“Since 2013 the BID and its partners have been purposely investing in and delivering public realm / GI improvements across Manor Royal.”

SECTION 2 - WHAT & WHERE GREEN INFRASTRUCTURE

WITHIN MANOR ROYAL & ITS CONTEXT

GI is broadly defined as a network that includes various elements *"such as street trees, green roofs and walls, parks, private gardens, allotments, sustainable drainage systems, and wildlife areas. It also encompasses woodlands, wetlands, and natural flood management systems, functioning across both local and landscape scales. Linear elements of GI include roadside verges, green bridges, field margins, rights of way, access routes, and canals or rivers"* (Natural England).

This general definition from Natural England sets the foundation for understanding the GI network within Manor Royal.

However, the range of GI types described above does not entirely align with the specific assets found within Manor Royal. As a result, a tailored approach has been adopted for defining and assessing GI in this context.

For the purpose of this project GI falls into the following broad categories:

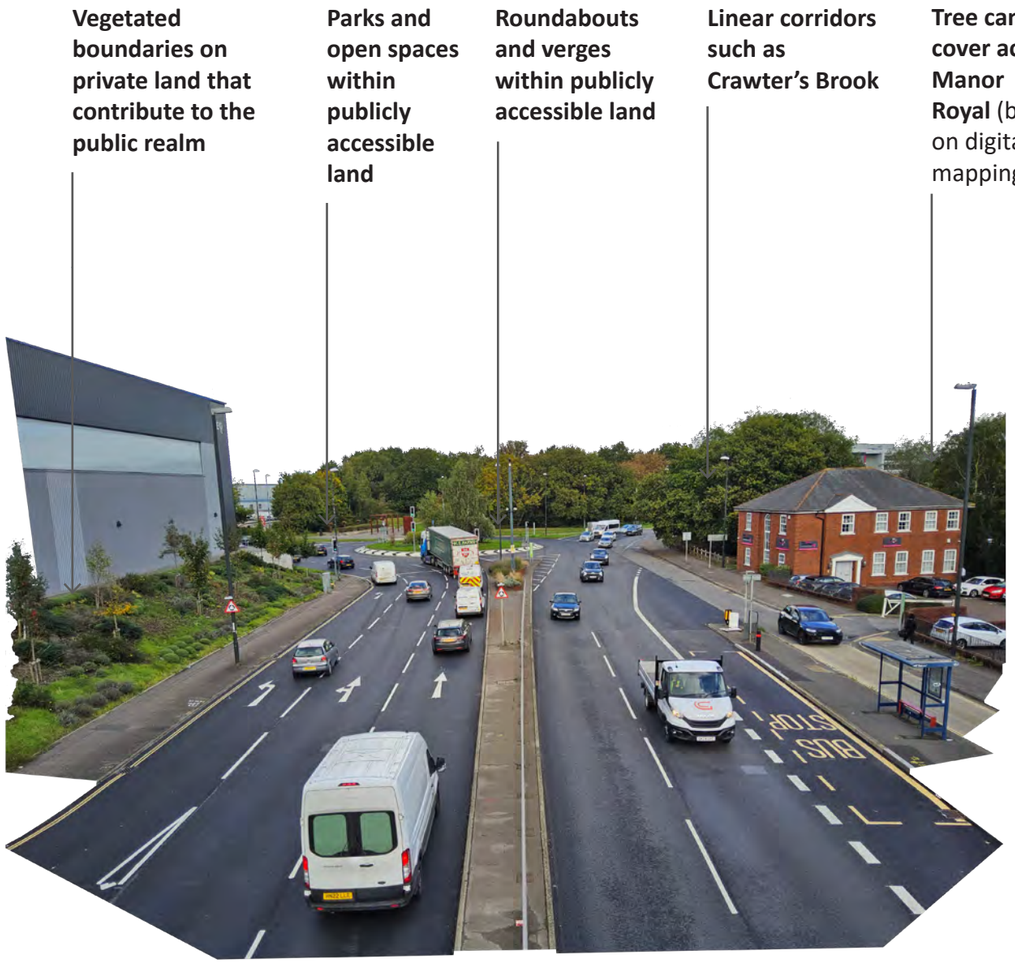
- GI within the public realm of Manor Royal, typically on public land such as within public parks or on highway land.
- GI that contributes to the public realm of Manor Royal, typically on private land such as along boundaries within the public realm or areas that are visually or physically accessible to the public.

It is acknowledged that there are other GI assets across Manor Royal within private ownership such as private courtyards, gardens, and green roofs. These have not been audited and assessed but have been considered in the context of opportunities / wider network.

This customised approach reflects the unique nature of the project, taking into account the physical components and context of Manor Royal, as well as the specific scope in which its GI assets are being evaluated. Additionally, it considers the various scales that the GI Framework needs to guide, which differs slightly from broader GI strategies that might apply to a County or Borough level. Those strategies typically use standard typologies outlined in Natural England's GI Framework (e.g., parks, natural green spaces, cemeteries, allotments).

For Manor Royal, the tailored approach also incorporates considerations of how GI assets have the potential to contribute to Biodiversity Net Gain (BNG) and Urban Greening Factor (UGF).

Following Natural England's 'process journey,' this GI Framework begins by defining what constitutes GI within the Manor Royal area, before moving on to explore opportunities for enhancing or expanding these assets.



GI is defined as those GI assets that typically fall within public land such as within public parks or on highway land + GI assets that contribute to the public realm, typically on private land such as along boundaries visually or physically accessible to the public. Tree canopy cover across the whole of Manor Royal has been included based on available mapping data.

MANOR ROYAL GI FRAMEWORK TYPOLOGIES

For the purpose of this project, GI within Manor Royal can be defined and described in two ways.

