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The University of Manchester

DIRECTORATE OF ESTATES AND FACILITIES

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University Of Manchester Landscape Masterplan

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The purpose of this document is to set out an indicative approach to solutions for the design of the spaces between University buildings, and aims to ensure that there is a cohesive vision and approach.

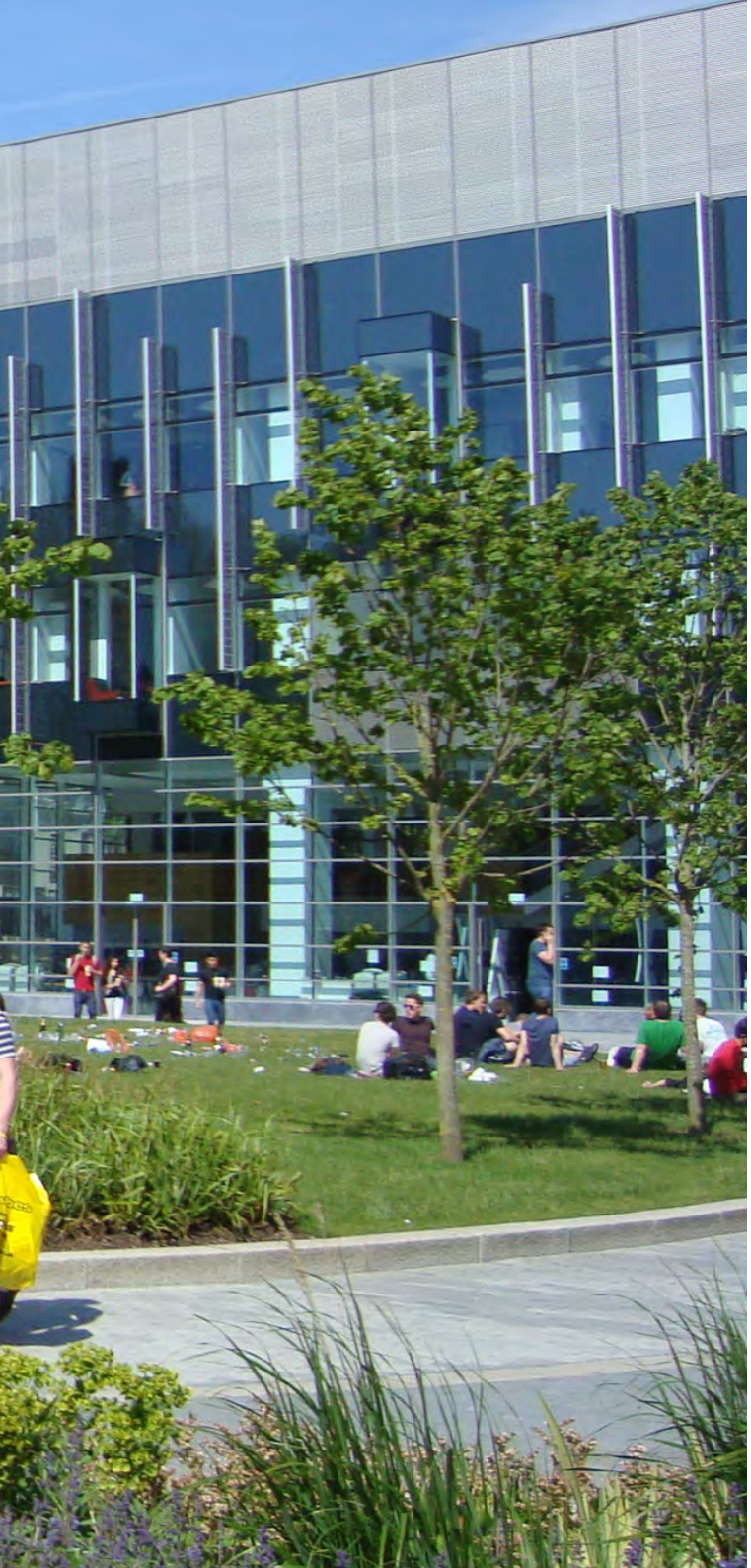
It sets out a framework for the future landscape, guided by campus wide diagrams to ensure a holistic approach is taken and suggested palettes of materials to ensure a co-ordinated design is achieved.

The Landscape Masterplan provides the principles that, with flexible and inventive interpretation, can be used to design places that are stimulating and well-managed and complimentary to the campus as a whole.

The University of Manchester

Landscape Masterplan

MARCH 2014



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Foreword

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Executive Summary

0.1 Introduction

The Landscape Masterplan has been developed in context of wider University plans and strategies including:

- Manchester 2020: The Strategic Plan for The University of Manchester
- Campus Masterplan 2012–2022
- Environmental Sustainability and Biodiversity Plan

The Landscape Masterplan has also been developed in light of evolving proposals for the Oxford Road Corridor at the heart of the campus. It focuses on the public realm - routes, spaces and materials for existing and future development. Particular reference is made to paving, street furniture and planting design. The Landscape Masterplan also highlights the integration of public art in its capacity to inform the character of different areas of the campus.

The Landscape Masterplan sets out an indicative approach to solutions for the design of the spaces between University buildings, and aims to ensure that there is a cohesive vision and approach.

It sets out a framework for the future landscape, guided by campus wide diagrams to ensure a holistic approach is taken and suggested palettes of materials to ensure a co-ordinated design is achieved.

The Landscape Masterplan provides the principles that, with flexible and inventive interpretation, can be used to design places that are stimulating and well-managed and complimentary to the campus as a whole.

0.2 The Campus Today

It is important that the Landscape Masterplan is based on a thorough understanding of the campus and its context. This gives the Landscape Masterplan credibility and ensures the campus landscape that results will have evolved from the place and is not an arbitrary or imposed solution. All future landscape works need to recognise past issues and build on the assets of the campus in a positive way

An audit of movement, circulation, access and the landscape itself helps build a picture of the campus today. Identifying key focal points and understanding emerging development proposals for the future, will ensure the Landscape Masterplan builds on the best of the past whilst looking forward. The campus landscape also needs to consider the wider area and links to and through the city.

Only a few areas within the campus already meet or come close to the quantum leap in quality that the Landscape Masterplan envisages, such as new landscape associated with the Alan Gilbert Learning Commons. The quality achieved here should be the minimum expected across the whole campus to help meet the overall objectives of the University.

0.3 A Future Campus

A core aim of the Landscape Masterplan is to help develop a place for people; a place which people will find easy to understand, a place that is memorable and identifiable, a place that is distinctive. It is vital that both students and staff have a sense of belonging and a strong 'sense of place' which visitors will also recognise in a single campus.

Key to delivering this aim will be the establishment of a high quality public realm that reflects the character of both the University and Manchester, and provides spaces within which people can gather to study, socialise, and enjoy educational, cultural and recreational activities.

An improved public realm will be delivered over a period of years, building on the good progress made over the past few years. The Landscape Masterplan now seeks to establish a level of consistency and quality for the public realm across the single campus, whilst ensuring a flexible approach to future delivery, considering each part of the campus and it's specific context.

The Landscape Masterplan has a number of key themes:

- A Social Campus
- A Connected and Accessible Campus
- A Sustainable Campus
- A Green Campus
- An Artful and Historic Campus

0.4 Landscape Palette

The landscape palette or language, that is the surfaces, furniture and planting, of any place needs to respond to the many other built elements around and within it, such as buildings, public art, existing planting and existing materials. This type of visual language also needs to communicate to the users of the place and in this case create a cohesive and easily accessible campus.

Building a campus over a long period of time creates an interesting mix of architectural and landscape styles. At the University of Manchester there are several different spaces and styles of architecture. However for the purposes of creating a coherent campus this study has identified two main characters and thus two landscape palettes or languages for the campus:

- Heritage Language
- Contemporary Language

Boldness, simplicity, style and elegance are fundamental characteristics of the landscape palette. The aim of improving the environmental quality and the design of streets and spaces must also include the reduction and rationalisation of clutter and attention to detail and a high level of workmanship.

0.5 Further Work

The importance of trees on campus is demonstrated throughout the Landscape Masterplan. Trees are a valuable asset, supporting all aspects of sustainability - environment, society and economy. In recognition of their value, the first comprehensive survey and inventory of existing trees on campus is being commissioned.

To complement an existing inventory of paintings, sculptures and artefacts, further detailed work should be commissioned to focus on those external art works that are to be relocated from North Campus to establish their condition and any requirements for refurbishment when relocated.

It is recommended that when commissioning landscape projects, an allowance should be made for the provision of a detailed site specific management and maintenance plan that will guide future upkeep of the new public space. In addition, whilst commissioning new works of public art can be challenging, but ultimately rewarding, a number of methods can be considered, including open competition or limited competitions and also inviting artists directly for prestigious or difficult commissions.

APPENDIX

Design proposals are being prepared for a number of spaces to illustrate the potential of the Landscape Masterplan to transform the campus and raise the quality of the external environment. These design proposals will include:

- Brunswick Street Public Realm (concept illustration shown right)
- Devas Street /Blyton Street
- Coupland Street & the Rear Quad
- Mansfield Cooper Building
- Thorncliffe Shopping Parade

1.0 Introduction

1.1 The Landscape Masterplan

"By 2020 The University of Manchester will be one of the top 25 research universities in the world, where all students enjoy a rewarding educational and wider experience; known worldwide as a place where the highest academic values and educational innovation are cherished, where research prospers and makes a real difference, and where the fruits of scholarship resonate throughout society." (The Strategic Plan for The University of Manchester)

A high quality campus landscape will help achieve this goal of the University by providing a suitable environment for students and staff to flourish. This Landscape Masterplan sets out the vision for that future landscape or 'public realm'. The public realm comprises the routes, squares and green spaces that require no key to access them and that are available for everyone to use - students, staff and visitors. It is the places they move through on their way to work or study, the social spaces where they meet friends or colleagues and the external places used for recreation, relaxation and study. The public realm shapes the character of the campus and should comprise beautiful places that inspire thought and academic excellence.

1.2 The Wider Picture

The Landscape Masterplan has been developed in context of wider University plans and strategies including:

- Manchester 2020: The Strategic Plan for The University of Manchester
- Campus Masterplan 2012–2022
- Environmental Sustainability and Biodiversity Plan

The Landscape Masterplan has also been developed in light of evolving proposals for the Oxford Road Corridor at the heart of the campus.

1.3 Structure

The Landscape Masterplan focuses on the public realm - routes, spaces and materials for existing and future development. Particular reference is made to paving, street furniture and planting design. The Landscape Masterplan also highlights the integration of public art in its capacity to inform the character of different areas of the campus.

The Landscape Masterplan sets out an indicative approach to solutions for the design of the spaces between University buildings, and aims to ensure that there is a cohesive vision and approach. It sets out a framework for the future landscape, guided by campus wide diagrams to ensure a holistic approach is taken and suggested palettes of materials to ensure a co-ordinated design is achieved. The Landscape Masterplan provides the principles that, with flexible and inventive interpretation, can be used to design places that are stimulating and well-managed and complimentary to the campus as a whole.

The Landscape Masterplan can be used in different ways and at varying stages of the development process as a prompt and checklist:

- A source of inspiration and in the preparation of design briefs
- To inform the overall design process
- To evaluate differing responses to sites and to guide solutions

The Landscape Masterplan is set out in six sections. Section 2 paints a portrait of the campus today, highlighting key issues and providing a valuable background to the Landscape Masterplan and future change. Section 3 sets out a landscape vision for the campus with a number of supporting themes. Section 4 describes the simple palette of paving, street furniture and planting that should be used throughout the campus to create a unified, cohesive look to the public realm. Section 5 describes future work needed for the successful implementation of the Landscape Masterplan.

2.0
The Campus Today

2.1 Learning, Working & Living

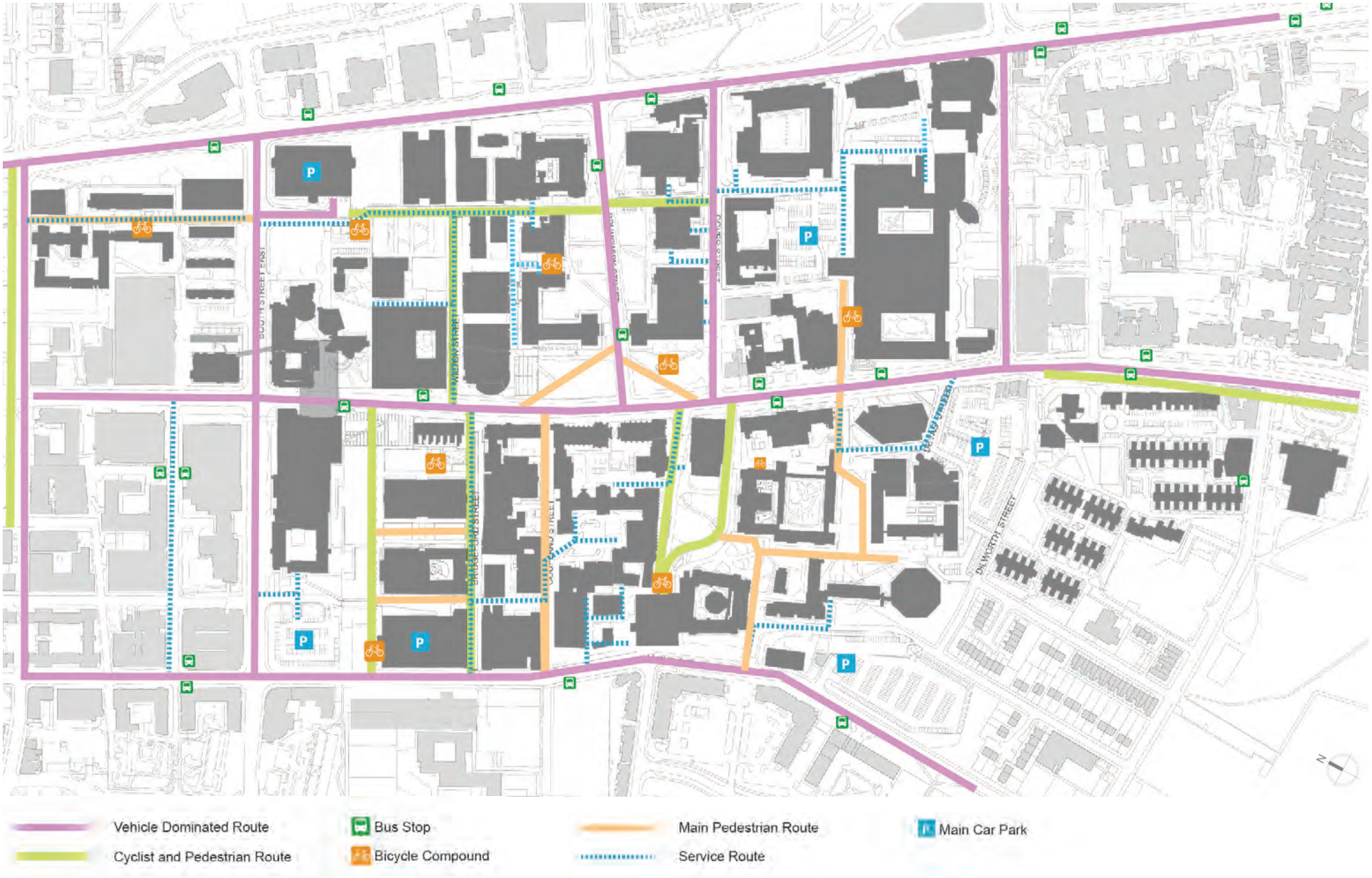
It is important that the Landscape Masterplan is based on a thorough understanding of the campus and its context. This gives the Landscape Masterplan credibility and ensures the campus landscape that results will have evolved from the place and is not an arbitrary or imposed solution. Although limited, unfortunately a number of insensitive landscape interventions can be seen today in a number of areas which detract from the overall experience of the campus. More often than not, these were simply left over spaces from previous developments that had not been planned or designed in context. The Landscape Masterplan therefore has to address this legacy of modern design placing buildings in space, rather than using built form to define urban spaces and the landscape itself.

