider mitigation for any potential habitat loss.

On the southern boundary of the Rose Garden lies a semi-circular pool at a slightly lower level than the rest of the garden. A low wall with piers surrounds the curved edge of the pool constructed from red clay tiles and stone copings. The piers are much reduced in height from their original state and bronze figures from the pool have also gone. Unfortunately, the stone copings are crumbling.



Walled garden gates

Initially, profits from the proposed Wind Turbines were earmarked in the planning proposal for heritage conservation on site. However, since their rejection the University researched into opportunities from the Heritage Lottery Fund. Funding and volunteer support may now be provided by Nottingham County Council to return this area to its former condition.

Gatehouse Wall

When the Main Hall was still used as a private residence it was accessed via the driveway from Nottingham Road. The gatehouse (or lodge) remains and is used as a private residence.

A semi-circular wall with tall railings and stone piers stands at the entrance to the drive. Some of the copings on the northern side are either missing or crumbling. As part of the new Lyth building developments, the rusty gates and railings, including the coat of arms, will be restored and painted to their original condition.

Gates to Walled Garden

The Grade 2 listing status placed on the Walled Garden covers the walls and features including bothies, stove ranges and peach cages. Largely these are in good condition, as their regular use relies on good maintenance. The walled garden gates need restoration and painting while the others will need to be replaced. Currently there are no plans in place for this restoration as this is subject to funding being sourced.



Section 8: Community Involvement

8.0 COMMUNITY INVOLVEMENT

Community Events

Brackenhurst campus was due to hold the University Horticultural Officers' Conference 2020, consisting of study tours, demonstrations and technical seminars covering sports turf, arboriculture, amenity horticulture, heritage & sustainability with the aim to share new thinking within the sector.

Unfortunately, due to the Covid 19 pandemic this was cancelled, however, future opportunities to host this event or similar will be sought in the future.

During the lambing season, school children and members of the public are invited to come on to Campus to learn about lambing.



Previous lambing event hosted by Brackenhurst campus

NTU work with Lowdham Primary school, creating a Forest Schools space at Brackenhurst campus. Staff from the School of Education have written a module on learning in nature as an introduction to forest school skills, based on the principle that open-air play can help children develop personal, social and technical skills.



Outdoor classroom area

During December, daily nativity events are held at the Brackenhurst Campus using animals to help depict the nativity scene for local school children.

The Nottingham Farm Business Association hold meetings at Brackenhurst every Monday throughout winter. In January 2020, George Eustace (Minister for DEFRA) gave a talk on the new Agriculture Bill currently going through Parliament.

The Derbyshire and Nottinghamshire Entomological Society (DANES) stages an annual event which takes place on Campus every other year, which is open to the public as well as students. The event allows members of the public to view numerous insect specimens to encourage interest and develop concern for conservation.

The South Nottinghamshire Ringing Group has a permanent ringing site on the Campus which involves students and volunteers in bird ringing, producing valuable information about bird populations which contributes to nationally important data collection.

National Amphibian and Reptile Recording Scheme (NARRS) have used the ponds on site to assist in training for volunteers to help their recognition of a range of amphibians, including the Great Crested Newt.

The Southwell University of the Third Age has hosted events on campus and taken part in wildlife surveys outside of term time.

Southwell Flood Forum host annual events at Brackenhurst, with topics including community resilience to flooding and emergency planning.

Southwell Civic Society co-hosted a Heritage Day with NTU at Brackenhurst in September 2016, inviting over 150 members of the public onto Brackenhurst for tours of the heritage features of the Hall and gardens. The event takes place every year since.

Southwell Civic Society also invited NTU to take part in the Southwell Heritage Day event on the Burgage in September 2016. Brackenhurst staff provided a stall at the event with example exhibits from the collection of agricultural museum pieces.

The campus hosts Open Farm Sunday in June with Linking Environment and Farming (LEAF). The public are encouraged to enjoy tours, talks and demonstrations encouraging the public to engage with agricultural issues. The nationwide 2015 Open Day, celebrating the tenth anniversary of Open Farm Sunday, involved nearly 400 farms and attracted over 500 people at Brackenhurst, leading to it being dubbed “the industry’s open day”. In 2017, Open Farm Sunday attracted more than 1,500 attendees.



