Chapter five
Masterplan objectives and concepts

As this document introduced, the placemaking principles that set the vision for the Masterplan have evolved to address the opportunities within the site analysis which promote key objectives. These key objectives seek to:

- Improve the campus arrival and navigation experience to align it with the reputation of the University.
- Create high-quality pedestrian environments, including a central core to promote interaction and a sense of place.
- Deliver a connected and walkable campus that prioritises sustainable transport choices.
- Use wayfinding and clear design aesthetic in urban design to provide a safe and consistent campus experience.
- Provide high-quality facilities for our students, staff, commercial partners and visitors that meet the technological and sustainability objectives of the University.
- Structure the campus around the University's key research and teaching themes.
- Enhance biodiversity across the site by linking key streets to the surrounding landscape.

These objectives will be physically expressed in the Masterplan, both in terms of the guiding principles and supporting masterplan components. These are set out below and will structure this chapter:

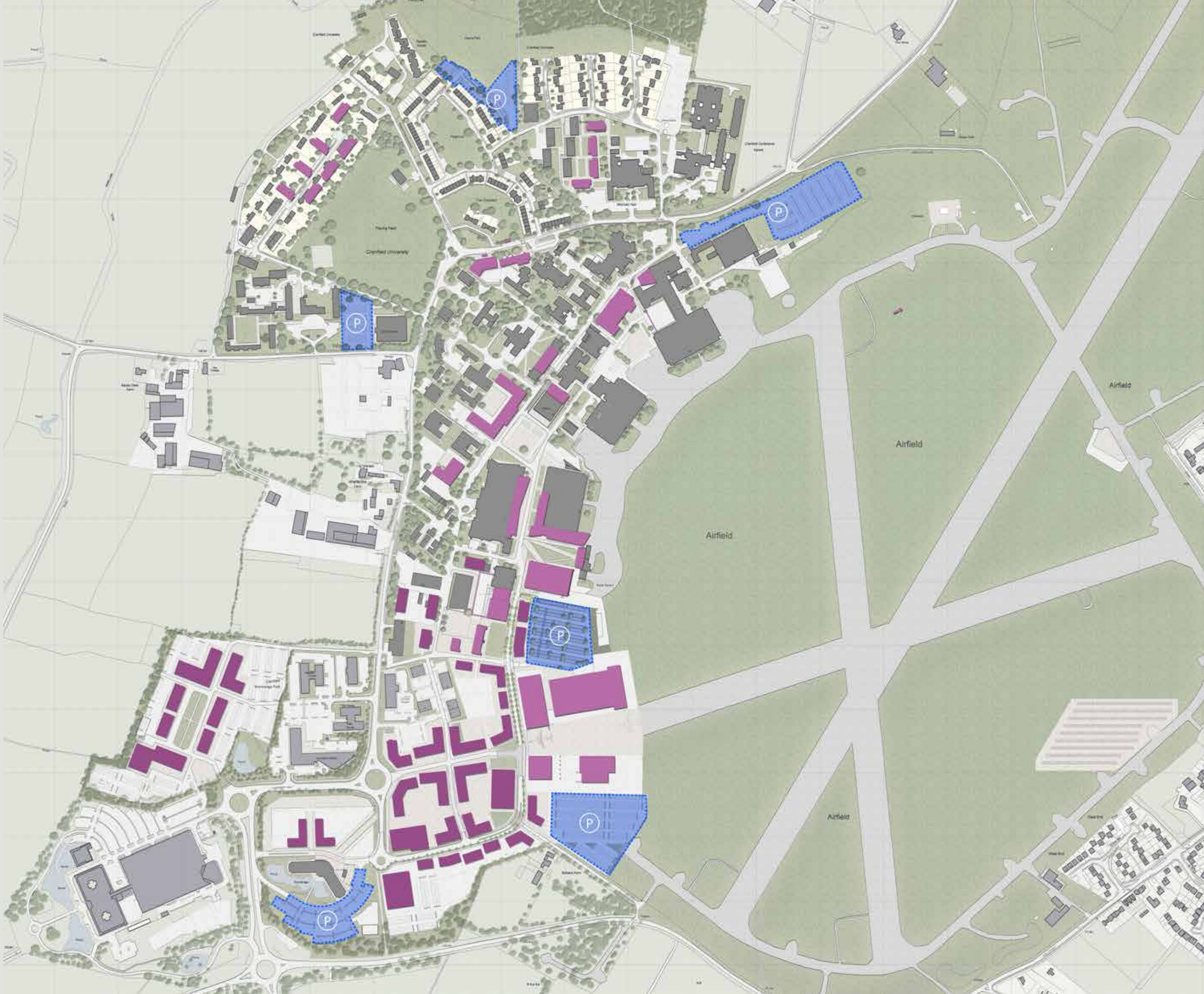
Guiding principles:

1. Thematic campus
2. Movement and navigation
3. Urban form and spatial hierarchy
4. Public realm and landscape vision

Masterplan components:

1. Streets and urban structure
2. Architectural form and character
3. Landscape and public realm framework

The following principles and components will provide the framework through which the campus will be transformed to meet the vision of the Masterplan, guiding future University development.


Airfield
Airfield
Airfield

Guiding principles of the Masterplan

1. Thematic approach to the University

The re-organisation of the University into themes rather than schools has influenced the form of the campus Masterplan.

The organisational approach promotes physical clustering of theme activities, where possible placing them in adjacent buildings and spaces.

It has also aligned opportunities where research dictates a specific scale of building. Each thematic zone within the Masterplan provides a level of flexibility where buildings are illustrated as indicative footprints.

All thematic zones have a ‘front door’ onto the new main north-south link road. The expansion zone to the south of the campus provides a level of flexibility within these blocks to incorporate a range of building scale and massing to come forward, all within a block structure that is responsive to key frontages.

The breakdown of functional zones that are critical to the operation of the site but sit outside of the themes have been acknowledged within the thematic plan. The dedicated retail zone is capable of accommodating different types of retail offering to provide everyday services for students and is conveniently located next to the student residences. Increasing the size of the existing food and general amenities in this zone are promoted.

Notably the commercial/industry, research and innovation zone provides flexibility for a collaborative approach allowing commercial and academic development to come forward side by side, blurring the traditional split between academic and commercial/industry. Development in this zone will be dependant on demand and funding, and will come forward for development as and when suitable opportunities arise.

The thematic plan sets an important indicative approach to the grouping of uses and buildings, however it is not a rigid fix. Depending on funding options, building locations and uses may change. All development should adhere to the principles and components of the Masterplan for the specific location.

