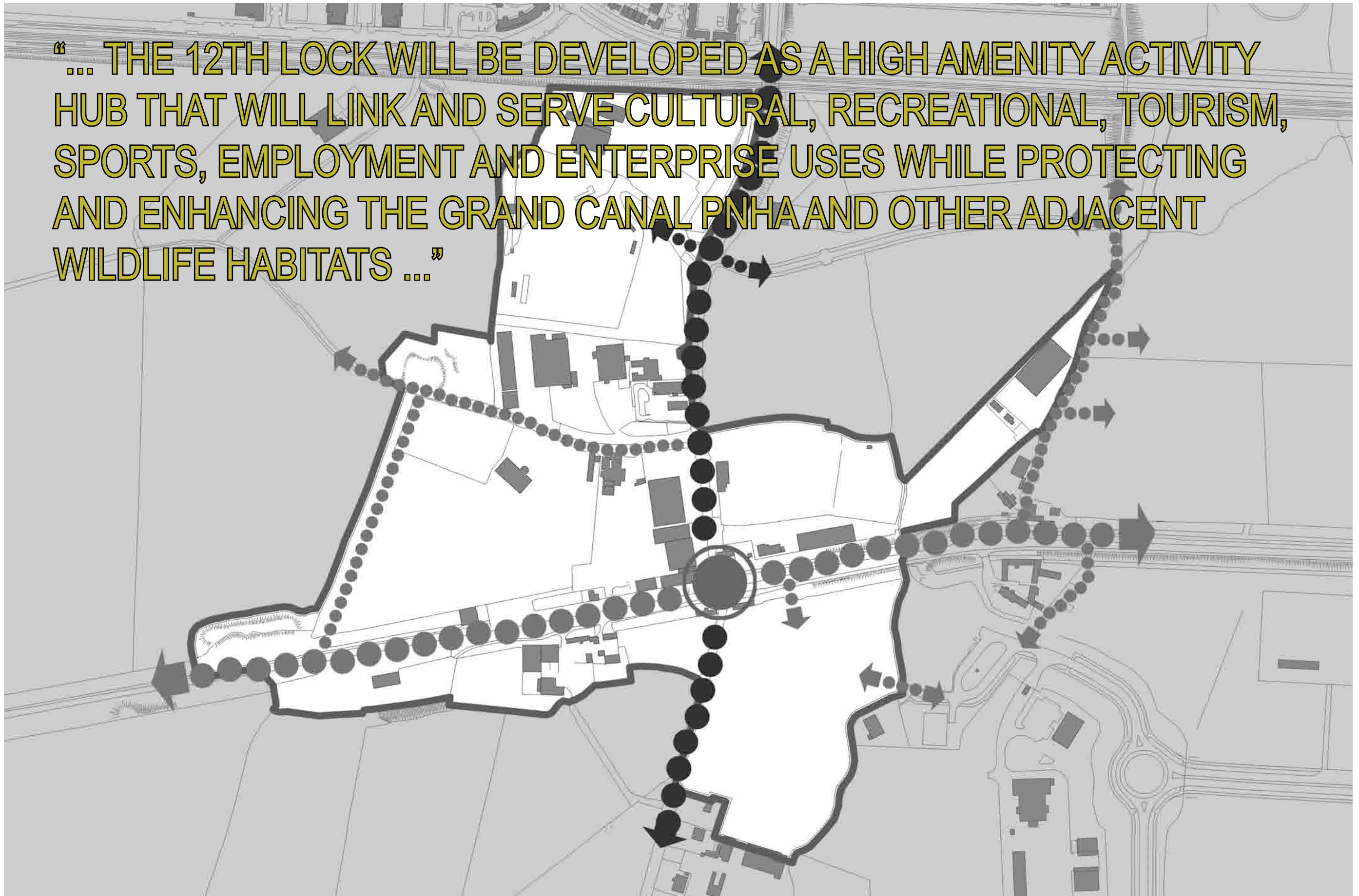


12th Lock Draft Masterplan

January 2013



“... THE 12TH LOCK WILL BE DEVELOPED AS A HIGH AMENITY ACTIVITY HUB THAT WILL LINK AND SERVE CULTURAL, RECREATIONAL, TOURISM, SPORTS, EMPLOYMENT AND ENTERPRISE USES WHILE PROTECTING AND ENHANCING THE GRAND CANAL PNHA AND OTHER ADJACENT WILDLIFE HABITATS ...”



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12th Lock
Masterplan
January 2013

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1.0 Introduction

1.1 Context

The 12th Lock is located at the edge of low lying agricultural lands to the south and west of the expanding suburbs of Lucan/Adamstown and Clondalkin. The Dublin-Cork/Kildare railway line and the Outer Ring Road form strong boundaries to these suburban expansion areas just to the north and east of the 12th Lock.

Despite the encroachment of established and recent development to the north and south-east of 12th Lock, the area retains a semi-rural character. A valuable visual amenity and unique setting is created by a combination of features including the Grand Canal, historic mill and lock buildings and structures, agricultural and recreational lands, narrow roads and towpaths, a topography that varies along the Canal and roadside and canal-side vegetation that includes hedgerows.

This document proposes a Masterplan for the area around the 12th Lock and seeks to protect and enhance this unique character and visual setting while promoting opportunities for further tourism, recreational, cultural, sports, employment and enterprise activities.

1.2 Rationale for 12th Lock Masterplan

The requirement to prepare a Masterplan for the 12th Lock stems from Specific Local Objective No. 37 of the *South Dublin County Council Development Plan, 2010 – 2016*, which reads as follows:

“37. 12th Lock - Masterplan

To prepare a Masterplan for the area around the 12th Lock to guide matters such as;

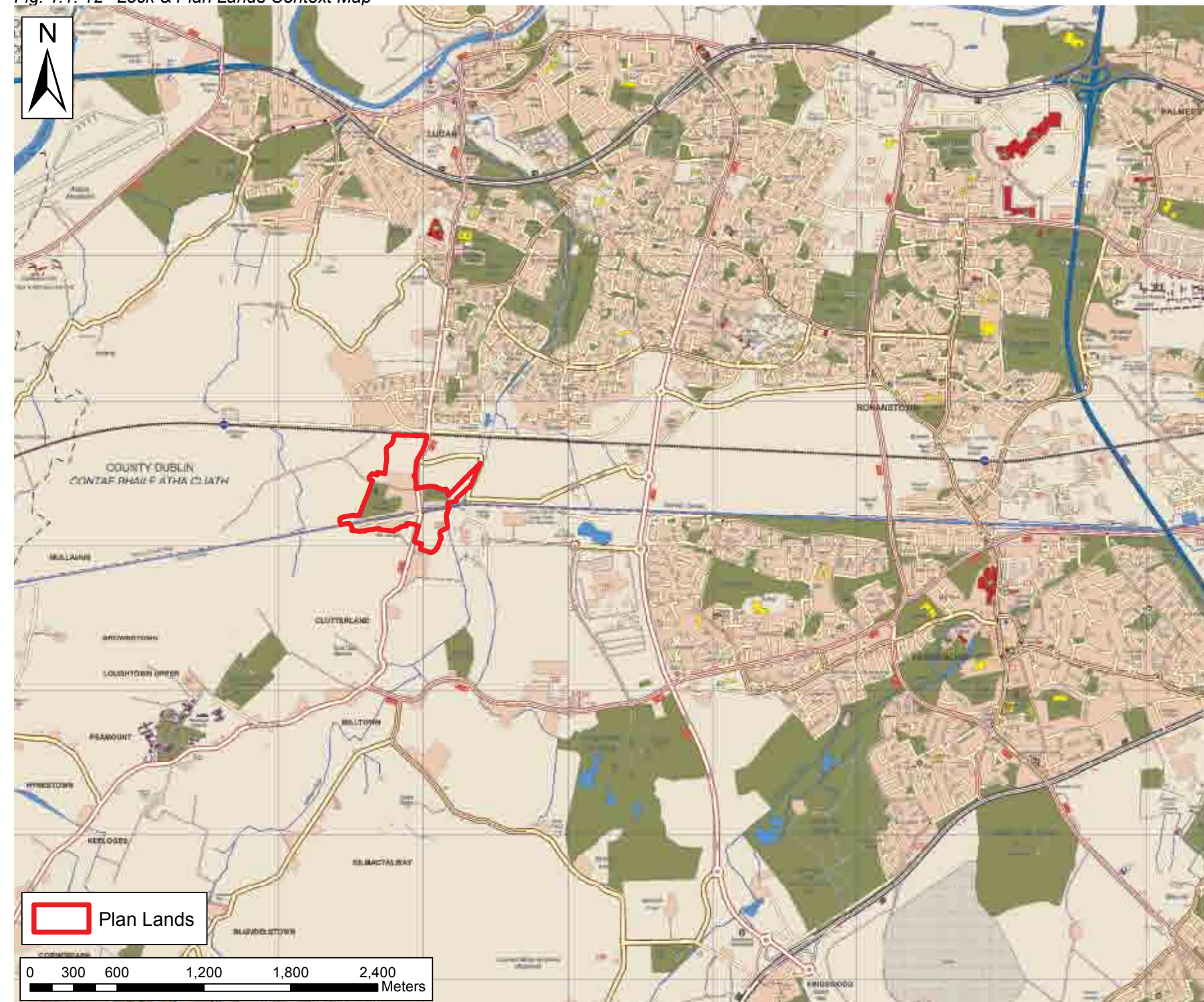
- The further development of a recreational and amenity zone given the presence of a variety of recreational and sporting amenities including the Grand Canal, Griffeen Valley Park, Lucan Sarsfields, Lucan pitch & putt and the 'green route' pedestrian and cycle paths along the Grand Canal and linking to Adamstown & Griffeen Avenue.;
- To protect and conserve the rich natural and cultural heritage of the area including the restoration of the historic Thomas Omer lock house and old mill buildings and the protection of natural habitats and ecological resources along the Grand Canal and Griffeen River.
- To facilitate the down-scaling of uncomplementary extractive, heavy-industrial and distribution uses on adjoining lands which contribute to significant and undesirable HGV usage of the R120 / Newcastle Road;
- To facilitate development of complementary uses on adjoining lands;
- To secure environmental, social and physical infrastructural improvements and other planning gains for the community including the strategic reinforcement of the power network in the area, the possible undergrounding of overhead 110kv lines, the upgrading of the R120 / Newcastle Road and the extension southward of Griffeen Valley Park.

The Grand Canal 12th Lock Master Plan is subject to the following:-

- The Grand Canal Way should be developed on the North Side westbound to Hazelhatch but not on the South Side.
- Traffic control should be implemented for cyclists' safety at the 12th Lock Bridge.
- The three storey Mill Building adjacent to the 12th Lock Bridge should be included in the list of protected structures.
- The Grand Canal should not be used as a flood relief route.
- Any restorative work on the Grand Canal should not impact negatively on the local natural environment."

The boundary of this Masterplan has been drawn up to centre on the 12th Lock and include lands and structures that are relevant to SLO 37 of the County Development Plan. The boundary therefore extends to include lands that accommodate recreational and sporting facilities (Lucan Sarsfields GAA Club & Lucan Pitch & Putt Club), historic canal-side and mill structures, non-conforming uses immediately to the north and south of the Canal, overhead power lines, adjacent undeveloped lands zoned for development (EP2) and lands adjacent to the Griffeen Valley Park.

Fig. 1.1: 12th Lock & Plan Lands Context Map



Source: Ordnance Survey Ireland

1.3 Guidance on Masterplans

The preparation of non-statutory plans such as Masterplans is referenced in the *Guidelines for Planning Authorities on Sustainable Residential Development in Urban Areas* (2009). It is stated that supplementary local development frameworks might be appropriate in certain circumstances to guide local development. Furthermore, non-statutory local frameworks must conform to the core settlement and housing strategy of the overall county development plan with respect to projected population and development land.

2.0 Area Analysis

2.1 Local Landscape Context

2.1.1 Land Uses

The area around the 12th Lock is characterised by a mix of low to medium intensity uses including agriculture, sports/recreation, service, warehousing, industry, business park and residential. The Grand Canal divides these uses to the north and south of the 12th Lock and the Adamstown Road (R120) divides uses to the east and west.

The 12th Lock and immediate section of Canal are bound to the north-west by an overgrown disused quarry, football pitches and disused and semi-occupied mill buildings and warehousing. An Irish Wheelchair Association centre, petrol filling station, showroom warehouse and cement/concrete plant are located further to the north. The immediate north-eastern edge of the Lock is bound by unoccupied warehousing with a pitch and putt club and low intensity agricultural lands further to the north-east.

The lands to the south-west of the 12th Lock are rural in character with low intensity agricultural uses. The lands immediately to the south-east includes a parcel of agricultural land adjacent to Grange Castle Business Park, which is also bound by a large builders'/storage yard and outdoor storage facility on backlands off the R120. Grange Castle Business Park accommodates a number of large scale bio-pharmaceutical and ICT facilities.

Rural dwellings are located on four corners of the 12th Lock, some of which have become derelict. Ribbon housing is located further to the south on the eastern side of the R120 and adjacent to the builders'/storage yard.

Baldonnel Military Aerodrome is located circa 2 kilometres to the south beyond agricultural lands and rural housing. The mainly residential area of Adamstown begins circa 0.5 kilometres to the north.

2.1.2 Landscape

Despite encroachment of established and recent development around the 12th Lock, the surrounding landscaped remains dominated by greenfield lands.

The landscape immediately surrounding the 12th Lock and Bridge is low lying at circa 60 metres above sea level (Ordnance Survey Ireland) and is relatively flat in topography with a localised rise in level on both sides of the Canal, which is contained within an embankment, and a slight drop in topography along the route of the Canal from west to east. Agricultural lands are divided by intact but irregular field patterns formed by traditional hedgerows.

This gentle rise in level towards the Canal and its embankment is noticeable along the Adamstown Road (R120), which rises gently to meet the Canal from its the southern and northern sides and traverses the Canal at its apex in the form of the 12th Lock Bridge. The towpaths along the southern and northern sides of the Canal rise to meet the elevated sections of the R120 immediately to the north and south of the bridge before returning to the canal-sides. The R120 also narrows slightly before traversing the Canal in the form of the 12th Lock Bridge, which includes a footpath on one side.

Fig. 2.1 Aerial Photograph of 12th Lock and Surrounding Lands



The relatively straight path of the Canal and gently sloping topography offers uninterrupted and distant views of the canal route to the east and west from the 12th Lock Bridge. The localised sloping topography combined with historic lock and mill structures, narrow towpaths and canal-side and roadside vegetation including hedgerows combine to contribute to the visual amenity and setting of the 12th Lock.

The low lying lands around the 12th Lock affords panoramic views of the Dublin-Wicklow Mountains to the south.

2.1.3 Built Form

The built form around the 12th Lock varies significantly. Low rise warehouse and storage structures set amongst large concrete yards largely occupy the area between the Canal and the Dublin-Cork/Kildare railway line on the north-western side of the 12th Lock Bridge. Tall silo, industrial and sand/cement storage structures are located within the grounds of the Kilsaran Concrete Plant close to the railway line. A two storey club house is set amongst car parking and the playing grounds of

Lucan-Sarsfields GAA Club adjacent to the Grand Canal.

