

Sustainability

Landscape Management Plan Clifton Campus

January 2020

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Section 1: Introduction & Background

1.0 INTRODUCTION AND BACKGROUND

Location

Clifton Campus is a 31.8 hectare site on the south bank of the River Trent, situated approximately four miles southwest of Nottingham City Centre on the A453, Clifton Lane.

The site fronts onto Clifton Lane, from which the site is accessed by bus, bike, car or on foot. The Campus is served by the award winning Go2 Uni4 bus service, which provides access from Nottingham. Buses to Clifton Campus leave Nottingham Trent University (NTU) City Site every 7-10 minutes Monday to Friday during term time. During holidays, the campus is still accessible via the number 1 bus service which stops just outside of campus on the A453.

Access to Clifton Campus can also be gained via the Nottingham Express Transit (NET) Tram further details can be found in **Section 2** below.

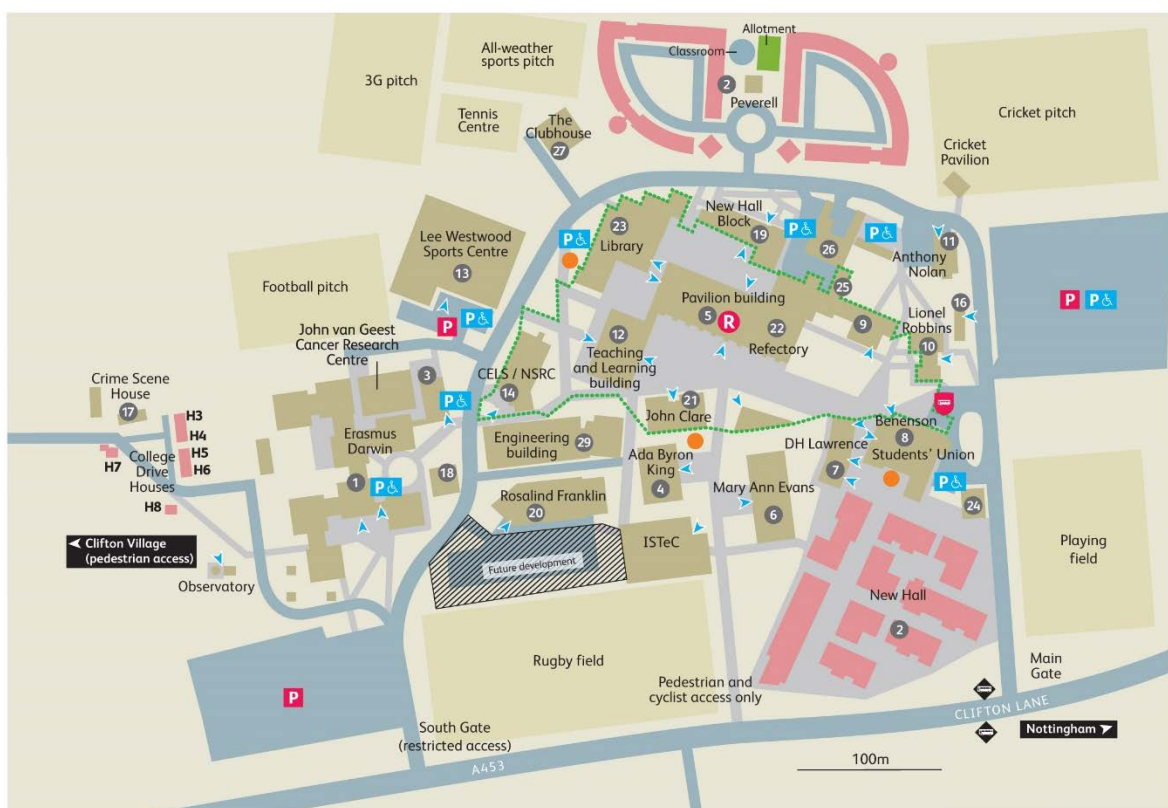


Figure 1 - Plan of Clifton Campus

Current Use

Clifton Campus is home to the School of Arts and Humanities; School of Science and Technology and Nottingham Institute of Education.

It has lecture theatres, General Purpose Teaching Rooms (GPTs), laboratories, IT suites, a library and sports centre providing all the specialist equipment necessary to support the wide range of courses offered to over 8,000 students. A health centre, two halls of residence, a student's union, sports pitches, shops and cafes provide all the facilities to make this an independent Campus.

Redevelopment of the campus began in the summer of 2014 starting with the 'Heart of Campus'. Two new buildings, the Pavilion and the Teaching and Learning Block, are now situated in the centre of campus.

A strong emphasis on high quality landscaping remains a priority for the variety of land users on the campus. This is now supported by the Clifton Campus NTU Landscape Strategy which was finalised and approved in November 2018. Under the Sustainable Construction Policy for the estate all new builds are required to achieve BREEAM Excellent rating and 'Very Good' on all major refurbishments.

NTU is a proud Client Partner of the Considerate Constructors Scheme (CCS). We are an active member of the Scheme, in order to improve the image of construction, not only by minimising the negative impacts associated with construction activities but by working collaboratively to promote excellence in site appearance, respecting the community, protection of the environment, secure everyone's safety, and valuing our workforce.

Recent and Proposed Development

The Sustainable Construction policy has a strong emphasis on high quality landscaping which is continually providing the campus with diverse spaces.

The Landscape Strategy sets objectives to provide a high-quality landscaped setting of distinct character strengthened by green infrastructure for interconnected pedestrian routes and spaces. This includes a landscape framework which allows for the expansion of built facilities and services for the variety of University courses.

New Hall Student Village (2013)

This redevelopment replaced some of the previous student accommodation and ancillary academic support facilities on the Campus with attractive, high quality student accommodation, which houses 730 students and has achieved a BREEAM Excellent rating.

