STRIDE TREGLOWN
LANDSCAPE ARCHITECTURE

GREEN INFRASTRUCTURE STATEMENT

CROSSKEYS CAMPUS

COLEG GWENT

PRE-APP REPORT

REVISION PL02 - 13.12.2024

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PROJECT	**CROSSKEYS CAMPUS**
CLIENT	**Coleg Gwent**
STRIDE TREGLOWN JOB No.	**155663**
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PROJECT CONTACT

CLAIRE SYMONS
+44 2920 022539
ClaireSymons@stridetreglown.com

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HEALTHCARE
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Front Cover Image: Coleg Gwent Website

Contents.

1.0

INTRODUCTION AND THE SITE

1.0 INTRODUCTION

INTRODUCTION

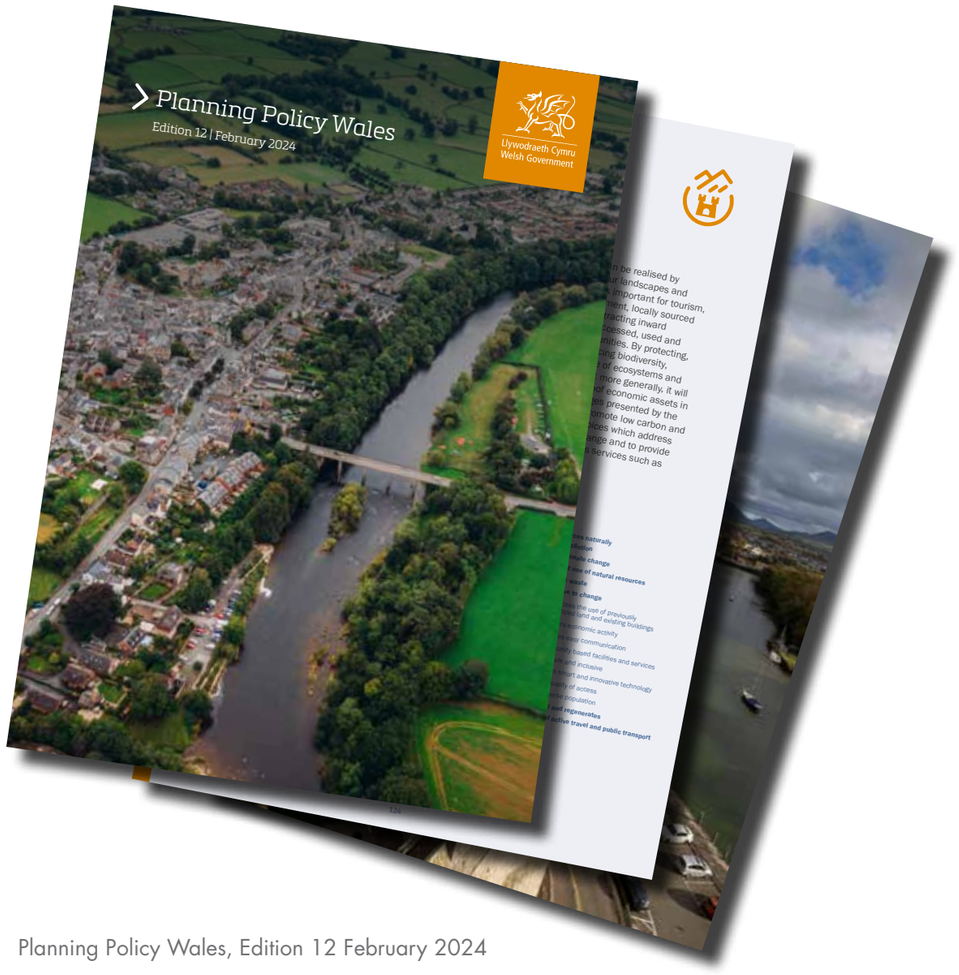
Overview

This document has been produced in reference to the recently updated Chapter 6 of Planning Policy Wales (Edition 12 February 2024) which sets out the policies to support 'Distinctive and Natural Places'.

6.0.1 The Distinctive and Natural Places theme of planning policy topics covers historic environment, landscape, biodiversity and habitats, coastal characteristics, air quality, soundscape, water services, flooding and other environmental (surface and sub-surface) risks.

The proposed scheme provides a number of Green Infrastructure enhancement opportunities as described in the following sections.

The report will provide a brief summary of the design proposals, in relation to the Green Infrastructure, as described in the associated pre-app submission information for the hybrid planning application.



Planning Policy Wales, Edition 12 February 2024

1.0 The Site and its Surroundings

The Coleg Gwent Campus is located in the town of Crosskeys (formally known as Pont-ycymer), north of Risca in the Ebbw River Valley. Crosskeys is approximately 8 miles north-west of Newport City Centre.

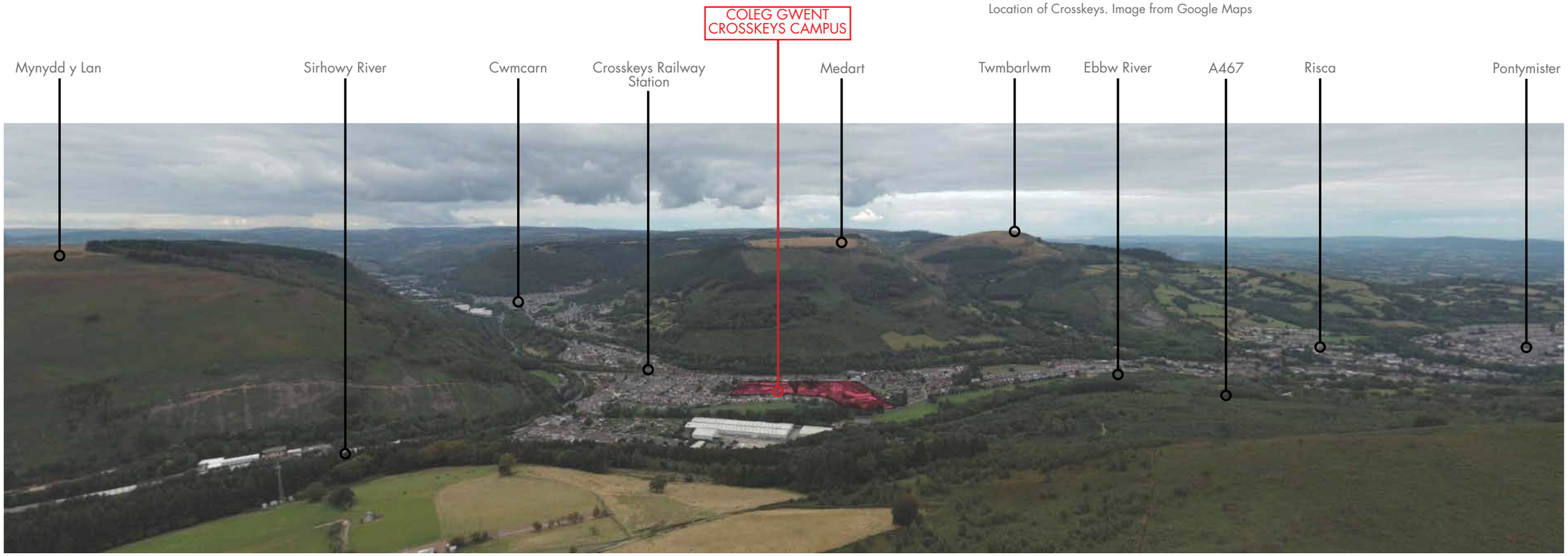
The town is well connected by road and rail. The A467 is the main road link from Newport and continues up to the Heads of the Valleys Road at Brynmawr. Crosskeys Railway Station is a 3 minute walk from the Coleg Gwent Campus and is part of the Ebbw Vale railway line.

Crosskeys is in the Ebbw River Valley and is surrounded by hillside, most notably Mynydd y Lan, Medart (Cwmcarn) and Twmbarlwm.