Sparse development on the north-eastern and south-western sides of the bridge comprises low rise dwellings, agricultural sheds, warehousing and the single storey clubhouse for Lucan Pitch and Putt Club.

2.2 Natural Heritage

2.2.1 Grand Canal pNHA

Canals are known to comprise unique elements of built heritage that support diverse forms of natural heritage including aquatic ecosystems. The Grand Canal provides a rich linear habitat and a vital corridor for protected species including otters, crayfish and bats.

Further to its landscape and ecological interest, the Grand Canal has been designated as a Proposed National Heritage Area (pNHA) by the Minister for the Environment, Community and Local Government under national wildlife legislation. The site synopsis for the Grand Canal pNHA (Site Code: 002104) as recorded by the National Parks and Wildlife Services (NPWS) is provided within the Appendix 4 of this Masterplan.

2.2.2 Protected Species

The EU Habitats Directive seeks to protect rare and vulnerable species including species of otter, bat and crayfish and their habitats.

Bat Conservation Ireland and the Centre for Irish Bat Research recently carried out an analysis of the County in terms of areas of greatest bat occurrence (January 2012), which are listed under Annex II and IV of the Habitats Directive. This analysis was based on bat records available from 2000 to 2009. Most or all of South Dublin County was found to be within the core ranges of the common pipistrelle, soprano pipistrelle, Leisler's bat and Natterer's bat. Approximately half the County was found to be included in the whiskered bat's core range. The Daubenton's species has been found to occur only in the western part of the county. A 10km square area that includes the 12th Lock, Adamstown, Lucan and parts of Clondalkin was highlighted as having potentially very high occurrence of most bat species.

An Environmental Report carried out in August 2012 by Carroll & Brown Consultants on behalf of South Dublin County Council for an upgrade of the Adamstown Road (R120) recognised that the Grand Canal forms an important linear habitat containing species listed under the EU Habitats Directive and National Legislation. It was noted that the 12th Lock Bridge may be used for summer roosting by bats and tree growth on the north-eastern side of the 12th Lock is likely to be used by bat species. A bat survey and assessment carried out in August 2009 in compliance with permission for development of the Lucan Sarsfields GAA Club further confirms the use of the Grand Canal and its environs by bats and the existence of five species of bat in the area of the 12th Lock.

The Carroll & Brown Report found that otters, which are listed under Annex IV of the Habitats Directive and occur at various places along the Grand Canal, may use the Adamstown Road and 12th Lock as a crossing point.

The Environmental Report also noted that freshwater crayfish (protected under the Wildlife Act and listed under Annex II of the EU Habitats Directive) occur in many places along the Grand Canal including along and within a Millrace on the northern side of the 12th Lock, which is located within the boundary of the Grand Canal pNHA. The Millrace, which consists of a shallow stream that ranges from 1 to 2 metres in width, takes water from the upper end of the 12th lock and runs parallel to the Canal for circa 200 metres before releasing back to the lower end of the 12th Lock. The conservation status of freshwater crayfish is known to be poor and is also a confirmed food source for otters.

A follow up study carried out by a Consultant Aquatic Ecologist and

Photo 2.1: View East of Canal & Hedgerows from 12th Lock Bridge



Crayfish Specialist in September 2012 noted that crayfish are abundant in the Millrace with a dense population of five to ten times normal levels. It was also noted that the 12th Lock Millrace provides a corridor for aquatic animals to by-pass the lock, however, existing barriers block the route for otters at the western inlet. Subsequent to this, the Adamstown Road Improvement Scheme was amended to avoid culverting the Millrace.

Fifteen fish species are also known to be found throughout the Grand Canal the most common of which are bream, roach, tench, pike, rudd, eel and perch.

2.2.3 Parish & Townland Boundaries

Townland names are thought to be an invaluable source of information, not only on topography, land ownership and land use, but also on history, archaeological monuments and folklore. The Masterplan Lands include parts of the historic townlands of Adamstown, Gollierstown and Ballymakailly. The survival of substantially intact historic parish, townland and field boundaries within and along the boundaries of the Masterplan Lands is evident from a comparison of recent aerial photographs with the First Edition Ordnance Survey Maps of 1843 (see Figs 2.1 and 2.2). Due to the age of these boundaries and further to their historic and cultural value, it is considered they are more than likely rich in natural heritage in terms of plant and animal species and form potentially important wildlife networks that are long established.

It is also noted that two quarries that originate from before the mid-nineteenth century and are connected by historic field, parish and townland boundaries have become overgrown with pockets of flooded woodland and also form potentially important habitats for flora and fauna. Part of the southern quarry is included within the boundary of the Grand Canal pNHA.

Article 10 of the Habitats Directive recognises the importance of ecological networks and refuges as corridors and stepping stones for the movement of wildlife. The networks are considered imperative in connecting areas of biodiversity within the County to each other, thus avoiding the creation of isolated island habitats. Such corridors and refuges are known to be particularly important for mammals and small birds while providing foraging routes for bats.

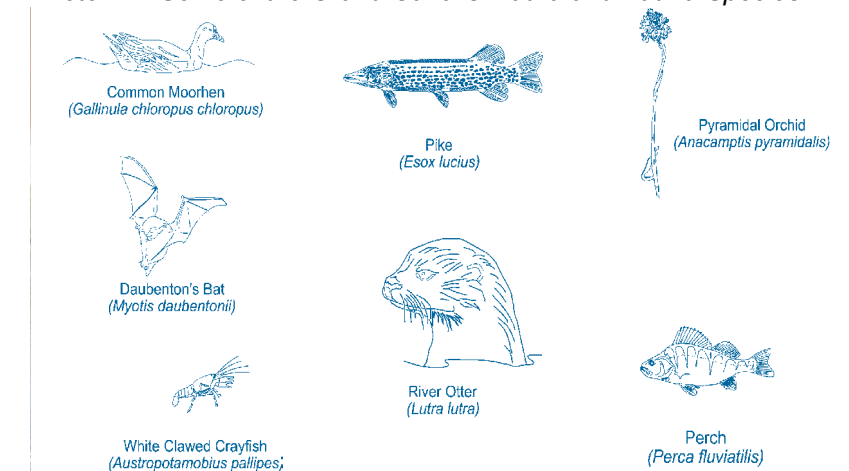
Photo 2.2: Eastern End of 12th Lock Millrace



Photo 2.3: Overgrown & Ponded Quarry



Photo 2.4: Some of the Grand Canal's Flora and Fauna Species



Source: National Parks and Wildlife Service

2.3 Built Heritage

2.3.1 Historic Mill/Canal Buildings & Structures

The 12th Lock (circa 1770) and associated bridge, which are listed separately as Protected Structures under the County Development Plan (Map Ref Nos. 125 & 127) and recorded separately under the National Inventory of Architectural Heritage (NIAH), are both considered to be of 'Regional Importance' under the NIAH. The bridge, though widened in the 1930s, is described as retaining much of its original fabric and remains a valuable element. The earlier bridge survives in the form of an arched west elevation and semi-circular coping stones that cap the parapet walls, two of which have fallen into the lower lock and are still visible. The original lower gate recesses of the Lock are also still visible.

The Bridge and Lock form part of an historic setting that comprises a coherent cluster of canal and mill structures that includes (inter alia) a victorian lock keeper's house (circa 1765) and a two storey former mill building (circa 1850s), which are both listed as Protected Structures under the County Development Plan (Map Ref Nos. 119 & 118) and the NIAH. A three storey mill building that is located adjacent to the two storey mill building and also thought to originate from the 1850s is not listed as a Protected Structure but is listed in the NIAH.

The Lock Keepers House, which is thought to be one of three surviving houses designed by the original engineer for the Grand Canal (Thomas Omer), is derelict and although in deteriorating condition appears to be structurally sound. The two storey mill building appears to be in occasional use as an office and store and is in good condition together with an adjoining derelict 2 storey house to the east that resembles an old farmhouse and was possibly a millworker's house. The 3 storey mill building appears to have been derelict for some time and is in a poor state of repair with some of its roof missing to the rear.

The Grand Canal including the 12th Lock, 12th Lock Bridge and towpaths are notable on the First Edition Ordnance Survey Maps of 1843 (see Fig 2.2). Adamstown Road (R120) and Hayden's Lane are also evident and follow similar alignments to the existing roads. A number of properties are depicted surrounding the 12th Lock, some of which correspond to existing structures most notably a flour mill that corresponds with the existing two storey former mill building, dwellings on all four corners of the 12th Lock Bridge and the Lock House.

The 12th Lock Millrace, which runs parallel to the Grand Canal on its northern side, is also depicted on the First Edition Maps. The existing Griffen River Aquaduct, which runs under the Grand Canal to the east of the 12th Lock and the existing quarries to the north-east of the 12th Lock Bridge are also depicted.

The site of a Towerhouse is recorded on the site once occupied by Adamstown Castle (Recorded Monument Reference DU017-029) to the north of the Lock.

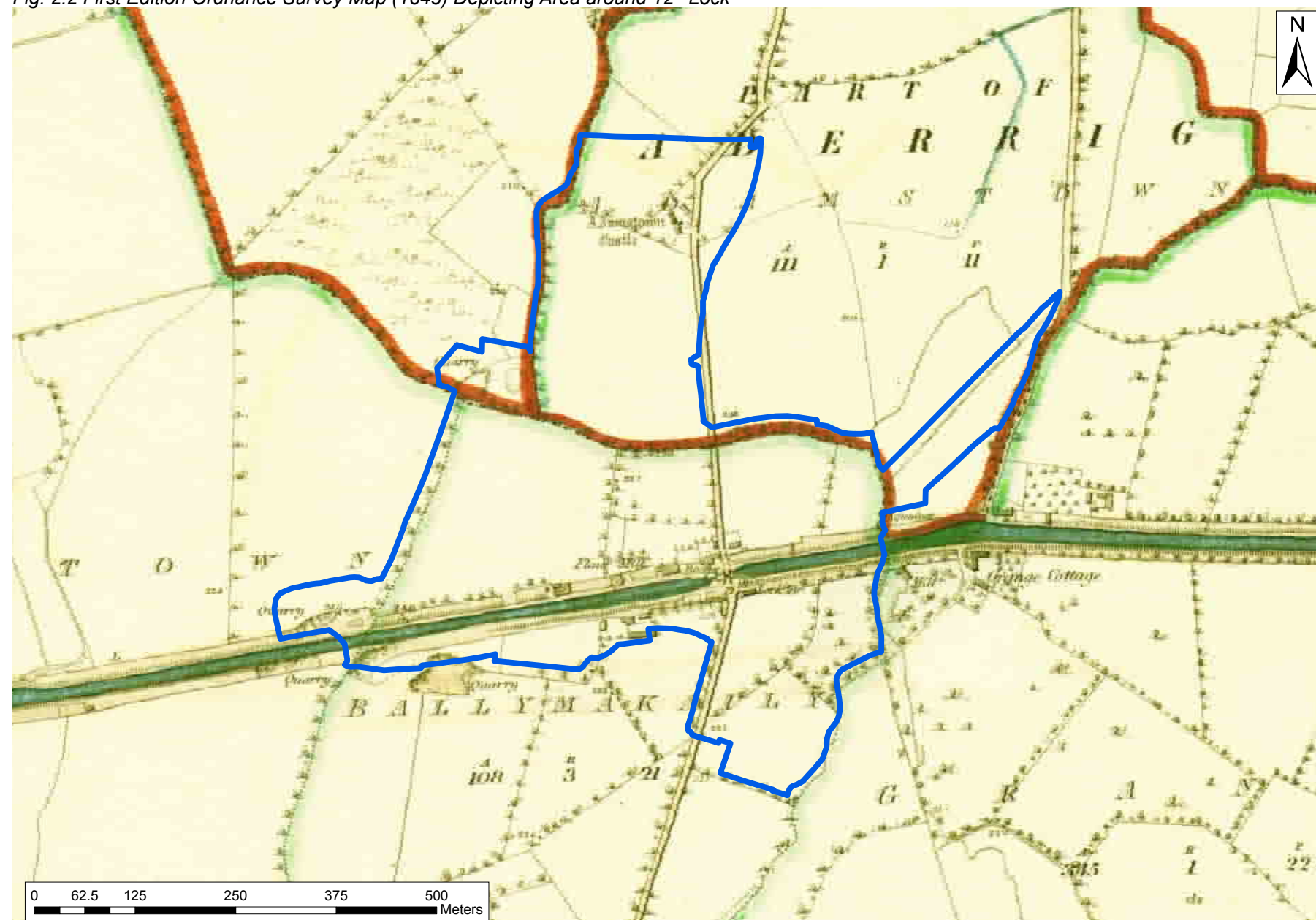
Photo 2.3: View West of Canal & Mill Structures from 12th Lock Bridge



Photo 2.4: Thomas Omer Lock House



Fig. 2.2 First Edition Ordnance Survey Map (1843) Depicting Area around 12th Lock



Source: Ordnance Survey Ireland

2.4 Accessibility

2.4.1 Vehicular Traffic & Movement

The 12th Lock is situated between the N7 (circa 5 kilometres) to the south and the N4 (circa 2.5 kilometres) to the north with the M50 located circa 3 kilometres to the east. The Outer Ring Road, which links the N4 and N7, is located circa 1.5 kilometres to the east. Its final phase was completed in July 2008.

The Adamstown Road (R120) also links both of these national primary routes via the 12th Lock. The R120 comprises a relatively narrow rural road with no street lights, footpaths or cycle lanes. Large sections of the road are flanked by traditional hedgerows and roadside ditches. The Outer Ring Road mirrors and runs parallel to sections of the Adamstown Road to the east but benefits from a straighter alignment, wider roads, footpaths, cycle lanes and street lighting with a speed limit of 80 km/h.

The Adamstown Road provides the sole primary route for movement through the 12th Lock with the Grand Canal Way, which accommodates significant pedestrian and cyclist traffic, and Hayden's Lane providing secondary routes for movement. The speed limit along Adamstown Road is 60 km/h, however, its meandering alignment and narrow width reduces traffic speed in certain sections. Traffic over the 12th Lock Bridge, which has a narrowed carriageway due to the provision of a footpath on one side, is managed by a one-way system controlled by traffic lights. No fatal or serious accidents were recorded in the vicinity of 12th Lock Bridge by the Road Safety Authority between 1996 and 2009. This database is yet to be updated.

A road improvement scheme for the Adamstown Road was approved by South Dublin County Council in November 2012. This will involve the realignment and widening of circa 1.2 kilometre of the R120 to include footpaths, cycle tracks and the widening of the 12th Lock Bridge on its eastern side with the installation of a crossing point. The bridge will be widened from circa 8.1 metres to circa 16.3 metres with the removal of the previous bridge extension on the eastern side and subsequent alterations to towpaths and hedgerows.