As part of the development, a high-quality landscape scheme was delivered, incorporating paving, street furniture and lighting as well as soft landscaping. The Swale forms a focal point in the landscape, bounded by gabion walls and crossed by a timber bridge. An interpretation board provides information on the environmental benefits of the Swale.

All-weather Sports Pitch (2014)

An all-weather pitch was completed in summer 2014 and used by a wide range of sports teams within NTU and the local community. Further details can be found in **Section 7**.

The Clubhouse providing changing rooms near the all-weather pitch complement the sports facilities and better provide for community events that make use of the sports areas of campus.

Clifton 'Heart of Campus' Regeneration (2014-16)

The optimisation of the Clifton Campus estate is high on the agenda, with the Pavilion and Teaching and Learning building forming a new Heart of Campus on the site of the previous George Eliot building. Both buildings achieved BREEAM Excellent.

Landscaping works completed as part of the Heart of Campus links the Lee Westwood Sport Centre and The Clubhouse to the Refectory and Pavilion gardens all prioritising pedestrians and biodiversity. Plans continue to be in place for improving the appearance of the main entrance onto

campus and opportunity for new cycle facilities are always being explored. To maximise aesthetic and biodiversity value, planted trees will be established when planted wherever possible.

As part of the Heart of Campus redevelopment, a new 'Green Zone' was introduced. This area in the centre of campus is free from smoking, unauthorised traffic and parked bicycles, contributing to the peaceful atmosphere of the campus.



Aerial view of the Pavilion and Plaza of the Heart of Campus

A453 Widening (2015)

Works to widen Clifton lane (A453) were completed in the summer of 2015. The A453 bounds Clifton Campus along the southeast fence line. As part of the works, the campus was encroached by the new part of the road. This resulted in the loss of the ancient hedgerow as well as trees that previously lined the campus boundary.



A453 compensation planting

Compensation planting along the length of the eastern boundary of the campus took place in March 2014. This planting, comprising entirely of British native species, was designed to provide an effective screen for the campus from visual and noise pollution, retaining its peaceful and secluded atmosphere, whilst also taking the opportunity to increase the quantity and diversity of habitat available. The planting provided a valuable opportunity to work with the contractor, NTU's Sustainable Development Team and Landscape Services Manager.

ISTeC (2017)

This building provides the resources for research and teaching, bringing together students, researchers, staff and businesses for project-based work and its application in the real world.

Facilities include chemistry, physics and bioscience laboratories; a robot arena to use humanoid robots and specialist computing labs including networking, security and forensics, games, data science and high performing computing.

This building has achieved Design Stage BREEAM Excellent and awaits its Post Construction certification.

Engineering building (2019)

Works are now complete on the School of Science and Technology's Engineering building, the new home to the Department of Engineering.

The building features attractive and flexible learning and teaching space provision with specialist equipment to support project based, industry focused research into nine technologies including; autonomous robots, simulation, cybersecurity; transforming automation in manufacturing and production.

There are also facilities for commercial research, professional development and consultancy activity.



Artist impression of the new Engineering building on campus

Medical Technologies Innovation Facility (MTIF) (2019-present)

This new multi-disciplinary research and development building will enable early stage research and development in medical technology with a strong focus on medical devices.

This building is due for completion in summer 2020.



Section 2: A Welcoming Place

2.0 A WELCOMING PLACE

Good and Safe Access

The award-winning Go2 Uni4 bus service is available for everyone to use throughout term time. This service takes about 25 minutes to travel between the City Campus and Clifton Campus. The route is ideal as it passes through Nottingham City Centre via Nottingham train station. Double decker buses serve this route and stop on both campuses. The buses also have spaces and ramps for wheelchair users and prams.

A predominantly traffic free cycle route between City Site and Clifton Campus takes around 30 minutes. More information on cycling between campuses and around the city can be found on NTU's Sustainability webpages. The Ucycle bike hire scheme operates from three of NTU's Campuses, allowing staff and students to travel between and around the Campuses and accommodation by bike for £39 a year.

NTU's Clifton Travel Plan and Nottinghamshire County Council's cycle strategy predict growing trends in non-motor users. A new secure cycle compound has been installed in December 2019 comprising 30 bike parking spaces. Work such as this aims to strengthen the cross-campus cycle route and encourage more visitors to the site using active and sustainable travel options.

Access across the site complies with BS 8300, design of buildings, and its 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 and tactile paving at most road crossings. Paths across the Campus have been made accessible to wheelchairs and pushchairs. When any new development is carried out consideration is given to DDA.



Signage

All NTU students, visitors and deliveries are asked to use the Main Gate on to campus and report to the gatehouse. South Gate is for staff use. Once on Campus, standardised signage using the NTU 'brand' logo and typeface are located across the campus. A further entrance on Clifton Lane is for pedestrians and cyclists only referred to as Central Approach. Plans to improve this second

entrance have been designed and await sign off and funding allowance. The space has been designed to create a more welcoming and biodiverse approach to the campus complete with areas of garden and trees.

As part of the Heart of Campus regeneration, a bus stop was completed on campus when entering the site from Main Gate. This gateway means that buses enter and exit the campus from Main Gate. The number 1 bus service provides an alternative travel option for students, staff and visitors 7 days a week, dropping off passengers just outside of campus. A cycle lane also runs along Clifton Lane providing direct access by bike. The Rivergreen Tram stop is a short 10 minute walk to campus and most recently a Tram Park and Ride offer has been introduced for NTU staff and students providing an off campus overflow car park option.

On entering the campus from Main Gate, students and visitors are directed to park in the student car park. All students must have a valid parking permit for which there is a charge. All visitors are given a day parking permit, free of charge. It is recommended that visitors contact the site prior to their visit but this is not essential. Cyclists will be directed to the most appropriate cycling compound of which there are a variety across the site. On entering South Gate, staff use the South Gate car park that has a daily charge and is automatically taken from their accounts when using their staff cards at the barriers on entrance. Both car parks are located on campus with campus facilities just a short walk away.

