Chapter 6 – Implementation & Monitoring

6.1 Introduction

The Naas Road LAP outlines the vision for the lands and a physical framework for activating that vision. The LAP through its policies and objectives will thereby inform both the preparation and assessment of detailed planning applications and master plans.

The responsibility for the implementation of policies and objectives contained within the LAP will be dependant on a number of possible sources, including Government Departments, Infrastructure providers, Dublin City Council and the private sector.

The success of the plan will be measured with the degree of implementation that is achieved over the lifetime of the plan in the next six years. The objectives set out in the plan need to be realistic in terms of funding capabilities and implementation structures.

The funding of the plan falls within three sectors, 1) the national government, either directly or through the guise of public utilities, 2) the Council and 3) the private sector.

Dublin City Council will actively undertake a leadership role to progress and secure the implementation of the LAP. This will involve a collaborative approach with citizens, stakeholders, sectoral interests, city partners, and the adjoining authority, South Dublin County Council, to achieve collective support and successful implementation of the plan.

6.2 Masterplan Requirement

In the redevelopment of the key sites, all key stakeholders shall be required to produce a detailed site master plan accompanied by a clearly articulated design statement. This masterplan should be agreed with Dublin City Council in advance of any major planning application. Where a landholding immediately adjoins other lands within a key site, master planning should give due consideration to the anticipated roll-out of development on such land. Of particular importance in this plan is the KDC designation and the delivery of employment generating mixed uses including retailing. Delivery of new green links and improvements in public realm shall be given due consideration when masterplans are being considered and the Council shall have regard to community gain. Residential uses are particularly sensitive to impacts of surrounding construction, and this should be given full consideration in relation to master planning.

In situations where a key site is in multiple ownership, the Planning Authority shall have discretion in regard to determining the rollout of development in instances where some owners are more ready than others to progress development– i.e. the achievement of the objectives for the site as set out in this plan shall not be unnecessarily delayed.

Key Sites

Key Sites:

1: Royal Liver Retail Park
2: Motor Distributors Ltd
3: Nissan Site / Site Fronting onto Long Mile Road
4: Muirfield Drive / Naas Road

The masterplans shall address the following key issues:

- Site Layout
- Land Uses
- Building Density
- Building Height
- Urban Design
- Community & Social Infrastructure
- Education
- Open Space
- Public Realm
- Permeability
- Heritage/Conservation
- Car parking & Vehicular Access
- Natural Heritage
- Environmental Impact Assessment
- Construction Management
- Phasing & Implementations
- Monitoring
- Infrastructure
- Flood Risk
- Green Infrastructure
- SuDS
- Landscape Design

6.3 Possible Barriers to Development

The implementation of this Local Area Plan may be constrained by a number of elements, namely the current economic climate, allocated Local Authority funding, availability of funding from other sources, and other infrastructural constraints. The nature of statutory development plans is such that no budget is agreed in advance and therefore no funding of projects or implementation of all objectives within the plan is guaranteed in advance.

There are a number of high voltage cables running through the LAP lands, which consist of a double circuit 110kV line and a single circuit 38kV line, originating in the Inchicore 110kV substation. The 38KV and in particular the 110KV power lines impose restrictions with regards to development and visual amenity of the area. There is an 80 metre restriction corridor around the 110kV line, i.e 40m corridor each side. As part of implementation of the LAP and the phasing of development on the key sites, the undergrounding of the power lines must be taken on board in the masterplans for the sites. This will need co-operation between the individual land owners.

There is a large watermain running diagonally through three key sites, and this may have to be relocated to facilitate the development of these sites.

Development in the LAP lands is also dependent on capacity being available in the Ringsend Treatment Plant. Development will only be permitted in tandem with available water supply, waste water treatment and network capacity.

There are also a number of Seveso sites, although not within the LAP lands, these are located in close proximity in South Dublin County Council lands (see section 2.1.2) which would be within the consultation zone for these facilities. These must be taken into account for all new development.

Dublin City Council will take an interdepartmental approach to the implementation of this local area plan, and also will engage with the Department of the Environment, Community and Local Government, the NTA, Department of Eduction and Skills, the Offices of Pubic works, and other relevant agencies to coordinate the delivery of key infrastructure in this area.

6.4 Community Gain

It is important that the Local Area Plan delivers a balanced approach to the future development of the Naas Road Lands through the delivery of enhanced public realm, greater connectivity between the key sites for pedestrians and cyclists, new green routes, and improvements and delivery of key infrastructure.