A comparison of vehicular traffic counts undertaken at the 12th Lock Bridge in June 2012 and at the junction of the Adamstown Road and Nangor Road in May 2004 suggests that the completion of the Outer Ring Road has reduced traffic along the Adamstown Road even when taking seasonal differences into account.

2.4.2 Public Transport

The Masterplan Lands are located circa 2 kilometres by road (via Adamstown Road and Adamstown Avenue) to the south/south-east of Adamstown Railway Station, which is served by the Kildare Twin Track Suburban Route and various intercity routes including Dublin to Cork, Dublin to Limerick, Dublin to Waterford, Dublin to Galway and Dublin to Kildare/Portlaoise. A railway station is also planned at the Outer Ring Road Transport Interchange at Kishogue that would serve Clonburris.

A bus terminus is located within Grangecastle Business Park adjacent to the Masterplan Lands. Access via a gate off the Grand Canal Way (circa 400 metres to the east of the 12th Lock Bridge) is limited to employees and local residents. The bus terminus serves the No. 13 bus between Grange Castle Business Park and Harristown in North County Dublin via Dublin City Centre and Clondalkin Village at a frequency of circa 1.5 buses per hour during peak hours on weekdays. The public transport

map below illustrates the frequency and accessibility to public transport around the 12th Lock.

2.4.3 Pedestrian and Cyclist Links

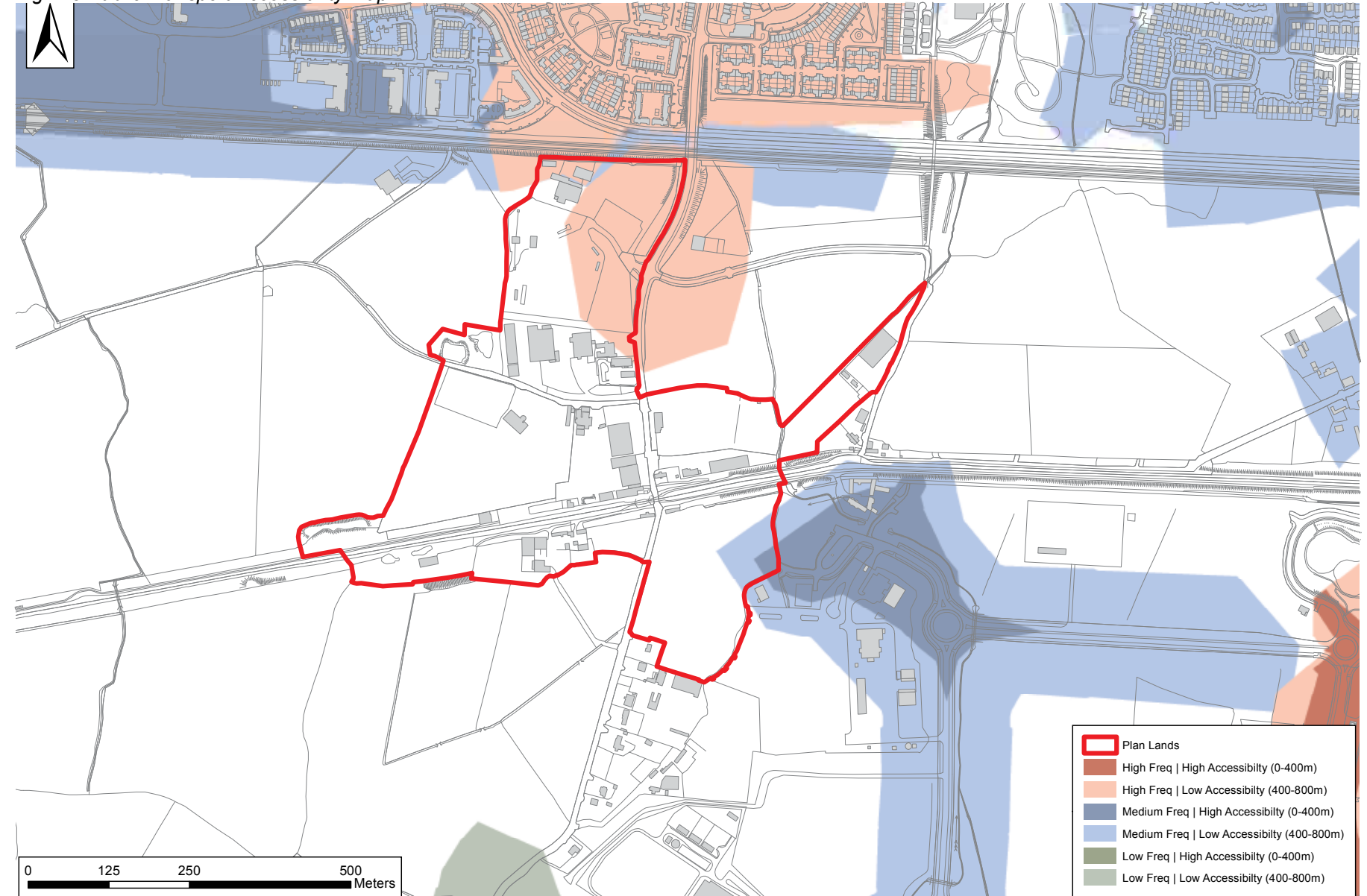
The Grand Canal Way Green Route ends on the eastern side of the 12th Lock Bridge and comprises a pedestrian and cycle route that runs for circa 8.5 kilometres along the southern side of the Grand Canal between the 12th Lock and the 3rd Lock. This provides a strategic continuous pedestrian and cycle route between Inchicore in Dublin City and the 12th Lock thus making the area including Grange Castle Business Park highly accessible to pedestrians and cyclists travelling from the direction of Dublin City. A new pedestrian and cycle bridge also links the Grand Canal Way Green Route with Griffen Valley Park circa 750 metres to the east of the 12th Lock Bridge. This provides access to a cycle and pedestrian route that continues through Griffen Valley Park before linking with Hayden's Lane further to the north.

Towpaths on the western side of the 12th Lock Bridge continue towards

Hazelhatch in County Kildare but are intermittent and vary in terms of underfoot condition. It is an objective of the *South Dublin County Council Development Plan, 2010 – 2016*, to facilitate the development of the Grand Canal at Hazelhatch as a location for (inter alia) walking trails and cycle routes between Dublin and Kildare (SLO 31).

Adamstown and its railway station is within cycling distance of the 12th Lock and the Grand Canal Way Green Route, however, no cycle lanes or footpaths are located between these destinations along the Adamstown Road. The approved Adamstown Road Improvement Scheme provides the opportunity to introduce good quality pedestrian and cycle links between the Grand Canal Way and the emerging and established populations in Adamstown and Lucan including Adamstown Train Station. The approved scheme terminates circa 250 metres to the north of the 12th Lock Bridge where it will interface with a recently upgraded section of the R120 that includes pedestrian footpaths but excludes cycle paths.

Fig. 2.3 Public Transport Accessibility Map



2.5 Drainage

2.5.1 Water Courses

The 12th Lock is located within the catchment of the Griffeen River. This river flows through Grange Castle Business Park and is culverted via an aquaduct under the Grand Canal approximately 200 metres to the east of the 12th Lock Bridge before traversing a truncated section of the Masterplan Lands and running along a 300 metre section of its boundary. The Griffeen River, which rises in Saggart, forms a tributary to the River Liffey to the north of Lucan. The Grand Canal also joins the River Liffey at Grand Canal Dock. The Grand Canal also joins the River Liffey at Grand Canal Dock.

Surface water from the Adamstown Road (R120) on the southern side of the 12th Lock and Grand Canal currently discharges to the River Griffeen via roadside ditches. Surface water drainage to the north of the Canal consists of road gulleys and surface water sewers. Some surface water on the northern side of the Canal in the vicinity of the 12th Lock Bridge discharges to the Grand Canal via the 12th Lock Millrace.

The *Eastern River Basin District – River Basin Management Plan 2009 – 2015*, which has been prepared in accordance with the European Communities Water Framework Directive, has found the overall status of the Griffeen to be ‘bad’. It is an overall objective of the River Basement Management Plan to restore the status of this river to ‘good’ by 2027. The overall status of the Liffey Lower has been found to be ‘moderate’ and it is an objective to restore the status of this section of river to ‘good’ by 2027.

2.5.2 Flood Risk

Flood risk information in relation to the 12th Lock is limited to provisional flood risk assessment data and recorded flood events from the Office of Public Works (OPW). By using fluvial (river and stream) data and pluvial (rainfall) data, the OPW Draft Preliminary Flood Risk Assessment (PFRA) has identified a number of areas located in and around the 12th Lock that could be at risk of potential flooding (see Fig 2.4).

Fluvial data identifies the potential for a 1% or 1 in 100 year event occurring along the route of the River Griffeen and beyond its banks including the section of the river that runs through and along the boundary of the Masterplan Lands circa 200 metres to the east of the 12th Lock Bridge. This takes in a section of the lands that are undeveloped and zoned ‘Objective EP2’ and a section of lands zoned ‘Objective B’ currently occupied by an element of storage and warehousing to the west of Hayden’s Lane. Pluvial data identifies the potential for small scale 1% or 1 in 100 year event occurring along the route of the Grand Canal at two points within the Masterplan Lands (circa 350 metres and 550 metres) to the west of the 12th Lock Bridge. No flood events have been recorded by the OPW within or immediately around the 12th Lock including all the lands within the boundary of this Masterplan.

2.5.3 Ground Water Vulnerability

The groundwater vulnerability within the Masterplan Lands and immediately around the 12th Lock is identified as having an extreme vulnerability (see Fig 2.6). This area is also located on a locally important aquifer. Development within and around this sensitive area could therefore impact on the quality of groundwater within the County. It is noted that many of the warehousing and industrial units to the north-west of the 12th Lock Bridge are not served by public sewers and are likely to be served by private on-site sewerage treatment systems.

Fig. 2.4 OPW Flood Risk Data

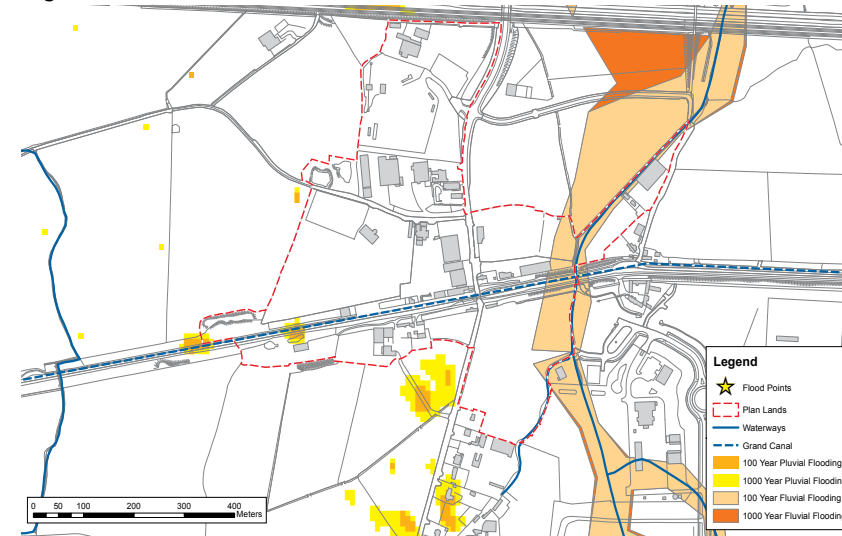


Fig. 2.6 Aquifer Vulnerability Mapping

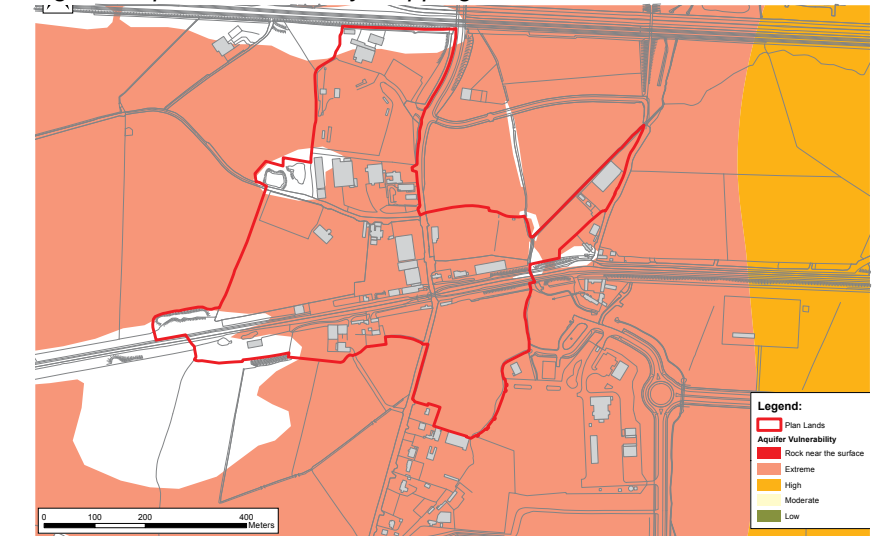
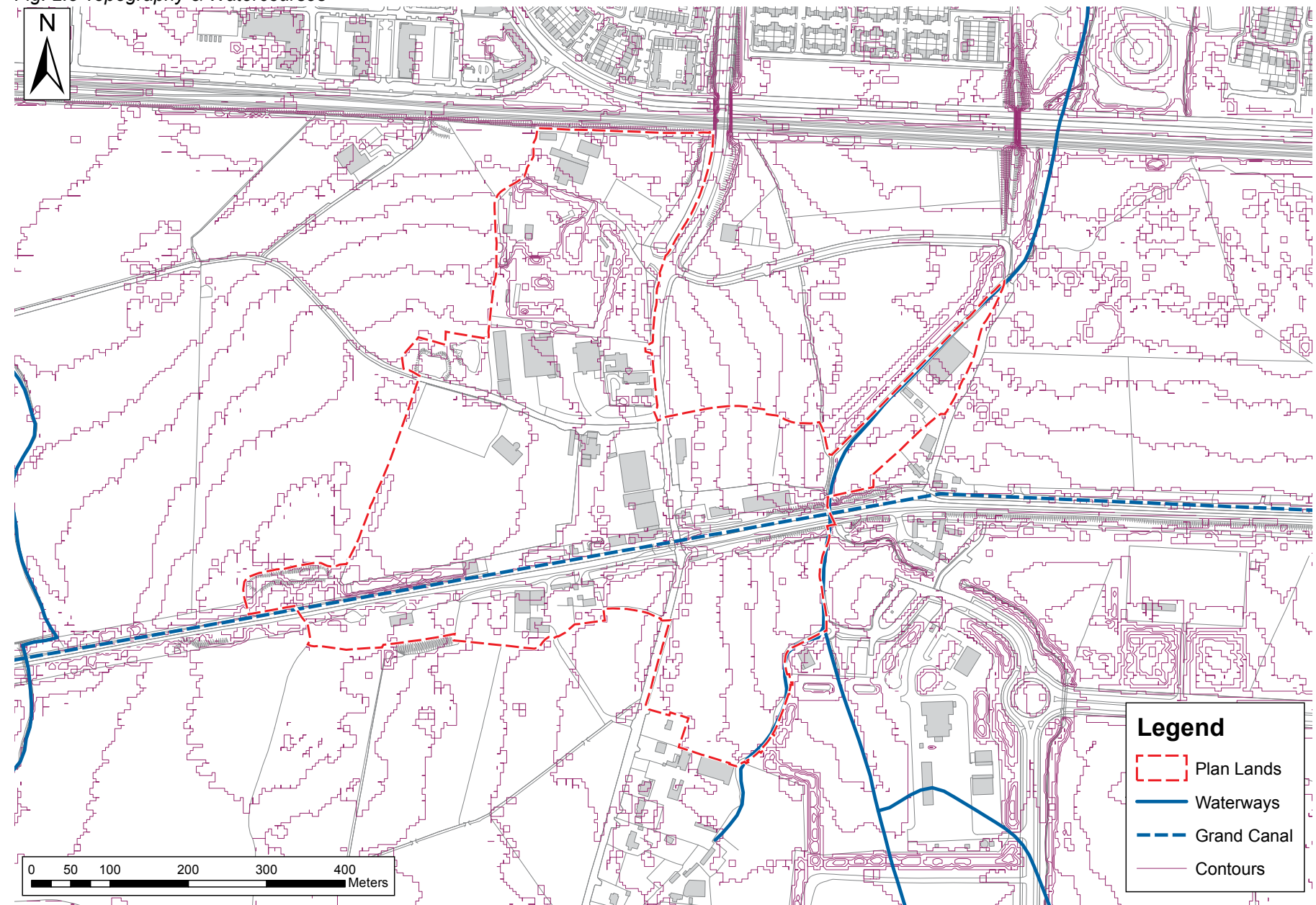