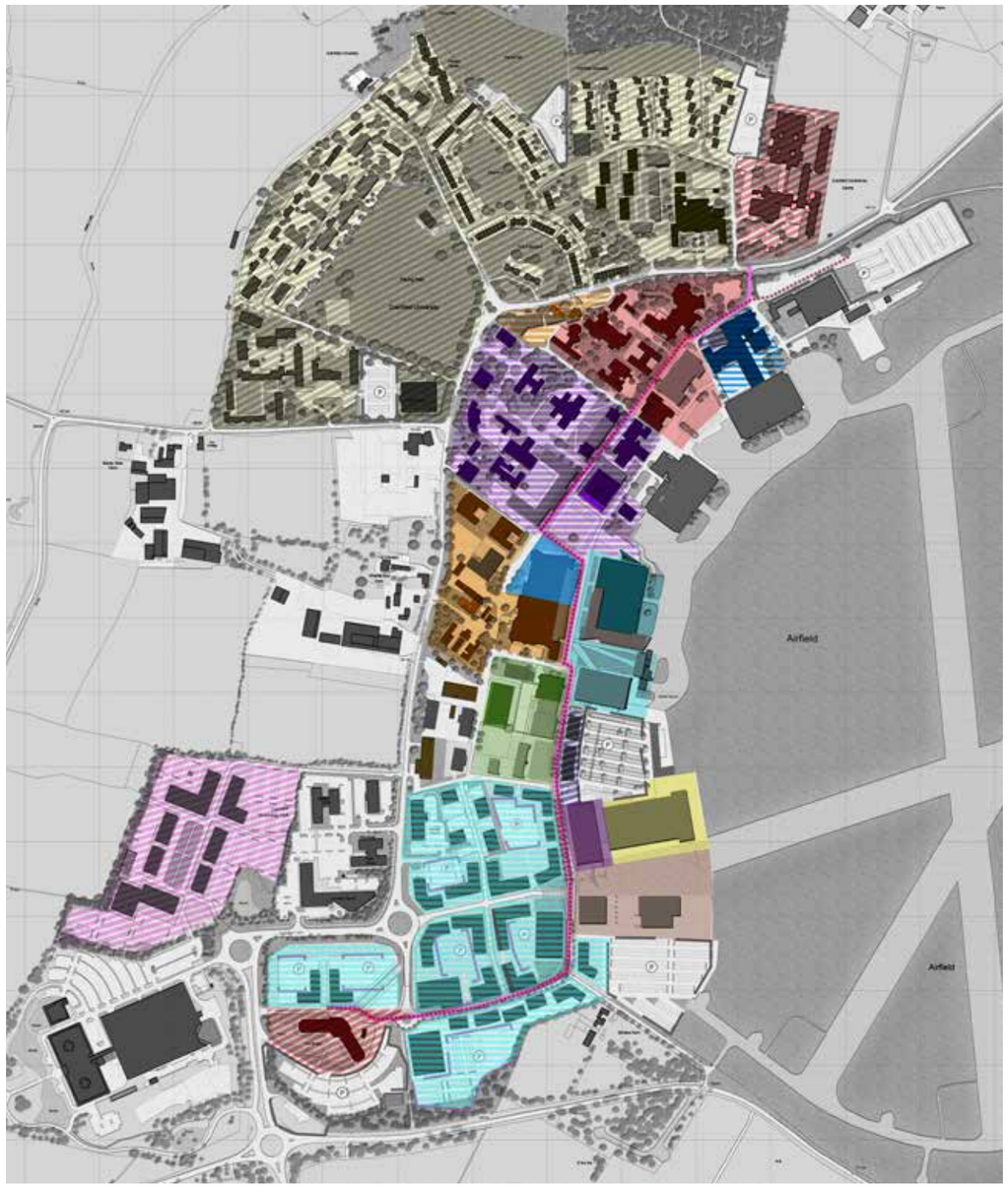
Thematic plan

Campus functional zones

- Central teaching and administration
- Commercial
- Executive education
- Estates facilities
- Residential/recreational
- Retail

Campus thematic zones

- Aerospace
- Defence and Security
- Energy and Power
- Environment and Agrifood
- School of Management
- Manufacturing
- Transport Systems
- Water
- Connecting shuttle route



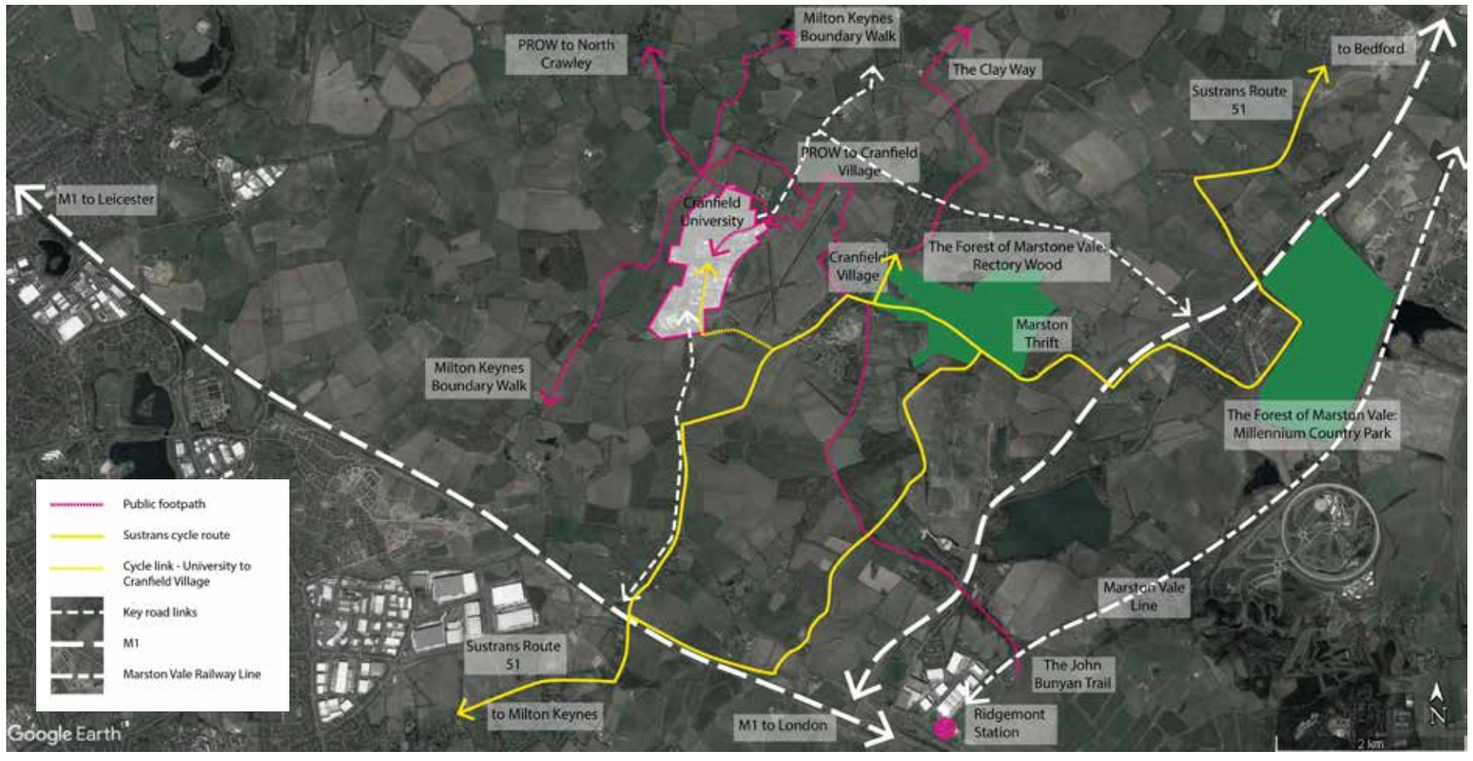
2. Movement and navigation

The Masterplan proposes to enhance the north and south entrances with landscaping, wayfinding signage and directional stopping points for visitors. This will allow the most frequent users travelling by car to enter the campus more conveniently, promoting users to leave their vehicles towards the periphery and to walk to their destination within the campus. This will also help encourage less car usage in the centre of the campus, which will be more pedestrian in its nature and character.

