

LANDSCAPE - KEY SPACES

Car Park Entrance Plaza & Approach



Location Plan



Inset Plan - Car Park Main Entrance Plaza & Approach

- ① Building main entrance
- ② Entrance plaza
With feature bench
- ③ Pedestrian crossing
- ④ Rain gardens
- ⑤ External dining and social space
- ⑥ Parking bays



LANDSCAPE - KEY SPACES

External Dining & Social Spaces



Location Plan



Inset Plan - External Dining & Social Space

- ① Enclosed cycle store
- ② External dining
- ③ Raised planter with integrated seating
- ④ Rain gardens
- ⑤ Bin Store
- ⑥ Drop off/delivery bay

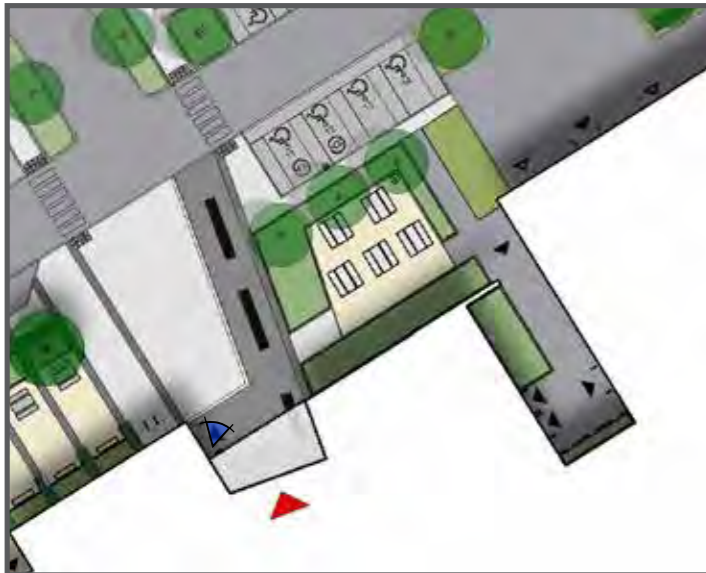


LANDSCAPE - KEY SPACES

External Dining & Social Spaces



Location Plan



Inset Plan - External Dining & Social Space

- ① External dining and social space
- ② Entrance plaza
With feature bench
- ③ Main pedestrian route
- ④ Rain garden



LANDSCAPE - KEY SPACES

Front Entrance Approach - Port Road



Location Plan



Inset Plan - Front Entrance Approach (Port Road)

- ① Enclosed cycle store
- ② Rain gardens
- ③ Entrance plaza
With feature bench
- ④ Cycle parking



LANDSCAPE - KEY SPACES

Front Entrance Social Spaces - Port Road



Location Plan



Inset Plan - Entrance Plaza Social Spaces

- ① External dining and social space
- ② Rain garden

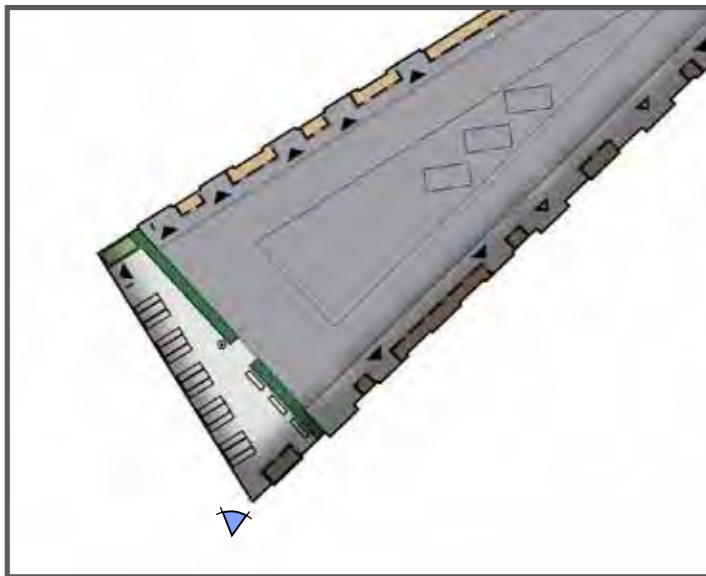


LANDSCAPE - KEY SPACES

External Dining & Social Space - Construction Yard



Location Plan



Inset Plan - Construction Yard Social Space

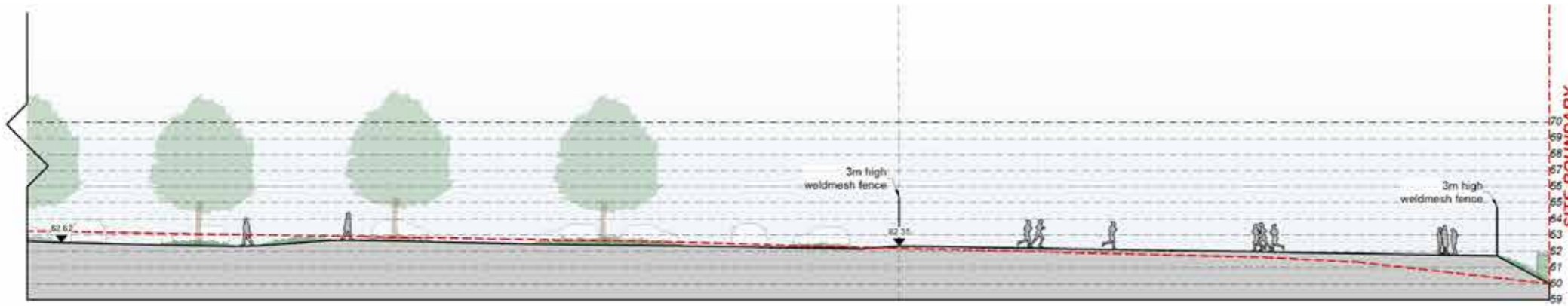
- ① External dining
- ② Hedge planting
- ③ Construction yard