NTU hosts the annual Nottinghamshire Biodiversity Action Group Forum, bringing in over 100 representatives from the ecological consultancies and conservation volunteers to hear high profile speakers and take part in workshops to advance species and habitat monitoring and conservation.

Nottingham Beekeepers Association has a training apiary at Brackenhurst Campus, which is used to teach members and the wider public about bee keeping practices. In September 2019, they hosted a Honey Show on campus.

New facilities among the farm buildings include the cattle roundhouse, a new concept for housing animals that minimises stress for both handler and stock. It is hoped that new infrastructure like the roundhouse will further draw the community to Brackenhurst for Open Farm Sunday events.

The University often arranges seminars on subjects relating to Brackenhurst research which are open to NTU students and staff.



Undergraduate student teaching on the Brackenhurst farm

NTU hosted a badger vaccination training session in November 2016 which was led by Nottinghamshire Wildlife Trust. The training is for students and volunteers and will support a new approach to controlling TB in badgers through a new programme of vaccination.

The British Dragonfly Society (BDS) held their annual meeting at Brackenhurst in 2016 for members and students to discuss dragonfly conservation and will hold their 2020 annual meeting here

The Friends of Brackenhurst group meet every Wednesday in the Walled Garden throughout the year except for December and January, to carry out maintenance which includes weeding and planting vegetables.

NTU Open Days offer another opportunity to members of the community in careers related to any of the subjects taught on site to visit the campus to view the facilities.

In the past, tree-planting events involving the wider community have taken place at Brackenhurst Campus. In 2018 local groups from Nottinghamshire Wildlife Trust and AgeUK were invited to take part in planting new areas of woodland.

Guided walks give an opportunity for the wider community to visit the gardens and grounds to learn about the history as well as the rich flora and fauna. The Brackenhurst Walks leaflet is available to staff, students and members of the public via NTU's Sustainability webpages, on the Visit Nottinghamshire website and in the local leisure centre.

Rogation is an event which occurs each May when the people of Southwell meet to pray for fine weather, good crop yields and healthy animals. Traditionally the School jointly hosts the service

with Southwell Minster, Nottinghamshire Farmers' Union (NFU) and Nottinghamshire Young Farmers' Club (YFC). The first half of the service takes place in Southwell Minster, whilst the second half involves a procession up the lanes to Brackenhurst Campus, stopping at intervals on the way to bless the crops and animals.

Team building away days are also a great opportunity to bring staff usually based in the City or at Clifton Campus the opportunity to experience Brackenhurst campus. In October 2018, the University's Executive staff members volunteered with the Landscaping Team at Brackenhurst.



Nottingham Trent University Executive staff members volunteering on campus

Nottingham Trent University Brackenhurst campus and academics featured on BBC2 Countryfile on the 20th August 2018. The report detailed the recent purchase of the original Bramley apple tree in Southwell which unfortunately is dying because of an incurable honey fungus infection. Horticulture staff and students will carry out an initial assessment of the tree and then set about carefully tending it with the aim of prolonging its life. Grafts of the original tree will also be replanted at the Brackenhurst Campus.

Flower Pod

The University works with Reach Learning Disability, a charity providing support for adults with learning disabilities in Nottinghamshire to live happier, healthier lives in their community. They also offer quality one-to-one care support through Reach Learning Disability Care CIC (rated outstanding by the Care Quality Commission). This partnership with Reach offers customers a chance to engage with an innovative organisation supporting some of the most vulnerable people in society.

In 2012, the charity established Flower Pod which is based on a 1.5-acre plot of land leased by NTU on the Brackenhurst Campus.



Flower Pod Volunteer

The garden is now mature and outdoor experiential learning is offered all year round, with purpose-built working space. The low carbon footprint building incorporates sustainable materials such as straw-bale walls, lime rendering, sheep's-wool insulation, a concrete and re-cycled glass floor.

The site continues to develop with an environmental and sustainable focus, and in 2022 will be installing solar panels, improved rainwater harvesting systems and further developing a wildlife garden to improve biodiversity and enhanced learning opportunities for adults with learning disabilities, making them active green citizens.