Fig. 2.5 Topography & Watercourses



Source: South Dublin County Council & OPW

2.6 Tourism & Recreational Potential

A survey carried out between January and February 2009 in preparation of the *Dublin City Canals Study* (2010) found that the most popular activity along the canals amongst respondents (432 in total) was walking, either recreationally (72%) or as a means of travel (53%). This was followed by cycling (28%), sitting (27%) and spending time at a waterside café/ restaurant or bar (23%). Other cited activities included fishing, canoeing, rowing and nature studies.

A survey of Grand Canal users in 2004 (commissioned by Waterways Ireland) identified other activities including boating (24%), horse riding and bird watching.

In terms of attracting higher use of the Canal, the key opportunities identified by respondents under the 2009 survey included additional restaurants, cafes and bars (15%), canal based recreations (15%), boats (13%), a network of cycle and footpaths (12%) and general environmental improvements (11%). Individual facilities that were identified as being required included public toilets (41%), shower/locker/ changing facilities (25%), pathways/walkways (16%), litter bins (15%) and facilities for children (12%).

The 12th Lock benefits from a unique combination of amenities and opportunities including a semi-rural setting; the Grand Canal Way Green Route; Griffeen Valley Park; a Canal that is stocked with fish; a lock with pontoons at its upper and lower ends and derelict/semi-derelict historic canal and mill buildings/structures etc. The area also benefits from recreational facilities offered by Lucan Sarsfields GAA Club and Lucan Pitch and Putt Club. The Irish Wheelchair Association operates a centre along the Adamstown Road (R120) circa 200 metres to the north of the 12th Lock. Grange Castle Golf Course and Ballybane Pitch and Putt Club are located to the south and south-east beyond Grange Castle Business Park.

These amenities in combination with proximity to Adamstown Railway Station, Grange Castle Business Park and the existing and planned links with Hazelhatch creates the potential to realise a tourism and recreation hub centred around the 12th Lock to include for activities such as cycling, walking, fishing, team sports, canoeing/kayaking, hospitality, pitch and putt, golf and leisure boating.

This potential is furthered by the *Clonburris SDZ Planning Scheme and Local Area Plan* (2008), which includes for a planned canal basin/dock between the 10th and 11th Locks and proposals to develop and enhance the southern section of Griffeen Valley Park as a major area of strategic open space for major recreation and amenity uses. These proposals are detailed further under the review of the Clonburris Plan towards the end of this chapter.

Photo 2.4: Cyclists along Grand Canal Way Near 12th Lock



Photo 2.7: Anglers along Towpath Adjacent to 12th Lock



Photo 2.5: Pedestrian & Cyclist Bridge Between Canal & Griffeen Park



Photo 2.8: Pedestrians & Cyclists along Grand Canal Way



Photo 2.6: 12th Lock Lower Pontoons



Photo 2.9: Cyclists Resting along Grand Canal Way



2.7 Local Planning Context

2.7.1 Development Plan Zoning Objectives

The circa 30.3 Hectares of lands within the boundary of this Masterplan are primarily zoned 'Objective B' (circa 24.4 Hectares/81%) under the *South Dublin County Council Development Plan, 2010 – 2016*. The County Development Plan sets out to 'protect and improve Rural Amenity and to provide for the development of Agriculture' on such lands.

Circa 4.4 Hectares/15% of the Masterplan Lands are zoned Objective EP2. This zoning objective sets out to 'facilitate opportunities for manufacturing, Research and Development facilities, light industry and employment and enterprise related uses in industrial areas and business parks'.

A small proportion of the Masterplan Lands are zoned 'Objective F', which largely corresponds with the boundary of the Grand Canal pNHA on the eastern side of the 12th Lock Bridge. The County Development Plan sets out 'to preserve and provide for Open Space and Recreational Amenities' on such lands.

The County Development Plan objectives and policies that are most relevant to this Masterplan are outlined in Appendix 1 together with the uses that are listed as either permitted in principle, open for consideration and not permitted under each of the aforementioned zoning objectives.

2.7.2 Development Status of Masterplan Lands

A large proportion of the Masterplan Lands (9.7 Hectares/32%) have been developed for the purpose of warehousing, storage, service and industry. All of this development has taken place on lands that are zoned for rural amenity and agriculture (Objective B) and appear to represent 'non-conforming' uses.

A significant proportion of the Masterplan lands (circa 6.8 Hectares/22%) that have been developed for the purpose of sports and recreation are also zoned 'Objective B'.

A large share of the Masterplan Lands remain undeveloped or in agricultural use (circa 10.4 Hectares/34%) including all the lands zoned 'Objective EP2'. These EP2 lands are subject to a planning permission for a 1,850 sq.m light industry/office/light industry block on a site of circa 0.9 Hectares. This permission expires in June 2013.

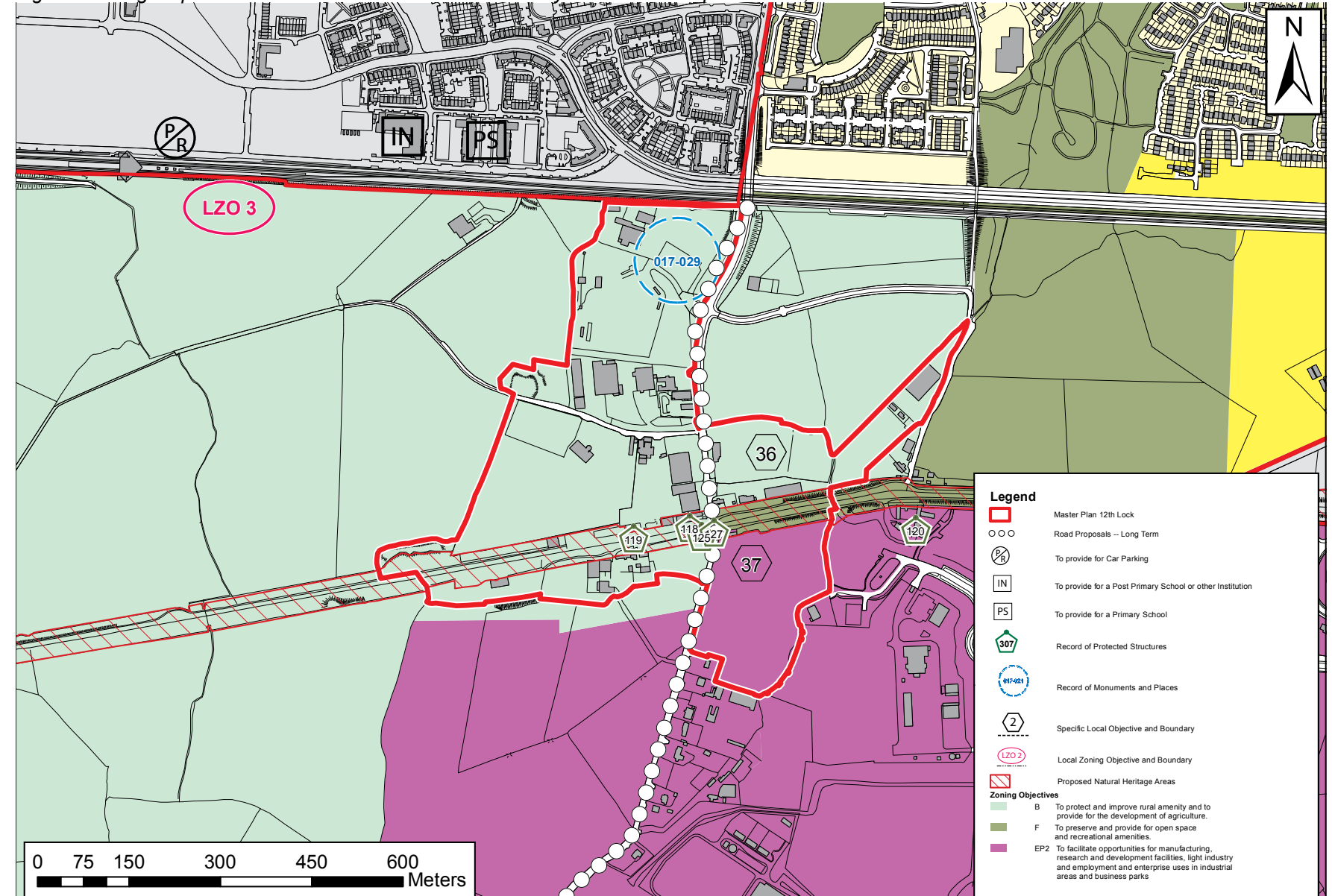
A Dublin Bus depot is also permitted along the western side of the R120 outside of the Masterplan Lands circa 750 metres to the south of the 12th Lock Bridge. The permission expires in September 2013.

2.7.3 Grange Castle Masterplan

A Masterplan was prepared in 2005 for the Grange Castle Business Park, which adjoins the subject Masterplan Lands to the south-east. The Grange Castle Masterplan sets out to attract large scale bio-pharmaceutical and ICT facilities on large plots surrounded by smaller infill developments. It is estimated that the Business Park could support employment of up to 10,000 people when fully developed.

The Grange Castle Masterplan proposes an overall framework based on east-west and north-south 'greenways' along which pedestrian and cycle routes and nodes of activity will be located including community facilities, retail/food outlets, public spaces, recreational facilities and heritage facilities etc. This includes a planned Canal Greenway/Linear

Fig. 2.7 Zoning Map of Plan Lands under South Dublin County Council Development Plan, 2010 - 2016



Park dedicated to pedestrian, cycle and waterborne movement.

The framework includes five precincts suitable for smaller scale mixed use development. It is envisaged that the precincts will accommodate offices and or research and science based activities that would support larger bio-pharmaceutical and ICT tenants.

The masterplan includes design principles on legibility, amenity, flexibility, accessibility, efficiency and image with specific urban design characteristics and objectives for each precinct. This includes for physical security around the perimeter of the Business Park with secure pedestrian access at one or more points along the Canal.

Precincts along the Grand Canal are planned to provide permeable pedestrian and cycle links with canal-side development, a pedestrian and cycle path along the Grand Canal and a potential bridging link to Griffeen Valley.

2.7.4 Clonburris SDZ Planning Scheme & Local Area Plan

The *Clonburris SDZ Planning Scheme and Local Area Plan* (LAP), which was adopted in 2008, relates to 265 hectares of lands situated between Ronanstown, Lucan, Clondalkin, Grange Castle and the area to the east of the 12th Lock.

The LAP element of the Clonburris Plan extends up to Hayden's Lane circa 350 metres to the east of the 12th Lock Bridge and includes the element of Griffeen Valley Park located to the south of the Dublin – Cork/ Kildare Railway Line and adjacent to Hayden's Lane. The SDZ and LAP lands includes circa 3 kilometres of the Grand Canal stretching from Hayden's Lane to a point beyond the Fonthill Road and 10th Lock to the east.

The SDZ and LAP divides lands into a series of neighbourhood frameworks including the 'Kishoge Grange' neighbourhood, which comprises the southern section of the Griffeen Valley Park and a circa 500 metre stretch of the Grand Canal.

The SDZ and LAP Movement Strategy seeks to secure the construction of a canal overbridge between Lynche's Lane and Grange Castle Business Park. A cycle and pedestrian bridge has recently been constructed further to the west of the planned bridge and within circa 750 metres of the 12th Lock Bridge.

The SDZ and LAP includes a comprehensive open space strategy, neighbourhood framework and detailed illustrations that seek to develop and enhance the southern section of the Griffeen Valley Park as a major area of strategic open space and as a robust and adaptable multi functional space for major recreation and amenity uses to include:

- Areas of active recreation including sports pitches, games courts and playgrounds
- Direct pedestrian and cycle routes to connect with Hayden's Lane
- Biodiversity habitat areas to include ecological corridors
- Spaces of contrasting character including small garden spaces and allotments
- Surface-water attenuation ponds fed by a SUDS system

The Design Code Section of the SDZ & LAP includes detailed illustrations for the Grand Canal Way and the Canal Overbridge. It is stated that the Grand Canal Way should feed into the overall character of Griffeen Valley Park.

It is indicated that the entire southern edge of the park along the Canal will include for the retention and enhancement of the existing biodiversity habitat and ecological corridor along the northern towpath hedgerows. Direct pedestrian and cycle routes are also envisaged to connect with Hayden's Lane.

The SDZ and LAP includes for the provision of a large rectangular canal basin/dock (circa 1 hectare) with pontoons that would be surrounded by quayside development and accessed from the canal via a narrow access channel between the 10th and 11th Locks. It is envisaged that the dock would be surrounded by a mix of leisure, entertainment and residential uses.

2.7.5 Adamstown SDZ

The Adamstown SDZ Planning Scheme, which was adopted in 2003, relates to 223.5 hectares of lands to the west of the Adamstown Road (R120) and the north of the Dublin – Cork/Kildare Railway Line.