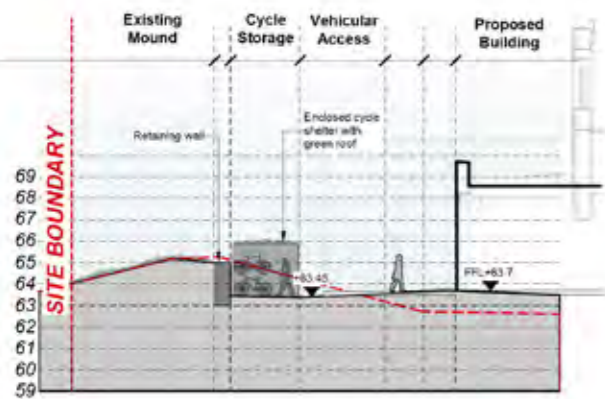
LANDSCAPE - SITE SECTIONS



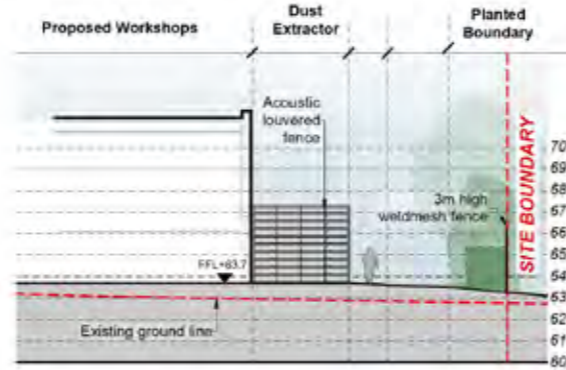
SECTION A-A
South to North



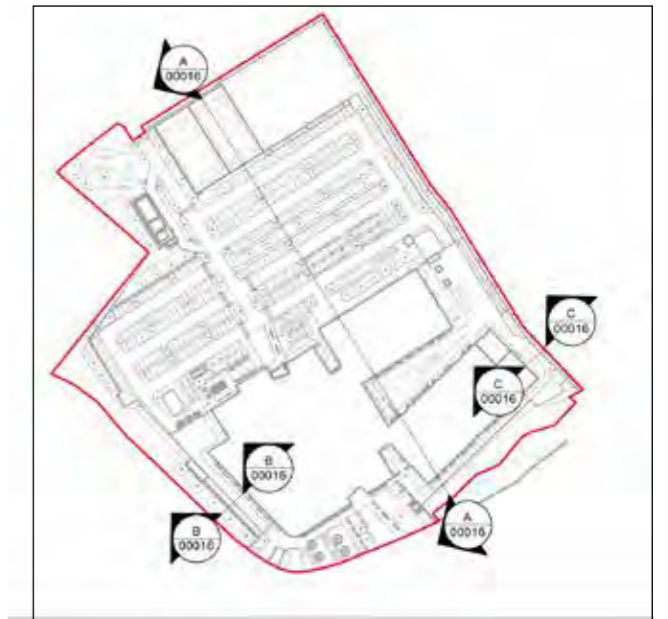
SECTION A-A (continued)
South to North



SECTION B-B
Through western boundary

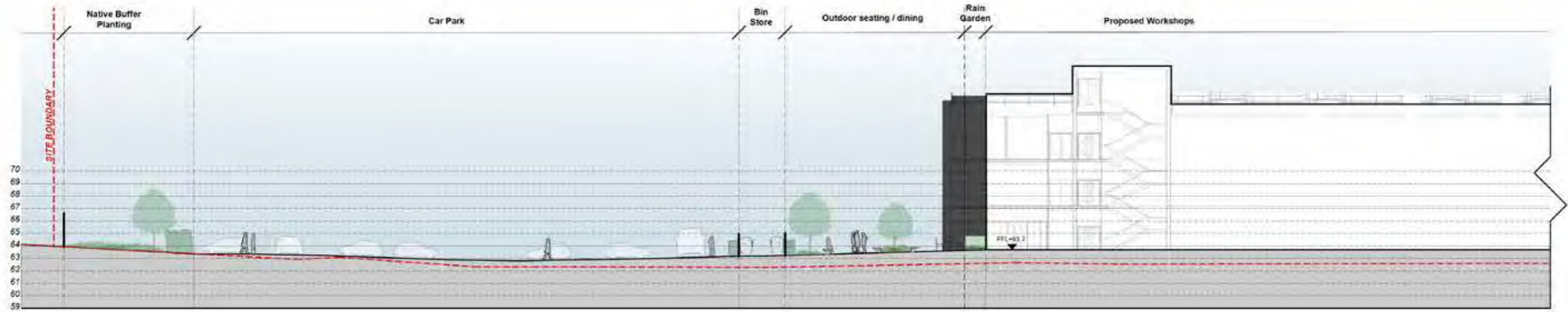


SECTION C-C
Through eastern boundary

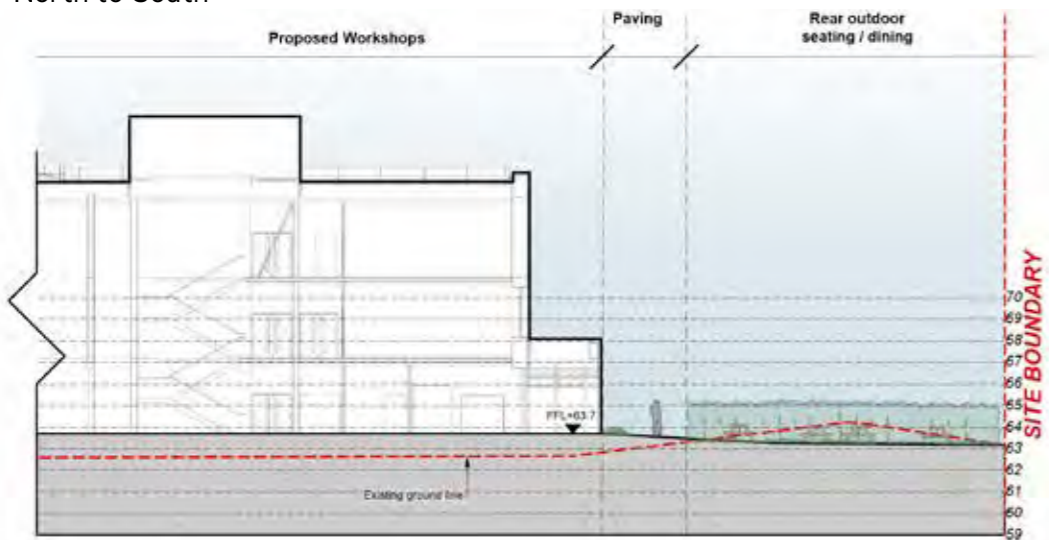


LOCATION PLAN
NTS

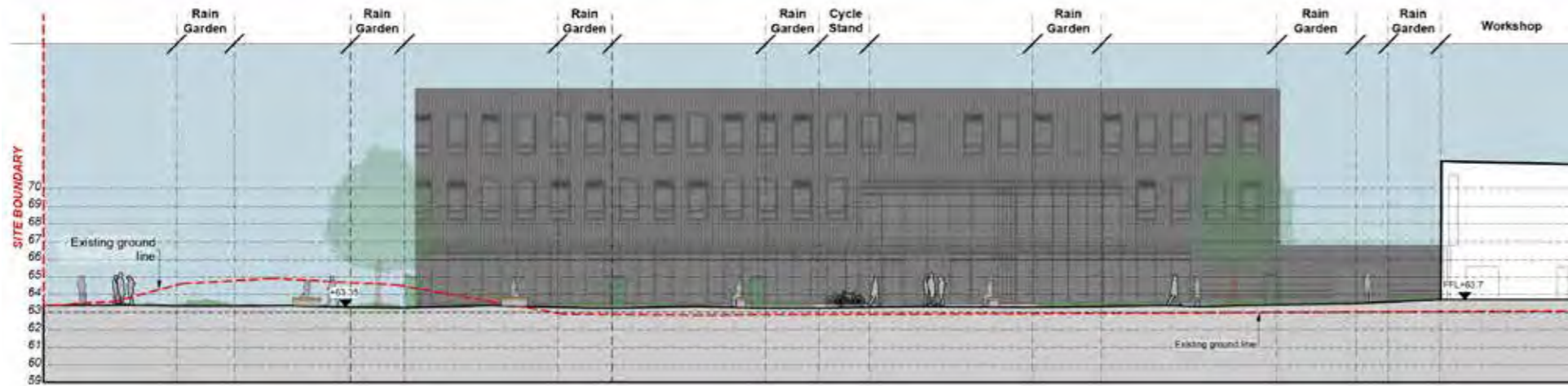
LANDSCAPE - SITE SECTIONS



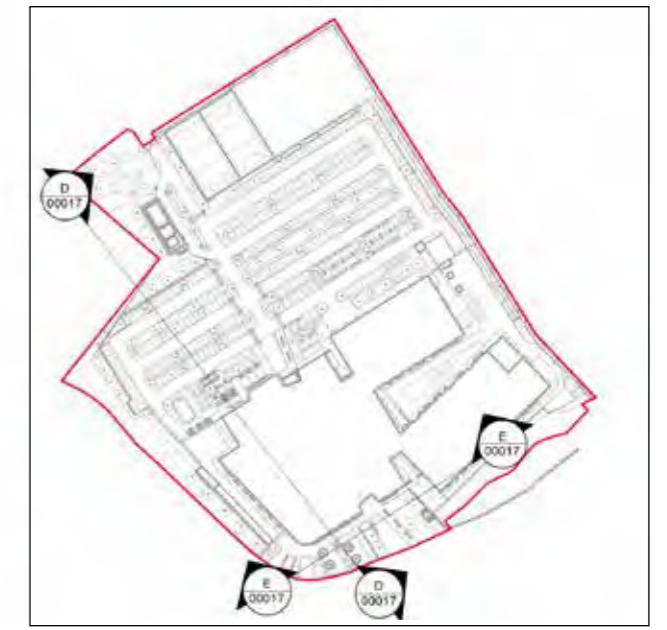
SECTION D-D
North to South



SECTION D-D (continued)
North to South



SECTION E-E
West to East



LOCATION PLAN
NTS

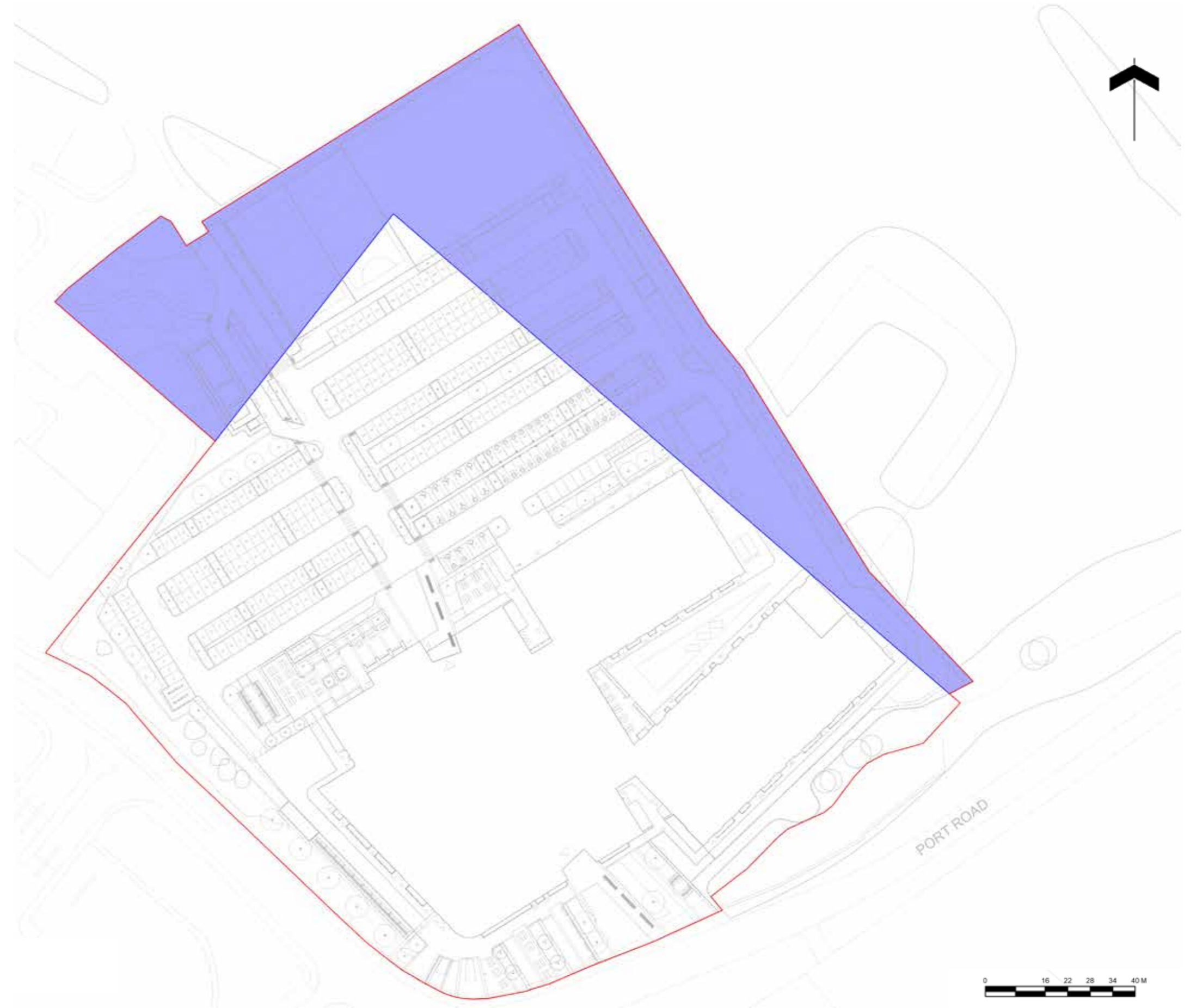
LANDSCAPE - BUFFER ZONE

As has been previously discussed, a buffer zone has been included around the north of the site to ensure the 'right to light and air' is not compromised for any future developments that are proposed around the site. In consultation with CaVC, it was deemed that the buffer zone could include landscape elements that would not impact on this 'right to light and air'.

The buffer zone also ensures that there are no awkward parcels of land leftover around the site, i.e. in between the hammerhead access point and the boundary.

The size of the buffer zone was limited by CaVC to maximum 2.5 acres. The proposals fit within this limitation.

The width of the buffer zone was driven by the height of the proposed building and the predicted height of the future expansion buildings. In doing so, a 45 degree angle was extrapolated from the roof down to the ground level.



LANDSCAPE - ACCESS & CIRCULATION

Pedestrian & Cycle Access

The main pedestrian access is from the south corner of the site, along Port Road, in response to the active travel route that is allocated in the SPG. CaVC have also expressed a desire to align with this allocated travel route.