Flower Pod Southwell connects people with learning disabilities, local organisations, community and corporate volunteers to experience the benefits of therapeutic, horticultural activities. Flower Pod continues to find innovative ways to utilise the site, such as making natural petal confetti made from flowers that are past their best and upcycled flowers collected from supermarkets as well as running forums to introduce people to the wider sustainability agenda.

Collaboration with NTU has been maintained and there are collaborative projects underway. For example, as part of Brackenhurst horticultural students' curriculum, they grow commercial quality plants for Flower Pod to use in hanging baskets which are sold to generate a small income for the charity.

The future of Flower Pod will focus on areas which increase client engagement. Growth and sale of flowers will be targeted more at planned activities such as involvement with local events where

people with learning disabilities can play a more active role in the community and customers' corporate and social responsibility agendas can be met.

Reach Learning Disability opened a second Flower Pod in Newark during the pandemic in Summer 2020, recognising the need for permanent outdoor spaces to benefit the wellbeing of its clients.

Community Access

Access to the Campus grounds and facilities is available to school groups and community groups on arrangement. Organised activities include pond dipping, nature walks and visiting Home Farm.

In addition to the public footpaths through the Campus the University also provides public access along permissive routes, which allows public access to features such as the Sheepwalk's Pond and the wildlife hide. The Campus grounds provide a variety of environments such as wetland, woodland and parkland, which the community are welcome to enjoy. The University has produced a leaflet setting out a series of nature walks across the estate, each of which is focussed on certain species, habitat or environment, which is available online. The leaflet has also been distributed to Southwell Library, Southwell Tourist Information Centre and Southwell Leisure Centre.

Interpretation boards are provided along the public and permissive footpaths providing information concerning what nature they can look out for and the on-going management practices. These are to be updated and replaced as an NTU wide signage scheme currently underway in 2022.

Gardens of the Main Hall, along with the rest of the site, are accessible to the public as well as regularly hosting planned visits.

The library is open for public access during office hours.



Sheepwalk's Pond and wildlife hide

Commemorative Benches and Plaques

Several plaques and monuments can be found around the grounds at Brackenhurst Campus. Many trees have been planted around the Campus because of requests for tributes to staff or former students of NTU.

Conferences, Catering and Room Hire

The Main Hall is licenced for weddings and offers rooms for various functions. Over the years the commercial events offered at Brackenhurst have developed considerably with the following now offered.

- Outdoor weddings on Main Hall lawn at weekends June – September (starting 2023) in an outdoor structure of the client's choosing, including tipi, marquee, and sailcloth tent. Outdoor weddings are serviced by an external catering company and bar.
- Indoor weddings are available at weekends all year round in the Lyth building and include exclusive use of the Reception, Lecture Theatre and Refectory.
- Access to the mirror pool and landscaped gardens around the Lyth building, Main Hall lawn, the walled gardens and lake are all included in the wedding packages.
- We are currently in the process of applying for a wedding licence which will allow legal wedding ceremonies in the Lyth building and hopefully outdoor ceremonies on Main Hall lawn.

On-site catering can deliver hospitality for a range of events. In June, a marquee on the main lawn hosts the popular Brackenhurst Ball for students, whilst welcome week activities are hosted on the main lawn in September. Please note that such events have been suspended due to the recent pandemic.

Sports Facilities

A wide variety of Brackenhurst specific sports clubs are offered to students from Cheerleading to Hockey, and Netball to Rugby Union.

The Campus is home to a football pitch used by students and a cricket square and nets which are home to the local Southwell Cricket Club.

As a member of the NTU community, staff and students can take advantage of our partnership with Southwell Leisure Centre for discounted centre rates. This includes access to a swimming pool, sauna, fitness classes, a 50-station gym suite, squash and badminton courts.

The Equestrian Centre holds a variety of events throughout the year, including unaffiliated and affiliated dressage competitions and unaffiliated show jumping. The Equestrian Centre can also be hired out by the public. The extensive indoor and outdoor spaces are approved by the British Horse

Society (BHS) for training and livery establishment and also holds a full local authority riding school licence.



Section 9: Marketing and Communication

9.0 MARKETING AND COMMUNICATION

Marketing and Communication

Increasing efforts, such as the walks leaflet and Heritage Day, are being made to make the local community aware of the facilities at Brackenhurst Campus which are available for them to use and enjoy. The 27 information boards across the estate are a good resource for information, once people are on the site, with university-wide aspirations lead by the Brackenhurst user forum, for more information boards to be installed after the latest campus developments. The original ones have been reviewed and are to be updated and replaced as part of an NTU wide signage project underway in 2022.

