



PART 2

THE CAMPUS IN CONTEXT

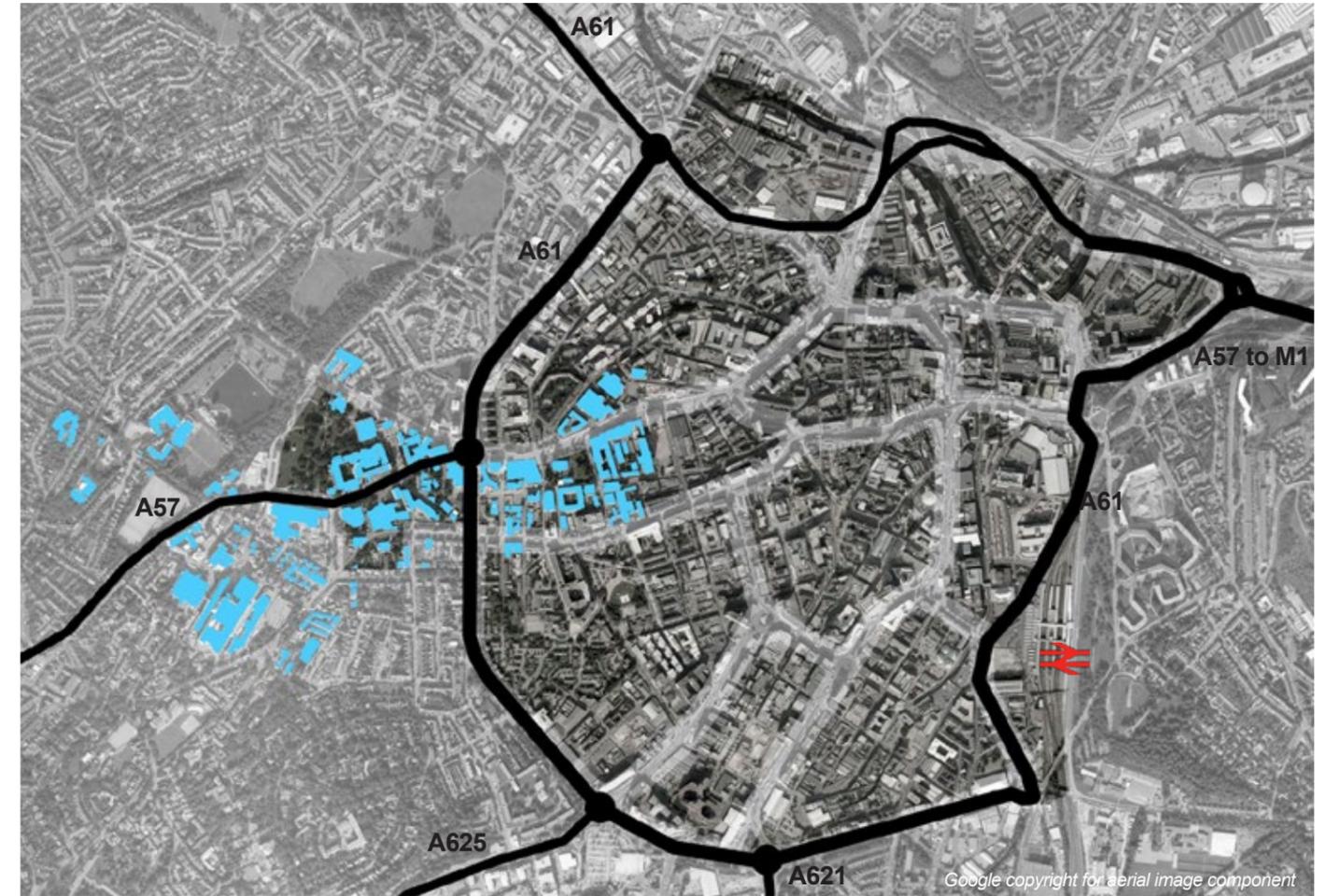
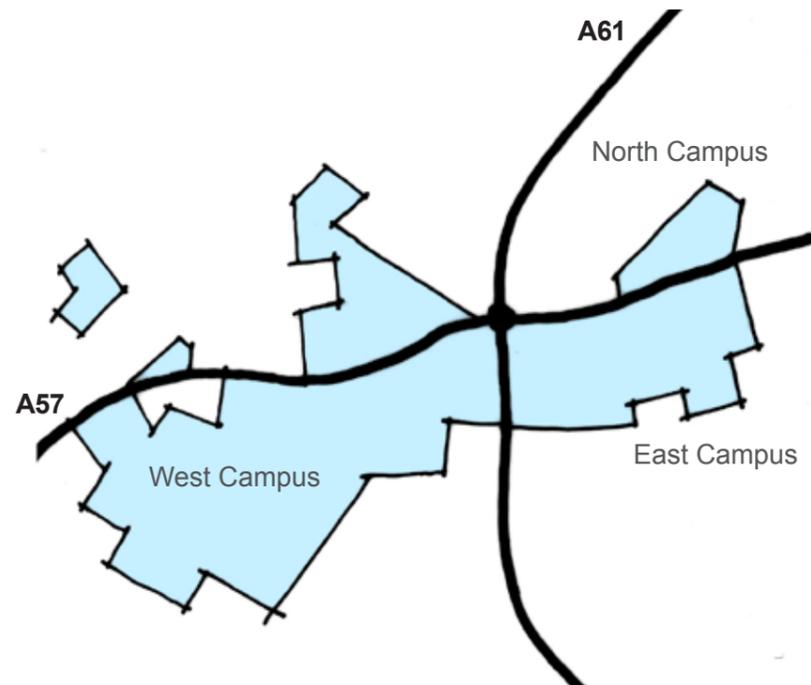
OPPORTUNITIES + CONSTRAINTS

2.1 Location

The University of Sheffield central campus is located on the west slopes of the city centre. The campus forms a city gateway characterised by a change from leafy suburbia to a more built up urban environment.

The central campus is often identified as sitting within the St George's Quarter of the city, though reaches beyond this quarter in all directions, and as such has highly permeable boundaries. The central campus is divided by Upper Hanover Street, a north-south section of the A61 city ring road, and further divided by significant east-west roads Western Bank and Broad Lane. The resulting campus zones are known as the east, north and west campus. The academic and social shape of these is described in later sections.

On foot, the centre of the campus is approximately 15 minutes from the city centre, and 25 minutes from Midland Rail Station, the Bus Station and Sheffield Hallam University, which are east of the city centre.



Principal routes to the city



LOCATION KEY

- 1 Weston Park
- 2 Royal Hallamshire Hospital
- 3 Firth Hall
- 4 UoS Students' Union
- 5 St George's Church
- 6 Devonshire Green
- 7 City Hall
- 8 Sheffield Town Hall
- 9 Sheffield Hallam University
- 10 Bus Station
- 11 Midland Station
- 12 A61 Ring Road

University buildings shaded blue

Whilst the Hallamshire Hospital and Sheffield Children's Hospital are not owned by the University of Sheffield, we do have significant numbers of staff based in these two locations under long-term arrangements which is why they are included here.

Google copyright for aerial image component

2.2 The Wider Estate

The University Estate extends beyond the central campus, and includes student accommodation, sporting facilities, and the Advanced Manufacturing Research Centre with Boeing.

These wider links with the City are all fundamental aspects of the University's social, educational and commercial integration with Sheffield.

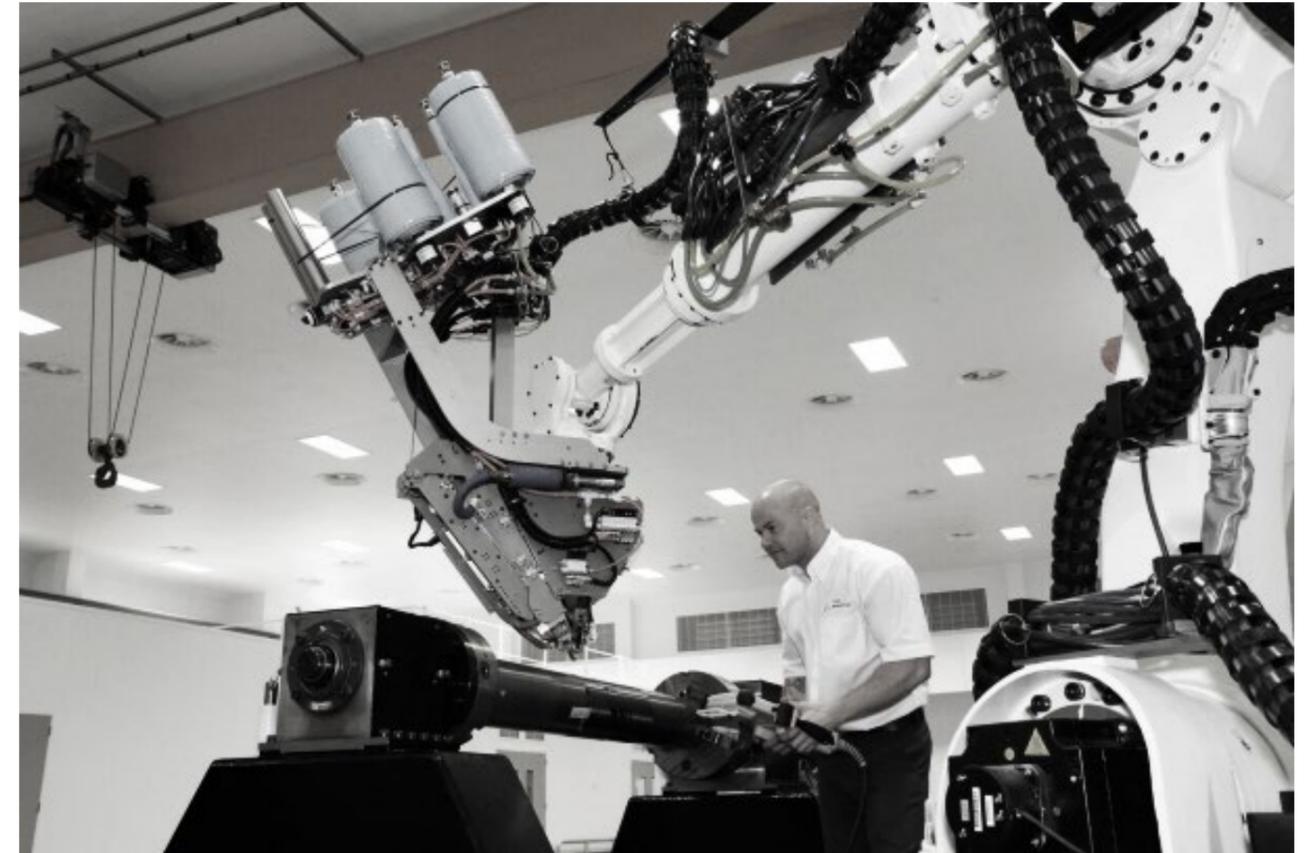
The University estate reaches well beyond the central campus.

