Clonburris Strategic Development Zone
Biodiversity Management Plan
Relevant Landscape Principles

3.1 Green and Blue Infrastructure

To deliver a network of high quality green and blue infrastructure spaces and public parks while protecting, enhancing and sensitively upgrading the natural, built and cultural assets of Clonburris lands.

1. *To protect, enhance and develop an interconnected green and blue infrastructure network of parks, open spaces, hedgerows, grasslands, protected areas, rivers and streams for amenity and recreation, biodiversity protection, flood management and adaptation to climate change;*
2. *To retain and improve key landscape and ecological features such as hedgerows, the Grand Canal and the Griffeen River;*
3. ***To incorporate new elements of Green and Blue Infrastructure such as tree planting, parks and natural open spaces and sustainable drainage systems;***
4. *To reduce fragmentation and strengthen ecological links through the retrofitting and or upgrading of the pedestrian bridge over the railway line to a 'green bridge';*
5. *To* ***connect parks and areas of open space with ecological and recreational corridors to aid the movement of biodiversity and people and to strengthen the overall green infrastructure network;***
6. *To support native plant and animal species and encourage corridors for their movement; and,*
7. ***To seek to retain hedgerows, aquatic habitats and established treelines wherever possible****.*

3.2 Services, Infrastructure and Energy Framework

To prioritise the delivery of high quality services, utilities infrastructure, and sustainable urban surface water drainage.

1. *To mitigate the risk of flooding by promoting installing Green Roofs in all apartment buildings, by integrating a comprehensive and high quality Sustainable Urban Drainage System (SUDS) into the design of new developments and maximising opportunities to incorporate rainwater attenuation measures into public realm, parks and open spaces.*

Suggested Biodiversity Measures for Clonburris South West (Table 14 of BMS)

3.3 Landscape and Open Space

To provide attractive, interesting and well used outdoor spaces using the latest place making and urban design principles, creating a pedestrian centred environment with active, inviting public space, parks and private gardens.

1. *Provide a hierarchy of high quality and multi-functional open spaces including strategic spaces, local parks, urban spaces and strategic routes; and,*
2. *To provide appropriate space for health and well-being, required to meet the recreational needs of the new population of Clonburris through the provision of adequate walking and cycling facilities and a diversity of green spaces for active and passive recreation.*

3.4 Biodiversity and Natural Heritage

To maximise appropriate access to and use of the Grand Canal, Griffeen Valley Park and other biodiversity assets in an ecologically sensitive way, thereby offering unique selling points to the SDZ Planning Scheme.

1. *To seek to protect and enhance natural, built and cultural heritage features, where appropriate, such as the Grand Canal, streams, Protected Structures and barony and townland boundary hedgerows;*
2. *To improve the quality, character and continuity of the Grand Canal (pNHA);*
3. *To avoid or minimise the impact on protected species and their habitats; and,*
4. *Incorporate biodiversity and heritage into new developments.*

3.5 Character Areas and Development Areas

Ensure that each character area integrates green and blue infrastructure features as identified on the masterplan and supports ecological connectivity and enhancement where identified.

Biodiversity Objectives for Habitat Retention

Over Arching

HR01 *Where feasible within the constraints of the SDZ Masterplan and overarching principal of developing the lands the designs for proposed developments should retain habitats of ecological value that can be accommodated within their ownership boundaries. Particular consideration must be given to retaining ecological features which provide connectivity between habitats (e.g. hedgerows and treelines) to promote green and blue infrastructure within the SDZ lands. Retention of townland boundary hedgerows within open space, which have high biodiversity and heritage value should be given priority.*

HR02 *Where hedgerows, treelines, woodland and other semi-natural habitats are being retained within the SDZ lands, details of their management and protection should be provided in a Habitat Management Plan (HMP) to be provided to the Council by the developer alongside the planning documentation.*

HR03 *Proposed developments within the Clonburris SDZ must be subject to an Ecological Impact Assessment (EcIA) and the EcIA must set out appropriate biodiversity mitigation compensation and enhancement measures in line with SDZ and BMP requirements. This does not absolve the proposed development/developer from carrying out other statutory environmental assessments that may be required. The Ecological Impact Assessment should include but may not be limited to the following:*

1. *An assessment of potential impacts on bird species, including breeding birds, wintering birds, barn owl and kingfisher. Bird surveys must be carried out in the appropriate season;*
2. *An assessment of potential impacts on bat species. Bat surveys must be carried out in the main season of bat activity (May-August inclusive);*
3. *An assessment of potential impacts on mammals. Mammal surveys must cover the proposed development site and lands at least 150m from the proposed development site boundary;*
4. *An assessment of potential impacts on amphibians. Amphibian surveys must be carried out if there is suitable habitat (i.e. wetlands) present on or near the proposed development site;*
5. *An assessment of potential impacts on habitats and habitat connectivity within the lands;*

Consideration must be given to whether impact assessment on other species is required for a proposed development e.g. white-clawed crayfish, common lizard etc.

