















Nottingham Trent University City site

Landscape Management Plan February 2014

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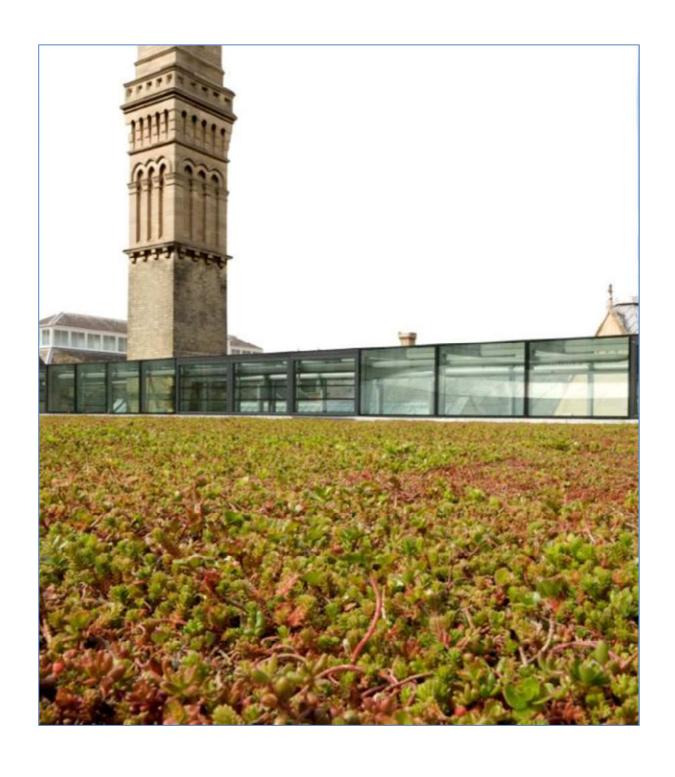
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Section 1 – Introduction & Background

1.0 INTRODUCTION AND BACKGROUND

Location

- 1.1 NTU's City Site is located in the heart of Nottingham city centre with 30 buildings surrounded by 5.1 hectares of open space.
- 1.2 As the buildings are spread out across an area of Nottingham city centre it is classed as a site rather than a campus.



Figure 1 - Plan of city site

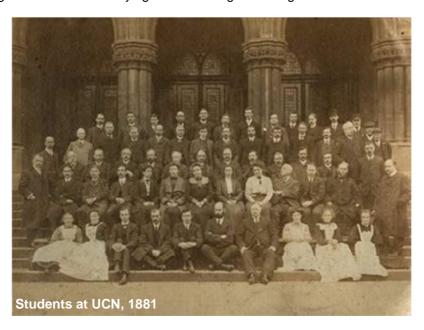
- 1.3 The NTU city site provides a key transition from open green spaces at the city's edge to the vibrant city centre. The western boundary of the site, including the Waverley building and Terrace Royal, falls within the Arboretum conservation area and borders Nottingham General Cemetery; whilst at the south eastern corner of the site the Newton building directly overlooks Nottingham's pre-eminent shopping and entertainment venues. The approach to Landscape Management must therefore echo this transition, with the manicured lawns, sedum roof and open courtyards of Newton-Arkwright giving way to more intimate and informal green spaces towards the west of the site.
- 1.4 The site is well connected for students, staff and the public alike. Trams and buses connect the site directly with Nottingham centre, the train station, other NTU campuses and outlying areas. East Midlands Airport can also be accessed by public transport in less than 1 hour.

Current Use

- 1.5 The city site is home to a range of the University's academic departments, including the School of Art and Design, Nottingham Law School, Nottingham Business School, the School of Social Sciences, The Centre for Broadcast Journalism and the School of Architecture, Design and the Built Environment.
- 1.6 The Nottingham Trent Students Union is also based at the site, in the redeveloped Byron building, which was completed in September 2013. Alongside NTSU offices, Byron provides a social hub for students on site, containing accommodation, gym, sports hall, café, bar and rooftop garden.
- 1.7 The University administration departments are also based on the site, including the Estates and Resources Department, Finance, the Academic Registry, IS Computer services and the Directorate.
- 1.8 As a key component of Nottingham City Centre, the city site provides a thoroughfare for the public, with the city's first tram line passing directly along Goldsmith Street.

History

- 1.9 The historic site, situated in Nottingham's Royal Quarter, contains five Grade II listed buildings.
- 1.10 The history of NTU began in 1843 when the Nottingham Government School of design was opened. In 1881 University College Nottingham (UCN) was established on Shakespeare Street later becoming NTU's Arkwright Building. In 1903 poet DH Lawrence received his teaching certificate after studying in the Arkwright building.



1.11 In 1945 Nottingham and District Technical College was designated. In 1966 Nottingham College of Art and Design was linked with the Regional College and in 1970 Trent polytechnic was granted polytechnic status with the official name, Trent Polytechnic taking place in 1988.

- 1.12 It was in 1992 that the Polytechnic was awarded its University charter, becoming Nottingham Trent University, with Professor Ray Cowell appointed as the first Vice-Chancellor. In 2004 a project to transform the learning facilities across the University's three sites began at a total cost of £130 million.
- 1.13 Since that time the university has made strong progress, providing a wide range of courses at the city site, as well as a high quality teaching and learning environment. The university has been particularly commended for its graduate employability achievements, with 94% of graduates from full-time courses engaged in employment or further study six months after leaving (HESA survey 2010/11).
- 1.14 Sir Michael Parkinson, internationally renowned television presenter, has been the University's Chancellor since 2008.
- 1.15 The School of Art and Design, the first educational institution established on the site in 1843, is currently celebrating 170 years of teaching.