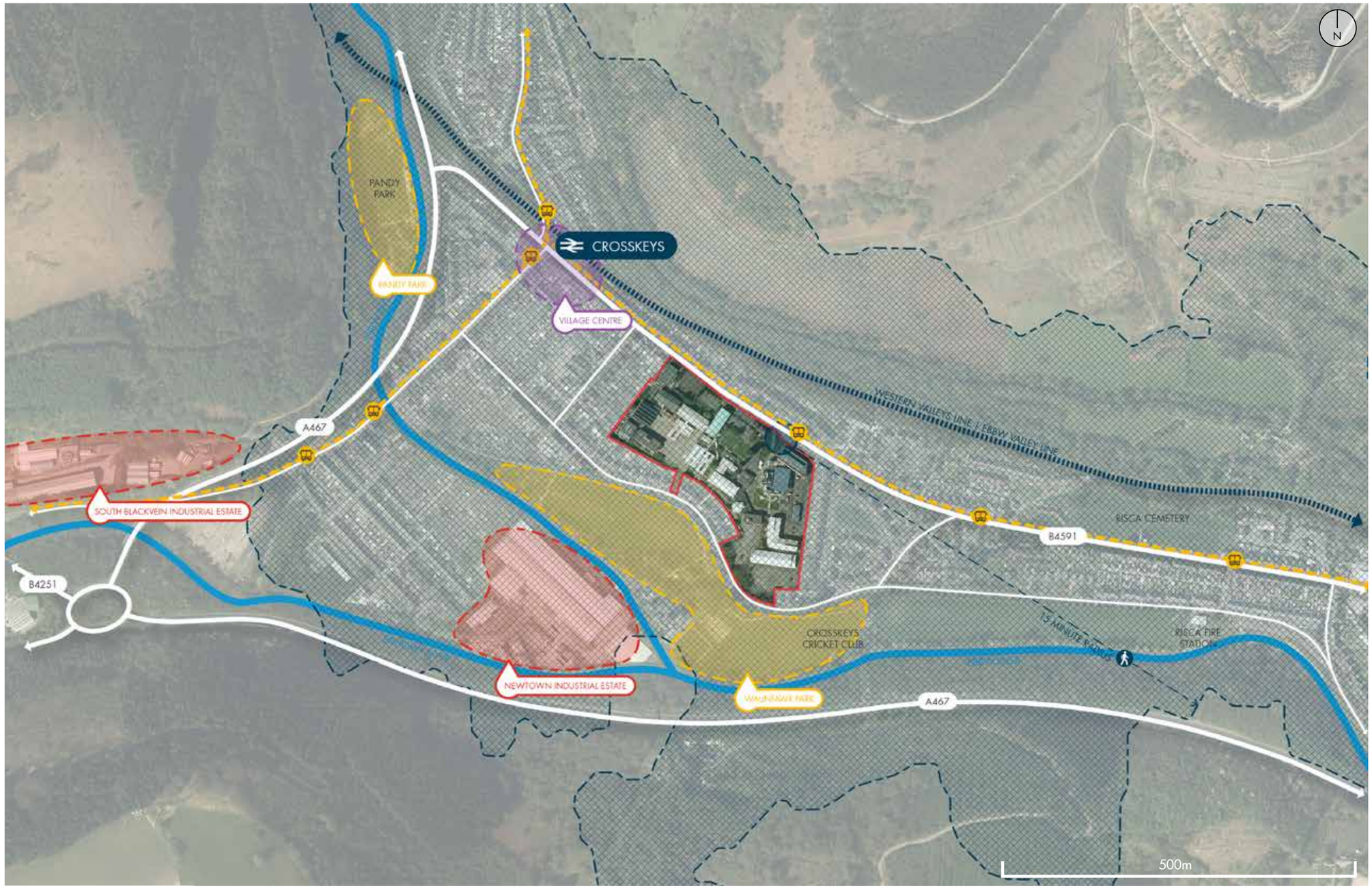
The town, was known as a place to bridge the confluence of the Ebbw and Sirhowy rivers, long before its urban development in the nineteenth century.

Like most South Wales Valley towns, Crosskeys was once part of the network of coal mining communities.

Location of Crosskeys. Image from Google Maps



View from Waunfawr Mountain, looking north to the Ebbw Valley. Image from Google Maps



Site boundary

Major roads

Bus route (and stops)

Railway (and station)

River

15 minute walking distance (from campus)

Local context location plan

1. Risca Road (north-west view)
2. Risca Road (south-east view)
3. Exit only via Waunfawr Park Road
4. Rear access via Waunfawr Park Road

2.0

PLANNING POLICY CONTEXT

2.0 Planning Policy Context

Paragraph 6.2.12 of Planning Policy Wales (PPW 12) states:

A green infrastructure statement should be submitted with all planning applications. This will be proportionate to the scale and nature of the development proposed and will describe how green infrastructure has been incorporated into the proposal. In the case of minor development this will be a short description and should not be an onerous requirement for applicants. The green infrastructure statement will be an effective way of demonstrating positive multi functional outcomes which are appropriate to the site in question and must be used for demonstrating how the step wise approach (Paragraph 6.4.15) has been applied.

Paragraph 6.4.11 state:

Planning authorities must follow a step wise approach to maintain and enhance biodiversity, build resilient ecological networks and deliver net benefits for biodiversity by ensuring that any adverse environmental effects are firstly avoided, then minimized, mitigated, and as a last resort compensated for. Enhancement must be secured by delivering a biodiversity benefit primarily on site or immediately adjacent to the site, over and above that required to mitigate or compensate for any negative impact.

Paragraph 6.4.15 sets out the Step Wise Approach in detail. This is summarised as follows:

- **Avoidance (1a and b)** – avoid damage to biodiversity in its widest sense (i.e. the variety of species and habitats and their abundance and ecosystem functioning). Where there may be harmful environmental effects, planning authorities will need to be satisfied that any reasonable alternative sites (including alternative siting and design options) that would result in less harm, no harm or benefit have been fully considered. Proposals in statutory designated sites and sites containing protected species and habitats which are irreplaceable are unacceptable. All locational, siting and design options for avoiding damage to biodiversity should be exhausted.

- **Minimise (2)** – minimise damage to biodiversity through:

1. Maintaining the largest possible area of existing habitat supporting biodiversity and functioning ecosystems, particularly Section 7 habitats and species where present, by minimising development size and appropriate orientation on site, paying due regard to the potential for continued long term maintenance and management of retained areas to benefit biodiversity.
2. Ensuring that retained habitats continue to be well connected to adjacent habitats to provide connectivity for key species and ensuring that the favourable conservation status of local species populations is maintained;
3. Retaining existing features, develop a management plan for their future care (e.g., trees, hedgerows, species rich grasslands, heath, wetlands, ponds and freshwater habitats) and use appropriate buffers to protect these from construction and operational impacts;
4. Using proven innovative/creative solutions (where required) to minimise damage and maintain existing biodiversity features and ecosystems in tandem with robust monitoring and rectification strategies;

- **Mitigation/Restoration (3a)** - Where, after measures to minimise impact, biodiversity and ecosystems could still be damaged, or lost through residual impacts, the proposed development should mitigate that damage. Mitigation measures must be put in place to limit the negative effects of a development.

- **Mitigation (3b)** - Mitigation or restoration measures must be designed to address the specific negative effects by repairing damaged habitats and disturbed species. They should seek to restore in excess of like for like, accounting for disturbance and time lags for the recovery of habitat and species, and in every case, mitigation or restoration measures should seek to build ecosystem resilience within the site and where possible the wider area.

In designing mitigation measures where uncertainty exists, applicants should follow the precautionary principle and assume a significant effect. Off site compensation measures (as set out in step four below) should be considered as a last resort.

- **Compensation (4)** - When all the steps above have been exhausted, and where modifications, alternative sites, conditions or obligations are not sufficient to secure biodiversity outcomes further on site/immediately proximate, as a last resort off site compensation for unavoidable damage must be provided. This must be of significant magnitude to fully compensate for any loss.

- **Management (5)** - Each stage of the step wise approach must be accompanied by a long-term management plan of agreed and appropriate avoidance, minimisation, mitigation/restoration and compensation measures alongside the agreed enhancement measures. The management plan should set out the immediate and on going management of the site, future monitoring arrangements for all secured measures and it should clearly identify the funding mechanisms in place to meet the management plan objectives. The management plan must set out how a net benefit for biodiversity will be achieved within as short a time as possible and be locally responsive and relevant to local circumstances.

Paragraph 6.4.5 notes that development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a net benefit for biodiversity and improve, or enable the improvement, of the resilience of ecosystems (Section 6 Duty).

Caerphilly County Borough Council have their own local Green Infrastructure Strategy document which takes on board the principles of the PPW 12, and have applied them to a local level.

Caerphilly County Borough Council's *Green Infrastructure Strategy*

3.0

EXISTING GREEN INFRASTRUCTURE FEATURES

3.0 Existing Green Infrastructure Features

STATUTORY AND NON-STATUTORY SITES

Statutory Sites:

There are no statutory designated sites within or near the campus. There is one statutory site approximately 14km of the site, this being the River Usk. It is large linear ecosystem and acts as an important wildlife corridor. However there is unlikely to be any impacts due to the distance from the campus.