Information boards for all site users are provided across the campus showing basic details of the campus buildings and provide on-site security contact details. As part of the Heart of Campus development, new copper information boards were installed to outline the 'Green Zone'.

Beyond the buildings, an informal path follows the perimeter of the site, along which users can enjoy many of the site's landscape assets, the Clifton Nature Trail. Information boards designed and located around the path to provide staff, students and members of the public information on the landscape, ecology, history and management of the site as well as information on the wildlife you might hear and see throughout the year. Access for all users can currently be limited during very wet weather conditions, however proposals have been drafted to improve the path in the future.

Equal Access for All

As well as being an important resource for students and academics, Clifton provides facilities that are used by the local community.

The main focus for community use is the Lee Westwood Sports Centre, providing a wide range of facilities, further details of which can be found in **Section 7**.

Public involvement is actively encouraged to ensure that the community maximises the opportunities available at Clifton Campus. These include Open Dome events, tree planting events, Open Days and sporting events (see **Section 8**), while more informal public access is available for sport. Community groups and schools can also use the allotment and outdoor classroom located behind the Peverell hall reception for activity sessions.



Section 3: Health, Safety and Security

3.0 HEALTH, SAFETY AND SECURITY

Appropriate Provision of Quality Facilities and Equipment

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. A sample maintenance plan is provided in **Appendix A**. Any staff member is able to report a problem to the maintenance department via the Estates Helpdesk via MyHub. Issues are prioritised by maintenance and carried out as quickly as possible. The public may report issues to receptions or use the contact numbers provided widely across campus.

A wide range of indoor and outdoor sports facilities are available on campus to students, staff and the public and these are maintained to a high standard by landscape, maintenance and sports staff.

There are a range of food options in the dining outlets offering a range of freshly prepared, tasty eats, from across the globe every week including great value breakfasts and healthier choices. The NTU Catering Team works in partnership with the Sustainable Development Team and Procurement Team to consider ethical, social and environmental factors when making decisions on the food and drink products served.



Outdoor seating space on the Plaza

Outdoor seating is available around campus including on the Plaza at the Heart of Campus, Student Union and the outdoor classroom at the allotment site. The Central Approach design at the pedestrian entrance onto campus includes seating.

Security staff are all first aiders and can be reached 24/7 by all Campus users on 0115 848 6600, the number is provided on the Campus information boards.

Toilets including disabled toilets are found all over Campus and most are accessible to the public.

Safe Equipment and Facilities

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 if required.

External consultants FPCR Environment and Design Ltd survey all tree stock including woodlands within the Campus every 3 years with advice on their condition. This identifies any trees that are dead, dying or dangerous. Trees are then maintained accordingly. The last survey was completed during January 2018.

The Landscape Services Manager pro-actively monitors potential external threats to tree stock, including the national spread of tree diseases, in order to take pre-emptive action if required.

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. The three balancing ponds just south of Peverell Hall are surrounded by dense native vegetation, discouraging public access, though access is available for maintenance, teaching and research. Gently sloping, solid edges comply with safety guidelines. Pedestrian guardrails around the Swale at New Hall Student Village help to prevent access to the water. Drainage outlets also ensure that the water does not become deep. Regular checks of guardrails and outlets are made to barriers as part of the maintenance regime.



One of the balancing ponds located by the Peverell Halls

Personal Security

Security at Clifton Campus is 24/7 providing surveillance and helping to give peace of mind to all site users.

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 works 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.



The Pavilion and Plaza are suitably lit for safety and aesthetic

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 height of 1.5m to improve lines of sight for security and maintenance purposes.

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 Landscape Services Team. 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.

The University 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. All NTU security staff are first aid trained and are contactable 24 hours a day.

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, the University 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

Currently dogs are not encouraged on the Campus, due to the presence of outdoor sports facilities; however, members of the public are known to use the site for walking their dogs. This is usually around the perimeter of the campus along the Nature Trail.

To accommodate for this dog waste bins have been installed at the beginning and the end of the Nature Trail. In addition, the interpretation boards situated around the Nature Trail have a note asking those dog owners who do use the site to behave responsibly and remove all waste.

Working Hours

The Estates Department work closely with the timetabling department; NTU Sport and Marketing departments to ensure that there is no conflict with residents and students during exam periods, sports events or open days. These are managed and discussed in the Clifton Operations meetings that take place monthly. For any disruptions that may be caused on the Estate staff and students are directed to a dedicated webpage for further information (Estates Works). For campus development staff and students are directed to a dedicated NTU webpage called Campus Transformations.



Section 4: Cleanliness and maintenance

4.0 CLEANLINESS AND MAINTENANCE

Litter and Waste Management

The appearance of the Campus is a priority for the University and is recognised as a basic requirement for attracting new students. The Landscape Services Team is responsible for maintaining the landscape, while the Facility Support Team empty external litter and recycling bins on a daily basis, at the same time conducting litter picks and leaf sweeping when necessary. All the entrances are manually cleaned/picked on a daily basis. The sweeper also does the rounds of the hard surfaces every morning. The sports pitches are picked on Thursdays, following the Wednesday matches. Car parks are more ad hoc. The service operates weekdays only (except when there are special events) and priority is given to weekend high-use areas on Monday mornings, for example around the Students' Union. In 2019 the Facility Support Team have extended their litter picks to include the roadside of the A453, supporting the work of a local Clifton Village resident who is a Nottingham Clean Champion.

To encourage site users to keep the Campus litter-free, litter bins and recycling banks are provided extensively throughout the Campus.

In March 2018, student and staff volunteers took part in the annual Great British Spring Clean and litter picking around campus.

Students in January 2020 are looking at litter bins across the estate for a more cohesive approach to waste disposal.

NTU has an on-site waste segregation rate of 42% and diversion from landfill of 99%.