An indicative bus stop location has also been shown on Port Road to encourage the use of public transport to the site. The feasibility of these locations is subject to further discussions with the Highways department.

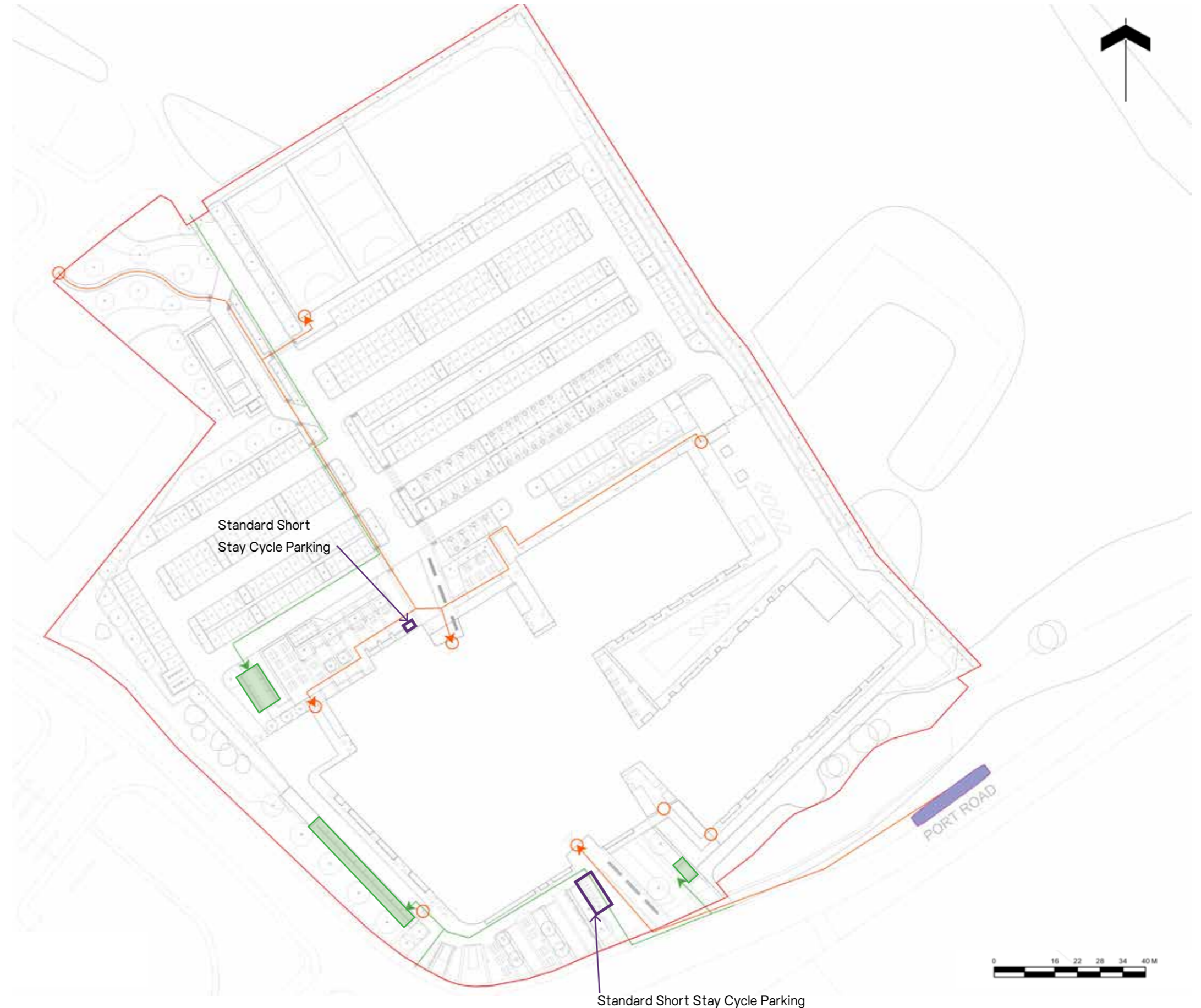
There is also a main pedestrian access route from the North of the site which leads directly to the main entrance.

The cycle parking has been split into various accessible locations on site. There are 24 tiered spaces, with 16 standard cycle spaces along the main active travel route entrance along Port Road.

96 spaces are available in the car park to the north, with an additional 4 standard spaces to the entrance.

Then there are 160 spaces within the secure boundary line west to the main southern entrance.

The 280 total spaces have been proposed using two tier bike racks, with an additional 20 short stay cycle spaces.



Key

- Site Boundary
- Access points
- Pedestrian Access
- Cycle Access
- Enclosed Long Stay Cycle Parking
- Standard Short Stay Cycle Parking
- Indicative Bus Stop Locations

LANDSCAPE - ACCESS & CIRCULATION

Vehicular Access

Access to the site for all vehicles is from the north, via the existing hammerhead. This ensures existing infrastructure can be utilised as much as possible and that S278 works can be minimised. As a result, the car park is placed to the north side of the building. This provides separation between the pedestrian and vehicular entrances.

The car park includes 280 standard spaces, 14 disabled bays, 32 Electric Vehicle Charging Points, 10 Motorcycle spaces and 2 Minibus parking spaces.

8 additional spaces to be utilised by the motor vehicle workshop, have been located adjacent to the work shop with access point via a dropped kerb.

A safe route through the car park has been provided for pedestrians accessing the MUGA.