The Site Now

- 1.16 Open spaces are a key component of the site, with 5 hectares around and between buildings containing a variety of spaces and courtyards that provide a pleasant environment for staff, students and the public to enjoy.
- 1.17 The Grade II listed Waverley building, at the westernmost point of the site, lies within the arboretum conservation area, and is managed to contribute to an attractive and welcoming site. The landscapes here consist of ornamental lawns and trees as well as bedding to provide seasonal interest. New picnic benches have also been provided to provide a rest space for staff, students and the public.



1.18 The recently completed Byron building, which houses the students union, sports centre and accommodation also hosts an attractive roof garden complete with seating areas, trees and raised beds, planted with a range of attractive perennials. It is planned that the environment team and Landscape Services, in conjunction with volunteers, will continue to improve the space for people and wildlife in the future.



- 1.19 The pedestrianisation of Shakespeare Street is set to connect the Waverley, Byron and Dryden buildings with an open, welcoming and nature friendly walkway. The final design is to be confirmed, however one of the proposals includes the creation of a Woonerf to restrict vehicle movement and provide opportunity to increase green space on the site and within Nottingham city centre for all to enjoy.
- 1.20 The Dryden building, home to the University Directorate and central support services, is surrounded by lawns and houses a central courtyard designed as a tranquil "garden of reflection". A 150m² bank surrounding the building is unmown in order to promote biodiversity and will be sown with wildflower seeds to attract pollinating insects in the summer months. The grounds of the Dryden building, including a new green corridor for autumn 2014 are under development as part of the adjacent 50 Shakespeare Street development. This restoration work to the former City Council Registrar's office will provide an opportunity to increase the quality of and access to green space.
- 1.21 The historical Grade II* listed Arkwright building, former home to People's College Nottingham and college to DH Lawrence, has been refurbished in recent years. Works enhanced the surrounding green space and provided an open and welcoming interior courtyard, both of which host community and university events. The interior of the building was also restored in accordance with its historical significance.



- 1.22 The Newton building, also Grade II* refurbished alongside the Arkwright building, now boasts an open public frontage comprising of Newton square and steps. This provides a welcoming, relaxed and safe environment for all users of the busy Goldsmith Street. The building itself plays host to a large sedum roof of approximately 3000m², a bee hive and a natural nesting site for two Peregrine Falcons that have captured public imagination.
- 1.23 Newton and Arkwright, once separate, are now linked to form a stunning glazed centre court 'the Link' with a walk around balcony. The buildings are used for teaching space, lecture theatres, cafes, offices and social learning space. Sustainability was at the forefront of the refurbishment design incorporating natural light, solar glazing, insulation, intelligent lighting, the sedum roof and much more. Sir David Attenborough officially opened the building in May 2011. On several occasions NTU's Environment Team have been approached to give tours of the building for groups such as E-On and the Civic Society which have been well received with positive feedback from all events and influencing building design within the city
- 1.24 The Newton Arkwright redevelopment won a range of Architectural awards, including a Civic Trust award for contribution to the local environment and a RIBA award.

- 1.25 The Chaucer building is one of NTU's largest buildings. Currently undergoing refurbishment, immediate plans include two newly developed, green courtyards. Plans are due for completion in summer 2014, with the courtyards expected to be completed by the end of the year. The Chaucer building also hosts the Centre for Broadcast Journalism, which is fronted on Goldsmith Street by ornamental lawn, trees and shrubbery. Further trees are located along the length of the Chaucer building, softening the building frontage.
- 1.26 The south-western section of the site covers the Grade II listed Terrace Royal, along with University owned Trent House, Hollymount House, DICe and the Taylor building. These buildings host staff offices and teaching areas, and are connected by a series of gardens and green walkways. This area of the site is characterised by informal landscaping, with a wide range of hedgerows and shrubbery providing a relaxed and secluded feel whilst encouraging biodiversity. Clarendon Street falls within the arboretum conservation area, and trees here are managed accordingly.
- 1.27 Inside the buildings across the site particular attention is paid to the supply and maintenance of internal planters in open forum and reception areas.



Recent and Proposed Development

1.28 NTU is investing significantly into its City site, as with Clifton Campus and Brackenhurst. Due to the city centre location, expansion of the site is limited. Investment has focussed on the refurbishment of many of the buildings on site, aiming to incorporate excellent sustainability features and outdoor spaces in each project. The largest projects have been the refurbishment of the Grade II* listed buildings Newton and Arkwright and the rebuilding of the Students Union.

- 1.29 The 2013 Byron development has created a landmark building on Shakespeare Street. Byron provides 5,000 meters of social, leisure and wellbeing facilities including a sports hall, roof garden, shops and bars plus student accommodation. As with all NTU developments the design incorporates sustainable features and a BREEAM accreditation of Very Good to Excellent is anticipated.
- 1.30 The most recent project taking place on the city site is the refurbishment of the Grade II listed Nottingham Registry office on Shakespeare St. The building is being restored to highlight its architectural value and to convert to a new office and meeting space.
- 1.31 Part of the Byron development, the proposed pedestrianisation of Shakespeare Street is projected to be completed during 2014. The final design is to be confirmed; however project managers have been inspired by open and natural Dutch Woonerfs. The project will limit vehicle movement and provide a relaxed, tree-lined green space for all to enjoy.
- 1.32 A proposal has been drafted for the installation of a new green roof for the Maudslay building, adjacent to the large sedum roof on Newton. A mixed substrate is proposed, comprising of sedum, wildflowers and potentially rubble to provide a diverse habitat. Options ranging from 300m² 2000m² are currently being considered.