New developments in the area will generate an appropriate financial return for the landowners, which will underpin investment and support the viability of community and social infrastructure. It is considered reasonable therefore that the identified key development sites shall each contribute to the provision of new community and cultural infrastructure to serve the local area and wider community. The delivery phasing, operation and the costs associated with the provision of new community and social infrastructure shall be the subject to detailed negotiations between the developer, the planning authority, statutory agencies and key stakeholders.

6.5 Public Realm

The public realm areas of the Naas Road Area are likely to be completed on a staggered timescale, when the key sites come up for redevelopment. It is important that the masterplans ensure a consistent high quality approach to the treatment of the public realm.

Street furniture should have a contemporary character, and will be simple, robust and elegant. It is important in the redevelopment of the key sites, that soft landscaping be introduced into the public realm proposals. All Landscape Design / Green Infrastructure proposals in the public realm areas would be subject to liaison with the Parks and Landscape Division in Dublin City Council, and should be consistent with any objectives set out in the Green Infrastructure chapter. Signage in the public realm areas will be restricted and shall be simple and legible, and consistent throughout the plan area.

6.6 Social and Affordable Housing

All residential and mixed use development will be required to comply with the Dublin City Housing Strategy as prepared under Part V of the Planning & Development Acts.

6.7 Contributions - Section 48 Levies

All development proposals within the local plan areas are subject to general financial contribution levies as set out under the Dublin City Council Development Contribution Scheme made under Section 48 of the Planning & Development Acts, towards expenditure by City Council for works including roads, water and drainage scheme, open spaces, cultural/ arts projects and other amenities which facilitate development.

6.8 Temporary Uses

Due to the current economic climate there is a possibility that a number or sections of the sites within the LAP area that are currently vacant or underutilised may remain so in the short/medium term. Dublin City Council will adopt a dual approach of 1) ensuring vacant sites are managed properly so that sites are kept clear of debris, buildings secured, and boundary treatments are attractive and maintained and 2) encouraging temporary uses on these sites to bring activity and vitality to the area.

Temporary uses on vacant sites may include:

- ‘Greening’ to create a temporary park/biodiversity space
- Landscape screening and attractive railing to reduce negative visual impacts of rear elevations/vacant sites/exposed boundary walls
- Use of space for local events, projects or festivals.
- Allotments or community gardens
- Start up business/innovation activities
- Temporary artistic ‘fake’ frontages.
- Limited surface parking until sites are redeveloped
- Visual arts projects which enliven the public realm

6.9 Construction Phase

Dublin City Council recognise the negative impacts albeit short term, that large scale construction projects can have on local businesses and community in terms of dust, noise and other nuisances. All major planning applications will be required to be accompanied by a construction management plan to mitigate against any adverse impacts on the local business and community.

6.10 Taking in Charge

Dublin City Council is committed to the taking in change of the public areas of developments, including where appropriate new community, social and recreational facilities. In this regard applicants should refer to guidelines for Open Space Development and Taking in Charge (Parks and Landscape Services vision 2009) and the overall approach to the taking in charge of completed developments of public spaces shall be agreed in accordance with the relevant stakeholders during the individual key site masterplan preparation process.

For residential schemes clarity at application stage needs to be provided regarding the extent and scale of management companies (if such are proposed) and the extent of areas to be taken in charge or not.

6.11 Phasing

With regard to phasing, it will be an objective of Dublin City Council to promote the implementation of the LAP in a rational and sequential approach that is in keeping with the proposed development strategy, and to ensure that essential facilities (such as road infrastructure, water, sewerage, undergrounding pylons) are secured and in place concurrent with the development of the key sites. As this LAP is not greenfield, but a regeneration area comprising of separate distinct sites, a large scale phasing plan is not appropriate. The sequence with which these schemes will be advanced determines the sequence and phasing of development in the key sites.

Having regard to the large land parcels that the key sites occupy, this plan does not demand the delivery of key site strategies in any specific order as this may preclude build-out of desirable development in association with improved market forces. Nonetheless, Dublin City Council recognises the functional interrelationship between key sites in regard to land uses, urban design and linkages - and it is critical that masterplanning addresses this.

It is an objective of the Planning Authority to ensure that essential facilities such as road infrastructure , water, and sewerage networks etc, are secured in tandem with the proposed development of the key sites and that later phases within each key site are appropriately managed, secured or landscaped until their future development.