Refuse, service and delivery vehicles share the same circulation routes through the car park as cars. A delivery/ drop off and pick up bay has also been included adjacent to the building.



Key

- Site Boundary
- Access to workshop
- Vehicle Access
- Parking Spaces (280)
- Accessible Spaces (14)
- Drop off zone and refuse pull in bay
- Electrical Charging Zones (32)
- Minibus Spaces (2)
- Motor Vehicle Workshop Spaces (8)
- Motorcycle Spaces (10)

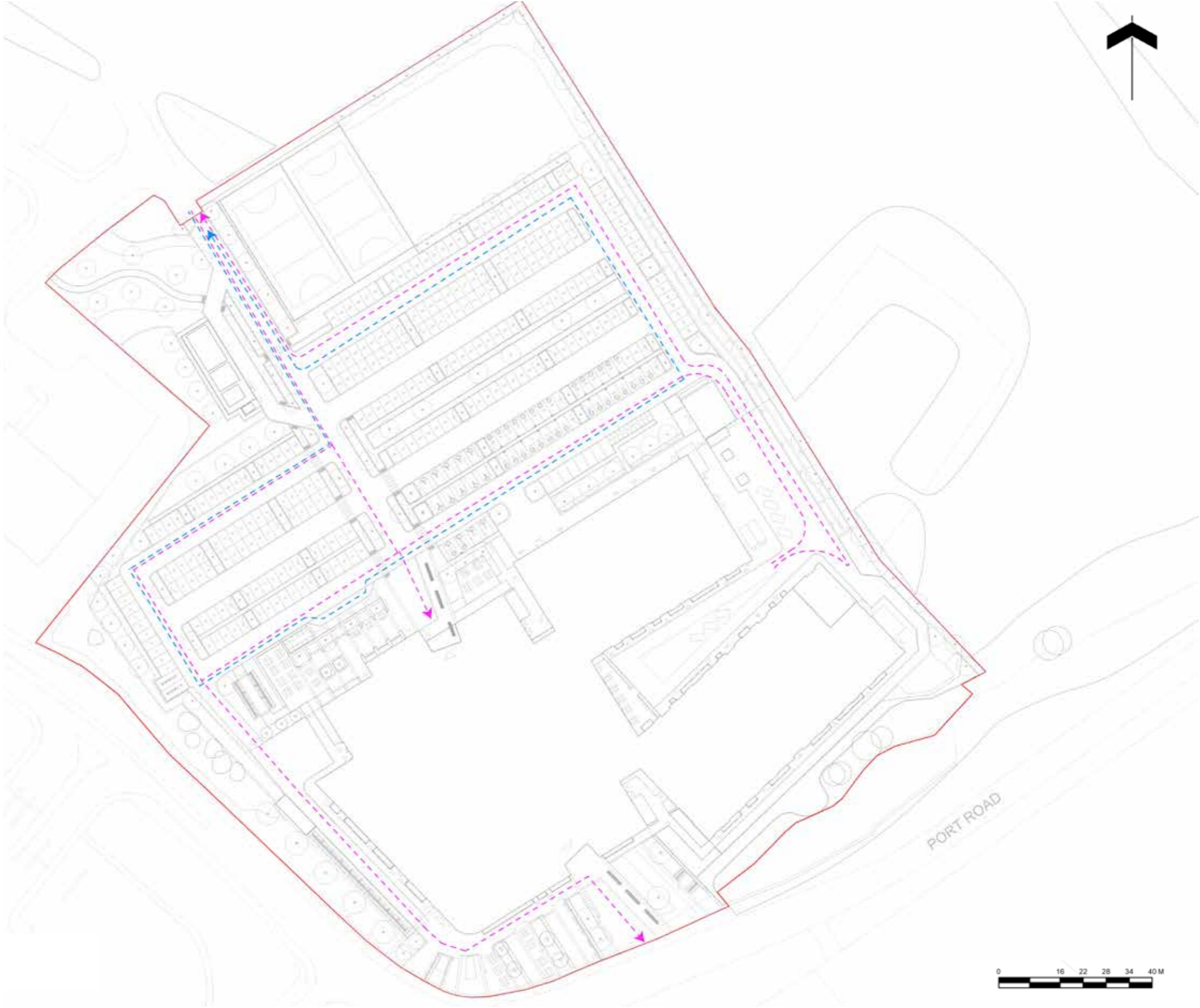


LANDSCAPE - ACCESS & CIRCULATION

Refuse & Fire Tender Access

Refuse vehicles share the same circulation routes through the car park as cars. A delivery bay has also been included adjacent to the building and next to the bin store for easy access.

Fire tender access also follows the same circulation route, with additional access into the construction yard and entrance plaza.



Key

- Site Boundary
- - - → Refuse Access
- - - → Fire Tender Access

LANDSCAPE - SITE SECURITY





The security strategy is split into 3 levels:

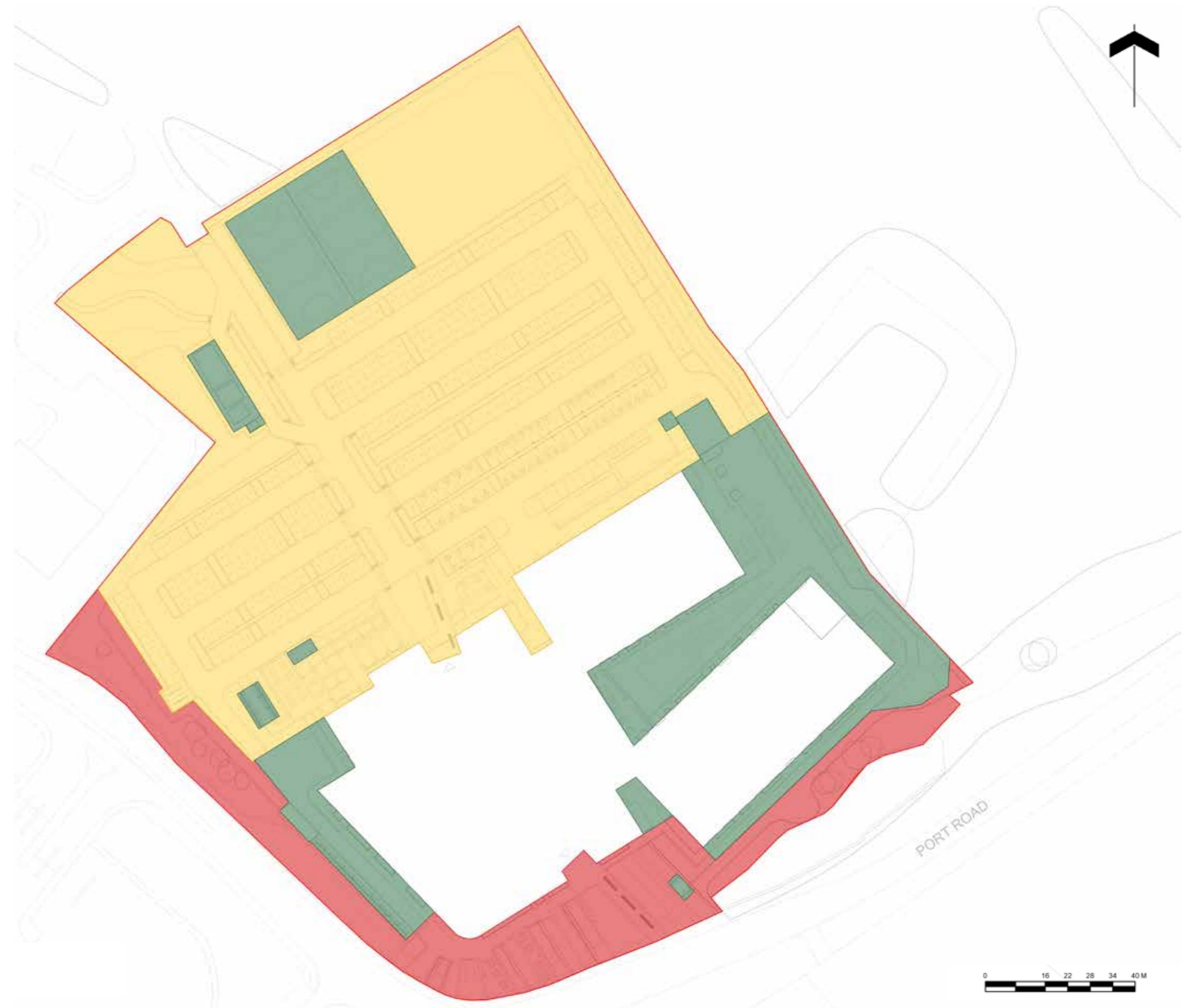
- Public access: the pedestrian entrance off Port Road to the site will be open to the public. Access into the building is controlled internally.