The campus development lies within 10km of the following sites that have been specifically designated for bats:

- Ruperra Castle and Woodland SSSI - it is a known nursery roost for Greater Horseshoe Bats, which are of national and international importance.
- The River Usk (Lower Usk) - the frequent tree cover along the river provided valuable cover for migration, roosting and feeding for several bat species including Daubenton's Bats.

The campus lies within 2km of the following statutory sites:

- Dan y Graig Quarry SSSI, Risca - designated for it's geological interest.
- Coed y Darren SSSI - designated for it criticality in understanding the geological evolution of the South Wales basin.
- Flatwood Meadows LNR - Contains some of the few remaining examples of species rich grasslands in the Sirhowy Valley.

Non-Statutory Sites:

The following SINCs are located within 2 km of the site:

- Monmouth to Brecon canal, 0.1km to the north.
- River Ebbw, 0.3km to the south of the site.
- Coed Mamgu, 0.3km to the north.
- River Sirhowy, 0.4km to the south-west.
- Mynydd y Lan Woodlands, Cwmcarn, 0.5km to the north-west.
- Darran Woodland, Fernlea, 0.8km to the west.
- Mynydd Machen, west Risca, 0.8km to the west.
- Mynydd y Lan, west of Cwmcarn, 0.9km to the west.

Ancient Woodland:

There are areas of Ancient Woodland within 2km of the college site, which the detailed list can be found in the Preliminary Ecological Survey produced by Acer Ecology.

ARBORICULTURE

A Tree Survey (Arboricultural Appraisal) has been undertaken by Arbtech Consulting Ltd (April 2023). A total of 35No. individual trees, 12No. groups of trees and 4No. hedgerows were surveyed. These include 10No. Category B and 43No. Category C Trees. No Category A trees were found on site.

Details of each of the trees surveyed can be found in the Schedule of Trees in the Tree Survey Report.

ECOLOGY

Acer Ecology have completed a Preliminary Ecology Appraisal (May 2023). The report included the following habitat assessments:

On Site Habitats and Vegetation:

The site itself consists of the following Phase 1 habitat elements and their value:

- Scattered broadleaved and coniferous trees - site value
- Amenity Grassland - site value
- Introduced shrub - site value
- Hedgerow with trees - high local
- Fence - site value
- Buildings - site value
- Hard standing - negligible value

Invasive Species:

There are no invasive species (Schedule 9 of the Wildlife and Countryside Act 1981) recorded on site during the ecological site visit.

Off-Site Habitats and Vegetation:

The off-site habitats surrounding the site largely consist of developed land, amenity grassland and urbanised environments. They are assessed as supporting low-grade and widespread habitats of value only within the immediate zone of influence (i.e. of very low ecological significance). The site does, however, lie 0.1km to the south of the Monmouth and Brecon Canal SINC, which forms an important linear corridor for a variety of species. The SINC is separated from the site by several roads and short dry sections, but still represents a significant length of wetland habitat.

The areas of amenity grassland are assessed as being a low-grade and widespread habitat of value only within the immediate zone of influence.

No particularly noteworthy plant species were recorded from these habitats during the current survey. The grassland areas are probably of some minor value for fauna such as foraging birds, bats, small mammals, and invertebrates, but are considered unlikely to be of any greater than average value for these species.

Protected and Notable Species:

No plant species, which individually are considered to be of either of national, regional or local significance were recorded on the site.

Via a date trawl, SEWBReC returned records of 49 rare or notable species in the local area, including bluebell and Welsh poppy.

Birds:

A moderate number of birds were recorded on site, including blackbird (Turdus merula), buzzard, goldfinch (Carduelis carduelis), magpie (Pica pica), raven (Corvus corax), and wood pigeon (Columba palumbus).

A defunct nest was recorded in a cypress tree beside the visitor's car park. The species of origin is unknown.

SEWBReC returned records of 25 priority bird species within 1km of the site. 23 birds listed as species of conservation concern were recorded within 1km of the site. SEWBReC also returned two birds listed as locally important species within 1km of the site, namely: buzzard (Buteo buteo) and British dipper (Cinclus cinclus gularis).

No birds listed as other bird species (i.e. invasive species) were recorded within 1km of the site.

The areas of introduced shrub and scattered broadleaved trees provide nesting and foraging

opportunities for a range of tree and shrub-nesting bird species, potentially including a range of UK BAP and Red List species which were recorded in this area; however, these features are widespread and common in the surrounding landscape, such as the Monmouth and Brecon Canal SINC 0.1km to the north of the site.

Bats:

Desk studies concluded that a total of 5 records of bat roosts were found within 1km of the site, including Common Pipistrelle bats. Together with records of foraging or commuting bats within 1km of the site.

The field investigation on site assessed all the trees on site for their suitability to support roosting bats. The majority of the scattered trees were semi-mature to mature in age, with no PRFs. They were therefore assessed as having negligible to moderate bat roost potential. The mature trees had a more likely chance of providing bat roosting, due to larger crevices or knot holes within the upper limbs of the trees.

The existing buildings on campus were assessed for bat roosting or the potential for roosting. No evidence of bat roosting were found in any of the buildings, however some of the building did have crevices which could potentially provide access and attract bats to roost.

The habitats surrounding the campus includes a railway lined with dense trees to the north, which may act as an ecological corridor for foraging and commuting bats, connecting the campus buildings to the wider landscape. The Ebbw River is located to the south-west of the site and is lined by trees which may be used by foraging and commuting bats to travel between the campus and the wider woodland landscape. These features make the area of moderate-quality for foraging and commuting bats.

Overall, the site is assessed as having low potential for commuting bats. The boundary of the site features hedgerows with trees that are considered to be suitable for foraging bats, however these features are minimal throughout the rest of the site. The site is considered to have moderate potential for commuting bats due to the number of suitable trees and hedgerows on-site and the number of records of bats on-site previously. However, the amenity grassland is heavily managed and is therefore considered unsuitable for foraging bats.

Badgers:

SEWBReC returned two badger records within 1km of the site. This included:

- An observation of a dead individual some 0.4km from the proposed development site.
- Observation of a foraging individual some 0.8km from the proposed development site.

The nearest record was made in 2021, approximately 0.4km to the development site.

No setts or other signs of badgers were recorded on site.

Although no evidence of badgers was recorded on site, there is considered to be some limited potential for them to venture onto the site from the surrounding landscape to forage sporadically. Badgers may pass through occasionally when foraging or commuting from Waunfawr Park, which lies 0.1km to the south of the site. They may also commute from the suitable surrounding landscape features, such as large areas of grassland, mature woodland, and agricultural pastures lined by hedgerows. However, due to the high levels of disturbance currently experienced on site and the urbanised nature of the site, this is considered to be highly unlikely.

Reptiles:

Desktop studies returned two records of reptiles within 1km of the site. These included a record of slow-worm (Anguis fragilis), and one record of common lizard (Zootoca vivipara).

No direct evidence of reptiles was recorded on site.

The majority of the site is considered to be largely unsuitable for most reptiles due to the lack of suitable refuges and the urban nature of the site. The boundaries between the amenity grassland and intact hedgerows are superficially suitable for reptiles; however, it is considered unlikely that these areas would contain a significant reptile population due to the limited opportunities for basking.

Other Mammals:

The desk study returned four records of other mammals within 1km of the site, comprising: one common hedgehog (Erinaceus europaeus), one brown hare (Lepus europaeus), two eastern grey squirrel (Sciurus carolinensis) within 1km of the site.

The field study found no incidental sightings or field signs of other mammals were recorded on site. However it is likely that hedgehogs (Erinaceus europaeus) are present on site, occurring either as resident species or whilst foraging and/or commuting. The intact hedgerows surrounding the site are considered to provide valuable foraging habitat for hedgehogs.

Invertebrates:

The ecological desk study returned 34 notable invertebrate records from within the study area, comprising:

- 19 priority invertebrate species were recorded within 1km of the site.
- 4 invertebrate listed as species of conservation concern were recorded within 1km of the site.
- 11 invertebrate listed as locally important species were recorded within 1km of the site.

During the field study on site no incidental observations of invertebrates were recorded during the survey.

Due to the habitats present it is assumed the site will support an assemblage of invertebrates but is unlikely to support notable or rare species.

SITE LANDSCAPE APPRAISAL

Much of the green infrastructure situated within the campus consists of informal lawn areas, alongside landscaped vegetation and several trees.

An area of semi-public space is located at the entrance to Block X and provides a successful entrance to the campus. There are also a number of trees located on campus, although none are protected by a TPO. An arboricultural survey has been completed to assess the quality of these trees

Much of the site boundary is secured by residential properties. The edges facing the road are less secure and are bounded by a metal fence.