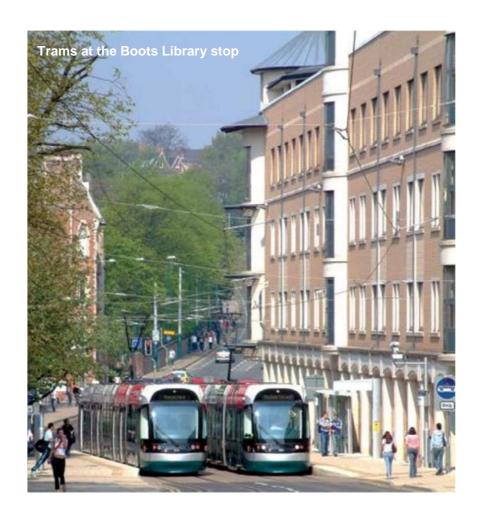


Section 2: A Welcoming Place

2.0 A WELCOMING PLACE

Opportunities for access

- 2.1 As well as hosting over 16,000 students and 3,000 members of staff, the city site is used for community benefit throughout the year.
- 2.2 In addition to access being provided to the majority of the site's open spaces, an extensive programme of events occurs each year to ensure that members of the public are able make the most of the facilities on offer.
- 2.3 The majority of these are managed by the Schools Colleges and Community Outreach team, who recorded over 4,500 members of the public attending events hosted at the city site during 2012/13. This is in addition to a range of open days, sporting events and other outreach activities outlined in more detail in Section 8.
- 2.4 The site is also a key leg of many commuter journeys in Nottingham, with the city's first tram line passing directly through the site. The line links the park-and-ride facilities at the Forest Recreation Ground with the city centre and train station. The Waverley garden and new square developed outside the Byron building marks the trams entrance to the site, passing a large bed of shrubs and trees, with the tram leaving the site past the impressive Newton square, a large open forecourt to the newly refurbished Newton building. In between, a stop at the Boots library enables the students, staff and the public to access the site conveniently.



Physical access

- 2.5 Due to Nottingham's central location in the heart of England the site is readily accessible by car, bus, train, tram (with its own tram stop), cycling and walking.
- 2.6 Without the fenced boundaries of a campus, the site is accessed from all sides, with direct connections to the city centre via Goldsmith and Shakespeare Street, the Arboretum residential area via Dryden and Peel Streets, and the Forest Recreation Ground via Waverley Street.
- 2.7 Clear signage around the buildings and grounds are provided by information boards. These boards contain maps and directions to key city centre attractions, along with information about nearby facilities.



- 2.8 The City site is serviced by the award winning Go2Uni4 (formally known as Unilink) bus service every 7 minutes during peak times, Monday to Fridays during term time. Accessible to students, staff and the public, the route passes through the city centre and Nottingham train station on its way to Clifton campus. The Victoria Centre bus station, terminus for many routes that traverse Nottingham, is also within 10 minutes' walk of the site.
- 2.9 Over 200 cycle stands are located around the site. Many of these are housed in restricted access shelters with swipe card access and CCTV. As part of sustainable transport plans, cycle facilities at the site have recently been upgraded, providing locker and shower facilities, more covered and restricted access cycle parking, together with a dedicated bike repair workshop that hosts regular free and low cost bike maintenance sessions.

Access for all

- 2.10 The Ucycle bike hire scheme operates from all three sites, allowing staff and students to travel between and around the Campuses and accommodation by bike. The scheme is heavily subsidised, costing staff and students £35/year. The University are continuously working with local partners to improve and promote alternative modes of transport to the private car. In addition NTU has worked closely with Nottingham City Council to ensure improvements to cycle paths and facilities within Nottingham City Centre.
- 2.11 As mentioned above, the tram line running directly through site provides access for travellers between the Park and Ride facilities on the outskirts of the city through to Nottingham train station.
- 2.12 The City site is service by the Go2Uni4 bus service every 7-10 minutes Monday to Fridays during term time running through to 3.30am.



2.13 Access across the site complies with BS 8300, design of buildings, and its approach 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 site have been made accessible to wheelchairs and pushchairs. When any new development is carried out consideration is given to DDA.



Section 3: Safety, Security, Health & Well-being

3.0 SAFETY, SECURITY, HEALTH AND WELL BEING

Personal Safety and Security

- 3.1 Security at the city site is 24 hours a day, seven days a week, providing surveillance and helping to give peace of mind to all site users. The site 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 site.
- 3.2 The 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.
- 3.3 Streetlights provide appropriate levels of lighting along roads and paths. 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.
- 3.4 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.

Safe Facilities and Equipment

- 3.5 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 and Resources 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 online Badger system. Issues are then prioritised by maintenance and carried out as quickly as possible. The public may report issues to receptions.
- 3.6 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.
- 3.7 All tree stock is surveyed by external consultants FPCR Environment and Design Ltd every three years with advice given on their condition. This identifies any trees which are dead, dying or dangerous. Trees are then maintained accordingly. The next survey is due during 2014.
- 3.8 The Landscape Services Co-ordinator 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.

Health and Safety

3.9 The Landscape Services Co-ordinator 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.
- 3.10 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.
- 3.11 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, 7 days a week. Staff are provided with details of risk assessments and information leaflets relevant to any risks relevant to their job.

Accident and incident reporting

- 3.12 The City site has a Security Team who are available 24 hours a day, seven days a week all year round. Their contact number is 0115 8482468 and this is available in all site receptions.
- 3.13 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.



Section 4: Cleanliness

4.0 CLEANLINESS

Litter and waste management

- 4.1 The appearance of the site 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.
- 4.2 To encourage site users to keep the site litter-free, litter bins and recycling banks are provided extensively throughout the site, internally and externally. To help promote recycling on the site, the University have recently replaced all external litter bins with recycling bins. These new bins segregate paper/card, plastic bottles/ cans and general waste. NTU's overall recycling rate for all waste currently stands at >90%.
- 4.3 NTU has a fully integrated Environmental Management System (EMS) further details of which can be found in **Section 6**. NTU issues guidance on 'What to do with your waste' via EcoWeb as well as posters and labelling of bins, encouraging the use of the recycling banks. In addition the Environment Team work with project managers and minor works to donate unwanted office furniture to charity, with over 400 items of furniture donated in the academic year 2013/14 to date.
- 4.4 Due to its city centre location and open access to staff, students and members of the public the appearance of the site is of paramount importance. NTU's Facility Team work closely with Nottingham City Council (NCC) and Nottingham Express Transit (NET) to ensure footpaths are litter free and street bins are emptied on a regular basis. The University Maintenance team conduct site wide litter sweeps every morning Monday-Friday prior to the beginning of the working day.