Dublin City Council reserves the right to refuse development on the grounds of it being premature pending the provision of physical infrastructure or the provision of infrastructural capacities. The phasing of the various key sites will also be dependant on waste water treatment being available at the Ringsend Treatment Plant.

In setting out both masterplan and individual planning applications it is a requirement that key internal connections are delivered at an early stage in the phased development of each key site. The complete severance of routes by the non development of a large sections of the site on a medium or long term basis whilst awaiting development will not be accepted. Sites should be sub-divided with safe, attractive connections provided. Some of these connections can be temporary, providing connectivity until the final elements of the site are delivered. Provision of dead-ends or cul-de-sacs should be avoided. In delivering connectivity, a key element that must be provided in the early phases of the sites is the east west connecting boulevard for both the MDL site and the Nissan key site. For the Muirfield and Nissan sites, new development must provide for vehicular, pedestrian and cycle interconnectivity with adjoining lands (the detail of which must be agreed with Dublin City Council) to allow both residential areas fully integrate.

6.12 Monitoring and Review

The Naas Road Local Area Plan will have effect for a period of six years in accordance with the Planning and Development Acts 2000 – 2010. Thereafter the LAP will be reviewed or extended as appropriate by resolution of the members of Dublin City Council to reflect any changed planning policy or circumstance in addition to altered market conditions.

It is the role of Dublin City Council to put in place a structure for the continual monitoring and progress review of the LAP and its objectives.

In order to ensure that the development strategy outlined in this Local Area plan is being delivered, Dublin City Council through its development management functions will monitor the implementation and phasing of this Local Area Plan. A review will assist in assessing whether the objectives detailed in the plan are being met.

6.13 Transitional Arrangements

Once formally adopted this local area plan will apply to all planning applications lodged to the Planning Authority in the plan area. In the interim period, prior to the formal adoption of this local area plan, the Planning Authority can have regard to the contents of the plan in the assessment of planning applications.

Appendices

Appendix 1: Flood Risk Assessment

Introduction

This Flood Risk Assessment was prepared and informed by the DoEHLG Guidelines for Planning Authorities (DoEHLG & OPW, 2009) on 'The Planning System and Flood Risk Management' (and Technical Appendices). The Guidelines state that planning authorities are required to introduce flood risk assessment as an integral and leading element of their development plan functions. It sets out that development plans and local area plans, must establish the flood risk assessment requirements for their functional area.

A Strategic Flood Risk Assessment (SFRA) is an area wide assessment of the existing risks of flooding and the impact on those risks arising from proposed spatial planning decisions. The assessment will focus on Stage 1 primarily (Identification of Flood Risk) , where, in general the need for a more detailed flood risk assessment is flagged (Stage 2).

The guidelines require the planning system at national, regional and local levels to:

a) Avoid developments in areas at risk of flooding, particularly floodplains, unless there are proven wider sustainability grounds that justify appropriate development and where the flood risk can be reduced or managed to an acceptable level without increasing flood risk elsewhere.

b) Adopt a sequential approach to flood risk management when assessing the location for new development based on avoidance, reduction and mitigation of flood risk, and

c) Incorporate flood risk assessment into the process of making decisions on planning applications and planning appeals.

Stages in the Assessment of Flood Risk

Stage 1 – Flood Risk Identification - to identify whether there may be any flooding or surface water management issues related to the plan area. This stage mainly comprises a comprehensive desk study of available information to establish whether a flood risk issue is existing or whether one may exist in the future.

Stage 2 – Initial flood risk assessment – If a flood risk issue is deemed to exist arising from the Stage 1 Flood Risk Identification process, the assessment proceeds to Stage 2 which confirms the sources of flooding, appraises the adequacy of existing information and determines the extent of additional surveys and the degree of modelling that will be required. Stage 2 must be sufficiently detailed to allow the application of the sequential approach within the flood risk zone.

Stage 3- Detailed Risk Assessment – Where Stages 1 and 2 indicate that a proposed area of possible zoning or development may be subject to a significant flood risk, a Stage 3 Detailed Flood Risk Assessment must be undertaken.

The general approach is to avoid development in areas with a significant risk of flooding, and where development in floodplains cannot be avoided, to take a sequential approach to flood risk management based on avoidance, reduction and mitigation of risk.

As part of stage 2, a Flood Zone Map for the plan area must be prepared drawing on the most up to date available information. This map provides information on three zones of flood risk in the study area. Zone A where there is a high probability of flooding, Zone B where there is a moderate probability of flooding and Zone C where there is a low probability of flooding.