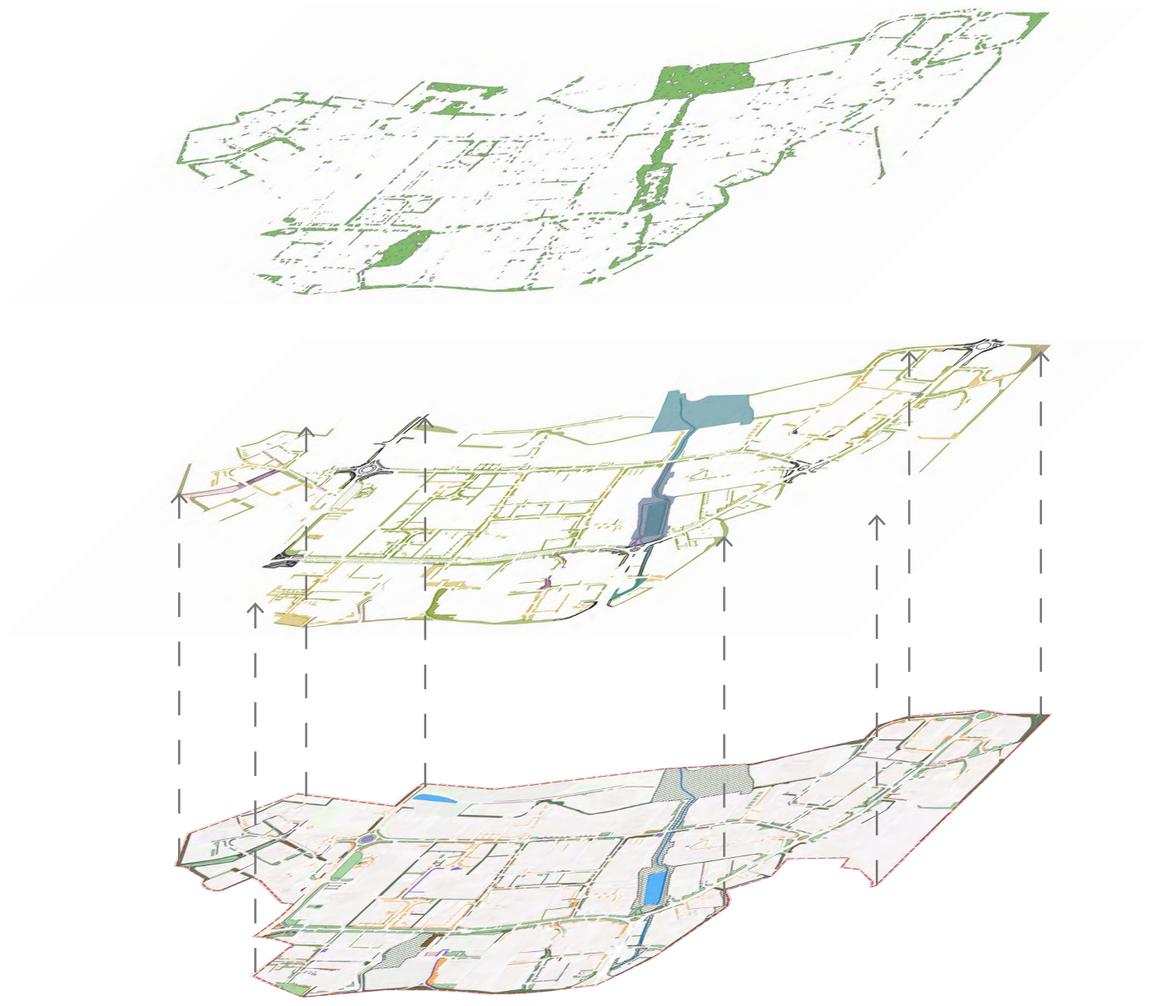
GI NETWORK TYPES

These are typically corridors of multifunction GI or areas of GI that can be grouped together as a definition.

GI SURFACE TYPES

These are typically ways to define what is on the ground.

Note: Some areas shown as GI on CBC's Green Infrastructure Plan have been excluded from the baseline assessment as areas have now been development / changed / planned for change.



GI NETWORK TYPES

The GI Network Types are generally areas of connected GI assets separated out into descriptive typologies.

The GI Network Types are:

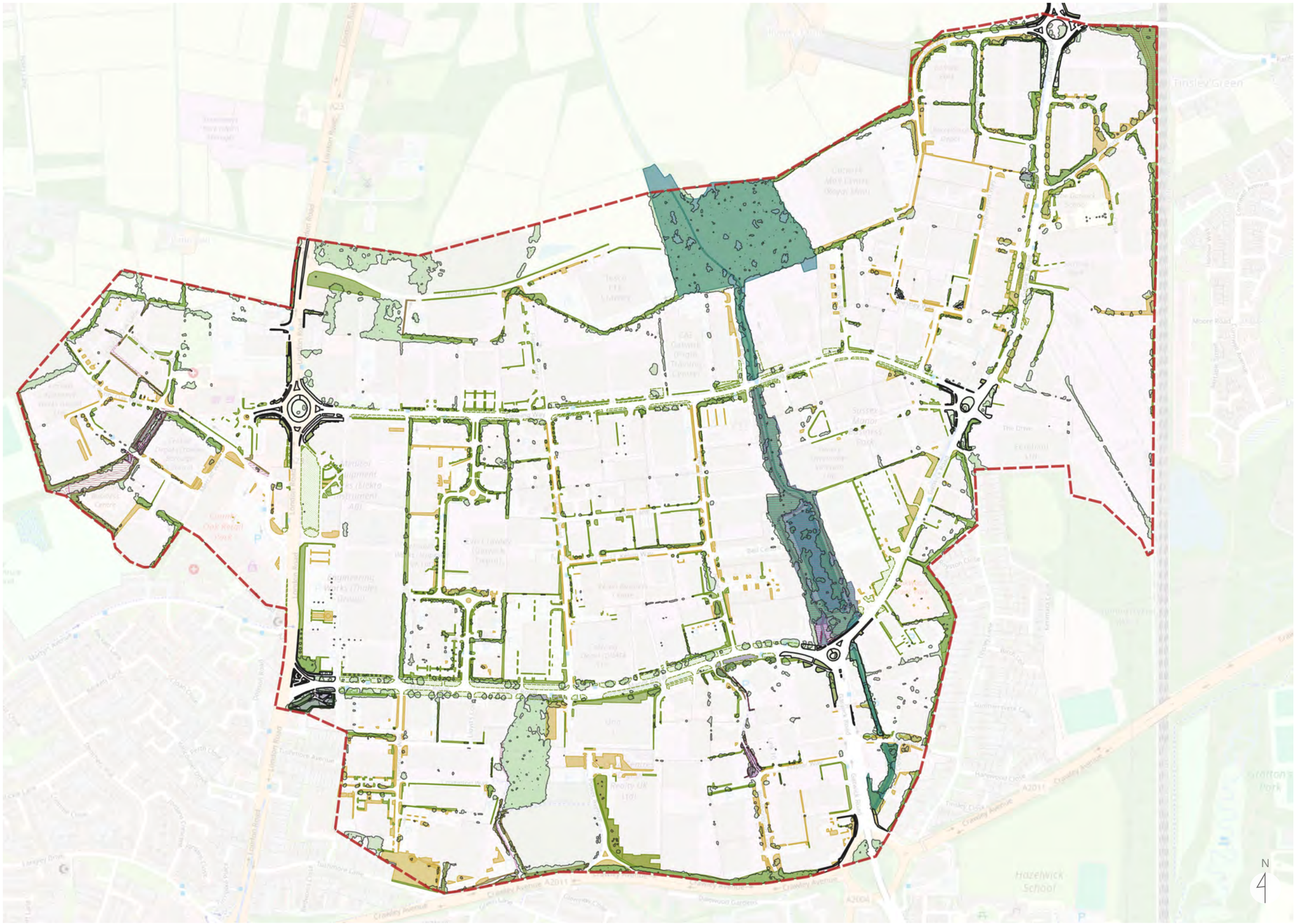
- Tree canopy cover (across the whole of MR)
- Green/Blue corridors (e.g. Crawter's Brook)
- Primary Boulevards (e.g. Manor Royal Road)
- Gateways (as per Projects Pack)
- Greenways (e.g. Metcalf way, Woolborough Lane)
- Vegetated boundaries (throughout)
- Micro parks and pocket parks (all micro parks and pockets parks)
- Incidental greening (left over spaces or small grass verges)