The Halls of Residence are concentrated to the west of campus, primarily in the Ranmoor and Endcliffe accommodation, and further north in Tapton Hall on Crookes Road. The context for these buildings is one of leafy streets lined with Victorian terrace, semi-detached or detached houses; many of which are owned by staff, students or private landlords letting to students. These neighbourhoods are characterised by this successful overlap of university and city life in commercial and social terms. This is particularly the case for the local shops and businesses in Broomhill, near the University Halls of Residence, and on Ecclesall Road, further to the south, a popular choice for privately owned student flats. Typically students and staff travel from these neighbourhoods to the central campus on foot, by bicycle or bus.

The University's sport facilities are located between the residential neighbourhood of Broomhill and the central campus. They include the Goodwin Centre with indoor courts, pitches and a swimming pool, and externally a group of artificial grass pitches. These facilities, and the adjacent Weston Park, create a sense of open space between the residential districts and the denser central campus fabric. The University also provides sports pitches at the Norton Playing Fields to the south of the city.

The University occupies c.1700sqm net on the Northern General Hospital site dealing with two key areas: the delivery of clinical training within the new state of the art Clinical Skills Facility at Samuel Fox House; and the Clinical Research areas for Cardiovascular and Metabolic Bone, utilising the joint Sheffield Teaching Hospitals Clinical Research Facility. All areas are directly linked to the University's Faculty of Medicine Dentistry & Health.

The University's Advanced Manufacturing Research Centre is located in South Yorkshire on the border of Sheffield and Rotherham. This is a 15 minute car/taxi journey from Midland Station, and can also be reached by the TM Travel A1 bus service from the station. The success of AMRC has necessitated the acquisition of additional land at Sheffield Business Park. Circa 50 acres has been secured to deliver our ongoing developments over the coming 5-10 years, known as AMRC2. Independent analysis of our AMRC activities have forecast that at current rates of development the site at AMRC2 will deliver up to £218million per annum to the economy.



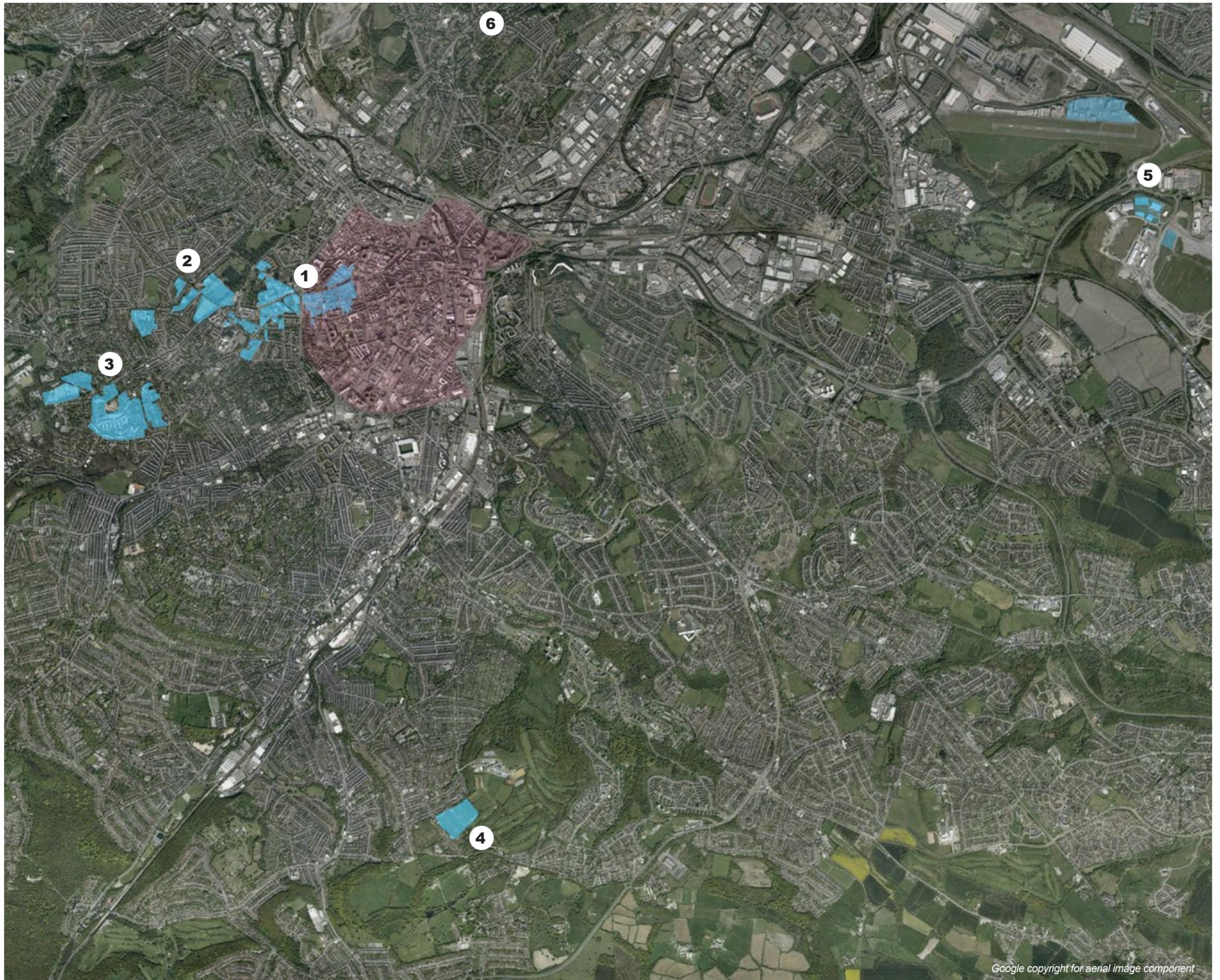
AMRC Composite Centre

The AMRC was established in 2001 as a £15 million collaboration between the University and aerospace giant Boeing, with support from Yorkshire Forward and the European Regional Development Fund. In 2004 the AMRC moved into a purpose-built facility as the anchor tenant for the privately owned Advanced Manufacturing Park. The centre grew rapidly and opened the 4,500 sqm AMRC Rolls-Royce Factory of the Future in 2008. A 1,800 sqm extension was opened in 2012 to house an expanded Composite Centre. The highly successful and growing centre exemplifies the University's long tradition as a world leader in metallurgy and engineering research; and its strong ties with industry in the city.

WIDER ESTATE KEY

- 1 Central Campus
- 2 Sports Facilities and Social Sciences
- 3 Student Residences
- 4 Norton Playing Fields
- 5 Advanced Manufacturing Research Centre
- 6 Northern General Hospital (to north of map)

City Centre shaded pink



Google copyright for aerial image component

2.3 Historic Context

In 1905, the amalgamation by Royal Charter of three local institutions: The Sheffield School of Medicine, Firth College and the Sheffield Technical School, saw the beginning of the institution that would become the University of Sheffield. At the time of the University's foundation in 1905 there were 114 full-time students.

The fact that three independent colleges came together to form the University has affected the physical development ever since. The original creation produced two academic foci approximately one kilometre apart, and this has persisted until the present day. Following the First World War in 1919, when returning ex-servicemen were admitted in large numbers, the full time student figure rose to a short-lived peak of about 1,000, however, between the two wars full time student numbers stabilized at about 750 and expansion into new areas of specialist teaching and research continued slowly.

The Second World War brought with it new areas of specialist research and training in, for example, radar, dietary and vitamin studies, production of anaesthetics and chemicals, magnetism, fuel production and economy, naval cartography, glass manufacture and English language teaching. The benefits of universities during the war alerted the government to their importance and the need to expand them in the post-war years.

In 1943 the Grants Committee announced that universities should look forward to expansion in the years immediately following the war. Predictions for a 50% increase in student population meant that Sheffield, like all other institutions, was unprepared for such growth. Even if that level of growth was not achieved, it was clear that a re-think of the competition-winning scheme for Western Bank was required. By 1946 the University population had grown to 3000 and there was great pressure on the university to expand. In 1947 the University announced the findings of its development committee in the University Development Plan, which outlined sites to be purchased to allow development. The 1950's saw the proposals that led to the largest expansion in the 1960's. The need for new Departments for Chemistry and Physics, the completion of the Western Bank Quadrangles for the Faculties of Art and Law, a new Medical School, the development of Engineering, a new library, the extension of the Students' Union, a new Great Hall and Administration Building and new Halls of Residence were highlighted. The building of the Chemistry Building at the base of Western Bank allowed some of the above needs to be answered, however, more development needed to be undertaken.

In 1953 GMW and Partners won the open competition to find a 'new architecture' to solve the changing face of the University. The realization of the scheme took a considerable time, due to the heavy cost of financing the grand GMW plan. The scheme also underwent considerable development through time. In particular, the Arts Tower changed greatly and was the tallest academic building in Europe at the time. This highlights the fact that the University was striving to present itself as a dynamic and grand institution.

At the same time the University was also growing at other sites, notably St. Georges, once again reinforcing the two centres of academic focus. By the 1970's the University required a new development strategy, since the GMW master plan was effectively complete. The principal aspect of the brief was the desire to resolve the situation created back in 1897 with the splitting of the institution into two sites. The limited competition was intended to address the issue of unifying the campus. One of the main issues to be faced was the proposed ring road at Upper Hanover Street that would reinforce the split of campus accommodation. The winning scheme by Arup Associates managed to overcome the difficulties of the split by placing a glazed concourse over the ring road linking the two halves of the site. The development of the scheme was never realized, only the Computer Centre on Hounsfield Road was completed. Since the Arup master plan the University has built a number of more isolated schemes making use of available land in and around the main area of the campus.