All future landscape works need to build on the assets of the campus in a positive way and must be based on a sound vision and design principles. This does not mean however that the result cannot be bold and imaginative. With no single architectural style, the campus is very robust and often dramatic and there is no reason why routes and spaces cannot have their own identity. However, it must be recognised that this individual identity will need to also respect the whole. This overall sense of place that is the campus must be respected in order to create a coherent landscape.

This section therefore provides a background or starting point from which future proposals for change to the campus landscape should be developed. For the purposes of the Landscape Masterplan, the 'campus' is defined as the South Campus or Oxford Road Campus within which is it proposed to consolidate most university teaching over the next decade. However, the Landscape Masterplan has considered areas beyond this, particularly in terms of its neighbours, to establish the context and character of the campus and define assets and opportunities.

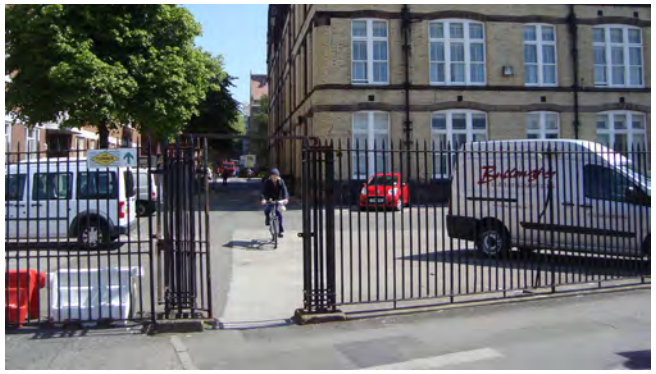
An audit of movement, circulation, access and the landscape itself helps build a picture of the campus today. Identifying key focal points today and understanding emerging development proposals for the future, ensure the Landscape Masterplan builds on the best of the past whilst looking forward.

Almost 40,000 students and 10,000 staff study, work and live at the University of Manchester the South or Oxford Road Campus occupies a substantial area of land. When thought of in these terms, the campus is in fact a significant urban quarter or neighbourhood itself within the wider city.



Movement and Circulation Today





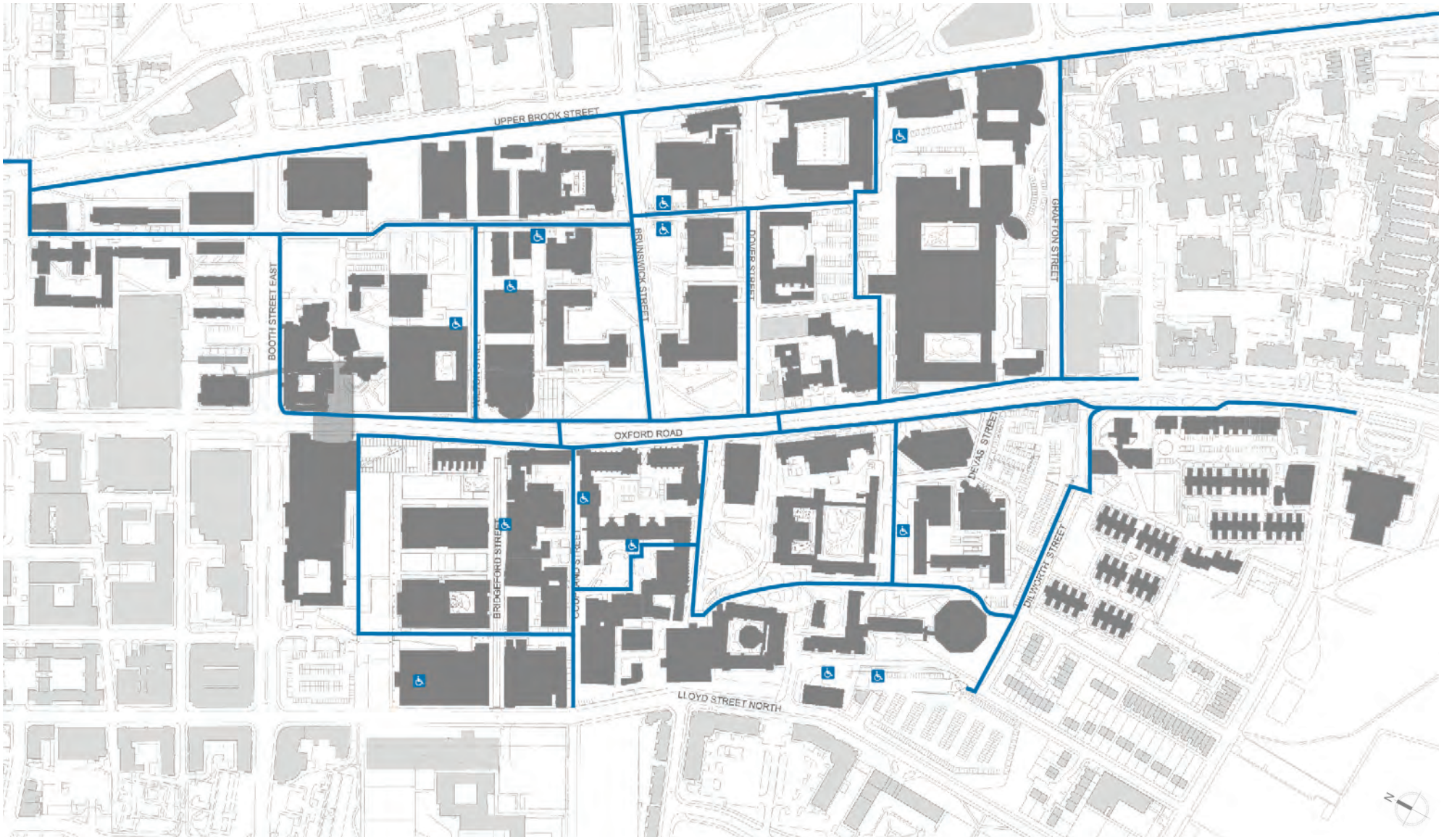

2.2 Movement and Circulation

The University of Manchester is an urban campus. There are several public highways and pedestrian routes that go through or border the campus, making it part of the urban grain that is Manchester. The campus is located on the southern edge of the city centre between two other key destinations (MMU and MRI). This creates a campus busy with pedestrians and traffic. In this way, the University of Manchester is not an isolated campus. Instead it plays a key role in the life of the city and its public domain.

Oxford Road is a main route through the heart of the campus and a key approach to the city centre. It acts as a spine, from which access to much of the campus can be made. Upper Brook Street to the north is a heavily trafficked approach to the city centre and defines the eastern boundary. Higher Cambridge Street and Lloyd Street define the western boundary. In addition, Booth Street East, Brunswick and Dover Streets are internal east-west public highways through the campus, linking Oxford Road and Upper Brook Street.

There are many pedestrian, cycle and service routes throughout the campus, often combined, with access from the main boundaries and Oxford Road itself. However, many of these routes do little to alert pedestrians they have entered the campus, unless access barriers are present. There is a limited amount of information provided to announce the movement from city to university space. There is also a mix of surface materials used, making the threshold to the campus often unclear and incoherent.

There is a mix of on-street and specific areas for servicing across the campus, resulting in service vehicles having to access many routes and bins, etc., often clearly visible from key pedestrian routes.



Access Today

2.3 Accessibility

The provision of access for all across an historic urban campus environment is clearly a challenge. The existing campus includes provisions for disabled access, but the system is by no means comprehensive and is in need of improvement and expansion. The campus wide 'accessible route' is limited in scope, often confined to public highways and does not provide direct equal access to every building entrance. Within the campus itself, some routes are inaccessible or difficult to use, blocked by changes of level, obstructive street furniture and abrupt or random changes of direction on footways. Poorly located street furniture can be a specific hazard for visually impaired people, particularly bollards below 1m in height, of which there are many.

As campus facilities have been renovated and developed, universal access has improved, but by no means meets the University's commitments or obligations in full. New vehicle barriers, bollards and service areas all present challenges to disabled students, staff and visitors. They also restrict access for those who are able-bodied or with pushchairs. Although areas of shared surface are intended to reduce these access problems (at least for wheelchair users), some service vehicles travel through at speed and park haphazardly in pedestrian zones causing obstruction.

High Quality (no works required)

High Quality (minor works required)

Medium Quality (significant works req'd)

Low Quality (reconfiguration required)

Car Park and Service Areas

Landscape Quality Audit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2.4 The Landscape Audit

The following audit of existing external spaces and landscape is the foundation upon which the Landscape Masterplan has developed and future investment could be directed.

1. GROSVENOR HALLS OF RESIDENCE

A link popular with pedestrians and cyclists between Grosvenor Street and Booth Street East, despite road barrier making access difficult. Dated paving and furniture.

2. UPPER BROOK STREET

Informally landscaped green space with a number of mature trees providing a green edge to campus, but little spatial definition to Upper Brook Street itself.

3. JAMES CHADWICK BUILDING

The current landscape palette has been implemented around the recent James Chadwick Building. Note road barrier forces cyclists onto pavement and the number of bollards provided appears excessive to simply define boundaries or prevent vehicular access. Bollards can be an obstruction to pedestrians, particularly those who are blind or partially sighted.

4. THE NATIONAL GRAPHENE INSTITUTE (FUTURE DEVELOPMENT, 2015)

This currently vacant plot is to be the location of a future landmark building and state of the art research facility. The site is located adjacent to a multi-storey car park which dominates the area with vehicle access requirements. This site presents the opportunity for a new, strongly defined public realm treatment to provide a high quality setting for the building and an important link between University Place and proposed new engineering and physical sciences building(s).

5. ST. PETERS HOUSE COURTYARD

A quiet green courtyard space defined by St. Peters House, the Kilburn Building, Prospect House and the Information Technology Building. Informal landscaped space containing a number of mature trees, but no seating and asphalt footways. Could be an important link/open space, but currently somewhat hidden/ under-used.

6. ST. PETERS HOUSE FORECOURT

Well defined hard landscaped space providing access to St. Peters House and soft landscaped link alongside the Kilburn Building, but with a dated paving and furniture.

7. WILTON STREET AND PLAZA

University Place and Wilton Street are both recently completed public realm schemes that use the existing paving and furniture palette. The spaces have a contemporary look, creating a strong backdrop to the surrounding architecture. Although the design and implementation of the schemes are of a high quality, a number of elements require attention:

- Existing seating orientation
- Existing seating quantity
- Currently damaged paving as a result of service vehicle access
- Introduction of a wider variety of planting

8. SERVICE AREA (BETWEEN WILLIAMSON BUILDING AND JEAN MCFARLANE BUILDING)

This area predominantly serves to provide delivery access to the rear of a number of University Buildings. It also provides a link between Wilton Street and Brunswick Street. The hard landscape treatment has been recently implemented and is of a good quality.

9. UNIVERSITY PLACE AND ENTRANCE TO BRUNSWICK STREET

The plaza adjacent to University Place provides an open space for a variety of small events as well as a spill out space for the building. The hard landscape and furniture provision has been recently implemented and continues the current palette. The adjacent green space that runs along Oxford Road benefits from a number of large mature trees and provides a welcome variation to the streetscape, as well as an attractive setting to the Whitworth Building across the street.

10. BRUNSWICK STREET

This is an important area of public realm, which currently benefits from large areas of green space between the surrounding buildings and the existing carriageway. All buildings along the street are owned by the University and are regularly used by students, staff and visitors, creating well used environment during core hours. It should be noted that the street itself is public highway.

The wide carriageway and railings are a physical barrier, interrupting areas of green space and pedestrian movement. There is also inconsistency in paving and furniture along the street and a lack of identity in contrast to comparable spaces such as University Place.

11. DOVER STREET

Dover Street is dominated by vehicle access from Oxford Road and Upper Brook Street as it provides service access to a number of buildings. The street itself is public highway with only standard finishes. It does benefits from a number of architecturally significant buildings and links through to Brunswick Street.


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12. OXFORD ROAD FORECOURTS
Forecourts of the Stopford Building, Holy Name Church and others on this section of Oxford Road, use a different paving and furniture palette to other areas of the campus. Although some buildings are out of University ownership, this fact is highlighted with the inconsistent landscape treatment of the forecourts.

13. ACKERS STREET & PORTSMOUTH STREET
Both streets are public highway with standard finishes and provide access to both Vaughan House and biomedical buildings. However pedestrian access to biomedical buildings difficult due to location of service area. Setting for a number of listed buildings including Grade I Holy Name Church.

14. MICHAEL SMITH BUILDING CAR PARK
Predominantly a large expanse of asphalt, the car park presents little in the way of attractive landscape or pedestrian accessibility between buildings. The boundary adjacent to Portsmouth Street benefits from a row of mature trees and views to Holy Name Church, however there are no defined links for pedestrians to the wider University campus and Oxford Road and no through access to Grafton Street or Upper Brook Street from this area.