Some of these types may overlap.

The plan on the next page show the locations of these GI Network Types. The following page provide a description on each GI Type and high level data from the baseline assessment.

Additional GI Assets in the Network

It is recognised that there may be additional GI assets that contribute to the overall GI Network. This includes assets and opportunities identified in Crawley Borough Council's Local Plan, such as outdoor sports spaces, natural green spaces, and structural planting. However, for the purposes of this GI Framework—focused specifically on GI within and adjacent to the public realm in Manor Royal—the generic typologies from Crawley Borough Council's Local Plan have not been used. Manor Royal's GI Framework defines tailored and more specific typologies suited to the project.



GI NETWORK TYPES

GI Network Type	Broad Description
Tree canopy cover	All trees and their canopy cover provide an important part of the GI Network. This network includes individual trees, groups of trees and areas of woodland. For the purpose of this project, the overall tree canopy cover includes all mapped / recorded trees whether they fall within public or private land. Note: Source of this data has come from Blue Sky mapping and may not be 100% accurate based on actual trees.
Green/Blue corridors	These are typically multifunctional and continuous linear GI corridors that follow streams / rivers. The corridors include the watercourse and its adjoining and connected vegetation.
Primary Boulevards	This specifically picks out important east/west and north/south linear multifunctional movement corridors through Manor Royal. This type includes the structural planting such as trees, grass verges, boundary treatments and other GI assets along these corridors.
Gateways	As identified within the Projects Pack and as part of the wayfinding across the business district, Manor Royal consists of five key gateways. GI within Gateways includes many different GI assets and often overlap with the other network types.
Greenways	This linear GI Network Type typically includes areas of GI that follow the 'off road' pedestrian / cycleway network across Manor Royal.
Vegetated Boundaries	These typically fall within either private or public ownership but along the edges to roads, walkways / cycleways and areas of public realm. These comprise of a variety of GI assets such as hedges, shrubs, trees and potentially green walls or green screens.
Microparks and Pocket Parks	Microparks and Pocket Parks are areas of public realm / public space specifically designed for people to spend time in. Together, these provide a network of public spaces that contain a variety of GI assets.
Incidental Greening	This GI network type is intended to help identify those areas of GI that do not fall with the other network types above but do contribute to the wider GI network across Manor Royal. This includes areas of grass verges along the internal road network or 'islands' of GI such as areas of scrub or unmanaged vegetation.

10% of the total area is covered by existing tree canopy.

There are 14.3 Ha of Green / Blue Network types in Manor Royal.

Four roads make up the Boulevards. Together they make a loop.

There are five key Gateways within Manor Royal.

Greenways typically link to wider networks outside of Manor Royal.

31 % of mapped GI is defined as vegetated boundaries.

9.9 Ha of quality public space delivered / to be delivered

6.3 Ha has been identified as incidental greening.

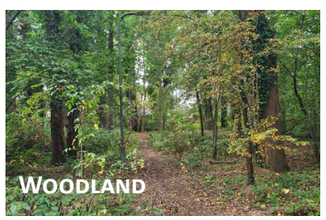
MANOR ROYAL GI SURFACE TYPES

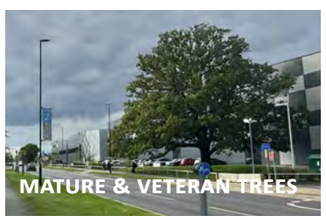
The GI Network Types comprise of GI Surface Types. The GI Surface Types are generally a description of the physical GI assets that make up the network.

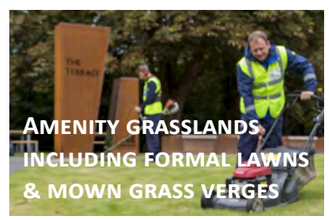
The types and the descriptions are tailored to Manor Royal but broadly align with descriptions found in the Urban Greening Factor for England User Guide .

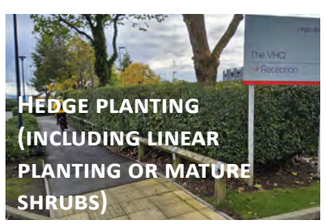
The types and the descriptions in the table on the next page covers existing GI based on an audit of existing GI across Manor Royal (undertaken in 2025) and potential GI Surface Types in consideration of the Project Pack 2023-2028.