Aquatic Habitat Objectives

HR04 *Prior to any works, watercourses will be fenced off at a minimum distance of 10m from the watercourse bank in order to maintain a biodiversity protection zone of not less than 10 metres from the top of the bank.*

HR05 *Development must be set back from the Grand Canal to protect aquatic habitats and species.*

1. *All buildings must be set back 50m from the Grand Canal pNHA boundary*
2. *Other development (with the exception of footpaths and bridges) must be set back 30m from the Grand Canal pNHA boundary*
3. *Footpaths and bridges may be constructed within the pNHA boundary with regard to actions HR06 and HR07 below*.

HR06 *Where construction works are planned in the vicinity of the Grand Canal and Griffeen River no storage / stockpiling of materials or machinery or construction works activities (except for those required to construct footpaths or bridges) will be undertaken within 50m of the watercourse. Where construction works will take place within 50m of a watercourse, a risk assessment must be carried out on a case-by-case basis by a suitably qualified ecologist in order to determine if the*

works will require a Construction Environmental Management Plan (CEMP) outlining how the watercourse will be protected during works must be produced. This is to protect the habitats associated with the Grand Canal and Griffeen River.

HR07 *Where other works e.g. footpath maintenance must take place within 10m of the edge of a watercourse or tributary thereof, a risk assessment should be carried out on a case-by-case basis by a suitably qualified ecologist in order to determine if the works will require a Construction Environmental Management Plan (CEMP) outlining how pollution of watercourses during and after the construction period will be prevented and / or mitigated. If a substantial risk is identified, the CEMP must be developed in consultation with Inland Fisheries Ireland at application stage where feasible*.

Grassland and Meadow

HR08 *Where meadows (labelled as Fossitt code GS2 in Figure 1) are to be retained within the areas of open space as outlined in the Parks and Landscape Strategy, particular consideration should be given to retain this habitat around other features of ecological importance such as hedgerows, water features (including attenuation ponds) and scrub. Where possible, developers are encouraged to retain meadows within their ownership boundaries.*

HR09 *The following document should be consulted prior to the design of wildflower meadows: National Biodiversity Data Centre (2017) Creation and management of a wildflower meadow. All-Ireland Pollinator Plan, How-to-Guide 4. National Biodiversity Data Centre Series no. 13. Management guidelines are also set out in this document.*

Woodland and Scrub

HR10 *Where woodland or individual trees are being retained, the root protection zone / area must be calculated by a qualified arborist. Protective barriers must be installed to exclude construction activities from the root protection area of the woodland / trees.*

HR11 Particular consideration must be given to retaining woodland which provides ecological connectivity to other habitats of ecological importance. This is to strengthen the green and blue infrastructure network.

Hedgerow and Treeline

HR12 *The Parks and Landscape Strategy indicates the retention of 7,720m of hedgerow / linear woodland habitat within the strategic open spaces - 5,200m along the canal, 520m along the Griffeen river and 2,000m of hedgerow within parks and open spaces.* ***When final landscape designs are being prepared for open spaces, this level of retention is considered to be the minimum acceptable.***

HR13 *Where hedgerows and treelines are being retained, the root protection zone / area must be calculated by a qualified arborist. Protective barriers must be installed to exclude construction activities from the root protection area of the hedgerows and treelines during construction works.*

HR14 *Pedestrian access points to the Grand Canal must be located in areas that are sparsely vegetated and should avoid as much tree and vegetation removal as possible. Where vegetation removal is required, this should be focused on vegetation of lower ecological importance and avoid mature trees and hedgerows.*

HR15 *Appropriate pedestrian access points to the Grand Canal are to be sensitively designed to prevent damage to adjacent vegetation.*

HR16 Where hedgerows are proposed for retention, management measures should be set out, appropriate to their location and function, and in accordance with guidance set out in the following document: *The Heritage Council (2016) Conserving Hedgerows*. Management must also include the removal of non-native invasive species such as butterfly-bush *Buddleja davidii13* and filling in sparse patches with native species planting.