In addition to internal advertising through 'Must-know Monthly' emails and the MyNTU Newsroom, press releases are circulated for all major events, open days and LEAF events. These raise public awareness and participation in public events at Brackenhurst.

The NTU ARES website includes extensive features on the Campus, including information on the facilities available to the public. The news section of the main website and NTU's Sustainability webpages give information on current and future events.

Short films about the University, Brackenhurst Campus and topics relevant to the School (such as growing your own food) can be viewed via the NTU's main website or the ARES website.

NTU's Sustainability webpages have a dedicated page to Wildlife and Green Spaces, with sections on Brackenhurst, Clifton and City campuses which feature landscape information, ongoing projects and important areas of conservation across the university. The webpage also includes a copy of this report for staff, students and members of the public to view and learn more about the opportunities the campus offers.

The visitor centre at the newly opened Lyth building is now a hub of Brackenhurst outreach work and community involvement.

Informational Channels

Internal communications within NTU include the MyNTU dashboard which displays daily updates to all members of staff with forthcoming events and news within the University. For 2021, a new student dashboard was launched, which provides updates on what has been happening on all campuses and what is coming up. NTU also has a University Calendar for students and staff to refer to via the website.

The University produces the annual printed newsletter for supporters 'Shaping Futures'. This newsletter keeps alumni and other supporters in touch with what's going on at the university. The 2020 edition included features on work taking place at ARES to seek solutions to the global climate crisis and community fundraising highlights across NTU.

The Estates Department have their own newsletter which provides a great opportunity to communicate to staff about the carbon saving and green initiatives that have taken place or that are planned for soon.

The Sustainability Team have strong relations with both the staff and student communication teams and work closely to ensure key messages and opportunities for involvement are advertised for all. Communication is now often via social media such as Facebook, Twitter and Instagram, of which there are several accounts for NTU.

The NTU's Sustainability Team's Twitter account has over 2,607 followers with tweets communicating to a variety of students and staff. The account is used multiple times a week to keep followers up to date with all the activities the team are involved in from tree planting to workshops as well as retweeting important environmental news pieces.

Due to high student demand, Facebook and Instagram pages for the Sustainability Team were launched in winter 2016/17. The Facebook page now has over 950 likes, and the Instagram account has over 1,210 followers as of January 2022.

NTU Landscape Services twitter account has over 1,287 followers with regular updates about their work to make the campus an attractive space for wildlife and people. NTU Estates has an Instagram account used as an image portfolio and dedicated webpages to inform staff and students about any disruptions to users as well as updates on current campus developments.

The Green Flag status of the campus is used and shared through events such as Staff Induction, Sustainability in Practice tours and Welcome Week. Green Flag status is also promoted through the NTU Sustainability webpages and social media channels (Twitter, Facebook and Instagram).

The establishment of the land user forum aims to balance the needs of different stakeholders at Brackenhurst. The group currently meets quarterly and includes the Brackenhurst farm manager, academics, the Brackenhurst Dean and members of the Sustainability and Landscape Services Teams.

Educational and Interpretational Information

A wide variety to educational activities take place across campus for both NTU students and community groups.

As described previously, interpretation boards around the estate help users find their way and provide information about the land and local wildlife.



Section 10: Management

10.0 MANAGEMENT

Management Structure

This Landscape Management Plan (LMP) is reviewed annually by the Sustainability Team, ARES academics, the Farm Manager, and the Landscapes Services Manager.

The Director of Estates is supported by other Senior Management in the management and implementation of the University's environmental policy.

The Sustainability Team has formed strong working relationships with different stakeholders across the University for the incorporation of sustainable principles.

The Hazardous Waste Working Group (HWWG) has been established to ensure the University meets its legal obligations with regards to storage and disposal of hazardous waste. The group meets with the Environmental Manager to discuss waste contract management refresh training and discuss legal compliance.

As part of this management, NTU's Sustainability Team help ensure that up to date information of best practice on environmental issues is disseminated throughout the University.