Section 5: Maintenance

5.0 MAINTENANCE

- 5.1 The Landscape Services Team is responsible for the upkeep of the grounds, helping to enhance the outward appearance of the site. 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, such as replanting of areas.
- 5.2 The University recognises the importance of maintaining the grounds to a high standard, as this influences people's perception of the site, including potential future students.

Tree management

5.3 An assessment of tree condition has been undertaken for the entire site, by external consultants FPCR Environment and Design Ltd. The site is surveyed every three years and the assessment updated accordingly. 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 which 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.

Building Maintenance

- 5.4 Buildings on the site 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.
- 5.5 All buildings are maintained to a high standard by the Estates and Resources Department, with particular attention paid to work involving listed buildings on the site. 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).
- 5.7 The NTU fleet of vehicles are managed by the Estates and Resources Department, 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.



Section 6: Environmental Sustainability

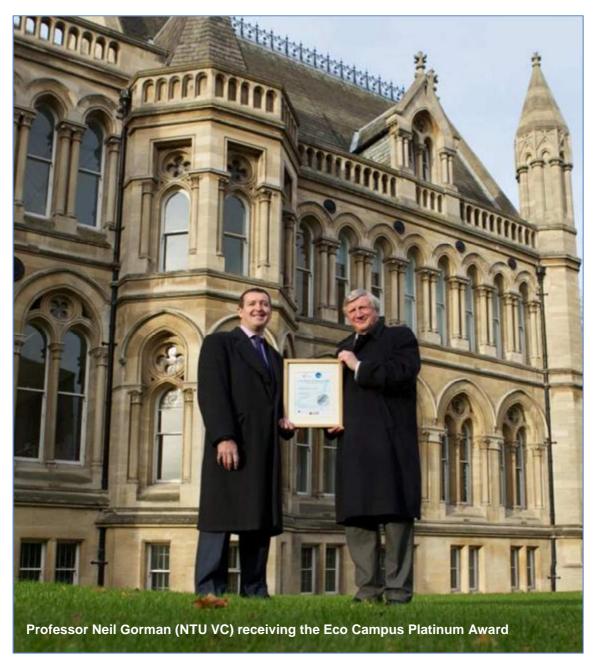
6.0 ENVIRONMENTAL SUSTAINABILITY

Environmental Strategy

- 6.1 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 Environment Team's website, EcoWeb.
- 6.2 All new members of staff receive an Environmental Induction as part of the compulsory Health and Safety induction.
- In September 2012 the Environment Society was formed, with over forty student members the society has already been actively involved in environmental events including Green Week and NTU's Big Switch off, r whilst also supporting NTU's Environment Team. This society has been largely superseded by the Eco Reps programme during 2013, with over forty students registered to receive invitations from the Environment Team to attend volunteering opportunities throughout the year.
- 6.4 NTU has been named as one of the most environmentally friendly and ethical Universities in the UK in the People & Planet Green League for five consecutive years, each time receiving the top rating "1st Class Honours".
- 6.5 The University has a number of policies (listed below) relevant to environmental sustainability. These are reviewed annually by senior management. All of which are available on EcoWeb.
 - Environmental Policy;
 - Biodiversity Policy;
 - · Transport Plan;
 - · Sustainable Food Policy; and
 - Sustainable Construction and Refurbishment Policy.
- 6.6 The University has committed to:
 - Reduce carbon emissions by 48% from 2005 baseline by 2020/21.
- 6.7 Elements that are included in the calculation of NTU's carbon footprint include:
 - Energy use in buildings (gas, electricity, district heating consumption);
 - NTU fleet vehicle use emissions associated with current vehicle fleet:
 - The Go2Uni4 bus service for staff and students operating between City Site and Clifton Campus the emissions associated with the use of this inter campus bus service.
 - Waste management and recycling aiming to reduce emissions associated with waste disposed of by increasing recycling.

Eco Campus & ISO14001

- 6.8 EcoCampus is an Environmental Management System (EMS) and award scheme that has been specifically designed for universities. It aims to assist institutions in moving towards environmental sustainability through good operational and management practices.
- 6.9 NTU has completed and been re-accredited for the final Platinum stage. The University is one of only seven higher education institutions in the UK to receive the Platinum Award and is the largest University to date to achieve Platinum.



6.10 The EcoCampus scheme enables universities to identify, evaluate, manage and improve their environmental performance and practices, while benchmarking environmental improvement.

6.11 In addition to achieving the EcoCampus Platinum Award NTU have successfully implemented and retained the internationally recognised EMS ISO14001 since November 2012.

Recycling and Waste Management

- 6.12 External recycling stations have recently been installed on the site to encourage the recycling of waste. The University currently recycles >90% of the waste generated, with aims to increase this. Food waste from catering kitchens is collected and anaerobically digested externally to generate power.
- 6.13 At the end of every academic year NTU's Environment Team runs a campaign called 'NTU's Big Clear Out', claiming unwanted reusable items from students moving out of their first year halls of residence. Kitchenware, textiles (clothes/bedding etc.), shoes, bric-a-brac, dried/tinned food and electrical items are collected and donated to local charities. To date over 18 tonnes of unwanted but reusable items have been distributed between the student body and charities in Nottinghamshire.
- There are also four British Heart Foundation (BHF) donation banks within the Arboretum, an area of Nottingham adjacent to the site with a dense population of NTU students. These banks are used throughout the year providing an invaluable service for students at the end of the Academic year to recycle their unwanted items rather than throw them away. In the last two years these banks have collected over 8 tonnes of unwanted but reusable items for local BHF shops. In 2014 the scheme is extending by a further 10 donation banks to be installed at all UPP managed halls of residences for NTU students.