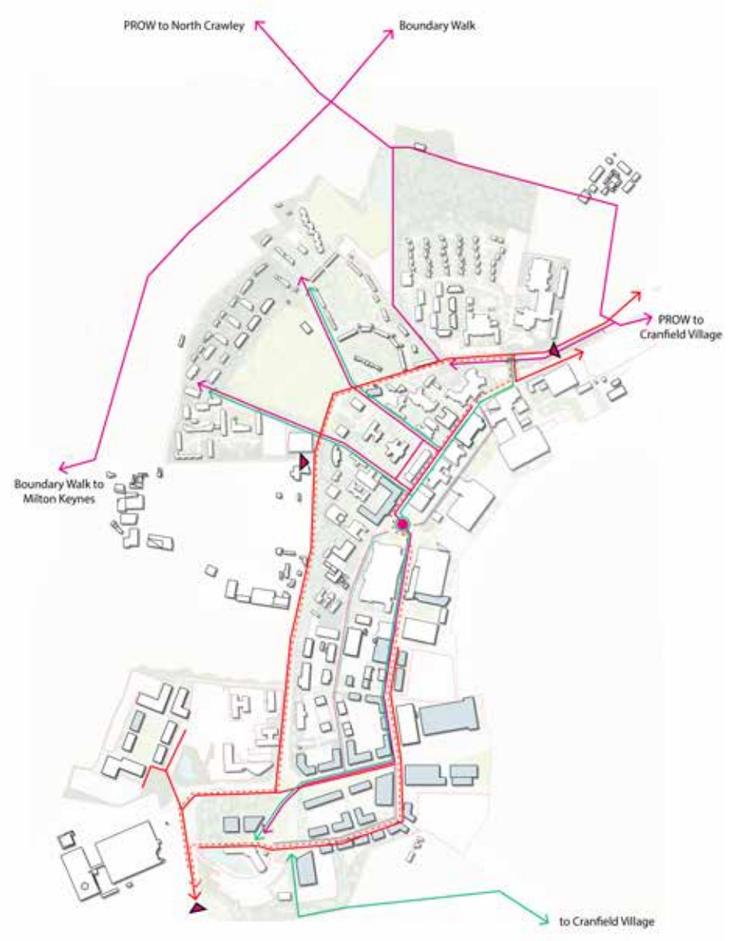
The Masterplan seeks to enhance north-south connections by introducing a main link road through the campus. This route will serve as the front door for important buildings, as well as those roads which link key spaces within the campus.This allows other existing roads within the campus to revert to their back of house function for servicing whilst also encouraging east-west movements.

Cycling is to be promoted as an alternative to pedestrian and car movements and will be accommodated within new roads as well as the existing network of the campus, connecting with external cycle paths towards Cranfield village.

Wayfinding, signage and public art will be incorporated to assist navigation and to enhance the quality of the landscape and wider campus environment.



Strategic movement plan



Campus circulation

Pedestrian (primary/secondary)
Cycles (primary/secondary)
Cars
Buses

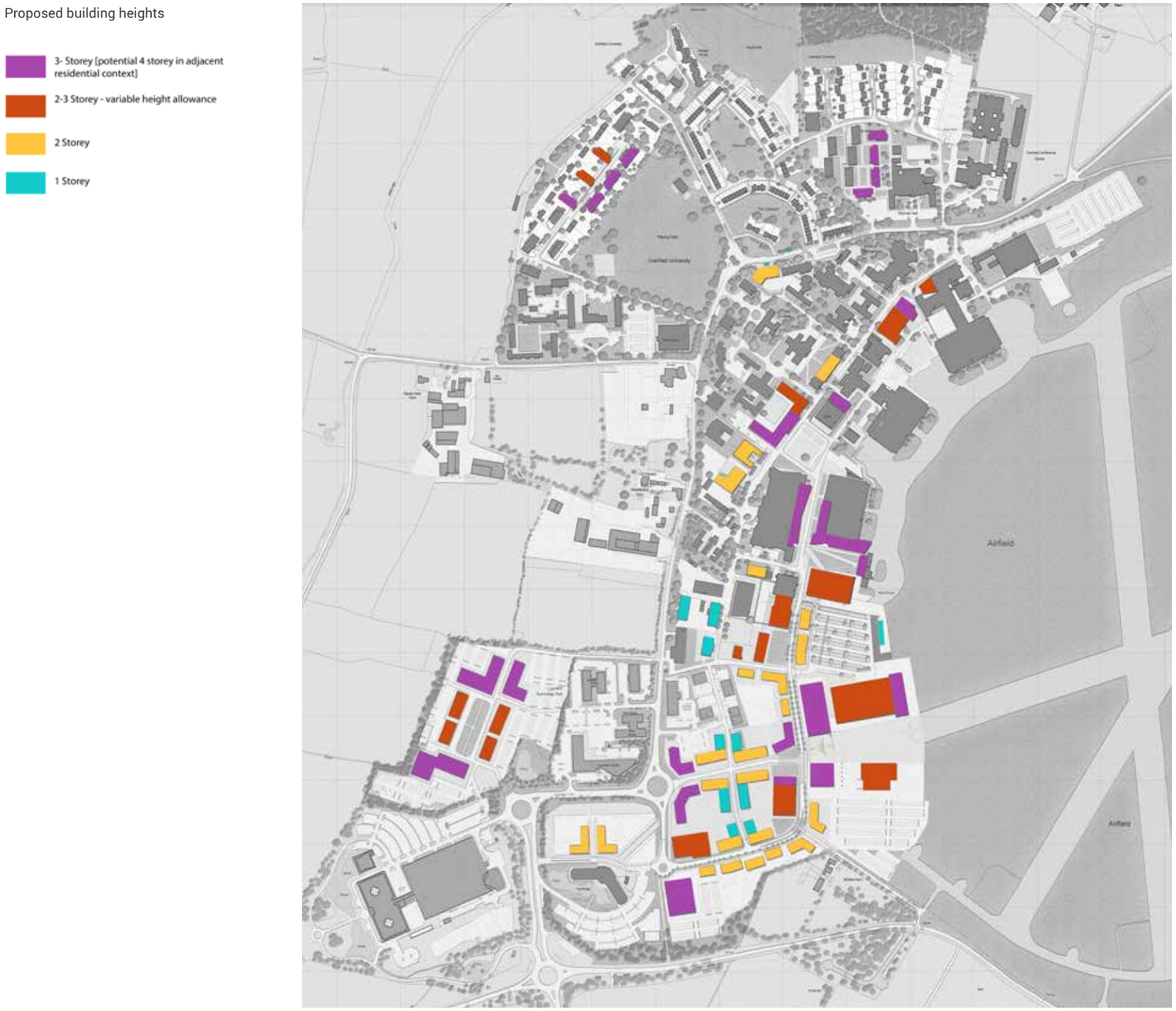
3. Urban form and spatial hierarchy

Recognition should be given to the historic layout of the RAF base; public squares which exist within the historic campus should be enhanced. With the introduction of the new link road, the Masterplan proposes to connect and continue this tradition of public squares along the length of the new road by promoting a series of interlinking spaces, providing future campus development it with high quality urban realm.

Many of these existing spaces have over time have been used as parking zones. Parking will be removed from these areas and relocated to peripheral locations of the campus, better serving the movement strategy.

Mimicking the existing hangars that line the airfield housing University research activities, buildings of a similar scale, and so appropriate for 'industry oriented' research, are proposed to line the airfield maintaining a certain scale of development. Buildings within the historic urban fabric are proposed to be of a modest, domestic scale of up to two-storey. As development moves towards College Road, the occasional three-storey building will be appropriate at terminations and vistas.

Buildings along the main campus road are to be more urban in their setting and so have a two to three storey scale to compliment the larger buildings proposed along the airfield.