- Controlled Access: The car park will be access controlled using automated gates that are connected to reception via intercom. This is to ensure only authorised visitors or members of staff have access to the site.

- Secure Areas: These are areas that are only accessed from inside the building or by authorised people. These areas include the cycle shelters, sprinkler tank, ASHP, MUGA, bin store and external workshop spaces.

Key

-  Site Boundary
-  Public Access
-  Controlled Access
-  Secure Access



LANDSCAPE - FENCING STRATEGY

2.4m weldmesh fencing surrounds the majority of the site boundary and buffer zone. The exception to this is the site frontage where an open and welcoming approach is desired.

Acoustic louvred fencing is proposed to the air source heat pump enclosure and dust extraction enclosure to minimise the impact of noise adjacent to the building.

3m closeboard fencing has been proposed to the sprinkler tank to screen as much plant as possible from the car park.

The main vehicular entrance (from the hammer head) at the north of the site will be access controlled with automated gates that are connected to reception via an intercom.

The service yards have internal secure lines to prevent unauthorised access.

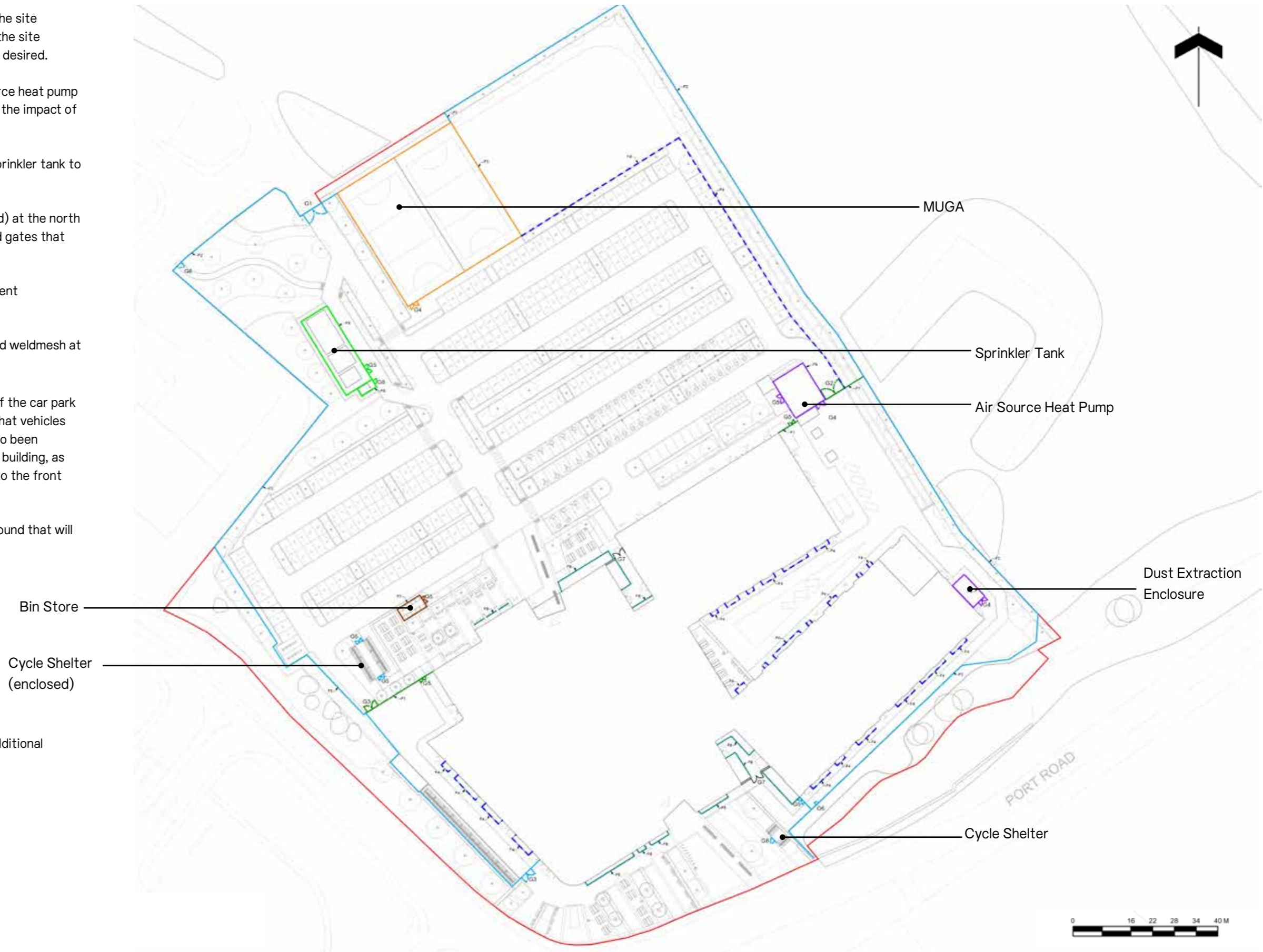
Fencing to the MUGA is proposed as sports rebound weldmesh at 3m high, with additional ball stop netting at 3.0m.

A timber knee rail has been proposed to the north of the car park to separate the roadway from the swale, ensuring that vehicles avoid over-sailing the kerb in this location. It has also been proposed to the window collision details around the building, as well as an architectural knee rail which is proposed to the front and rear entrances.

The covered cycle shelters will form a secure compound that will be accessed via a key pad or similar.

Key

- Site Boundary
- 1.8m Weldmesh Fencing
- 2.4m Weldmesh Fencing
- 3.0m Sports Weldmesh Fence with an additional 3.0m Ball Stop Netting
- Timber Knee Rail
- Architectural Knee Rail
- 3m Close board Timber Fence
- 2.6m Acoustic Louvred Fencing
- 2.4m Timber Hit & Miss Fence



LANDSCAPE - ECOLOGY & ARBORICULTURE

Ecology

The preliminary ecology appraisal was undertaken during the preparation of the site proposals. The appraisal summarised the following:

- Following progression of detailed surveys, no common reptiles were identified onsite indicating their likely absence and/or presence in such low numbers so as to be undetectable.
- Due to the nature of the site there were extensive bird records for the area, including several Species of High Conservation Concern (RSPB Red list); Common linnet, Yellowhammer, Kestrel, Greenfinch and Willow warbler
- The bat roost insect survey deemed the trees along the western edge of the site to have suitable features for bat roosting - these trees are to be retained.
- No evidence of badgers or dormouse, and the site was unsuitable for otters and water voles

The landscape proposals seek to enhance the biodiversity on site through diverse planting, rain gardens, swales, and native hedges.

To mitigate and compensate for the habitat loss, habitat creation has been proposed through the following:

- Provision of sustainable drainage features including rain gardens and swales, to be seeded/planted with species-rich grassland and marginal/aquatic species
- Tree and shrub planting along the boundaries of the site
- Native hedgerow planting along northern and part of western boundary
- Inclusion of ecotone planting along woodland edge on-site
- Provision of amenity grassland areas seeded with a species-rich seed mix with further opportunities for native shrub planting.

Further information can be found in the Ecological Appraisal document **edp8160_r001**