Sustainable Transport

The Go2Uni4

During term-time, the award winning NTU Go2Uni4 runs between the City site and Clifton Campus every 7 (peak times)-10 minutes. This service also runs through the night until 3.30am. This service links the two sites to the city centre and train station, and is subsidised by NTU and Nottingham City Transport (NCT). Outside of term time a wide range of bus routes pass within a 5 minute walk of the site.

Cycling

- 6.16 The University runs the U-cycle 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 students and staff.
- 6.17 Men's and women's bikes are available in different sizes and can be hired for the whole academic year for just £35 (plus a £60 refundable deposit). Bikes are available to hire between October and June. 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).
- 6.18 EcoWeb provides 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 site.
- 6.19 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 scheme.

Electric Vehicles

6.20 The Maintenance department have recently taken delivery of a new electric vehicle to help carry out on-site maintenance. Two charging points for electric vehicles have now been provided in the DICe car park. Electric vehicles are being considered by more university departments as current vehicles reach the end of their life span.

Car Sharing

6.21 A new NTU lift-share scheme has been launched in 2013, providing staff and students with a facility to co-ordinate sharing cars to and from work. The launch of the scheme took place during Green Week in the early part of November 2013.

Solar Photovoltaic Panels (PV)

6.22 The Chaucer building has solar PV panels on its roof which generate 50kWh of electricity for use within the building.



Carbon Elephant

- 6.23 Carbon Elephant is an NTU initiative which aims to encourage staff and students to become involved in the University's plans to reduce its carbon emissions.
- The Green Impact scheme, now in its fourth year, challenges university departments to implement a number of easy practical actions to help the environment. The scheme is about empowering individuals to reduce their environmental impact by encouraging, rewarding and celebrating practical environmental improvements. Each department that signs up can work towards a Bronze, Silver or Gold award that is presented by the VC in the summer. During the scheme, NTU students Eco Reps have the opportunity to become a volunteer 'Green Impact Auditors' checking that what departments say they do is actually what they do. They are given a half day Institute of Environmental Management and Assessment (IEMA) accredited training course prior to visiting departments. This provides an excellent opportunity for students to become involved and learn key skills to add to their university experience.
- In October 2012 the Carbon Challenge for NTU departments across the estate was launched with over 70 carbon champions signing up to help their department to start saving energy and top the monthly league table. The energy savings made each month are recorded and the equivalent monetary value was added up over the year. Departments were given their total savings for the year in a lump sum to use on any environmental projects for the department. The best performing departments received in excess of £10,000, enabling them to undertake

sustainability related projects, such as the Chaucer courtyards at the city site, which will be funded by the Estates and Resources department Carbon Challenge reward.

6.26 In 2013 the staff Eco-champions group has been re-launched, comprising of over 100 nominated individuals from a variety of schools. A new student Eco-reps group has also been established, with over 40 students recruited during Welcome Week and Green Week events and online. Both groups have received induction meetings and have so far assisted with sustainability projects across the campuses, such as Green Impact and the Carbon Challenge, with many more activities planned throughout the year.



A 'Carbon Elephant' painted by students during Green Week, 2013

Fairtrade

- 6.27 NTU has been awarded Fairtrade University status for the last 5 years. Fairtrade products are available in all NTU shops and catering outlets and used in all meetings hosted by the University and the Students' Union.
- 6.28 The Fairtrade Steering Group demonstrates a strong commitment to increasing Fairtrade consumption on all three Campuses, as written into the NTU Fairtrade Policy, a copy of which is available on EcoWeb.

Biodiversity

- 6.29 The City site provides a number of opportunities for biodiversity within a city centre location including the large sedum roof on the Newton building and the gardens of Waverley, Dryden, Chaucer, Arkwright, Byron and Hollymount.
- 6.30 A proposal has been drafted for the installation of a new green roof for the Maudslay building, adjacent to the large sedum roof currently in place on Newton. A mixed substrate is proposed, comprising of sedum, wildflowers and potentially rubble to provide a diverse habitat. Options ranging from 300m² 2000m² are currently being considered.
- 6.31 In 2012 a colony of bees and a bee hive were introduced to the sedum roof of the Newton building to encourage biodiversity within the city. The bees are checked and monitored on a monthly basis during the summer months. Before going dormant for the 2013/14 winter, there were encouraging signs of bridging taking place within the hive, with the bees extending the pre provided combs. This is considered a sign of health, and we are hopeful to see some excess honey production in the 2014 season with the ultimate idea being to use this honey within the city kitchens or to offer to staff and students to buy
- 6.32 These new residents join the famous Peregrine Falcons that have naturally used the shelf of the 9th floor of the Newton building for the last 11 years to breed and raise their chicks every year. Thanks to the launch of NTU's Falcon Cam available via EcoWeb there have been over half a million hits to the website and in 2012/13 the Falcon blog attracted hundreds of comments throughout the year.



- 6.33 After the success of Falcon Cam the bee hive on the Newton roof has a camera with live footage streaming from the entrance of the hive and inside of the hive. Both cameras provide a valuable awareness raising tool for staff, students and members of the public. In 2012/13 a project with the Wildlife Trust saw primary school children naming the falcons, with follow up classroom sessions delivered by the Wildlife Trust and the Environment Team.
- 6.34 The mature trees across the site do have some bird and bat boxes installed. The Libraries Team have decided to spend part of their Carbon Challenge reward (Section 6.25) on a set of bird boxes for the site, and a planning meeting has been scheduled with the Wildlife Trust to identify suitable locations. Similar projects will be pursued over the coming years to ensure increased provision of bird habitat on site.
- 6.35 During the summer of 2013 NTU's Environment Team took part in a pilot of a new Biodiversity Index developed at Northampton University. This Index involved surveying all leaf types on site as a proxy for assessing the biodiversity on site. A summary of the city site results can be seen in figure 2. The score of 138 is strong for the inner city; with suggestions for improvement including reviewed mowing regimes and incorporating wildflower into planting. Since the survey a large area of Dryden's grounds has ceased to be mown, whilst wildflowers have been incorporated into the proposal for a new green roof on the Maudslay building.