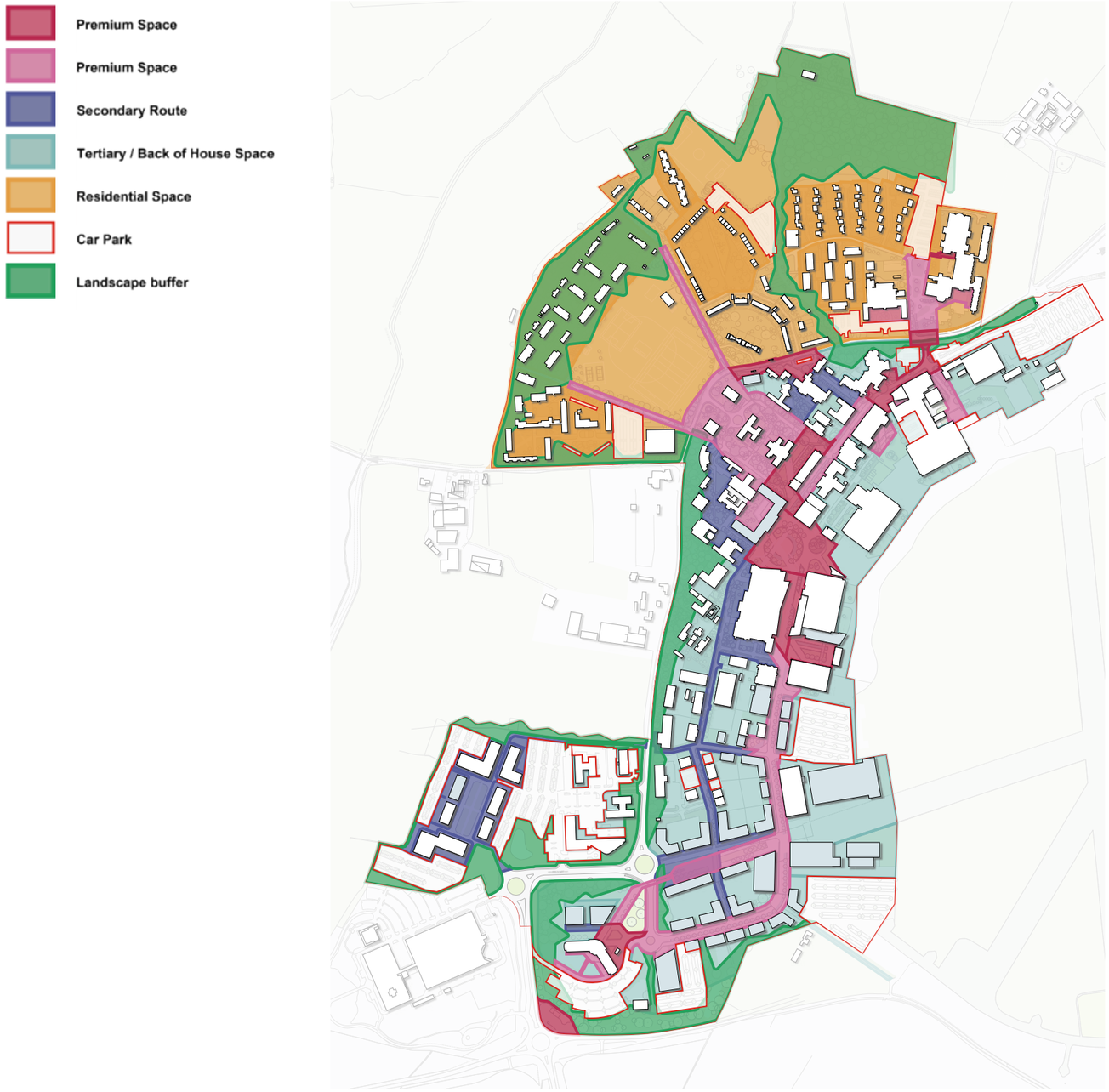
4. Public realm and landscape vision

The landscape strategy seeks to provide a variety of legible and distinctive areas to better signal key spaces on campus, and to encourage movement and gathering within the existing and proposed building fabric. Landscape and public realm are also envisaged as testing grounds for research into innovative technologies developed by the University, in particular green and sustainable technologies. The vision is three-fold:

To enhance existing public realm spaces within the campus, and improve character to provide function and useable spaces - whether for students, staff and other university users, or to allow for appropriate wildlife and habitat corridors.

To provide a series of linked spaces creating a variety of different outdoor experiences, contributing to the existing and new character of the campus environments. This includes both retrofitting existing campus areas and creating new spaces as development progresses. Pedestrians will be prioritised as the dominant user for these spaces.

To provide a consistent and appropriate palette of public realm materials to create a cohesive experience across the campus whilst acknowledging functional routes, character areas, and wayfinding strategies. This will include the retrofit of existing soft and hard landscape palettes.



Components of the Masterplan

The following make up the various components or layers that have been considered in shaping the masterplan inline with the key objectives. These form the basis from which proposals for future development should directly address:

1. Streets and urban structure

Street hierarchy:

The street sections opposite give guidance on the typologies of streets suitable for the masterplan and the principles that should guide construction. Existing street centre-lines shall be maintained in their current locations. Proposed new roads shall connect with these centrelines to create a connected street network. Streets shall be designed as low speed and low trafficked routes to encourage pedestrian movement.

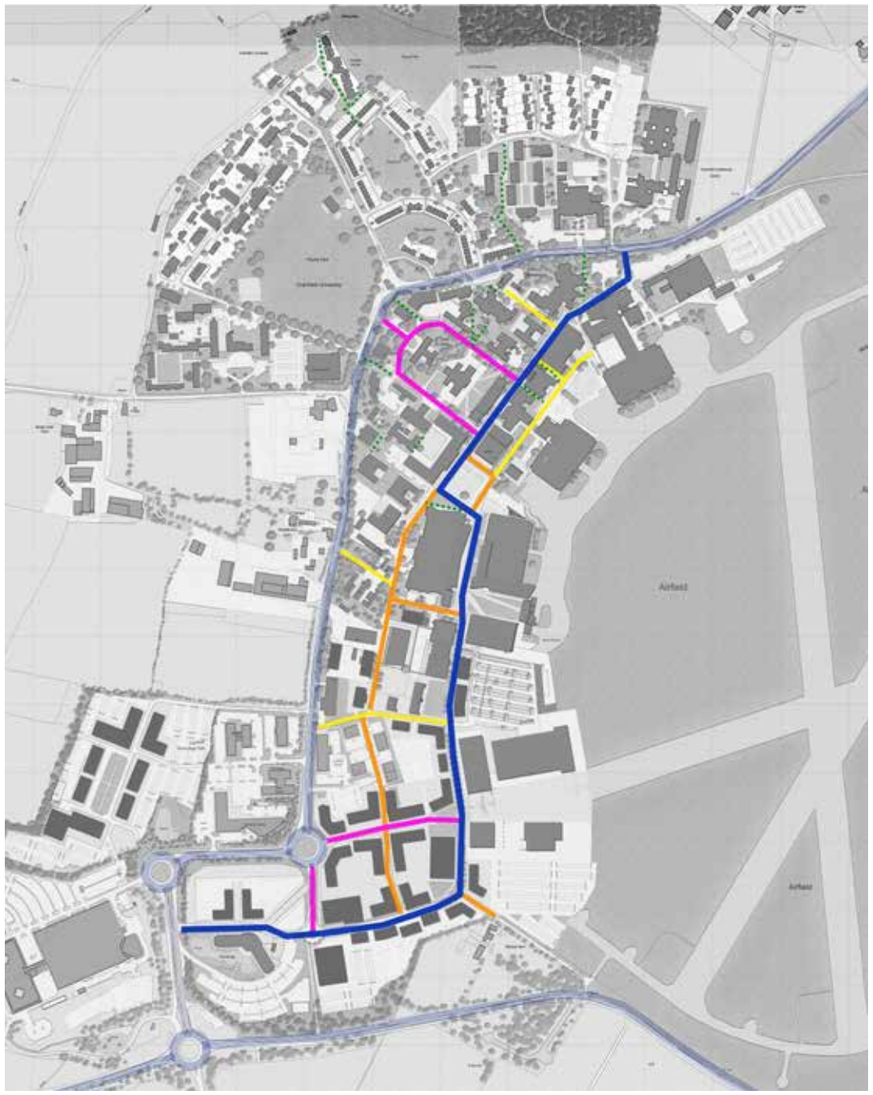
- **Major campus thoroughfare/primary street** - the street hierarchy promotes a primary link road through the campus serving as the main north/south axis. This road will be the main connector serving pedestrian, cycle, and car movements. It will also allow for some public transport movement, which will be an increasingly important green travel alternative as growth occurs across the campus.