15. GRAFTON STREET, INCUBATOR & CORE TECHNOLOGY
Forecourts to both the Manchester Incubator Building and Core Technology Facility use a different paving and furniture palette to other areas of campus. Potential edge/gateway to campus across from the Manchester Royal Infirmary.

16. BACK STOPFORD BUILDING OFF GRAFTON STREET
Neglected green space at the back of the Stopford Building accessible from Grafton Street, but no access to Oxford Road or Stopford Building itself. There are a number of mature trees within the space.

17. WHITWORTH ART GALLERY
Mature trees and railings separate the gallery from the street and reduce the impact of the building on the wider public realm. Consequently the forecourt fails to create a relationship between the gallery and the important Oxford Road corridor isolating this important facility from the rest of the campus.

18. GROVE HOUSE AND THORNCLIFFE SHOPPING PARADE
This stretch of Oxford Road has a dated public realm and provides a low quality environment for Grove House and the shopping parade. Inconsistent paving and street furniture create an incoherent appearance. However, positive attributes include the presence of a number of mature trees and an off-carriageway cycle route.

19. DILWORTH STREET
Private road with a different paving and furniture palette to other areas of campus. Various measures to deter parking visually and physically intrusive. Important link between Whitworth Park Halls of Residence and main campus and also access to car parks.

20. DILWORTH STREET CAR PARK
Although the Dilworth Street boundary to the car park is lined with mature trees, the car park itself is dominated by vehicles and open expanses of asphalt creating a poor edge and gateway to the campus. Pedestrians are afforded no priority or wayfinding.

21. DEVAS STREET AND BLYTON STREET
Devas Street provides the main access to the entrance of the Contact Theatre from Oxford Road. However, the route is blighted by the secure access control with vehicle priority and Blyton Street dominated by railings and servicing to the rear of Academy building. As a result, both streets fail to provide an attractive setting for the Contact Theatre and offer little in the way of a positive pedestrian experience for students, staff or theatre patrons.

22. ELLEN WILKINSON BUILDING PUBLIC REALM
This area is set back from the busy and animated environment of Oxford Road, creating a calmer environment that is sheltered amongst adjacent buildings and mature trees. Although an area of lawn and benches provide seating opportunities, the space is generally used to pass through, with little reason to dwell. The area has potential, but its dated paving and furniture palette and unclear function create a space lacking in character.

23. CECIL STREET AND CAR PARK
Currently Cecil Street presents a 'back of house' character with dated landscape and furniture and vehicle priority. The adjacent car park which is an important edge to the campus, is of an expansive scale, with no trees within or clearly defined pedestrian routes across. A wooded area to the southern end of the car park is both a gateway feature to the campus and also an undefined pedestrian cut through.


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24. MANSFIELD COOPER PUBLIC REALM
This area provides a vehicle free pedestrian link through the campus and includes areas of border planting and mature trees, creating a good quality environment. However, the area suffers from dated paving and furniture and some areas contain tired looking planting. In particular, cycle racks are in a poor condition and waste storage to the rear of the Mansfield Cooper Building is visually intrusive.

25 . ALAN GILBERT LEARNING COMMONS
Following the recent implementation of public realm works with the new Alan Gilbert Building, the area offers a high quality space and landscape for staff and students. The area is well used and a popular place to sit and as a result, seating is currently under review with the intention to potentially increase provision.

26. LLOYD STREET NORTH, BACK MAIN LIBRARY
A number of small, partly accessible, spaces along Lloyd Street North creating a green edge to the campus. However, a number of mature trees block views to key campus landmarks. Wall alongside Main Library service area below.

27. REAR QUADRANGLE
Mature trees and high quality, well maintained planting screen the presence of vehicles to create an attractive car park. Within the context of the surrounding buildings however, the predominate use of the space as a car park and priority for vehicles does not reflect the potential of the space. Vehicular access also impacts on Coupland Street. Pedestrian access is possible between the Rear Quad and Learning Commons, but is not obvious.

28. OLD QUADRANGLE
Situated amongst the high quality and attractive architecture of the Whitworth Building, this space has an historic courtyard appearance and includes mature trees and planting around its periphery. However, the presence of low quality paving and furniture and vehicle parking detracts from the potential quality of the space and surrounding architecture.

29. MANCHESTER MUSEUM COURTYARD
The small courtyard space benefits from a recently implemented landscape scheme which creates a strong relationship between the surrounding contrasting architectural styles. The material finish is of a high quality and the space provides an attractive entrance to the Manchester Museum off Coupland Street.

30. COUPLAND STREET
A potentially attractive link through the campus with mature trees, border planting and small seating areas. This street is predominantly used by pedestrians with only light vehicular traffic at generally low speed. Although the street has a 'shared space' character, the overall experience is negatively affected by asphalt surfaces and extensive car parking and associated lining. As well as the low quality surfacing, street furniture in also dated.

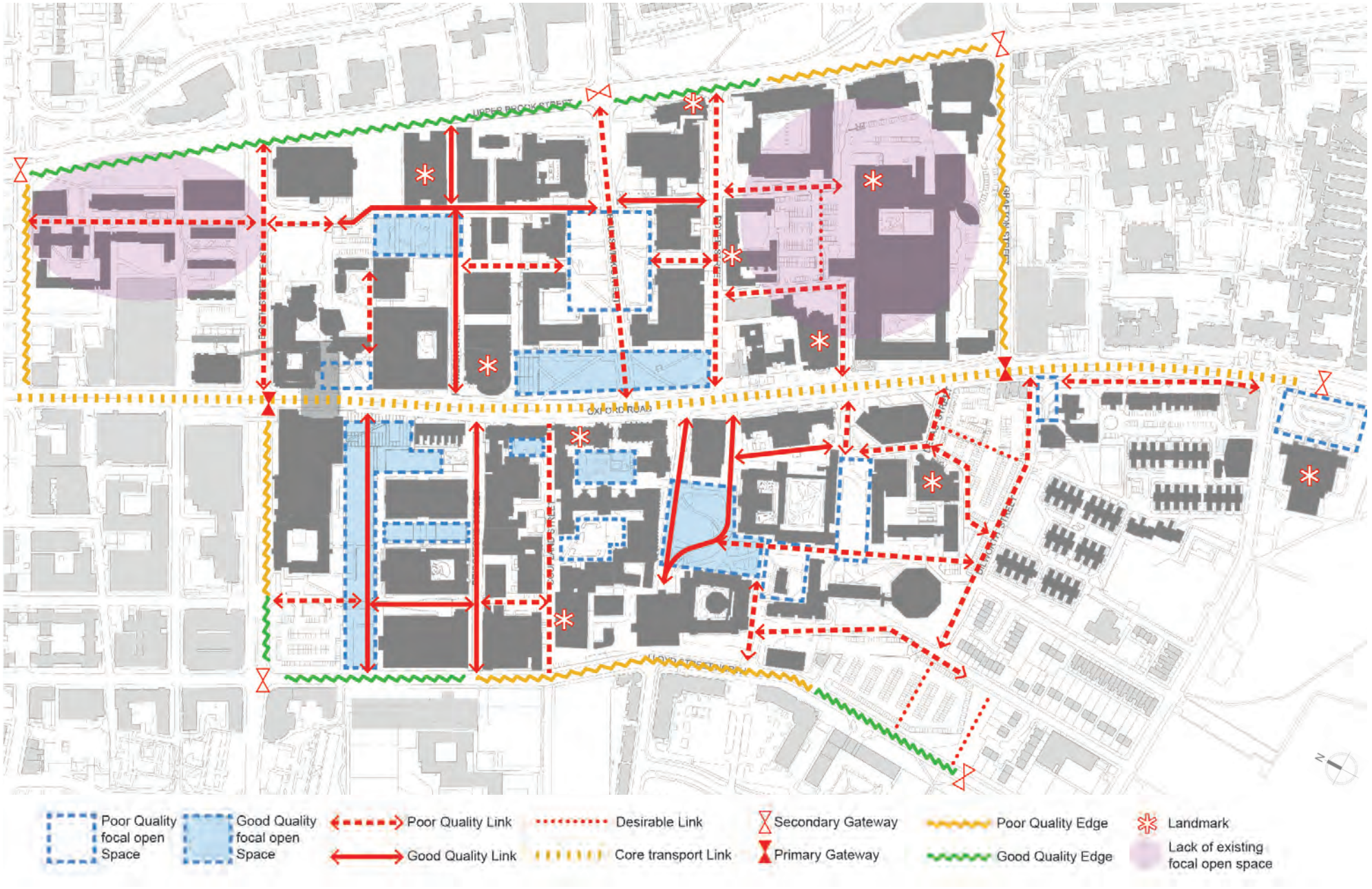
31. TURNER DENTAL SCHOOL SERVICE ACCESS
This area is currently dominated by building servicing, including waste storage. However, it is regularly used as a pedestrian route from Coupland Street to Bridgeford Street. The area lacks any provision for pedestrians and cyclists and is a hard space, dominated by asphalt surfacing with the absence of planting.

32. BRIDGEFORD STREET
This street was recently reconfigured using the current material specification, tying the scheme into the emerging public realm character of other areas. The street effectively reduces vehicle speeds, creating a pleasant pedestrian and cyclist experience and gateway to the campus.

33. CHATHAM STREET
Also recently implemented, Chatham Street includes exemplar street planting to create an attractive environment that caters for both vehicle and pedestrian requirements. A raised surface table at a pedestrian crossing point reinforces pedestrian priority by reducing vehicle speeds and reducing the impact of vehicles through the adjacent green space.

34. HIGHER CAMBRIDGE STREET CAR PARK
The car park benefits from a belt of existing mature trees along Higher Cambridge Street, screening both the car park and adjacent green space from the road. The car park itself is standard asphalt, but the expanse of open hard surface is softened by areas of lawn, trees and hedges around its periphery.

35. ARTHUR LEWIS BUILDING GREEN SPACE
A recently re-designed and implemented area of public green space that presents an attractive pedestrian and cyclist environment amongst an abundance of mature trees. High quality paving and furniture in line with the current specification.



LINKS, SPACES AND EDGES TODAY





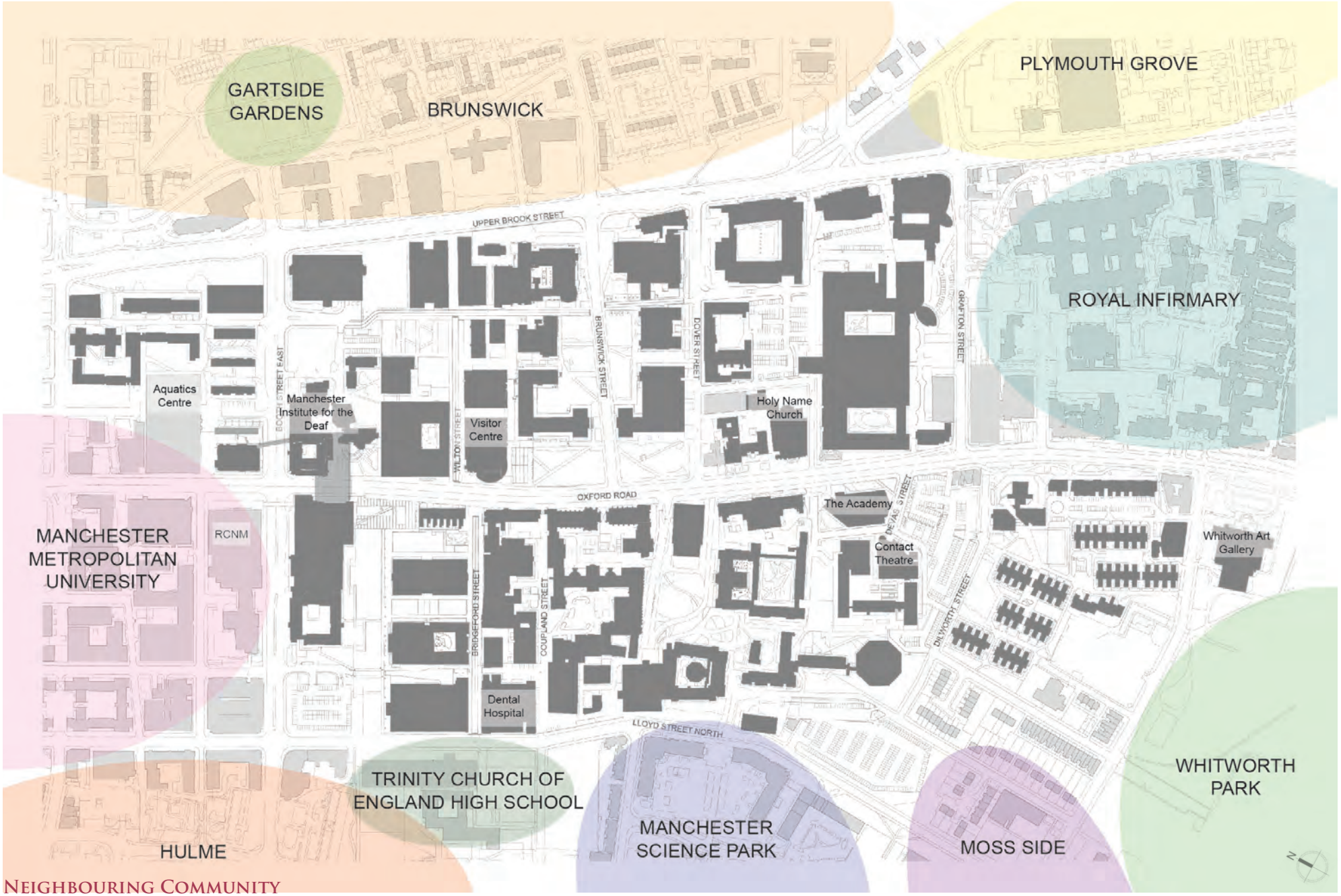

2.5 The Focus

Focus spaces are an important part of university life as they facilitate various aspects of student and staff life such as end of term celebrations, graduations and examination periods. Focus spaces have the potential to create a vibrant, interactive and integrated campus population.

There are several spaces within the university which provide a positive focus for students, staff and activities. Several of these spaces are located near key buildings on the campus such as the Whitworth Building, University Place, the Business School, Alan Turing Building and the new Alan Gilbert Learning Commons. The landscape associated with these buildings often acts as 'spill out' space for people to continue their discussions outside or acts as a place to meet.