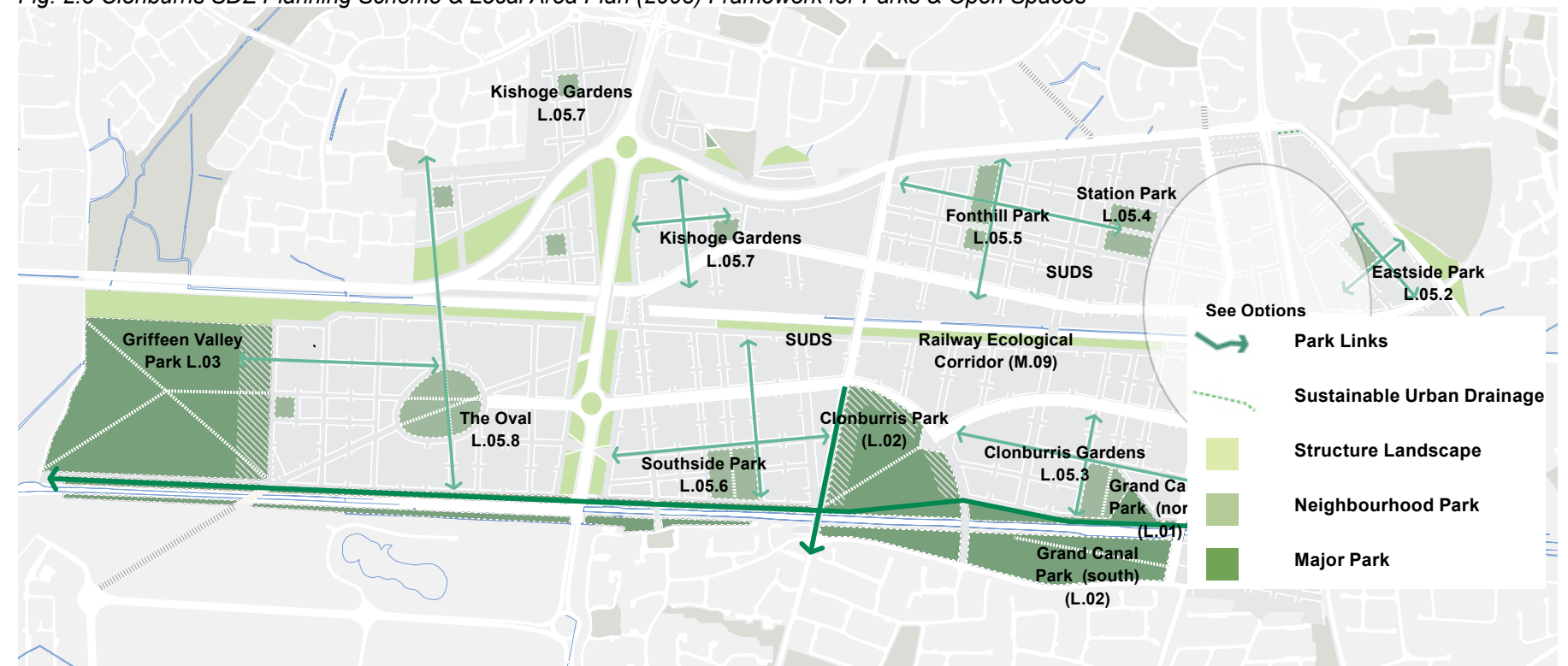
The SDZ provides for medium density residential development centred on Adamstown Railway Station at the western end of Adamstown Avenue and lower density development and post primary schools at the eastern end of Adamstown Avenue close to the Adamstown Road (R120).

The primary movement framework, which has been largely constructed, includes for north-south boulevards and streets that terminate at Adamstown Avenue, which runs parallel to the east-west railway line.

Fig. 2.9 Adamstown (2003) SDZ Planning Scheme



Fig. 2.8 Clonburris SDZ Planning Scheme & Local Area Plan (2008) Framework for Parks & Open Spaces



2.7.6 Policy & Strategic Context at Wider Level

The European, national, regional and local planning policy documents and directives that further helped to inform the preparation of this Masterplan are outlined in Appendix 1 and 2 of this Masterplan.

2.8 SCOT Analysis

A summary SCOT analysis of the 12th Lock is carried out in the Table opposite and draws from the area analysis carried out under this chapter.

Table 2.1 SCOT Analysis of 12th Lock

Strengths	Opportunities
<ul style="list-style-type: none"> Semi-rural and attractive visual setting shaped by a unique combination of built and natural heritage features Picturesque east and west views down Canal and of Dublin - Wicklow Mountains Surviving built heritage features of regional importance with a rich history - canal structures and buildings including towpaths, bridge and lock; mill structures and buildings including a millrace Surviving historic parish and townland hedgerow boundaries Rich in biodiversity and habitats that includes the canal, millrace, hedgerows, park and overgrown quarries pNHA status of Grand Canal with regional importance Evidence of Habitat Directive protected species - bats, otters and crayfish Nearby access to N4, Outer Ring Road, Dublin Bus terminus and Adamstown Railway Station Grand Canal Way Green Route - cycle and pedestrian route from Dublin City to 12th Lock Existing sports and recreational amenities including Canal, towpaths, Grand Canal Way Green Route, Griffeen Valley Park, GAA grounds and pitch and putt course Employment population at Grange Castle Business Park & community at Irish Wheelchair Association Centre Links between Griffeen Valley Park, Grand Canal Way Green Route and 12th Lock via pedestrians and cyclist routes including new bridge Traffic relief from opening of Outer Ring Road 	<ul style="list-style-type: none"> Tourism potential from heritage features and amenities Potential for increased recreation and sporting activities including golf, pitch and putt, fishing, team sports, boating/kayaking, cycling and walking Hospitality potential for café/restaurant/public house Irish Wheelchair Association events Creation of a unified and strategic sports, recreation and tourism zone that would serve Clonburris and Adamstown with links to Griffeen Valley Park Development of Canal basin/dock for boats between the 10th and 11th Locks under the Clonburris SDZ Planning Scheme & Local Area Plan Conservation, enhancement and utilisation of built and natural heritage features including mill and canal buildings Extension of Grand Canal Way Green Route towards Hazelhatch Development of Griffeen Valley Park on southern side of Railway Line to include additional recreational and sports facilities Upgrade of R120 to include cycle and pedestrian routes with links to Adamstown and crossings to serve extension of Grand Canal Way Green Route Establishment of Millrace and overgrown and ponded quarries as nature reserves Pedestrian and cyclist links with Adamstown and Adamstown Train Station Improved pedestrian and cyclist permeability between 12th Lock and Grange Castle Business Park Significant parcel of lands zoned 'Objective EP2' awaiting development
Challenges	Threats
<ul style="list-style-type: none"> Non conforming warehousing, storage, showroom and industrial development on lands zoned for agriculture and rural amenity Limited public transport options at a local level Unsatisfactory approach to Lock from Lucan/N4 to the north Absence of pedestrian and cycle route between Train Station and 12th Lock along Adamstown Road (R120) One way system operating across 12th Lock Bridge Limited permeability between Grange Castle Business Park and 12th Lock including Grand Canal Way Green Route 	<ul style="list-style-type: none"> Economic downturn Limited lands in Council ownership Intensification of non-conforming warehousing, storage and industrial development on lands zoned for agriculture and rural amenity Further development and/or loss or erosion of built and natural heritage features with adverse impacts on visual setting, biodiversity, habitats, hedgerows and Habitat Directive protected species Recently constructed section of Adamstown Road Improvement Scheme excludes cycle path Threat to ground water in the area, which is extremely vulnerable, from private on-site sewerage treatment systems serving conforming and non conforming developments

3.0 The Strategy

It is envisaged that the 12th Lock will be developed as a high amenity activity hub that will link and serve cultural, recreational, tourism, sports, employment and enterprise uses while protecting and enhancing the Grand Canal pNHA and other adjacent wildlife habitats especially those that are likely to be utilised by Habitat Directive protected species.

The creation of a successful place and an attractive and important staging post along the Grand Canal and the Grand Canal Way Green Route will involve the utilisation and enhancement of the existing visual and historic setting, recreational amenities, historic buildings/structures and ecological features that surround the 12th Lock together with the incorporation of sensitive and appropriate uses with high quality pedestrian and cyclist facilities and links.

3.1 Achieving the Strategy

The Masterplan will be achieved through the implementation of a series of interrelated strategies, which can be broadly described as follows:

1. Accessibility & Movement Strategy

The Accessibility and Movement Strategy seeks to utilise and improve the strategic north-south and east-west primary routes of the Adamstown Road (R120) and the Grand Canal, which converge at the 12th Lock. This will require improved pedestrian and cyclist routes and crossing facilities including the extension of the Grand Canal Way Green Route towards Hazelhatch to the west.

The existing primary routes will be supplemented by a choice of alternative pedestrian and cyclist routes that will knit together the Masterplan Lands especially its green infrastructure while providing links with Griffeen Valley Park and towards Clonburris and Adamstown.

2. Green Infrastructure Strategy

The Green Infrastructure Strategy for the 12th Lock sets out to protect and enhance its natural and built heritage including its visual, recreational and environmental (flora/fauna/biodiversity) amenity value, adjacent wetlands and associated habitats. The Strategy seeks to build upon this by establishing a strategically located and linked recreation and amenity zone that will serve existing and future communities at Adamstown and Clonburris.

3. Land Use Strategy

The Land Use Strategy seeks to encourage uses that will complement and aid in the creation of a hub for tourism, culture, sports and community while encouraging the re-use and renovation of historic canal and mill structures. This hub will anchor an expanded tourism, sports and recreational amenity zone.

The strategy also seeks to prevent the proliferation and intensification of non-conforming uses in the interest of directing employment and enterprise uses onto lands that are zoned and serviced for such development.

Each of the strategies is further detailed in this chapter of the Masterplan under the relevant heading.

3.2 Accessibility and Movement Strategy

The Accessibility and Movement Strategy seeks to link the unconnected areas of the Masterplan Lands with each other and integrate such with the 12th Lock as a hub for activity and movement. The Strategy also seeks to open up and connect the Masterplan Lands with surrounding locations including Griffeen Valley Park, Grange Castle Business Park and towards Clonburris and Adamstown.

The strategy follows and incorporates direct lines of movement in order to create a highly accessible place for a range of uses and activities.

3.2.1 Corridors and Routes

Promoting accessibility to the Masterplan Lands for pedestrians, cyclists and public transport users is prioritised under this Masterplan in order to help establish the 12th Lock as a sustainable and easily accessible node of movement and activity.

The Accessibility and Movement Strategy seeks to utilise and improve the strategic north-south and east-west routes of the Adamstown Road (R120) and the Grand Canal and to enhance the interface between these two routes as an identifiable hub.

Cycle and Pedestrian Access

The opening up of the Masterplan Lands will require improved pedestrian and cyclist routes and crossing facilities both along and between the primary routes of the Grand Canal and the Adamstown Road. The extension of the Grand Canal Way Green Route towards Hazelhatch is also sought.

The primary routes will be supplemented by a choice of good quality secondary pedestrian and cyclist routes (Green Secondary Routes – see Fig 3.1) that will help knit together the Masterplan Lands including elements of green infrastructure (see strategy below) and strengthen links with Grange Castle Business Park (including adjacent EP2 zoned lands), Griffeen Valley Park and towards Clonburris and Adamstown.

These secondary routes should be provided along Hayden's Lane and Beattie's Lane, which is a private lane to west of Adamstown Road that is due to be upgraded with cyclist and pedestrian paths under the recently approved Adamstown Road Improvement Scheme. A pedestrian and cycle route will also be required between the northern towpath/extended Grand Canal Green Way Green Route and Beattie's Lane. This should be considered as part of any further development or expansion of Lucan Sarsfields GAA lands.

The Adamstown Road Improvement Scheme includes for pedestrian and cycle paths and a crossing point at the 12th Lock Bridge. It is noted that details of pedestrian and cyclist facilities are yet to be finalised. These should include for traffic calming measures on approaches to the 12th Lock from the north and south, a definition point where the Canal is bridged, the maintenance of pedestrian connections between towpaths and the Adamstown Road, a sensitive planting scheme and a bridge design that reflects the building language of the Canal.

It is an objective of this Masterplan that:

- Any development on the Masterplan Lands should contribute to the creation of an open ended and integrated network of walking and cycling routes that promotes universal access for all and permeates the Masterplan Lands. Such routes may coincide with heritage

features such as hedgerows and watercourses provided that they are carried out in an appropriate and sensitive manner and accord with this Masterplan's Green Infrastructure Strategy. (**Objective AM1**)

- Any upgrade of the Adamstown Road (R120) should be sensitive to the establishment of the 12th Lock and Bridge as an important movement hub and traffic calmed zone. The following measures should therefore be incorporated at detailed design stage:
 - A pedestrian connection between the truncated north-eastern towpath and the R120 (steps or similar) to ensure that the towpath is not severed together with signage to indicate the alternative ramped access;
 - A form of definition at the point where the Canal is bridged, in order to signify the location of the bridge (currently signified by the distinct 'hump'), through the use of materials, whether in the structure/and/or road surface;
 - Ensuring that the design and materials of the retaining structures/abutments where the north-eastern and south-eastern towpaths and bridge front the canal reflect the building language of the canal i.e. vertical stone walls as existing at present and in the vicinity of bridges and lock gates generally;
 - Measures that would help deliver a lower speed, a more traffic calmed zone on the approaches to and on the 12th Lock Bridge, such as a possible change of carriageway surface materials and/or geometric measures, in the area approximately 50 metres south and 100 metres north of the bridge;
 - A planting scheme that is compatible with existing vegetation and the proposed design. (**Objective AM2**)
- The provision of an open ended pedestrian and cycle route between the northern towpath/extended Grand Canal Way Green Route and Beattie's Lane should be considered under any further development or expansion of Lucan Sarsfields GAA club. (**Objective AM3**)
- The Grand Canal Way Green Route should be extended towards Hazelhatch on the northern side of the Grand Canal in accordance with SLO 37 of the *South Dublin County Council Development Plan, 2010 – 2016*. (**Objective AM4**)
- Development of the EP2 zoned lands on the western side of Grange Castle Business Park should include for a pedestrian and cycle link with the Grand Canal Way Green Route. (**Objective AM5**)
- Limited sections of field boundary and hedgerow may be carefully altered where this caters solely for cyclist and pedestrian through access. (**Objective AM6**)
- Any extension of Griffeen Valley Park to the west of Hayden's Lane (see Green Infrastructure Strategy) should include for the upgrade of Hayden's Lane with pedestrian and cycle paths/tracks (**Objective AM7**).

Bus and Rail Access

This Accessibility and Movement Strategy attempts to improve links between the Masterplan Lands and existing public transport services in the area namely train services at Adamstown Railway Station and bus services that terminate in Grange Castle Business Park. This should help sustain and make efficient use of these public transport facilities while contributing to the establishment of a vibrant sports, recreation and tourism zone.