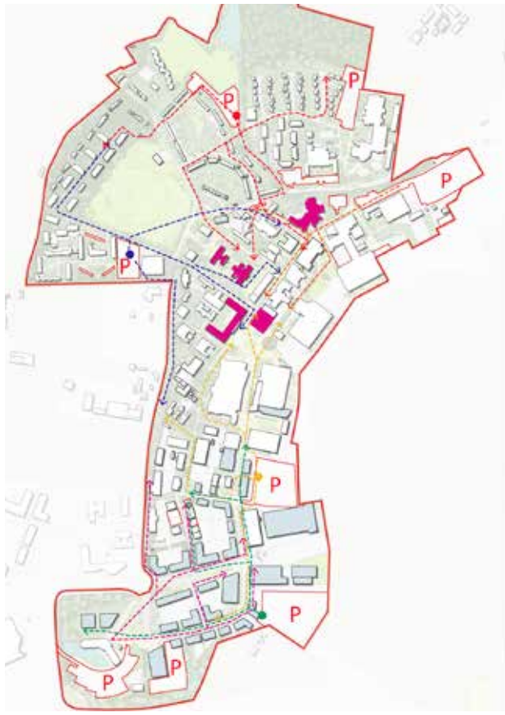
- **Main streets** - are similar in nature to the Primary Street however these will not be promoted as main vehicular routes.

- **Secondary streets** - existing roads that take major traffic will be converted to secondary streets. These routes will not be promoted for main vehicular movement but will allow for the servicing of buildings and spaces through the campus.

- **Tertiary streets** – will serve as connecter roads and will not promote primary vehicular movement, but will accommodate servicing movement to back-of-house type activities, which will be promoted within the blocks behind buildings.

- **Pedestrian paths** - will be retained and promoted throughout the existing campus fabric. Pedestrian movement will be integral to travel and movement across campus in the new street hierarchy.





Proposed street hierarchy

Local distributor

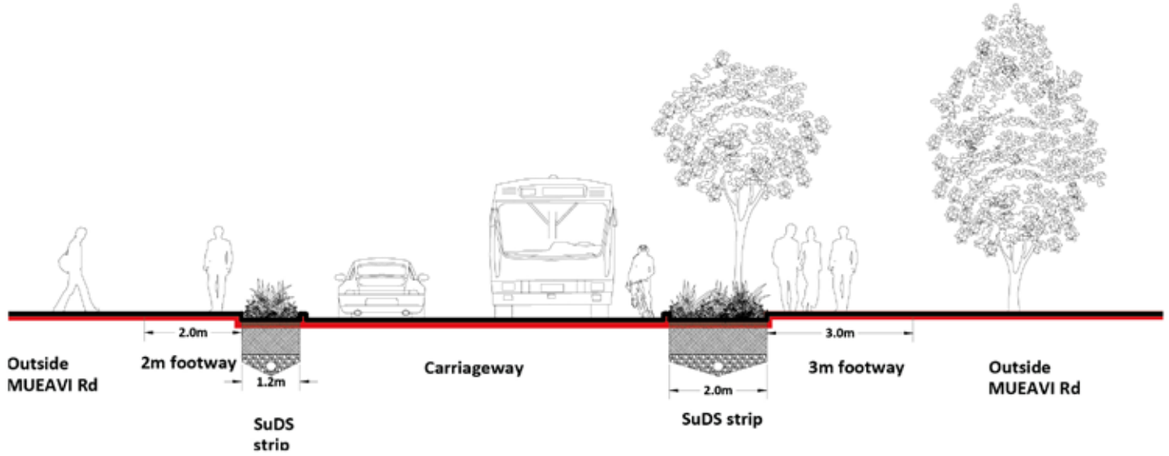
Major campus thoroughfare - primary street