All developments in the SDZ must demonstrate how they can achieve the objectives on **Table 2**

Table 2. Biodiversity Objectives for Habitat Creation

Overarching

HC01 *Planting schedules for all areas within the lands should include predominantly native species, and non-native species should be limited to specific areas.*

HC04 *Where native species planting is not feasible, planting schedules should include species that provide biodiversity value (food and shelter resources) to pollinators and other fauna species. Suitable plant species can be found in the All-Ireland Pollinator Plan's Pollinator Friendly Planting Code.*

HC05 *Native species should be used for formal hedging proposed within Clonburris SDZ. Suitable species include hazel Corylus avellana, wild privet Ligustrum vulgare, guelder rose Viburnum opulus and yew Taxus baccata.*

Wildflower meadow / Strip / Garden

HC06 *Native wildflower meadows proposed within the SDZ should reflect the existing biodiversity in the area. This may be achieved in the following ways:*

1. *Where possible and subject to season restriction, seeds may be harvested from the existing meadows (if there are no non-native invasive species present in the area) to ensure that local biodiversity is retained.*
2. *Local biodiversity may be retained by translocation. Intact turves may be removed from donor sites with a suitable excavator and incorporated into a suitable receptor site.*

3. *Seed mixes may be bought from a wildflower provider. Species known to be present in the area should be chosen for the seed mixes. Full species lists for the SDZ can be found in Ecological Survey of Clonburris (FERS Ltd., 2018).*

HC07 *If seed mixes are to be bought, a perennial mix must be used to create wildflower meadows on site, rather than continually planting annuals. Even though a perennial mix meadow may be less colourful than an annual mix meadow, this is a more cost-effective approach and provides a better source of food for pollinators than an annual mix. Native Irish perennial seed mixes can be sourced from various supplies, for example Design by Nature.*

HC08 *Where wildflower meadows are being planted on site, proper ground preparation and weed elimination is integral to the successful creation of the wildflower meadow. Steps to be taken to prepare the site for sowing with wildflower are described in the following document: National Biodiversity Data Centre (2017) Creation and management of a wildflower meadow. All-Ireland Pollinator Plan, How-to-Guide 4. National Biodiversity Data Centre Series no. 13. These steps must be followed for the proposed wildflower meadow habitats on site.*

Green/Brown Roof (SuDS Measures)

HC11 *Green roofs are recommended in the Clonburris SDZ Planning Scheme Surface Water Strategy (2017)14 for consideration within the Clonburris SDZ on appropriate apartment and commercial buildings.*

HC12 *All planting proposed for green roofs must be of native species and preferably species that are local to the area. Native Irish perennial seed mixes can be sourced from various supplies, for example Design By Nature.*

HC13 *Brown roofs are recommended for consideration as they replicate existing 'recolonising bare ground' habitat which is present within the SDZ lands. They should have a substrate applied but be left unplanted.*

HC14 *Brown roofs are recommended for consideration as they replicate existing 'recolonising bare ground' habitat which is present within the SDZ lands. They should have a substrate applied but be left unplanted.*

Hedgerow

HC15 The planting of hedgerows within the parks areas and along roadways is a key habitat creation objective. This will compensate for the loss of hedgerow habitat within the lands*. If appropriate to the required land use and development densities, planting of hedgerows on the boundaries or within the sites should also be considered in Development Areas. Species lists must be comprised of a range of native species and preferably comprised of the species already present locally. Species should include a range of trees and shrubs as well as suitable understorey planting. Full species lists for the hedgerows within Clonburris SDZ can be found in the document Ecological survey of Clonburris Strategic Development Zone, Clondalkin, Co. Dublin (FERS Ltd., 2018).*

HC16 *Where hedgerow planting is proposed within the lands, the new hedgerows should take the form of a double line of native tree with shrub species. Translocation of existing hedgerows and their seed banks to new locations should be considered where feasible. Hedgerows must be correctly maintained according to the following document: The Heritage Council (2016) Conserving Hedgerows.*