Food waste from across Clifton, City and Brackenhurst campuses is collected and anaerobically digested to generate power by a third party.

Clothing recycling banks are found on Clifton campus at New Hall and Peverell Halls of Residence, giving staff, students and visitors the opportunity to donate unwanted clothes, footwear and books to the British Heart Foundation (BHF).



Promoting British Heart Foundation donations to fellow students

NTU Sustainable Development Team has worked with UPP and the Students' Union to promote the locations for donations across three of its campuses. In 2019 the work of the last seven years was recognised by the national award, winner in the Retail Partner category at the British Heart Foundation Hero Awards.

Since being set up, 60,000 bags of donations plus furniture and electrical items have been collected raising £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 are provided in **Section 5**. 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 encouraging the use of the recycling bins.

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

In September 2018, the Sustainable Development 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 16,722kg of CO₂, £6034 donated to charity, 7,142kg of waste diverted from landfill and increased resource efficiency.

In 2019 NTU took part in a pilot University recycling competition called the NUS RecycleLeague, encouraging those taking part to improve their recycling rates over the year.

Horticultural Maintenance

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 (including sports pitch maintenance). In addition to a short-term annual programme of maintenance requirements, a longer-term programme is in place to address more complex issues, such as desilting the balancing ponds and replanting of areas.

To date 2.1million bulbs and 800m² of wildflower meadow have been planted around campus over the last few years to improve the biodiversity and appearance of the Campus.

Tree Maintenance

FPCR's three-year surveys 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 required maintenance work. The Landscape Services Team uses this active database as a tool to manage the tree stock.

Building and Infrastructure Maintenance

Buildings on the Campus are diverse in terms of age, scale, style and use. These buildings have specific uses for teaching, research, administration or residential purposes, but all share the same setting.

All buildings are maintained to a high standard by the Estates Department. An on-site maintenance team is responsible for the upkeep of the buildings.

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 used by employees or the public are safe to use. Six-monthly inspections are carried out on tree climbing equipment under the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER).

The NTU fleet of vehicles 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. Servicing and maintenance of lease vehicles is included in the lease fee. An onsite vehicle wash-down facility located within the Landscape Services maintenance compound helps to maintain and clean landscape machinery and equipment as well as NTU fleet vehicles.

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**.



Section 5: Environmental Management

5.0 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.

All new members of staff are offered a Sustainability Induction upon joining NTU, this is delivered either face to face by members of the Sustainable Development Team or alternatively as an online awareness training module. The online module can be accessed by all staff and students.

As of January 2020, NTU is named as the UK's 3rd most environmentally friendly and ethical University in the People & Planet League and 5th in the University of Indonesia Green Metric World University Ranking.

The University has a number of policies (listed below) relevant to environmental sustainability. These are reviewed annually by senior management. They are all available on NTU's Sustainability webpages and include:

- Environmental Policy
- Energy Policy
- Carbon reduction strategy for the Estate
- Biodiversity Policy
- Transport Plan
- Sustainable Food and Drinks Policy
- Ethical Investment Policy
- Water Policy
- Waste Policy
- Student and Staff Engagement Strategy
- Sustainable Procurement Policy
- Sustainable Construction Policy
- Plastic Pledge

In March 2017, the University Executive Team at NTU approved the adoption of a 29% carbon reduction target, relative to staff and student numbers, by the academic year 2020/21 against a baseline of 2005/06. The target of 29% reflected both the efforts already made by NTU to reduce its carbon emissions, and NTU's fair share contribution to meeting the HE sector 43% absolute carbon reduction target by 2021. The latest data for December 2019 shows the target has been achieved, with a relative reduction of 46.4%.

Eco Campus & ISO14001

EcoCampus is an Environmental Management System (EMS) and award scheme that has been specifically designed for universities in the UK. It aims to assist institutions in moving towards environmental sustainability through good operational and management practices. The EcoCampus scheme enables universities to identify, evaluate, manage and improve their environmental performance and practices, while benchmarking environmental improvement.

NTU has completed and been re-accredited for the final Platinum stage of the Environmental Management System (EMS) 'EcoCampus'.

In addition, NTU has successfully held the internationally recognised ISO14001 certification since November 2012.

Pesticides and Herbicides

Integrated Pest Management (IPM) is in place to maintain the landscapes. This is an effective and environmentally sensitive approach to maintain the landscapes and relies on a combination of environmentally sound practices.

Pesticides are kept and used where tasks dictate and in accordance with legislative guidance. Pesticide use is part of an integrated regime where cultural and biological control measures are undertaken where absolutely necessary within maintenance schedules. Herbicides are used for weed 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.



Composting facility on campus converts prunings to a rich compost

Composting and elimination of pesticide use

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

Horticultural waste from the grounds 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). The team uses a composting machine and a chipper is used to break down the landscape waste.

Landscape Services utilise a dedicated composting facility which is located within the far perimeter of the student car park area and is used to recycle all soft and woody landscape material. The majority of this material is processed with a composting machine. This material is then regularly turned and left in the bay area for a minimum of six months before being returned to the woodland areas. This landscape recycling facility is fenced off and licenced by the Environment Agency. All compost material generated is used on the grounds.

The Go2 Uni4

During term-time, the award winning NTU Go2 Uni4 runs between the City site and Clifton Campus every 7-10 minutes. This fleet was replaced at the beginning of the 2019/20 year by the latest clean buses with Euro IV engines – with a fraction of the emissions and carbon of the previous fleet.

Nottingham Express Transit (NET)

Clifton Campus can also be accessed by using the NET Tram. Staff, students and visitors can alight at Rivergreen stop with a short 10-minute walk to the entrance of the Campus. A direct tram can be taken from NTU City Campus to Rivergreen taking just 22minutes.