- Site boundary
- Existing vegetation
- Landscaped areas
- Parking areas
- Potential contamination
- ILS campus garden
- Key views out of the site
- Fencing
- Low-lying wall
- Low-lying wall (with hedgerow)
- Brick wall
- Canopy
- Bin store location

Existing landscape on campus [1:2500 @ A3]

4.0

THE STEP-WISE APPROACH AND PROPOSED GREEN INFRASTRUCTURE STRATEGY

4.0 The Step-Wise Approach and Proposed Green Infrastructure Strategy

THE STEP-WISE APPROACH

Section 6.2 of Planning Policy Wales (PPW 12), describes how green infrastructure is proposed to be incorporated into the proposals. The step-wise approach has been followed as follows:

Avoidance:

The site is made up of developed land with very little vegetation to the centre of the site. The majority of the proposed development avoids the periphery planted areas to the boundary of the site.

Minimise :

Whilst trees and hedgerows have been maintained wherever possible, the central part of the site will need tree and shrub loss to make way for the phased development.

Mitigation/Restore:

The following mitigation measures are proposed for the loss of trees and vegetation.

- Woodland under-storey shrub planting, including smaller trees, shade tolerant shrubs, bulbs and grasses.
- Additional tree planting along key lines (north to south and east to west), to enhance the green infrastructure in and around the site.
- Additional native hedgerows throughout the site.
- A tree replanting ratio of 1:3 for the loss of any specimen trees.
- A network of blue infrastructure throughout the site.
- Plants for Pollinators planting strategy.

Compensation:

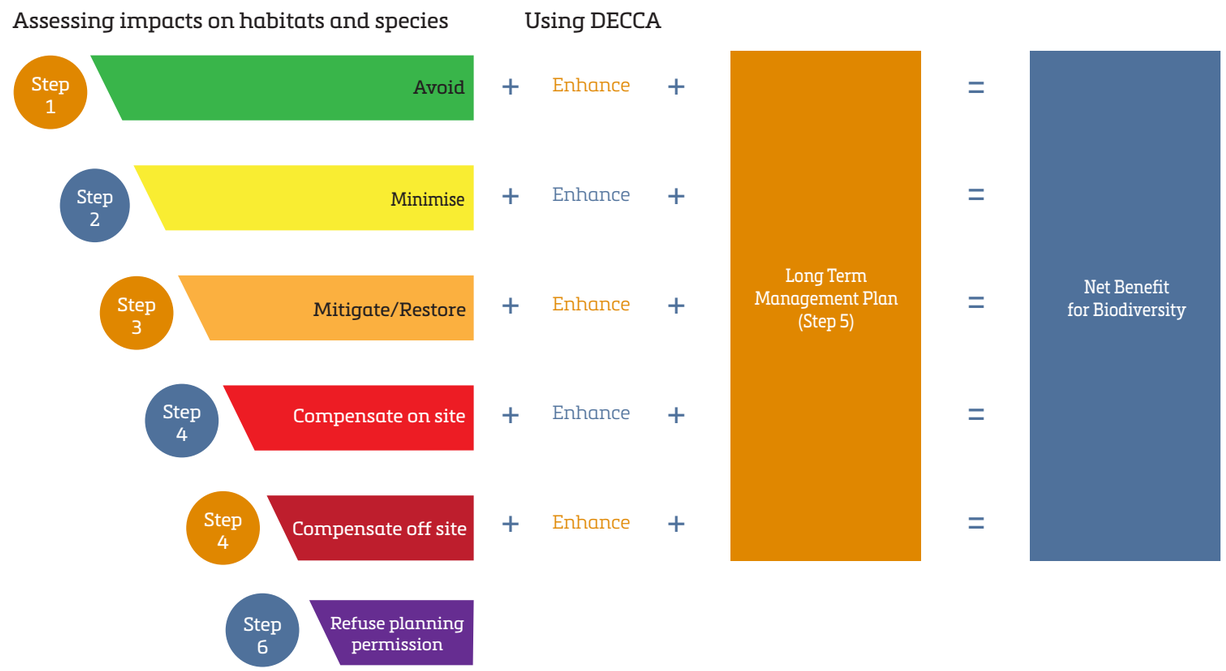
Further compensation measures, if required can be implemented off site, such as in the neighbouring Park or Rivers.

Management:

A Landscape and Ecological Management Plan will be produced for the project, listing out all the above, together with optimal timings for implementation and ongoing management of the site.

The LEMP will set out how a net benefit for biodiversity will be achieved within as short a time as possible and be locally responsive and relevant to local circumstances.

The LEMP will be reviewed and updated at each stage of the step-wise approach, to endure it is fit for purpose.



The Step-Wise Approach Diagram

Existing boundary vegetation enhanced
Private rear gardens linking the wider GI
Waunfawr Park
Local water bodies of significance on GI

The primary green and blue link through campus
Secondary green and blue links through campus
The campus 'heart'
Key pedestrian or vehicle routes into the campus

Site wide Green Infrastructure Strategy Plan

GREEN INFRASTRUCTURE STRATEGY

Green Infrastructure (GI) is defined by the Town and Country Planning Association as follows:

Green infrastructure is a network of multi-functional green space and other green features, urban and rural, which can deliver quality of life and environmental benefits for communities.

Green infrastructure is not simply an alternative description for conventional open space. It includes parks, open spaces, playing fields, woodlands – and also street trees, allotments, private gardens, green roofs and walls, sustainable drainage systems (SuDS) and soils. It includes rivers, streams, canals and other water bodies, sometimes called 'blue infrastructure'.

Key features:

The key features of green infrastructure are that it is a network of integrated spaces and features, not just individual elements; and that it is 'multi-functional' – it provides multiple benefits simultaneously.

These can be to:

- support people's mental and physical health
- encourage active travel
- cool urban areas during heat waves
- attract investment
- reduce water run-off during flash flooding
- carbon storage
- provide sustainable drainage.

The extent to which green infrastructure provides these benefits depends on how it is designed and maintained, and the maturity and health of the elements (such as trees) that form it.

ENHANCEMENTS AND MANAGEMENT

The landscape design is being developed to connect with the wider green infrastructure, which can be achieved by 'designing in' wildlife corridors and permeable boundaries where appropriate.

It aims to maximise links by considering how these can contribute and integrate at local and national levels. Where possible create uninterrupted corridors of planting/waterways which run from within the site to connect with those that exist, or are planned, beyond.

Some specific enhancement measures which are proposed for the Coleg Gwent Crosskeys Campus site, include:

- A strong tree planting strategy, planting native species as well as fruit bearing trees.
- Enhancing periphery planting zones, which brings the essence of woodland, hillside and native areas into the site.
- Adding local origin species, as per the Caerphilly Local Nature Plan.
- SuDS features such as ponds, swales and bioretention ponds (rain gardens) will be implemented throughout the site, which will help with water management on site, together with adding a range of interesting plant species.
- Rich grass areas, where the management regime allows for strengthening species.
- Implementation of bird and bat boxes (particularly swift boxes) are proposed with the new and existing landscape.
- Creating new habitats to encourage wildlife on the site including log piles, hiberniculums, bee/bug boxes, in locations as advised by ecologists. Together with hedgehog friendly fencing or 'hedgehog highways' allow them ease of movement.
- A Landscape and Ecological Management Plan (LEMP) will be prepared for the site.

SOFT LANDSCAPE MATERIALS AND ECOLOGICAL ENHANCEMENTS

The soft landscape design will aim to provide a planting structure that brings seasonal colour and interest to break up the hard surface finishes and enhance biodiversity across the site. New native tree planting, wildflowers, areas of native and ornamental shrubs will aid the visual and ecological enhancement. Existing trees and habitat area have been retained wherever possible.

Recommendations from the ecology report have been incorporated in the landscape design such as bird boxes, insect hotels, a hibernaculum, log piles and native planting to enhance biodiversity.

HARD LANDSCAPE MATERIALS

The landscape plan will focus on utilising a number of mixed material surfaces to provide varying spatial, physical and contextual experiences. These include contemporary block paving to the entrance plaza, permeable block paving to pathways, asphalt to vehicular zones and resin bound gravel to the social spaces on campus.