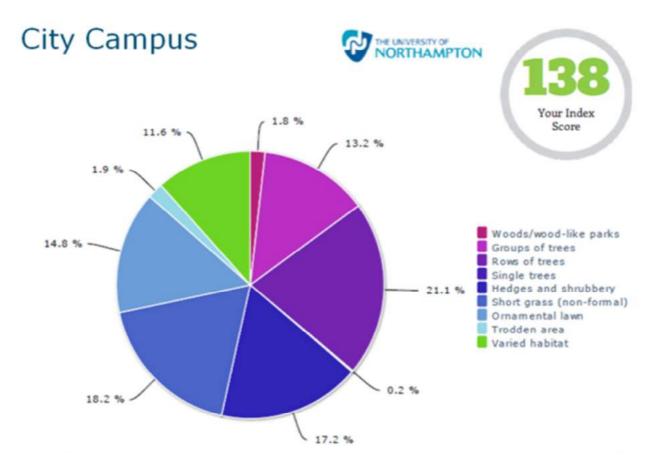


Figure 2 – City Site Biodiversity Index report

Pesticides and Herbicides

- 6.36 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.
- 6.37 Pesticides are kept and used in accordance within legislative guidance and where tasks dictate. 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.
- 6.38 Glyphosate is used to keep hard surfaces weed free. Herbicide is used for vegetation management in other areas. Where applied appropriately it represents little risk to the environment.
- 6.39 Landscape services rely only on minimal use of granular herbicides to control weed growth in some shrub borders. However, where practicable, hand weeding and mulching of such areas is preferred and supported by spot treatment for more persistent weeds. Where necessary herbicides are also used to control weeds along paved areas and building perimeters.

Planting Policy

- 6.40 Native species are largely used for planting and replacement of trees, woodland and hedgerows, to promote biodiversity through creation of appropriate wildlife habitats.
- 6.41 Most of the bedding is grown from plugs, supplied from a nursery supplier, which are then planted out. A new £100k glasshouse facility at Brackenhurst, as mentioned in the Implementation Plan (Appendix B), should provide capacity to support landscape schemes across all three campuses.
- 6.42 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. The planting of Union square at the front of the new Byron building was of a predominantly native origin and provides habitats for a range of wildlife.



Section 7: Conservation & Heritage

7.0 CONSERVATION AND HERITAGE

- 7.1 NTU's City site buildings range from Victorian gothic to modern contemporary fashion studios, with five Grade II listed buildings amongst the 30 that make up the site.
- 7.2 Amongst these, the Arkwright Building in the easternmost section of the site is steeped in educational history, starting life as the home of University College Nottingham (now the University of Nottingham) from 1881. A significant college for the whole region throughout the 20th Century, the building played its part in making higher education accessible to the masses, particularly during the educational boom that followed the First World War. With this principle at the heart of NTU's work today, it was vital that major refurbishments would enhance this heritage for a new generation of staff and students to enjoy.
- 7.3 Arkwright, together with the Newton building, were extensively re-imagined and restored to conserve their significance as historical educational buildings in the city centre. As outlined in Section 1, the restoration work focussed on creating a modern, light-filled connection between the two buildings whilst redeveloping both to become superb teaching and learning facilities.
- 7.4 At a total cost of approximately £100m, the project also paid close attention to the exterior spaces around the two buildings. At Newton a large sedum roof was created in addition to a sweeping open forecourt dubbed Newton Square. At Arkwright, ornamental lawns and beds surround the building, complementing its gothic architecture. On the interior, Benefactors Court was developed as a welcoming and open space, to be used for frequent events as well as informal socialising.
- 7.5 This approach, conserving heritage whilst developing state-of-the art teaching facilities, is one NTU aims to progress with each new build and refurbishment.
- 7.6 NTU have recently taken on the Grade II listed old registry office at 50 Shakespeare Street. Having most recently been used as offices, complete with suspended ceilings and striplighting, work is being undertaken to restore this new NTU property to its former grandeur, restoring the ceiling and the rest of the building in line with its historical significance. Once completed late 2014, the building will host the Directorate, along with board meetings and formal functions.

The most significant historical landscape feature of the site is the area the west, including the listed Terrace Royal and Waverley building. This section of the site falls within the Arboretum Conservation Area. Accordingly, close attention is paid to the upkeep of the buildings and grounds in this area. Tree stock here and other outdoor features have a distinct character, with intimate and informal green spaces contrasting with the open areas at the opposite end of the site.



Section 8: Community Involvement

8.0 COMMUNITY INVOLVEMENT

Community Events

- 8.1 Community events on the site primarily focus on improving access to Higher Education and academia for people from all walks of life. Sports, language learning, volunteering and biodiversity also form the basis of a rich programme of events that encourage the public to make the most of the site.
- 8.2 The NTU Distinguished Lecture Series, arranged every year, invites the public to join in with hot topics in academia. Delivered by a range of expert guest speakers, the Distinguished Lecture Series covers many exciting subjects and tackles topical and sensitive issues face-on. The lectures are thought-provoking, raise debate and inform. The programme attracts large audiences from across the region, regularly up to 500. The lectures cover diverse topics from the rise of China to the implications of increased surveillance, and are free and open to all. Selected lectures are filmed and put online approximately one week after the event.
- 8.3 The NTU Volunteering Team held a volunteering fair at the city site in October 2013. Voluntary and community sector organisations were invited to the site to discuss their community projects with students and encourage their support. 730 students signed up to volunteer in the community as a result of the city event.
- 8.4 The Art and Design school are particularly active in terms of involving the community. The Saturday Art Club, organised by the school, takes two classes of local secondary school students who have been referred by teachers. The groups attend a range of art classes throughout the autumn, including sessions that focus on finding natural materials around the site. The School also hold regular exhibitions and sales of student work that are open and clearly signed around the site for the public. Currently the school, NTU's oldest, is celebrating its 170th anniversary, for which a range of public events are planned.
- 8.5 The Law School also play their part in involving the community, hosting a group of prospective students from disadvantaged backgrounds during the Sutton Trust summer school every year.
- 8.6 Many other summer schools and pupil visits are arranged by the Community Outreach team throughout the year. In 2012/13, over 4,500 pupils and family members were supported to engage with higher education by attending a master-class, school visit or similar educational event at the city site.
- 8.7 The NU2 sport programme focusses particularly on engaging students, staff and the public with new and unusual sports. From Climbing to Tchoukball, beginners' sessions take place throughout the week for £1 at the Byron building. These are advertised on the Sports and Lifestyle website and via leaflets distributed around the site.
- 8.8 As with the other sites, a full programme of Open Days is run on an annual basis for prospective students and their families. The outdoor areas of the site are fully populated with signage and uniformed stewards that ensure families are welcomed warmly to the site.