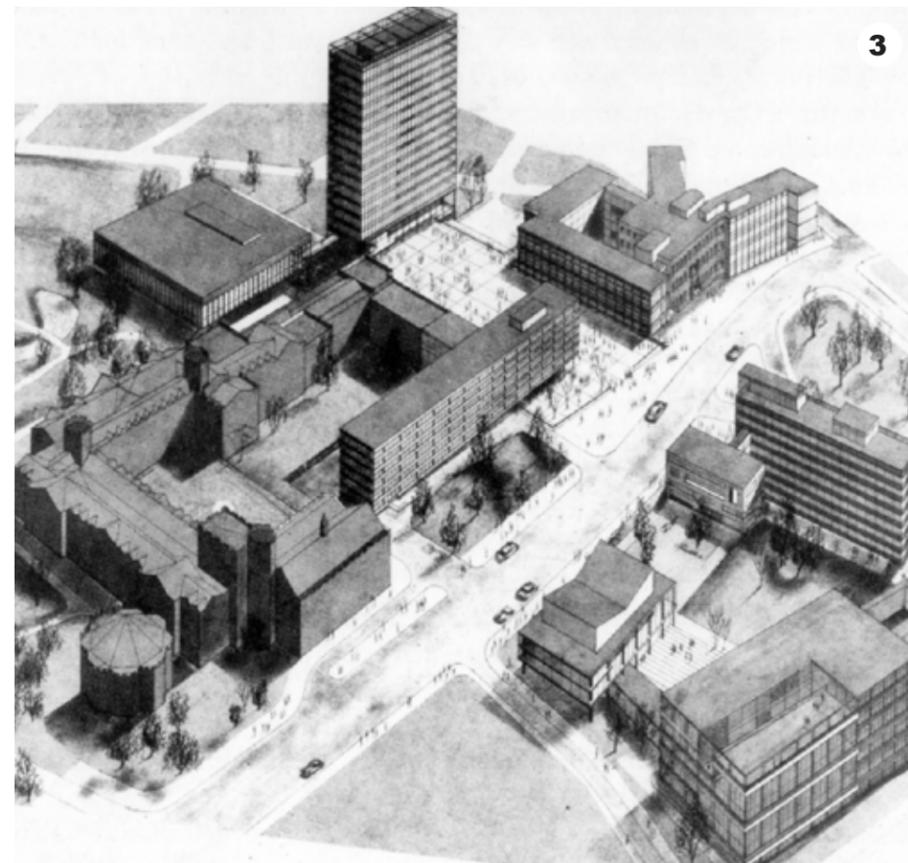
The 1980's saw the opening of the Octagon Centre, the Sir Henry Stephenson Building, and major extensions at the Northern General Hospital. In the 1990's, new premises for the School of Clinical Dentistry, the Management School, the Division of Education and St Georges Library (incorporating Blackwell's University Book Shop) were opened, together with extensions to Stephenson, Halifax and Tipton Halls of Residence, three new blocks of student flats, and the Regents Court building which houses the departments of Computer Science and Information Studies.

In 2003 Turnberry Consulting were commissioned to produce a Development Framework. The phased proposals looked to densify the campus, notably the areas immediately to the east and west of Upper Hanover Street. This in turn has led to a number of projects including the Information Commons and Jessop West which though departing from some of the framework principles, help to visually connect the east and west campus. Work has now begun on the The Diamond adjacent to St George's Church.

The present Academic Estate stands at around 365,000 sqm with a population of 25,664 students (2013-2014) and 7,000 staff.



- 1 Postcard view from Weston Park
- 2 Firth Court
- 3 GMW Masterplan
- 4 Western Bank before the Concourse



2.4 The Growth of the University

Since its origin the University has expanded from two ends, Firth Court and Sir Frederick Mappin Building, rather than from a single centre. As a consequence the geographical centre of the campus lies on the Upper Hanover Street ring road, and the East and North Campus are distanced from existing recognisable University public spaces.

The Masterplan provides the necessary opportunity to re-think the central area of the campus which at the present time lacks any cohesion or focus for the campus. This must be a significant opportunity to improve the sense of place for the University and this Masterplan is therefore critical in helping to develop the University campus.

The adjacent sequence of diagrams illustrates the growth of the central campus from its foundation in 1905, as described in the previous section of this report. This growth from two academic foci, approximately one kilometre apart, explains the academic shape of the University today.

The two halves may have successfully fused in time were it not for the introduction, in the 1960's, of the city A61 ring road (superimposed on the 1958 diagram). This and the increased status of Western Bank to dual-carriageway (also shown) served to fix the perception which prevails today of a campus segregated into parts. The University's most recent developments, adjacent to the ring road (Information Commons and Jessop East), go some way towards visually bridging the divide between east and west campus; however the physical connection remains just as weak, worsened by the existing low-grade pedestrian crossings.

University Buildings

c 1900



c 1923



c 1958

superimposed with
planned ring road

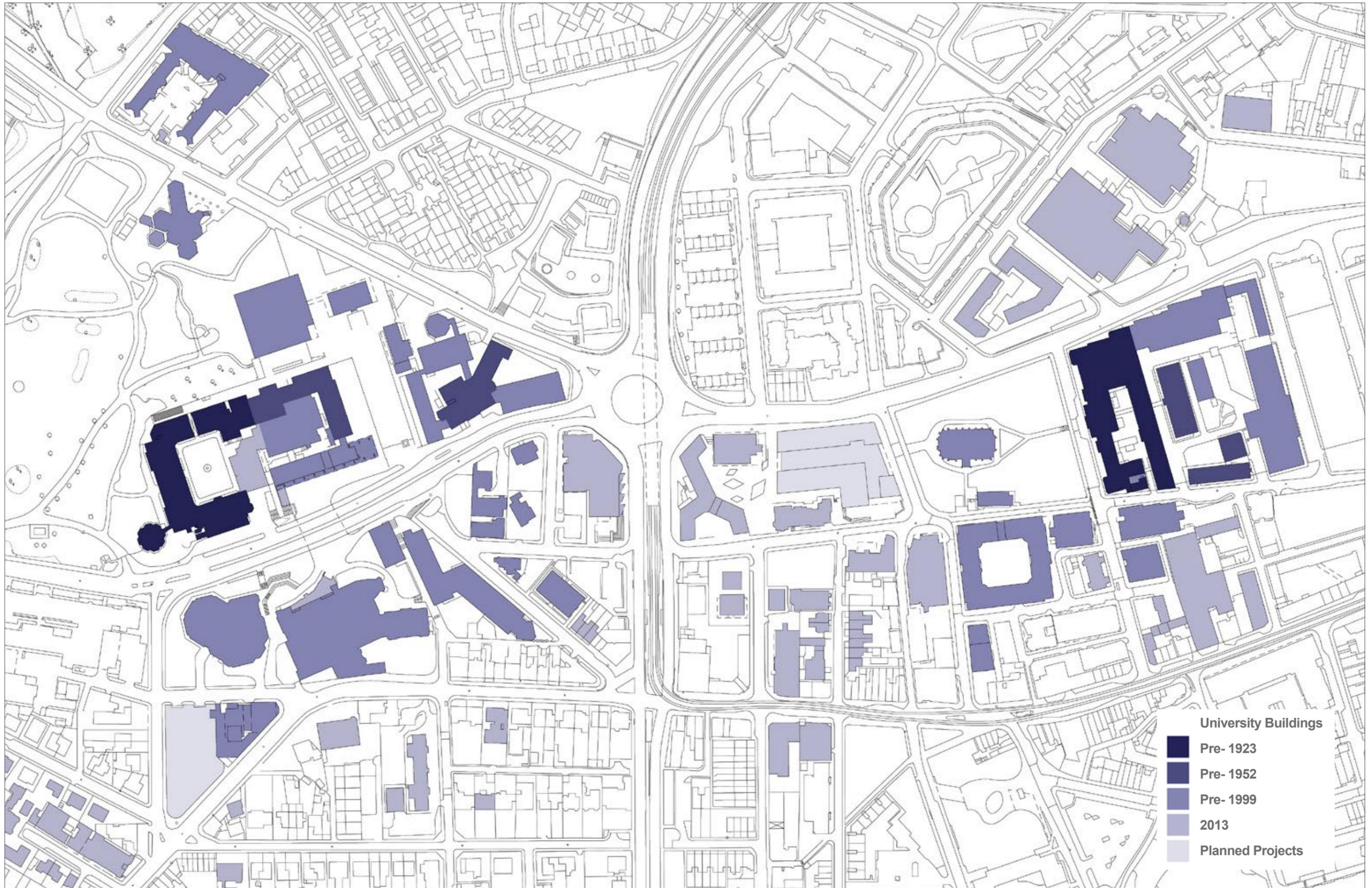


c 1999



c 2013





- University Buildings**
- Pre- 1923
 - Pre- 1952
 - Pre- 1999
 - 2013
 - Planned Projects

2.5 The Campus and the City

The campus straddles the boundary, physically marked by the ring road, between suburb and city centre. The perceived University axis aligns with the extension of the City Gold Route. In creating a unique identity for the 'Urban Campus', there is an opportunity to weave together the civic grain with the suburban green.

The Sheffield City Urban Design Compendium identifies the following targets in the transformation of the city:

- A city that offers a diversity of experience, culture and activity. The streets are the focus of the city's life and the quality of the pedestrian experience is paramount.
- A city that expresses the many layers of its history and evolution in its urban fabric. While preserving the diverse wealth of Sheffield's historic buildings, the potential of sites which are ripe for redevelopment is simultaneously embraced to create the heritage of the future.
- A city that actively promotes sustainable development - not only in terms of reducing energy consumption, but also producing a quality of development which will function well and be a pleasure to experience.
- A city that is reconnected with its natural heritage, where the rivers become vital green spaces running through the city, alive with waterway activity.
- A city that rewards quality development with a high return on investment.

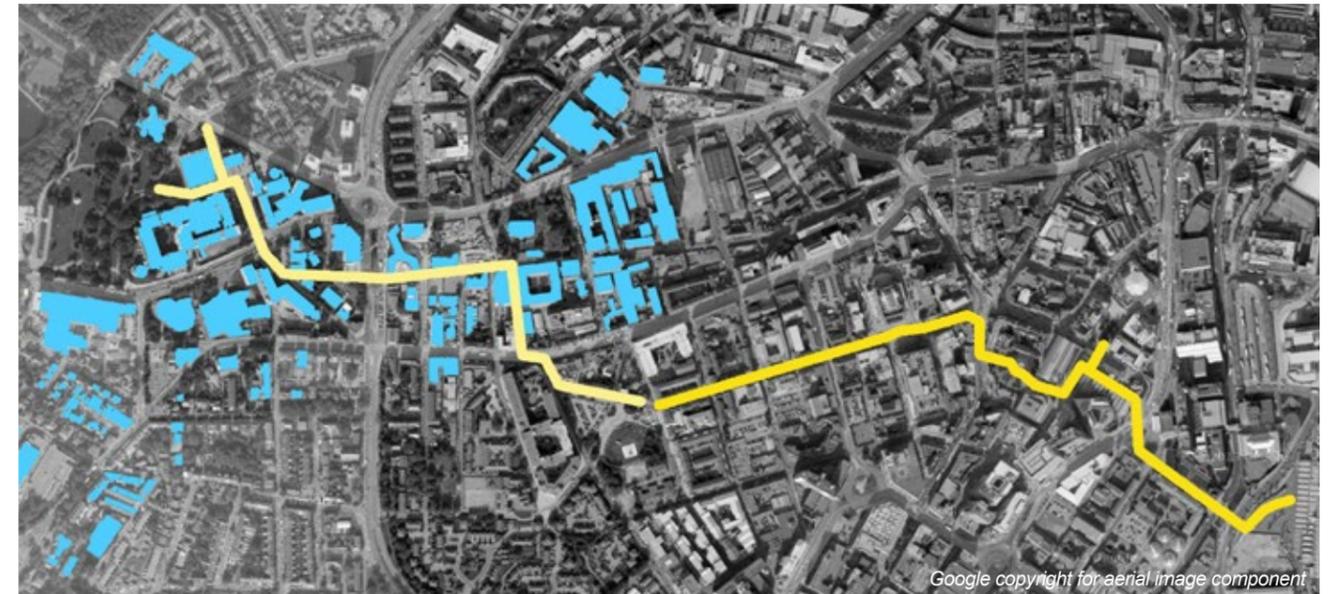
The Compendium identifies the St George's Quarter, with the University of Sheffield at its focus, as an 'integral part of Sheffield's regeneration as a city driven by a new knowledge based economy'. The University Masterplan should reinforce this strategy as an integral part of defining the character of St George's as the 'University Quarter'.