HC17 *Hedgerow locations must be chosen to connect features of ecological value (particularly the Griffeen River, the Grand Canal and the railway line, as well as existing hedgerows, treelines and woodland) to the ecological network in the wider landscape where possible and promote green infrastructure within the lands. This can be achieved by planting hedgerows where they do not already exist and in this way minimising the number of gaps in the hedgerow network that would affect ecological connectivity within the SDZ lands and the surrounding areas.*

HC18 *Where existing tree planting is present along roadsides, supplementary native understorey shrub and herbaceous planting should be considered. This would help compensate for the loss of hedgerow habitat and strengthen green and blue infrastructure within the lands.*

HC19 *Where hedgerows are being retained within parkland, consideration should be given to incorporate sufficient space for hedgerows to develop into linear woodland features.*

Suggested Biodiversity Measures for Clonburris South West (Table 14 of BMS)

Good native hedgerow species for pollinators:

Hazel (Feb-Apr)	Bramble (May-Sept)	Wild Rose (Jun-Jul)
Willow (Mar-May)	Wild Privet (May-Jul)	Honeysuckle (Jun-Oct)
Blackthorn (Mar-May)	Crab apple (May-Jun)	Guelder Rose (Jun-Jul)
Hawthorn (Apr-Jun)	Elder (May-Jun)	Raspberry (Jun-Aug)
Broom (Apr-Jun)	Whitebeam (May-Jun)	Ivy (Sept-Nov)
Wild Cherry (Apr-May)	Rowan (May-Jun)	Gorse (Jan-Dec)

These species are not recommended for hedgerows: Horse Chestnut, Beech, Laburnum, Lilac, Lime.
These species can be considered invasive and should not be planted: Fuchsia, Cherry Laurel, Rhododendron, Sycamore, Snowberry.

Tree Planting

HC20 *For every tree felled within the Clonburris SDZ, a replacement tree must be planted. This ensures compliance with South Dublin County Council's Tree Management Policy.*

HC21 *Preferably, all tree planting (including street planting) should be of native species. Where this is not possible, tree species should be chosen with regard to the All-Ireland Pollinator Plan's Pollinator Friendly Planting Code.*

HC22 *Where tree planting is proposed, consideration must be given to planting a range of semi-mature specimens. This will compensate for the loss of mature trees across the SDZ and will immediately provide nesting and feeding habitat for fauna species*.

HC23 *Tree planting must take into consideration the connectivity of existing ecological features (e.g. hedgerows, treelines, woodland, watercourses) within the SDZ lands and planting must aim to contribute towards it. This can be achieved by, for example, planting trees and/or groups of trees relatively close to each other across amenity grasslands and wildflower meadows thus providing 'stepping stones' for wildlife over open areas, and/or by planting treelines along streets and other linear features and consequently improving green infrastructure and the overall ecological connectivity within the SDZ lands*.

Living Walls (SuDS Measure)

HC26 *Living walls should be considered for incorporation into developments where appropriate within the lands. These improve the overall biodiversity value of a development, act as a SuDS measure and are visually appealing. Advice on how to implement living walls can be found in section 6 of the following document: Greater London Authority (2004) Building Green. A guide to using plants on roofs, walls and pavements.*

HC27 *Native, high biodiversity value species should be chosen for inclusion within living walls e.g. ivy Hedera helix and native honeysuckle Lonicera periclymenum*

Swales (*SuDS Measures)*

HC28 *Where swales are proposed within the SDZ, the design should include native grass species to enhance biodiversity and wildlife.*

Rain Gardens (SuDS Measures)

HC29 *High biodiversity value rainwater gardens should be considered for inclusion within new developments as a SuDS measure. It is recommended that planting lists are comprised of water-tolerant native species and preferably of species which are known to be present locally. Where it is not possible to plant entirely native species, ornamental species should be chosen with regard to the All-Ireland Pollinator Plan's Pollinator Friendly Planting Code.*

Retention Pond (SuDS Measures)

HC29 *New wetlands should be created with biodiversity in mind. Retention and attenuation ponds should have shallow, gently sloping areas to create suitable habitat for amphibians and other fauna. Guidance for the creation of ponds can be found in the following documents:*

- *Freshwater Habitats Trust (2008). Million Ponds Project. Pond Creation Toolkit.*
- *WWT Consulting & RSPB (2012). Sustainable Drainage Systems. Maximising the potential for people and wildlife.*

HC30 *New wetlands should connect to other features of ecological interest within the lands such as meadows and hedgerows. This is to strengthen the biodiversity value of the lands and improve green and blue infrastructure.*