- 8.9 Due to the nature of the city site, many community events are held indoors. However, the Environment Team are keen to make the most of the 5 hectares of outdoor space that the site has to offer.
- 8.10 In November 2013, during the annual NTU Green Week, a local food market was held on the forecourt of the Newton building. Comprised of 16 stalls run by local food enterprises, the market aimed to highlight localism and provide an inclusive social event on the main public thoroughfare through the site.
- 8.11 With the popularity of the falcon cam spreading around Nottingham and further, NTU and the Wildlife Trust arranged a series of bird watch events at the front of the Akrwright building. Maintaining a safe distance so as not to disturb the nests, these events nevertheless give the public an opportunity to see and learn about the falcons and other city birds in their natural habitat with expert guides.



- 8.12 The Student Union ran a bird box making workshop in January 2014 as part of Give It a Go Week. Student volunteers got involved with the session to produce boxes that will initially be used on the nature trail at Clifton. As mentioned in Section 6, a meeting is arranged with the Wildlife Trust to discuss suitable locations for bird/bat boxes at the city.
- 8.13 In December 2012 the Student Union and student volunteers planted a number of spring bulbs in the gardens of Chaucer as part of their work towards the NUS Green Impact biodiversity Award. This type of activity will be encouraged for all to take part in across the City site.
- 8.14 Opportunities for future events that have been identified include the landscaping of the Dryden gardens; bird box building workshop and bulb planting across the site.

Community Access

- 8.15 The city site lies at the heart of Nottingham's Royal Quarter, and contributes significantly to the atmosphere of the city centre, with its listed buildings, ornamental lawns and green spaces. Many members of the public therefore use the site as part of the city centre, with the excellent transport links, shops and seating areas at Bonnington and Waverley providing an accessible site.
- 8.16 Maps are available in various formats online and from receptions across the site.

Conferences, Catering and Room Hire

8.17 The Nottingham Conference Centre is housed in the recently refurbished Newton and Arkwright buildings, providing a full range of business conferencing facilities, room hire and weddings. Catering adheres to the University's Food for Life Silver accreditation.

Sports Facilities

- 8.18 Bringing state-of-the art sports facilities to the city centre was a key aim of the Byron Development.
- 8.19 The new gym is spread over two floors, combined with a large sports hall, dance studios and a climbing wall. Membership is heavily subsidised for staff and students. NTU aim to encourage staff, students and the public (via the aforementioned NU2 Sport scheme) to keep active and healthy using these facilities.





Section 9: Marketing

9.0 MARKETING.

- 9.1 The NTU website includes extensive features on the site, including information on the facilities available to the public. Labelled maps are provided in various formats online and at receptions across the site.
- 9.2 The news section of the main website and EcoWeb site gives information on current and future events.
- 9.3 A copy of this LMP is also publically available on EcoWeb.
- 9.4 EcoWeb has a dedicated page on the city site, falcons and bees. This acts as a port for staff, students and members of the public to view and learn more about the opportunities the site offers.
- 9.5 The University produces an annual printed newsletter for supporters 'Shaping Futures'. This newsletter keeps alumni and other supporters in touch with what's going on at the university. This year's edition includes features on the falcons, Run NTU event, Open Observatory events and other community outreach work.
- 9.6 Internal communications within NTU include 'e-news', 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 the bimonthly Carbon Elephant newsletter is emailed to all staff and students and summarises recent carbon saving initiatives that have taken place across the estate. A copy of the newsletter is also added to the staffnet webpages and all news stories are added to Eco Web's News and Events page. Stories from EcoWeb are regularly featured by the University and Student's Union on the main websites.
- 9.7 The Estates and Resources department have their own newsletter providing another great opportunity to communicate to staff about the carbon saving and green initiatives that have taken place or that are planned in the near future.
- 9.8 The Environment 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 and Twitter which there are several for NTU.
- 9.9 NTU's Environment Team has its own Twitter account with currently 143 followers. The account is used on a weekly basis to keep followers up to date with all the activities the team are involved in from tree planting, to carbon challenge workshops to Dr Bike sessions. Most tweets are retweeted to the wider student body by the SU.



Section 10: Management

10.0 MANAGEMENT

Management Structure

- 10.1 City site is managed by the Landscape Services Team who are part of the Estates and Resources Department.
- 10.2 The Landscape Services Team have one full time staff member who is based at City site to carry out immediate day to day grounds maintenance jobs such as mowing, weeding and planting, whilst larger projects are managed from the Landscape Services base at Clifton Campus.
- 10.3 As part of this management NTU's Environment Team helps ensure that up to date information of best practice on environmental issues is disseminated throughout the University.
- 10.4 The Director of Estates and Resources is supported by other Senior Management in the management and implementation of the University's Environmental Policy. A growing group of NTU staff and student representatives known as the Go Green Group is chaired by the Environmental Manager comprising people involved in the sustainability agenda at NTU.
- 10.5 The Landscape Services Team meets regularly with academics to give regular updates and ensure continuity between Landscape Services and teaching projects.
- 10.6 The Hazardous Waste Management Group (HWWG) has been established to ensure the University meets its legal obligations with regard to disposal of hazardous waste.
- 10.7 The Biodiversity Action Group (BAG) includes representatives from Landscape Services, the Environment Team, relevant academic departments and the Student's Union. Meeting six monthly, this group discusses and plans biodiversity projects on all three sites.
- 10.8 This Landscape Management Plan (LMP) is reviewed annually by the Environment Team and the Landscapes Sources Co-ordinator.