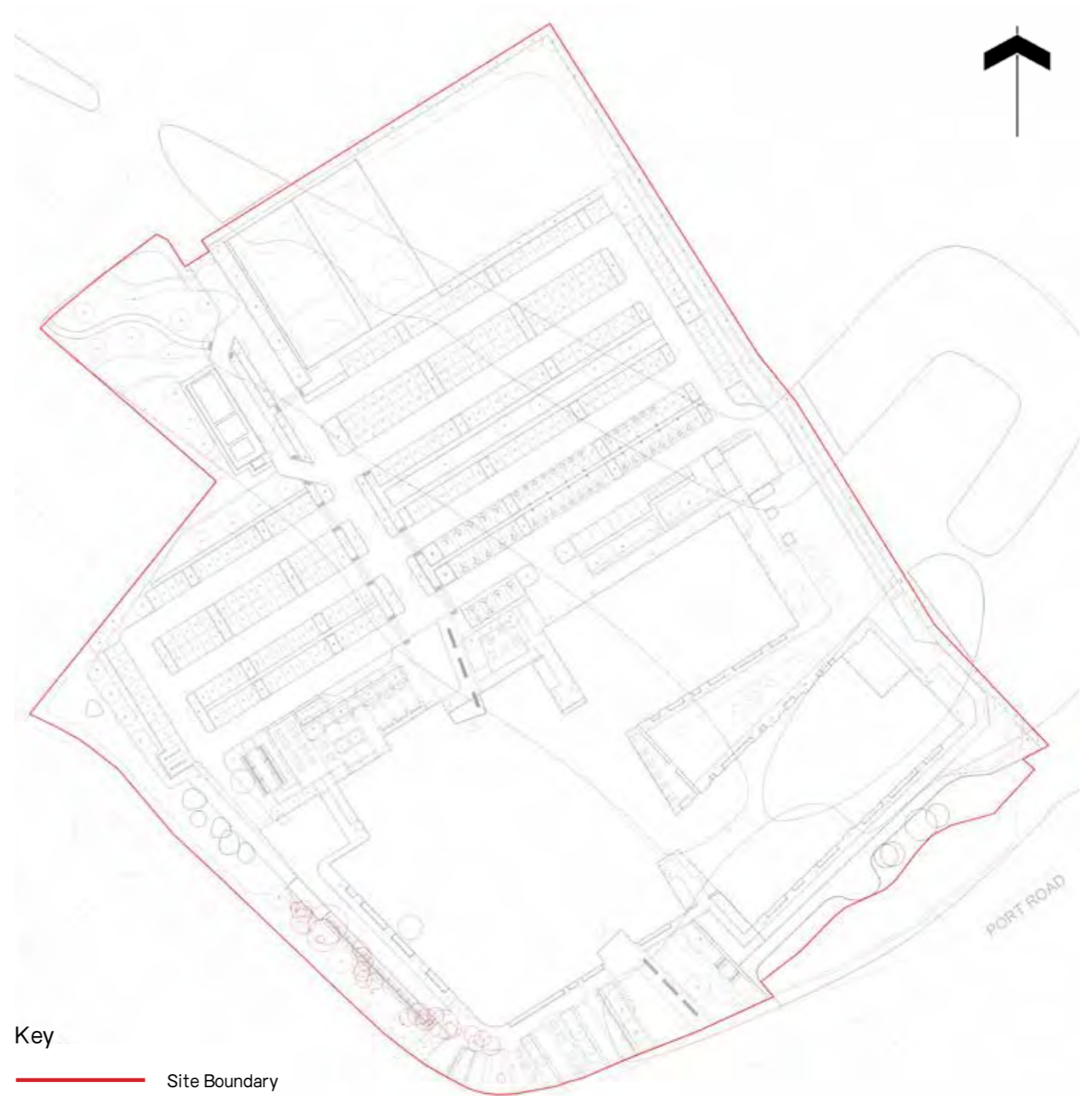
Arboriculture

The existing trees and hedgerows on the site are notable and positive characteristic of the existing site. Whilst acknowledging some vegetation will be lost to development, the site layout has sought to retain as many as possible.

For the requirements of CaVC and Vale of Glamorgan to be fulfilled, a small part of the trees and shrubs within Group 1 to the south of the site along Port Road are proposed to be removed for the main access into the site. The remainder of the group will be maintained and protected.

The majority of the vegetation that is proposed to be removed on site mostly contains dense and low quality shrubbery.

Further information can be found in the Tree Survey document **BS5837 - Cardiff Airport and Technology site - Arbtech TSR 01**



- Key
- Site Boundary
 - Existing Vegetation to be retained
 - Existing Trees to be removed

LANDSCAPE - SUSTAINABLE DRAINAGE

The sustainable drainage strategy has been driven by the site's topography as the lowest part of the site is located in the northern corner. As such, the levels generally fall this way, with the swale along the eastern boundary falling towards the attenuation crates located to the north.

As there are no limitations from existing services, all the parking spaces will be permeable paving, separated with rain gardens, to capture, treat and convey water from the surface water runoff. The protective planting areas close to the building also function as rain gardens to present a similar treatment system for water from the roof connecting to the site wide SUDS network.



Key

- Site Boundary
- Swale
- Permeable Paving
- Rain Gardens

LANDSCAPE - PLANTING STRATEGY

-  Site Boundary
-  Existing Trees
-  Proposed Tree
-  Proposed Multi-stem Tree
-  **Grass seed**
Areas of grass to be enjoyed recreationally by students or acts as an element of the eco-tone planting to the boundary planting
-  **Turf**
Turf to the entrance social spaces, providing areas for students and staff to sit and enjoy during the summer months.
-  **Wildflower Meadow Planting**
Wildflower seed mix to areas at the periphery of the site, used as eco-tone planting to create areas of structure and habitat.
-  **Amenity Planting - Full/Partial Sun**
Herbaceous perennial and shrub planting located in areas where it receives full or partial sun.
-  **Amenity Planting - Shade Tolerant**
Herbaceous perennial and shrub planting located in areas where it is mostly shaded throughout the day.
-  **Rain Garden - Full Sun**
Planting that is tolerant to waterlogging and rain garden conditions, that also thrive in sunnier spots.
-  **Rain Garden - Partial Sun**
Planting that is tolerant to waterlogging and rain garden conditions, that also thrive in sunnier or partially sunny spots.
-  **Rain Garden - Shade Tolerant**
Planting that is tolerant to waterlogging and rain garden conditions, that is also tolerant to shadier conditions.
-  **Swale Planting**
Planting and seed mix specifically chosen to thrive within swale conditions
-  **Naturalistic Woodland Edge & Meadow Planting (Sun/semi-shade)**
Woodland planting as smaller whips and shrubs and seed mix. This acts as parts of the eco-tone planting around the periphery of the site to create a biodiverse habitat area, and create a habitat link with the surrounding fields and woodlands in the north east corner.
-  **Naturalistic Woodland Edge & Meadow Planting (Shade)**
Woodland planting as smaller whips and shrubs and seed mix. This acts as parts of the eco-tone planting around the periphery of the site to enhance the existing scrub along the boundary.
-  **Naturalistic Woodland Buffer Planting**
Native species planted as denser whips with larger specimens This acts as parts of the eco-tone planting around the periphery of the site to create a biodiverse habitat area.
-  **Green Roof**
Green roofs to the cycle shelters
-  **Ornamental Mix - Full Sun**
Mix used within the planting area as part of the window collision detail
-  **Ornamental Mix - Shade Tolerant**
Mix used within the planting area as part of the window collision detail
-  **Native Hedgerow**
Native hedgerow mix along areas of the site boundary, creating a wildlife corridor along the edges of the site.
-  **Formal Instant Hedge Planting**
Formal hedge planting creates more structured planting within the social spaces



LANDSCAPE - TREE SPECIES SELECTION & RATIONALE

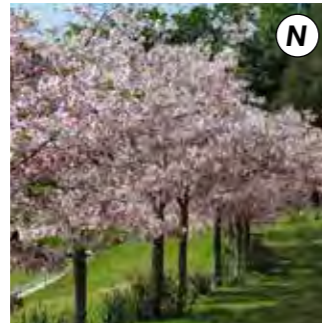
(N) NATIVE SPECIES

(E) EVERGREEN

Feature Trees



Quercus petraea
Sessile/Welsh Oak (Welsh National Tree)
Chosen as the feature trees to the main entrances due to its significance to Wales as it's the National tree.



Prunus avium
Wild Cherry
Planted across the site as an ornamental feature tree that blossoms during spring. Two rows are planted with the pedestrian entrance to the north. Also chosen due to it being one of the species removed from site.



Taxodium distichum
Swamp Cypress
A deciduous conifer that provides a different form and texture, with needles rather than leaves. They are tolerant to water logging and provide a feature avenue to the large rain garden within the car park.



Acer saccharinum 'Asplenifolium'
Silver Maple
Located to the north of the building within the shadier external social spaces.



Acer palmatum 'Seiryu'
Japanese Maple
Chosen due to its attractive light canopy, it is located within the social dining spaces to the shadier area at the North of the building. It also provides bright autumn colour.



Betula papyrifera
Paper Birch
Located to the north of the building within the shadier external social spaces. Also chosen for its contrasting white bark for added interest.



Tilia cordata 'Greenspire'
Small-leaved Lime
Chosen for its tidy upright form and broad canopy.

Shade Tolerant Trees

Boundary Trees



Acer campestre
Field Maple
Native to the UK. One of the species existing in the tree groups removed on the site. Forms part of the boundary tree planting.



Betula pendula
Silver Birch
Native to the UK. One of the species existing on site to be removed. Forms part of the boundary tree planting.



Carpinus Betulus
Common Hornbeam
Native to the UK. Forms part of the boundary tree planting.



Fagus sylvatica
Common Hornbeam
Native to the UK. Forms part of the boundary tree planting.



Pinus nigra var. austriaca
Austrian Pine
Mostly forms part of the boundary tree planting, with some species dotted around the site. Chosen for its all year round colour, as well as its texture, with needles rather than leaves.



Pinus sylvestris
Scots Pine
Native to the UK. Mostly forms part of the boundary tree planting, with some species dotted around the site. Chosen for its all year round colour, as well as its texture, with needles rather than leaves.



Salix caprea
Goat Willow
Native to the UK. Forms part of the boundary tree planting.



Sorbus aria
Whitebeam
Native to the UK. Forms part of the boundary tree planting.