The Adamstown Road improvement Scheme provides the opportunity to link Adamstown Railway Station with the 12th Lock and the Grand Canal Way Green Route. A recently constructed section of the Adamstown

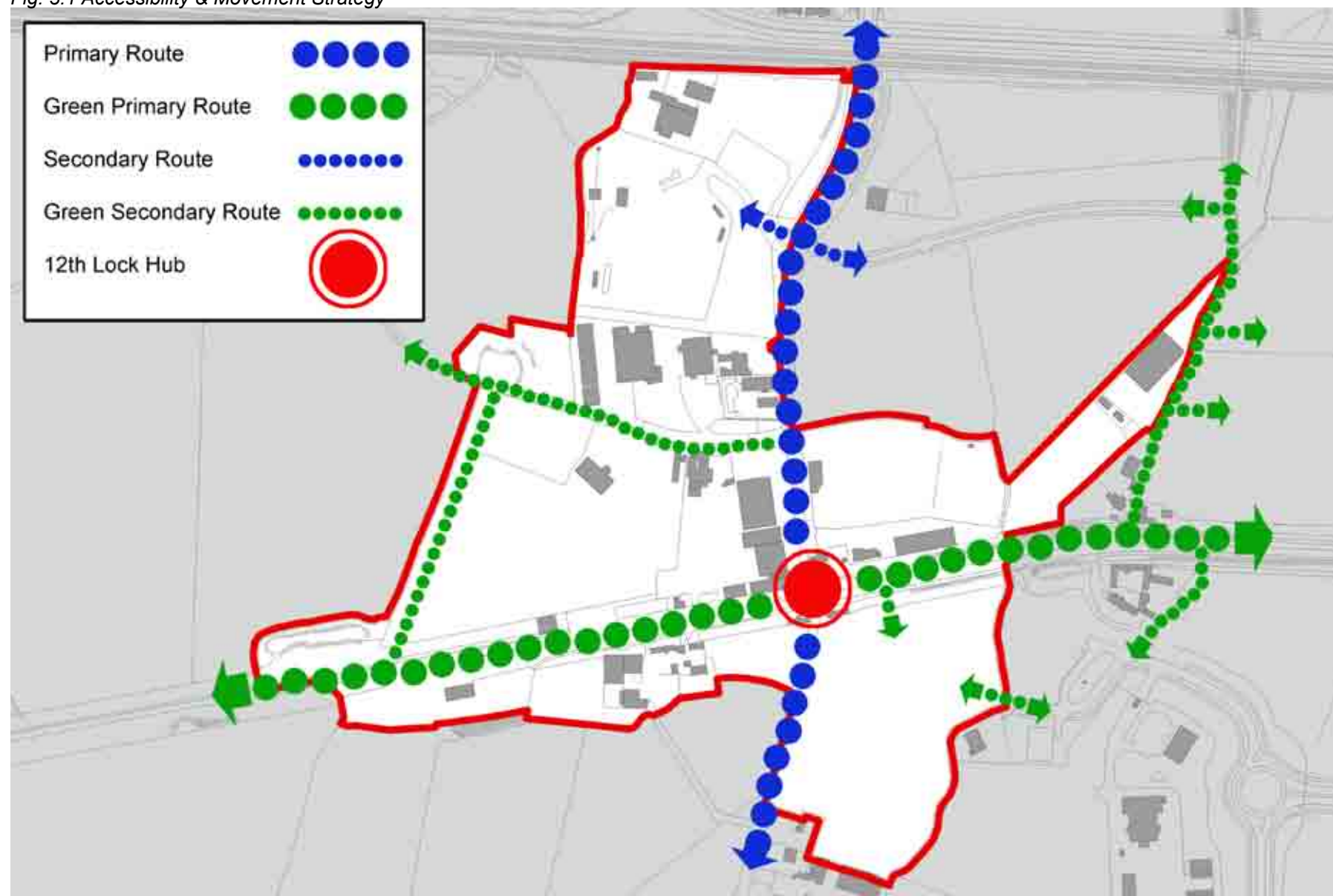
Road Scheme circa 250 metres to the north of the 12th Lock includes pedestrian footpaths but excludes cycle paths. This should be addressed under any further development or planned road improvement along this section of road.

The existing gate between the Grand Canal Way Green Route and Grange Castle Business Park should also be opened up to the general public at appropriate times in order to improve accessibility to the bus terminus located within the Business Park. Development of the EP2 zoned lands adjacent to Grange Castle Business Park should also be provided with access to these bus services.

It is therefore an objective of this Masterplan that:

- Any development or further road improvement along the existing northern upgraded section of the Adamstown Road should provide cycle tracks/paths that will integrate and link with the cycle tracks/paths approved to the south under the Adamstown Road Improvement Scheme (November 2012). (**Objective AM8**)
- The opening of the existing access gate between Grange Castle Business Park and the Grand Canal Way Green Route to members of the public should be considered under any further development of the Business Park. Access should at least be provided during the operating hours of the bus services that terminate within the Business Park. (**Objective AM9**)
- Development of the 'Objective EP2' zoned lands on the western side and adjacent to the Grange Castle Business Park. Access should at least be provided during the operating hours of the bus services that terminate within the Business Park. (**Objective AM10**)

Fig. 3.1 Accessibility & Movement Strategy



3.3 Green Infrastructure Strategy

Green Infrastructure planning is crucial in meeting the growing and increasingly complex and inter-related demands of European and national legislation and directives that relate to habitats, birds, floods, the water framework, SEA and environmental liability. This Green Infrastructure Strategy seeks to promote the conservation and enhancement of ecological features; the creation of a strategic amenity zone; the maintenance and protection of the visual setting of the 12th Lock; the protection of ground water and watercourses; the provision of an appropriate interface with rural lands and employment development; and the management of water.

3.3.1 Conservation and Enhancement of Ecological Features

This Green Infrastructure Strategy seeks to enhance and protect the 12th Lock and Grand Canal pNHA as an important linear habitat for a wide range of species including Heritage Directive Protected Species such as otter, bat and crayfish. It is considered that nearby and adjacent heritage features including hedgerows, quarries and water courses including the 12th Lock Millrace also contribute to the biodiversity of the Grand Canal by providing symbiotic habitats, wildlife refuges and corridors that are also in themselves important. Some hedgerows also demarcate historic parish and townland boundaries.

A recently permitted upgrade of pitches and floodlights at Lucan Sarsfields GAA club has been largely completed with the exception of an approved landscape scheme that is to include hedgerow planting along the southern boundary of the club's lands (illustrated within club grounds on Figure 3.2). It is noted that the permission does not expire until August 2014, however, the prompt completion of the landscape scheme is considered important in terms of visual amenity and the protection of bat species especially in the context of the associated recent upgrade of playing pitches and floodlighting.

It is therefore an objective of this Masterplan to:

- Protect and enhance hedgerows, watercourses and quarries within the Masterplan Lands in order to safeguard and improve networks of wildlife corridors and refuges that contribute to the biodiversity and visual setting of the Grand Canal pNHA and 12th Lock. This should include for the reinstatement and linking of sections of removed hedgerows and/or replacement, wherever possible, in a manner that contributes to the integration of a more comprehensive network of heritage features. **(Objective GI1)**
- Ensure that all development proposals within the Masterplan Lands maximise the opportunities for enhancement of existing ecological features and are accompanied by a full ecological assessment and Biodiversity Action Plan that includes measures to enhance biodiversity and avoid or minimise loss of existing local habitats, wildlife corridors and refuges. **(Objective GI2)**
- Protect and reinstate historic townland and parish delineations detailed on First Edition Ordnance Survey Maps of 1843 (see red and green demarcated boundaries on Fig. 2.2) including associated hedgerows and ditches and require all planning applications for development on lands that include or are bound by existing or pre-existing historic boundaries to clearly detail how these boundaries will be enhanced or reinstated and incorporated. All such applications shall include a comprehensive hedgerow survey and method statement (compiled by a suitable qualified person) for protection, incorporation and reinstatement of such boundaries before, during and after construction. Existing hedgerows along the

Fig. 3.2 Green Infrastructure Strategy



boundaries of the Masterplan Lands and the Canal shall also be protected and enhanced in a similar manner. **(Objective GI3)**

- Progress on completing the Landscaping Scheme permitted in compliance with SD09A/0246 and the submission of a certificate of effective completion should be taken into consideration under any application for further development of Lucan Sarsfields GAA club particularly for developments that would exacerbate impacts on Habitat Directive Species and the visual setting of the 12th Lock. Existing hedgerows on the club lands should also be further protected and enhanced in an appropriate manner under any further development proposals. **(Objective GI4)**
- Require the submission of a Bat Survey as part of every planning application for development, where considered appropriate, within the Masterplan Lands and require the implementation of appropriate mitigation measures that ensure for the protection of bats and their habitats. This should include for the planting of native tree species to reinforce the natural habitats of bats. The potential impact of any development on bat populations and required mitigating measures,

if appropriate and acceptable, should be established prior to any grant of permission and should not be left for agreement by way of compliance with a condition. **(Objective GI5)**

3.3.2 Strategic Amenity Zone

This Green Infrastructure Strategy sets out to integrate existing recreational amenities, greenfield lands and ecological features on the northern side of the Grand Canal in a manner that will create an agglomerated amenity zone for a range of activities including tourism, recreation, sports and ecological protection.

It is intended that this amenity zone will complement and link with the Grand Canal, 12th Lock and Griffioen Valley Park while also forming a strategic 'Green Lung' for the existing and future employment and residential communities of Adamstown and Clonburris. The strategic amenity zone should take the form of a recognisable and permeable linear network of linked spaces as illustrated in Figure 3.2. Ecological features should be protected and incorporated wherever appropriate.

Appropriate edges should also be formed between the southern side of the Grand Canal and lands zoned for rural and enterprise/employment development.

It is an objective of this Masterplan that:

- Development within the Strategic Amenity Zone should accord with uses that are listed as 'permitted in principle' or 'open for consideration' under the zoning matrix for 'Objective B' zoned lands as listed under the County Development Plan. 'Open Space' and 'Recreational-Facility/Sports Club' uses are particularly encouraged. All development should be sensitive to ecological features, protected species and the Grand Canal pNHA. **(Objective G16)**
- The Masterplan Lands on the western side of Hayden's Lane, which is partially within the 1 in 100 flood event path of the Griffeen River as identified by the OPW, should form a further extension of Griffeen Valley Park in accordance with SLO 37 of the County Development Plan and should bring a further section of river into the park to include for the protection of existing hedgerows while expanding the park's interface with the Canal. There should be no intensification or extension of non conforming uses on these lands. **(Objective G17)**
- Any further extension or upgrade of Lucan Sarsfields GAA club facilities, especially floodlighting, should prioritise the protection of Habitat Directive protected species such as bats and should ensure for the planting of the hedgerow permitted along the southern edge of the club grounds followed by further planting where considered appropriate or necessary. **(Objective G18)**

3.3.3 Protection of Visual Setting and Built Heritage of 12th Lock

This Plan sets out to protect, retain and enhance the various natural and built heritage elements that contribute to the historic visual setting and amenity around the 12th Lock within a coherent visual amenity zone. These elements include the cluster of canal and mill structures, towpaths, hedgerows, the adjacent quarry, the 12th Lock Millrace and the gentle variation in topography.

The protection of these elements together with archaeological heritage will benefit the 12th Lock in terms of enhancing and highlighting its historic character and tourism value. This should be taken into account at the detailed design/tender stage of the approved Adamstown Road Improvement Scheme. Objective AM2 of the Accessibility and Movement Strategy includes a number of suggestions that would help protect the visual amenity of the 12th Lock.

It is an objective of this Masterplan that:

- All development, including the upgrade of the Adamstown Road, should take cognisance of the contribution that various natural and built heritage elements make to the visual and historic setting of the 12th Lock both on an individual basis and as part of a coherent arrangement. These elements should be retained, protected and enhanced wherever possible. The upgrade of the Adamstown Road should be carried out in accordance with the measures suggested under Objective AM2 and Appendix 5 to include for extensive streetside planting that announces the arrival into the 12th Lock. **(Objective G19)**
- Works to Protected Structures and NIAH listed buildings (3 storey Mill Building) including development within attendant grounds of such structures shall comply with the *Architectural Heritage Protection Guidelines for Planning Authorities, 2011*. **(Obj. G110)**

- An archaeological assessment report should be submitted with any application for development in and around Recorded Monument DU017-029 (site of Towerhouse and Adamstown Castle). The archaeological implications of any such development shall be fully ascertained and it shall be demonstrated how archaeological features will be protected, incorporated and enhanced. **(Obj. G111)**
- Any significant archaeological features/deposits discovered during construction or archaeological investigations within the Masterplan Lands should be preserved in-situ where such preservation would contribute to the visual setting and/or cultural value of the 12th Lock or the surrounding area. **(Objective G112)**

3.3.4 Protection of Ground Water and Watercourses

Development within the Masterplan lands should seek to protect the route and potential flood path of water courses and should be sensitive to the quality of surface water and the prevailing groundwater vulnerability.

Development should also recognise the role of water courses and flooded quarries as potentially rich habitats for wildlife including Habitat Directive protected species especially the Grand Canal pNHA including the 12th Lock Millrace. All development should minimise disturbance to such water bodies and their surrounding/adjacent hedgerows. It is therefore an objective of this Masterplan that:

- A 5-10 metre (min) buffer (measured from the top of the bank) shall be maintained either side of all watercourses that traverse the Masterplan Lands including the Grand Canal pNHA, 12th Lock Millrace and River Griffeen. An appropriate buffer should also be provided around wetland quarries. These buffers shall be left free from development and shall protect, improve and enhance the natural character and setting of the adjacent waterbodies. In the interest of protecting habitats, natural flood paths and water quality, the culverting of sections of watercourses including the 12th Lock Millrace shall not be permitted. **(Objective G113)**
- Development proposals should be accompanied by details that demonstrate sufficient protection of existing groundwater sources from pollution during construction and operational phases. Developments that generate wastewater should largely be served by a public sewage system and there should be a preference against the intensification or extension of development that relies on waste water treatment systems especially on lands with high ground water vulnerability. Surface water shall not be discharged to the Grand Canal pNHA including the 12th Lock Millrace. **(Objective G114)**

3.3.5 Interface with Rural Lands & Transition with Development

The Green Infrastructure Strategy seeks to ensure that there is an appropriate interface between the Masterplan Lands with surrounding rural lands and an appropriate buffer between the Canal and development. Such boundaries will help protect the character of rural lands, the visual setting and approach to the 12th Lock and the ecological value of Grand Canal pNHA and associated Habitat Directive protected species.

These transitional boundaries should take the form of retained and enhanced hedgerows and overgrown quarries along the western and south-western boundaries of the Masterplan Lands together with retention of the hedgerow between the Grand Canal pNHA and the 'Objective EP2' zoned lands to the south-east of the 12th Lock and its enhancement with a protective green buffer. The hedgerow along the western boundary of the EP2 zoned lands with the Adamstown Road (R120) shall also be retained, protected and enhanced.