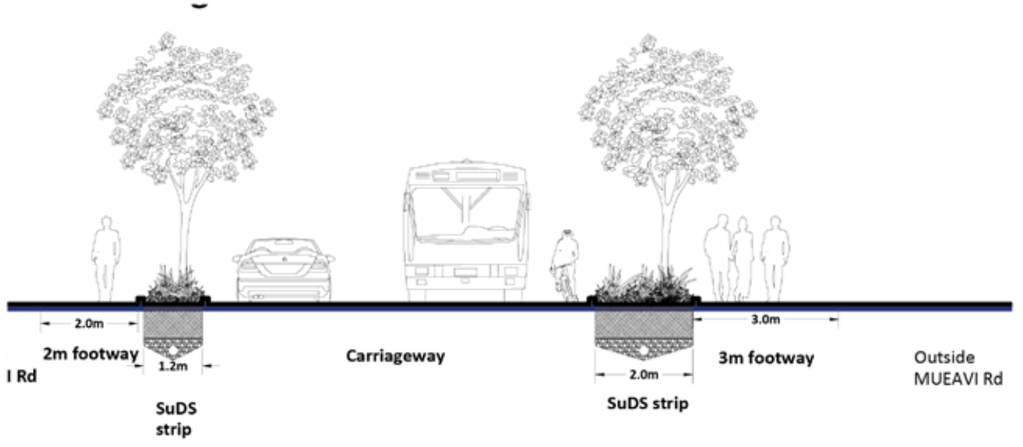
Main street

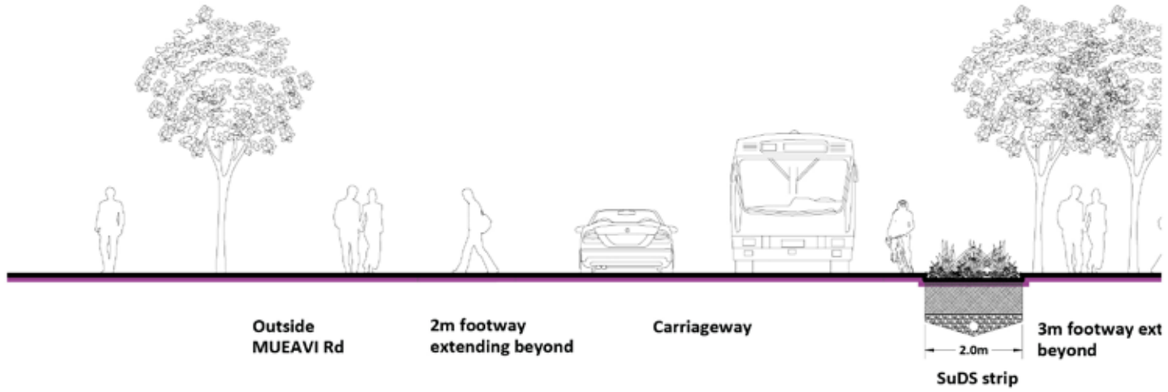
Secondary street

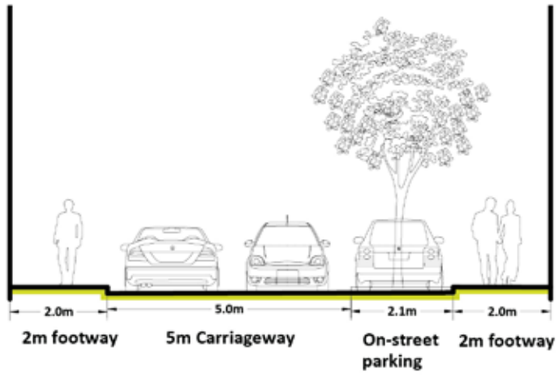
Tertiary street

Pedestrian paths







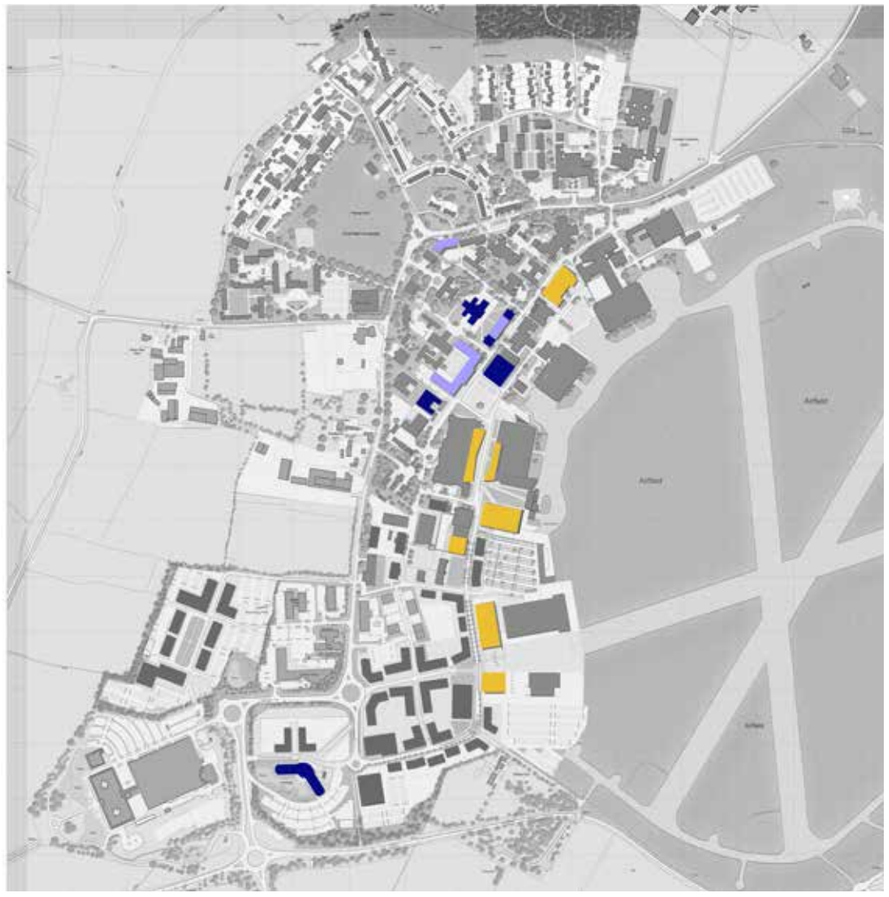


Street sections of the various conditions along MUEAVI road specifically. These sections demonstrate integrated SUDS, and pedestrian prioritiy in their conception.

Urban structure of the campus

- New, more pronounced arrival points will feature at the north and south entrances of the campus to better orientate visitors and enhance the University's kerb appeal. This will be achieved through a wayfinding strategy and an innovative and modern design approach.
- New roads will link in with the existing street network as well as each other to create connected streets and form the basis of an integrated, walkable campus structure.
- Squares and key spaces will be dominated by pedestrian and cycle movement. Where squares, key spaces and links intersect with the vehicular street hierarchy, these spaces will be prioritised for pedestrians and cyclists over vehicular movements.
- Squares and key spaces will have elements of hard and soft landscaping and urban furniture to encourage gathering, and maximise flexibility of use.