New for 2019 is the Tram Park and Ride offer for NTU students and staff, allowing a return ticket from Clifton South Tram Park and Ride to Rivergreen Tram Stop for £1.50. This can be viewed as an overflow car park, alleviating on campus parking services.

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, promotion of cycling via social media and engagement events and a bike hire scheme for students and staff.

150 men and women's bikes are available in different sizes and can be hired for the academic year for just £39 (plus a £60 refundable deposit). The cost of the cycle hire includes maintenance sessions, access to free Ridewise training and advice and information (through information packs and general on-going support such as drop-in surgeries).

New for 2020 the Sustainable Development Team has two e-bikes for staff to trial as an alternative mode of transport.

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. One of the routes identified is a predominantly traffic-free cycle route linking Clifton Campus to the City site, which takes around 30 minutes to cycle. The website also provides information to the general public on topics such as buying a bike, bike maintenance and cycle clothing. Restricted access cycle compounds with CCTV are provided across the Campus. Further cycle information is planned to be incorporated onto the external campus information boards found around the campus in the future.

Currently 501 spaces are provided for bicycles on campus. Many of these are housed in restricted access shelters with swipe card access and CCTV. In line with the Clifton Campus travel plan, cycle facilities at the campus are in the process of being upgraded, providing more covered and restricted access cycle parking. A new compound of 30 enclosed spaces with CCTV and swipe access has recently been completed adding to the facilities on campus.

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

Landscape Services use and maintain their own John Deere electric powered gator (all terrain utility vehicle) for on-site maintenance. Two charging points for electric vehicles are provided adjacent to the landscape services yard. An additional four charging points at the South Gate main staff car park for all staff to use.

In 2014, NTU purchased its first zero-emissions van for use by the maintenance teams across the estate and the IS team also have their own electric vehicle.

Solar Photovoltaic Panels (PV)

There are PV installations on the Rosalind Franklin building, Pavilion, Library, Clubhouse and ISTeC. These installations generated 165,157 kWh of renewable energy in the academic year 2018/19. This renewable energy generation will be added to in the future with the Engineering building's PV.

The New Hall student accommodation has solar thermal panels, generating hot water used by the residents.

Efficient Cooling System

An efficient cooling system has been installed in the Clifton Data Centre to reduce its carbon footprint. The Evaporative Cooling System maintains a relatively stable internal environment in terms of temperature and humidity regardless of the external conditions.

The system provides a 90% reduction in annual running costs, which also means that up to 40% of the power for the installation could be provided by the photovoltaic cells installed on the roof of the data centre. Overall, the carbon footprint for cooling in the data centre has been significantly reduced.

Combined Heat and Power (CHP) Plant

There are two CHP units on Clifton Campus, fuelled by natural gas, supplying a number of buildings with heating on the campus.

NTU's electricity is purchased from a green energy provider. The University continues to work on projects for more renewable sources across the estate.

Sustainable Development Operational Forum

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

Staff Engagement

The Green Impact scheme ran for eight years empowering individuals to reduce their environmental impact by encouraging, rewarding and celebrating practical environmental improvements.

Although the Green Impact scheme has run successfully, feedback from staff for new interesting content has driven the introduction of a new staff engagement platform. In January 2019 Green Rewards was launched for all NTU students and staff to sign up to and take part in earning 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 2020, we have 342 students and 948 staff signed up to the Green Rewards with 57,444 actions completed.

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 Sustainable Development team and Fairtrade Steering Group achieved the new Fairtrade Universities and Colleges Award (FTUC) under the updated criteria in 2019.



Section 6: Biodiversity, landscape and heritage

6.0 BIODIVERSITY, LANDSCAPE AND HERITAGE

Management of Natural Features, Wild Fauna and Flora

Management techniques employed across the Campus ensure that the potential for biodiversity is maximised, resulting in a number of varying habitats.

Areas of woodland around the edges of the Campus largely comprise of native species such as Oak, Ash and Field Maple. The woodland is managed to promote biodiversity, by allowing interesting ground flora to grow and using small piles of wood and stone to encourage small ground-dwelling animals, such as hedgehogs and toads.

Additional mini-beast hotels have been installed on regular occasions as part of compensation work for new developments as well as part of student projects and engagement activities. These important insect refuges have also been used in student research projects investigating their effectiveness near recreational land use.



Undergraduate students constructing and installing mini- beast hotels

As part of the cluster of projects including Heart of Campus, Rosalind Franklin, Clubhouse, and 3G pitch, different types of bird boxes and bat boxes were installed on trees as well as other amphibian habitats. These are located around the 3G pitch and towards the east of the site.

Behind Peverell Hall lies the Foodshare Allotment where the flowers, bushes, leaf piles and compost provide food and habitats for wildlife.

The Old Marl Pit, located within the woodland towards the east of the site, provides an important wildlife habitat as it has a unique form and is relatively undisturbed by human activity. Both Green Woodpeckers and Lesser Spotted Woodpeckers have been heard and seen in the Old Marl Pit. The pit is managed with the sole focus of increasing biodiversity.

The woodlands near to the Observatory contain a good collection of snowdrops, bluebells and primroses, which were transplanted by students from other areas on Campus which were being developed.

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

The three balancing ponds, south of Peverell Hall, are aerated using a fountain, to help provide an ideal habitat for invertebrates and other wildlife. As a result, herons have been seen on pond margins.

The Sustainable Development Team were approached by the Clifton Security Team due to their wildlife sightings during their patrols throughout the night. This is now recorded in a log and includes species sightings such as sparrow hawks, muntjac deer, owls and foxes.



Wildflower meadow and A453 compensation planting

New wildflower meadow planting has taken place in the south of the campus, with over 600,000 bulbs planted in a special mix of carefully selected natives and non-natives which provide a visual impact and benefits for fauna. There are now over 1.2 million bulbs planted across the campus and 8,000m² of wildflower meadow.

