Keele University

Estate Strategy & Masterplan

Final Report

Updated October 2022

BDP.

THIS IS KEELE

Keele UNIVERSITY

1. INTRODUCTION

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1.1 Masterplan Purpose

The Keele University Campus Masterplan sets a vision for how the campus estate should develop over the next 10 years. Its purpose is to provide a framework for the delivery of services and facilities and the future development of the campus in order to meet its academic, research, commercial, accommodation and community needs and aspirations.

In support of this primary purpose, the Masterplan will:

- Seek to maximise the potential of the University estate to meet its needs and aspirations within a context of environmental sustainability and sensitivity.
- Support and enhance the University's sustainability credentials and actions.
- Provide a framework for maintaining and enhancing the attractiveness of the University campus in terms of its built, natural and landscape environments, facilities and services.
- Explain how the University is responding, and will continue to respond, to the demands and opportunities presented by the technology driven evolution in the educational and economic arenas.
- Contribute to supporting the role of Newcastle-under-Lyme as a university town.
- Continue to support and contribute to the attractiveness of Keele village.
- Reinforce the University's status as a champion of student satisfaction through the provision of services and facilities.
- Provide the framework for the creation of a safe, healthy, coherent and accessible campus.

The Masterplan is not a blueprint; a blueprint suggests certainty and an inability to respond swiftly to changing circumstances and imperatives. In contrast, the masterplan framework offers flexibility in responding to the challenges and opportunities that the next decade will bring in maintaining and enhancing services and facilities and delivering development strategies and site specific schemes across the campus. In addition, the Masterplan is not focused exclusively on the physical development of the University.

1.2 Character & History of Keele University

Keele University was founded in 1949 as the University College of North Staffordshire and received its Charter as the University of Keele in 1962. It occupies extensive grounds of around 600 acres (250 hectares) comprising the academic campus, sports pitches and facilities, student accommodation, pockets of general housing, commercial science and business accommodation, extensive woodland and lakes, and pasture land.

The general area in which the campus is located is rural in nature. The campus adjoins the historic Keele village and occupies a position on the western edge of the North Staffordshire conurbation of Stoke-on-Trent and Newcastle-Under-Lyme.

The historic Grade II listed Keele Hall, originally constructed in 1580 and rebuilt in 1860, occupies a prominent position within the campus core. The Hall functions as a major conference, wedding and banqueting facility and provides a physical link to the origins of the Keele estate; most of the campus is designated a Historic Park and Garden reflecting its origins as a formally planned estate.

The university campus, rather than the wider estate itself, has been the subject of various masterplans and development planning exercises since the creation of the University. The 1958 development plan proposed an extensive range of new buildings for academic, welfare and accommodation purposes. Prominent among these was the current library and this now represents a landmark within the academic core of the campus. Other buildings rooted in the 1958 development plan included a small Students Union building and a number of staff houses and student accommodation that reflected a founding principle that all staff as well as students should be expected to reside on campus as a community of scholars. The early concept of a quadrangle, similar to an Oxbridge College or an American Liberal Arts College, which began with the early construction of the Tawney and Walter Moberly Buildings was subsequently abandoned in favour of more organic growth.

By 1978, the modern university campus had begun to take shape and most of the original temporary accommodation were replaced by residence halls. The Chancellor's Building was in existence by 1988 and by 1996 the Holly Cross and Oaks student accommodation buildings were completed with major academic buildings, including the post-graduate Moser Building, following in later years. The medical school (David Weatherall building) was completed in 2003 with a new main entrance to the university from the A525.

Keele Hall

The Library

IC5 – Keele Science & Innovation Park

The Keele Science and Innovation Park located to the east of the main campus was brought forward through a masterplanning exercise. The site was granted permission for University-related mixed use development in late 2006 with development plateaux and related highway and strategic landscaping being delivered by 2009. Individual developments have since come forward within the park including an autism research and care facility, a Commercial Innovation Centre and the Denise Coates Foundation Building, which provided a new home for the Business School and an integrated incubator centre and student hub. A 150-bed hotel also opened in February 2021, along with a Veterinary School in September 2021.This will be supplemented by the addition of a commercial Veterinary Practice/Hospital in late 2023. Building on the University's Digital Research Institute, Innovation Centre 7 is planned for completion in Spring 2023, incorporating a campus Data Centre..

A number of important individual developments have been undertaken in recent years at various locations, and for different purposes within the campus. These include new student accommodation blocks at Barnes Hall and the creation of new research laboratories and teaching spaces as part of the biggest single investment in learning and teaching in the University's history.

The University is the largest single, integrated electricity, gas and heat smart energy network demonstrator in Europe. It is also the first facility in Europe for at-scale living laboratory research, development and demonstration of new smart energy technologies and services in partnership with business and industry. Related renewable energy infrastructure to the south of the Science and Innovation Park was constructed and commissioned late January 2022. .

The physical development of the University has been as much organic as planned in order to positively respond to changing academic, social, economic and environmental opportunities and challenges whilst at all times ensuring that the attractiveness and rural character of the University is maintained. In this regard it is important to recognise that the University has shown a commitment to concentrate its operations within the existing campus (i.e. the relocation of student accommodation from the Hawthorns, within Keele village, to Barnes Hall within the campus). The University is also sensitive to the value brought to the University by its rural character and community feel and is therefore keen to ensure that future growth properly respects the character of the adjacent village community in Keele Village.

The Masterplan Framework and Vision will seek to ensure that future development will continue to respond positively to opportunities and challenges within a context of environmental, social and economic sensitivity and sustainability.

1.3 The Need for a Masterplan

Since the foundation of the University a number of development strategies and masterplans have been undertaken. Significant among these was the Terry Farrell masterplan that provided the case for the removal of the now allocated Science and Innovation Park from the green belt. The Science and Innovation Park itself was subject of a masterplanning exercise by David Lock Associates in 2004.

Notwithstanding these area-specific masterplanning initiatives, a comprehensive campus wide masterplan is not in existence and the case for its production is now pressing, particularly as the University campus is located within an area of Newcastle-Under-Lyme that is the focus of local authority and parish council initiated masterplanning exercises.

The Keele Neighbourhood Plan area aligns with the administrative boundaries of Keele Parish Council and includes the extent of the University estate. Although the Neighbourhood Plan has not yet reached an advanced stage of preparation, it is envisaged that land use policies and proposals relating to the University campus and estate will be incorporated as an appendix to the Keele Neighbourhood Plan. As such this will be an integral part of the Neighbourhood Plan but it

can also serve as a standalone reference document in the event that progress on the Neighbourhood Plan towards referendum and adoption is delayed.

In January 2021 the Newcastle-under-Lyme Borough Council resolved to undertake a new Local Plan for the Borough of Newcastle-under-Lyme. From 2013 to January 2021 the Borough Council worked with Stoke-on-Trent City Council to produce a Joint Local Plan. Work on the Joint Local Plan has now ceased. The Borough Local Plan Issues and Strategic Options is anticipated to be subject to public consultation in late Spring 2023.

A key element of the Joint Local Plan was the proposal for a targeted area of economic and housing growth, known as the University Growth Corridor, to the west of Newcastle, with the economic focus centred upon the expansion of academic and commercial activities at the University. In accordance with the then requirements of the Joint Local Plan, the University Growth Corridor proposal was subject of a masterplanning exercise. It is therefore important for the University's development and investment intentions for the existing campus to be publicly available regardless of the timetable for, and progress on, the new Local Plan.

At a campus specific level, there are a number of development strategies and initiatives that are in existence, currently underway or proposed and which will benefit from the adoption of an overarching campus-wide masterplan in order to provide a clear and credible context for its short and medium-term development. At present the University of Keele Strategic Plan 2015-2020 is particularly important in that it sets out the University's Vision Mission and Values and confirms the objective of developing the University as an "integrated innovation campus" that provides high-quality co-location spaces on campus and on the Science and Innovation Park and maximises the beneficial interfaces between the academic community and the businesses on the campus.

In combination the current uncertain timescales for the completion of the Keele Neighbourhood Plan and Local Plan, together with the benefits that a Campus Masterplan will bring in providing a definitive framework for campus specific proposals and decisions, point to the need for the preparation and adoption of a Masterplan that deals with all aspects of development affecting the campus over the next ten years.

Denise Coates Foundation Building

University Growth Corridor masterplan

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2. GROWTH ASPIRATIONS

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2.1 University Mission

Keele was created to be different. It was formed to be a university fit for a world of uncertainty that prepared students for that world and supported society through research in partnership with others. This founding mission is as relevant and as important now as it was then.

The University's mission to ***"making a difference in society by providing innovative, high-quality education for students from all backgrounds and by undertaking world-leading research that transforms understanding and brings benefit to society, communities and individuals",*** has not, and will not change.

'Our Future' is the University's strategy. It is a living document focused principally on the short to medium-term in order to secure longer term sustainability and success. The aspiration is to develop some key strategic projects that will move the strategy from the incremental to the transformative. Undoubtedly this will result in physical changes and growth to the university campus, which this masterplan will guide.

2.2 Short to Medium Term Growth

The University plans to grow its home and international student base in undergraduate and postgraduate research. The student-based growth strategy, which already benefits from both recently approved, and developed projects, is complemented by the provision of new and improved administrative, employment incubator and student support facilities. This includes the recently constructed Denise Coates Foundation Building and Vet School on the Science and Innovation Park and the enhancement of the student accommodation offer on campus, with plans to grow to between 3,500 and 4,000 study bedrooms.

Renewable energy initiatives form part of the short / medium growth strategy, which is developing appropriate on-site renewable energy generation for a Renewable Energy Research Hub.

The growth strategy is firmly rooted in the principles of sustainability and the delivery of the Strategic Plan. Spatially, the strategy will be focused on the wider campus development and the Science and Innovation Park, the infrastructure for which is already in place.

The longer-term growth strategy is, again, strongly rooted in the delivery of sustainable development in that it envisages physical and functional linkages across a number of activities, which together, represent a unique opportunity to create a landmark development that will be of significance for the local and sub-regional economy. This will be particularly focused on assisting the development and location requirements of knowledge-based industries in the area and meeting the needs of those who provide them.