Objectives for retaining hedgerows and quarries throughout the Masterplan Lands are set out under Section 3.3.1 (Conservation and Enhancement of Ecological Features). In addition to these objectives, it is an objective of this Masterplan that:

- The hedgerow between the 'Objective EP2' zoned lands and the Grand Canal shall be protected, retained and enhanced with additional planting of native tree species and further planting within a Green Buffer behind which development shall be set back. The existing hedgerow and green buffer may be altered to a limited extent in order to allow pedestrian and cyclist access to and from the Grand Canal Way Green Route. **(Objective G115)**
- Undergrounding the existing overhead electrical transmission lines that traverse the EP2 zoned lands and decommissioning of associated lattice steel towers should be investigated as part of any development. **(Objective G116)**

3.3.6 Water and Flood Risk Management

The collection and on-site storage of surface water for delayed discharge to local water catchments such as the River Griffeen is necessary under the requirements of the *South Dublin County Council Development Plan, 2010 – 2016* and the *Greater Dublin Drainage Study, 2005*, which sets out to ensure that development sites do not generate any additional discharge of surface water over the baseloads of existing greenfield sites.

The requirements of *The Planning System and Flood Risk Management – Guidelines for Planning Authorities* (2009) also need to be taken into account to ensure that flooding does not impact on human health, property, the ability to meet the requirements of the EU Water Framework Directive and the need to protect existing biodiversity.

This is particularly important for any development of the 'Objective EP2' zoned lands that are located within the boundary of this Masterplan and within and along the 1 in 100 flood event path of the Griffeen River as identified by the OPW (see Fig 2.4). Surface water drainage on these lands and on any other large development sites should be conveyed more slowly before discharge by utilising Sustainable Urban Drainage Systems (SUDS). This should prioritise the use of any existing drainage channels and the natural topography of sites including existing ditches, surface water wetlands, depressions and meadows augmented (where necessary) by soft and hard engineering solutions such as swales, retention ponds/basins, soakaways, rainwater harvesting, green roofs and porous grass paviers. Landscaped based attenuation features should be planted with suitable riparian vegetation that will clean and attenuate surface flow.

It is therefore an objective of this Masterplan:

- To promote the sustainable collection and on-site retention of surface water for delayed discharge to the local water system by utilising natural swales, ditches and hedgerows and incorporating on site SUDS technologies. **(Objective G117)**
- That all planning applications for development in areas at risk of flooding shall be accompanied by a Flood Risk Assessment carried out in accordance with *The Planning System and Flood Risk Management – Guidelines for Planning Authorities* (2009). The scope of flood risk assessment shall depend on the type and scale of development and the sensitivity of the area. **(Objective G118)**

3.4 Land Use Strategy

This Land Use Strategy further seeks to promote the creation of a strategic amenity zone or 'Green Lung' that will cater for the existing and future employment and residential communities of Adamstown and Clonburris. The strategy also seeks to establish a tourism, sports and community hub at the centre of the strategic amenity zone and direct employment and enterprise uses onto EP2 zoned lands to the west of Grange Castle Business Park.

3.4.1 Strategic Amenity Zone

The objectives for the establishment of an agglomerated amenity zone that will cater for a range of activities including tourism, recreation, sports and ecological protection are set out under the Green Infrastructure Strategy for the Masterplan Lands (section 3.3.2).

3.4.2 Hub for Tourism, Culture, Sports & Community

It is intended that a hub for tourism, sports, culture and community will be established along the northern side of the Grand Canal in a manner that will link and bind the planned strategic amenity zone with a recognisable centre. The local Irish Wheelchair Association Centre should play an important role in the establishment of this hub including the realisation of additional recreational facilities and activities.

The re-use and renovation of Protected Structures and the NIAH listed mill building should be prioritised especially the Thomas Omer Lock House. The re-use of historic canal and mill structures should also be investigated as part of any extension of the Grand Canal Way Green Route. It is considered that extending the route on the northern side of the Canal should increase the viability of redeveloping these buildings especially for cultural, recreational and hospitality uses. The opening of an interpretive centre for the Grand Canal is particularly encouraged. Other viable and appropriate uses could include a café/cycle café, a public house, a bed and breakfast, cottage industry uses, clubhouse facilities, a storage facility for sports equipment or toilets, changing room and shower facilities.

Modern warehouse buildings within the hub could be also used and/or redeveloped for low to medium scale hotel/guest house uses, indoor sports/recreation facilities, clubhouse facilities, storage facilities for sports equipment or toilets, changing room and shower facilities.

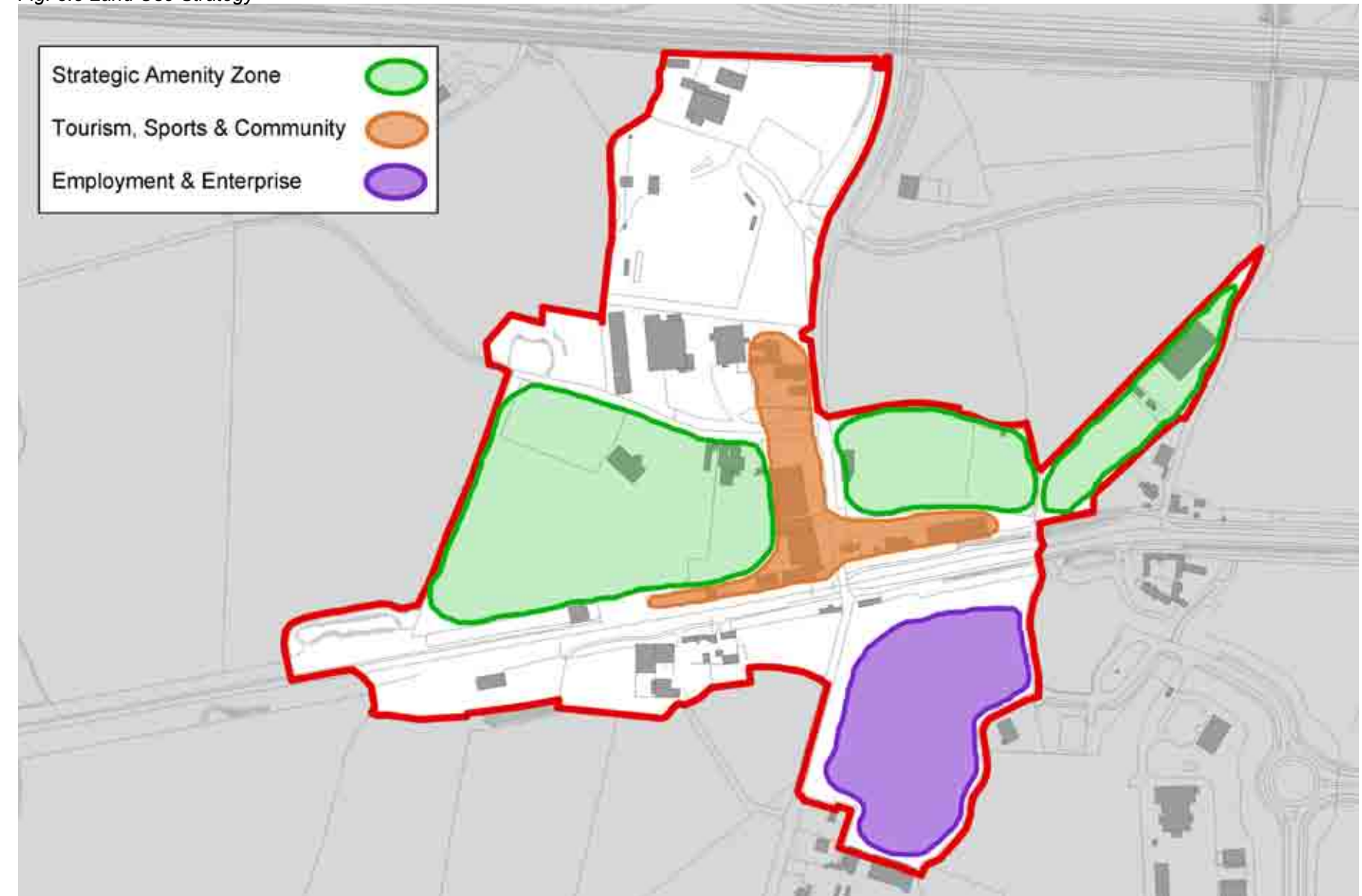
Seasonal pop-up food and beverage outlets, fishing/tackle shops or market stalls within buildings or along towpaths could also be suitable.

Installation of specially adapted facilities for wheelchair users such as a pontoon and fishing pegs should also be investigated in consultation with the nearby Irish Wheelchair Association Centre as part of any extension of the Grand Canal Way Green Route. Such facilities could be used in tandem with the *Saoirse ar an Uisce* barge based at Monsterevin in Kildare, which operates along the Grand Canal and has been designed for people with disabilities. Towpaths should also be improved to provide for universal access. Any such facilities should be designed in a manner that is sensitive to the unique and historic visual setting of the 12th Lock and should accord with this Masterplan's Green Infrastructure Strategy.

It is an objective of this Masterplan that:

- Development within the hub for tourism, sports, culture and community should prioritise the re-use of historic mill and canal buildings and should largely accord with uses that are listed as

Fig. 3.3 Land Use Strategy



'permitted in principle' or 'open for consideration' under the zoning matrix for 'Objective B' zoned lands as listed under the South Dublin County Council Development Plan. 'Rural Industry-Cottage', 'Bed & Breakfast', 'Community Centre', 'Cultural Use', 'Dance Hall/Discotheque', 'Education', 'Garden Centre', 'Guest House', 'Hotel/Motel', 'Public House', 'Recreational Buildings-Commercial', 'Recreational-Facility/Sports Club', 'Restaurant' and 'Shop-Local' uses are particularly encouraged. All development should be sensitive to ecological features, Habitat Directive protected species and the visual setting of the Grand Canal pNHA and 12th Lock. **(Objective LU1)**

3.4.3 Employment & Enterprise Zone

Development within the Employment and Enterprise Zone should accord with the relevant policy and objectives that pertain to EP2 zoned lands as contained within the County Development Plan together with this Masterplan's Accessibility and Movement Strategy and Green Infrastructure Strategy namely the requirement to provide pedestrian

and cyclist links with the Grand Canal Way Green Route and Grange Castle Business Park; to preserve and enhance hedgerows; and to further set back development from the Canal behind a Green Buffer.

It is an objective of this Masterplan that:

- Development within the Employment and Enterprise Zone should accord with uses that are listed as 'permitted in principle' or 'open for consideration' under the zoning matrix for 'EP2' zoned lands as listed under the *South Dublin County Council Development Plan, 2010 – 2016* or superseding plan. Further to Policy EE12 of the Development Plan (3.2.11.xii), offices over 1,000 sq.m should only be considered where the planning authority is satisfied that there is sufficient public transport provision and the scale of such development reflects the existing scale and layout of the area, unless this policy is changed by a superseding Development Plan. All development should be set back behind a Green Buffer and existing hedgerows and should be sensitive to ecological features, habitat protected species, the Grand Canal pNHA and the visual amenity/setting of the 12th Lock. **(Objective LU2)**

3.4.4 Non Conforming Uses

In order to ensure that development, employment uses and resources are directed onto lands that are zoned and serviced for such development, there should be a preference against any intensification, extension or change to non-conforming uses within the Masterplan Lands especially on lands that are zoned for rural development and agriculture. This will help ensure that employment and enterprise uses are directed in a planned and co-ordinated manner onto or near lands where there has been investment in infrastructure, utilities and public transport with associated efficiencies in public spending.

This approach accords with SLO 37 of the *South Dublin County Council Development Plan, 2010 – 2016*, and will help ensure for the preservation of a strategic land bank for any further planned extension of Clonburris to the west of Griffeen Valley Park and/or Adamstown to the south of the Dublin-Cork/Kildare Railway Line.

Fig. 3.3 Combined Strategies Map



Note: See Green Infrastructure Strategy Map for Visual Amenity Zone

Appendix 1: Development Plan Objectives & Policies

The following table sets out the relevant sections of the *South Dublin County Council Development Plan, 2010 – 2016*, that relate to the Grand Canal and the 12th Lock:

Section	Heading	Summary
4.3.7.xxi	Policy LHA23: Protection of the Grand Canal	Protect and enhance the visual, recreational, environmental (flora/fauna/biodiversity) and amenity value of the Grand Canal (pNHA), its towpaths, adjacent wetlands, and associated habitats and facilitate the provision of a cycle-way on one side. All development proposals adjoining the Grand Canal should be accompanied by a Biodiversity Action Plan, including mitigation measures, where appropriate.
4.3.9.xi	Policy LHA35: Public Rights of Way	Secure retention of established public rights of way. Among the most important of these is the Grand Canal Way.
3.2.11.xii	EE12: Offices over 1,000 sq.m in Enterprise Priority Two Zoned areas	Offices over 1,000 sq.m in EP2 areas shall be considered where the planning authority is satisfied that there is sufficient public transport provision and the scale of the office reflects the existing scale and layout of the existing area. Underground car parking will not be considered appropriate in EP2 locations.
Specific Local Objectives	8. River Liffey and Grand Canal – Strategy	Develop a sustainable strategy to promote the natural, historical, and amenity value of the Grand Canal (including the promotion of Lucan as a tourist destination for water – based activity).
Specific Local Objectives	31. Grand Canal - Hazelhatch	Facilitate the development of the Grand Canal at Hazelhatch as a location for water based activities, walking trails and cycle routes between Dublin and Kildare.
Specific Local Objectives	36.12 th Lock Canal Bridge	Retain and protect the character of the 12 th Lock Canal Bridge.
Specific Local Objectives	37. 12 th Lock - Masterplan	See Section 1.2 of Masterplan for full SLO text.
Specific Local Objectives	38. Grange Castle Business Park	Provide for high quality developments, which are entirely appropriate to and fully compatible with the development of the Grange Castle Business Park.
Schedule 7 – Landscape Character Areas	2. Lucan	Conserve dense mixed planting along the banks of the Grand Canal and at the golf courses.
Schedule 7 – Landscape Character Areas	4. Newcastle	Deciduous planting along the Grand Canal to be conserved.

Zoning Objective ‘B’	
“To protect and improve rural amenity and to provide for the development of agriculture”	
Use Classes Related to Zoning Objective	
Permitted in Principle	Aerodrome/Airfield, Agricultural Buildings, Boarding Kennels, Caravan Park- Holiday, Cemetery, Concrete/Asphalt Plant in or adjacent to a Quarry, Industry-Extractive, Nursing Home, Open Space, Place of Worship, Public Services, Rural Industry-Cottage, Rural Industry-Food, Traveller Accommodation.
Open for Consideration	Abattoir, Bed & Breakfast, Betting Office ^b , Car park, Cash & Carry/Wholesale Outlet ^b , Childcare Facilities ^b , Community Centre, Cultural Use, Dance hall/Discotheque ^b , Doctor/Dentist, Education, Enterprise Centre ^b , Funeral Home ^b , Garden Centre, Guest House, Health Centre ^b , Heavy Vehicle Park, Home Based Economic Activities, Hospital, Hotel/Motel, Household Fuel Depot ^b , Industry-General ^b , Industry-Light, Industry-Special, Motor Sales Outlet ^b , Office-Based Industry ^b , Offices less than 100m ² . ^b , Petrol Station ^b , Primary Health Care Centre ^b , Public House ^b , Recreational Buildings-Commercial ^b , Recreational-Facility/Sports Club, Recycling Facility, Refuse Landfill/Tip, Refuse Transfer Station, Residential ^c , Residential Institution, Restaurant, Retirement Home, Science and Technology Based Enterprise, Service Garage ^b , Shop-Discount Food Store ^b , Shop-Local ^b , Shop-Neighbourhood ^b , Transport Depot, Veterinary Surgery.
Not Permitted	Aerodrome/Airfield, Betting Office, Caravan Park-Holiday, Caravan Park-Residential, Cemetery, Guest House, Nursing Home, Off Licence, Residential, Residential Institution, Retirement Home, Rural Industry-Cottage, Rural Industry-Food, Shop-Discount Food Store, Shop-Major Sales Outlet.