New for 2020 NTU are aspiring to join 23 other UK Universities by being accredited as a Hedgehog Friendly campus for both Clifton and Brackenhurst Campuses.

In 2019 NTU was awarded the Bees Needs Champion 2019 award recognising the bee friendly environment that the campus creates through maintenance practices, planting design and species selection.

Compensation Planting

Compensation planting has occurred across the campus as seen in the below picture. This plan was drawn out to identify where existing compensation planting is on campus and avoid its removal in future campus regeneration plans. Areas in red are marked out as potential sites for future compensation planting.



Figure 2 – Compensation planting plan as of January 2019

Water Conservation

The balancing ponds are naturally filled with the rainwater from Peverell Hall student accommodation.

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

Water used by the wash-down facility, located within the Landscape Services maintenance compound, is pumped around the system to be re-used.

The Swale at New Hall student accommodation acts as a flood attenuation basin, collecting surface runoff, and then allowing it to seep into the water table.



The Swale at New Hall student accommodation

Planting Policy

Native species are largely used for planting and replacement of trees, woodland and hedgerows, to promote biodiversity through creation of appropriate wildlife habitats. Ash, Field Maple and Oak are locally native species found throughout the site woodland. During the outbreaks of Ash dieback, no cases were reported on the Clifton campus due to the vigilance of the Landscape Services Team. If a case was to be reported the best practice procedures would be followed.

The £100k glasshouse facility at Brackenhurst Campus, is capable of producing a mix of seasonal bedding plants throughout the year, which are raised from seeds & plugs. This provides a wide range of plant material for estate projects across all campuses. If necessary, nurseries are used to provide additional plants.

The glasshouse facility has a turnover of over 30,000 plants annually, satisfying a large majority of all soft landscaping requirements across NTU campuses.

New planting is largely undertaken as part of development schemes. In addition to the amenity benefit of planting, the University recognises the important biodiversity benefits. An example of this can be seen in the 1200 m² of wildflower planting in the south of the site, which not only provides a visual benefit but is attractive to fauna also.

A new carpet bedding scheme created a new landmark for Clifton campus. The NTU logo was picked out in over 13,000 plants as a distinctive emblem using 238 pre-grown tiles. For 2020 this area has been planted with bulbs to commemorate the 75th VE Day anniversary.



Conservation of Landscape Features

The Campus is a comparatively recent development and therefore contains little in the way of historic features. The features, as described in **Section 1**, that are shown on the 1883 Ordnance Survey map are believed to date from much earlier.

Despite the lack of apparent site heritage, there are historic features near the Campus. Most noteworthy is Clifton Grove, situated immediately northwest. Clifton Grove is a historic avenue of Elm trees, which were planted to create a majestic route alongside the River Trent to the front of Clifton Hall - this unfortunately fell victim to Dutch elm disease.

Clifton Village and Clifton Grove are Conservation Areas. The historic core of Clifton Village contains 22 listed buildings and features, including Clifton Hall and the associated Icehouse. The closest listed buildings to the site are The Old Rectory and School House, which lie near to the Observatory. Although these features do not fall within the site, it is important that development within Clifton Campus is sensitive to the setting of these adjacent Conservation Areas.

As described in **Section 1**, the steep-sided Old Marl Pit, originating from around 1700, is situated within the woodland on the northeast boundary of the site. Although this feature is not recognised by way of designation as having any historic importance, it does serve as a reminder of past land use on the site. This area will remain an important feature, protected by the surrounding woodland. It is intended that future management will ensure that potential for biodiversity is maximised.

In the southeast corner of the site, an ancient hedgerow, believed to date back to around 1840, bordered Clifton Lane until January 2013. This was beyond the Campus boundary and NTU were not responsible for its maintenance. Due to the A453 widening works that begun in January 2013 the hedgerow has now been removed. Compensation planting as part of this road widening scheme has been incorporated into the design and successfully planted in March 2014.

A group of 10 Turkey Oak trees (*Quercus cerris*), each over 20 metres in height, are located along the perimeter of the cricket pitch, on the northern corner of the site. As with all trees on the Campus, these are regularly surveyed by external consultants and maintained accordingly. They are also protected under a Tree Preservation Order (TPO) due to their prominence and contribution to the landscape both for their historical and ecological value. It is believed that these ancient trees represent the 10 fallen Clifton soldiers who fought and died at Waterloo with General Sir Arthur Clifton.





Section 7: Community Involvement

7.0 COMMUNITY INVOLVEMENT

Community Events

NTU actively views Clifton Campus as an asset to the community, be it students and staff, local school children, local sports teams, members of the public or other community groups with a range of events throughout the year formally inviting the public to the campus, alongside the on-going access to the Clifton Nature Trail.

The Centre for Student and Community Engagement (CenSCE) Teams host school pupils and families across all campuses every year. They have engaged 15,995 young people (aged 7-18) from disadvantaged backgrounds as part of NTU outreach interventions. The Sustainable Development Team work with CenSCE and with local schools for partnership events which have historically included bulb planting, tree planting and applying woodchip to the nature trail path.

The Sustainable Development Team also manages the Foodshare Allotment on campus and the school and community groups that take part in activity sessions there. In 2017, a large group of children and teenagers from Spiral bereavement group attended the allotment and took part in garden craft activities and harvested fruit and vegetables with a professional gardener. During the summer of 2018 whilst students are not on campus, the allotment was supported by volunteers from Nottingham's Women's Institute as well as groups of local Clifton residents.



Local Clifton residents visiting the campus allotment during summer 2018

At the allotment site is the Outdoor Classroom – a circular structure of pergolas and log benches with a wooden throne-like chair, surrounded by a wildflower bank and fruit trees. The classroom was built in 2017 after securing £8000 funding from Tesco's Bags of Help scheme. The space is available for anyone to use as a social or teaching space and has been used during children's activity sessions for local schools and community groups.