The buildings and gardens at Brackenhurst Campus are managed by teams within NTU's Estates Department. The farmland is managed by ARES and the Farm Manager. Communication between the various stakeholders at Brackenhurst Campus has significantly improved in the last two years with the introduction of regular Land-use Group meetings. These meetings are chaired by the Dean of ARES and attended by academics, the farm manager, the senior field technician (who supports the Conservation Society) and representatives from Landscape Services and the Sustainability Team.

Project Funding

NTU is currently involved in major redevelopment across all campuses, further information of these projects can be found via NTU's homepage. As a result, most of the working capital for site work is used to deliver these projects and new associated landscape areas. As the number of development projects diminishes, increased funds may become available for the delivery of landscape maintenance projects in the future.

The Landscape Services Team have an annual budget of £400k. Approximately £100k is allocated to Brackenhurst upkeep. A budget breakdown for Brackenhurst is provided with the Implementation plan in **Appendix B**.

Fundraising is carried out by staff and students for restoration projects such as the Rose Garden, while Brackenhurst Campus 'Old Students' Association (BOSA) have also helped to raise funds. This method can result in long lead-in times. There is potential for the management team to take advantage of other funding opportunities, such as the Heritage Lottery Fund and English Heritage:

Grants for Historic Buildings, Monuments and Designed Landscapes. These funding options continue to be explored.

Management Priorities

The current short-term aims are;

- Plant new trees in light of planned campus redevelopment 2020/21
- Create new ponds across the estate 2022/23
- Build upon the excellent working relationship with the local community, to enhance the landscaped areas – on-going.
- Wider landscaping projects to improve student experience

The longer-term aims are (timelines subject to funding):

- Restoration and replacement of gates to the Walled Garden including glasshouses Mart House and bothies.
- Restoration of Rose Garden pergola and Boat House.
- Restoration of Gatehouse walls and railings.
- Development of links with local community groups, such as Young Farmers and the Ramblers Association.

The Implementation Plan allows the management team to assess the highest priorities and develop a programme that responds to these. See **Appendix B**.

APPENDICES

APPENDIX A – SAMPLE MAINTENANCE PLAN

Examples of landscape maintenance schedules

Shrub Beds

- Shrub beds will be managed to maintain a healthy stock of plants. The edges of the beds will be neatly defined by appropriate means. Beds shall be weed free and mulched annually to suppress weed growth and retain moisture content within the soil. However, should the prevailing weather conditions dictate these beds shall be irrigated during the dry spells to remove undue plant stress and the potential for die-back.
- Pruning will be carried out on shrubs that require it according to species to remove the dead and damaged branches and to retain natural shape and encourage good flowering to improve health and vigour.
- Where die-back of plant material has been identified new plants will be planted as soon as possible, using species that maintain the character and continuity of the shrub bed. Replacement planting will use the species with a form and flowering habit that is appropriate for that plants position in the bed as well as the context of the nearby environment.

Winter sports pitches (Football/cricket)

- Grass in these areas will be maintained to a height governed by the respective playing needs at the time of play and with the aim of providing a suitable and safe playing surface throughout the season. Areas will be gang mown weekly throughout the growing season. In addition, other tractor mounted tasks will be undertaken to provide a true, safe and free draining surface. These tasks will include monthly aeration, rolling and chain harrowing throughout the playing season. The ratio and timing of these tasks will be determined by user needs as well as maintaining the quality and integrity of the playing surface. Throughout the year regular applications of fertilisers and herbicides will be considered on their merit and need under the prevailing weather/ground conditions.
- Throughout the playing season and as determined by fixture arrangement the pitches will be fully marked out in accordance with the Association Rules and Regulations. Respective posts and crossbars will be safely erected at the start of each playing season and regularly checked before and after each fixture including the set up and removal of nets (football). At the end of each season this equipment will be safely dismantled, repaired and stored until next required.
- End of season renovations will include topdressing and over-seeding and re-establishing of levels to make safe and maintain the integrity/quality of the playing surface.
- Preparation and maintenance tasks are mainly carried out during the academic year (Sept- June) when demand is at its greatest with end of season works taking place as demand eases.