However, it is curious that the Old Quadrangle and Rear Quadrangle are the only named spaces on campus. The University takes great pride in naming buildings, but many spaces and even routes, are not named. Formally naming spaces and routes as squares, greens and walks for example, could be one way to reinforce a sense of place and identity, giving further value to the landscape and assist with wayfinding.

As well as illustrating that not all the existing focus spaces are linked coherently, the plan highlights a deficit in focus spaces on the north and south sides of the campus, particularly in the southeast corner where biomedical teaching and research is concentrated. This is often due to the dominance of car parking and service access in these areas.



Neighbouring Community



2.6 the Neighbours

Being an urban campus adjacent to Manchester city centre, the University has many neighbours and must be seen as an integral part of the local community.

These neighbours include residential areas such as Brunswick, Plymouth Grove to the east, Hulme to the west and Moss Side and Rusholme to the south. Nearby parks include Grosvenor Square to the north, Gartside Gardens to the east and Whitworth park to the south. Immediately to the north is the Manchester Metropolitan University and to the south Manchester Royal Infirmary, to which the University Manchester is closely linked. Also to the west is the Manchester Science Park. Connecting the University with many of these neighbours are key the south-north transport corridors as described earlier, the most important of which is Oxford Road at the heart of the campus.

Although the University must be welcoming and integral with the wider community, the campus should also have its own identity and character, as does any other neighbourhood or district of the city. Identity, character and sense of place should not be mistaken for isolation. It is expected that the campus should have an identity and a high quality environment. It should not however have fences and barriers which physically block access. It should continue to encourage visits to the campus with its high quality and open public attractions such as the Whitworth Art Gallery and Manchester Museum which act to break down barriers, which are often more psychological than physical on today's campus. Edges, gateways and through routes are all critically important landscape elements that in many instances are weak and if improved, could improve the relationship of the campus further with its neighbours.

Campus Masterplan 2012-2020




Concept design for Brunswick Street


Proposed addition to Manchester Business School


1973 proposal for Brunswick Street

2.7 An Evolving campus

With a long and illustrious history, it is inevitable that the campus has evolved over the years from humble beginnings. The built form and landscape of the campus was traditional it its design until post-war plans, modern design concepts and rapid expansion, radically changed the approach to development. In 1954, landscape design envisaged "ultimately many more large open spaces and extensive lawns" across the campus. By the 1960s, ideas for upper level walkways and extensive road building proposals with grade separated junctions across the city (including an inner ring road along Dilworth Street) began to impact on the design of the campus, with the Business School bridging over Oxford Road one the last remaining elements of these policies. In terms of landscape, the emphasis was on creating open green spaces with meandering footways in contrast to the obsolete and congested Victorian city.

Now as part of its wider strategy to become one of the top 25 research universities in the world by 2020, the University is to invest £1 billion over the next ten years to create a single world-class campus for staff and students. (Campus Masterplan 2012-2022). There is an immense opportunity now to create a world-class landscape and environment to set this development within.

In addition, plans are now well developed and currently out to public consultation for the Oxford Road Corridor. Restricted private vehicular access, bus priority measures, cycle lanes, improved pedestrian crossings and public realm improvements along Oxford Road will eventually help connect north and south sides of the campus. This improvement to the heart of the campus will likely result in the edges becoming more important as 'front doors' - Upper Brook and Lloyd/ Higher Cambridge Streets in particular.

Existing Tree Cover






2.8 Tree Cover

One of the campus' greatest landscape assets is its mature tree cover in selected areas. A legacy of established native and specimen trees constitute a significant, although limited, part of the existing campus landscape. These mature trees impart a sense of spatial order, visual clarity and a sense of time and grandeur to the campus, particularly in more historic areas around the quads and along Oxford Road.

Desk based mapping of trees on the campus has been undertaken and will be supplemented by a full survey and audit of existing trees shortly. What the desk top mapping does illustrate is the extent of tree cover and green space generally across the campus. Tree cover is concentrated in a number of areas and thin in some areas, particularly the north east corner. A number of the edges also have little tree cover in sections and few surface car parks have trees within. These hard areas are in stark contrast to the more green areas of the campus and contribute to the general lack of a sense of coherence throughout the landscape and public realm. The tree cover itself also reflects the design of the landscape over time and more formal/urban/contemporary avenues of trees stand in contrast with the informal/naturalistic/park-like arrangement of many older and 'modern' areas.

The existing tree cover presents both an opportunity for the landscape, but also a constraint on future development. Mature tree cover is a legacy that cannot be recreated overnight and therefore should be carefully managed. It also represents an opportunity to reinforce the existing sense of place by increasing the tree cover generally across the campus.


Campus Maps

3.0
A Future Campus

3.1 A Quality Campus

A core aim of the Landscape Masterplan is to help develop a place for people; a place which people will find easy to understand, a place that is memorable and identifiable, a place that is distinctive. It is vital that both students and staff have a sense of belonging and a strong 'sense of place' which visitors will also recognise in a single campus.

Key to delivering this aim will be the establishment of a high quality public realm that reflects the character of both the University and Manchester, and provides spaces within which people can gather to study, socialise, and enjoy educational, cultural and recreational activities.

An improved public realm will be delivered over a period of years, building on the good progress made over the past few years. The Landscape Masterplan now seeks to establish a level of consistency and quality for the public realm across the single campus, whilst ensuring a flexible approach to future delivery, considering each part of the campus and it's specific context.

A number of issues were raised from looking at the campus today:

- it is often not clear where the 'edge' is and visitors especially do not know when they have arrived 'on campus'
- the landscape is not cohesive and does not have a distinct character.
- external spaces vary in quality. There are some exceptional spaces and some very poor ones
- the campus is unbalanced in its provision of external spaces, especially green spaces

In response to the above and the overall Landscape Masterplan vision, the following design principles should be applied to future landscape and public realm design to achieve a quality campus:

- reinforce the sense of place
- provide richness and variety
- a comfortable scale
- active frontages and positive enclosure
- key views, orientation and wayfinding
- unify through streetscape surfaces
- reduce clutter
- inclusive and accessible
- sustainability and biodiversity

In addition to addressing the above, there needs to be a clear relationship established between design, construction and management of the public realm and landscape in the future.

High Priority

- Reconfigure public realm layout and function
- Create new public space
- Specify new hard and soft landscape elements

Medium Priority

- Specify new hard and soft landscape elements
- Provide new tree and amenity planting
- Improve lighting and furniture provision

Low Priority

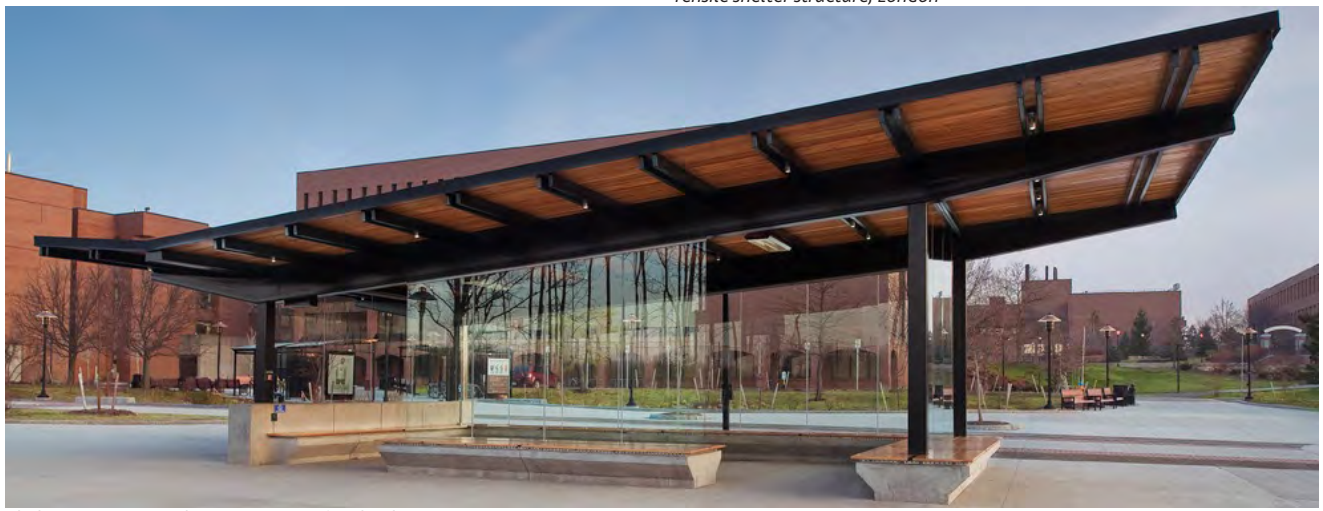
- Improve/ reconfigure furniture provision
- Repair any damaged hard landscape
- Introduce wider variety of planting

Investment Priorities

Future development with new landscape




Tensile shelter structure, London



Shelter structure, Rochester Institute of Technology, NY

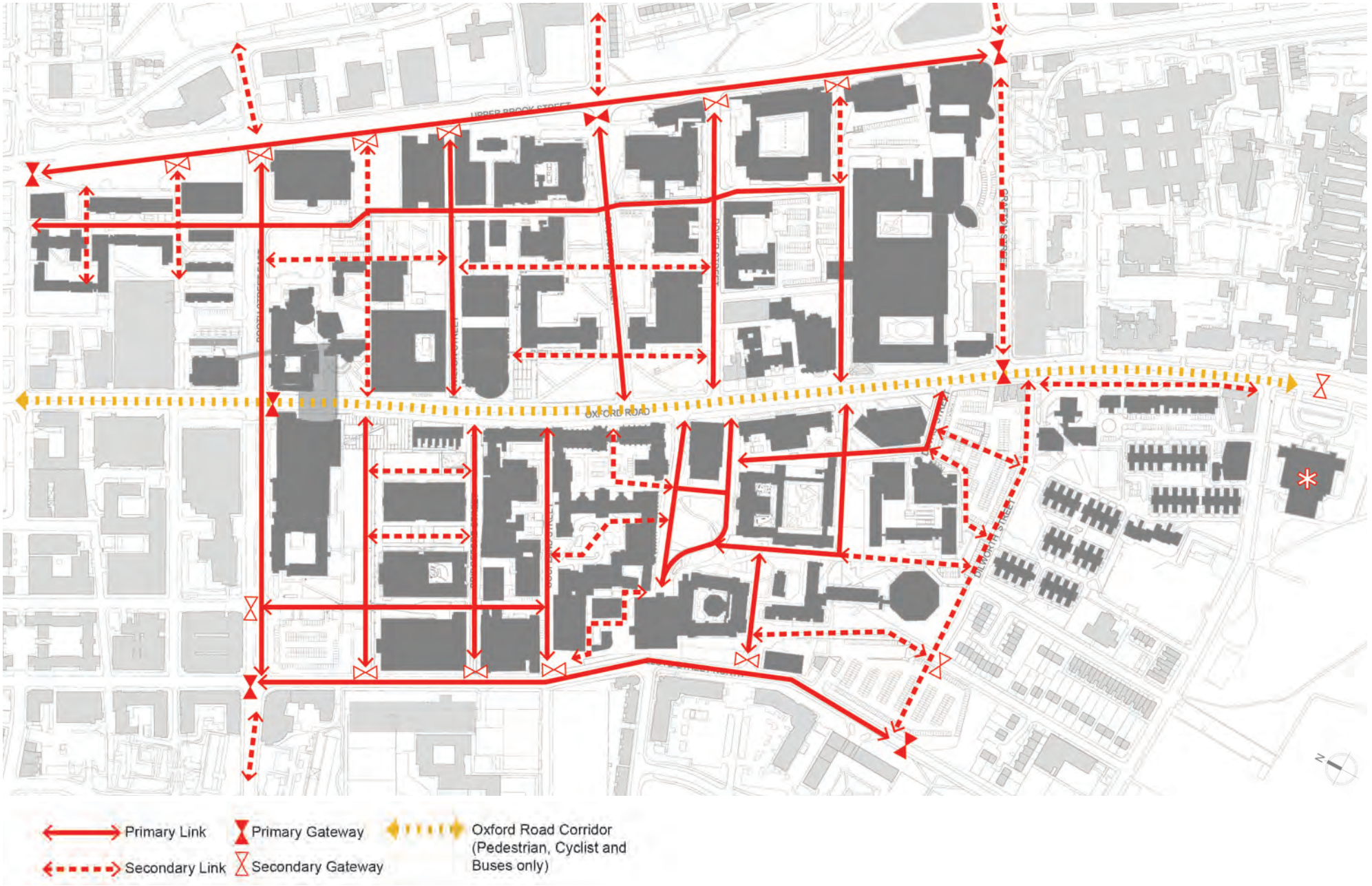
3.2 A Social Campus

Every square metre of space on campus should be considered valuable. There should be no left over or forgotten spaces, particularly those between buildings where under-utilisation of potential is an opportunity lost. Special consideration should be given to the treatment of the spaces between buildings to form a continuous and coherent network of routes and green spaces along and through which people will move around the campus.

Indeed, the campus is too large to have a just one or two high quality open spaces. It is clear from an existing plan of the campus that the east side in particular lacks quality open space for students and staff. The objective therefore should be to provide 'human scale' open spaces within a short walk of each building on campus to sit, relax, study and socialise. To improve their use and attractiveness further, shelters should be considered in a number of these places to provide cover from both the rain and sun.

Historically and culturally significant spaces on campus should be preserved and enhanced, such as the Main and Rear Quadrangles. New spaces should seek to become as culturally significant over time, particularly on the east side of the campus.

As well as spaces to relax and study in and routes to move about and socialise in, entrances to buildings are also critically important. The building threshold is the space between inside and out and the quality of that space, particularly in terms of its surface, should be equally high. There should not be a drop in quality simply because students or staff are outside. Equally, this space needs to be easy to identify and assist with wayfinding and locating the front door by students, staff and in particular, visitors.