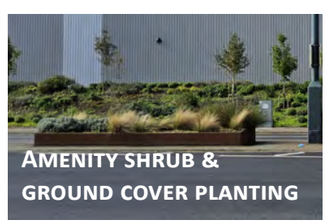
The table describes the GI Surface Type, together with a refer to the UK Habitat Classification. Following this is a plan that shows the locations and spread of the existing GI Surface Types based on an audit undertaken in 2025.

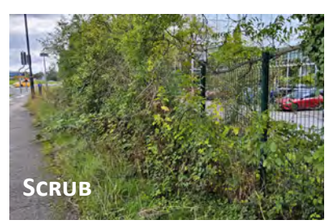


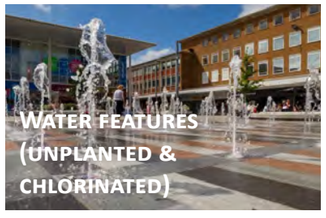


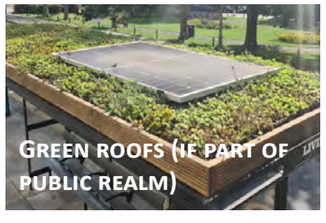


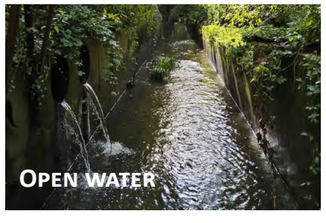


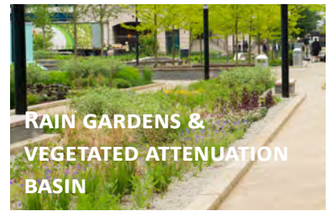






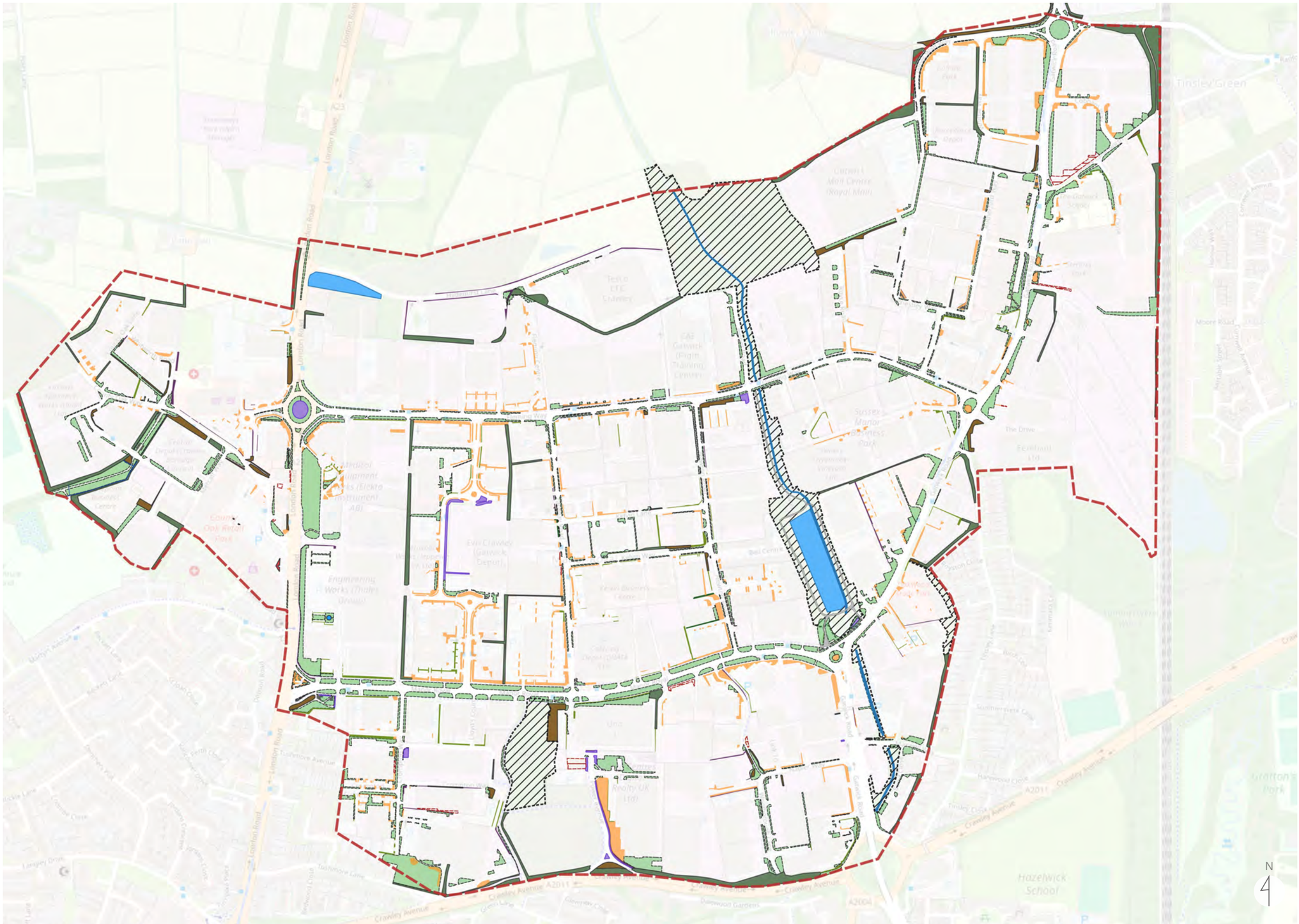






GI Surface Types within Manor Royal

GI Surface Type	Broad description	UK Habitat Classification (code)
Woodland	*This is typically a habitat where trees are the dominant plant form. A woodland can also include woodland understorey planting such as at Crawter's Brook and Magpie Wood.*	*Lowland mixed deciduous woodland (w1f)* *Wet woodland (w1d)*
Mature and veteran trees	*These are typically notable trees outside of areas of woodland, but physically or visually within the public realm of Manor Royal.*	Individual trees
Linear mature native vegetation	*Linear or continuous areas of mature planting with a mixture of majority native vegetation. Typically, along boundaries or in between properties comprising of a combination of scrub, shrubs and mature trees.*	Line of trees G4 (33)
Standard trees	*These are typically trees that fall outside of areas of woodland, are not veteran and are not part of a group of linear mature native vegetation.*	Individual trees
Amenity grasslands including formal lawns and mown grass verges	*Typically found along roads and within areas of open space such as Crawter's Brook picnic area or The Terrace Pocket Park.*	Modified grassland (g4)
Flower rich perennial and herbaceous planting	*Mixed native and ornamental herbaceous and perennial plant species to support seasonal cycles of pollinating insects.*	Built-up areas and gardens (u1)
Species rich meadow grass	*Typically, wildflower meadow found along roads and within areas of open space*	Other neutral grassland (g3c)
Hedge planting (including linear planting or mature shrubs)	*Dense linear planting of native or ornamental shrub and hedgerow species, closely spaced with one or more plants wide.*	Native hedgerow (h2a)
Native hedgerows	*Dense linear planting of mixed native hedgerow species, at least 800mm wide and planted two or more plants wide.*	Native hedgerow (h2a)
Amenity shrub and ground cover planting	*Areas of formal and informal non-native shrub and ground cover planting connected to sub-soils at ground level or in planters.*	Bramble scrub (h3d)
Scrub	*Typically, a dense habitat made up of shrubs, young trees, and brambles. It can include all stages of growth for native shrubs, from scattered bushes to closed canopy vegetation. Scrub is usually less than 5 meters tall, but good scrub has a diverse structure with different heights.*	Bramble scrub (h3d)
Wetland and semi-natural open water	*Areas of semi-natural wetland habitat with open water for at least six months per year contributing to surface water management.*	Wetland (f)
Rain gardens and vegetated attenuation basin	*Bio-retention drainage features including vegetated rain gardens and attenuation basins that also provide biodiversity benefit.*	Urban (u)
Open swales and unplanted detention basins	*Sustainable drainage systems to convey and temporarily hold surface water in detention basins with minimal vegetation cover.*	Urban (u)
Water features (unplanted and chlorinated)	*Ornamental and generally chemically treated water features providing amenity value but with minimal biodiversity and habitat benefit.*	Urban (u)
Open water	*Typically, rivers, streams such as Crawter's Brook.*	Standing open water and canals (r1)
Green roofs (if part of public realm)	*To cover all types from species rich to sedum*	Urban (u)
Green facades and modular living walls (if part of public realm)	*Vegetated walls with climbing plants rooted in soil supported by cables or modular planted systems with growing substrate and irrigation.*	Urban (u)
Open aggregate and granular paving	*Porous paving using gravels, sands and small stones as well as recycled materials that allow water to infiltrate across the entire surface.*	Urban (u)