The 'Keele Deal' initiative, sponsored by the Local Enterprise Partnership, centrally involves the University. The Keele Deal presents a plan for investment by the University, private and public sectors to realise the comparative advantage from research and innovation to return significant, innovation-led, higher value local economic growth, improved local health and care and to make a significant contribution to the transition to a lower carbon local economy. The plan establishes the economic rationale and evidence base for investment in research and innovation and identifies eight key areas of comparative advantage delivered by the University that can be exploited to deliver this growth. Over the next few years, the 'Keele Deal' will focus on eight priorities to deliver innovation-led, higher value employment growth:

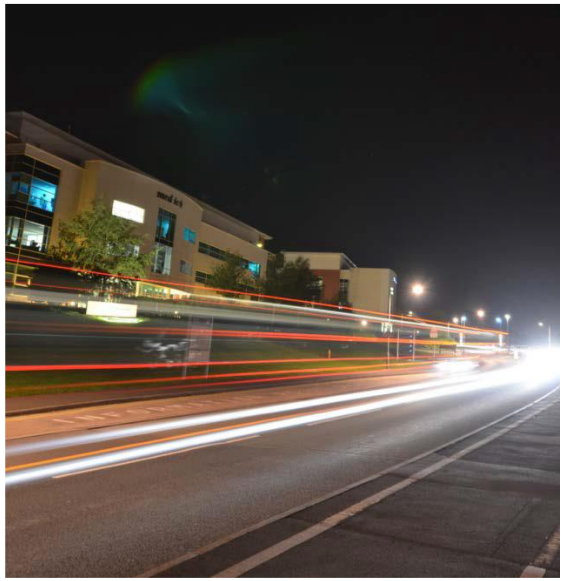
- Priority 1: A single point of access to Keele innovation support
- Priority 2: Leadership development for enterprise and social innovation
- Priority 3: Smart Energy Network Demonstration
- Priority 4: University-NHS-Industry collaboration
- Priority 5: Harnessing global reach and visibility for local economic impact
- Priority 6: A strategic site of the Northern Gateway Development Zone

- Priority 7: Higher level educational provision
- Priority 8: A spatial masterplan for the University campus and local area.

2.3 Longer Term Growth

Within the University, attention has been devoted to articulating future academic and research needs and opportunities and their spatial manifestations. This has generated an emerging 2040 Vision, the content of which, together with the Keele Deal initiative, has identified a number of key components:

- Student growth to 16,000 students by 2030 and 19,000 by 2040;
- Formation of a new Faculty of Engineering, linked to existing and emerging technologies located at the University and Science Park;
- Four new Innovation Centre (IC) developments, to complement existing provision, ranging from 3,700 m^2 to 5,600 m^2 in size;
- A conference facility;
- Additional nursery facilities;
- Ancillary retail facilities;
- Leisure facilities (gym / pool / games suite);
- Additional residential accommodation comprising student residences, staff housing and graduate accommodation;
- Provision of renewable energy infrastructure at, or close to, the University estate;
- Provision of new and enhanced amenities to support the growing university community; and
- The potential for a Transport Hub, improving connectivity in and around Newcastle, known as the “North Staffordshire Sustainable Transport Network Phase 1" (NSSTN Phase 1).



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3. THE UNIVERSITY TODAY

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3.1 Sub-Regional Context

The missions of most universities are threefold; teaching, research and contributing to economic growth. Many universities create successful campus clusters by attracting knowledge-intensive businesses around their strong research base and a ready supply of skilled graduates. For companies, the benefits include special access, closer relationships, better information and powerful incentives, as well as the opportunity of networking with other businesses in similar fields.

These relationships are already in existence at Keele and the University occupies a significant role as an anchor to the North Staffordshire sub-region. In particular, the University plays a major role in the local economy. Research has been undertaken which demonstrates that the University supports around 3,400 Full Time Equivalent (FTE) jobs within Newcastle-under-Lyme and Stoke-on-Trent (Newcastle and Stoke). These impacts are summarised in the following table.

Economic Footprint of Keele University in Newcastle-under-Lyme and Stoke-on-Trent, 2014/15 Academic Year

	FTE Jobs Supported
Direct university activity	1,750
Supply chain expenditure	350
Student expenditure	320
Staff expenditure	120
Visitor activity	50
Science Park	810
Total	**3,400**

Source: Regeneris Consulting estimates

Note: Figures are rounded so may not sum to total exactly.

Direct activities: The University directly employs 2,000 staff, which equates to 1,750 FTEs. These are predominantly highly skilled academic, managerial and professional positions, along with support staff.

Supply chain / indirect effects: A detailed mapping of the University's supply chain linkages shows that the University spends a total of £19 million on an annual basis with external suppliers located in Newcastle and Stoke. This includes purchases to support ongoing activities and major capital developments. This expenditure supports a total of 350 FTEs within these suppliers and through knock-on multiplier effects locally.

Student expenditure: The University has over 10,500 students, the vast majority of whom come from outside Newcastle and Stoke. Around 15% are from overseas. A large proportion live locally and their expenditure supports significant numbers of jobs, especially within the food and drink, retail and housing sectors**.** The University supports around 320 FTEs in Newcastle and Stoke through these effects. Given the location of origin of the students, these are predominately additional jobs driven by additional expenditure.

Staff expenditure: Around two-thirds of University staff live in Newcastle and Stoke.

As these staff and those employed in the supply chain spend money locally this supports further economic activity. Regeneris estimates that this expenditure supports 120 FTEs in the area including multiplier effects.

Visitor activity: The University attracts a range of visitors from outside the local area, including from overseas. Some of these are student-related (e.g. graduations and open days), whilst others are related to academic and cultural events. As these visitors spend money locally this represents a further injection of activity. Regeneris estimates that this supports around 50 FTEs per annum in the local area.

Science and Innovation Park: The occupiers of the Science and Innovation Park support further local employment. At present, there are an estimated 780 people working within the Innovation Centres located there, in high value sectors such as medical technologies, energy, ICT and advanced materials, supporting a total of 810 FTEs including local multiplier effects. It is important to acknowledge that the Science Park is the only facility of its kind in North Staffordshire and therefore provides a unique focus for high value employment growth.

Alongside these primarily expenditure-related effects, the University plays a wider role in driving the local economy by boosting the supply side of economic activity. It does this by supplying large numbers of highly skilled graduates and by working closely with businesses via collaborative research and innovation activities, consultancy, and by commercialising research.

At a qualitative level, the University, together with Staffordshire University, contribute very positively to the image and profile of the North Staffordshire conurbation.

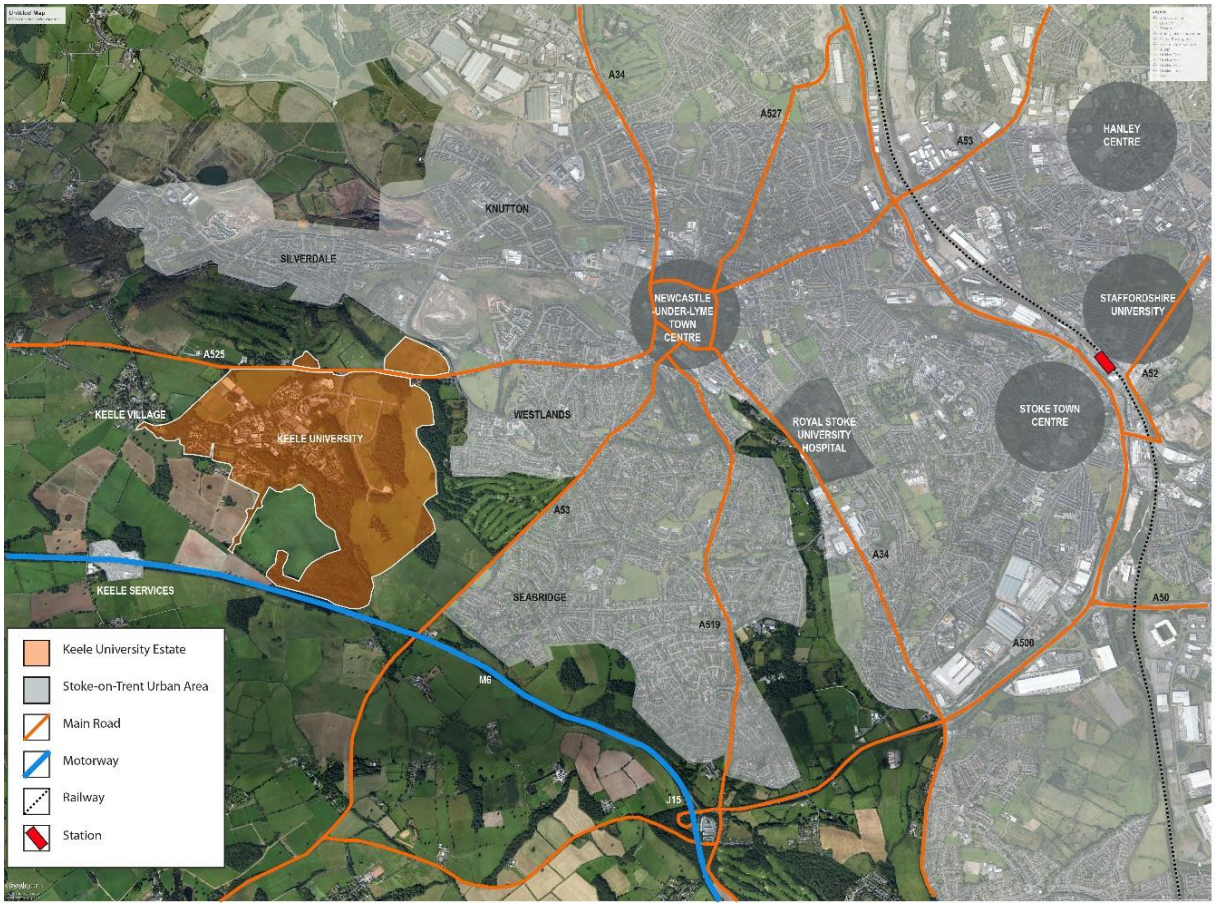
3.2 Site Context

The University estate consists of the main University campus south of the A525 Keele Road (222.5 hectares) and two parcels of land to the north of Keele Road (measuring 1.1 hectares and 10.7 hectares respectively).

The campus sits between Keele village to the west and the Newcastle-under-Lyme urban area to the east.

The main access to the campus is provided from Keele Road to the north, with a secondary access to the west from Keele Village.

The campus is bordered by open fields to the south and west, which are enclosed by the M6 motorway. North of the A525 is the former municipal golf course and the campus is enclosed to the east by woodland.