In addition the University will need to grow outside of the St George's Quarter, particularly moving north, south and west of this segment within the Urban Design Compendium. The predominance of the University within St Georges and the need to keep the segment flexible as part of the City's Local Plan are essential prerequisites in order to support the University into the future.

The draft 2013 Sheffield City Centre Masterplan recognises the opportunity to extend the highly successful City Gold Route west through the campus terminating at Weston Park. The challenges faced in doing this are the same as those faced in consolidating the campus identity: the negative impact of Upper Hanover Street and Western Bank intersecting these pedestrian and bicycle desire lines from the City Centre to the west.

A key element of the City's Gold Route is the ability to move pedestrians and cyclists across the city centre through to the University campus. The most successful Gold Route will be exclusively pedestrian and cycles only, which will in part require pedestrianisation of roads in and around the University campus. This Masterplan strongly underscores this need. The City Gold Route connects the most significant urban and green spaces in the City Centre. It follows that an extension of this route should also engage with significant public spaces. This Masterplan study will identify opportunities to enhance or create these spaces, in particular the potential for a new University Square in the Hounsfield Site. This public space will deliver an essential meeting space for staff and students, at the heart of the campus.

The UDC guidance on tall buildings has also been referred to in assessing potential development sites. In particular the Hounsfield Favell Site is identified as a suitable location for a tall building.



The draft 2013 Sheffield City Centre Masterplan recognises the opportunity to extend the highly successful City Gold Route west through the campus terminating at Weston Park

Sheffield City Centre Masterplan 2013 Consultation Draft



KEY TO CITY QUARTERS

- 1 City Centre
- 2 Cathedral
- 3 St George's
- 4 St Vincent's
- 5 Kelham Island
- 6 Riverside
- 7 Castlegate
- 8 Sheaf Valley
- 9 Cultural Industries Quarter
- 10 The Moor
- 11 Devonshire



Copyright for aerial image component

2.6 Academic Shape

The University faculties are largely clustered as a result of their historic origins; this is emphasised by subsequent introduction of major roads. This is potentially most problematic for the Faculty of Engineering which though lively itself, is isolated from the central administrative and social functions of the University.

Recent and planned projects ensure that the University is generally aligned to meet faculty growth in Engineering, Medicine, and Arts and Humanities. However the Science and Social Science Faculties require consolidation and expansion to meet demand and condition targets.

Social Sciences will need to consolidate their growth and the dispersed nature of the Faculty, which operates from 19 separate locations. Science however requires significant support to develop and deliver estate improvements to meet the growing demand for this discipline.

The table opposite gives approximate areas for each Faculty and summarises the University's growth requirements for each.

The plan diagram opposite illustrates the Faculty clusters that make up the central campus. This zoning is seen as a positive attribute of the campus: new students quickly become familiar with the academic 'neighbourhoods' of the campus – Medical, Engineering, Science, and Arts - and begin to identify with their own whilst quickly becoming cognisant of the overall picture. Social Sciences rely on departmental areas due to the dispersed nature of their accommodation. The central social and administrative functions of the University are well located in University House and the Union to the south of Western Bank, and Firth Court and the Arts Tower to the north.

Arguably the weakest area of the campus in terms of 'academic identity' is the Hounsfield Favell Quarter, immediately to the west of the ring road, which due to its building scale and poor external realm lacks the academic character of other parts of the campus.

The continued growth of Engineering presents an ongoing challenge to deliver sufficient accommodation. Social Sciences also present challenges with departments dispersed across campus. There is a significant opportunity to consolidate Social Sciences adjacent to their new Management School. As such, by developing a significant facility in Northumberland Road, space will be released for Engineering in existing spaces, and Social Sciences can create a new heart for the Faculty.

Sport Sheffield plays a major role in the life of the campus and our students. The facilities are at capacity and expansion of our artificial grass pitches is necessary at our Norton site. Replacing the existing pool and gym will be necessary as the buildings are over 50 years old. This will require the provision of new facilities on site as well as expansion of indoor sporting activities.

The Masterplan offers the opportunity to both celebrate the identity of the Faculty neighbourhoods in their external spaces, but to also celebrate the possibly more intriguing interplay between Faculties in the spaces in-between. The provision of learning and social environments in these 'shared spaces' will significantly enhance the external realm character; and also the University's reputation as place of shared knowledge.

Current space provision

<i>Faculty</i>	<i>Area</i>	<i>Status</i>
Faculty of Arts	10,695	No significant changes planned, consolidate performance spaces
Faculty of Engineering	124,287	Significant expansion required*
Faculty of Medicine, Dentistry & Health	35,468	Expansion planned
Faculty of Science	59,520	Consolidation and expansion required
Faculty of Social Sciences	30,977	Growth associated with Management School, Economics and Politics, and consolidation of the highly dispersed accommodation
Professional Services	40,328	Reductions of 10% associated with space efficiencies
Learning Infrastructure	52,774	-
Social & Commercial	33,426	On-going review
Residential	49,682	Disposal of vacant space and refurbishment of legacy buildings
Other	67,669	-
Total	504,826 sqm	

* The Diamond under construction and included in area, is meeting this requirement

KEY TO PRINCIPAL FACULTY USE

- Medical
- Science
- Social Science
- Arts
- Engineering
- Other Facilities

Whilst the Hallamshire Hospital and Sheffield Children's Hospital are not owned by the University of Sheffield, we do have significant numbers of staff based in these two locations under long-term arrangements which is why they are included here.



2.7 Central Campus

Following an appraisal of the existing campus buildings in terms of quality and condition, potential sites for new buildings have been identified. There is an opportunity for these new projects to help shape and enhance the external realm.

Listed buildings

The estate comprises a number of Sheffield's significant Listed Buildings, including Firth Court, the Arts Tower and Western Bank Library. The University also has the Sir Frederick Mappin Building, St George's Church and Jessop Victorian. A number of other smaller grade II listed buildings are included within the University estate portfolio totaling 36 individual buildings. These buildings all have visual prominence on the main pedestrian axis through the campus and help to consolidate the campus identity. It is noteworthy that part of the landscape and retaining wall surrounding the Arts Tower and Western Bank Library is included within the buildings' listing status, as described within their Conservation Management Plan. Although St George's Church building is specifically listed there is no reference to the churchyard or gravestones which are in urgent need of landscaping to provide a more attractive environment for staff and students to utilise. Weston Park is on the Parks List, and the gateway to the Park on its south-east corner is a listed structure.

Projects in progress

There are a number of redevelopments, refurbishments and new buildings currently under construction or nearing completion. These include the provision of a multi-storey car park on Durham Road to the west of the campus. This development is an essential precursor to moving cars from the centre of campus to the periphery and will gradually support this change over time. In addition the former University House has been redeveloped to provide extended Students' Union facilities and has been renamed the University of Sheffield Students' Union. The Pam Liversidge Building was completed in early 2014 providing much needed accommodation for post graduates from all disciplines within the Faculty of Engineering. Recently completed projects including the new Management School at Crookesmoor and an ongoing and significant investment within the quality of teaching spaces continue at a pace. Redeveloping the Engineering estate with a series of detail refurbishment projects and the creation of an atrium between the Sir Frederick Mappin building and central wing are essential to support the Faculty in their continued growth of student recruitment and research income.

Short life buildings

The buildings shown have been identified as RICS Condition C or D, defined as 'Operational but in need of major repair or replacement' and 'Inoperable' respectively. Whilst these buildings remain in condition C/D a long term plan for disposal, redevelopment or refurbishment needs to be agreed through the detailed Estates Strategy for the period 2015 – 2020. Maintaining these buildings in their current state is not acceptable and in particular those within the Hounsfeld/Favell Quarter will require substantial review in order to deliver developable space for the expansion of academic buildings most notably the Information Commons as self-managed learning space as well academic facilities allied to the Faculty of Science.

Potential development sites

The sites of the above buildings have formed the initial basis for a review of potential development sites in both the Hounsfeld and Portobello Quarters. Further opportunities are recognised on the site opposite Jessop East to help enhance the Leavygreave streetscape, and also a small building or pavilion in the Arts Tower Court to help activate the external realm.

Listed buildings



Projects in progress

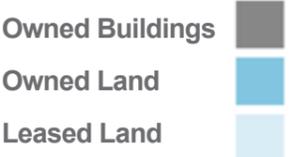


Short-life buildings



Potential development sites





2.8 Advanced Manufacturing Research Centre with Boeing

The University began developing its Advanced Manufacturing Research Centre (AMRC) facility over ten years ago. In the subsequent ten years the AMRC has become the world leading centre of advanced manufacturing.

The success of AMRC has necessitated the acquisition of circa 50 acres at the Sheffield Business Park located to the north of the current AMRC centres which are on the Advanced Manufacturing Park at Waverley, Rotherham.

The new site, known as AMRC 2/AMRC Campus, will allow the University to Masterplan the campus. The site will be able to support upto 100,000m² of the developable accommodation. The Masterplan will promote opportunities for the engineering research staff to meet and collaborate within a pedestrianised campus.