Primary Link
Secondary Link
Primary Gateway
Secondary Gateway
Oxford Road Corridor (Pedestrian, Cyclist and Buses only)

Improved Connections

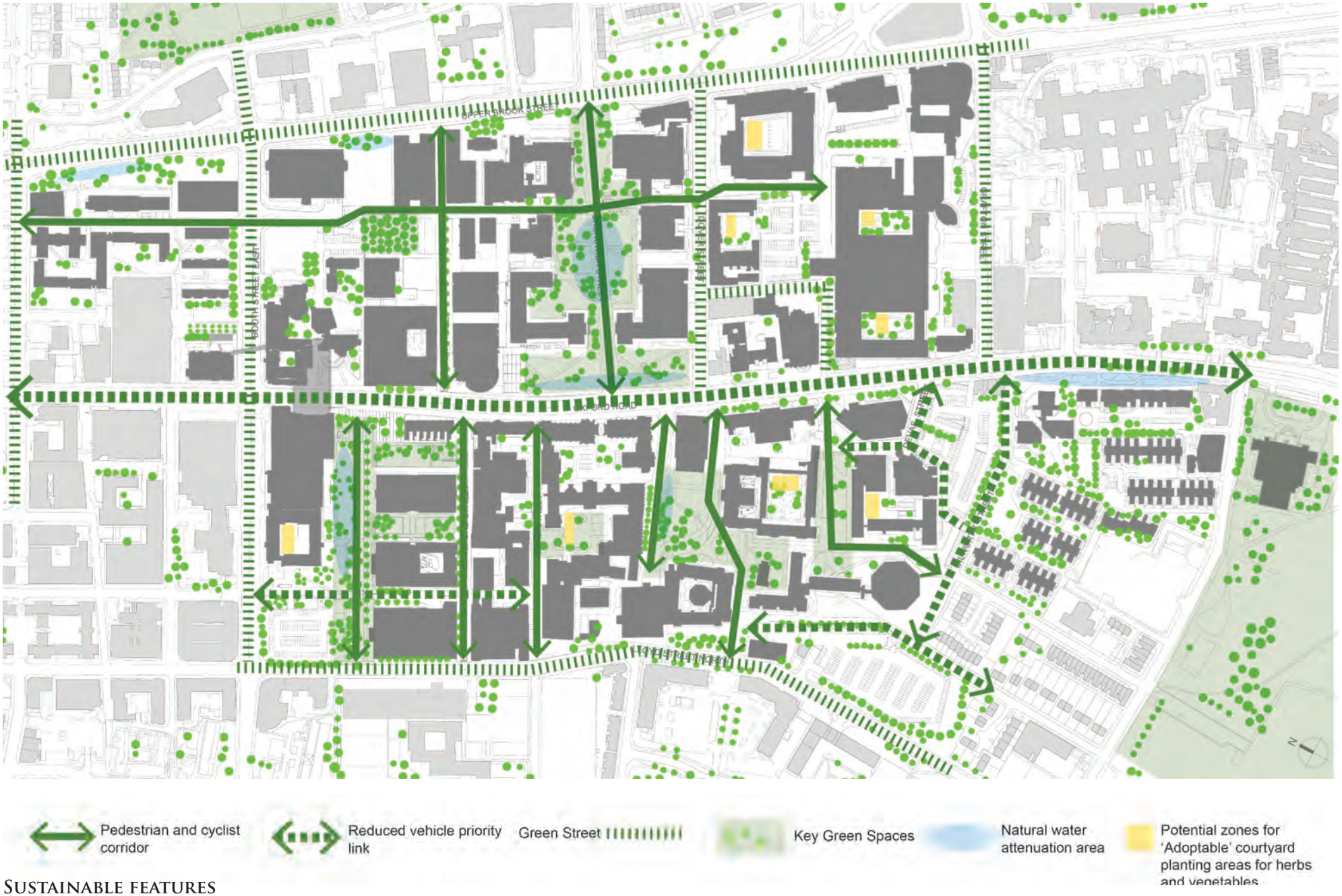
3.3 A Connected and Accessible Campus

Primary routes within and on the edge of the campus should be improved to ensure a high degree of connectivity and permeability. These primary routes provide cross campus links and many will also link beyond into the surrounding neighbourhoods and should be a priority for improvement, particularly on the east side. There should be a clear way from these routes to each university building entrance to improve legibility and accessibility. Primary routes should generally avoid open service areas where possible, be finished to a high standard and respect pedestrian desire lines.

Secondary routes may be known to students and staff, but visitors currently may find it difficult to find and navigate them. These should also be improved as a priority to ensure good accessibility across the campus, particularly where they provide access to building entrances. Pedestrian desire lines should also be respected.

A number of the primary routes and edges are public highways, but consideration should be given for improvement to an adoptable standard regardless following dialogue with the City. Primary routes with standard highway finishes such as Dover Street do not reinforce the idea of a single cohesive campus and may act to isolate academic areas such as biomedical. Where primary and secondary routes are not currently named, consideration should be given to this to improve legibility and wayfinding.

A connected campus also requires appropriate and inviting gateways into the campus for students, staff and in particular, visitors, to create a sense of arrival and orientation. Improvement works will make people aware of when they are on the edge campus or entering into it on primary and secondary routes.



Sustainable features




3.4 A Sustainable Campus

To help meet the environmental objectives of the University for biodiversity, planting should focus on nectar rich species, including wild flowers, to support bees and butterflies. Shrubs and trees with berries will also support bird life. Potentially valuable existing habitats should be identified and incorporated into future landscape and development proposals. Green links and corridors should be established across the campus and beyond to Gartside Gardens, Whitworth Park and Manchester Science Park to assist wildlife. All of these actions will also support Manchester City Council's Biodiversity Action Plan.

In terms of climate change adaptation, as evidence suggests more intense rainfall events are likely in the future, effective drainage will become even more important. Easy to block grating should be avoided in favour of open channels. Areas of soft landscape should be considered for attenuation with the additional benefit of supporting biodiversity. The urban heat island effect is also likely to become more apparent with climate change and its impact could be mitigated with trees providing shading to buildings, people and pavements on hot days. Trees and plants also have a natural general cooling effect on the air.

The concept of an 'edible landscape', with permanent planting of fruit trees and temporary planting/moveable 'adoptable' planters for herbs and possibly vegetables would be appropriate in certain areas. . These planters could be voluntarily adopted by staff and information, responsibility and possibly sponsorship for each included on them. Interpretation to highlight landscape features associated with biodiversity and sustainability should also be introduced to raise awareness of issues amongst students and staff.

Green Infrastructure



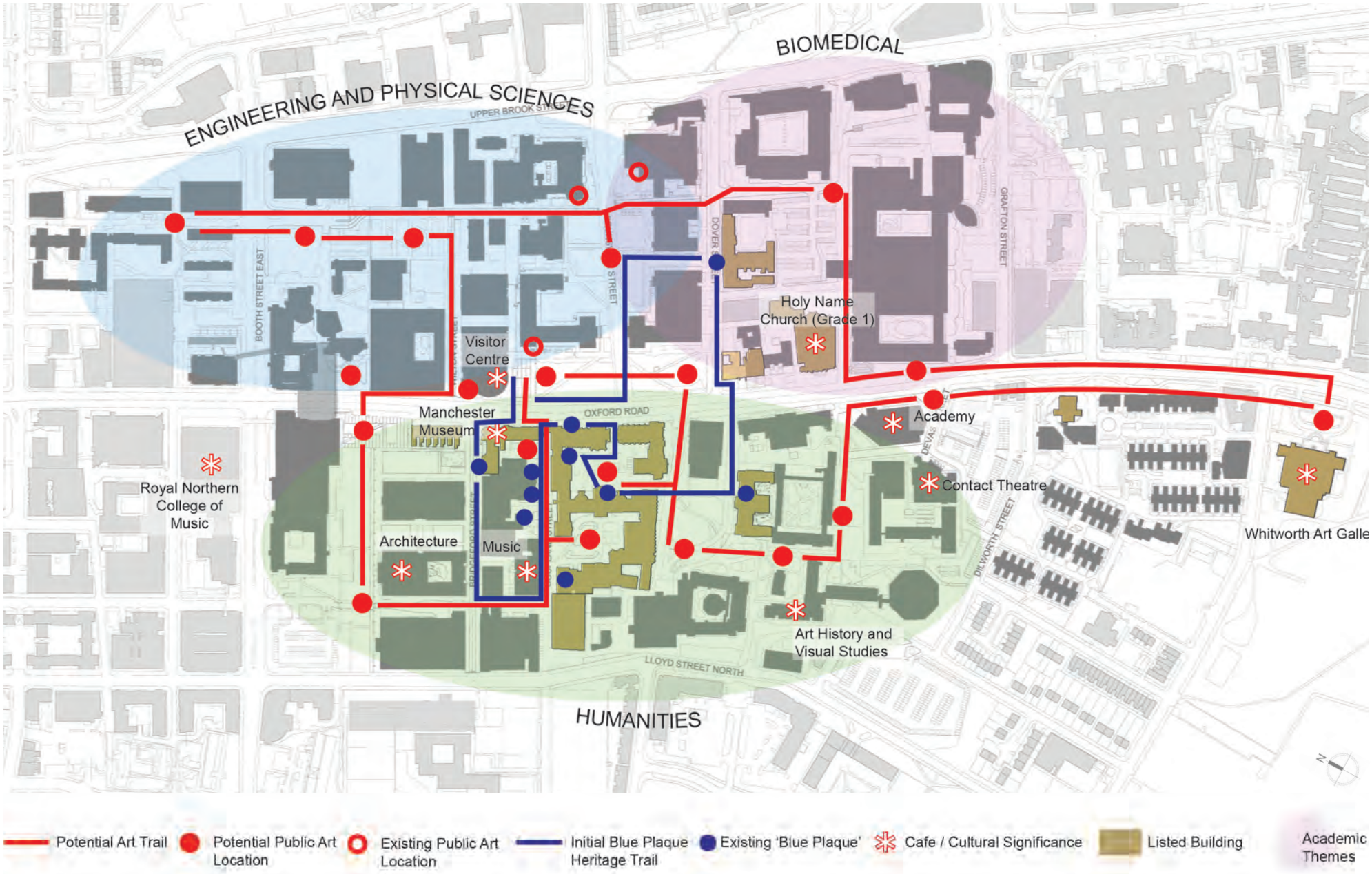
3.5 A Green Campus

A cross campus planting strategy is proposed, focussing on biodiversity, botanic interest and low maintenance, to create a green or horticultural focus for the campus.

There is the opportunity to create an individual botanic identity for routes and spaces. Planting should respond to the seasons, with a focus on autumn, winter and spring when the campus is at its busiest. This would add interesting colours and textures to the campus throughout the year.

Semi-mature tree planting should focus on key routes where space allows to reinforce visual connections and be concentrated in key spaces where signature species may be appropriate. Where possible, existing good tree specimens should be retained and protected during any construction works. Their setting should be improved and works carried out as necessary to promote healthy growth. Avenue tree planting of the campus edges is encouraged to soften vehicle dominated environments, ameliorate pollution and enhance the sense of arrival.

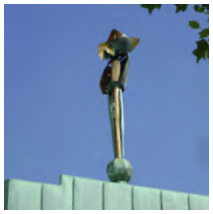
Ornamental planting (shrubs, ground cover and perennials) should be used in key routes and spaces to soften the public realm and provide visual focus at a human scale. Areas of well defined lawn are encouraged reduce areas of hard paving and provide space for recreation and study. Planters (moveable or static) are to be avoided to reduce unnecessary clutter and maintenance. Wildflower and native meadow mixes should be used only in specific well managed locations for a low cost, low maintenance enhancement to wildlife corridors and increase biodiversity.



Art and Heritage Trails


'Manchester Sun Bronze'


'Vimto'


An abstract sculpture, Schuster Building


'Technology Arch'

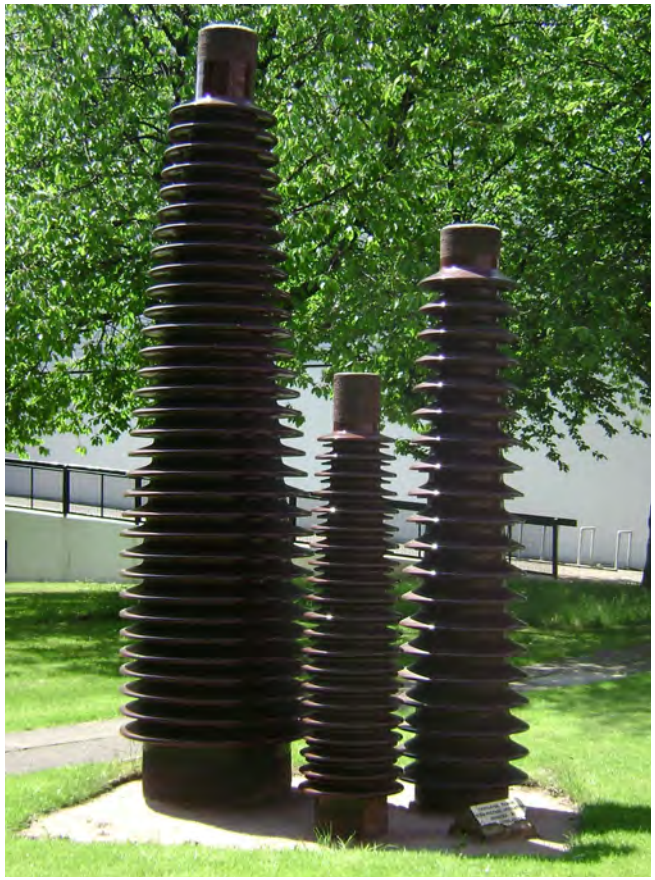

'Magnets'

Uttley

Rutherford

Stopes

Turing


'Insulator Family'

3.6 An Artful and Historic Campus

Art is an important and varied element of the public realm that has many benefits, including allowing the campus and community to engage with the art and therefore each other. Public art can take on many forms and communicate on different levels such as an expression of a place in terms of its character, history or aspirations, or as a focus for stimulating our senses and imagination. Public art can also provide an interesting focus for a place or vista and it can be challenging and controversial to provoke discussion.

The campus is rich in character and history, providing inspiration for future public art. 25 Nobel Prize winners alone have either studied or worked (or are still working) at the University of Manchester. 'University Icons' as a theme could include these Nobel Prize winners and other notable students and staff, but also inventions or discoveries in the sciences and major contributions to the arts for example. This theme would strengthen the unique identity of the campus and add meaning to it for staff, students and visitors.

There are currently very few public art installations within the Oxford Road campus. The majority of public art is currently located on the North Campus, mostly with a science or engineering theme. Plans should be made to protect and relocate these to the new single campus and new works commissioned.

In addition to public art, the University is rich in other cultural assets, including the Whitworth Art Gallery, Contact Theatre, Academy, Manchester Museum, the Martin Harris Centre for Music and Drama and the adjacent Royal Northern College of Music. A cross campus art trail could link these cultural assets and key spaces with existing and newly commissioned public art.