Ulmus procera
English Elm
Forms part of the boundary tree planting.

Water Tolerant Trees - Rain Gardens



Acer rubrum
Red Maple
Chosen due to its tolerance to water logging and rain garden conditions. Also provides vibrant autumn colour.



Acer x freemanii 'Armstrong'
Freeman/Canadian Maple
Chosen due to its tolerance to water logging and rain garden conditions. Also provides vibrant autumn colour.



Alnus glutinosa
Common Alder
Native to the UK. Water loving tree that was chosen due to its tolerance to water logging and rain garden conditions.



Amelanchier lamarckii
Snowy Mespilus
Slightly smaller bushier tree chosen due to its tolerance to water logging and rain garden conditions. Also provides blossom in spring and vibrant autumn colour.



Amelanchier arborea
Juneberry
Smaller bushier tree with a grey colour bark. Multi-stem provides a variety in structure and form. Also chosen due to its tolerance to water logging and rain garden conditions. Also provides blossom in spring and vibrant autumn colour.



Betula nigra
Black/River Birch
Chosen due to its tolerance to water logging and rain garden conditions. The bark also provides a variety of colours from greys, browns and purples.



Quercus palustris
Pin/Swamp Oak
Chosen due to its tolerance to water logging and rain garden conditions. Also provides vibrant autumn colour.



Platanus orientalis 'Minaret'
Oriental Plane
An ornamental tree chosen due to its tolerance to water logging and rain garden conditions. Provides a vibrant orange/yellow colour during Autumn months.

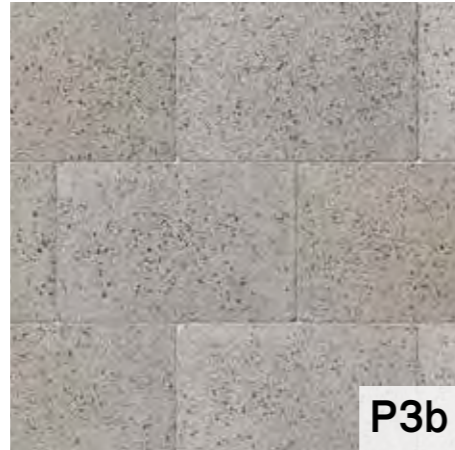
LANDSCAPE - HARD MAERTAILS PALETTE

Key Surfacing Materials

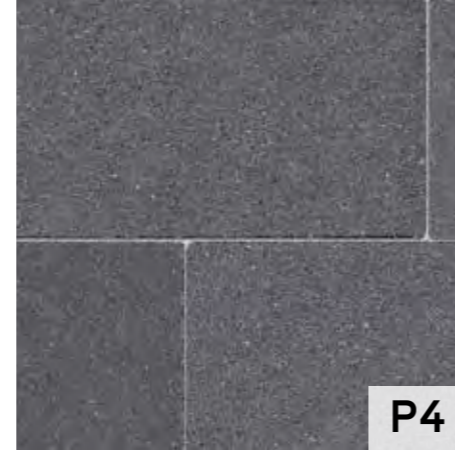
Entrance Plaza



CONCRETE BLOCK PAVING
Location: To entrance plazas and social spaces
Size: 200x300x80mm
Colour: Light Grey



CONCRETE BLOCK PAVING
Location: To entrance plazas and social spaces
Size: 200x300x80mm
Colour: Dark Grey



CONCRETE BLOCK BANDING
Location: To entrance plazas and social spaces
Size: 600x300x80mm
Colour: Graphite Grey

General



RESIN BOUND GRAVEL
Location: To entrance plazas and social spaces

Car Park



PERMEABLE BLOCK PAVING
Location: To car parking spaces
Size: 200x100x80mm
Colour: Charcoal with white marker blocks

LANDSCAPE - STREET FURNITURE



S1
DOUBLE STACKED CYCLE RACK



S2
CYCLE SHELTER WITH GREEN ROOF



S3
SEATING BENCH
 Material: Powder-coated steel and treated softwood



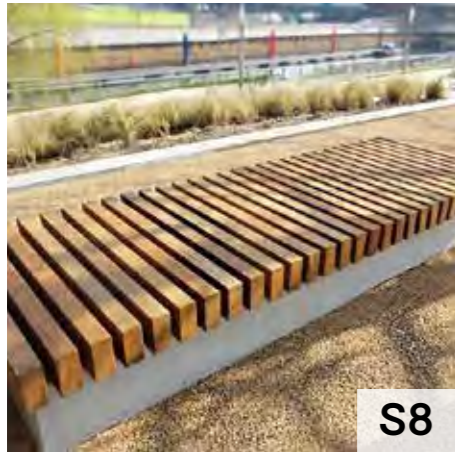
S4
PICNIC BENCH
 Unit Material: FSC Treatment Softwood



S6
CYCLE STANDS



S7
SEATING BENCH
 Material: Powder-coated steel and treated softwood



S8
TIMBER FEATURE BENCH
 Material: FSC Hardwood



S9
RAISED PLANTER WITH TIMBER SEATING
 Material: FSC Hardwood, Powdercoated Steel



S10
DOOR PROTECTION HOOP



S11
MOTORCYCLE ANCHOR



S12
LITTER BIN
 Materials: Powder Coated Steel, Timber.
 Finish: Galvanised. Powder Coated.

LANDSCAPE - LIGHTING STRATEGY

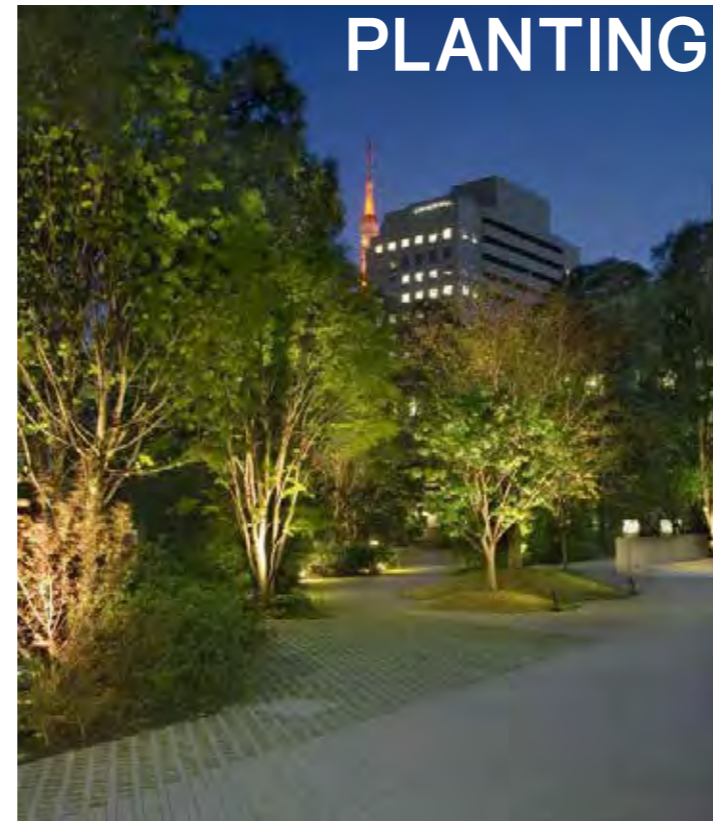
One of the key principles for the lighting strategy is to ensure a safe environment for both the staff and students on campus. This strategy will be coordinated with the security strategy to ensure the lighting and security measures compliment each other.

Decorative and feature lighting to some seating will be provided to enhance these details. Low level bollards provide ambient lighting to quieter social spaces, as well as uplighting to enhance the planting and feature trees within the entrance plazas.

The Multi-Use Games Area (MUGA) will also have lighting to accomodate for outdoor sports.

The key areas of lighting will be within areas of higher usage, however where there are areas to the periphery of the site that intent to provide areas of habitat, limited lighting will be used to ensure minimal disturbance to wildlife.

COLUMNS



PLANTING



UPLIGHTING



BOLLARDS



PLAZA LIGHTING



FEATURE UNDERLIGHTING

projections. In this case the best option is the superblock form.