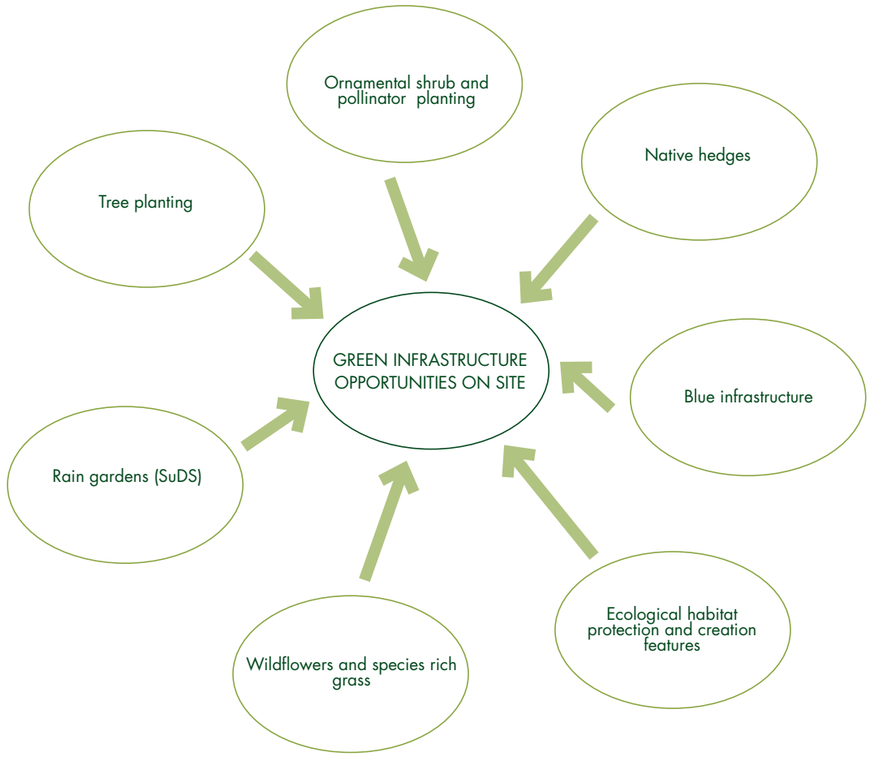
SITE SECURITY AND PEDESTRIAN CIRCULATION

Secure fencing has been considered to ensure student, staff and visitor safety is maintained at all times. Where possible, the secure line is softened by planting. Pedestrian access will be prioritised through the sites north-east entrance from Risca Road, and directed to the main entrances of the existing and proposed buildings.

The provision of cycle facilities has been considered for staff and around the campus.

COMMUNAL AREAS

The scheme includes external break out spaces for students and staff to use during breaks, or for outdoor lectures or dining when the weather allows. Seating features include timber tables, benches, teaching amphitheatre and covered areas.



NATIVE AND NON-NATIVE TREE PLANTING

To provide commuting opportunities bats, etc. as well as providing seasonal interest for the campus

FORMAL AND NATIVE HEDGE PLANTING

To provide a food source for wildlife as well as protection and habitat for commuting wildlife.

ORNAMENTAL SHRUB AND POLLINATOR PLANTING

To provide colour and interest, whilst also promoting biodiversity.

PLANTING FOR BLUE INFRASTRUCTURE FEATURES

Planting to aid water cleansing and promote biodiversity.

WILDFLOWERS AND SPECIES RICH GRASS

Improving biodiversity on the campus.

ECOLOGICAL HABITAT PROTECTION AND CREATION FEATURES

The ecological guidance outlined within this document has been set out and co-ordinated with the Acer Ecology Preliminary Ecological Appraisal of 2023, together with further recommendations by the Ecologist as part of the design process.

The findings of the reports are that the development land within the campus has moderate ecological value, with many features present to offer good conditions for nesting birds and roosting bats.

The following recommendations are likely to be secured through planning conditions. The implementation of these recommendations will ensure compliance with the Planning Policy Wales version 11 (Welsh Government, 2021)31, TAN 5 Nature Conservation and Planning (2009), Section 6 and 7 of the Environment Wales Act, 2016, the Conservation of Habitats and Species Regulations 2017 which has been updated by the Conservation of Habitats and Species (Amendment) (EU Exit) ['CHSAEU'] Regulations 2019 and the Caerphilly County Borough Local Development Plan (2021).

The recommendations aim to avoid or minimise adverse impacts on the environment and protected species, mitigate and compensate for losses where damage is unavoidable and promote opportunities to enhance biodiversity. There is a requirement that developments must provide net benefit for biodiversity.

Reptiles

No live reptiles were noted during the assessment, although there is potential for them to be present. On site habitat includes areas of grassland, scrub and bare earth.

The site itself can be developed to encourage such species in future and to aid in their conservation. It is recommended to construct a hibernaculum for use by reptiles, newts and other animals in a suitable location on the site as an enhancement for biodiversity. Such a feature will encourage reptiles to colonise the site in the future.

Amphibians

No newts were found on site and due to the distance from the River Ebbw, it is unlikely they visit or use the campus.

Whilst no newts were found on site, careful consideration must be made during the works to avoid potentially harming or disturbing any reptiles or amphibians that may move on to site. If any such species are found during development works, all works must cease and a suitably qualified ecologist contacted for appropriate advice.

All reptiles and great crested newts are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), with additional protection of great crested newts under Schedule 2 of the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) 2019, both reptiles and great crested newts are therefore protected under these provisions.

It is recommended to construct a hibernaculum in a suitable location on the site as an enhancement for biodiversity.

Bats

Bats use trees as well as buildings for roosting, where they will exploit gaps, cracks and crevices in the bark. Trees or buildings did not display any obvious signs of bat roosting.

The habitats present on site are likely to attract a variety of invertebrate fauna, suggesting that the site is likely to be used by foraging bats. Treelines are used for commuting purposes, and open areas/ waterbodies are used for feeding by some species.

Bat boxes should be placed near the existing tree lines of the site to promote commuting bat lines. These can be placed on poles or on building facades, at a minimum height of 4m, and to be south or south-east facing. Any proposed lighting scheme should be sensitive to bats, and bat boxes should not be placed near to existing or proposed lighting columns. Over time, additional bat boxes can be placed on the new trees, once more established.

Birds

Habitats on site, such as the treeline and scrub are considered to be suitable for supporting birds of various sizes and their breeding activities. During the time of the survey no nesting or breeding activity was noted.

However it is recommended that bird boxes be placed near to the existing trees on site. Boxes can be placed on poles or dierectly on mature trees at a minimum height of 4m. Boxes should not face south. Over time, additional bird boxes can be placed on the new trees, once more established.

Works to Trees

As the masterplan proposals develop, mature trees with low or moderate potential for supporting roosting bats, which are proposed for either felling or other arboricultural works (e.g. pruning, lopping, crown reduction etc.), should be subject to dawn re-entry surveys to better establish and quantify their use by roosting bats.

Dormice

Hazel dormice are associated with well-defined, connected hedgerows that link to further suitable habitats elsewhere in the landscape. No evidence of dormice was recorded during the survey. Enhancing existing and new hedgerows will attract dormice to the campus.

Good Construction Practices for Badgers and Hedgehogs

Any open trenches, steep sided holes and excavations associated with the development will either be closed and covered at night or a means of escape provided (e.g. plank or reinforced plywood board over 60cm wide at no greater angle than 30° or gently graded site wall of the same angle or equivalent) to prevent any badgers, hedgehogs or other animals falling in and becoming trapped). Any exposed pipes and trenches must be checked for trapped wildlife each morning before starting construction activities.

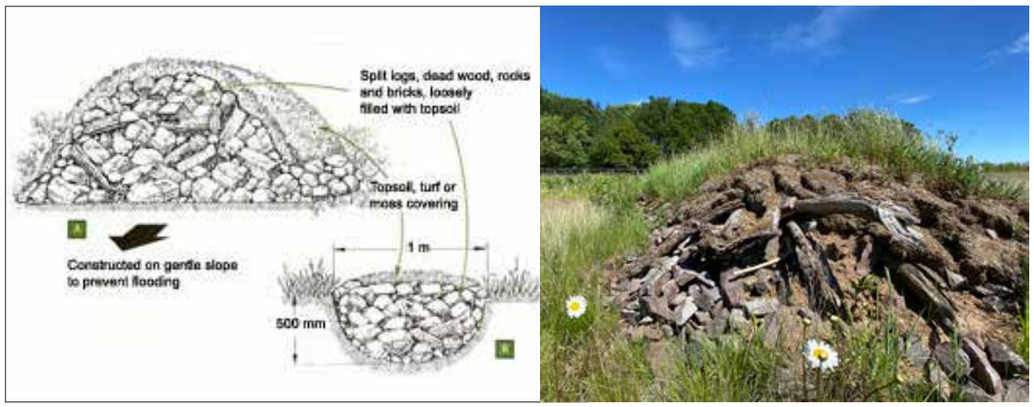
If there is a significant delay to development of the site (i.e. more than 12 months) an updated badger survey should be undertaken to determine if any new active setts have been created within the site.