As well as providing inspiration for works of art, the history and heritage of the University is recognised in the many 'blue plaques' across the campus, which identify the numerous significant leaders in their field who have studied or worked here. The number of blue plaques could easily be expanded considering the significant world class contribution to knowledge and human progress that staff and students of the University have made in the past (and continue to make today). Additional blue plaques and other interpretation, combined with the architectural heritage of the University (listed buildings), could form a heritage trail, possibly starting at the Visitors Centre. This 'story' of the University is one that needs to be told through the landscape and could be a source of inspiration for a new generation of students, staff and visitors.

4.0 Landscape Palette

4.1 Fit for Purpose

This section identifies the overall palette and general design guidelines for application to the campus landscape. However, guidelines alone are insufficient to achieve a quality campus and their application is at least as important as attention to detail in the design of specific locations and the siting of physical elements. Implementation on site, workmanship and supervision are also vital to achieving quality in the landscape. Of equal importance are management and maintenance. Common objectives and a co-ordinated programme for management is essential to achieving and sustaining improvements to the campus. Without this corporate will, investment in the landscape can be lost or at best, diluted.

The aim of improving the environmental quality and the design of streets and spaces must include the reduction and rationalisation of clutter, as well as the recognition of pedestrian and cycle desire lines. Boldness, simplicity, style and elegance are fundamental characteristics of the philosophy of design guidelines.

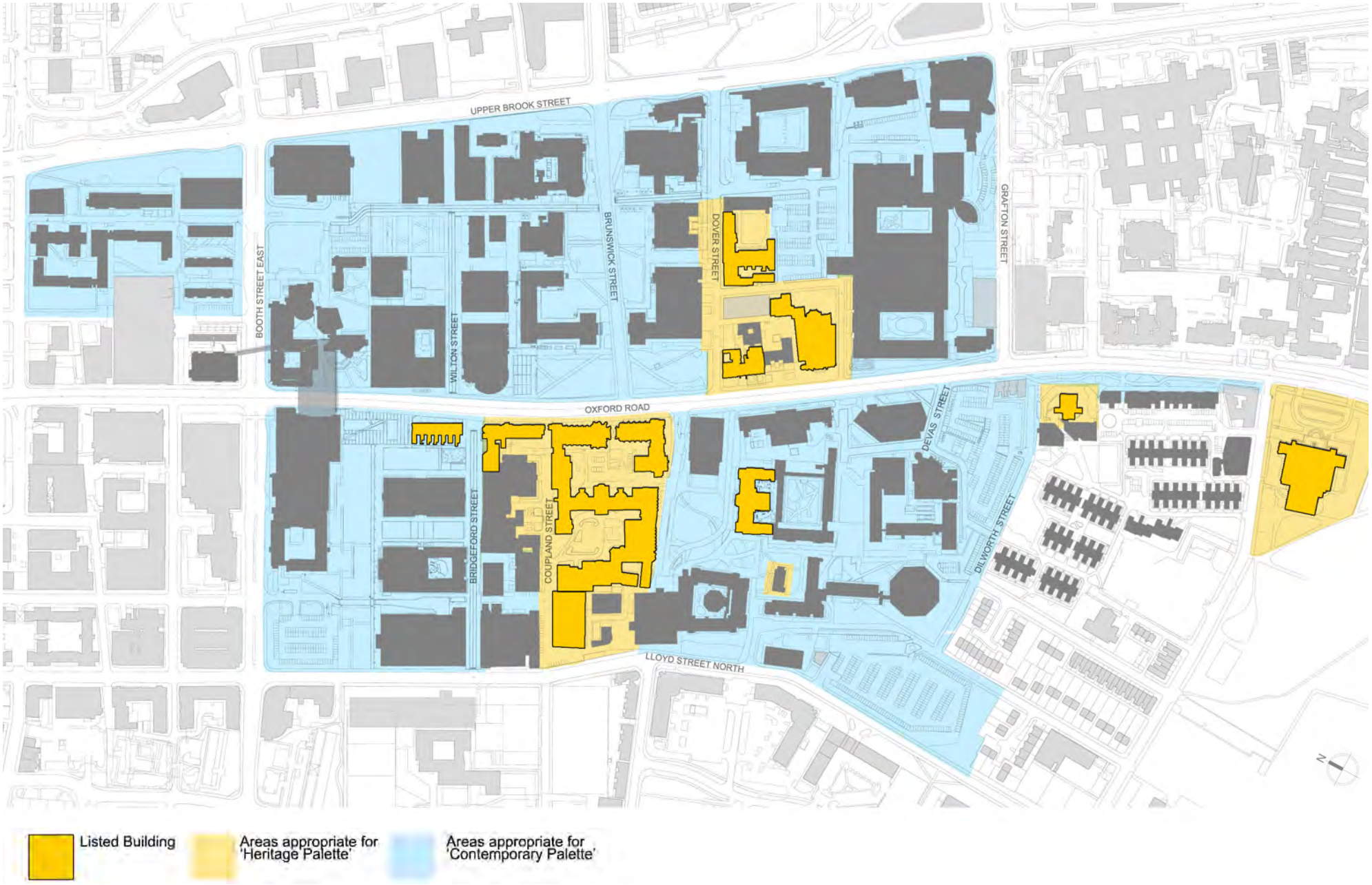
Before a palette of paving, furniture and planting can be selected, it is first necessary to define the objectives for an area. This can involve the consideration of a number of issues:

- Architectural setting - historic or contemporary
- Continuity
- A 'sense of place'
- Hierarchy or ordering

In considering new landscape or improvements, it is important to ensure the retention or creation of a coherent hierarchy to streets, routes and spaces as outlined in this Landscape Masterplan. It provides a rationale to identify the most important streets, routes and spaces for quality treatment and higher level of investment.

In selecting paving, furniture and planting to fulfil the above objectives, there are a number of factors that must be considered with the palette:

- **Climate** – is one of the least considered issues in the pursuit of quality, but it directly impinges on almost every other tangible issue – in maintaining the quality of materials and healthy trees and planting, in promoting more active uses at specific locations or encouraging student and staff to use the campus' outdoor spaces and most importantly, it is about the comfort of the place for its users.
- **Function and design** - the materials used must be durable and fit for purpose. It is important that their design is of a quality and nature that will last. Examples from across the campus demonstrate that landscape works of high quality and simplicity are the most likely to successfully pass the test of time, both in physical terms and aesthetically.
- **Appropriate character** - a balance has to be found between contemporary design and conservation where appropriate. This is best achieved through a combination of the two approaches in sensitive areas. Firstly, by making reference to existing materials and details, so that the new landscape looks at home within its architectural setting. Secondly, through the introduction of new materials and designs that have the potential to enhance the character and image of the place.
- **Supply, affordability and maintenance** - materials used, whether they are paving or furniture, must be available in the quantities required, at a reasonable price and for the foreseeable future. It is important to consider the long-term future of the landscape so that the selected materials are durable and if damaged can be replaced cost effectively.



Design Language



4.2 Reflecting and Reinforcing Character

The landscape palette or language, that is the surfaces, furniture and planting, of any place needs to respond to the many other built elements around and within, it such as buildings, public art, existing planting and existing materials. This type of visual language also needs to communicate to the users of the place and in this case create a cohesive and easily accessible campus.

Building a campus over a long period of time creates an interesting mix of architectural and landscape styles. At the University of Manchester there are several different spaces and styles of architecture. However for the purposes of creating a coherent campus this study has identified two main characters and thus two landscape palettes or languages for the campus:

- Heritage Language
- Contemporary Language

The Heritage Language responds to the existing historic architecture, buildings and materials. These tend to be the oldest buildings on the campus dating from 1873. The Contemporary Language on the other hand, responds to a broader mix of architectural styles, mostly post-war up to the present day, and the spaces that are adjacent to or enclosed by these buildings. This language will also be used for many routes through the campus giving a sense of coherence. The plan shows where these two different languages should be applied.

The following pages describe and give examples of the individual elements that comprise the heritage and contemporary languages by way of surfaces, furniture and planting. The Campus Masterplan 2012-2022 has identified academic areas of Engineering and Physical Sciences, Biomedical and Humanities within the campus. Therefore, in addition to the Heritage and Contemporary palettes, there will be the opportunity to reflect these academic areas through bespoke landscape elements and art further reinforcing the sense of place and identity.

4.3 Surfaces

A simple, classic, elegant application of surface materials that subtly vary across contemporary or heritage areas will create a harmonious campus that respects historic buildings and complements modern and new architecture.

Principles for the choice of surface materials:

- Create a simple, harmonious floorscape with subtle variations to provide a sense of transition between character areas;
- Set a limited materials palette that is distinctive and makes reference to the campus' intrinsic character;
- Follow sustainability principles, using locally/UK sourced, recycled and reclaimed materials where budgets and availability allow;
- Use the highest quality materials affordable with thorough consideration of whole life costs;
- Select materials for their durability and functionality;
- Ensure materials are readily available and consider stock piling spares for repairs;
- Select surface finishes that fully consider location, function and character.

High quality materials alone are not sufficient to create high quality floorscape. Excellence in detailing and workmanship is required to ensure that the value of investment in surfaces is elevated. Particular care should be given to:

- Detailing of material junctions – careful consideration of drainage details, integration of utility covers, furniture, trees and building lines;
- Minimising awkward paving cuts and poor alignment of materials;
- Ensuring appropriate skilled labour is available (particularly for areas where traditional or unusual laying techniques are required);
- Road markings are minimised carefully considered, particularly in areas using high quality materials and blocks;
- Careful detailing of tactile paving to accord with current access guidance;
- Sub-base make up and jointing. These are key to high quality, long lasting surfaces. A rigid construction build up is recommended for all surfaces where vehicle overrun is likely or indeed possible;
- Accessibility requirements in line with national and local guidelines and responding to the Disability Discrimination Act.

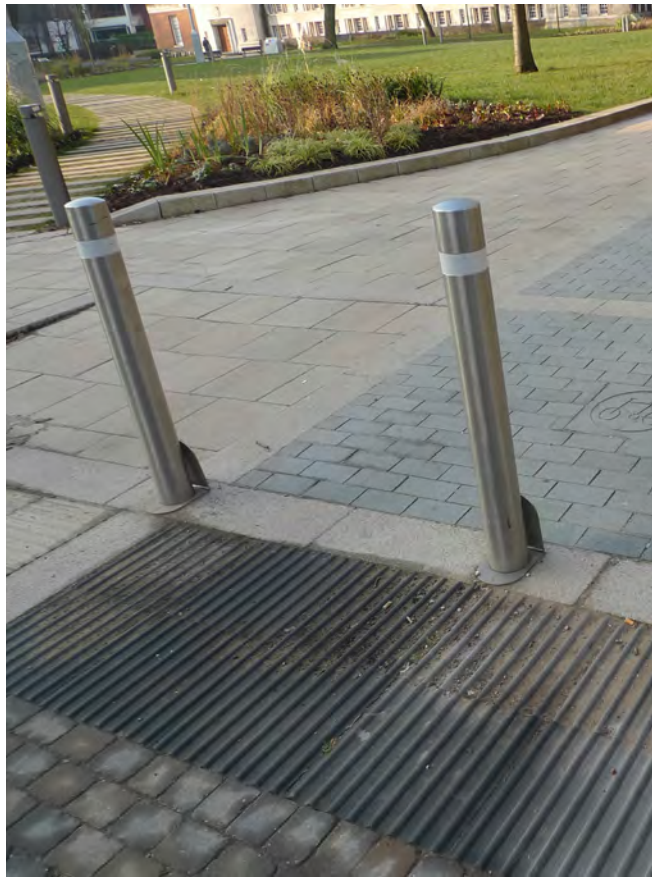


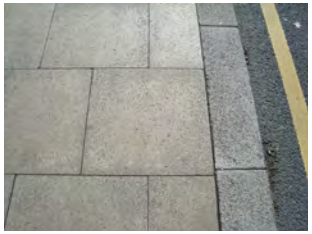
IMAGE	MATERIAL	NAME/SUPPLIER	COLOUR/FINISH	LANGUAGE	NOTES
	Precast concrete flag	Saxon/ Marshalls	Natural colour/ textured	Contemporary/ Heritage	400x400mm, staggered bond
	Precast concrete flag	Perfecta/ Marshalls	Natural colour	Contemporary/ Heritage	400x400mm, staggered bond, public highways only to MCC specification
	Precast concrete kerb - wide	Conservation kerb/ Marshalls	Silver grey and natural/ textured	Contemporary/ Heritage	255mm wide
	Precast concrete kerb - narrow	Conservation kerb/ Marshalls	Silver grey and natural/ textured	Contemporary/ Heritage	125mm wide
	Tactile unit, natural stone	Marshalls	Yorkstone or granite	Contemporary/ Heritage	Various types and sizes to meet access requirements

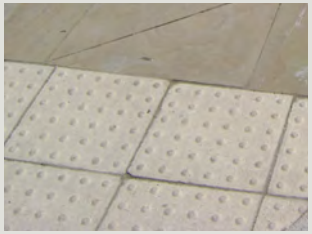
IMAGE	MATERIAL	NAME/SUPPLIER	COLOUR/FINISH	LANGUAGE	NOTES
	Tactile unit, precast concrete	Marshalls	Colour to meet access requirements	Contemporary	Various types and sizes to meet access requirements
	Yorkstone flag	Yorkstone/ Marshalls	Sawn	Heritage	Various sizes, staggered bond
	Yorkstone sett	Yorkstone/ Marshalls	Sawn	Heritage	100mmxrandom length
	Granite sett	Marshalls	Light Grey/ flamed	Contemporary/ Heritage	100x200mm, staggered bond, also 100x100mm cubes for edging
	Granite sett	Marshalls	Dark Grey/ flamed	Contemporary/ Heritage	100x200mm, staggered bond

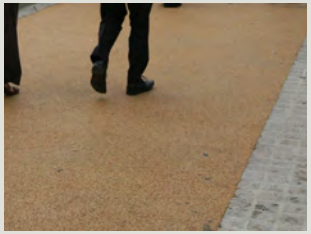
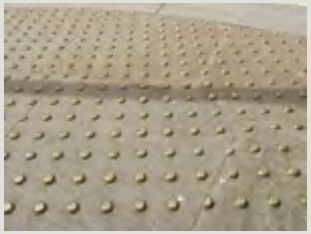
IMAGE	MATERIAL	NAME/SUPPLIER	COLOUR/FINISH	LANGUAGE	NOTES
	Granite flag	Marshalls	Light Grey/Dark Grey/ flamed	Contemporary	400x600mm
	Granite flag	Marshalls	Dark Grey/ flamed	Contemporary	
	Resin bound gravel	SureSet	Buff	Contemporary	3-6mm sized aggregate
	Asphalt	-	Black	Contemporary/ Heritage	Carriageways only. To MCC specification if on public highway
	Blocks	Woburn Rumbled/ Charcon	Graphite	Contemporary	100x134mm, carriageways only

IMAGE	MATERIAL	NAME/SUPPLIER	COLOUR/FINISH	LANGUAGE	NOTES
	Precast concrete step unit	Marshalls	Silver grey/ textured	Contemporary	400x150x100mm
	Yorkstone step unit	-	Yorkstone	Heritage	-
	Pavement signs (cycle and pedestrian)	-	Granite	Contemporary/ Heritage	Unit must to be designed to accept vehicle loading if located in a trafficked area. Approximately 405x415x80mm
	Stainless steel edging	Excel edge	Stainless steel	Contemporary	5x150mm
	Paving studs	-	Stainless steel	Contemporary	Various types and layout to meet access requirements. Can be used to mark property boundaries in areas of continuous paving

IMAGE	MATERIAL	NAME/SUPPLIER	COLOUR/FINISH	LANGUAGE	NOTES
	Paving studs	-	Brass	Heritage	Various types and layout to meet access requirements. Can be used to mark property boundaries in areas of continuous paving
	Channels (Concrete)	-	Silver grey and natural/ textured	Contemporary	
	Channels (Natural stone)	-	Yorkstone	Heritage	
	Inspection cover	-	Cast iron	Contemporary/ Heritage	Plastic covers should not be specified
	Recessed inspection cover	-	Gavalnised steel frame	Contemporary/ Heritage	Unit must to be designed to accept vehicle loading if located in a trafficked area

4.4 Furniture

Street furniture is an important component of the public realm, helping to create distinctive places that students, staff and visitors will want to use. A co-ordinated suite of furnishings consisting of a limited palette and restrained selection of styles will help reinforce the unique campus 'brand' or identity and contribute to a sense of place.