Outdoor classroom with features for teaching and wildlife

'Open Dome' events are held regularly at the Observatory, managed by the School of Science and Technology. These events are publicised locally in Clifton Village as well as on the NTU staff and student website, 'What's On' emails and Facebook pages. These events are open to the public, as well as staff and students. They comprise a tour of the Optical Observatory, which houses a 20-inch telescope, a solar scope and a range of smaller telescopes, as well as providing opportunities to explore the wonders of the sky. Each Open Dome Event includes a talk, focusing on interesting, recent and sometimes surprising topics relating to astronomy. Members of the audience also have time to talk to scientists about astronomy and ask questions.

NTU has achieved excellent scores through the Considerate Constructors scheme for all new builds in the past few years. The scheme has helped us to build safely, sustainably and in a way that involves local people in the process. Work on the changing room facility invited primary school students onto site to work on new raised beds.

The University often arranges one-day seminars on subjects relating to the subjects taught at Clifton Campus. These are open to professionals and the public, with the purpose of making training available to a wider audience.

Open Days offer another opportunity to all sections of the community, giving people with an interest in higher education a chance to view and use the facilities. A full programme of site wide open days is advertised widely, with temporary signage provided on roads to ease access.

Tree Planting Events

NTU's Sustainable Development Team and Landscape Services Manager are keen to create as many opportunities as possible for staff, students and members of the local community to help enhance the environment of the campus for all to enjoy.

During 2012–2014 groups from Glapton Primary School and the student conservation society volunteered extensively to create habitats and planted areas around the campus. In addition, a group of NTU student volunteers came along to help plant the native tree species as part of NTU's Student Volunteer week.



Glapton Primary School planting event at NTU

Community Access

Nine information boards have been installed around the perimeter of the Nature Trail. These contain information concerning the natural points of interest, contact numbers, a QR code to NTU's Sustainability webpages and a brief Code of Conduct notice. The boards were installed with the help of staff and Student Union volunteers.

In 2014, the NTU's Student Health Team developed a Mindfulness Walk at Clifton that takes in the majority of the nature walk. More information on the walks and wellbeing by contacting the Chaplain.

Room Hire

Several Campus buildings offer rooms for various functions, such as seminars and conferences. On-site catering can deliver hospitality for a range of events.

Sports Facilities

Clifton Campus is home to a large complex of sporting facilities. Close to Peverell Halls of Residence is a cricket pitch and pavilion, a sand-based hockey pitch, a state-of-the-art 3G pitch and an indoor tennis centre. Our outdoor facilities also boast five grass pitches, which are used for a wide variety of sports, including football, rugby union, lacrosse and American football. Amongst these pitches stands the Lee Westwood Sports Centre, which plays host to a multi-station fitness suite, dance studio, squash courts, sports halls and a high-performance gym.

Although largely for student use, NTU is proud to host local sports teams including Notts County Football Club and Nottingham Rugby. All facilities are open to use by not only students but the public, staff and alumni.

The cricket pitch and pavilion are shared between NTU and Clifton Cricket Club. The historic shared agreement between Colonel Clifton and the Clifton Cricket Club gives the club use of the cricket pitch. Clifton Cricket Club is also involved with local schools, helping to coach children.



The start of the annual NTU charity run

Each year NTU's John van Geest Cancer Research Centre holds its annual 5km run and 1.5km fun run around Clifton campus. Last year the event attracted 200 participants, made up of students, staff, and the general public to raise over £4,000 for the Research Centre. The 5km route leads runners around the nature trail on campus, as well as a small excursion through the Clifton Grove area.

Since its opening in 2010 by Ryder Cup winner Lee Westwood, the Lee Westwood Sports Centre has opened its doors to accommodate for more than the average gym user. With the addition of superb outdoor facilities, NTU Sport now sees its partnership clubs making use of our fantastic rooms and equipment. The high-performance gym contains specialist equipment to suit athletes from an elite sporting background, making it a regular spot for teams such as Championship side Nottingham Rugby's training sessions. This also heightens the appeal to NTU from high-level sporting students looking for a University that can accommodate to their needs.

By opening its doors to the local community and external clubs, NTU is established in the local area as a hot spot for sport. Alongside regular student fixtures, teams such as Roller Derby and Powerchair football often book space in the Campus's facilities.

With growing demand from external and internal clubs and users, NTU Sport is constantly striving to keep ahead of the game with its facilities and presence in order to accommodate for not only the increasing standard of sport within the students but also for the rising level of participation in the community and local area.

Foodshare Allotment

The campus allotment was established in the 2014/15 academic year, NTU's Foodshare project is in the gardens of Peverell Hall. A joint venture between NTU, UPP Ltd, NTSU and Nourish Associates, the project is designed to teach NTU students and staff about growing their own food in an environmentally friendly manner.

Volunteering sessions run every Wednesday afternoon during term-time and are led by an organic food specialist.



Allotment volunteers harvest organic produce weekly

The pilot project began in October 2014 and in just 10 weeks the site was transformed into a fully functional allotment with raised beds and a poly-tunnel. Each year more beds are added as the project attracts more volunteers.

Staff and student volunteers can taste the produce as they harvest with the weekly crop donated to local community kitchens in Nottingham. This has included Crocus café, Emmanuel House, The Friary, Sherwood and Clifton community centres. Since the allotment's beginnings in 2014, more than 35 different types of food have been grown on site, including melons, grapes, sweet potato, physalis and much more. During the academic year 2018/19, more than 139 kilograms of pesticide free produce was grown on site and donated to local charities

Other activities particularly during the colder months are enjoyed by the volunteers, including wreath making at Christmas, carving pumpkins grown onsite and cooking with the produce, such as tomato chutney and pumpkin pancakes.

Educational Activities

The balancing ponds act as a site for an annual research project offered to Bioscience students researching the forensic breakdown of materials in submerged waters and newt trapping techniques in the spring.