Maintenance Planning

- 10.9 Currently University Maintenance Services are flexible to changing conditions, undertaking tasks as needed such as gritting roads in icy conditions and clearing tree debris during the autumn period. Day-to-day maintenance is discussed as a team, with objectives and actions agreed with the Landscape Services Coordinator. Works having health and safety implications are given highest priority.
- 10.10 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.

Management Priorities

- 10.11 The current short term aims for City site are:
 - To provide a welcoming, natural corridor, linking the refurbished 50 Shakespeare Street office refurbishment with the rear of Dryden Dec 2014;

- To secure Shakespeare Street as a pedestrianised zone and develop this as a WOONERF style space, incorporating a range of trees for the enjoyment of pedestrians, cyclists and wildlife- Summer 2015;
- To refurbish two courtyards in the Chaucer building to improve the provision of open green spaces for the staff, students and the public to enjoy Dec 2014;
- To hold further events such as 'make your own bird feeder' in conjunction with the Conservation Society and student Eco Reps;
- To increase the number of bird boxes on trees across the site;
- To develop further opportunities for staff, students and local community groups to come onto site and help plant bulbs or trees;
- To investigate a new green roof, 300m²+ on the Maudslay building.

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.

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

- All tree stock, within the remit of NTU, is reviewed on a 3 yearly cycle to determine workload
 priorities and asses 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

APPENDIX B – ALL SITE IMPLEMENTATION PLAN

	Action	Target	Budget	Timescale	Owner	Status
	Review mowing regimes	Increase meadow and grass habitats	n/a	May-14	Alan Horgan (AH)	Some regimes changed
	Dryden Corridor work	Provide open and welcome landscape between buildings	£4-5k	Winter 2014	АН	Following building work, due for completion summer 14
City	Sedum maintenance	Continue to ensure good runoff prevention, attractive appearance from inside the building, and strong habitat properties	n/a	checked every quarter, self- sustaining mostly	AH, Gary Stapleton	On going
	Bee care	Maintain a healthy colony	n/a		Nigel Smith	Checked monthly, records kept
	Falcons	Continue to provide suitable undisturbed nesting space whilst engaging communities	n/a	Spring 2014	Grant Anderson	Falcons returned to nest Jan 14.
	Byron roof (to be handed over from contractor)	Maintain the roof as a good green space with a range of perennial planting.	Unknown	Still with contractor, to be handed over late 2014.	Richard Clayton	Still in retention period, managed by Vinci
	Chaucer courtyard	Create a welcoming public square	£5k	Dec 14	АН	Design stage
	Maintain sports pitch drainage installed in 2012-13	Retain surface integrity and prevent damaging run off to dell and nature trail	£20k/annum	Ongoing	Alan Horgan	
Clifton	De-silt balancing ponds	Maintain a health pond habitat for newts	£25k	Nov-13	Alan Horgan	Complete
	Install remaining nature trail signs	Make nature trail more welcoming and informative	n/a	Feb-14	Colin Hutchinson	9 installed, 2 remaining pending board construction
	Plant 4000 snowdrops, 4000 bluebells, 2000 wood anemone bulbs.	Support threatened bluebell and snowdrops, provide points of interest around nature trail	n/a	Jan 13	Alan Horgan	Complete Dec 13
	Continue Heart of Campus Landscape Plans	Provide a welcoming green environment to complement new green buildings (overall increase in landscaped area)	£1m	Ongoing	Alan Horgan	Early planning stages

	Install minibeast hotel x10 Install Hogitats x2 Create hibernacula x3	Mitigate lost mini-meadow and woodland from 3G pitch construction		Complete	Sarah Thorp Ann Scotney Sarah Thorp	Purchased
	Install bird boxes x30 Install bat boxes x4			May 14	Sarah Thorp Ann Scotney	Purchased Purchased
	Install Bee&Bug Biome x3				Ann Scotney	Purchased
	Biodiversity index	Continue pilot of biod index		Summer 14	Grant Anderson	1 year complete, 2nd year planned
	Consider path and bench opportunities	Provide volunteer project and improve accessibility of NT	unknown	Review summer 2014	АН	
	Refurbish/re- instate the Rose Pergola and Lodge Gates and Walled Garden Gates.	Improve heritage conservation	Approx 200k across 5 years, funding source not secured		АН	HLF funding sought
Brackenhurst	New glass house 384m ²	Support landscaping work across NTU, particularly 'heart of campus'	£100k	Jun-14	Alan Horgan	Planning Proposal Submitted
	Biodiversity index	Continue pilot of biod index		Summer 14	Grant Anderson	1 year complete, 2nd year planned
	Brack hall landscaping	provide habitat and interesting recreation space			Mark Oxenbury	
	Path edges leading to rose garden	Provide safe surface for access to rose garden	£1k approx	2014	АН	
	Lodge gates planting	Improve appearance of site entrance, and draw attention to heritage gates	£2k approx	Jun-14	АН	
All	Smaller projects across the sites prioritised in conjunction with staff and students	Continual improvement of sites in line with stakeholder priorities	£20k/annum			

General maintenance regimes, example attached in appendices					
Replace landscaping machinery	Maintain effective stock of machinery	£182k	Ongoing	Alan Horgan	Ongoing (new chipper purchased Nov 13)