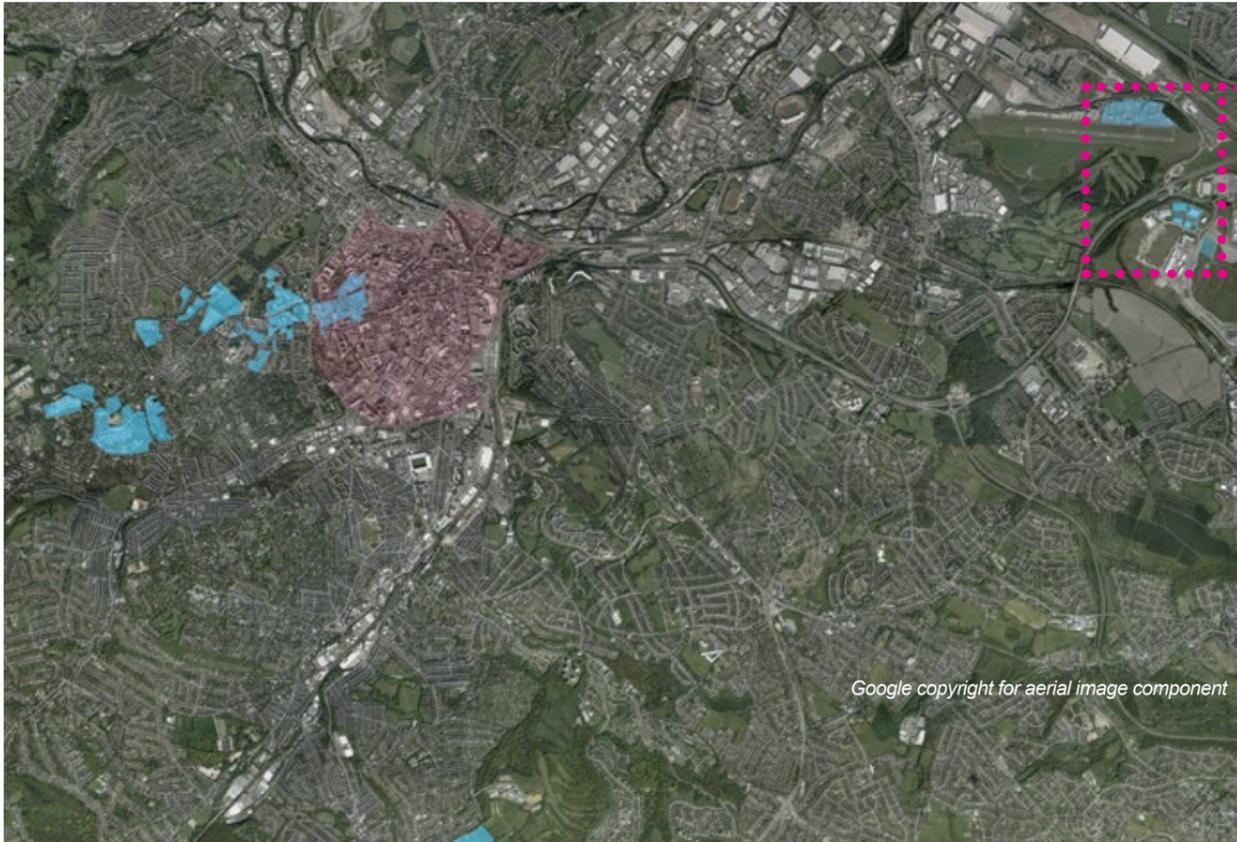
The Masterplan also promotes the opportunities for original equipment manufacturers (OEM's) to co-locate on adjacent land, strengthening the collaborative research and manufacturing initiatives where AMRC has created world leading centres.

The first centre to be developed at the AMRC 2/AMRC Campus is 'Factory 2050'. This £22 million project commenced on site in September 2014 and is due for completion autumn 2015.

When planning Factory 2050 the University commissioned Oxford Economics to undertake an economic impact survey. This report forecasted that AMRC activities could add up to £218 million GVA to the economy annually.

AMRC is a significant research and manufacturing centre of excellence and is strategic within the University's future development.





Above: Aerial view locating AMRC
Right: AMRC Masterplan



2.9 University Buildings

The campus is composed of an eclectic range of buildings from the identifiable ‘red brick university’ Victorian style to classic Modernism to contemporary International. This creates much interest in the built environment but also creates challenges in terms of identity. It is all the more important that the external realm gives cohesion to the campus.

Sheffield is, or perhaps was, one of the six Universities informally known as Red Brick Universities, along with Birmingham, Liverpool, Leeds, Bristol and Manchester. The term was coined to describe civic universities, built before the first world war, and was inspired by the Victoria Building at the University of Liverpool, built from a distinctive red pressed brick; a feature common to all of the six.

Following the Second World War, new developments at the University represented the prevailing style of the era, and the outcome is an architecturally diverse campus. In attempting to consolidate the identity of the campus realm, careful consideration should be given to the balance between diversity and continuity in the estate buildings. There may be an opportunity to play on the strengths of the still-prevailing red brick character when developing new buildings, whilst achieving diversity in contemporary form and detail.



1 Firth Court and Alfred Denny Building



2 Sir Frederick Mappin Building



3 St George's Church



4 Jessop East





5 Bartolome House



6 Arts Tower and Library



7 Geography Building



8 Faculty of Science

9 Information Commons



10 Students' Union



11 The Black Box



12 Jessop West



Photography:
1,3 University of Sheffield
2 Ian Spooner
4, 5, 6, 8, 11, 12 Andy Brown
7, 9, 10 Shaun Bloodworth

2.10 Transport and Infrastructure

The University has a commitment to sustainable transport. In 1997 an Integrated Transport Policy was introduced with the aim of developing the most sustainable means of accessing the campus. In particular the aim of the University is to reduce the impact of the private car by encouraging staff and students to travel more sustainably. The key principles have been maintained in the Travel Plan approved in 2013. A key tenet of the new Travel Plan is to maintain a modal shift from cars to more sustainable means of travel and access.

In addition the current fragmented provision of car parking creates many challenges on the campus with pocket car parks liberally sprinkled throughout the estate. Moving cars to the periphery of campus to deliver open spaces more easily traversed by pedestrians and cyclists is an important objective which the Masterplan can build upon. The key principle set out in this policy should inform this new Masterplan.

The University of Sheffield is divided geographically by the Sheffield inner ring road, Upper Hanover Street. The ring road is a significant dissection of campus splitting the estate into the Western Bank and the St George's campus area. The St George's area of campus covers that part east of Upper Hanover Street. The St George's campus is bounded by Broad Lane to the north, Rockingham Street to the east, West Street to the south and Upper Hanover Street to the west. Located within the St George's campus are the Faculty of Arts and Humanities, all five departments which make up the Faculty of Engineering, and large parts of the Faculty of Social Sciences. St Georges Church is a dominant feature and provides the University with centrally bookable lecture theatres which are some of the largest on campus.

The Western Bank campus is bounded by Bolsover Street to the north, Upper Hanover Street to the east, Glossop Road to the south and Clarkson Street to the west. Within the Western Bank campus are the Biology, Chemistry and Geography buildings and the Arts Tower located to the north of Western Bank, and the Octagon Centre, the Students' Union,

Hicks building and the Information Commons to the south.

In addition there is also a smaller cluster of buildings on North campus which can be found to the north of Broad Lane opposite the main Engineering campus. These buildings include the Kroto Research Institute of Nanoscience and Technology, George Porter Building, a temporary Modular Village for teaching and research in Engineering, and the new Garden Street laboratories, again used for Engineering. Sheffield International College is currently located within North Campus as are a number of estates support activities such as the University's main post room, central archive and maintenance department.

Located on the western boundary of the city centre, the St George's and Western Bank University campuses are segregated by Upper Hanover Street, which forms a section of the A61 ring road around Sheffield city centre. The Western Bank campus is also divided by Western Bank (A57) which runs from the south west of the city, past the University student residences, Endcliffe and Ranmoor, located circa 1.7km to the south west of the main University campus, and meets Upper Hanover Street at the Brook Hill roundabout. This roundabout forms a congestion hotspot, with queues regularly building up along Upper Hanover Street and Western Bank, particularly during AM and PM peak hours. Primary routes from the University into Sheffield city centre run along Western Bank and Upper Hanover Street, branching off along Leavygreave Road east through the St George's campus, and Glossop Road.

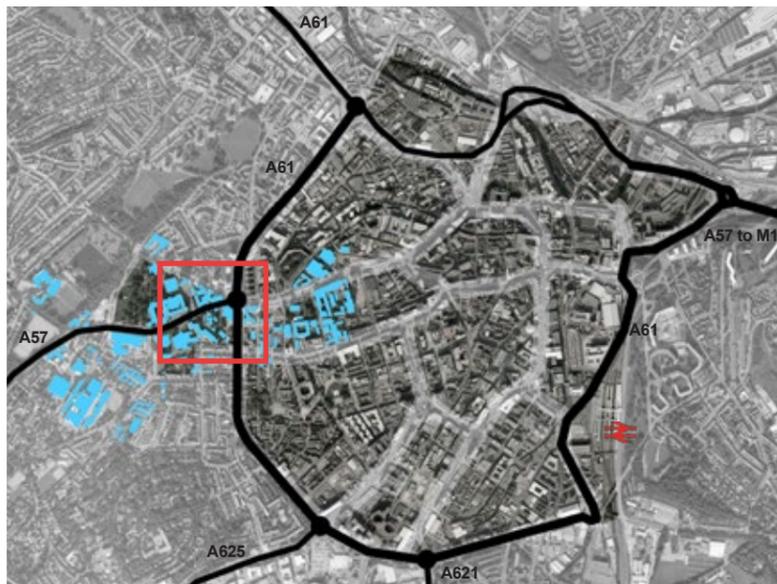
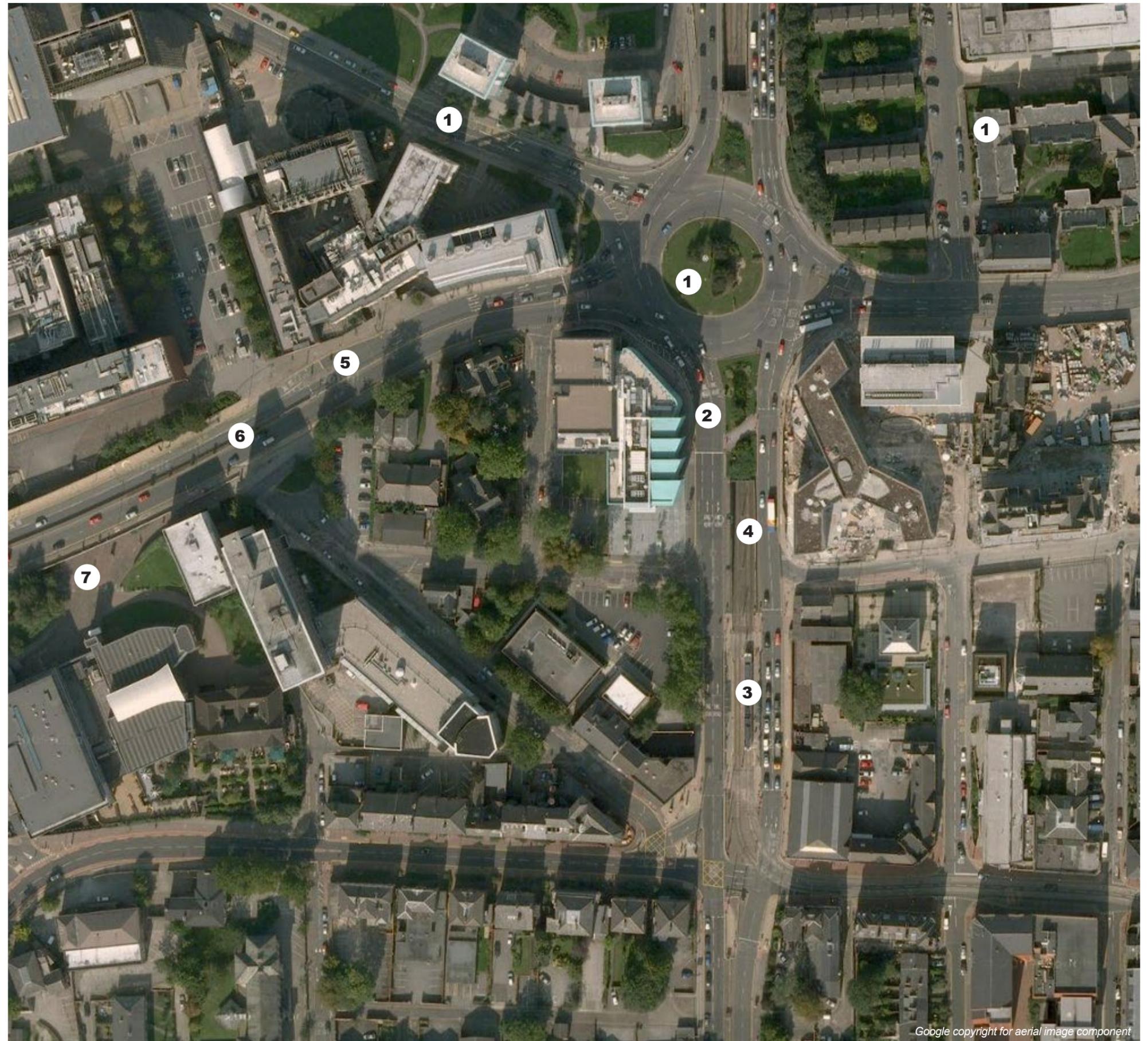
There are a number of more minor, internal roads which make up the area within the University. Within the Western Bank campus Hounsfield Road, Leavygreave Road and Favell Road currently provide internal vehicular access to the area around the Information Commons building, the Corporate Information and Computing Services (CICS) building and the Hicks building and their respective car parks.