^b In Villages to Serve Local Needs

^c In accordance with Council policy for residential development in rural area

Zoning Objective 'EP2' "To facilitate opportunities for manufacturing, Research and Development facilities, light industry and employment and enterprise related uses in industrial areas and business parks"	
Use Classes Related to Zoning Objective	
Permitted in Principle	Abattoir, Advertisements and Advertising Structures, Car Park, Cash & Carry/Wholesale Outlet, Enterprise/Training Centre, Heavy Vehicle Park, Household Fuel Depot, Industry-General, Industry-Light, Industry-Special, Motor Sales Outlet, Office-Based Industry, Office less than 100m ² , Open Space, Petrol Station, Public Services, Recycling Facility, Refuse Transfer Station, Retail Warehouse, Science and Technology Based Enterprises, Scrap Yard, Service Garage, Shop-Local, Transport Depot, Traveller Accommodation, Warehousing.
Open for Consideration	Agricultural Buildings, Bed & Breakfast, Boarding Kennels, Childcare Facilities, Community Centre, Concrete/Asphalt Plant in or adjacent to a Quarry, Cultural Use, Dance Hall/ Discotheque, Doctor/Dentist, Education, Funeral Home, Garden Centre, Health Centre, Home Based Economic Activities, Hospital, Hotel/Motel, Industry-Extractive, Offices 100m ² –1,000m ² , Offices over 1,000m ² ⁽¹⁾ Place of Worship, Primary Health Care Centre, Public House, Recreational Buildings-Commercial, Recreational-Facility/Sports Club, Refuse Landfill/Tip, Restaurant, Shop-Neighbourhood, Veterinary Surgery.
Not Permitted	Aerodrome/Airfield, Betting Office, Caravan Park-Holiday, Caravan Park-Residential, Cemetery, Guest House, Nursing Home, Off Licence, Residential, Residential Institution, Retirement Home, Rural Industry-Cottage, Rural Industry-Food, Shop-Discount Food Store, Shop-Major Sales Outlet.

¹ In accordance with Policy for Offices over 1,000 m² in EP2 areas

Zoning Objective 'F' "To Preserve and Provide for Open Space and Recreational Amenities"	
Use Classes Related to Zoning Objective	
Permitted in Principle	Community Centre, Cultural Use, Open Space, Recreational Facilities/Sports Club, Traveller Accommodation.
Open for Consideration	Agricultural buildings, Bed & Breakfast ^a , Boarding Kennels, Carpark, Caravan Park-Holiday, Cemetery, Childcare Facilities, Education, Garden Centre, Guest House ^a , Home Based, Economic Activities, Hospital, Hotel/Motel, Industry-Extractive, Place of Worship, Public Services, Recreational-Commercial, Recycling Facility, Refuse Landfill/Tip, Residential, Restaurant.
Not Permitted	Abattoir, Advertisements and Advertising Structures, Aerodrome/Airfield, Betting Office, Caravan Park-Residential, Cash & Carry/Wholesale Outlet, Concrete/Asphalt Plant in or adjacent to a Quarry, Dance Hall/Discotheque, Doctor/ Dentist, Enterprise Centre, Funeral Home, Health Centre, Heavy Vehicle Park, Household Fuel Depot, Industry-General, Industry-Light, Industry-Special, Motor Sales Outlet, Nursing Home, Office-Based Industry, Offices less than 100m ² , Offices 100m ² -1,000m ² , Offices over 1,000m ² , Petrol Station, Off Licence, Primary Health Care Centre, Public House, Refuse Transfer Station, Residential Institution, Retail Warehouse, Retirement Home, Rural Industry-Cottage, Rural Industry-Food, Science and Technology Based Enterprise, Scrap Yard, Service Garage, Shop-Discount Food Store, Shop-Local, Shop-Major Sales Outlet, Shop-Neighbourhood, Transport Depot, Veterinary Surgery, Warehousing.

^a In existing premises

Appendix 2: Policy and Strategic Context

This Masterplan has been informed by a hierarchy of European, National, Regional and Local Planning Policy documents and EU Directives that are outlined in the table below.

Policy Context	Policy Document/Directive	Summary of Policies/Objectives
European	<i>EU Water Framework Directive (2000/60/EC) 2000</i>	Aims to prevent any deterioration in the status of any waters and to achieve at least “good status” in all waters by 2015.
	<i>Strategic Environmental Assessment (SEA) Directive 2001/42/EC</i>	Ensuring that an environmental assessment is carried out of certain plans and programmes which are likely to have significant effects on the environment, to ensure a high level of protection of the environment. Ensuring that an environmental assessment is carried out of certain plans and programmes which are likely to have significant effects on the environment, to ensure a high level of protection of the environment. It is considered that the environmental assessment of SLO 37 under the <i>South Dublin County Council Development Plan 2010 – 2016 Strategic Environmental Assessment (SEA) Environmental Report</i> fulfils the requirement of the SEA Directive and National Legislation.
	<i>Bristol Accord</i>	8 Characteristics of a Sustainable Community. - Active, Inclusive and Safe. - Well Run. - Well Connected. - Well Served. - Environmentally Sensitive. - Thriving. - Well designed and Built. - Fair for Everyone.
	<i>Groundwater Daughter Directive (2006/118/EC)</i>	Establishes a regime which sets underground water quality standards and introduces measures to prevent or limit inputs of pollutants into groundwater.
	<i>Dublin City Council Development Plan 2011–2017 & Economic Development Action Plan for Dublin City Region</i>	Sets out Strategic Green Network. Aims to promote employment and economic opportunities via three economic/innovation corridors, one of which is the Naas Road/Rail Economic/Innovation Corridor.
National	<i>National Spatial Strategy, 2002 – 2020</i>	- Consolidate the Greater Dublin Area. - Achieve a better quality of life. - Address regional imbalances in terms of job opportunities and development.
	<i>National Development Plan, 2007 – 2013</i>	Co-ordinate national investment in infrastructure and achieve balanced regional development.
	<i>National Climate Change Strategy, 2007</i>	Integrate land use and transport policies and include appropriate technologies to bring about a change in Ireland’s contribution to climate change.
	<i>Draft Local Area Plan Guidelines - Consultation Document, June 2012</i>	Consultation draft document to facilitate planning authorities in preparing and implementing Local Area Plans having regard to realistic future development needs, wider county and city plans and regional planning guidelines.
	<i>Manual for Local Area Plans, June 2012</i>	A companion best practice manual to the Guidelines for Planning Authorities on Local Area Plans.
	<i>Sustainable Residential Development in Urban Areas, 2009</i>	Achieve 12 identified urban design criteria and prescribed densities when designing residential areas and creating neighbourhoods.
	<i>Urban Design Manual, A Best Practice Guide, 2009</i>	Accompanies Sustainable Residential Development in Urban Areas (2009) and further details and illustrates the means of achieving the 12 urban design criteria.
	<i>The Planning System and Flood Risk Management - Guidelines for Planning Authorities, 2009</i>	Guidelines aimed at ensuring a more consistent, rigorous and systematic approach to incorporating flood risk assessment into the planning system.
	<i>Smarter Travel – A Sustainable Transport Future: A New Transport Policy for Ireland, 2009 – 2020</i>	Sets out to reverse current unsustainable transport and travel patterns; outlines actions to reduce travel demand; outlines steps to ensure integrated delivery of transport policy.
Local	<i>South Dublin County Council Development Plan, 2010-2016</i>	See Appendix Masterplan above.
	<i>Dublin City Canals, 2010</i>	Recreational, tourism and commercial product identification study with investment and maintenance framework for City Canals.
	<i>South Dublin County Heritage Plan, 2010 - 2015</i>	Describes various elements of heritage value throughout the County and sets out a series of actions and objectives for the protection and enhancement of these elements and the achievement of a Green Structure. Sets out to promote the industrial, natural, historical, and architectural heritage of the County’s waterways including the Grand Canal.
	<i>Green City Guidelines, 2008</i>	Guidelines aimed at providing practical guidance on how to integrate biodiversity into new developments, specifically medium to high-density urban schemes.

Appendix 3: Protected Structures, Recorded Monuments & NIAH Listed Buildings

Protected Structures in Vicinity of 12th Lock

Map Ref.	Location	Description
118	12 th Lock Grand Canal, Ballymakailly	Stone Two Storey Industrial Building
119	Lock House, 12 th Lock Grand Canal, Ballymakailly	Victorian Style House
120	Grange Cottage, Grange, Clondalkin	Detached Six-Bay Single-Storey Farm House & Outbuildings
125	12 th Lock, R120, Lucan	Single-Stage Canal Lock, 12 th Lock
127	Leck Bridge, 12 th Lock Grand Canal, Ballymakailly	Bridge With Stone Capping
132	Grange Castle, Clondalkin	Stone Tower House (Ruin) (RM)

Recorded Monuments in Vicinity of 12th Lock

RM Ref.	Location	Description
DU017-029	Adamstown, Lucan	Tower House 'Site Of'
DU017-080	Kilmahuddrick	Barrow - Ring Barrow

Structures Listed under NIAH in Vicinity of 12th Lock

Ref.	Location	Description	Appraisal	Rating
11204052	12 th Lock Bridge	Single arch road bridge over canal, c. 1770. Segmental arch with painted dressed voussoirs stones set into smooth rendered west elevation. Roughcast rendered parapet with semi-circular coping stones and roughcast rendered pier faced with dressed granite blocks to each end. Bridge widened and refurbished in 1932.	This bridge, though widened, retains much original fabric and remains a valuable element in this group of canal structures including the lock gates and mill buildings.	Regional
11204056	Lock Keeper's Cottage	Detached three bay, two storey gabled fronted classical style former lock keeper's house, c.1765, now in use as a detached house. Timber sash windows. Roughcast rendered walls with cut stone architrave and string courses, with a round arched blind recess to the gable front. Pitched slate roof with red brick chimney stacks to each gable. Annexe to the east has a hipped slate roof, timber sash windows and timber panelled door with overlight.	This attractive former lockkeeper's house of a standard design retains much of its original architectural impact and style. The plain string courses and classical detail contrast with roughcast walls to a very pleasing effect. Possibly designed by Thomas Omer, it is a fine addition to the varied group surrounding the 12 th Lock.	Regional
11204053	12 th Lock	Single stage canal lock, c. 1770. Lock gates are of timber and iron construction with coursed granite inner walls. Painted timber mooring post at intervals between gates.	A good example of a standard type - 18 th century	Regional
11204054	Ballymakailly	Detached seven bay two storey over basement former mill (water) building, c. 1860, now in use as offices. Random coursed rubble stone walls with roughly dressed limestone quoins. Replacement timber windows. Ground floor windows have a modern concrete surround with the original red brick relieving arches still visible. Seven large oval cast-iron building ties are located on the south front. Segmental profile corrugated iron roof.	Despite alteration and conversion, this former mill building associated with the Flour Mill still retains its elegance and dominance over the 12 th lock and bridge, and is a valuable reminder of the former variety of functions associated with the canal network.	Regional
11204055	Ballymakailly	Detached multiple bay three storey over basement former mill building, c. 1860, now derelict. Roughcast rendered walls. Smooth render to the centre bays on the ground floor showing outline of a former extension, now removed. A mix of boarded-up and steel framed windows. Large door openings to ground floor of front elevation and west gable. Pitched corrugated asbestos roof.	This substantial former mill (water) building fronting onto the canal, though in poor condition, retains its imposing volume and some materials, and is a valuable document of the diversity of building functions and types associated with the canal network.	Regional
11204057	Grange Cottage	This cottage is a detached six-bay single storey farm house, constructed c.1810 with roughcast rendered walls with hipped roofs to the front elevation flanking an enclosed glazed porch with a lean-to roof of corrugated iron.	An attractive house, set alongside the lock within a complex of outbuildings. Adds character and is a valuable element within the overall group of buildings.	Regional

Appendix 4: Site Synopsis for the Grand Canal pNHA

The site synopsis for the Grand Canal pNHA (SITE CODE: 002104) as recorded by the National Parks and Wildlife Services (NPWS) is as follows:

“The Grand Canal is a man-made waterway linking the River Liffey at Dublin with the Shannon at Shannon Harbour and the Barrow at Athy. The Grand Canal proposed Natural Heritage Area (pNHA) comprises the canal channel and the banks on either side of it. The canal system is made up of a number of branches - the Main Line from Dublin to the Shannon, the Barrow Line from Lowtown to Athy, the Edenderry Branch, the Naas and Corbally Branch and the Milltown Feeder. The Kilbeggan Branch is dry at present, but it is hoped to restore it in the near future. Water is fed into the summit level of the canal at Lowtown from Pollardstown Fen, itself a pNHA.

A number of different habitats are found within the canal boundaries - hedgerow, tall herbs, calcareous grassland, reed fringe, open water, scrub and woodland.

The hedgerow, although diverse, is dominated by Hawthorn (*Crataegus monogyna*). On the limestone soils of the midlands Spindle (*Euonymus europaeus*) and Guelderrose (*Viburnum opulus*) are present.

The vegetation of the towpath is usually dominated by grass species. Where the canal was built through a bog, soil (usually calcareous) was brought in to make the banks. The contrast between the calcicolous species of the towpath and the calcifuge species of the bog is very striking.

The diversity of the water channel is particularly high in the eastern section of the Main Line - between the Summit level at Lowtown and Inchicore. Arrowhead (*Sagittaria sagittifolia*) and Water-cress (*Rorippa nasturtium-aquaticum*) are more common in this stretch than on the rest of the system. All sites for Hemlock Waterdropwort (*Oenanthe crocata*) on the Grand Canal system are within this stretch.

The aquatic flora of the Corbally Extension of the Naas Branch of the canal is also very diverse, with a similar range of species to the eastern Main Line.

Otter spraints are found along the towpath, particularly where the canal passes over a river or stream. The Smooth Newt (*Lissotriton vulgaris*) breeds in the ponds on the bank at Gollierstown in Co. Dublin.

The rare and legally protected Opposite-leaved Pondweed (*Groenlandia densa*) (Flora Protection Order 1987) is present at a number of sites in the eastern section of the Main Line, between Lowtown and Ringsend Basin in Dublin.

The ecological value of the canal lies more in the diversity of species it supports along its linear habitats than in the presence of rare species. It crosses through agricultural land and therefore provides a refuge for species threatened by modern farming methods.”