Fences must include gaps in them for hedgehogs to commute. Hedgehog highways can be placed into fence panels.

Otter

No direct mitigation is likely to be required; however, the following mitigation should be implemented in order to minimise disturbance:

- Any and all lighting will be directed away from The Ebbw River to minimise disturbance as a result of light.
- There will be no night-time working.
- All materials will be stored within a secure otter proof fenced compound.
- Any excavations will be covered overnight or where this is not possible, a means of escape will be provided.
- An appropriately experienced ecologist will be "on call" for the duration of the project in the unlikely event that an otter or otters are found on site, in which case the relevant work will cease immediately, NRW will be contacted. A development licence may be required prior to any further work being carried out. No further work will be undertaken without the approval of NRW.



Hibernaculum

Wildlife Underpass

Bug and bee hotels

Hedgehog friendly fencing

Bird boxes

Bat boxes

Log piles

Roof top bee hives

5.0

LANDSCAPE STRATEGY GENERAL ARRANGEMENT PLANS

Landscape Masterplan
1 : 750

N

Landscape Legend

- **Overall Site Boundary Line**
- **Fence Lines**
  Refer to Site Security and Fencing, dwg no. 09040

Soft Landscape
Refer to Soft Landscape Plan, dwg no. 09020

- **Existing Trees Retained and Protected**
  Refer to Tree Management Plan, dwg no. 09010.
- **Proposed Tree**
  Either 14-16cm, 16-18cm or 18-20cm girth.
  Min. 1.8m clear stem double staked, fitted with aeration / irrigation ring to rootball.
- **Proposed Ornamental Shrub and Groundcover Planting**
- **Proposed SUDs - Rain Garden**
- **Proposed Grass**
- **Proposed Wetland Grass**

Hard Surfaces
Refer to Hard Landscape and Street Furniture Plan, dwg no. 09030.

- **Proposed asphalt to vehicular areas**
- **Proposed asphalt to pedestrian areas**
- **Proposed block paving**
- **Proposed permeable block paving**
- **Proposed resin bound gravel**
- **Proposed MUGA surfacing**
- **Proposed tactile paving to crossing points**

Street Furniture
Refer to Hard Landscape and Street Furniture Plan, dwg no. 09030.

- **Proposed Timber Bench**
- **Proposed Bollards**
- **Proposed Cycle Shelter**
- **Proposed Tensile Canopy and Picnic Benches**
- **Proposed Growing Gardens**

Phasing Legend

- **Phase 1 Boundary**
- **Phase 2 Boundary**
- **Phase 3 Boundary**
- **Phase 4 Boundary**

NOTE:

- Do not scale from this drawing.
- Drawing to be read in conjunction with all other relevant drawings and documents.
- All dimensions should be checked on site, prior to starting work on site.
- Contractor to determine exact location of ervices/drainage, this should to be confirmed on site prior to commencement of works to avoid tree pit / services conflicts.
- Contractor to allow for thermoplastic markings of parking bays.
- For external lighting details refer to M&E Engineers drawings and specifications.
- For drainage details refer to Civil Engineers drawings and specifications.
- All build-ups, foundations and base formations to Engineers design and specifications.
- All manholes within paving areas to be recessed. Manhole covers are to withstand the appropriate loading class within any given area. For Manhole cover specification, refer to Engineers schedules.
- Any ecology works to be completed in co-ordination with a qualified Ecologist.

STATUS	REV	DATE	DESCRIPTION
PL	PL02	12/12/24	Issued for PAC
S1	P03	06/12/24	Draft for team review
S1	P02	29/11/24	Issued for team co-ordination
S1	P01	27/11/24	Draft Issue

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ORIGINATOR NO
156917

CONSULTANT
STRIDE TREGLOWN
www.stridetreglown.com

PROJECT
Coleg Gwent
Crosskeys Campus, Crosskeys

DRAWING TITLE
Landscape Masterplan

STATUS CODE
PL - PLANNING

SCALE
1 : 750
@A1

PROJECT - ORIGINATOR - FUNCTION - SPATIAL - FORM - DISCIPLINE - NUMBER
155663-STL-XX-XX-DR-L-09000

STATUS_REVISION
PL_PL02

N

pm am

NOTES

- Drawing to be read in conjunction with Arboricultural Survey
- All tree works are to comply with the recommendations of this document and are to be carried out by a suitably qualified arboriculturalist.
- All works are to be carried out in accordance with guidance from BS 5837:2012 Trees in relation to design, demolition and construction and BS 3998:2010 Recommendations for Tree Work.

1. The root protection area is the area (m^2) surrounding a tree which contains sufficient rooting volume to ensure the survival of the tree.

Excavation in protected area - Refer : BS 3998 : Recommendations for tree work
- Method: By hand or approved mechanical machinery (air spade) under arboricultural supervision.
- Backfill as soon as possible or temporarily line with polyethylene sheet to reduce evaporation.
- Outside protected area: Give notice of roots exceeding 25 mm and do not cut without approval from Arboricultural Consultant.

Cutting:
- Make clean smooth cuts with no ragged edges.
- Pare cut surfaces smooth with a sharp knife.
- Treatment of cut roots: To Arboricultural Consultants recommendations

Backfill:
As dug material. Copious watering may alleviate further stress and reduce further root dieback due to dessication. (Refer to BS 3998 : Reccomendations for tree work)

2. Care must be taken to protect the existing trees to be retained (As listed in the Arboricultural survey), to a level which ensures the trees, shape, form and healthy survival.

Precautions required to be taken during the demolition and construction stage of works should be in accordance with BS 5837 2012 : Trees in relation to design, demolition and construction, including:
- Prevention of physical damage to roots by soil compaction or severing.
- Provisions for water and oxygen to roots systems.
- Allowing for future growth to the root systems.
- Preservation of the soil structure around root system at suitable bulk density for root function.
(Refer : BS 5837 :2012 Trees in relation to design, demolition and construction).

3. Removal of trees: To standard of BS 3998
- Identification: Clearly mark trees to be removed, with spray paint marker and tag on trunk..
- Safety: Comply with HSE/ Arboriculture and Forestry Advisory Group Safety Guides.
- Felling: As close to the ground as possible. All work to be undertaken by a qualified tree surgeon.
- Stumps: Remove to a minimum depth of 450 mm below ground level or to a level set by the Structural Engineer in the specification, whatever the greater.
- Work near retained trees: Take down trees carefully in small sections to avoid damage to adjacent trees that are to be retained, where tree canopies overlap and in confined spaces generally.

Removing small trees, shrubs, hedges and roots: To standard of BS 3998
- Identification: Clearly mark trees to be removed, with spray paint marker and tag on trunk.
- Small trees, shrubs and hedges: Cut down.
- Roots: Grub up and dispose of without undue disturbance of soil and adjacent areas.
- Safety: Comply with HSE/ Arboriculture and Forestry Advisory Group Safety Guides.

4. Should a tree be damaged or destroyed, the contractor will be liable for any Local Authority penalties and may need to replace the tree either with a healthy, semi-mature tree of an identical type /species, as defined by the National Plant Specification, or whatever age/ type of tree is specified by the Local Authority, whichever is the more onerous.

5. No construction works to be commenced in proximity of existing retained trees until a full method statement describing all actions to be taken for each individual tree is submitted by the contractor and agreed in writing by an approved Arboriculturist and Local Authority.

Landscape Legend

Overall Site Boundary Line

Existing Trees Retained and Protected
To BS 5837:2012
Refer to Tree Constraints Plan by Arbtech Consulting Ltd, dwg no. Arbtech TCP 01.

Existing Trees RPA
Refer to Tree Constraints Plan by Arbtech Consulting Ltd, dwg no. Arbtech TCP 01.

Existing Trees to be Removed
as part of the development.
Refer to Tree Management Schedules for quantities.

Existing Planting to be Removed
as part of the development

Proposed Tree
Refer to Soft Landscape Plan, dwg no. 09040.
Refer to Tree Management Schedules for quantities.

NOTE:
Tree numbers as per Tree Constraints Plan by Arbtech Consulting Ltd, dwg no. Arbtech TCP 01.