Street furniture includes:

- Seating
- Litter bins
- Cigarette disposal
- Grit bins
- Bollards
- Railings
- Cycle stands
- Tree grilles
- Planters
- Shelters for pedestrians and cycles
- Vehicle barriers
- Signage
- Lighting
- CCTV
- Service and utility covers

The vision for the landscape palette is to develop a suite of furniture that will create a harmonious campus, whilst allowing the flexibility for variation and innovation and reflecting character areas.
Principles for the choice of furniture:

- Simple, elegant street furniture that is a sensitive blend of contemporary and traditional to produce a 'classic' look and therefore unlikely to date;
- Predominantly off-the-peg items that are readily available, easy to replace and have an established record of use;
- Bespoke furniture, such as shelters, to embellish the standard palette - limited to feature areas;
- Furniture should be robust, durable and able to withstand maintenance, vandalism and damage (i.e. fading, staining or skate damage);
- Consider the needs and comfort of all users – i.e. height of seating, provide backrests and armrests on some benches;
- Services or utilities provision can have a potentially significant impact upon the public realm. Utilities should be placed within shared trenches with adequate access points within the street or route with all new installations. Disused services and access points should be removed with major works and all utility covers should be recessed. Above ground service cabinets or boxes must be carefully located to avoid clutter or obstruction.

Careful consideration of the amount, type and siting of furniture will enable the campus' public spaces to function most effectively.
Key principles for the layout of street furniture:

- Street furniture should be well considered and organised to reduce unnecessary clutter;
- Street furniture to define routes and concentrate activity;
- Street furniture sited with access for cleaning and maintenance in mind;
- Consider accessibility, allowing sufficient space for wheelchair/ buggy access and avoiding obstruction of key desire lines and pedestrian crossings;
- Reduce the need for unnecessary furniture by integrating signs, lighting and CCTV cameras onto single elements;
- Take a 'less is more' approach to signage and bollards, particularly on routes that will allow vehicular access;
- Limit the use of bollards and where possible use other street elements to restrict access such as trees;
- Organise seating in clusters in positive micro climates, overlooking activity and orientated towards key views. Seating with its back to pedestrian activity is not comfortable for most users;
- Promote cycling through well placed cycle stands near to building entrances and where they will benefit from passive surveillance.

Quality external lighting improves student, staff and visitor's perception of safety, enhances legibility and encourages use of the public realm after dark which is important considering the campus is busy in the darker autumn and winter months. Lighting is particularly important in areas where passive surveillance from adjacent buildings is poor and there is no passing vehicular traffic In addition, feature lighting can help attract visitors, create distinctive character and add to the sense of place. Key principles for campus lighting:

- High performance light columns and fittings of a simple, classic design that complement other elements of the palette;
- Lighting should respond to built form and the scale and function of individual streets, routes and spaces;
- Demonstrate sustainability through the use of energy efficient LED fittings that are directed to maximise impact and minimise light pollution;
- Robust and vandal proof fixtures and fittings;
- Use only white light in warm and cool colour temperatures to create varied ambience and improve legibility within the campus;
- All lighting to provide a colour render index of 60 or above to give better colour rendering to aid facial recognition;
- Ensure that streets and spaces are sufficiently lit in accordance with BS5489-1 and BS EN 13201-2003;
- Encourage add-ons to light columns such as banners, signage and CCTV to reduce street clutter.

IMAGE	ITEM	NAME/SUPPLIER	COLOUR/FINISH	LANGUAGE	NOTES
	Stone bench with arm rests		Granite/stainless steel	Contemporary	2000x 600x500mm sawn granite bench supplied in 2no 1000x600x500mm sections. Bullnose to all external upper edges. Flamed finish to all visible faces, complete with 2no 'Urbanfab' s/s armrests
	Wood/metal bench	HRV-Z Standard Seat/Streetlife	Wood seat, powder-coated steel back, frame and armrests	Contemporary	Wood from fsc approved source
	Wood/metal bench	Geo/Woodhouse (Marshalls)	Wood seat and back and stainless steel frame and armrests	Contemporary	Wood from fsc approved source
	Wood/Iron bench	Braeburn/Heritage Street Furniture	Black/Cast Iron/Wood	Heritage	Wood from fsc approved source
	Bespoke wood/metal bench	Woodscape or other specialist street furniture fabricator	Wood seat and steel frame	Contemporary	Bespoke item Wood from fsc approved source

IMAGE	ITEM	NAME/SUPPLIER	COLOUR/FINISH	LANGUAGE	NOTES
	Cigarette bin	Ashton Steel/ Broxap	Light grey powder coated steel (contemporary) Black powder coated streel (heritage)	Contemporary (light grey) Heritage (black)	Different colour for contemporary and heritage areas.
	Recycling bin	Advancer 4SS & 4DS/Advanced Scapes	Light grey powder coated steel	Contemporary/ Heritage	Litter only bins should not be specified in order to encourage recycling
	Bollard (fixed/removable)	Sheffield/ Broxap or equivalent	Stainless steel	Contemporary	White reflective strip required in pedestrian areas, red reflective strip in trafficked areas. 100mm diameter, 1000mm high
	Bollard (fixed)	Manchester/ Broxap or equivalent	Black/ cast iron	Heritage	White reflective strip required in pedestrian areas, red reflective strip in trafficked areas
	Bollard (removable)	Manchester/ Marshalls	Black/ Ultrathane 600 with steel core	Heritage	White reflective strip required in pedestrian areas, red reflective strip in trafficked areas. Weight 23 Kg.

IMAGE	ITEM	NAME/SUPPLIER	COLOUR/FINISH	LANGUAGE	NOTES
	Cycle stands	Sheffield/ Broxap	Stainless steel	Contemporary	
	Cycle stand	Sheffield/ Broxap	Black powder coated steel	Heritage	
	Cycle compound	Bikeshed BXM-MU/ Broxap	Perforated steel panels mixed with reinforced multi-wall polycarbonate graphic livered panels	Contemporary	To incorporate cycle stands and locking door system
	Tree grill	Riviere Square Hole/ Broxap	Black cast iron	Contemporary/ Heritage	
	Planter	Box Clever/Plantscape	Stainless steel outer casing	Contemporary	1250x1250x1250mm. Potential to integrate signage for information/ sponsorship/ responsibility

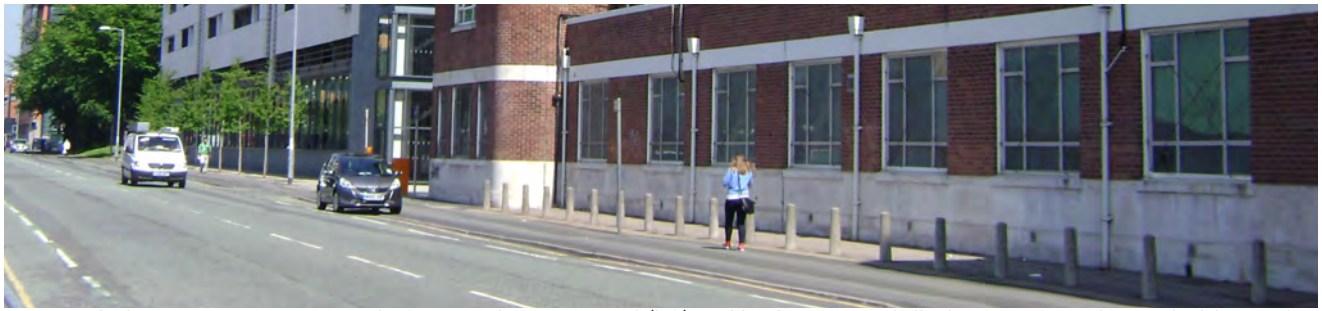
IMAGE	ITEM	NAME/SUPPLIER	COLOUR/FINISH	LANGUAGE	NOTES
	Lighting column	T.B.C. by University	Hinged for maintenance, black powder coated steel, tapered column	Contemporary/ Heritage	Latest specification LED luminnaire to meet lighting levels required
	Lighting bollard	T.B.C./ iGuzzini	T.B.C.	Contemporary/ Heritage	
	Vehicle barrier	T.B.C./ Automatic Systems	T.B.C.	Contemporary/ Heritage	Barriers should be carefully placed not to obstruct pedestrian or cycle movement
	Automatic bollards	T.B.C./ ATG Access	Stainless steel contemporary areas, black heritage areas	Contemporary/ Heritage	Control box and signals to be stainless steel in contemporary areas, black heritage areas. Bollards to have reflective strips
	Signage	T.B.C.	T.B.C.	Contemporary/ Heritage	

4.5 Planting

Trees and plants are vital to creating a more sustainable, greener and pleasant campus. Plants provide a wealth of benefits, improving the micro-climate, air and water quality, increasing biodiversity and enhancing the visual and amenity value of the landscape. Plants also humanise urban spaces and provide a natural seasonal sense of time.

Design principles for planting:

- Should provide for the functions of enhancement, focus and/or intimacy. It should positively contribute to the quality of space that is being designed and should not be incorporated arbitrarily;
- May not be appropriate in all locations;
- Plant native and forms of native species in preference to non-native species where appropriate;
- Where it is used, soft landscape should have real impact, in terms of its scale, location and/or nature;
- Should not be used where it would obscure important views, features, facades or lighting. Planting should also not be used where it will jeopardise safety and security by obscuring access or sightlines. ;
- Planting should include species of varying heights where possible.;
- Must be sustainable. Planting must be in a position where it will be able survive and flourish. The likelihood of vandalism should be considered; large areas of well cared for planting are generally less vulnerable than isolated pockets or specimens;
- Include planting that considers the entire lifecycle of bees and butterflies, to provide breeding places and a succession of food;
- Overall the aim should be for quality rather than quantity;
- To help meet the environmental objectives of the University for biodiversity, planting should focus where possible on nectar rich and berrying species to support wildlife; and,
- Programmes for future maintenance should be established prior to planting.



Upper Cambridge Street - street trees, as used in front of multi-storey car park (left), could replace concrete bollards in front of Dental Hospital, whilst providing a similar role but with added value

Guidelines for tree planting:

- The use of trees at existing ground level as opposed to raised in planters maintains the correct balance of scale and reduces the potential for obstruction to pedestrian movement;
- Often the main factor governing the physical positioning of street trees is services and, where monies permit, the grouping of appropriate services in ducts in a common trench should be considered to permit tree planting;
- Larger sizes of trees should be planted with a clear stem height of 2m minimum to minimise opportunities for vandalism and obstruction to pedestrians;
- Semi-mature trees should be carefully selected and prepared for transplanting at the nursery. Care should be taken during lifting and transporting to avoid damage to the roots, trunks and foliage;
- Trees to be incorporated into paved areas require to be planted in tree pits as large as possible and should be of a minimum width that allows a clearance of 300mm in all directions beyond the root spread of the trees being planted.
- Tree pits should be square and should incorporate watering facilities and a drainage layer to assist tree growth and development;
- Where groups of trees are being planted, a continuous strip or an island of soil ensures optimum growing conditions, with the paving being supported independently to the planting areas to allow air, drainage and roots to penetrate the soil outside the tree pit;
- To promote successful establishment and growth, a maintenance programme is essential which includes for regular inspections, feeding, watering and pruning of all plants to suit the individual needs of each species and consider the location and the requirements of the planting.

Trees should only be considered in locations where there is the room and conditions for them to flourish. Careful consideration should also be given to the visual appeal and character of the trees, including seasonal interest, unusual bark or habit. In most instances, the range of species selected should be limited with a change in species or variety used only to highlight junctions, features or buildings and to define routes and spaces. The following criteria should be considered when selecting trees from the following lists:

- Form - species should demonstrate a tidy overall shape with the branch network providing a strong architectural form when visible in winter;
- Scale - species should be planed at a scale that provides immediate impact. Long term and ultimate height and spread must be considered to ensure that the tree remains compatible with the scale of its surroundings;
- Canopy density - the density of the canopy is an important consideration. A dense canopy will shade the area below and adjacent to the trees. Within much of the campus, it will be desirable for light to filter to the ground and the canopy should therefore be light. Leaf size greatly affects canopy density;
- Leaf Size - smaller leaved trees are more preferable in urban situations. In the autumn, large leaves lying on the ground represent a potential hazard in the rain when they become slippery. Smaller leaves disperse more easily, albeit that leaf collection should be incorporated in any maintenance regime;
- Seasonal/ additional interest - given the considerable variety of trees available through commercial production, species can be selected not only for size and shape but also for seasonal effects such as autumn colour, flowers and fruits and for additional interest such as distinctive bark. It is important to consider these factors for autumn and winter when the campus is busy.