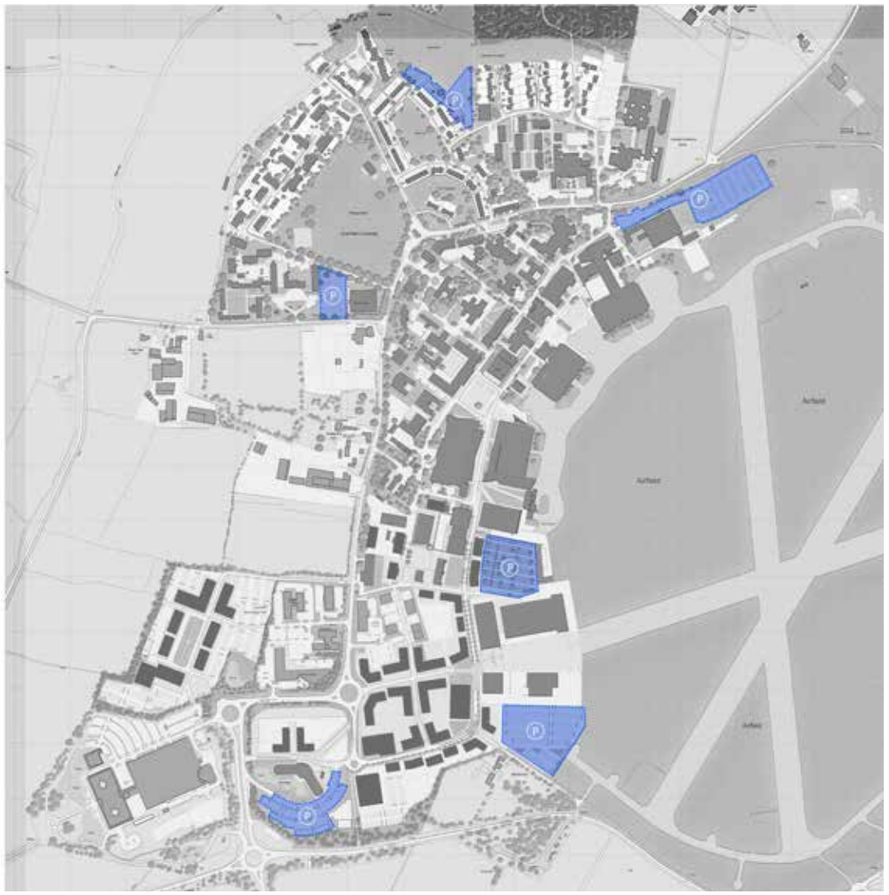
Key spaces and links



Key destinations

Urban structure

Block Structure



Strategic parking locations

Strategic Parking Locations

Parking

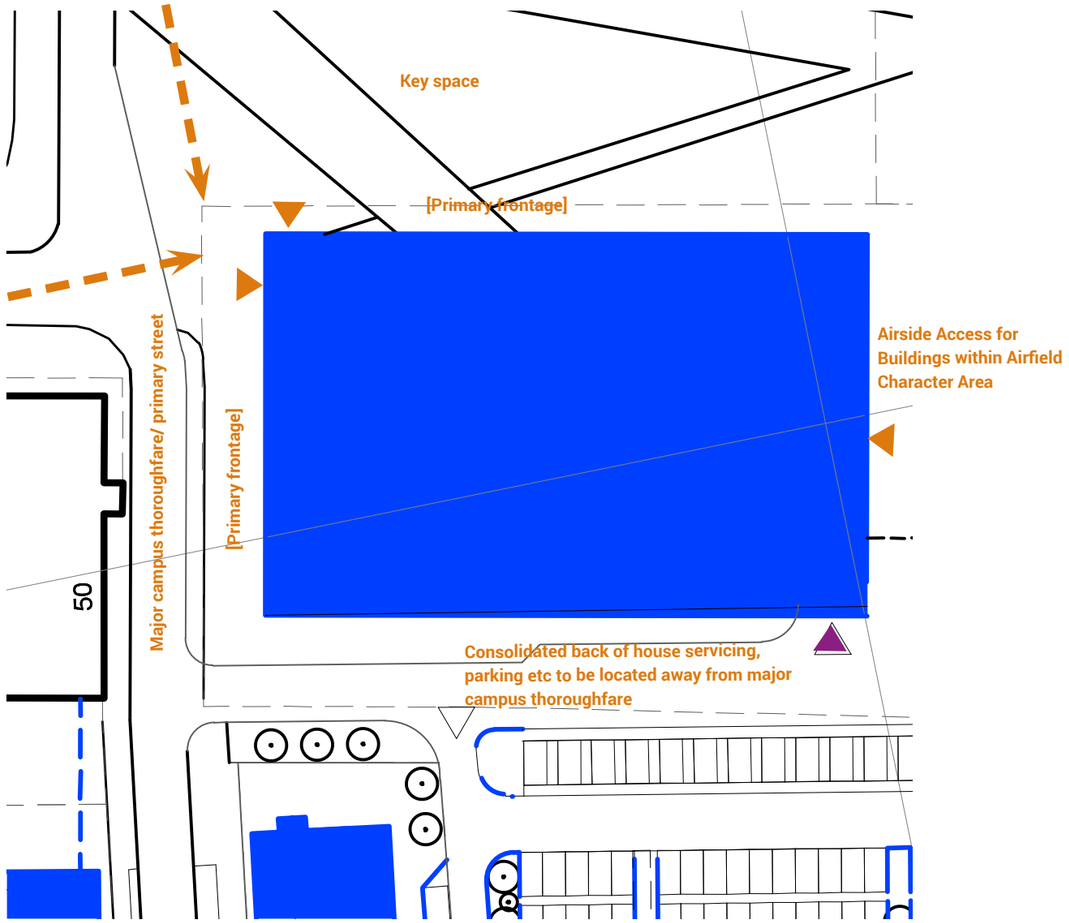
- Car parking will be relocated from the centre and consolidated in key arrival areas in peripheral locations.
- Short cross-campus trips will be discouraged by excluding, as far as possible, vehicles form the central core.
- A detailed servicing, security, and access strategy will be developed.

2. Architectural form and character

Principles of architectural form

These principles act as a guide for all future construction and any replacement of existing structures within the site.

- Dynamic and innovative architecture shall be supported, reflecting the processes being undertake inside new buildings.
- Buildings shall reflect their position within the character areas of the Masterplan and the respective guidance on architectural style/ materiality.
- All buildings shall have a single, primary frontage [including front doors] onto all major thoroughfares, primary, main, and secondary streets. Tertiary streets and lanes do not require building frontage but may require a secondary frontage where the building is wholly or partially visible from a primary, main, secondary street, or key space.
- Buildings that have a frontage onto squares or key public realm spaces shall have their front doors facing these spaces as an exemption to the above. A dual access strategy may need to be considered for buildings in these locations.
- New buildings shall not locate their servicing spaces, driveway access, WCs, storage, plant, or other similar service-type spaces on a primary frontage with the exception of a building extension where there is no alternative to accommodate the existing building. This is to allow maximum overlooking and larger windows onto the primary frontage.
- Building disposition and function. These principles shall apply to all new buildings and building extensions:
  - Buildings along the Primary Street shall have a minimum setback from the nearest 'service' zone. Buildings within the Historic campus character area are the only exception to this rule.
  - New buildings will not locate their external servicing strategy off of the primary frontage/street, but within the block or the secondary/tertiary streets.
  - Where a building plot depth is longer on a key space, the primary frontage onto a key space so long as they provide an entrance of equal prominence onto the Primary Street or highest tier of the hierarchy of their specific location.
  - Where parking is located at the rear of a building, a secondary access may be located to directly connect parking to a building, but this shall not be treated as the primary entrance. Servicing shall be located on this frontage if parking is provided in these rear locations.



Character areas

There are four distinct character areas envisaged to encompass the type of development sought across the campus. In general innovative design approaches and features are to be encouraged throughout all character areas to compliment the existing context.

The historic campus – that acknowledges the spatial setting of its era, and provides a historic reference point for the University.

The airfield frontage – similar to the historic campus, this area will acknowledge its special relationship with the airfield and its relationship to research within the University. This zone will be highly coveted for specialised uses and will allow for future access to potential development zones at strategic existing viewpoints.

The campus expansion and commercial area – this zone has a functional integration with industry and provides opportunities for integrating office and research environments. Therefore, its setting should provide access, links and a density that promotes this type of use, blending the lines between academia and industry to create an 'innovation community'. Such an environment will promote information and resource sharing between the University and industry being particularly suited to ventures at the frontend of innovation and industry.

Residential – this zone provides separation of this core function from the main academic campus, yet is in close proximity to ensure walkable links are retained and strengthened over time. The area is characterised by dominant landscape and terraced residential properties. Future development should seek intensification with appropriate functional open ,with poorer quality, incidental green spaces removed over time.

The following pages further expand on these areas in more detail of their material palettes, building disposition, massing, and general functions.

Historic campus

This portion of the campus relies on a dominant landscape setting with buildings of a symmetrical nature placed on axis, with strong relationships with adjacent buildings. Any new buildings shall contribute to these rules of axis, termination and layout. Buildings within this zone shall be reserved for support offices, retail/ commercial, teaching or functional campus uses as a priority.

- Where historic buildings are earmarked as key buildings, they should be maintained in the agreed external aesthetic or else enhanced to support the historic character of the zone. Demolition of these structures shall happen where buildings have become functionally obsolete.

- New buildings shall not break the established pattern of symmetry where the surrounding environment relies on this quality.

- Buildings within this zone shall be more domestic in scale – no more than three-storey (11.5m to the roofline) within the campus, and four-storey (14.3m) within the current residential neighbourhood.

- Where buildings are converted or refurbished, any new attached structure shall contribute to open plan, flexible floorplates.

- The materials palette shall be primarily brick or concrete with glass. Retail frontages should rely on the latter finishes. Timber may be used only as a minor material on frontages unless it is a residential building. If brick is used, it shall be of similar hues to the existing buildings. Bricks cannot be of browns or tans. Green walls/green elevations can be used on non-primary and blank elevations to soften the pedestrian experience and enhance biodiversity.

- Retail frontages within this zone should face primary streets or local collectors on the hierarchy.

Key frontages and front doors

Key alignments, axis, and terminations

Proposed building heights

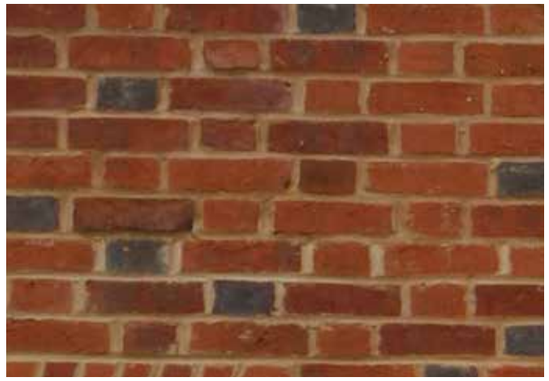
3- Storey (potential 4 storey in adjacent residential context)

2-3 Storey - variable height allowance

2 Storey

1 Storey

Opposite page:
Images represent the guiding look and feel of the materials and setting of the Historic Campus Character Area.