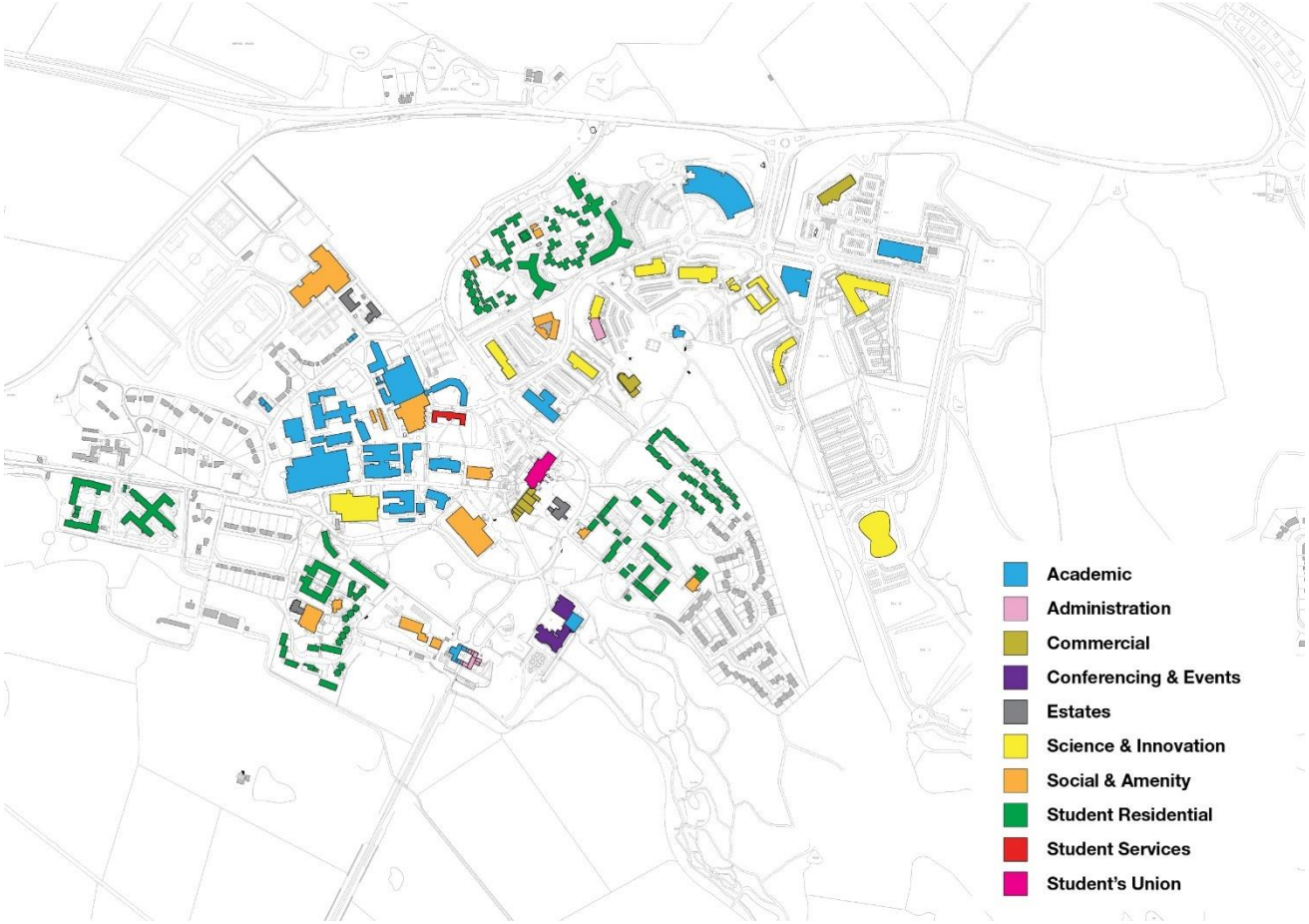


3.3 Land Uses

The university campus is arranged with a dense core of social / amenity and academic uses within the area formed by Keele Hall Road, The Covert and Barnes Hall Road. Within this core is located the Library, the Student Union, the University chapel, dining areas (in Chancellors) and a shopping parade.

Student residences sit at the flanks of the academic core, with the Oaks / Holly Cross to the west, Lindsay Court to the south, Barnes Halls to the north and Horwood Halls to the east.

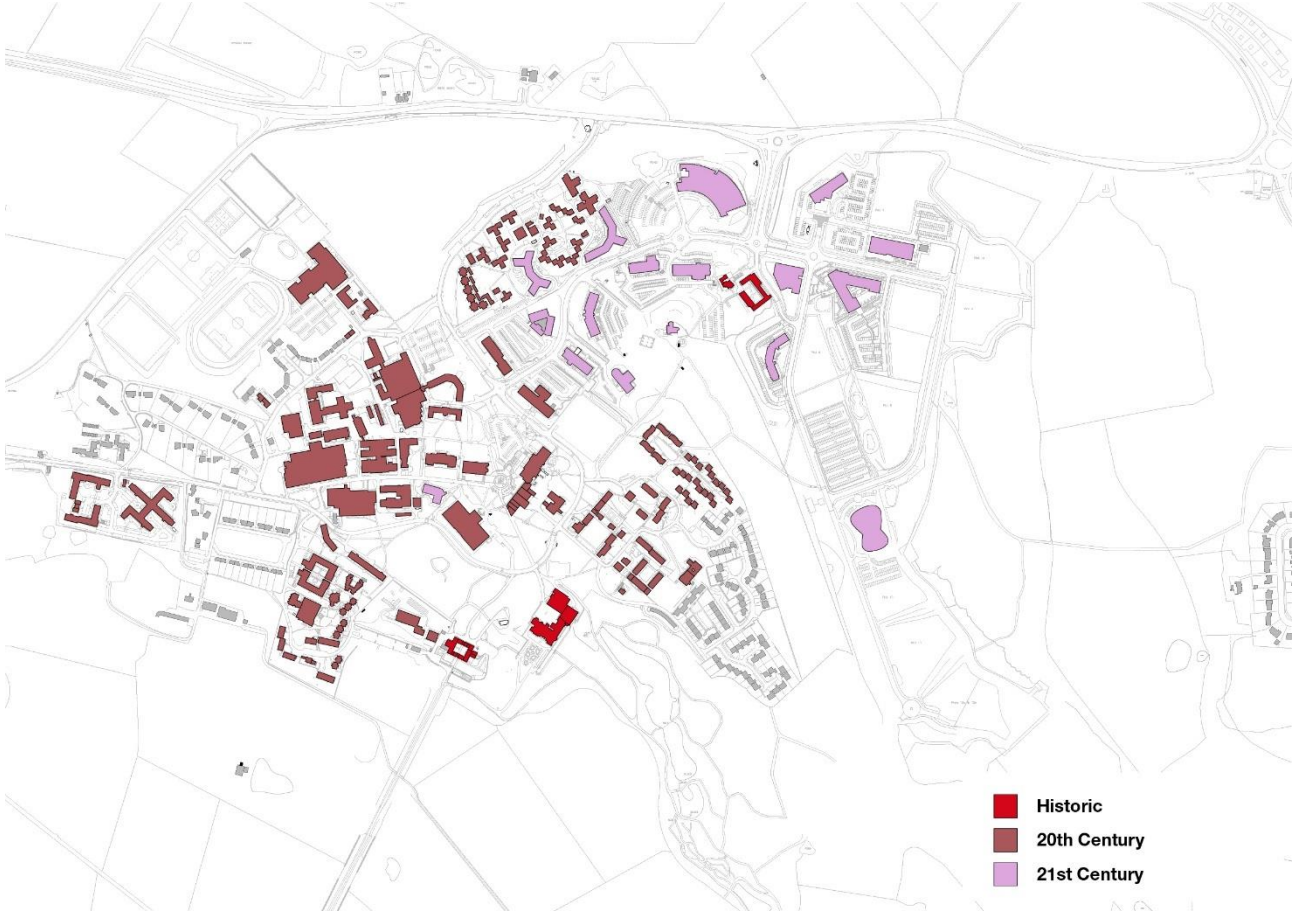
The area to the east of the established campus mostly comprises buildings for science and innovation, but also includes the medical school and nursery, as well as the Denise Coates Foundation Building and Vet School.



3.4 The Built Estate

The University Campus is based within the grounds of the historic Keele Hall, which dates back to the 16th Century. In addition to Keele Hall, built in 1860 and which itself is Grade II* listed, there are a number of other heritage assets within the grounds of the campus. Many of these lie within the Keele Hall Conservation Area and the main campus is also listed as a Registered Park and Garden (Grade II).

Much of the university estate was developed during the late twentieth century. Some buildings continue to meet their functional and quality requirements, others will require refurbishment or redevelopment in future years to meet functional and energy efficiency requirements.

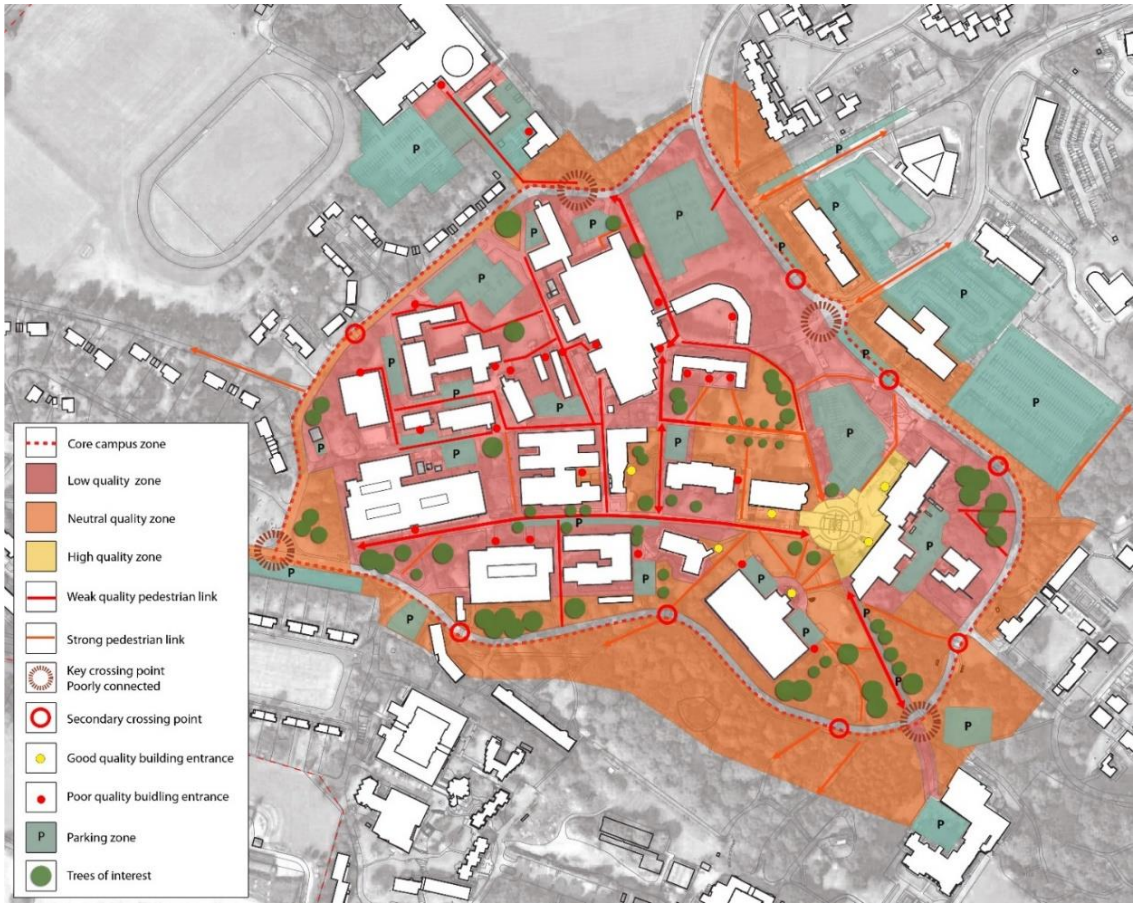


3.5 Landscape Character

Landscape settings within the campus include areas of public realm between buildings, sports pitches, wooded areas and formal gardens.