Landscape Machinery and associated equipment – maintenance

All landscape machinery and associated equipment is subject to regularly prescribed checks to ascertain service and repair needs under the Provision and Use of Work Equipment Regulations (PUWER) 1998 including six monthly safety inspections of Arboricultural equipment which falls under Lifting Operations and Lifting Equipment Regulations (LOLER) 1998.

All works, repairs and inspections are documented and maintained to file for access, monitor and review where requested.

Arboriculture

- During the Autumn/Winter period or where safety issues prevail. Care is taken to avoid such work during the nesting season and work action accordingly. Works are driven by a 3-yearly survey, by external consultants, which prioritises works according to either tree health/failure as well as the potential risk to public or property. Successional planting is factored into replant where trees could or have been lost.
- All tree stock, within the remit of NTU, is reviewed on a 3 yearly cycle to determine workload priorities and assess the health, well-being and vigour of both specimen and groups of trees
- Regular inspections are undertaken throughout the year where high winds may present a threat to NTU trees and works actioned accordingly to maintain the integrity of specimens affected and to remove the potential of risk to people & property.
- Safe work practices are adopted in relation to working at height within trees. Operatives undertaking work are IPAF certified to use mobile elevated work platforms & NPTC compliant up to units cs38/39.

Turf Maintenance:

Defined as either high or low amenity areas and subject to respective maintenance regimes. This may include:

- Mowing, throughout the growing season to the respective height (collected or non-collected)
- Use of a variety of cylinder, rotary mowers and strimmer's during the growing season
- Application of granular or liquid fertilisers to improve turf health and vigour
- Application of granular or liquid chemicals for the control of weeds, pests & diseases
- Application of water &/or wetting agents during periods of drought
- Aeration & scarification to improve drainage, quality, integrity & appearance of grassed areas
- Re-instatement of new, damaged or worn areas by turf or seed mixes
- Introduction of topdressings to improve drainage and levels
- Removal of litter & debris from surfaces

Landscape (Biodiversity)

All landscape tasks give due consideration to the impact of our activities on all flora & fauna such as:

- Green waste recycling – all landscape material composted and chipped for re-use across campus to aid weed suppression and combat drought
- Introducing a palette of a colour rich wildflower areas to improve biodiversity
- Legal compliance to minimise the impact on wildlife such as nesting birds & Great Crested Newts
- Utilisation of Integrated Pest Management (IPM) techniques which reduces the reliance on chemicals
- Introducing wildlife habitats such as bird boxes & log piles as well as shelters for a wide range of other invertebrates & insects
- Engaging with key partners & stakeholders, through volunteering projects, to improve biodiversity
- Actively encouraging students to utilise the landscape areas for research and coursework and how to add value to biodiversity through study

Internal plants

Service and maintenance to over 200 planters, throughout the year, across key building forums on all three campuses. Includes watering, feeding, pruning and cleaning down of containers.

APPENDIX B – BRACKENHURST IMPLEMENTATION PLAN

	Action	Target	Budget	Timescale	Owner	Status
Brackenhurst	Wider landscaping projects including soft landscaping along Hicking Lane and re-landscaping of Bramley car park curtilage	To improve the landscaping and student experience at frequently used points around campus	TBC	Sept 2022	Sarah Robertson	Creation of feature planting, seating and new paths for rich biodiversity and improved facilities as part of the new Lyth and accommodation building.
	Refurbish/re-instate the Rose Pergola and Lodge Gates and Walled Garden Gates.	Improve heritage conservation	Approx. 200k across 5 years, funding sources not secured	TBC in light of current development	TBC	Source funding for restoring the Walled Garden and Rose Pergolas is an ongoing venture.
	Mitigation tree planting in light of planned campus redevelopment.	Ensure trees lost to development are replaced	TBC	2017-20	Alan Horgan	Dependant on planned campus regeneration, Brackenhurst Lane bund with by wooded by 2020
	Restoration of Great Crested Newt ponds in accordance with Natural England Licence.	To meet the legal requirements of the Natural England licence in order to improve the quality of pond habitat for wildlife	Circa 60K	September 2022	Sarah Robertson	In progress
	Update interpretation boards	To improve the information available to Brackenhurst campus users on the past and present land use.	TBC	2022/23	Led by Brackenhurst land user forum as part of a wider NTU signage project.	In progress as part of a wider NTU estate signage project.