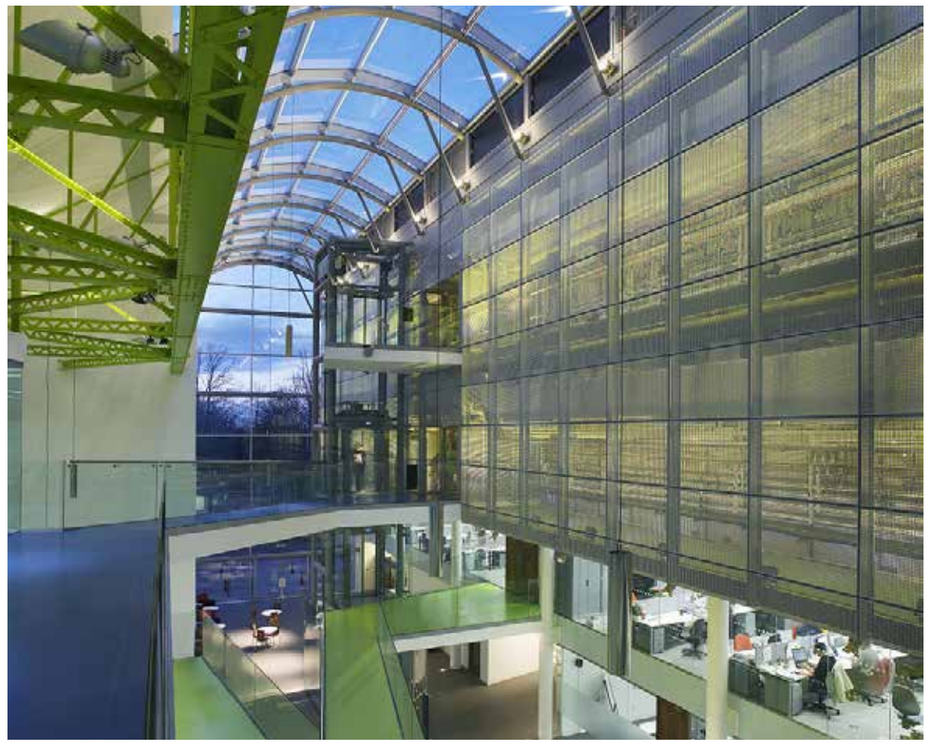
Campus expansion and commercial

Buildings within this zone of the campus are to be of a more modern and urban character where the built form dominates and landscape is the complimenting feature. University buildings shall be of a more specialised nature and will be key buildings within the blocks. The priority is for the University to promote and occupy buildings in this zone. However opportunities for integrating separate industries/commercial facing activity and 'partner/joint venture' projects will be encouraged.

Buildings that share a relationship to airfield-based activities shall be promoted within the campus airfield frontage character area only.

- New Buildings shall be no less than two- storeys (8.5m to the parapet), and ideally promoted at three-storeys (12m) with larger floor to ceiling heights on the ground and first floor if required.
- Materiality of buildings shall be primarily concrete, metal, and glass. Timber and brick will not be promoted materials within this zone.
- Buildings with innovative design features are to be encouraged.
- Building shall have large, flexible floorplates to allow for future adaption.
- PV panels can be considered on flat roof buildings. All installations must be mindful of the proximity of the airport and be CAA compliant.

Opposite Page:
Images represent the guiding look and feel of the materials and setting of the Technology Park and Campus Expansion Character Area.



Campus Airfield Frontage

Buildings within this area are of a larger scale and with a design quality in line with their function. These buildings shall have a dual function - to provide a frontage to the campus and where the functionality dictates the need for adjacency to the airfield. Any new buildings shall not obstruct the function, or else interfere with the sightlines of the airfield.

- Buildings shall generally be of a large footprint with and airside type relationship. These larger structures will have increased floor to ceiling heights due to the nature of their functions. Therefore airside frontages shall be of least 2.5 (12m) to three-storey (17m) to mimick the existing hangar heights (circa 16.5m).

- New structures shall not obstruct a future line of frontage onto the airfield nor potential future access. Views and glimpses shown between buildings from the neighbouring character zones shall be maintained in the long term, providing access for future development opportunities.

- Building materials shall be expected to be of the neighbouring character zone or the dominant materiality where more than one character zone meets.

- Where there is an existing runway structure, it shall be promoted as a feature to incorporate in detailed design where possible and economic to do so.

- PV panels can be considered on flat roof buildings. All installations must be mindful of the proximity of the airport and be CAA compliant.

Images represent the precedents for the look and feel of the materials and setting of the campus airfield frontage character area.

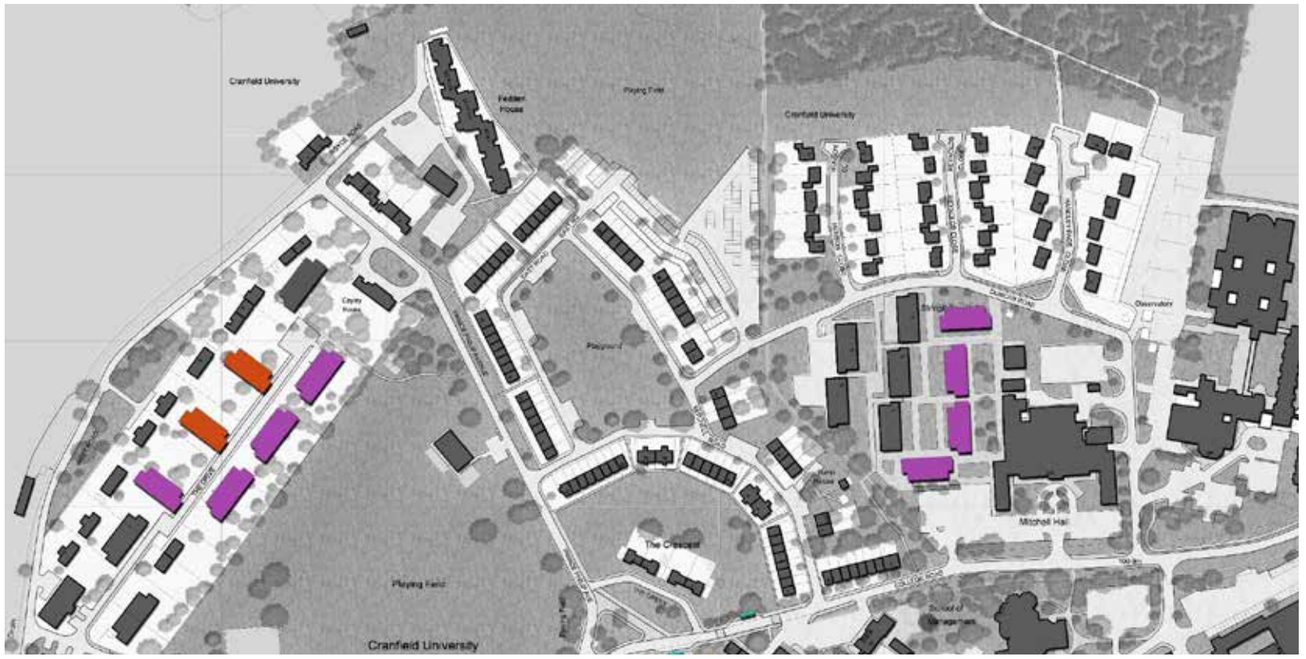
Residential

Development within this zone is more similar to that of the historic campus. Axial and court relationships of new buildings are to be encouraged.

Buildings within this zone are to be of a domestic scale of three-storeys (10.5m) and potential four or five-storeys (15m). Where studio or apartments are proposed, designed outdoor and indoor gathering spaces are to be provided.

Primary materials for buildings are to be brick, timber and glass. Masonry may be used occasionally as a primary material, but not as an accent.

As a general rule to avoid conflict of character and movement, front doors shall face other front doors, and backs doors shall abut backs in all future proposals for residences.



Proposed building heights

- 3- Storey [potential 4 storey in adjacent residential context]
- 2-3 Storey - variable height allowance
- 2 Storey
- 1 Storey

Images represent the guiding look and feel of the materials and setting of the Residential Character Area.