The wooded landscapes and formal gardens are a particularly pleasant and form an important role in the identity of Keele, but the quality of the public realm within the campus is more variable.

Union Square at the heart of the campus is an example of a high quality space, but many other areas are functional in appearance. There are very few useable green spaces or areas designated as outdoor seating for socialising and study. Many of the spaces between buildings are also dominated by servicing / car parking. Large amounts of surface car parking in the central core in particular and the relentless visibility of cars, reinforces that driving to the campus is the norm. Landscaping is seemingly restricted by the overriding need to accommodate car parking.

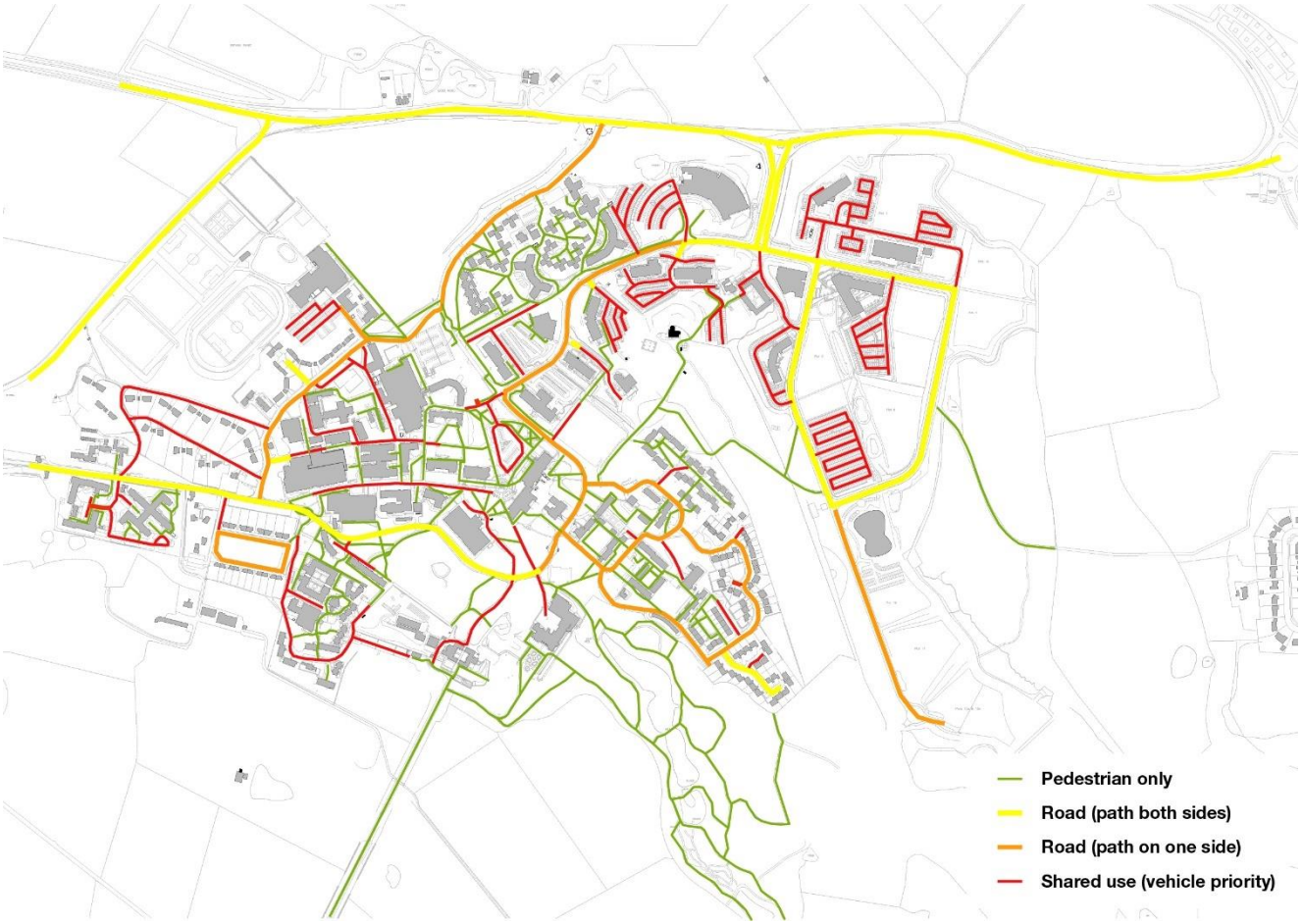


3.6 Pedestrian Movement

There is a network of well used pedestrian paths, but not all are segregated and many important links feel designed around the needs of vehicle parking / servicing rather than pedestrian movement, with pedestrians often forced to walk through car parks to reach building entrances. The design of many internal roads does not reflect the altered priority within a University campus where pedestrians are numerous and therefore should be given greater priority.

Footway quality is intermittent across the campus and pedestrian routes outside the core are often narrow, sometimes only providing sufficient width for one person, which results in people walking on grass verges or in the road.

Many desire lines are not catered for with adequate pathways, leading to patches of earth forming in grassed areas. Pedestrian links to residences are particularly poor with no obvious direct links in many cases.



3.7 Cycling

The campus benefits from a largely off road cycle route from the periphery of Newcastle-under-Lyme. The relative compactness of the campus is also well suited to cycling, but there is no legible cycle network, which may be a barrier to encouraging new cyclists. Traffic free cycle routes do exist mostly on the eastern side of the campus (painted lanes as part of footway) but are somewhat hidden, which raises security concerns. Junctions clearly do not reflect any priority for cyclists.

Within the core campus, paths are too narrow or congested for cycling and the main vehicular loop road can be difficult to cross on a bicycle because it has no dedicated crossings.

There is a large amount of cycle parking across the campus, which appears to be well used and at times is oversubscribed. A significant proportion of cycles are of high value and would benefit from an increased provision of secure parking facilities.

3.8 Public Transport

The 25 Service, which runs every 10-15 minutes, provides regular links to Newcastle, the Hospital, Stoke Station and Hanley Bus Station. Although well supported, it's a convoluted journey, and the need to cross the A500 in Stoke often causes delays and long journey times. The campus is also served by the number 85 / 85B service (Crewe, Madeley, Keele Village and Newcastle-under-Lyme). An additional term time service provides supplementary AM peak services from Stoke-on-Trent and Newcastle-under-Lyme.

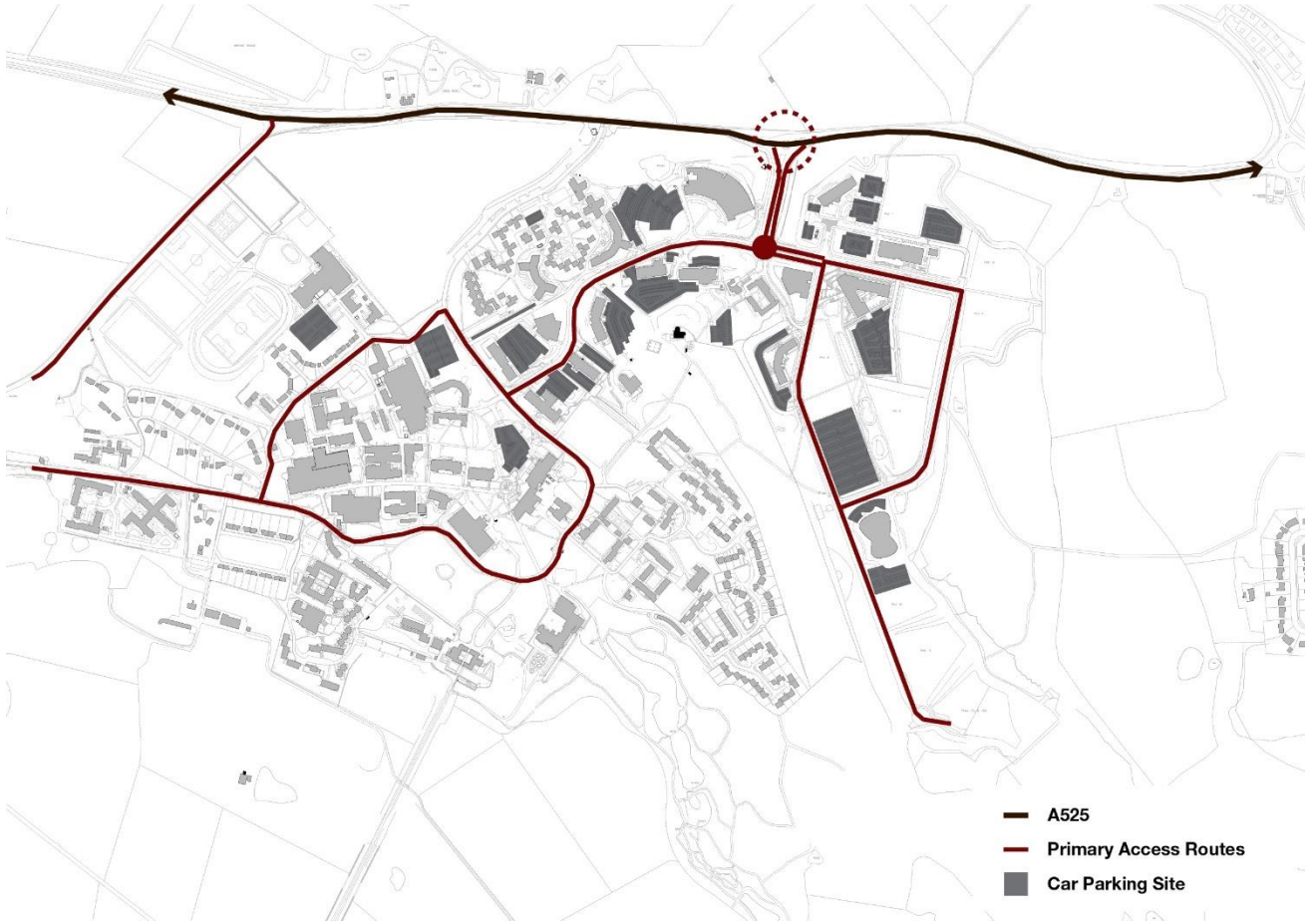
Combined these services provide up to 10 buses per hour at AM peak (weekdays) to Newcastle-under-Lyme (six of these services link to Stoke station). Bus services appear to be well used throughout the day with high demand in the late afternoon. Travel surveys indicate that current bus routes are only seen as attractive to a fraction of staff and students.

3.9 Vehicle Movement, Servicing & Car Parking

The main vehicular access to the campus is from A525 Keele Road. There is also a second access from Keele Drive. Traffic levels are such that traffic is mostly free flowing within the campus.