Phasing Legend

Phase 1 Boundary

Phase 2 Boundary

Phase 3 Boundary

Phase 4 Boundary

TREE MANAGEMENT SCHEDULES

Trees Removed	
Tree no.	**Phase Demolished**
G2a	Phase 1
T5	Phase 1
T6	Phase 1
T7	Phase 1
T8	Phase 1
T9	Phase 1
T10	Phase 1
T17	Phase 1
T18	Phase 1
T19	Phase 1
T20	Phase 1
T21	Phase 1
T22	Phase 1
T23	Phase 1
T24	Phase 1
T25	Phase 1
T26	Phase 1
T27	Phase 1

18 no. TOTAL in PHASE 1

T1	Phase 2
T2	Phase 2

2 no. TOTAL in PHASE 2

T3	Phase 3
T37	Phase 3

2 no. TOTAL in PHASE 3

Trees Removed	
Tree no.	**Phase Demolished**
G1	Phase 4
G2b	Phase 4
G2c	Phase 4
T11	Phase 4
T12	Phase 4
T13	Phase 4
T14	Phase 4
T15	Phase 4
T16	Phase 4

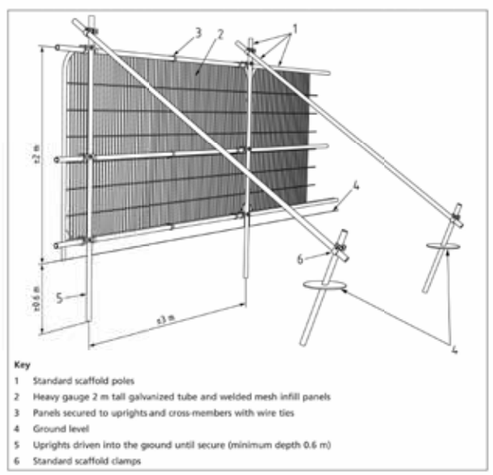
9 no. TOTAL in PHASE4

G9	Final - masterplan/campus
G10	Final - masterplan/campus
G12	Final - masterplan/campus
T29	Final - masterplan/campus
T32	Final - masterplan/campus
T35	Final - masterplan/campus

6 no. TOTAL in Final - masterplan/campus

TOTAL : 37

Trees Proposed	
Phase Created	**Count**
Phase 1	31
Phase 2	14
Phase 3	31
Phase 4	48
Final - masterplan/campus	66
TOTAL :	**190**



Key
1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the gound until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

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S1	P02	29/11/24	Issued for team co-ordination
S1	P01	27/11/24	Draft Issue

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ORIGINATOR NO
156917

CONSULTANT
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PROJECT
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Crosskeys Campus, Crosskeys

DRAWING TITLE
Tree Management Plan

STATUS CODE
PL - PLANNING

SCALE
1 : 750
@A1

PROJECT - ORIGINATOR - FUNCTION - SPATIAL - FORM - DISCIPLINE - NUMBER
155663-STL-XX-XX-DR-L-09010

STATUS_REVISION
PL_PL02

N

pm am

Landscape Legend

Overall Site Boundary Line

Soft Landscape

Existing Trees Retained and Protected
Refer to Tree Management Plan, dwg no. 09010

Proposed Tree
Either 14-16cm, 16-18cm or 18-20cm girth.
Min. 1.8m clear stem double staked, fitted with aeration / irrigation ring to rootball.

Proposed Hedge
5Ltr stock planted in staggered row at 200mm centres (5 plants per linear metre), staked within prepared soil bed and 50mm bark mulch surface dressing.

Proposed or Improved Ornamental Shrub and Groundcover Planting
3-5L stock, planted in prepared 300mm topsoil over 300mm sub-soil with 50mm bark mulch.

Proposed SUDs - Rain Garden
400mm bio-retention soil, over a drainage layer as specified by Engineers

Proposed Wetland Grass Mix

Proposed Grass

Proposed Growing Gardens

Phasing Legend

Phase 1 Boundary

Phase 2 Boundary

Phase 3 Boundary

Phase 4 Boundary

NOTE:

- Do not scale from this drawing.
- All drawings to be read in conjunction with latest versions of Architecture & Engineers details & specifications.
- Refer to Soil Planting Profiles, dwg no. 09051.
- Refer to Tree Planting Detail, dwg no. 09052.
- Main contractor to determine exact location of services/drainage, this should to be confirmed on site prior to commencement of works to avoid tree pit / services conflicts.
- All soil is subject to detailed testing and analysis and will be in accordance with the soft landscape specification.
- All treatment of softwork areas to comply to BS4428 Code of Practice for general landscape operations.
- All native shrub & hedge species plant type supplied for designated areas are to be determined by the proposed planting season. (ie bareroot or container grown stock).
- Soil requirements in accordace with BS3882:2015.
- Contractor shall ensure adqueate time allowed for procurement of all plants and planting materials.

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DRAWING TITLE
Soft Landscape Plan

STATUS CODE
PL - PLANNING

SCALE
1 : 750
@A1

PROJECT - ORIGINATOR - FUNCTION - SPATIAL - FORM - DISCIPLINE - NUMBER
155663-STL-XX-XX-DR-L-09020

STATUS_REVISION
PL_PL02

Landscape Legend

- **Overall Site Boundary Line**
- **Fence Lines**
  Refer to Site Security and Fencing, dwg no. 09040

Hard Surfaces

- **Proposed asphalt to vehicular areas**
  to Engineers details and specifications.
- **Proposed asphalt to pedestrian areas**
  to Engineers details and specifications.
- **Proposed block paving**
- **Proposed permeable block paving**
- **Proposed resin bound gravel**
- **Proposed MUGA surfacing**
- **Proposed tactile paving to crossing points**

Street Furniture

- **Proposed Timber Bench**
- **Proposed Bollards**
- **Proposed Cycle Shelter**
- **Proposed Tensile Canopy and Picnic Benches**
- **Proposed Growing Gardens**

Phasing Legend

- **Phase 1 Boundary**
- **Phase 2 Boundary**
- **Phase 3 Boundary**
- **Phase 4 Boundary**

NOTE:

- Do not scale from this drawing.
- Drawing to be read in conjunction with all other relevant drawings and documents.
- All dimensions should be checked on site, prior to starting work on site.
- Contractor to determine exact location of ervices/drainage, this should to be confirmed on site prior to commencement of works to avoid tree pit / services conflicts.
- Contractor to allow for thermoplastic markings of parking bays.
- For external lighting details refer to M&E Engineers drawings and specifications.
- For drainage details refer to Civil Engineers drawings and specifications.
- All build-ups, foundations and base formations to Engineers design and specifications.
- All manholes within paving areas to be recessed. Manhole covers are to withstand the appropriate loading class within any given area. For Manhole cover specification, refer to Engineers schedules.
- Any ecology works to be completed in co-ordination with a qualified Ecologist.

STATUS	REV	DATE	DESCRIPTION
PL	PL02	12/12/24	Issued for PAC
S1	P03	06/12/24	Draft for team review
S1	P02	29/11/24	Issued for team co-ordination
S1	P01	27/11/24	Draft Issue

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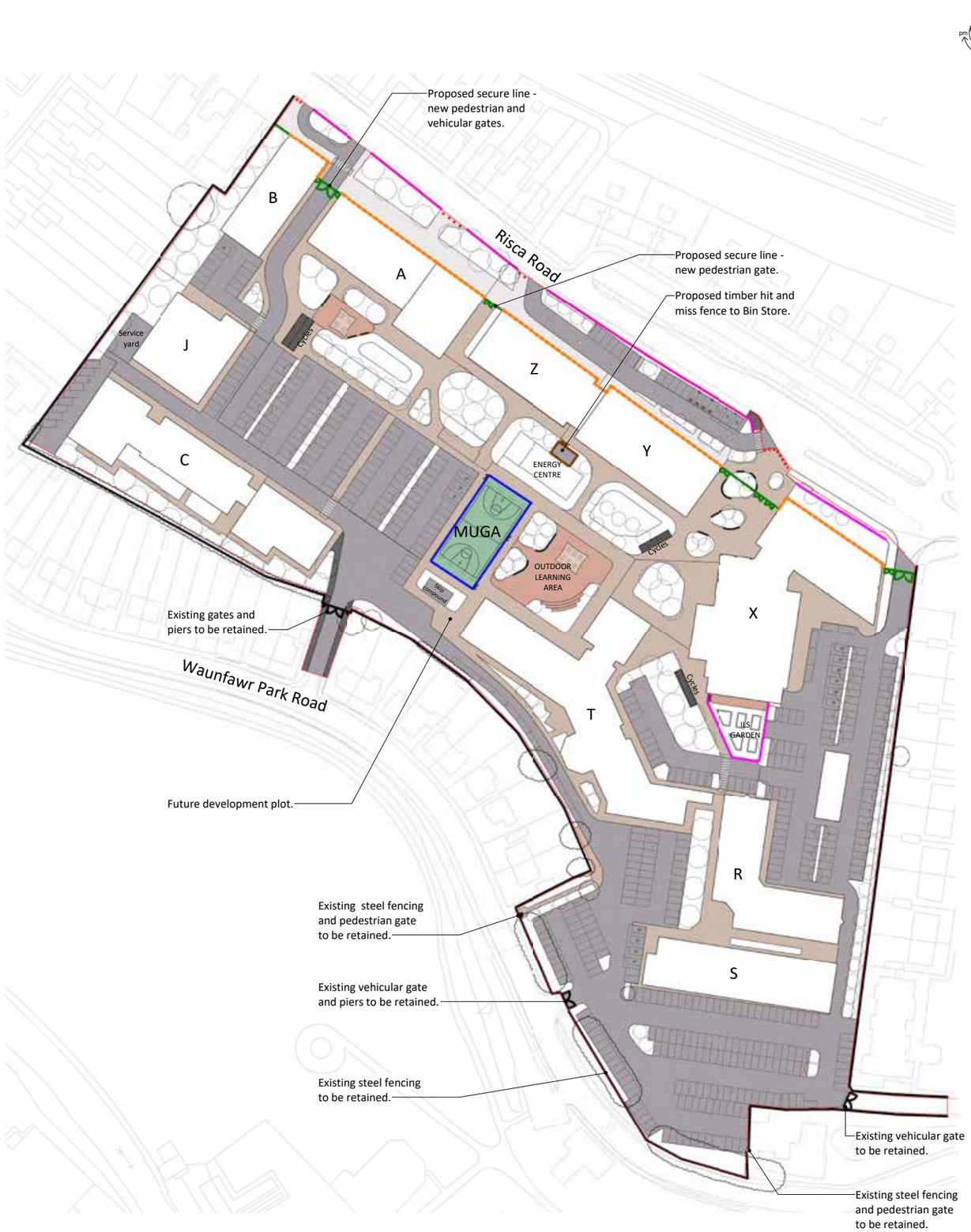
DRAWING TITLE
Hard Landscape and Street Furniture Plan