Partially sealed and semi-permeable paving	*Semi-permeable paving using precast units and filtration strips that allow water to drain through defined joints and voids in the surface.*	Urban (u)
Insect hotels	*Purposely built insect habitats within the public realm.*	N/A



Note: Excludes standard trees

GI SURFACE TYPES

Existing habitats within GI types

The Network and Surface Types of GI provide different types of 'Habitats'. High-level observations and recommendation on the habitats within the existing GI have been provided by ecologist and environmental specialists at ABEC.

These observations have been framed under:

- Biodiversity Net Gain: Baseline and recommendations – these cover the larger parcels of land with Manor Royal.
- Urban Greening Factor: This looks at a larger area, albeit composed of a collection of smaller sites than considered for BNG.
- Additional Ecosystem Services: this provides a broad analysis of current and potential benefits across a wide range of services including Natural Flood Management, Air Pollution, Noise Pollution, Access to Nature, and Habitat for Pollinators.

Image above of existing GI between Metcalf Way and Cherry Lane Playing Field

Image above showing an example of a woodland ride rich in biodiversity. (location unknown)

Biodiversity Net Gain (BNG)

Biodiversity Net Gain (BNG) is an approach to development, land and marine management that leaves biodiversity in a measurably better state than before the development took place. Currently, although certain sites are protected, there are limited mechanisms to value, maintain, enhance or create wider habitats. As a result, habitats continue to be lost to development, reducing nature's ability to connect and thrive.

As a legal requirement, and enforced by the LPA CBC, from April 2024 all developments need to deliver a minimum 10% BNG.

BNG is additional to existing habitat and species protections. Intended to reinforce the mitigation hierarchy, BNG aims to create new habitat as well as enhance existing habitats, ensuring the ecological connectivity they provide for wildlife is retained and improved.

BNG is seen as one of the key investment vehicles for delivering the Local Nature Recovery Strategy (LNRS) with Crawley Borough Council a Supporting Authority for the West Sussex LNRS.

Habitat created or enhanced within areas identified by the LNRS will be set as strategically significant for nature recovery and will generate a higher number of Biodiversity Units compared to non-strategically significant areas not identified within the LNRS. This is intended to incentivise local habitat creation and enhancement within the identified LNRS areas, providing a key spatial consideration to the investment of BNG payments and form the most impactful areas of BNG investment.

By aligning GI planning with biodiversity goals, the BID and its partners can provide critical Ecosystem Services, enhance biodiversity, and improve resilience to environmental challenges like climate change. The combination of BNG with GI planning helps create multifunctional spaces that are beneficial for both people and nature.

The detailed results from the desktop assessment can be found in the appendix, establishing the baseline habitats and their current BNG unit value according to calculations derived from the Statutory Biodiversity Metric. The proposed habitat changes and recommendations have been integrated into Section 3 of this GI Framework. Please note that a detailed methodology, limitations, and a parcel-by-parcel breakdown of the data entered into the Metric can be found in the Appendix.

MANOR ROYAL

BNG FEATURES

BASE MAP AND DATA FROM OPENSTREETMAP AND OPENSTREETMAP FOUNDATION (CC-BY-SA). © HTTPS://WWW.OPENSTREETMAP.ORG AND CONTRIBUTORS.

BNG POTENTIAL

BNG Feasibility Assessment

This BNG Feasibility Assessment is an indicative assessment, estimating the baseline biodiversity unit score for the site; and calculating the potential increase in biodiversity units that could be achieved by implementing appropriate landscaping proposals.