Car parking provision is dispersed across the campus as shown in the diagram opposite. Student car parking is limited, with priority for those with greatest need. Enough parking is provided for staff (there is limited permit system), often immediately adjacent to workplaces, which has led to the expectation that staff are provided with a parking space within a short walk of their workplace. This is reinforced by each building seemingly having its own area of car parking. Staff appear unwilling to park further from their place of work (particularly those who work late or make multiple daily journeys).

New visitors to the campus lack information on where is most appropriate to park.



3.10 SEND & Smart Campus

Keele is the largest campus university in the UK, serviced by its own private utility network to support a wide range of business, academic, residential and leisure users. The campus has control over everything from the infrastructure of water and power, through data and communications networks, to transport and traffic.

The campus has residential, commercial and mixed-use buildings, internal and external spaces and even farm buildings. This mix of uses and the scale of the campus, allied to the university's research and educational expertise in areas such as sustainability and green technologies, smart campus infrastructure and IoT (internet of things), AI (artificial intelligence) and ethics and regulation of data and analytics, provides a unique opportunity to develop at-scale demonstrators.

The Smart Energy Network Demonstrator initiative (known as SEND), funded by the European Union, Central Government and private investors, is transforming the Keele University Campus into a world-class demonstrator facility that will provide a unique testing site for the evaluation of new and evolving renewable and low carbon energy technologies. Being the only "at scale" facility in Europe, it includes the development and evaluation of new and evolving initiatives relating to renewable and low carbon energy generation, management, storage and distribution.

The infrastructure is in place for several types of demonstrator, some are well established, e.g. SEND and HyDeploy, others are at the early pilot stage, e.g. Library IoT. The compute and storage infrastructure is not yet sufficient to address future needs.

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4. STRATEGIC PRIORITIES

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4.1 Introduction

Based on the issues and opportunities identified, nine strategic priorities will form the basis of the campus masterplan framework. These are set out below and explained in more detail thereafter.

Priority 1: A single, cohesive campus for learning, living, and innovation.

Priority 2: A coherent campus with a strong sense of place that offers the best experience for our students, workers, and visitors.

Priority 3: A green campus that maximises its natural and rural setting, promotes Wellbeing and enhances its feel of an established but contemporary community.

Priority 4: An inclusive campus that is pedestrian and cycle friendly.

Priority 5: An integrated transport solution that enables sustainable access to neighbouring communities, commercial and community amenities.

Priority 6: A campus that responds to the climate change challenge.

Priority 7: A campus that responds to current and possible future public health and welfare challenges.

Priority 8: A Smart Community.

Priority 9: An inclusive campus, with accessibility and flexibility at the heart of design and development.

4.2 A Single, Cohesive Campus for Learning, Living, and Innovation.

A strong characteristic of Keele is that it contains academic, business, and residential uses in one site, but the campus currently lacks a cohesive identity and is functionally has traditionally been split into the original academic campus and the newer Science and Innovation Park. Each zone has its own feel, architecture and brand. The division of these two zones is further emphasised by natural topography and wooded planting. The vision is to create a single integrated campus where learning, living and innovation sit hand in hand and collaboration and relationships between all parties is strong. The priorities are:

- Embed academic delivery within the eastern side of the campus without splitting teaching and research.
- Establish new residential communities within the eastern side of the campus, including a graduate village in an enlarged Science and Innovation Park.
- Grow the amount of innovation and enterprise space across the campus.
- Strengthen connections on University Drive, ensuring pedestrians and cyclists have a dedicated and welcoming route.
- Create a second connection across the campus through the Stacey Plantation.

4.3 A Coherent Campus with a Strong Sense of Place that Offers the Best Experience for Our Students, Workers, and Visitors.

The campus is a mix of historic buildings, post-war and late 20th century building stock and recent new build. Some buildings are in poor condition and do not provide suitable functional suitability, others are tired and need a refresh. The vision is for the university to grow its student intake and in a competitive market, there is a need to offer an exceptional student experience, comprising high quality teaching and informal study space, student housing, and commercial / social amenities. This should also benefit those who are working or visiting the campus. The priorities are:

- Maintain a mix of historic and contemporary buildings tied together with high quality open space.
- Form two hubs – one focused around the Student Experience and one for businesses – both acting as gateways to the campus.
- Refurbish or redevelop those buildings that provide poor functional suitability or are in poor condition.
- Develop new high quality academic, commercial and social buildings that build a culture of pride.
- Renew student residences and increase provision to deal with student growth.

4.4 A Green Campus that Maximises its Natural and Rural Setting, Promotes Wellbeing and Enhances its feel of an established but contemporary community.

One of the best attributes of Keele is its natural green setting and mature landscape. Particular areas of the existing campus have a pleasant mixture of the established and the modern, but these pleasant areas soon dissipate into a large surface car parks and a public realm designed for the car. The priorities are:

- Positively exploit the benefits of a green campus in terms of environmental setting, but also for the health and wellbeing of staff and students.
- Extend and enhance the welcoming mix of the modern and the established, and improve the quality of the public realm.
- Use the green ‘lawn’ principle to provide structure and coherence to the public realm.
- Maximise the biodiversity value of landscape.
- Redesign and reinvigorate the spaces between buildings to maximise utilisation, create vibrancy and add to the ‘student experience’.

4.5 An Inclusive Campus that is Pedestrian and Cycle Friendly

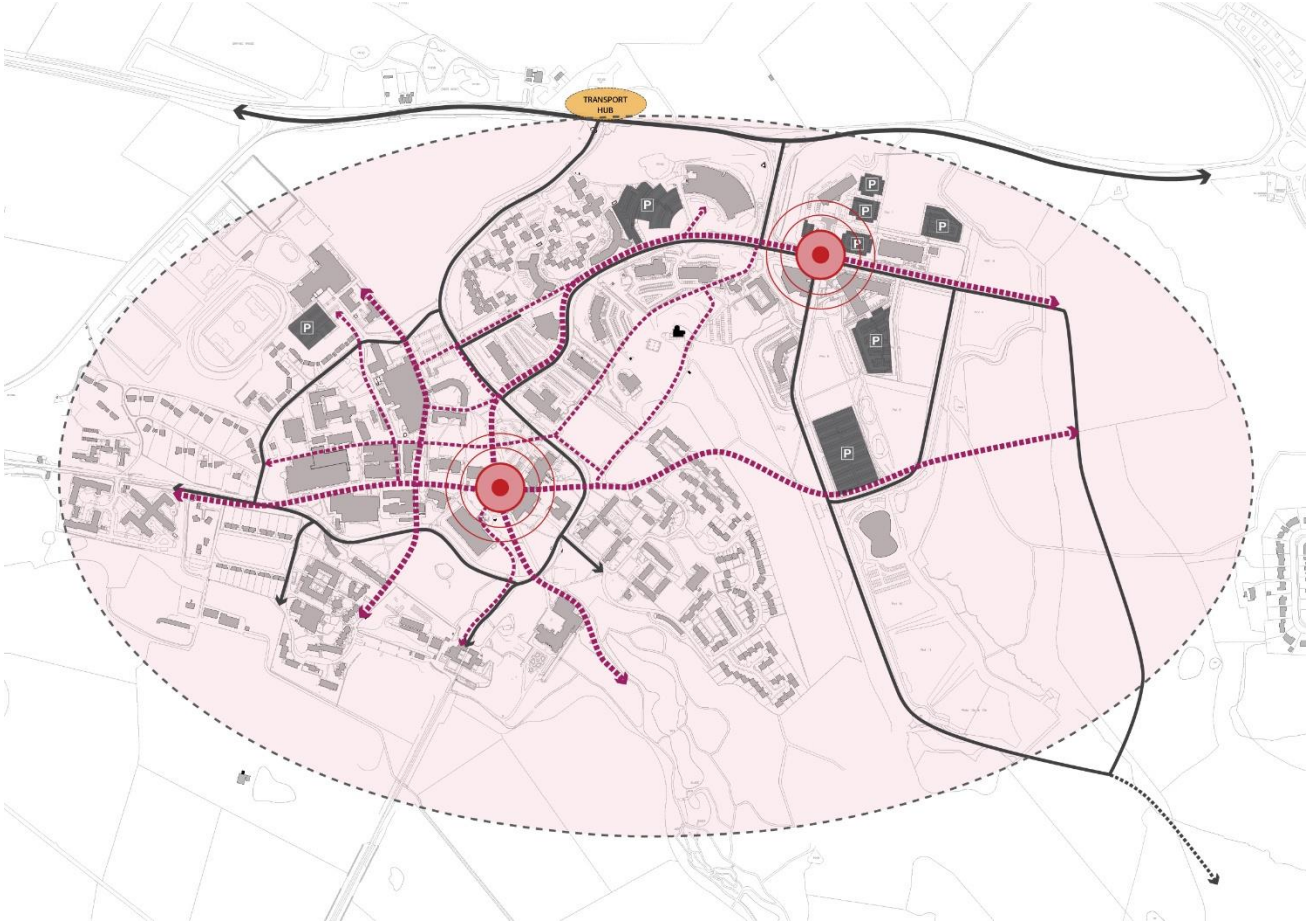
The campus is currently dominated by vehicles with poor pedestrian connections between buildings. Entrances are sometimes hidden and the spaces between buildings are poor. Improved linkages between all spaces will support the vision for a single mixed-use integrated campus. The priorities are:

- Remove car parking except essential blue badge parking from the centre of the academic core and apply the same principle to the eastern area of the campus.
- Provide a clear and direct hierarchy of pedestrian and cycle routes across the campus that are convenient, safe and well-signed, and can be used comfortably by everyone including wheelchair users and people who are visually impaired.
- Create shared surfaces for key routes, providing a more pedestrian friendly feel.
- Ensure surface / footway design and street furniture location and design consider the needs of all potential users including DDA compliance.
- Provide better cycle facilities.
- Consolidate car parking into a smaller number of strategically located car parks.

4.6 An Integrated Transport Solution that Enables Sustainable Access to Neighbouring Communities, Commercial and Community Amenities.

Keele's reliance on private cars to get people to and from campus contributes to the negative effects that private car usage is known to have on the environment, the economy and society in general. The opportunity exists to formulate a sustainable transport initiative, and associated infrastructure, which addresses existing and anticipated social, technological, environmental and physical challenges as well as mitigating the impact of growth. The priorities are:

- Facilitate a full range of transport services to campus from local business centres, retail centres and the hospital, including buses, taxis, autonomous vehicles and bicycles.
- Create a sustainable transport hub providing a terminus / parking for private vehicles and access to a range of onward campus transportation.
- Incorporate on campus energy generation for charging and refuelling vehicles.
- Positively influence emerging local and regional transport initiatives that enhance accessibility by public transport.
- Improve the user experience.
- Reduce the overall provision of parking per staff / student as total numbers grow.