The Clifton Campus is also used as a teaching and learning resource by many courses in the Nottingham Institute of Education, for students who are studying to work with children in schools and wider services. Adopting the Forest School approach to outdoor learning for children, students explore the active child-led possibilities offered by the outdoor environment. Teaching and learning principally takes place in the woodland areas which border the Campus on the east side, and with occasional use of other areas which all offer a variety of habitats and landscapes to explore. All students who engage in these outdoor sessions can submit a portfolio which is externally assessed and accredited at either Level 1 or 2 by AIM Awards, giving students an additional qualification on graduation.



Forest school teaching session with undergraduate students



Section 8: Marketing

8.0 MARKETING AND COMMUNICATION

Marketing and Promotion

Increasing efforts are being made to make the local community aware of the facilities at Clifton Campus, which are available for the local community to use and enjoy. The NTU 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.

The new carpet bedding scheme mentioned above is a creative new opportunity to increase the profile of NTU to those passing the campus.

Communication Channels

Internal communications within NTU include the 'What's On' e-bulletin which is sent on a weekly basis to all members of staff with forthcoming events within the university. In addition, a monthly newsletter is emailed to all staff and students providing 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 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 Sustainable Development 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. The team have their own social media accounts and there are many other accounts for different areas of NTU who can help spread the word for news or events.

The NTU's Sustainable Development Team's Twitter account has over 2,375 followers with tweets communicating to a variety of students and staff. The account is used on a daily basis to keep followers up to date with all the activities the team are involved in from tree planting to markets, as well as retweeting important environmental news pieces.

Due to high student demand, Facebook and Instagram pages for the Sustainable Development Team were launched in winter 2016/17. As of January 2020, the Facebook page has over 800 likes and over 900 followers and the Instagram account has almost 1000 followers.

NTU Landscape Services twitter account has over 853 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.

Educational and Interpretational Information

The Nature Trail around campus includes educational signs for walkers.

NTU's Sustainability webpages have a dedicated page on Clifton Campus which 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.

Educational experiences on campus such as allotment sessions can be accessed by local schools via CenSCE the team.



Section 9: Management

9 MANAGEMENT

Management Structure

Clifton Campus is managed by the Landscape Services Team who are part of the Estates Department. As part of this management, NTU's Sustainable Development Team helps ensure that up to date information of best practice on environmental issues is disseminated throughout the University.

The Director of Estates is supported by the University Executive Team in the management and implementation of the University's environmental policy.

The Landscape Services Team meet regularly with academics to give regular updates and ensure continuity between Landscape Services and teaching projects.

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

This LMP is reviewed annually by the Sustainable Development Team and the Landscapes Services Manager.

Project Funding

Currently, NTU is involved in major redevelopment across its Campuses. Working capital for site work is used to deliver these projects. With each new building project, the University has sought to deliver new associated landscape areas at Clifton which are now supported by the Landscape Strategy.

The Landscape Services Team have an annual budget for all three campuses of around £400k. A breakdown of the spend on larger projects is provided in the Implementation Plan in **Appendix B**.

The University committed in excess of £1million towards wider landscaping works to enhance biodiversity as part of the Heart of Campus development which took place in 2015-16.

Management Priorities

The current short-term aims for Clifton Campus are:

- Continue carpet bedding scheme and wildflower meadow creation as a result of the Clubhouse development – Spring 2020
- Create a new landscaped area at the Central Approach onto campus, to include a forest garden, meadow and bioswales – a design for this area was completed in November 2018 and awaits financial support and final sign off.
- Providing surfaced footpaths along 'desire lines' – on-going
- Providing cycle paths around the campus – on-going
- Maintaining and improving cycle storage – on-going with the most recent cycle compound being constructed in December 2019.

- Further development of links with local community groups, such as Clifton Village Residents Association and local schools – the most recent link being that with the Nottingham Clean Champion.

The long-term aims are:

- Increased useable open space for staff, students and visitors as part of the 'Heart of Campus' redevelopment – completed, there are plans in place for more green space
- Increased creation of insect, bird, bats, small mammal habitats across the estate as part of the new campus development – ongoing.



Bulb planting scheme on campus

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/rugby):

- 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. We have a working partnership with Clifton Village CC to ensure their fixtures are fulfilled during the summer months.

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 Arboriculture 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 in to 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 as well as MEWP trained.

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 trimmers 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 – IMPLEMENTATION PLAN

	Action	Target	Budget	Timescale	Owner	Status
Clifton Campus	Develop biodiverse and social area at the Central Approach	Create a more welcoming approach at the central entrance with seating, trees and garden area to improve student experience while providing valuable habitat.	TBC	2019- 2020	Sarah Robertson	Currently awaiting senior management approval and confirmation of budget.
	Develop student allotment	Continue to develop a student allotment first installed Autumn 2014 with the aim of increasing levels of engagement and the amount of organic fresh food produced.	£3k	2014- present	Sustainable Development Team	Professional gardener and volunteers maintain the allotment weekly.
	Continue path laying activity	To provide a good substrate for the nature trail, as mentioned in previous Green Flag feedback.	~£12k	2020/21	Alan Horgan	First 300m laid in summer 2014. Aspirations to complete the trail.
	General maintenance regimes.	To maintain and improve where possible the Clifton campus for staff, students and wildlife.	Landscape Services annual budget circa £398k	Ongoing	Alan Horgan	Ongoing, routine. Example attached in appendix A.
	Develop Clifton Campus to provide more teaching facilities	Expand the built environment on campus whilst enriching the biodiversity through green infrastructure.	TBC	2019- 2020	Sarah Robertson	Ongoing, see appendix C for development mapped.
	Finalise a Clifton Landscape Strategy	to provide guidance for future campus development		2018	Sarah Robertson	Completed 2018

APPENDIX C – CLIFTON CAMPUS MASTERPLAN