For a site, or sites, to become BNG Habitat Banks, or on sites where development is taking place to accurately determine the baseline biodiversity unit score and the potential unit uplift, a full Biodiversity Net Gain (BNG) Assessment is required. This includes a UK Habitat Classification (UKHab) based condition assessment of all habitats present, alongside an evaluation of the site's potential to support protected species, using standard best practice survey methodologies (CIEEM, 2018; UKHab Ltd, 2023). Habitat Banks and development sites will require a 30 year Habitat Management and Monitoring Plan, which is a statutory requirement.

In summary BNG has been used as a tool to look at predominately the larger sites to give a sense of current and future biodiversity enhancement potential. For establishing Habitat Banks and developments that require planning permission the BNG mitigation hierarchy and statutory precesses and requirements are followed.

Crawter's Brook corridor from Rowley Wood to Hazelwick Roundabout presents the largest linear GI with BNG habitat potential.

Other areas such as Magpie Wood and the link between Cherry Lane Playing field and Metcalf Way present good BNG potential.

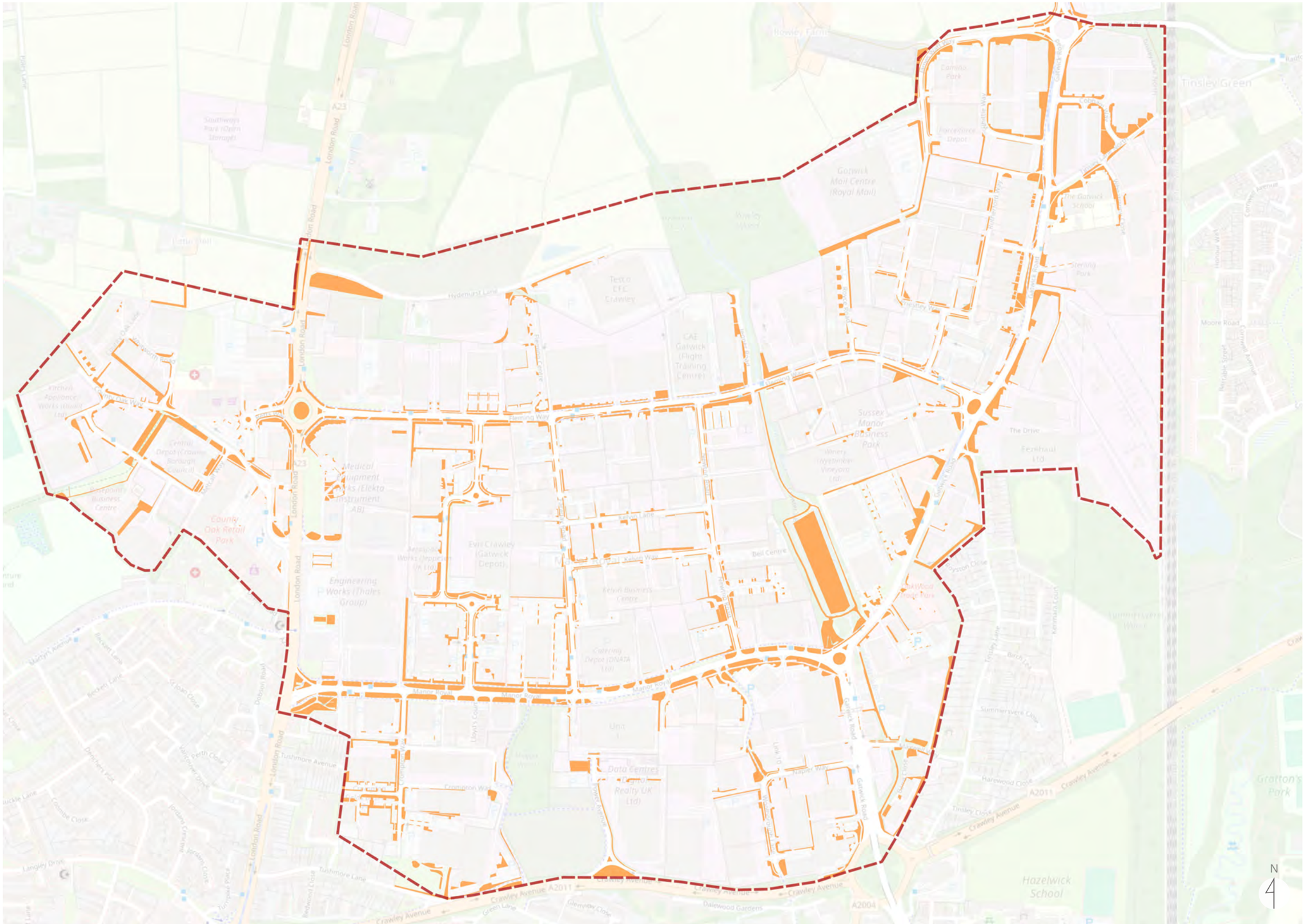
Whilst contributing to the public realm and visually accessible to the public, some areas of GI that present BNG potential are within private ownership (eg Magpie Wood, Rowley Wood, frontage to Elekta on London Road and land north of Tushmore Lane).

BNG habitat	Total Baseline biodiversity units
Area Features	85.73
Linear Features	23.62

Image above of Crawter's Brook Peoples Park providing a multifunctional green / blue linear GI connection

Image above of gate into Magpie Wood located on private land with no physical public access.

Image above of Electa's frontage on London Road with visual and some physical public access



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UGF POTENTIAL

Urban Greening Factor

Following the influential UGF guidance set out by Greater London Authority, UGF requirements should be considered from the outset of the design process to ensure site specific constraints can be accounted for and opportunities fully realised. This includes the potential to link on-site greening into the wider GI Network. Natural England's Urban Greening Factor Report also provides a comprehensive framework for UGF development.

The urban greening proposals described in this GI Framework adhere to these guidelines and frameworks as closely as possible. Nonetheless there can be limitations in baseline data due to the desktop nature of the analysis and therefore without field surveys, habitat condition is often assumed or generalised, which can skew Urban Greening Factor (UGF) scores or BNG calculations. Where this may occur conservative assumptions have been used to avoid over claiming ecological value. Flagging priority sites for field validation for future ground- truthing or ecological condition surveys is recommended, and in the case of BNG part of the mandatory process.