HC31 *A buffer zone of native habitat including trees and wetland habitats should be planted around new wetlands. Trees such as willow, ash and birch are ideal for wetland areas. Often in nature, marsh and wet grassland grade into each other and therefore, it may be possible to create a more natural habitat by mimicking nature in this way. Examples of typical species for both wet grassland and marsh are given below, as an indicator of species which should be planted to create a natural wetland habitat:*

- ***Wet grassland habitat:*** *rushes (e.g. Juncus effusus, Juncus inflexus, Juncus articulatus), sedges (e.g. Carex flacca, Carex hirta), grasses (Holcus lanatus, Alopecurus geniculatus, Agrostis stolonifera), broadleaved herbs (Ranunculus repens, Cirsium palustre, Potentilla anserina, Filipendula ulmaria, Mentha aquatica, Galium palustre, Iris pseudacorus, Cardamine pratensis and Equisetum spp). Clumps of reeds such as Phragmites australis could also be considered but these should not dominate. It is important that wet grassland habitat contains structural diversity, so that it can offer a variety of micro-habitats and support a range of species, especially invertebrates, which may have different habitat requirements. Therefore, a range of species of different heights should be selected. In*

addition, the proportion of grasses to herbs should be considered- typically the proportion of broadleaved herbs is often high

- ***marsh habitat:*** *rushes (Juncus spp.), sedges (Carex spp.), grasses (e.g. Agrostis stolonifera, Molinia caeruleae, Festuca arundinacea), broadleaved herbs (Filipendula ulmaria, Mentha aquatica, Cirsium palustre, Angelica sylvestris, Caltha palustris, Lychnis flos-cuculis, Lythrum salicaria, Potentilla palustris, Iris pseudacorus and Equisetum spp.) Reeds and other native tall grasses and sedges may also be planted but these should not dominate. To be considered as marsh, the proportion of sedges and grasses should not exceed 50%.*

Retention Pond (SuDS Measures)

HC39 *Inland Fisheries Ireland and Waterways Ireland must be consulted on any proposed plantin biodiversity protection zones (within 10m) of the Griffeen River and the Grand Canal prior to work*

Grand Canal (including pNHA)

HC40 *Any proposed planting along and adjacent to the Grand Canal must take into consideration measures for the protection of existing habitats by including an appropriate set-back distance from the pNHA boundary to facilitate protected species, biodiversity, and a fully functioning green and blue infrastructure network. This distance is dependent on the ecological feature (e.g. bat tree roost, rare flora) in question and should be assessed on a case-by-case basis by a suitably qualified ecologist.*

HC41 *Planting schedules along the boundary of the Grand Canal pNHA must have regard to the habitat creation recommendations provided above.*

HC42 *Planting along the boundary of the Grand Canal pNHA should take into consideration management requirements of proposed species in the planting schedules and prevent their encroachment into the habitats of the pNHA*.

Birds

Overarching

Bi02 *Where possible, existing grassland habitat should be retained or created as it provides important feeding and nesting habitat for birds. Meadows should be left uncut during the winter months to provide a continuous food source for seed-eating birds.*

Bi04 *All proposed developments within Clonburris SDZ must consider including nest boxes or bricks for swallows, house martins and swifts within the proposed building's structure following manufacturer's guidance. Specific guidance to attract swifts can be found in this document: Swift Conservation Ireland (2019) How to build-in swift nest boxes into cement block walls.*

Bi05

Consideration should be given to installing nest boxes within the parks and development zones. Nest boxes designed to accommodate a range of different species should be installed including boxes for raptors, large birds, small birds etc.

Barn Owl

Bi05

The parks onsite should be managed to retain suitable foraging habitat for barn owl. A network of rough grassland habitat, particularly that is associated with wetland habitat should be retained throughout the parks

Bats

Ba01 *Where buildings are to be demolished/ refurbished or trees with suitability for bats are to be removed within the lands, bat surveys must be carried out at the appropriate time of year by a suitably qualified ecologist to assess whether roosting bats are present (at least 2 surveys separated by a minimum of a week carried out between May and August). If bat roosts are confirmed within the lands (either in trees or buildings), the roost should be retained wherever possible. Should retention of any bat roost not be possible, then in order for a derogation licence to be granted there must have been no reasonable alternative, the loss of the roost must not affect the conservation status of the species. In all cases it is strongly recommended that loss of bat roosts is offset by providing replacement roost opportunities. All recommendations for mitigation should be adapted to the species and the function of the roost*