STATUS CODE
PL - PLANNING

SCALE
1 : 750
@A1

PROJECT - ORIGINATOR - FUNCTION - SPATIAL - FORM - DISCIPLINE - NUMBER
155663-STL-XX-XX-DR-L-09030

STATUS_REVISION
PL_PL02



Landscape Legend

Overall Site Boundary Line

Fencing Types

- **Existing Fence Line Retained**
- **Proposed Steel Fence 1.8m high** with matching gates
- **Proposed Weld Mesh Fence 3.0m high to MUGA** with matching gates
- **Proposed Timber Hit and Miss Fence to Bin Store** 1.8 m high, with matching gates
- **Proposed Metal Vertical Bar Railing** 1.2m high
- **Proposed Bollards**
- **Building facade to act as secure line**

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PL	PL02	12/12/24	Issued for PAC
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DRAWING TITLE
Site Security and Fencing

STATUS CODE
PL - PLANNING

SCALE
1 : 750
@A1

PROJECT - ORIGINATOR - FUNCTION - SPATIAL - FORM - DISCIPLINE - NUMBER
155663-STL-XX-XX-DR-L-09040

STATUS_REVISION
PL_PL02

Phase 0 Existing
1 : 1000

Construction of Block Y.
Demolition of Block B.

Phase 1
1 : 1000

Construction of new Block Z
and extension of Block C.

Phase 2
1 : 1000

Demolition of Old Block Z, K, F,
E, A1 and Block B Boiler House.
Construction of new Block B

Phase 3
1 : 1000

Construction of new Block A
Demolition of Blocks A2 and G.

Phase 4
1 : 1000

Enhanced and new planting across campus
and parking bays rearranged.

Final - Masterplan / Campus
1 : 1000

STATUS	REV	DATE	DESCRIPTION
PL	PL02	12/12/24	Issued for PAC
S1	P03	06/12/24	Draft for team review

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PROJECT
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Crosskeys Campus, Crosskeys

DRAWING TITLE
Landscape Phasing

STATUS CODE
PL - PLANNING

SCALE
1 : 1000
@A0

PROJECT - ORIGINATOR - FUNCTION - SPATIAL - FORM - DISCIPLINE - NUMBER
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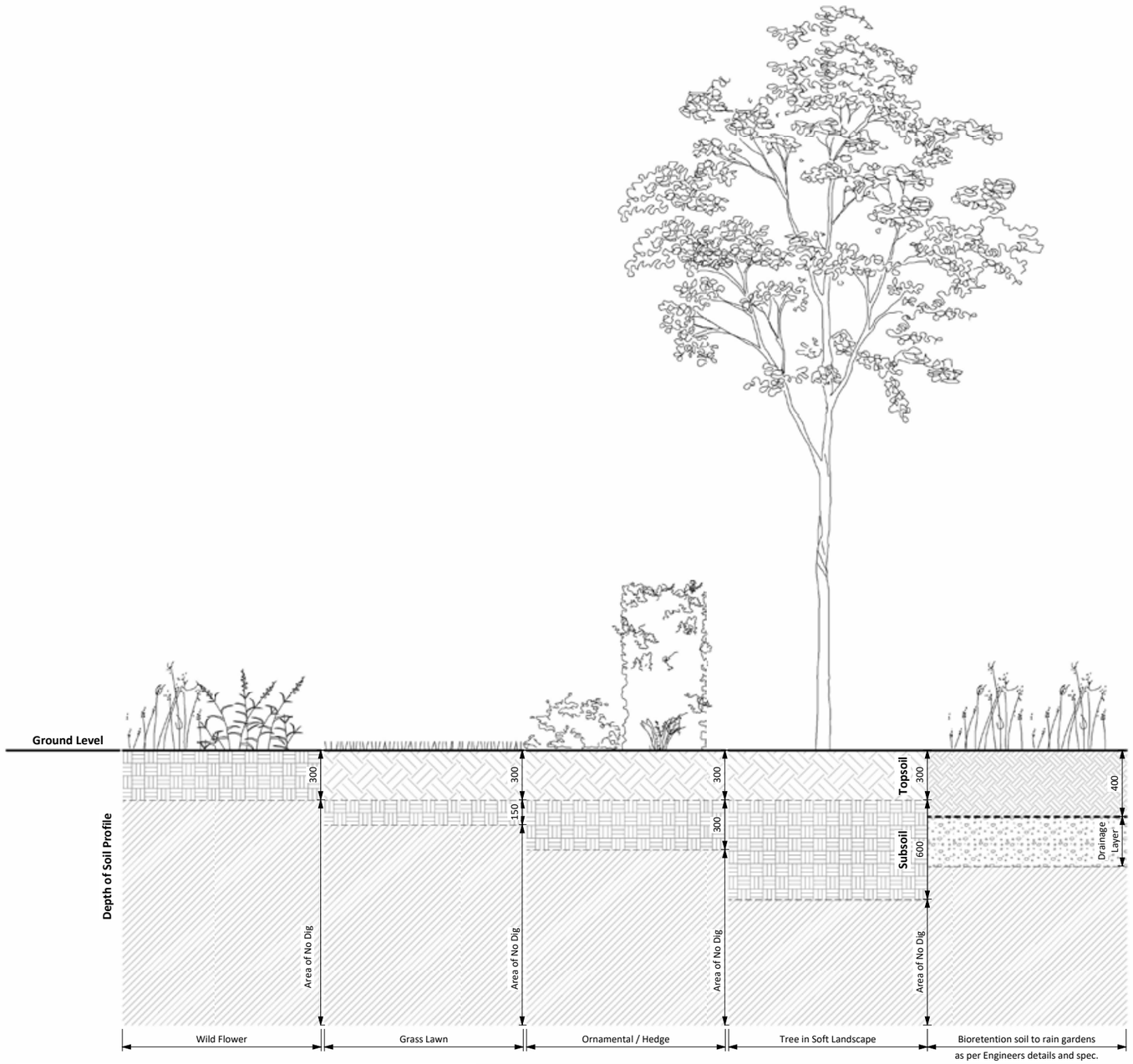
STATUS_REVISION
PL_PL02



TYPICAL SOIL PROFILES FOR SOFT LANDSCAPE - BS 3882:2015
SCALE 1:20

STATUS	REV	DATE	DESCRIPTION
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S1	P03	06/12/24	Draft for team review

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PROJECT
Coleg Gwent
Crosskeys Campus, Crosskeys

DRAWING TITLE
Soil Planting Profiles, inc. rain gardens

SUITABILITY STATUS
PL - PLANNING

SCALE
1 : 20
@A2

PROJECT - ORIGIN. - FUNCTION - SPATIAL - FORM - DISCIPLINE - NUMBER
155663-STL-XX-XX-DR-L-09051

STATUS_REVISION
PL_PL02

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