When providing recommendations for urban greening enhancements and modifications, ABEC followed a set of core principles whereby proposals aim to:

- Improve habitat connectivity. The ecological context of the site was considered when identifying urban greening opportunities, which will aim to add value and connectivity to the wider ecological network.
- Mitigate noise and air pollution from adjacent infrastructure as well as urban "heat island" effect.
- Deliver accessible open spaces that offer opportunities for environmental education and enhanced wellbeing.
- Create urban spaces where local biodiversity coexists with urban development.

This UGF Feasibility Assessment is an indicative assessment tool designed for new developments allowing them to incorporate in GI into the planning stages and quantify the overall GI the site will provide. Therefore, it doesn't work as BNG does where there is a calculation of unit uplift between the baseline and post intervention habitats, instead the UGF score is set as a target for the development to achieve. Despite this, UGF can be a very useful tool to assess GI and plan improvements in urban areas, which is how the tool has been used in this report.

In summary UGF has been used as a tool to look at the smaller sites to give a sense of current and future biodiversity enhancement potential.

There are, and are likely in the future, some small sites that have interventions/work taking place on them that means those developments will then be subject to a planning requirement to follow the BNG mitigation hierarchy and statutory precesses and requirements are followed.

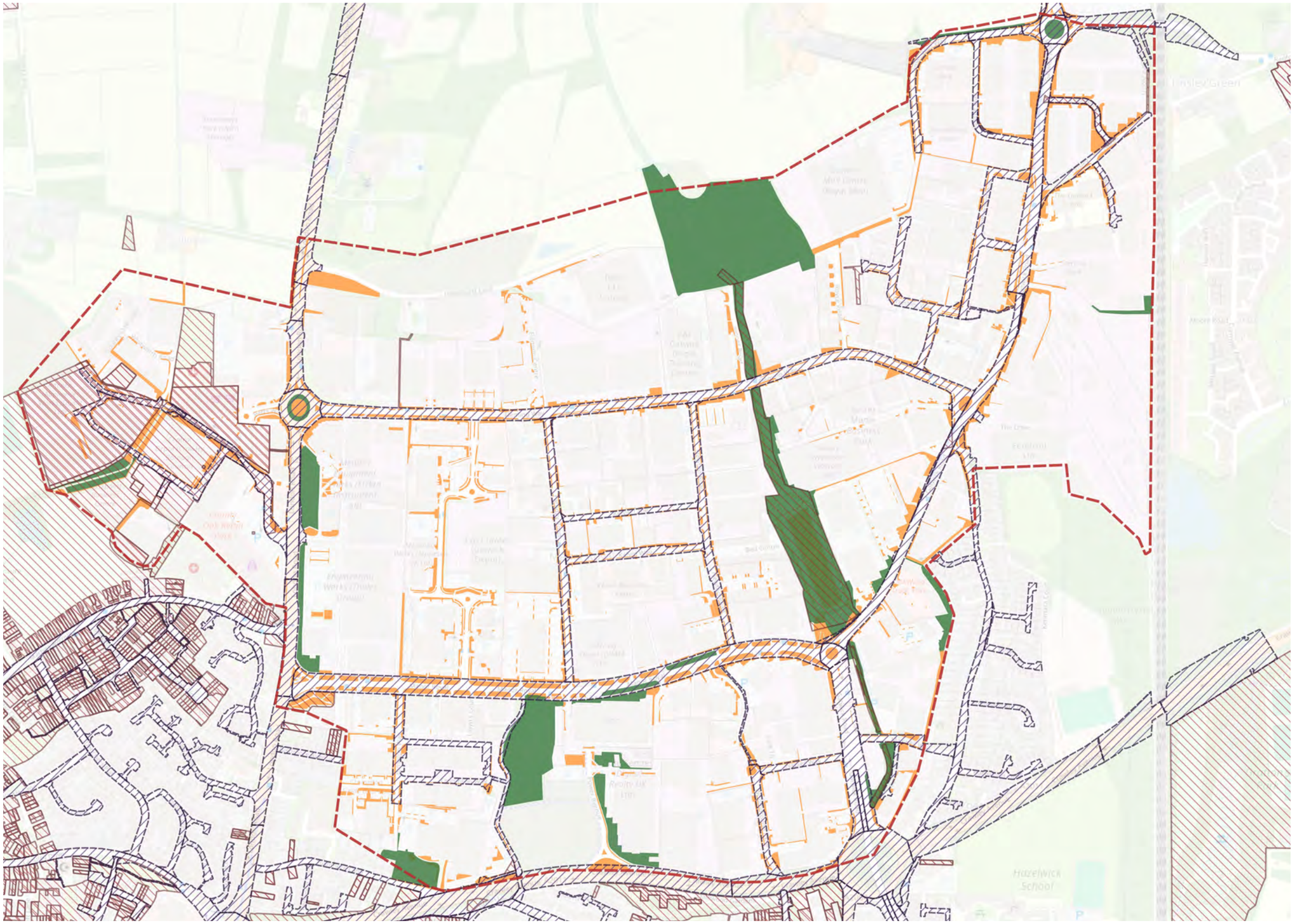
This will mean there are a few sites where some BNG gains that can be looked at on a site by site basis, but may not have been looked at in the over arching BNG lens that has been a useful tool to establish broad parameters for the area.

GI Network Type	% UGF factor increase potential
Incidental Greening	48.78
Primary Boulevards	40.35
Microparks	38.51
Gateways	34.72
Greenways	30.07
Green - Blue Corridors	26.94
Vegetated Boundaries	6.42

Refer to the appendix for more detail about the UGF calculations

Boulevards and Incidental greening present the largest opportunity (these categories often overlap), with a potential for circa 40% increase in UGF.

Manor Royal Road with existing trees and wide grass verges.



CBC LAND OWNERSHIP DATA FROM CRAWLEY BOROUGH COUNCIL

HIGHWAY BOUNDARY AND WSCC LAND OWNERSHIP DATA FROM WEST SUSSEX COUNTY COUNCIL WHO GIVE NO WARRANTY TO THE ACCURACY OF THIS DATA. OWNERSHIP TO BE CONFIRMED BEFORE ANY ONSITE WORKS BEGIN.