4.7 A Campus that Responds to the Climate Change Challenge

The University has a strong sustainability vision, aiming to address sustainability across all aspects of studying, working and living on campus. The University acknowledges the immediacy of the climate change emergency and aims to deliver a carbon neutrality target by 2030. The future development of the campus will seek to emphasise the University's commitment to sustainability and respond positively to the challenges of climate change. The priorities are:

- Energy efficient buildings, including the refurbishment of existing estate.
- Intelligent controls to enable a 24 / 7 campus environment without a significant increase in energy consumption.
- A smart, resilient, and flexible network of energy supply, storage and monitoring, capable of meeting the University's energy demands now and in the future.
- Maximise on-site energy generation.
- Improve and expand the University's existing heat networks to provide off-grid, secure, and low carbon heat supply.

4.8 A campus that responds to current and possible future public health and welfare challenges.

The University fully recognises that public health issues and challenges need to be identified, assessed and appropriately responded to in relation to both the management of the buildings and facilities of the campus estate and also new and refurbished development projects, including public realm improvements.

The impacts of the Covid 19 pandemic have meant that traditional patterns of working, studying and socialising needed to change very quickly, including the adoption of agile working. The extent to which this might have on the long-term functioning of the campus is not yet known, but as more is learned about the impact of the pandemic, physical changes to the campus may be required to support our students, staff and visitors.

The future development of the campus will seek to embrace best practice in relation to the management and development of buildings and facilities so as to ensure that the imperatives of public health safety and security are fully complied with.

4.9 A Smart Community

In spring 2019 the University secured planning consent for two wind turbines and an array of solar panels, which are forming an essential part of the wider SEND infrastructure requirements as well as securing a reduction of over 30% in carbon emissions.

This developing test-bed creates a unique opportunity for companies, students and researchers to collaborate on real-world challenges in one physical site. It provides opportunities for partners to invest in demonstrators, to test instrumentation and evaluate impacts in a controllable, real-world situation. Each new investment builds on the previous infrastructure. As such the University is able to deploy new technologies and new partnerships in a responsive way. This digitally forward approach is being mirrored into our curriculum where every student will receive introduction to the key elements of industry, machine learning, artificial intelligence, IoT and data and analytics.

At the heart of all these initiatives is our approach to data. We are working with our partners, our staff and our students to develop a mature approach to data, including the ethical use of data to ensure we can drive benefits for our students, staff and partners.

Keele is a data-led campus, we have the ability to combine and build on all our datasets. We can bring building, infrastructure, sensor and other data together in ways only possible because we have the Keele campus, for us, and our partners, this is the Keele Difference. The priorities are:

- A smart, resilient, flexible and re-usable technical infrastructure and computing facilities capable of supporting smart campus demands now and in the future.
- Create a physical centrepiece for a centre for digital and AI.
- Maximise re-use of technical investments.
- Single, full service technical infrastructure available to commercial and other partners.
- Create digital visualisation suite for use of digital and data tools to support partners.
- A smart, adaptable testbed facility for energy and more broadly to enable machine learning and AI facilities for the University.

4.10 An Inclusive Campus, with accessibility and flexibility at the heart of design and development

Keele University is committed to embedding equality, diversity and inclusion into all that it does. Although the historic estate presents many challenges, future design and development will embrace the importance of creating an inclusive environment, ensuring that the rights, needs and dignity of our staff and students are properly considered at all stages of design and delivery. We promote and celebrate the diversity and the rich mix of communities and cultures and need to ensure that the campus provides opportunities for all staff and students to live, work and socialise in an internationalised and inclusive environment.

We recognise the importance of making meaningful and sustainable change and dismantling systemic barriers so that everyone can thrive during their time with us at Keele. The priorities are:

- To put diversity and equality at the heart of design.
- To ensure the opportunity for all stakeholders and users of the campus to be engaged in developing the design of new buildings and facilities on campus.
- To embrace the use and inclusion of established and evolving technologies which can assist in the free and unrestricted access to spaces and facilities.

5. THE MASTERPLAN FRAMEWORK

5.1 Masterplan Concept

The nine strategic priorities described in Section 4 of this report together form the framework for the masterplan. As a basis for delivery of this framework the following sections provide further detail in terms of:

Intervention Areas – priority areas where development and renewal will be delivered over the next 10 years.

Development Guidance – high level aspirations and development principles for the intervention areas.

Movement Network – identification of the strategic internal movement network where improvements to route quality and public realm is to be concentrated.

Mobility Strategy – proposals to enhance the external connectivity of the campus.

5.2 Intervention Areas

Areas for intervention are identified on the following plan. These areas are where development and renewal can be prioritised over the next 10 years and beyond. That isn't to say that there won't be opportunities for development in other parts of the campus, but these are considered to have the most capacity to address the strategic priorities. The design and quality of any development and renewal works, including spaces, buildings and public realm will be undertaken in line with 5.3 Development Guidance and 6.1 Development Management.

IA01 Covert North – Location of the current Sports Centre and William Emes Building and the sports centre car park.

IA02 Chancellor's West – The area west of the Chancellor's Building.

IA03 Chancellor's Building – The Chancellor's Building itself.

IA04 Chancellor's East – The area east of the Chancellor's Building and the Student's Union car park.

IA05 Barnes – An area of Barnes Hall of residence.

IA06 Lindsay– Lindsay halls of residence.

IA07 Central Drive – The Hornbeam and William Smith Building.

IA08 Union Square South – The library and Student's Union

IA09 Horwood - Halls of Residence

IA10 Innovation North – The northern area of the Science and Innovation Park.

IA11 Campus East – The undeveloped area of currently green belt land to the east of the campus.

IA12 Innovation South – The southern area of the Science and Innovation Park.

5.3 Development Guidance

At this stage it is not the intention to define in detail a series of proposals for each intervention area. Instead a series of high level considerations have been identified, which will form the basis for more detailed analysis and development over the term of the masterplan.

Academic & Enterprise

IA01 Covert North

Sporting facilities are an important part of the University's offer and it is recognised that investment is required either to bring the current sports hall up to a higher standard or to build new sports facilities within the campus. Any new sports facilities on campus will need to retain a physical relationship with the adjacent sports fields, and will need to provide flexibility of use, but need not necessarily be located in this zone and could relocate to a nearby site (e.g. site IA4).

Being located outside of the inner ring of roads, this area is a better location for car parking. There is potential to consolidate car parking into this area as part of the removal of car parking within the ring (e.g. through a potential 'land swap' with the car parking on Intervention Area IA4).

In order to assemble a development site there is scope to incorporate the William Emes Building and adjacent stores, which are of no particular architectural value and could relocate elsewhere if necessary.

IA02 Chancellor's West

This area includes the Colin Reeves, Media, MacKay, Jack Ashley and Science Learning buildings as well as a number of hardstanding and landscaped areas. The area is largely functional in appearance and the quality and legibility of the spaces in between buildings is also very poor.

It does allow, in the short to medium-term space for a large teaching / social space to enhance the facilities in Chancellors. However, given the poor qualities of this area, there is scope over the longer term to restructure it entirely. This would open up a substantial development opportunity at the heart of the university and provide the means to create improved pedestrian linkages and public realm.

It is therefore suggested that any renewal of buildings or redevelopment in this location is weighed up with the wider opportunity to restructure this area over the long-term. If any proposals do come forward over the short-term, they should be considered within the context of a phased masterplan that covers the whole intervention area in order to ensure wider opportunities are not constrained.

Since activities will continue to occur in this area, any land within this zone that becomes 'fallow' following the relocation of uses and any associated demolition will require attention to ensure that it doesn't negatively impact on the campus experience. This will include the identification of short to medium-term 'meanwhile' uses and a suitable landscape treatment.

IA03 Chancellor's Building

The Chancellor's Building is one of the main hubs of the university for both students and staff. It includes teaching and administration functions and the main campus food offer. In order to ensure that the university continues to provide the services it needs and a high quality experience, opportunities will arise to renew this key facility over the masterplan period.

IA04 Chancellor's East

This is largely an area of car parking and 'in between' landscaping. The area sits at the gateway to the academic core and is adjacent to the heart of the university, Union Square.

With the aspiration to remove car parking from within the inner ring, there is scope to relocate car parking elsewhere from here and form two substantial development sites. This may include a number of new buildings, but should also incorporate strong pedestrian connections and high quality public realm.

IA05 Barnes

This area of residences is identified as having a limited life and will be demolished following re-provision elsewhere on campus. It is proposed that the area will become car parking, with links to an improved public transport solution utilising the "Old Entrance" from the A525 as a bus access only.

IA06 Lindsay

As part of a wider endeavour to enhance and expand Keele's residential offer it is proposed that poorly performing areas of Lindsay Hall will be redeveloped over the course of the masterplan period to provide new fit for purpose residences.

IA07 Central Drive

This area occupies the central point between two important pedestrian axes, the main Central Drive east – west route and the north – south route between the Sports Hall and Lindsay Hall. The focus within this area will largely be on public realm improvements but the future of the William Smith Building will also need consideration. There is an opportunity to redevelop the site and create a higher quality replacement building and potentially a public square that could incorporate existing areas of landscape north of Central Drive.

IA08 Union Square South

Incorporating both the Library and Student's Union, this intervention area plays an important role in the overall identity and experience of Keele. It is known that both facilities will require improvements during the masterplan period and this may include the possible redevelopment of the Students Union. The quality of any renewal works, including buildings and public realm, should be of the highest quality considering the significance of this location. Plans will also be progressed to limit / remove vehicles from the area immediately in front of the Library to create a pedestrian focused area for students and staff.

IA09 Horwood

Similarly, to Lindsay Hall, areas of Horwood Hall will be redeveloped over the masterplan period to provide new and improved residences. This will also include an area of expansion through the redevelopment of the former car park to the east of Keele Hall Road.

IA10 Innovation North

This includes the northern part of the Keele Science and Innovation Park within which a number of projects have recently been completed. In line with the aspiration to create an integrated mixed use campus, these and future developments will include both academic and commercial uses in addition to science park buildings.

As part of the overall aspirations for a green, pedestrian friendly campus, this area should be developed in a manner that focuses on high quality public realm and landscaping, with buildings forming attractive road frontages and easy access for pedestrians and users of public transport.

IA11 Campus East

It is expected that the Science and Innovation Park will largely be developed out by the end of the masterplan period, so to ensure the university has a continuous pipeline of development land, there is a need to look beyond the next ten years and consider further opportunities for growth. Whilst this area is currently designated as green belt in the Local Plan, a new local plan is in development. The Preferred Options Consultation Document produced as part of the Joint Local Plan identified land to the east of the Science and Innovation Park as an area for potential green belt release, forming part of the wider 'Newcastle Western Urban Extension.'

The university is working with Newcastle-under-Lyme Borough Council and Staffordshire County Council to inform the development of the Local Plan with the intention that the new Local Plan allocates this land for university expansion.

It is suggested that this new area follows similar guidelines to the existing Science and innovation Park, focusing on a mix of Academic (40-45%), University / R&D related Commercial (40-45%) with the remainder available for additional University related residential accommodation including a Graduate Village linking to domestic developments to the south (Innovation South).