BA02 *All proposals for development near bat roosts or ecological corridors must address the potential adverse impacts of lighting on bats. Lighting should be at a low level, directional and should follow guidance provided by Bat Conservation Trust (2018). Guidance note 08/18 Bats and artificial lighting in the UK. Lighting plans near ecological corridors should be reviewed by a suitably qualified bat ecologist. If adverse impacts are anticipated, a derogation licence must be obtained from the NPWS.*

Ba03 *Lighting on the northern Grand Canal towpath should be avoided and all lighting along the canal should be minimised. It is recommended that artificial lighting on the southern tow path is turned off during the peak season of bat activity (May- August inclusive). As the days are long, this shouldn't impact upon people using the canal and would greatly minimise the impacts on bats. Where this is not possible, lighting proposals for the canal must be created in consultation with a suitably qualified ecologist and follow guidance provided by Bat Conservation Trust (2018). Guidance note 08/18 Bats and artificial lighting in the UK.*

Suggested Biodiversity Measures for Clonburris South West (Table 14 of BMS)

Ba04 *Any developments located close to a known bat roost or ecological corridor should consider incorporating enhancement measures into the design. Appropriate measures may include installing bat boxes onto buildings, planting hedgerows, pond creation and planting of night-scented flowers*

Ba05 *All proposed developments within Clonburris SDZ must consider installing bat bricks into the building's design following manufacturer's advice.*

Other Mammals

Overarching

M02 A 10m riparian habitat buffer zone will be provided around existing and proposed rivers, streams and wetland habitat where space allows to maintain commuting and foraging routes for otter. Exceptions to the 10m buffer zone will apply where required to provide for road crossings, services and landscaping features.

Invertebrates

I01 *Grassland / meadow habitat retained or created throughout the lands should be managed to keep important foodplants of the invertebrate species recorded (Poa spp., Agrostis spp., Lolium spp., Urtica dioica, Cirsium spp., Lotus corniculatus, Lotus pedunculatus, Senecio jacobaea, Centaurea nigra, Rubus fruticosus agg., Dipsacus fullonum etc.).*

I03 *Installation of 'insect hotels' should be considered throughout the site. Insect hotels can include solitary bee bricks that can be built into buildings, purpose built 'insect houses' or standing deadwood. The creation of earth banks or bare ground free from vegetation should be considered to provide nesting habitat for solitary bees. These should be created facing southwards. Detailed instructions for the creation of wild pollinator nesting habitat can be found in the following document: National Biodiversity Data Centre (2016) Creating wild pollinator nesting habitat. All-Ireland pollinator plan, How-to-guide 1. National Biodiversity Data Centre Series no. 5.*

I02 *Planting throughout the site should focus on native species that provide food for pollinators. Where this is not possible, species included in ornamental planting lists should be chosen with pollinators in mind. A range of plants that produce pollen and nectar throughout the year should be chosen. A list of suitable species that provide food for pollinators can be found in the All-Ireland Pollinator Plan's Pollinator Friendly Planting Code.*

5.0 Habitats

5.3 Bats

In terms of lighting effects on bats, lighting throughout the SDZ should be at a low level, directional and should follow guidance provided by Bat Conservation Trust (2018) Guidance note 08/18 Bats and artificial lighting in the UK. Clonburris SDZ holds great potential for trialling and installing innovative red lighting.