Leavygreave Road is dissected by Upper Hanover Street. To the east Leavygreave Road runs through the St George's Campus linking Upper Hanover Street to Rockingham Street. Internal roads branch off, with Gell Street, Victoria Street, Regent Terrace, and Regent Street servicing the University buildings to the south, and St George's Terrace extending north alongside St George's Church. Mappin Street extends from north to south through the St George's campus, from Broad Lane to West Street adjacent to the Mappin and Portobello Buildings. The Diamond building is currently under construction in the St George's campus adjacent to St George's Terrace, further increasing the pedestrian footfall to this area.

The 2013 Sheffield City Centre Masterplan outlines two major pedestrian routes through the city, the Steel Route and the Gold Route. The Steel Route running from Wicker Riverside in the north east to Moorfoot in the south west of the city intersects the Gold Route in the heart of the city centre, which runs from Sheffield Train Station in the east towards the University campus. These pedestrian friendly routes will provide connectivity from the University to a large area of the city via a range of key spaces including Devonshire Green, the Peace Gardens, Millennium Square and the Winder Gardens.

KEY

- 1 Brook Hill roundabout
- 2 Upper Hanover Street
- 3 Tram Stop
- 4 Tram ramp (below roundabout)
- 5 Western Bank
- 6 Central Barrier
- 7 Concourse underpass



Google copyright for aerial image component

2.10 Transport and Infrastructure

Bus links

The bus network serving the University is both frequent and extensive. The most frequent bus routes run from the west of the main University campus where Endcliffe and Ranmoor Student accommodation are located, along Western Bank and Glossop Road towards West Street and the city centre. The number 52 bus service is the most frequent, running every four minutes through the University campus. Other services including the 10, 51, 70, 120, 123 and 95 run with frequencies between 8 minutes and 60 minutes. The diagram below illustrates the bus provision which serves the University, with the orange route illustrating the number 10 bus service, the red route illustrating the number 51 bus service, the blue route illustrating the number 70 and 120 bus services and the green route illustrating the number 52, 95 and 123 bus services.

The bus services running through the University campus provide links to a wide range of destinations, including the popular student housing locations of Broomhill and Crookesmoor, along with regular links to destinations further afield including Hillsborough, Ecclesall, Manor Park, Heeley, Lodge Moor and Charnock. There are also frequent links to the train station and The Royal Hallamshire Hospital, Weston Park Hospital and Sheffield Children's Hospital.



Existing Bus Routes

Sheffield Supertram

The University is a named stop on the Sheffield Supertram network, which runs between the St George's and Western Bank campuses along Upper Hanover Street. The University stop is located just south of Leavygreave Road, on the main arterial route through the campus. A pedestrian crossing is located across the tracks at the northern end of the platform. From here the track cuts under the Brook Hill roundabout, emerging on the northern arm onto Netherthorpe Road. The significance of a tram stop at the heart of the campus provides a huge asset for sustainable means of travel to and from campus. Signaling the arrival at the University's campus is however somewhat discreet and improvements to wayfinding and signage at this junction should be made.

The blue and yellow routes serve the University stop providing links to the city centre, Sheffield train station, Meadowhall Shopping Centre and Hillsborough amongst other stops. Both services operate with a 10 minute peak frequency.

Pedestrian Surveys

A survey of pedestrian walk patterns was undertaken by Travel Plan Services (TPS) in December 2012 which identified the most frequently used pedestrian desire lines around the University campus. The major routes were identified as follows and all were in excess of 600 persons per hour:

- 3591 people per hour from the University House / Students' Union buildings under the concourse towards the Arts Tower;
- 878 people per hour from Western Bank along Hounsfield Road;
- 930 people per hour across the central Upper Hanover Street pedestrian crossing (adjacent to the tram stop); and
- 626 and 1391 people per hour along Leavygreave Road east and Mappin Street respectively.

We expect these footfall figures to increase when The Diamond opens. Consequently the improvements and pedestrianisation need to progress in advance of the opening date in September 2015.

These make up the major arterial routes through the University campus and provide a basis for the proposed pedestrian improvements.

2.10 Transport and Infrastructure

Cycling

The University campus is well served for cyclists, with Leavygreave Road, Hounsfield Road, Glossop Road and Mappin Street south identified as Sheffield Council advised cycle routes. There are also a number of signed cycle routes located within the University campus on Victoria Street, Leavygreave Road and Portobello Street. Segregated cycle lanes are provided along Glossop Road, Leavygreave Road, Portobello Street and Mappin Street, providing a safe cycling environment around the University.

There is an extensive cycle network throughout Sheffield providing links from the University campus to the city centre and the train station. The diagram in section 3.4.1 shows both the existing and proposed cycle routes within the vicinity of the University, with advisory routes highlighted in green, signed routes in blue, designated traffic-free cycle paths outlined in red and the proposed university gold route shown in yellow.

Provision for cyclists and storage is relatively mixed; many buildings have Sheffield hoops, some covered and others open to the elements. The University will be investing in a cycle hub adjacent to the Hicks Building and Graves Building which will provide over 200 secure cycle spaces for the safe and secure storage of bicycles. The University will also provide secure cycling provision on land adjacent to the Soundhouse; to service The Diamond. The intention is to continue to encourage cycling as a sustainable means of travel and access to the campus. The University has very good provision of changing and shower facilities at various locations throughout the campus. Investing in cycling provision however is something that the University recognises as important to continue the modal shift as detailed within their Travel Plan.

Parking

Although there is no parking permitted on Western Bank and Upper Hanover Street, the internal roads that make up the University campus are accessible to vehicles and many provide on street parking and access to car parks. The St George's campus has parking restrictions on St George's Terrace and Regent Terrace, with on street parking provided along Leavygreave Road east, Gell Street, Victoria Street, Regent Street and Mappin Street.

In the Western Bank campus there are car parks at numerous locations. None of these are of any significant size and the University relies upon street parking and pocket car parks to support travel and access for those staff and students who do need to use a personal car to access the campus or indeed to support their work/studies. On street parking is also provided along Favell Road, Hounsfield Road and Leavygreave Road (west). As these are also the main pedestrian routes the experience of pedestrians moving through the campus is dominated by roads and not dedicated pedestrianised paths and routes.

The on street parking within the University campus is pay and display only. The University

car parks all require parking permits. There are a range of parking permit types, including Category A, guaranteeing staff a parking space in a designated Category A car park at a cost of £640 per year; Category B, allowing staff and students to use any Category B car park at an annual cost of £410; Category C, allowing staff to purchase a pay and display ticket at a cost of £3.40 per day with limited spaces available; and Category R, allowing staff and students to park at the University accommodation only at an annual cost of £75 for students and £80 for staff. Motorcycle permits, disabled parking permits and on call permits for staff are also available.

Servicing

In the Western Bank campus, the existing servicing arrangement to the north sees delivery vehicles entering the Arts Tower car park via Bolsover Street and undertaking a reversing manoeuvre between the Western Bank Library and Alfred Denny building. This is a problematic manoeuvre due to the narrow space available between the buildings. There are also service accesses from Western Bank towards Firth Court, and past the Alfred Denny building, under the concourse bridge to the Students' Union and Octagon buildings. To the south, service access is provided from Western Bank along Favell Road towards Leavygreave and Hounsfield Road and from Glossop Road along Leavygreave to the Hicks Building.

Statutory Undertakers' Equipment

AECOM have been commissioned to carry out an investigation into the existing Statutory Undertaker's Apparatus present within the University campus. Figure 3 below and in Appendix A illustrates the extent of the search throughout the University campus. The Hounsfield Favell Quarter (highlighted in yellow on the plan) is proposed to be an unadopted, pedestrianised zone and therefore the apparatus in this area has been studied to assess the requirement for its relocation.

Eight statutory undertakers were confirmed to have apparatus within the search area, these are: National Grid; Northern Power Grid; Yorkshire Water; BT; Kcom; Virgin Media; City Fibre; and Vodafone.

The Coal Authority has also identified an area of past underground mining under Upper Hanover Street, Western Bank, Leavygreave Road and Favell Road.

The majority of the electric, gas and water apparatus running along Favell Road, Leavygreave Road and Hounsfield Road is likely to be relatively inexpensive to stop up or move. The only major cost may arise from the Northern Power Grid 11Kv cable which runs across Western Bank and down Favell Road and Leavygreave Road.

The C2 request results have identified a number of telecoms cables which run through the site. Relocation of any fibre optic cables is likely to incur the greatest cost. A C3 request would confirm whether the telecoms apparatus running along Hounsfield Road, Leavygreave Road and Favell Road would be expensive to relocate.