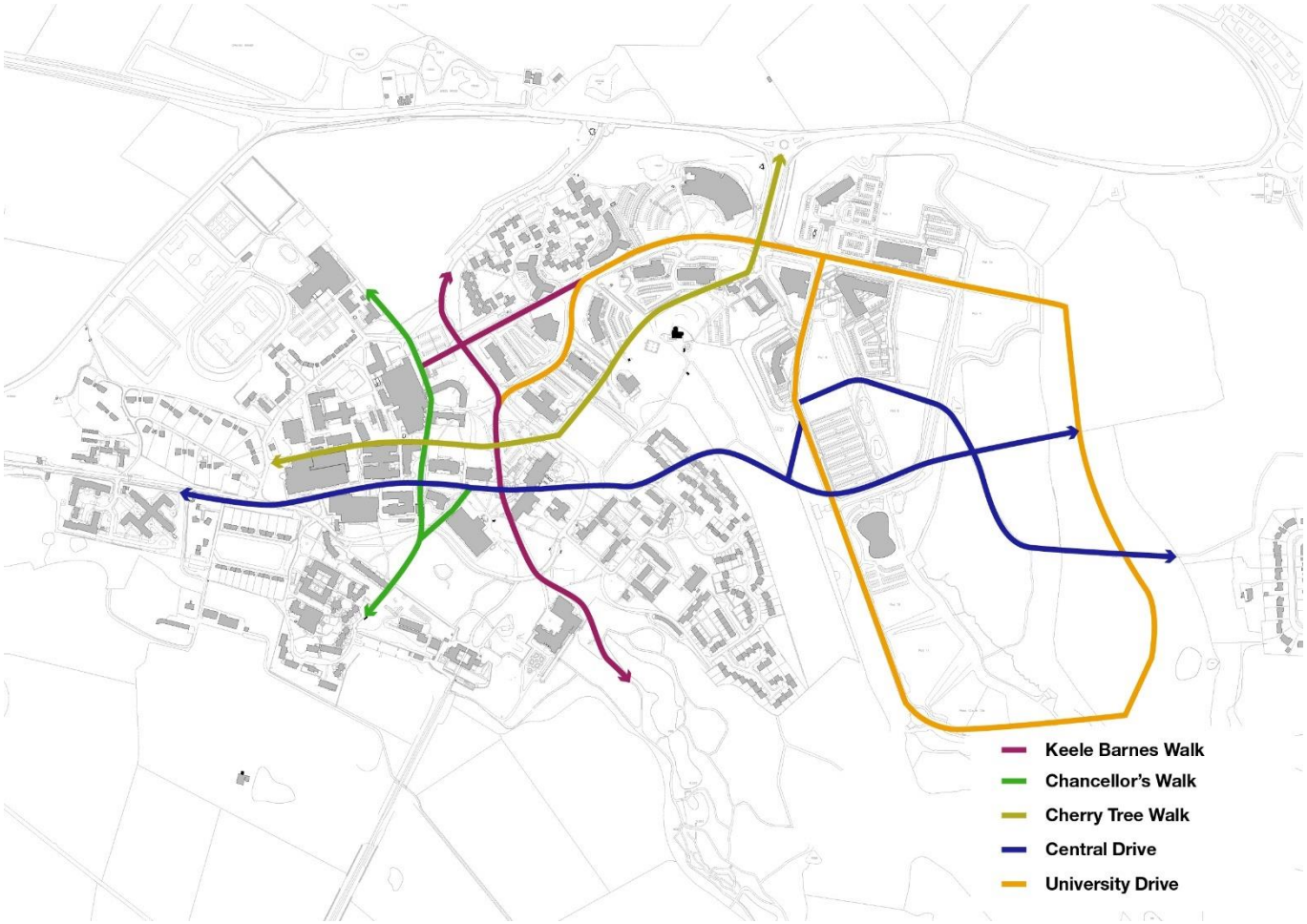
IA12 Innovation South

The southern part of the Science and Innovation Park is identified as a potential area for a fifth residential community to serve the student population. This forms part of the wider objective to mix uses across the campus and will provide added purpose to enhancing connections across campus, including the link through the Stacey Plantation.

5.4 Movement Network

Across the campus there will be opportunities to deliver improvements to the public realm as part of the setting of new / refurbished buildings as well as proposals of a more strategic nature aimed at enhancing the quality and reach of the pedestrian / cycle network. To act as a guide for these works, five key desire lines have been identified as priorities for enhancement. Together each desire line is currently comprised of a number of different paths and highways and the aim would be to better co-ordinate connections between these routes in order to form a more cohesive, convenient, comfortable and legible pedestrian network that connects the main functions of the university campus. These are not the only routes that would benefit from improvement, but should certainly be treated as priorities.

External to the campus is the promotion of the NSSTN Phase 1, which will improve movement and connectivity between the campus and other key centres within North Staffordshire and South Cheshire. The NSSTN will provide a terminus for eco-buses and taxis, autonomous vehicles, bicycles and other evolving transport solutions, as well as making available some areas for park and ride facilities and dedicated University vehicle parking. Therefore, the location of the Hub will also need to be appropriately linked into the campus movement network once the location has been confirmed.



Central Drive

This includes the Central Drive walkway as well as other routes and connections, which together form the main east –west desire line through the academic core and Science and Innovation Park. Of particular importance is the need for an enhanced connection from Union Square through Horwood Hall and Stacey Plantation to the Science and Innovation Park and proposed area of expansion.

Chancellor's Walk

This route comprises the main north – south desire line through the campus from the Sports Hall to Lindsay Hall. The route is well used but very poor in terms of the provision of space, quality of surfaces and overall convenience / legibility. With Central Drive this is one of the key routes across the campus and is therefore a priority for intervention.

Cherry Tree Walk

This forms a second east – west route between the science laboratories and Science and Innovation Park. The part formally identified as Cherry Tree Walk is fairly pleasant, but the rest of the route is lost within service areas and the backs of buildings. By expanding this to the east and demarcating a much wider and legible route, there is scope to create an alternative 'off road' connection between the existing academic core and Science and Innovation Park.

Keele Barnes Walk

By formalising this desire line, Barnes Hall can be better connected into the pedestrian network and Keele Hall better integrated into the campus community.

University Drive / Innovation Way

These routes connect the academic campus with the Science and Innovation Park and proposed area of expansion to the east. They are multi-modal routes incorporating both pedestrians and vehicles, but are mostly dominated by the needs of the latter. Whist they will continue to provide for vehicles, carriageway and junction works should be proposed to improve pedestrian and cycle connectivity. This can be enhanced by the aspiration to ultimately remove the vehicle route dividing Home Farm and the Smart Innovation Hub, creating a pedestrian space between to two centres.

5.5 Mobility Strategy

The Mobility Strategy seeks to address and influence existing and anticipated social, technological, environmental and physical challenges affecting the operation of the campus, as well as mitigate any adverse transport impacts arising from new development at and around the University, in order to create a safe and attractive movement environment.

The University estate is currently dominated by the private car and although public transport penetration of the campus is good, pedestrian and cycle movement is unsatisfactory. Ease of mobility within the campus can be improved through relatively modest measures delivered through planned programmes (e.g. creation of dedicated cycle and pedestrian routes) or as opportunities arise through individual development projects, but significant and sustainable improvements to mobility standards within and adjoining the campus will only be achieved through the development of an integrated sustainable transport solution, which responds to not only existing local transport challenges, but also the University's growth needs and wider development initiatives and plans.

The opportunity exists to form a sustainable transport initiative that addresses existing and anticipated social, technological, environmental and physical challenges as well as mitigating the adverse transport impacts of new development at and around the University.

The NSSTN will create a transport solution, integrated with the renewable and sustainable strategies being brought forward at the University. It will provide a terminus for eco-buses and taxis, autonomous vehicles, bicycles and other evolving transport solutions, as well as making available some areas for park and ride facilities and dedicated University vehicle parking. This will offer the scope to explore and embrace electric vehicles, hydrogen vehicles and other fuel cell and evolving technologies including bio – methane fuel use.

Although the NSSTN initiative has been formulated as the cornerstone of the Transport Strategy which underpins the University Growth Corridor proposal in the Newcastle-under-Lyme Local Plan, its delivery will bring significant benefits to the campus in various ways including contributing to the removal of intrusive traffic and improving access to public transport.

As a result, the quality of the movement environment within the campus will significantly improve.

Until the NSSTN initiative is brought forward the University will continue to manage the campus movement environment with the aim of creating a pedestrian and cycle friendly campus with enhanced public transport infrastructure. This will include, but will not be limited to:

- Restricting the number of car parking spaces and consolidating these in defined locations and controlling access to the available spaces through charging and permit regimes.
- Opening up an additional access from the A525 and A53 for buses, in order to improve bus penetration and access into the campus.
- Creating new cycle and pedestrian routes.
- Providing electric points and promoting the use of electric vehicles

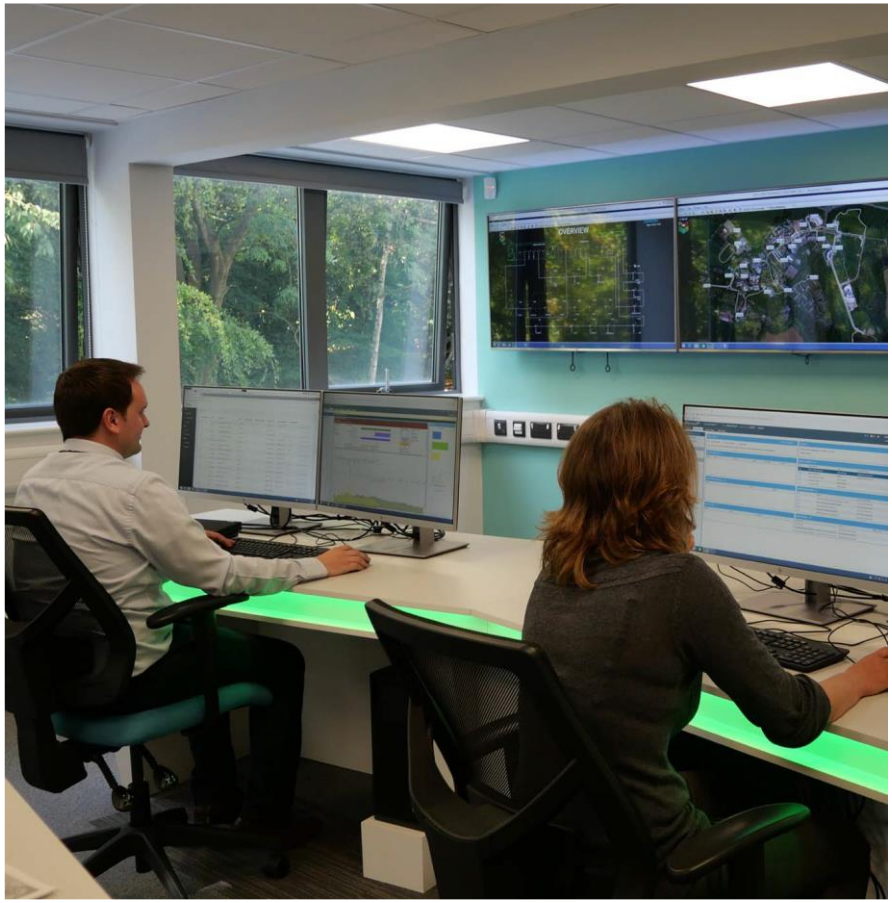
5.6 Smart Energy Network Demonstrator

Keele is the largest campus university in the UK, serviced by its own private utility network to support a wide range of business, academic, residential and leisure users. This mix of uses, ownership of a private network, an established range of renewable energy sources and the scale of the campus, allied to the university's expertise in sustainability and green technologies, provides a unique opportunity to develop an at-scale demonstrator for smart energy technologies.