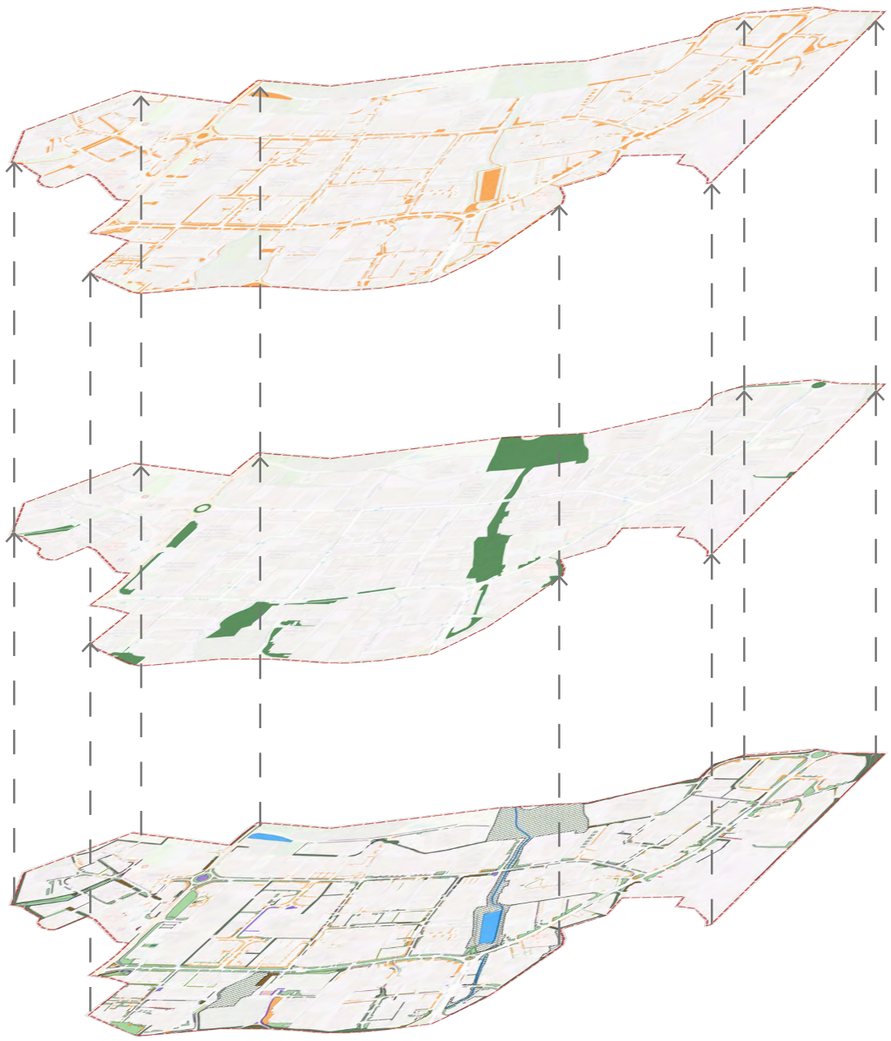
BNG & UGF POTENTIAL SHOWN WITH COUNCIL OWNED LAND

Summary of BNG, UGF and EcoS opportunities

The desktop analysis of Manor Royal baseline habitats showed substantial areas of amenity grassland across the site, with many of these occurring in relatively small patches alongside the roads and boulevards within the site. Despite these areas not currently providing substantial value for biodiversity there is plentiful opportunity for enhancement to more species rich grassland that would benefit a multitude of species including birds and pollinators.

There are also a substantial number of hedgerows and extensive patches of scrub throughout the site which already provide significant benefits to biodiversity through the provision of food and shelter. However, in a similar vein these areas could be further enhanced for biodiversity by increasing botanical species richness and structural complexity.

Finally, there are some large areas of woodland that are well connected within Manor Royal, particularly in the Crawter's Brook area. Given most of the woodland is wet woodland, a particularly rare habitat in the UK, this area already provides substantial value to biodiversity by means of shelter, food, and unique microclimates for rare plant and insect species. Regardless, there is significant scope to enhance this area of woodland and further improve the biodiversity benefits via changes to the management regime and the creation of scrape features for wildlife.



+ ECOSYSTEM SERVICES POTENTIAL

UGF AS TOOL

Urban greening factor has been used to assess habitat enhancement potential outside of those areas identified as BNG potential.

BNG STRATEGIC LENS

Habitat types that form larger area (over 0.1 Ha) show locations with good BNG potential.

GI SURFACE TYPES

These are typically ways to define what is on the ground and have been used to analyse habitat types and their potential.

HEADLINES ABOUT EXISTING GI

This GI Framework has identified various typologies of GI across Manor Royal.

Together these provide a network of GI assets that already provide multiple environmental, social and economic benefits. They also present much opportunity including ways to deliver BNG and UGF.

Spatial mapping of the existing assets and the desktop and site assessment work undertaken by Allen Scott (AS) and ABEC help identify the spread and the gaps in GI provision across Manor Royal.

The baseline information provides a stock take of GI at the time of the audit. The figures and area calculates are useful to help understand the baseline and so to focus on areas to enhance and increase GI across Manor Royal.

The baseline data and general observations have informed the Vision and the Strategic Aims for this GI Framework.

Detailed baseline information can be found in the appendix.

42.1 HECTARES (Ha) OF EXISTING GI

identified within this Framework

THIS EQUATES TO 15% OF THE TOTAL LAND AREA

within Manor Royal

THERE IS 24.4 Ha / 11% OF PUBLIC LAND (CBC & WSCC LAND)

within Manor Royal

CRAWTER'S BROOK EQUATES TO 3.5 HA OF VALUED GI / 8.3% OF EXISTING GI

within Manor Royal.

THERE ARE 11.6 Ha OF GRASS VERGES / 27.6% OF EXISTING GI

within Manor Royal

VEGETATED BOUNDARIES EQUATE TO 31%

of the GI within Manor Royal

Tree canopy cover is approx 10% which is below England average or 16% and Crawley's cover of 20%

Vegetation along boundaries with the public space are generally made up of hedges or ornamental planting.

There are sporadic areas of incidental greening comprising of habitats such as bramble scrub.