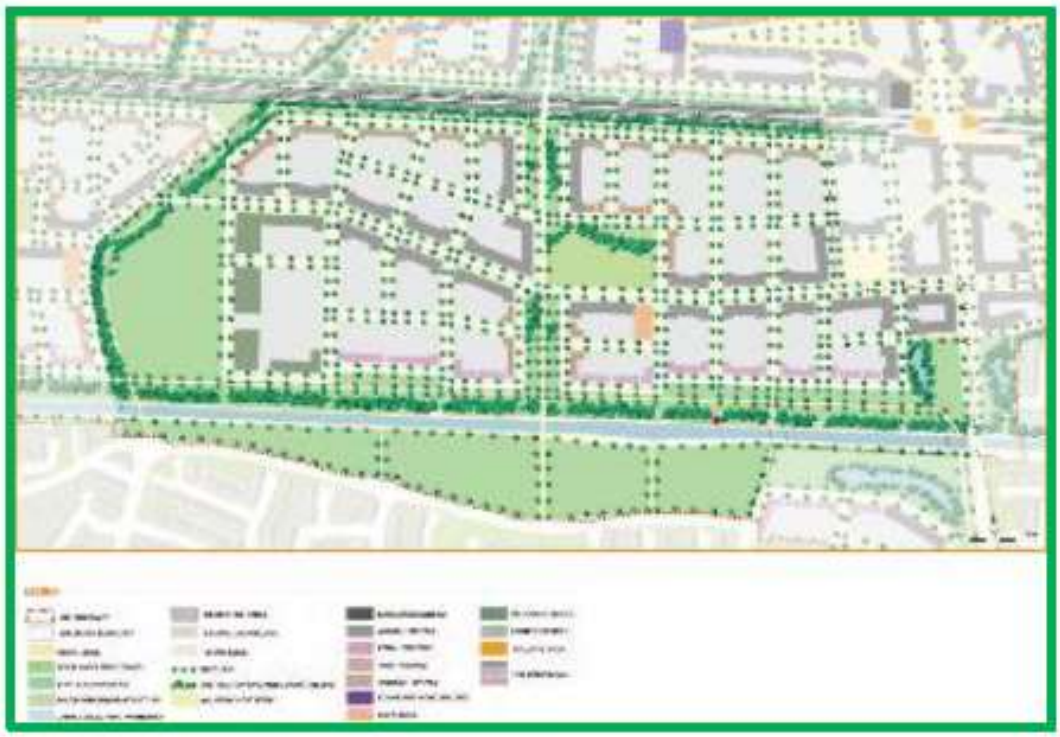
Clonburris South West

Key Objectives from Clonburris SDZ Planning Scheme for Clonburris South West

• Sensitively designed pedestrian access points to the Grand Canal; and,

• To seek the refurbishment and re-use of Omer's Lock House.

Figure 38 Visual of Clonburris South West



1A(i) Grand Canal Park

- *Retention of treelines and enhancement of treelines*
- *Retention, enhancement and creation of hedgerows*
- *Retention, enhancement and creation of woodland (pockets in park, near railway line and Grand Canal and around other water features)*
- *Planting of native flowering and fruiting tree species*
- *Creation of short-flowering species rich grassland (roadside verges, pavement verges)*
- *Creation of long-flowering wildflower meadows (areas in parkland)*
- *Herbaceous pollinator-friendly planting (urban planters, areas of annual bedding)*

- *Creation and enhancement of ponds, swales and other water-retention features*
- *Addition of bird and bat boxes on trees*
- *Sensitive lighting design and innovative lighting (e.g. red light) for the protection of bats*
- *Addition of leaf litter and log piles, earth banks and bee and bug hotels*

1B Local Park

- *Retention of treelines and enhancement of treelines*
- *Retention, enhancement and creation of hedgerows*
- *Retention, enhancement and creation of woodland (pockets in park, near railway line and Grand Canal and around other water features)*
- *Planting of native flowering and fruiting tree species*
- *Creation of short-flowering species rich grassland (roadside verges, pavement verges)*
- *Creation of long-flowering wildflower meadows (areas in parkland)*
- *Herbaceous pollinator-friendly planting (urban planters, areas of annual bedding)*
- *Creation and enhancement of ponds, swales and other water-retention features*
- *Addition of bird and bat boxes on trees*
- *Addition of leaf litter and log piles, earth banks and bee and bug hotels*

1E Railway Line and Fonthill Embankment

- *Retention, enhancement and creation of hedgerows*
- *Retention of treelines and enhancement of treelines*
- *Retention and enhancement of existing scrub habitat*
- *Creation of short-flowering species rich grassland (roadside verges, pavement verges)*
- *Creation of long-flowering wildflower meadows (railway verges, roadside verges, pavement verges, canal towpath)*
- *Sensitive lighting design and innovative lighting (e.g. red light) for the protection of bats*

3 Urban Core (small-scale retail and commercial)

- *Planting of native flowering and fruiting tree species*
- *Creation of short-flowering species rich grassland (roadside verges, pavement verges)*
- *Herbaceous pollinator-friendly planting (urban planters, areas of annual bedding)*
- *Creation of rainwater gardens, swales, green and brown roofs and living (green) walls*
- *Bird boxes on trees and on buildings (House martin, swallow and swift boxes on buildings)*
- *Bat boxes on trees and buildings*