4.6 Landscape Design Statements Design Approach

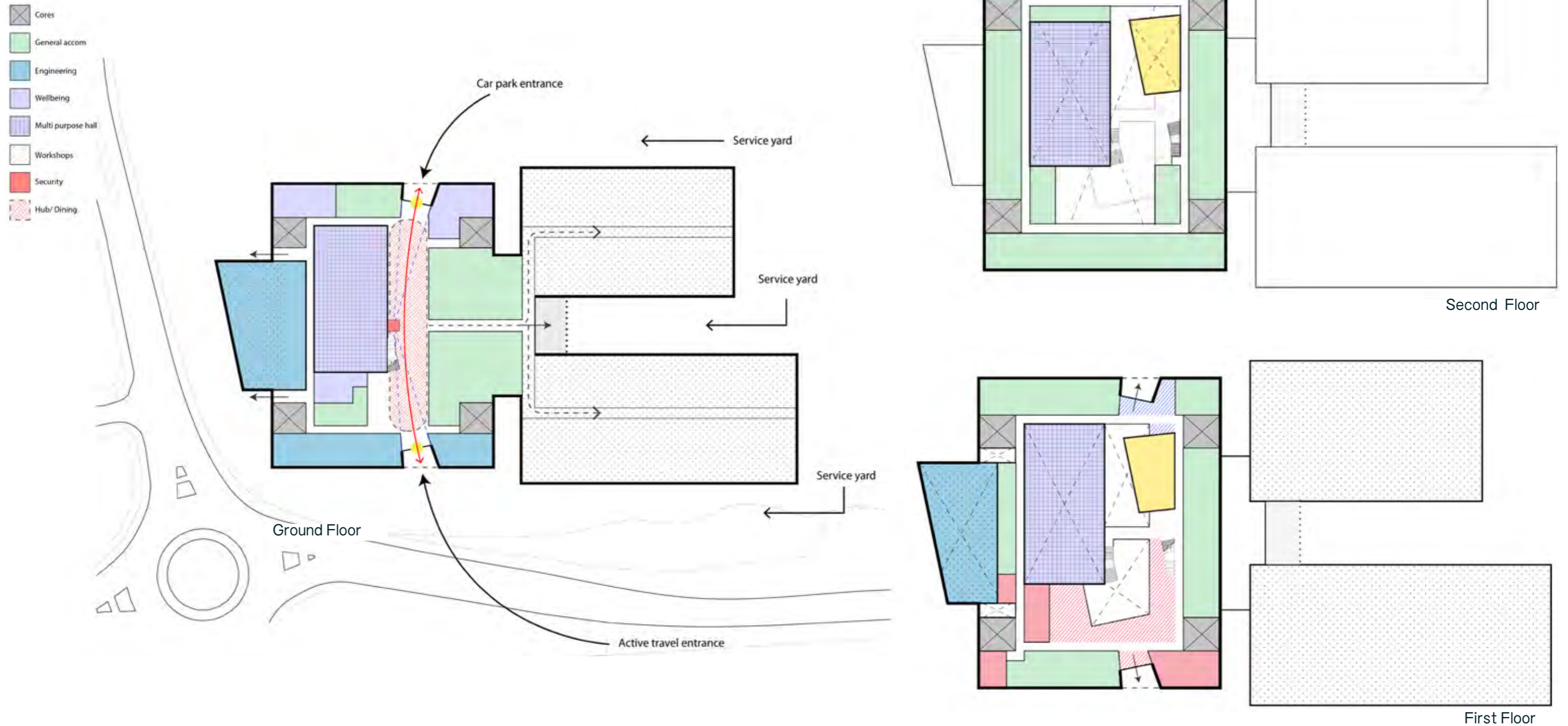
The proposed landscape design will meet the

requirements as set out in the New Project Request and described in the Authority Construction Requirements (ACR's) and the Site Specific Brief (SSB) and Generic Brief, unless otherwise stated in the derogation schedule.

The site sits in the Vale of Glamorgan's

'Cardiff Airport and Gateway Development Zone' supplementary planning guidance. This supplementary planning guidance (SPG) relates to the Gateway Development Zone which is a strategic employment site forming part of the wider Cardiff Airport - St. Athan Enterprise Zone.

The SPG allocates an active travel route along



Port Road, the site's southern boundary. This active travel route includes the allocation of a 10m wide cycleway and a bus route. The proposed cycleway has been captured in the Outline Planning Application submitted by L&G (as depicted in the 'Wider Site Context Diagram' on a previous page). As a result, the implementation of the cycle route is bound to this application which is subject to approval.

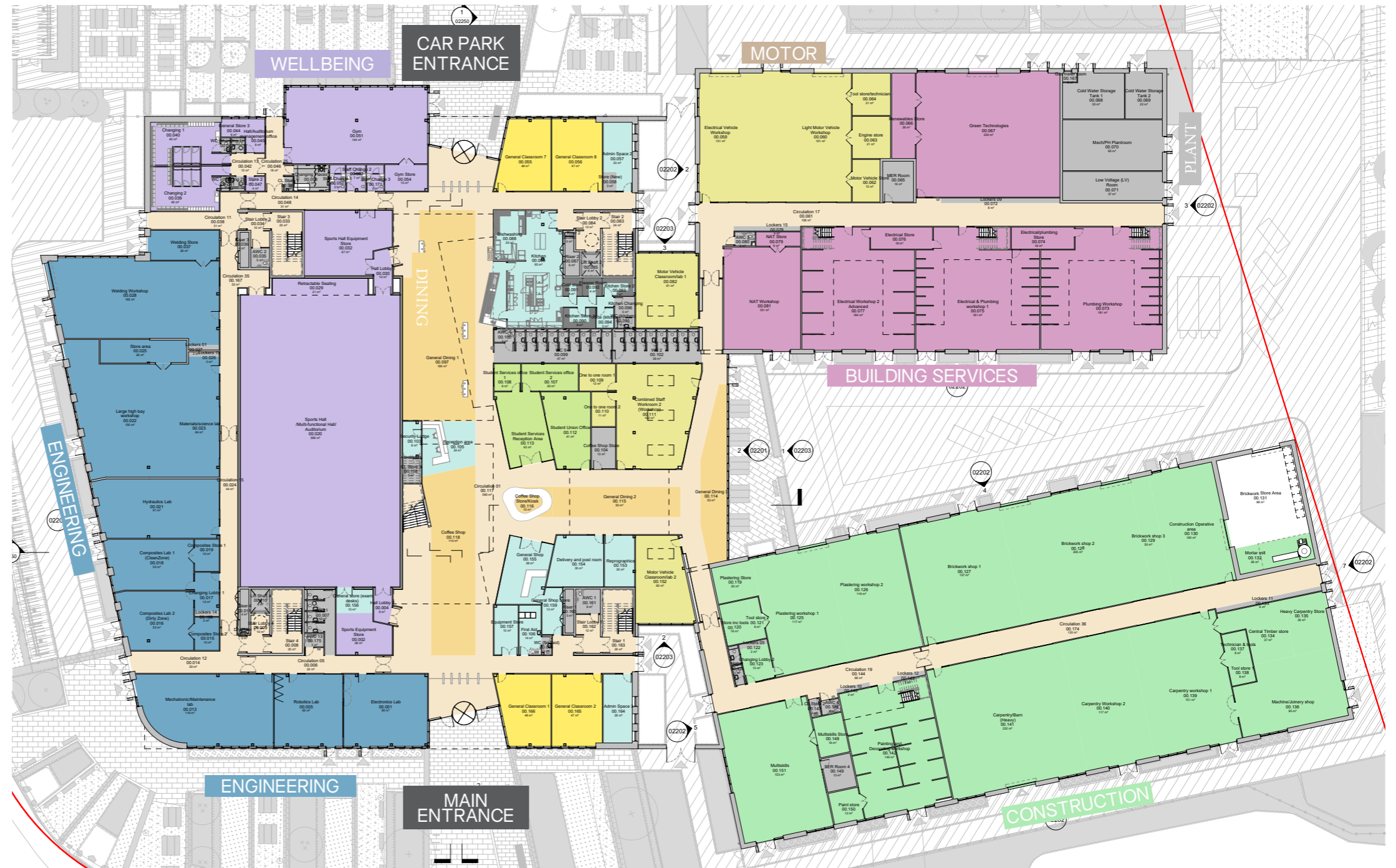
In order to respond to the 'Cardiff Airport and Gateway Development Zone' SPG, the proposed masterplan has been developed to link to the active travel route that is proposed along for Port Road.

Consultation with the Vale of Glamorgan has also driven the masterplan to create an attractive frontage to Port Road, ensuring car parking does not dominate views from this aspect. The location of an existing 'hammerhead' roadway to the north of the site has driven the location of vehicular access to ensure that existing infrastructure can be utilised to minimise the S278 works.

Another key component to the development of the masterplan has been the inclusion of a 'Buffer Zone' around the north of the site. Following consultation with CaVC, it was determined that a buffer zone was required to allow for adequate space between the proposed building and any future development around the site.

The complex nature and use of the building has resulted in specific landscape and access requirements.

Whilst addressing the above requirements, the landscape masterplan has also maximised external



learning opportunities and social space on site.

4.7 Landscape Design and Principles

Design Aspirations

The landscape design creates diverse and rich spaces for the staff and students of the college. The site layout maximises opportunities for social interaction and learning through the provision of external dining and extra curricular spaces. Together these balance educational needs with a connection to nature and the surrounding environment.