With the emphasis on high quality tree planting, the detailing of the tree pits is fundamental to success. Tree pits should be as large as possible. Ideally trees should be planted in groups, with the tree pit forming a continuous trench or island of soil. It is also preferable that trees should be planted in uncontained free draining tree pits. Where this is not possible, and root containment is necessary, the container must provide a minimum of $3m^3$ volume for root growth. To sustain tree growth, it is essential that good quality, nutritious soil is used to backfill the planting pit. 'Urban tree soil' should be should be used where tree planting is sited within paved areas. Tree pits should incorporate watering and aerating facilities and all trees should be supported by underground guying.

SELECT PLANT LIST

The plant lists on the following pages are not exhaustive, but focus on evergreen, winter/spring flowering (term time), coloured foliage and scented flowers. They will also provide year round interest and long season of colour with a high percentage of native or good nectar sources to support biodiversity.


*Buddleia "Black Knight"**


*Hydrangea quercifolia**


*Lavandula "Hidcote"**


Fatsia japonica


Skimmia Rubella


Prunus laurocerasus "Zabeliana"

Shrubs

SUNNY LOCATIONS

Berberis "Amstelveen"
Buddleia "Black Knight"*
Chaenomeles "Crimson and Gold"
Choisya ternata "Sundance"
Choisya ternata "Azrec Pearl"
Ceanothus thyrsiflorus "Repens"*
Eleagnus "Gilt Edge"
Escallonia "Glory of Donnard"*
Hebe sutherlandii*
Hebe "Green Globe"
Hebe"Mrs winder"*
Hydrangea quercifolia*
Hydrangea "Mdme E. Moulliere"*
Lavandula "Hidcote"*
Magnolia stellate
Rhododendron (Azalea) "Daviesii"
Rhodoendron (Azalea) "Narcissflora"
Rhododendron "Percy Wiseman"
Ribes odoratum*
Rosmarinus "Miss Jessops Variety"*
Viburnum x bodnantense

SHADY/SEMI-SHADE LOCATIONS

Aucuba "Picturata"
Camellia "Inspiration"
Camellia "JC Williams"
Cornus alba "Elegantissma"
Cotoneaster conspicuous decorus*
Euonymus "Emerald Gaiety"
Euonymus "Sun Spot"
Fatsia japonica
Hedera helix "Arborescens"
Ilex "Golden Queen"
Ilex "Silver Queen"
Ilex "JC van Toll"
Mahonia aquifolium "Apollo"
Prunus laurocerasus "Zabeliana"
Ribes "Pulborough Scarlet"*
Sarcococca humilis
Skimmia foremanii
Skimmia Rubella
Viburnum tinus "Eve Price"

*Denotes native species or valuable nectar source


Mahonia aquifolium "Apollo"

*Allium schoenoprasum (Chives)**

Anemone hybrida "September Charm"

*Sedum "Autumn Joy"**

*Ajuga reptans "Atropurpurea" **

Bergenia "Evening Glow"

Vinca minor

Groundcover/Hardy Perennials

SUNNY LOCATIONS

Allium schoenoprasum (Chives)*
Anemone hybrida "September Charm" and "Honorine Jobert"
Aster frikartii "Monch"*
Bergenia "Silberlich"
Bergenia "Evening Glow"

Centranthus ruber *
Cotoneaster dameri*
Erica "Springwood White" and "Springwood Pink"

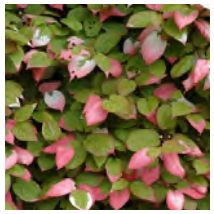
Festuca glauca
Geranium macrorrhizum
Heuchera"Palace Purple"
Iris unguicularis
Sedum "Autumn Joy"*

SHADY LOCATIONS

Ajuga reptans "Atropurpurea" *
Epimedium perralderianum*
Iris foetidissima "Variegata"

Liriope muscari
Luzula sylvatica
Geranium sylvaticum "Album"
Primula vulgaris (Primrose)*
Vinca minor
Vinca minor "Aureovariagata"
Silene dioica (Red Campion)*

*Denotes native species or valuable nectar source



Actinidia kolomikta

Parthenocissus quinquefolia

Pyrancantha "Mohave"

Crocus grandiflorus hybrids

*Hyacinthoides non-scripta (Blue bell) **

Narcissus "February Gold"

Climbers and Wall Shrubs

SUNNY WALLS

Actinidia kolomikta
Jasminum nudiflorum
Pyrancantha "Mohave"
Parthenocissus quinquefolia

SHADY WALLS

Euonymus "Silver Queen"
Hedera colchica " Dentata Aurea"
Hedear helix "Goldheart"
Hydrangea petiolaris*
Garrya eliptica

Bulbs for naturalising in lawn areas

Camassia quamash
Crocus grandiflorus hybrids
Hyacinthoides non-scripta (Blue bell) *
Fritillaria meleagris *
Galanthus nivalis *
Narcissus "February Gold"
Narcissus "Jack Snipe"
Narcissus poeticus

*Denotes native species or valuable nectar source

Temporary Planting (Adopted courtyard containers)

FRUIT/HERBS/VEGETABLES – UNLESS STATED NEED SUNNY LOCATIONS

Lettuce Salad Bowl types (can tolerate some shade)
Tomatoes – cherry forms
Dwarf French Beans
Carrots
Chives
Basil
Parsley
Mint (shade)

BEDDING PLANTS – CHOOSE SINGLE FLOWERED VARIETIES TO PROVIDE POLLEN SOURCE

Wallflowers
Cosmos
Fuschias
Snapdragons


Metasequoia glyptostroboides


Liquidamber styraciflua


*Tillia cordata "Greenspire"**


*Crataegus monogyna "Stricta"**


Picea omorika


Prunus "Spire"


Quercus ilex


*Sorbus torminalis**


Magnolia kobus

Formal Street Trees

Acer platanoides"Crimson Sentry"
Acer platanoides "Coumnare"
Acer pseudoplatanus "Erectum"*
Alnus cordata
Betula "Edinburgh"
Carpinus betulus "Frans Fontaine"*
Liquidamber styraciflua
Metasequoia glyptostroboides
Malus trilobata
Prunus "Sunset boulevard"
Quercus robur "Fastigaita Koster"*
Tillia cordata "Greenspire"*

Trees for confined spaces

Acer platanoides "Globosum"
Amelanchier lamarkii "Robin Hill"
Crataegus monogyna "Stricta"*
Malus "Evereste"
Prunus "Amanogawa"
Prunus "Spire"
Picea omorika

Specimen trees within open space

Acer platanoides "Crimson King"
Betula pendula "Tristis"*
Cedrus deodara
Larix europaea
Lirodendron tulipifera "Aureomarginata"
Magnolia kobus
Pinus sylvestris*
Prunus avium "Plena"*
Prunus padus
Sorbus aria
Quercus ilex
Quercus palustris
Sorbus torminalis*
Pinus sylvestris "Fastigiata"*

*Native tree or form of native tree with natural habitat value

4.6 Design and Construction Principles

All areas of the public realm and building entrances should be accessible to all and there is a statutory duty to ensure this is provided where possible. The requirements of those in wheelchairs or with other mobility needs and carers with pushchairs, must be considered in the design stage and proper provision made to ensure ease of access and use. The following detailed access principles should be considered:

- The broad and detailed provisions of the Disability Discrimination Act (DDA) should be referred to throughout the design, construction and maintenance stages of all projects;
- Where site conditions necessitate changes in level, or stepped access to an existing building is required, ramps no steeper than 1 in 15 (ideally 1 in 20) should be an integral feature of the design solution;
- Exaggerated cross falls on routes should be avoided. Gradients of between 1 in 30 - 1 in 40 is a good standard;
- Consideration must be made for those with mobility or visual impairment. Tactile paving is required to warn of changes in level (such as steps) or vehicle crossings, including cycle. The layout and materials for areas of tactile paving should be designed carefully to fulfil guidance, but also fit within the design and character of the landscape.
- The installation of tactile paving should avoid awkward junctions and cuts with adjacent surfaces. Care must be taken if brass or stainless steel studs are specified to avoid a slip hazard when wet. Natural stone paving with integral tactile

Paving failure in recessed cover

There should be consistency in paving colour unless specified otherwise

features is preferred to provide consistent slip resistance and contrast.

- The use of contrasting colours or values of the same colour of tactile paving must be considered to assist those with a visual impairment. However, contrasting colours in particular (which may or may not provide sufficient contrast for the colour blind) need to be carefully considered to avoid the appearance of a patchwork of materials that will detract from the design and lessen the quality of the space.
- The choice of surfaces can greatly help or hinder the use of the public realm by disabled students, staff or visitors. The extent to which surfaces enable people to maintain their independent use of the public realm is influenced by:
    - the colour, luminance and texture of the surfaces
    - the treatment of components and finishing elements
    - the correct use of surfaces to clarify location and direction and to identify objects/obstructions
    - the grip of floorscape surfaces, particularly at changes of level or along gradients
    - the perception of a surface day or night, wet or dry
- If a seat is too high or low, or if there are no armrests or side supports, a person may experience considerable discomfort as a result of poor posture. A person may also have difficulty rising from a seated position if the seat is set too low, or if it has no arm rests. A variety of seat heights and types would therefore be useful to a broad selection of users.

Care and attention to detail in design and implementation is as important as choice of materials in achieving a high quality public realm. A well detailed and constructed public realm will look good for years and reduce overall maintenance costs.

The design of construction details for any particular location should be carried out with consideration given to accessibility, vehicle loading, ground conditions, traffic volume, drainage requirements and cleansing. Each set of circumstances should be fully explored by designers and these details agreed with University Estates and Facilities.

There are two basic methods for constructing pavements - flexible and rigid - the choice of which will reflect a detailed consideration of the space, its intended use and maintenance. This is important to reduce the risk of future failures which can be seen across the campus, particularly where vehicle overrun has not be anticipated.

The method of constructing a **flexible pavement** consists of placing flags or setts upon a bed of uniform thick sharp sand within firm edge restraints over a suitably prepared sub-base. Sand is then brushed into the joints and the paved construction is compacted by several passes of a vibrating plate compactor. The stability of paved areas is provided by frictional restraint of the sand grains in the joints and applied loads on one unit are transferred to adjacent units, an effect known as interlock;

Flexible pavement construction is a cheaper and faster method and can be trafficked almost immediately upon completion. A flexible pavement can also easily be lifted for access to utilities and services and materials stored and reinstated;

There will be some degree of water ingress into flexible paving which will reduce runoff. This can be increased if specific permeable paving is specified and storm water attenuated;

Flexible pavement construction is subject to movement if edge restraints fail, there are weaknesses in the sub-base or ground, there is a loss of sand in the joints and if subjected to heavy vehicular traffic, particularly in areas involving turning. Flexible pavements are particularly vulnerable to damage from intensive street cleansing involving high pressure washing and brushing, as this can easily remove the sand between the joints and lead to structural failure.

The method of constructing a **rigid pavement** consists of placing flags or setts upon a mortar bed over a rigid bound base, most often concrete. A mortar or jointing compound then binds the units together, giving it structural strength. Movement joints are necessary to allow expansion and contraction of the structure, generally every six metres and around covers and other furniture.

Rigid construction is a more expensive method and can take more time than the flexible method. As all the units and base are bound together, access to utilities and services is more difficult and costly and materials generally cannot simply be reinstated. This can partially be mitigated if services are renewed before construction and placed in a combined trench.

Rigid construction is not permeable and drainage systems must be designed to handle all storm water runoff. Due to its impermeability, rigid construction is generally able to withstand the most rigorous cleansing methods.

Rigid construction is also generally able to withstand heavy traffic movement, even turning, and is suitable for most applications, including those where only occasional overrun is possible as flags will be less likely to fail.

5.0 Further Work

5.1 Surveys

The importance of trees on campus is demonstrated throughout the Landscape Masterplan. Trees are an important asset, supporting all aspects of sustainability - environment, society and economy. In recognition of their value, the first comprehensive **survey and inventory of existing trees** on campus is being commissioned. This will first accurately locate all trees in the campus landscape and then determine their condition and health. This inventory should be supported into the future and could be expanded so that it includes information relevant to planning and maintenance functions with a future link to a Geographic Information System (GIS) and other databases.

An inventory of artworks, sculptures and artefacts across campus has recently been completed. The majority of the items recorded are within buildings such as paintings, prints and busts and there are few external works of art. The majority of these are located in the North Campus which will close. Further detailed work should be commissioned to focus on those **external art works** that are to be relocated from North Campus to establish their **condition and any requirements for refurbishment** when relocated.

5.2 Management Plans

To maximise capital investment and to ensure long term sustainability of landscape improvements, it is vital to ensure effective management and maintenance regimes are implemented across the campus. It is recommended that when commissioning landscape projects, an allowance should be made for the provision of a detailed site specific **management and maintenance plan** that will guide future upkeep of the new public space. This plan should:

- be developed in consultation with relevant staff who will ultimately be responsible for its upkeep;
- outline agreed procedures for maintenance works;
- identify exact materials and plant species used and provide the names and contact details for all suppliers;
- provide as-built drawings and specifications for reference;
- make reference to the Biodiversity Action Plan (BAP);
- outline procedures for future reinstatement works;
- set out cleaning and maintenance regimes, noting activities, frequencies and any special instructions (i.e. specific cleaning products and equipment required, seasonal pruning, etc.);
- set out an inspection regime and response time for cleaning and repair works; and,
- identify key contacts and their responsibilities.

5.3 Commissioning Art

To students, staff and visitors, art in the landscape can be informing, diverting and distracting – an important part of any plan to attract and retain students and staff and encourage interest and pride in the outdoor environment. **Commissioning new works of public art** can be challenging, but ultimately rewarding, and a number of methods can be considered:

- Open competitions achieve a high degree of awareness amongst staff and students, press and artistic community. This form of competition is valuable as a public relations exercise, particularly in the wider community, but can require a substantial budget for administration and promotion.
- Limited competitions generate a choice of design ideas but selected from artists whose past works demonstrate the experience and talent to fulfil the commission. This is a less expensive mechanism to administer and promote.
- Invitation is appropriate for prestigious or difficult commissions and usually results in appropriate and exciting proposals which may require a substantial investment.

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