The Smart Energy Network Demonstrator initiative (known as SEND), funded from Europe, Central Government and private investors, is transforming the Keele University Campus into a world-class demonstrator facility that will provide a unique testing site for the evaluation of new and evolving renewable and low carbon energy technologies.

Being the only "at scale" facility in Europe, it will include the development and evaluation of new and evolving initiatives relating to renewable and low carbon energy generation, management, storage and distribution.

The University has also installed, with the assistance of our partner Equans, two wind turbines (Rated at 0.9MW and 0.8MW), over twelve thousand solar panels (Rated at 5.6MW total) and a large-scale storage battery (Rated at 1MW). These renewable technologies will form an essential part of the wider SEND infrastructure requirements as well as securing a reduction of over 30% in Carbon emissions and providing the foundations for future sustainable development and growth.



6. IMPLEMENTATION

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6.1 Development Management

Campus Development Strategy

Development proposals within and adjoining the campus shall be consistent with the principles and imperatives of the adopted Campus Masterplan Strategy

Campus Development Policies

General

New development proposals and alterations to existing buildings within the campus will be expected to demonstrate excellent design and contribute positively to the character and quality of the built and natural environment of the campus. Proposals for new development and alterations to existing buildings will be expected to:

(a) Respond to the local context and the form of surrounding buildings;

(b) Take account of relevant landscape and topographical features;

(c) Ensure that all components of the proposal, such as buildings, car parking, access routes, open space and landscaping are well related to ensure an integrated and attractive development;

(d) Take account of sensitive wildlife habitats, and retain trees shrubs and hedges that contribute to the character of the development site and the wider campus;

(e) Use appropriate materials in order to complement the character and appearance of existing buildings and landscapes within the campus;

(f) Embrace sustainable design, construction and operational elements;

g) Embrace prevailing imperatives to meet public health safety and security requirements;

(h) Ensure safe access for pedestrians, cyclists and road users;

(i) Promote walking, cycling and public transport use; and

(j) Promote healthy living standards.

Housing

Proposals for residential development within the campus for University staff, students and the wider University community which accord with the adopted Campus Masterplan Strategy will be supported, subject to compliance with any specific requirements set out in the General Campus Development Policy.

Transport

Support and encouragement will be given to the provision and enhancement of public transport infrastructure, including bus waiting and transfer areas and passenger shelters, and services which serve the University, Keele village and surrounding areas. Transport facilities and services within the campus will be provided, maintained and managed in order to encourage the use of non-vehicular modes of transport.

Car Parking

Car parking facilities will be provided in accordance with adopted standards and the operational needs of the University and commercial occupiers. Existing and any additional parking provision will be operated and managed with the objective of reducing the reliance upon the private car.

Access

Development schemes within the campus will be required to provide clearly defined, safe and accessible pedestrian routes and facilities for all users including disabled people. Such routes will be expected to contribute towards promoting easy access to local services and facilities, including off-campus services.

Cycling

Development schemes within the campus will, where appropriate, be expected to provide safe facilities for cyclists, including dedicated cycle ways and cycle parking facilities in accordance with adopted standards.

Heritage

Development proposals which adversely affect designated heritage assets and their setting will be resisted. Development proposals within, or immediately adjoining, the Conservation Area will be required to demonstrate that the character and appearance of the Conservation Area will be preserved and enhanced.

Design

Development proposals for new or extended buildings, or public realm works, shall promote high standards of sustainability and innovation in design, materials, construction and safety. Development proposals shall respond positively to the local context and form of surrounding buildings, landscape and topography so as to add positively to the character and appearance of the campus and its wider setting.

Ecology

Development proposals for new or extended buildings, and facilities within the campus, will be expected to minimise adverse impacts upon, and where possible enhance, protected habitats and ecological diversity.

Facilities

Where appropriate and feasible, the University will facilitate access to, and the use of, University services and facilities for members of the local community.

Renewable Energy

Proposals for renewable energy infrastructure within the campus, or at locations where such infrastructure will contribute to meeting the University's energy needs, will be supported in principle. Detailed proposals will be expected to comply with the relevant requirements of the General Campus Development Policy.

Green Belt

Proposals for University related development in the green belt, other than where defined in the masterplan, will be resisted unless very exceptional circumstances have been demonstrated.

6.2 Estate Management

Campus Facilities Management Strategy

The University's facilities and assets will be sustainably operated and managed to meet the needs and requirements of the University, campus users and residents and University partners.

Campus Management Policies

The management and renewal of campus facilities and assets will be undertaken in accordance with the principles and imperatives of the adopted Campus Development Policy.

Campus buildings will be maintained, and their utility determined, in accordance with their suitability to adequately meet required standards of performance and sustainability.

The natural resources of the campus estate, including the woodland and lakes, will be managed and developed to ensure that the rural character and landscape attractiveness of the campus is maintained.

Subject to the requirement to maintain and enhance the character and attractiveness of the campus estate, proposals for any limited commercial exploitation of the estate lakes and woodland will be considered on their individual merits.

The University will work with its partners to ensure that the provision of non-academic University facilities and services are provided on a scale and at locations within or external to the campus that best serve the needs of existing and future users.

6.3 Estates Strategy and Implementation Plan

The masterplan will be supported by a rolling implementation plan that will be managed by the Estate and Campus Services Directorate and reviewed and updated every three to five years. The Estates Strategy and Implementation Plan will underpin a Ten Year Capital Investment Plan and will comprise a number of components as set out below.

Built Estate

Conditions Survey – the Estate and Campus Services Directorate will be undertaking a refresh of the condition and suitability assessment of all non-residential accommodation. The survey will work with users to identify if each building is fulfilling its needs and establish its overall condition. The survey will be used to inform future investment in the university estate, establishing which buildings are capable of remodelling and which have reached the end of their economic life.

Space standards – a schedule of generic space standards will be developed to inform briefs for new university development. Whilst there will be an element of flexibility in the application of these standards, the aim is to establish a common baseline for all development projects coming forward.

Space management – the Capital and Space Group is undertaking a corporate overview of how space is utilised in the campus. This will obviously impact on the future use of existing and new accommodation.

Landscaping

The mature landscape setting of Keele is one of its most distinctive and positive features. In order to sustain and enhance this resource for future generations it requires careful management. This includes the care and maintenance of existing planting stock as well as the planning of new and replacement planting to accommodate development and improvements to the University campus and its setting.

Recognising that areas of the campus will change over time and bearing in mind the period required to cultivate a mature landscape, there is a need to ensure that new planting is provided in a strategic and planned manner so that the renewal and development of the campus's arboricultural assets are sustainably managed and that campus developments benefit from an appropriate landscape context. This will also require working in partnership with the local planning authority and other relevant stakeholders.

Signage

The university campus community is constantly changing with a new intake of students each year and new staff and visitors arriving at Keele on a daily basis. Faced with so many first time visitors to the campus, it is important for people to be able to easily orientate themselves around campus. Whilst structural changes to the campus over time will enhance its coherence and legibility and technological advances in the form of apps are making it easier for people to find their way around places, there is still the need for effective wayfinding and building signage.

The university will continue to review all signage on campus to ensure there is an overarching and consistent approach. This will recognise the range of visitors to the university and their specific needs (e.g. wheelchair users, visually impaired people), as well as the potential to redefine the movement network so that it makes for a more convenient and comfortable experience. The provision of campus signage will also require constant review against development activity within the campus to ensure that new destinations and routes are well integrated into the strategy.

Materials

The new Denise Coates Foundation Building (Smart Innovation Hub) responded to its brief as a gateway and hub to the university campus through the precedent of the Keele Chapel, which is built in distinctive Staffordshire Blue brick and is a campus landmark. As other new buildings and public realm are developed there will be other opportunities to enhance the coherence and quality of the campus, but at present there is no defined palette of materials. This will be progressed in order to reinforce the best qualities of the campus environment and will include paving surfaces to create a more legible movement network.

Health and Wellbeing

Good health and wellbeing allows staff and students to fulfil their potential. Many aspects covered within the masterplan will have a positive impact in that regard, including improvements to greenspace, access to new and improved amenities and enhanced walking and cycling options. There is a need, however, for a more holistic review of the campus from a health and wellbeing perspective to identify any potential gaps and further opportunities to enhance the health and wellbeing of the campus community, respecting the rights, responsibilities and dignity of individuals and Keele's commitment to equality, diversity and inclusion.

Sustainability

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. The concept can be interpreted in many different ways, but at its core is an approach that aims to balance different, and often competing, needs against an awareness of environmental, social, cultural and economic limitations. Living within our environmental limits is one of the central principles of sustainable development and one of the implications of not doing so is climate change.

Sustainable futures is one of the university's strategic research areas. The SEND project, which provides a unique testing site for the evaluation of new and evolving low carbon and renewable energy technologies, will make a significant contribution to a sustainable university campus through a reduction in CO_2 emissions. The development of the NSSTN will also make a meaningful contribution by reducing the reliance on fossil fuel burning motor cars and increasing the use of more sustainable modes of transport.

There is a need, however, to look more widely at how the university can reduce its carbon footprint and achieve sustainable development more

generally in terms of energy use, transportation, the sourcing and procurement of all goods and services from food to building materials, the management of biodiversity and water management.. This should consider all direct greenhouse emissions generated by the university (scope 1) as well as other indirect emissions (scope 3). Scope 3 covers the extraction and production of purchased materials and fuels, transport-related activities in vehicles not owned or controlled by the university, outsourced activities, waste disposal, etc.

6.4 Partnership Working

The University will continue to work alongside a wide range of people and organisations, both internal and external to the University, in order to implement the policies and proposals of the Campus Masterplan.

Valued existing partnership arrangements include the Local Enterprise Partnership, Newcastle under Lyme Borough and Staffordshire County Council, Keele Parish Council, public transport operators, health and care providers, neighbouring universities and colleges, developers and funding organisations and various internal bodies and groups. The University will actively involve relevant partners in the development and implementation of the policies and proposals of the masterplan in a timely and meaningful way.

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Keele UNIVERSITY

Estate *and* Campus Services