2.11 Topography and Density

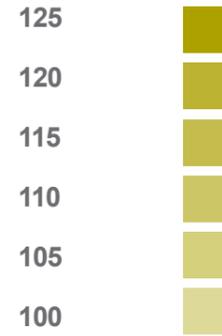
For a campus perceived to be on a hill, much of the external realm is relatively level. By strategically targeting access improvement to critical areas, the campus external realm can become accessible to all.

The topography diagram on the facing pages shows 1 metre contour ranges across the campus. This demonstrates that the gradients are relatively gentle within the Leavygreave area to the east and to the Concourse area to the west.

The most significant slopes within the campus are in the central Hounsfield and Favell area ranging from 103m AOD to 114m AOD over little more than 100m distance. This equates to gradients of between 1:10 and 1:15, and is not untypical of many streets in Sheffield. For context the minimum gradient within Building Regulation Part M Access is 1:20 over such distances, though the regulations would not be enforced in an existing natural streetscape condition such as this.

Nonetheless, in masterplanning the Hounsfield and Favell site there are opportunities to create access solutions within new buildings or the external realm to allow access for all across this part of the campus, and thus across all of the campus.

Topography
Contours at 5m intervals



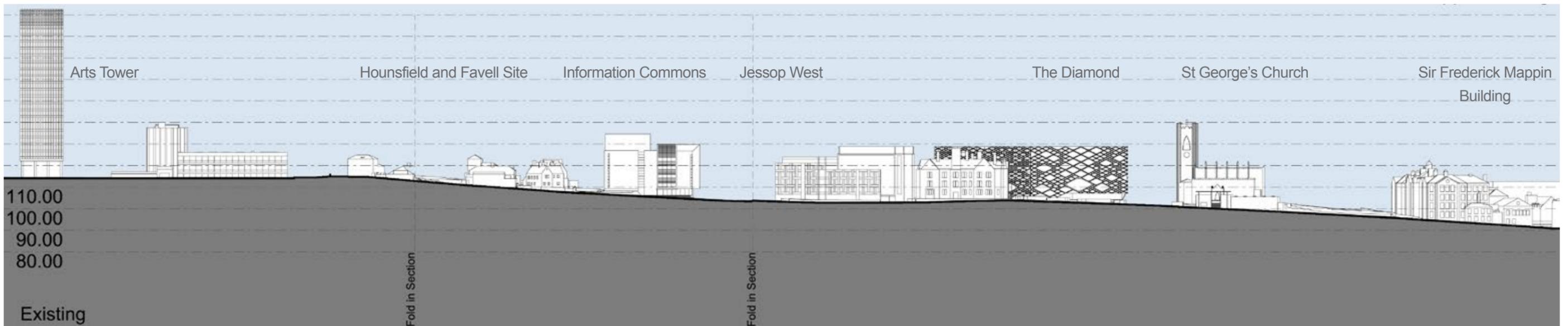
Building Heights



Topography
Contours at 1m intervals



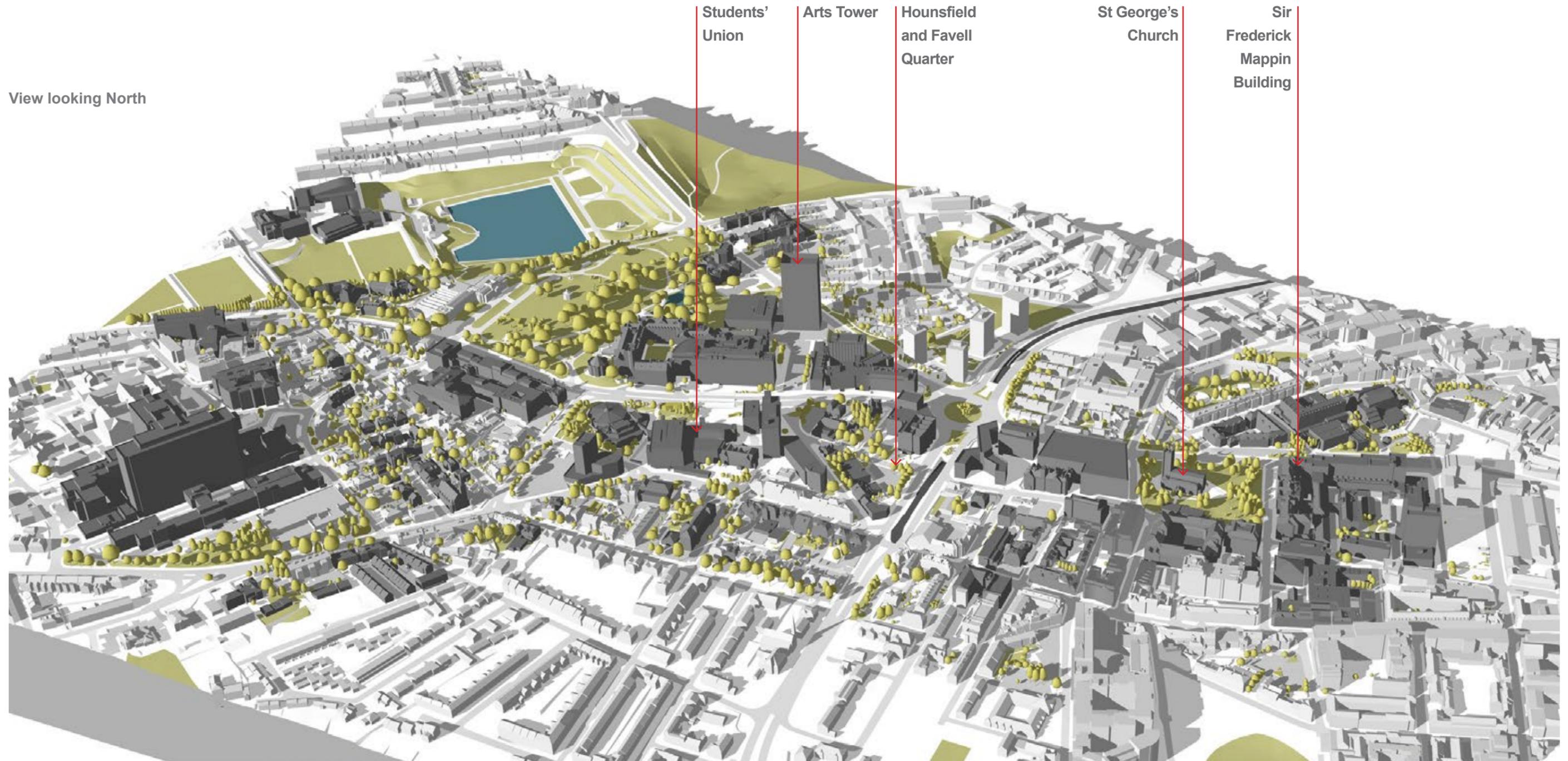
Section through the existing campus (along red line above)



2.11 Topography and Density

The 3d aerial views on this and the adjacent page illustrate the campus density. University buildings are highlighted by a darker grey tone, and key buildings are annotated.

The Hounsfield and Favell Quarter, also annotated, forms a central campus site, and is notable on these images for its low density compared to surrounding University areas.



Sir
Frederick
Mappin
Building

St George's
Church

Hounsfild
and Favell
Quarter

Arts Tower

Students'
Union

View looking South



2.12 External realm context

The University of Sheffield is a complex multi-site destination on the edge of the city centre severed by the ring road and Upper Hanover Street, and many of the key open spaces within the campus are dominated by car parking and vehicular movements. The central University estate has transparent campus boundaries, with multiple points of entry and exits with numerous front doors, depending on your mode of transport or approach from the city. As such the University estate has no clear identity or character within the city context, and this must be addressed.

The starting point for identifying opportunities and constraints within the public realm falls within 4 main areas:

1 Severed by infrastructure

Key pedestrian desire lines are made difficult to complete or are impassable due to highways infrastructure. The key desire line towards the Arts Tower is blocked by Western Bank, which is devoid of a designated crossing and made impassable by the concrete upstand within the central reservation. The key desire line from Leavygreave Road looking west is broken by Upper Hanover Street carriageway and tram infrastructure

2 Dominated by surface car parking

An analysis of the current surface car parks, exclusive of on street parking, located within the proposed key campus pedestrian zone, shows a combined total of 339 spaces. The Durham Street Car park will comprise 355 spaces after taking into account existing provision and Children's Hospital allocation. The release of surface car park land offers a prime opportunity as a catalyst for public realm spaces as well as for infill development opportunities.

3 Understanding pedestrian flows and concentration areas

Understanding the current pedestrian flows is key to unlocking the potential for future public realm improvements. The Diamond will support large scale teaching activity. Students and staff will travel hourly to the building in large numbers requiring improvements for pedestrians in particular to be made.

4 Inconsistent use of public realm materials

In addition to the eclectic range of buildings, the campus estate does not have a clear identity within the public realm. The lack of consistency in materials, street furniture and planting is further exacerbated by its location as an urban campus. Creating a distinct identity whilst fitting into its city context is a key objective for the Masterplan. No landscape and public realm strategy for the University exists yet is urgently needed to guide implementation over a phased approach to development.

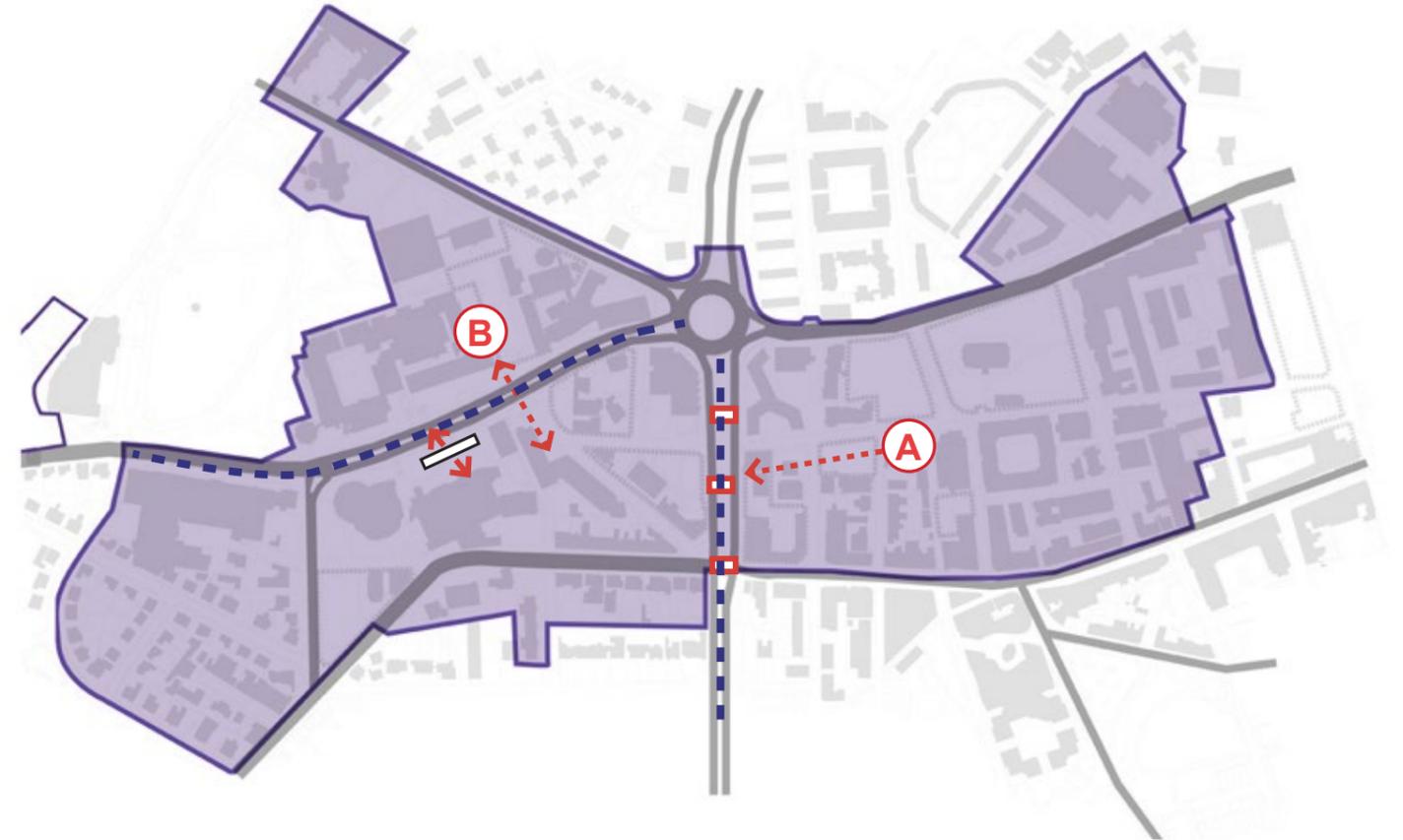


Diagram showing the key pedestrian desire lines across Upper Hanover Street and Western Bank

SEVERED BY INFRASTRUCTURE

A

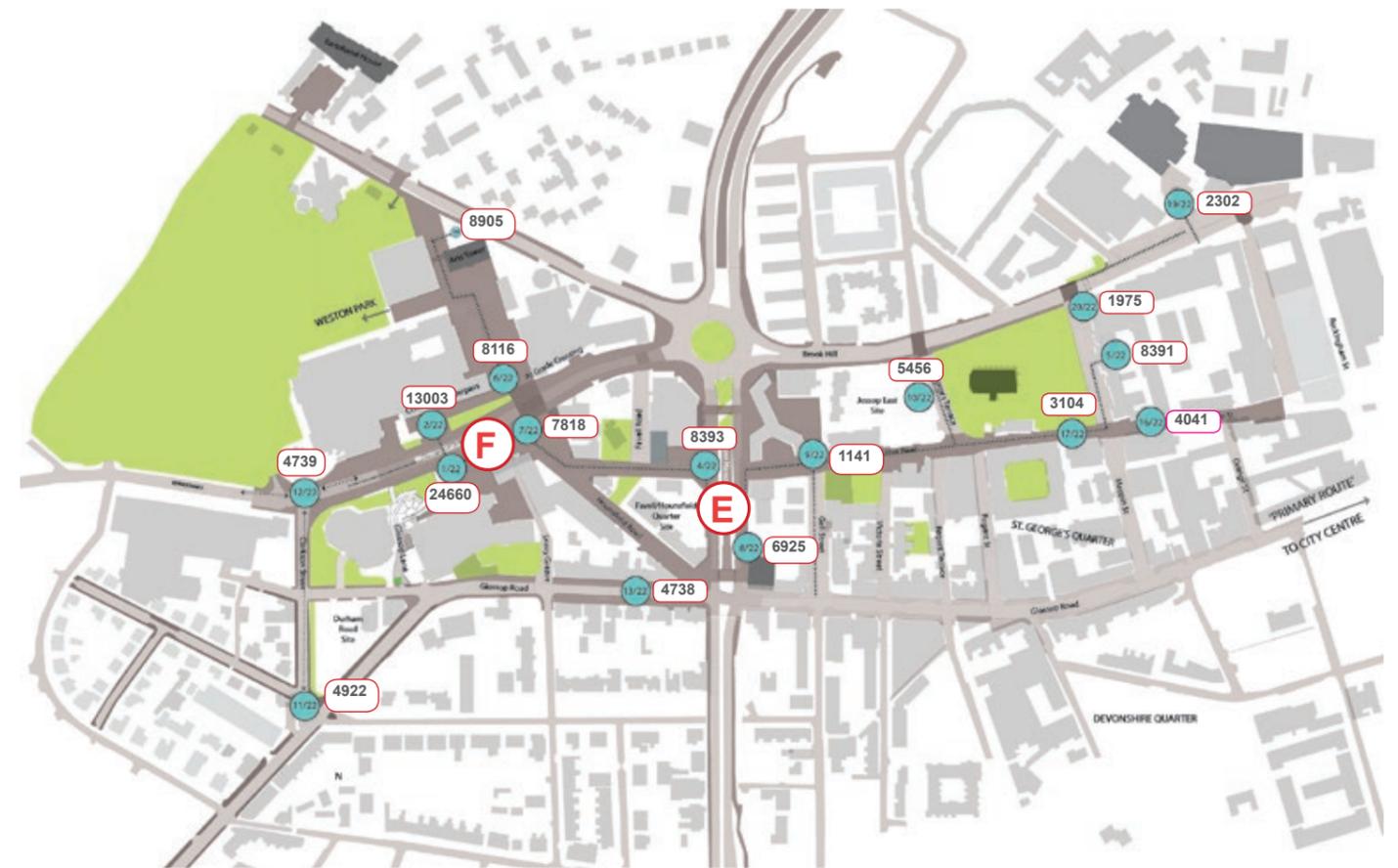
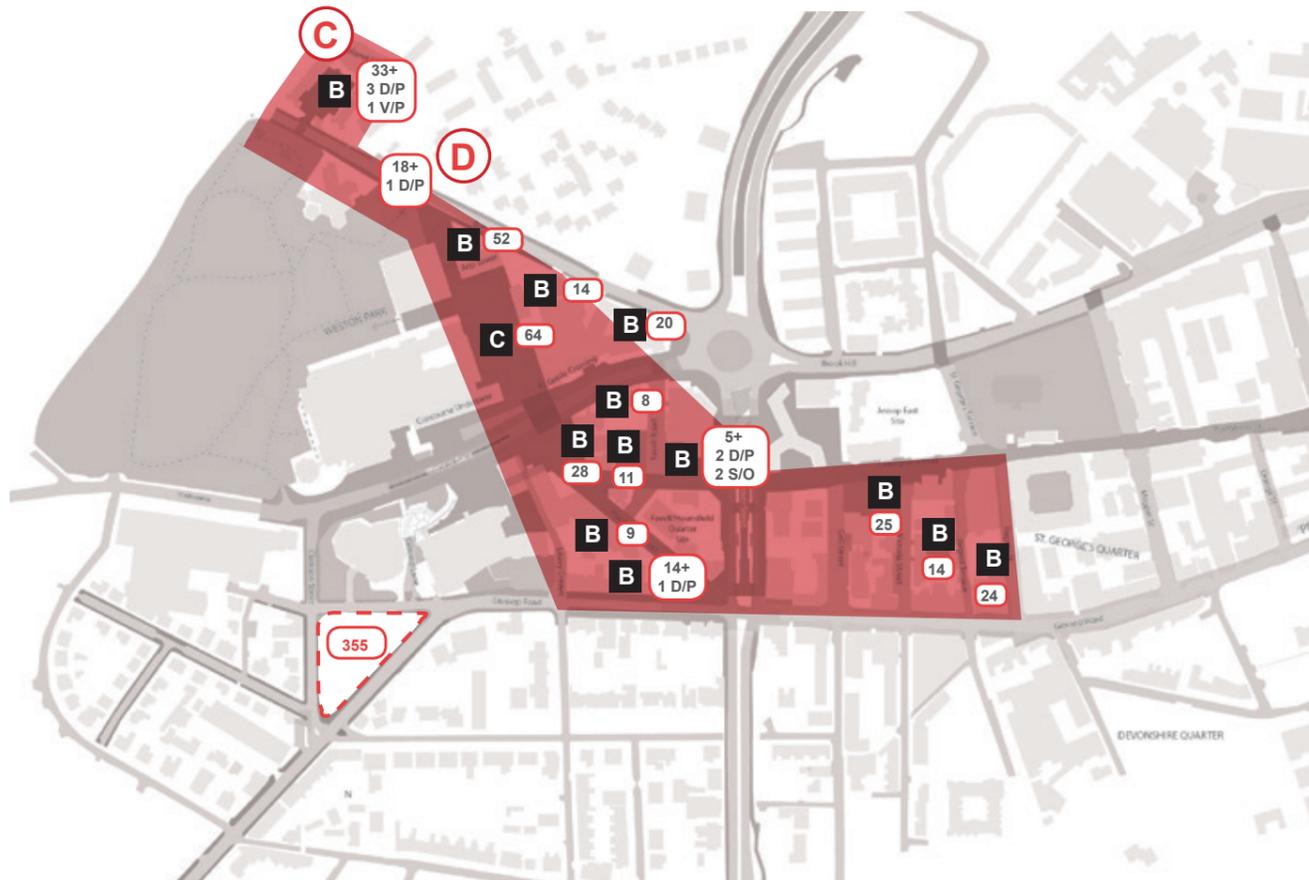
The key desire line from Leavygreave Road looking West across Upper Hanover Street is blocked by the Supertram infrastructure



B

The key desire line towards the Arts Tower is made impassable due to a lack of crossings and the concrete upstand in the central reservation





DOMINATED BY SURFACE CAR PARKING

C
Bartolomé House car park is identified as a prime opportunity for public realm improvement

D
The Geography Building car park interferes in the pedestrian link from the Arts Tower to Bartolomé House/ West Campus



UNDERSTANDING PEDESTRIAN FLOWS AND CONCENTRATION AREAS

E
Street clutter (railing, signage, pavement) and dog leg crossings interfere with pedestrian flow while prioritising the car user

F
Clutter and poorly detailed public realm lacks inspiration as one of the prime concentration points for pedestrian movement on campus





Google copyright for aerial image component

LOCATION OF UNIVERSITY TEACHING AND RESEARCH ACTIVITIES

Whilst the Hallamshire Hospital and Sheffield Children's Hospital are not owned by the University of Sheffield, we do have significant numbers of staff based in these two locations under long-term arrangements which is why they are included here.