It is important to note that the above zonal approach and the flood extent maps only cover fluvial flood risk / flood plains etc. The flood extent maps should not be used to suggest that any areas are free from significant flood risk, since these maps do not include the effects of other forms of flooding such as groundwater, pluvial Flood Risk, infrastructural/sewer failure and overflows from dams, etc.

Existing Environment - Identification of Flood Hazards

This section provides a description of spatial distribution of flood risk at appropriate scales for the Local Area Plan, based on available information.

The Grand Canal, which is a man made waterway runs in an east west direction to the north of the LAP area linking the river Liffey at Dublin with the Barrow at Athy and the Shannon, at Shannon Harbour. The river Camac enters into the functional area of Dublin City Council at the Old Naas Road and makes its way to the river Liffey at Heuston Station, Islandbridge via a series of natural open channels, mad-made channels and culverts. There are four stretches where the river channel is open and natural but these are so short and far apart that the river is essentially a heavily modified water body and has been designated as such in the River Basin Management Plan. The river passes through a number of industrial estates and residential areas as it flows into the city. The Robinhood stream, the Gallblack stream (including the Blackditch and Gallanstown streams) and the Walkinstown Stream all discharge to the river Camac. An extensive surface water drainage network discharges to the River Camac and a significant number of combined sewer overflows also discharge to the river and its tributaries.

Historically, flooding in the catchment has posed a problem within the heavily urbanised areas causing damage to adjacent river properties. However some flood alleviation measures have recently been undertaken on the main channel at Corkagh Park in Clondalkin, and along the Robinhood stream. The river drains large areas of residential and industrial lands and two major roads, the Western Parkway Motorway (M50) and the N7 Naas Road.

The drainage network in this area is a partially separate system in which foul sewage, together with some surface water is carried by an individual system of sewers to the Grand Canal Tunnel sewer and the balance of the surface water is collected in an independent system of surface water sewers ultimately discharging in to the River Camac. As the pipe network in the city centre catchment area is flowing at capacity, all new flows will be directed to the Grand Canal Tunnel through the 9B sewer serving the area. There are many misconnections of foul sewers to surface water infrastructure in the old industrial brownfield sites that make up much of this area, these are being addressed as far as is possible.

Naas Road LAP

In terms of the general performance of the pipe network in the Naas Road catchment, this varies from poor to reasonable. The Naas Road Local Area Plan area drains to two separate catchments. Most of the area is connected to the Grand Canal Tunnel catchment with a small area at the northern end connected to the city centre catchment. Both catchments ultimately discharge to the Regional Waste Water Treatment Plant at Ringsend. As of 2012, this facility is operating at its design capacity. Dublin City Council, is currently finalising proposals to increase capacity of the plant at Ringsend from 1.7 million PE (population equivalent) to 2.1 million PE, with a target completion date of 2015.

Although the River Camac runs through the eastern part of this LAP, there is a very limited surface water network connected to it. Most of the surface water pipes in the area discharge to combined sewers. It is not sustainable to allow storm water flows continue in the combined system as the cost of pumping and then treating 'clean' storm water is significant.

The storm water flow should be separated out using modern sustainable drainage systems. All new developments will be required to implement these principles by treating their storm water flows on site to ensure volumetric reduction and qualitative improvement of the storm flows. Examples of systems include soakaways and rainwater harvesting. Other systems can be viewed on www.irishsuds.ie.

Flood Zone Map

In preparing a flood zone map for the Naas Road Lands, the most suitable and most recent source of information is the Catchment Flood Risk Assessment and Management Studies (CFRAMS) which are being carried out by Dublin City Council and adjoining authorities in conjunction with the OPW.

In June of 2011 the Minister of State at the Department of the Finance with special responsibility of the Office of Public Works announced that RPS consulting engineers have been appointed to carry out a major study of flooding in the Eastern River Basin District catchment. This will identify in detail the causes of flooding throughout the catchment and produce an integrated plan of specific measures to address the significant flood risk factors in a proactive and comprehensive way. The Eastern River Basin District includes Co.Dublin and portions of Cavan, Kildare, Louth, Meath, Offaly, Westmeath, Wexford and Wicklow. The CFRAMS study is part of a programme being undertaken by the OPW in line with current national flood policy and the EU Directive on the Assessment and Management of Flood Risk which requires that such studies be completed for each catchment by 2015. The CFRAMS plans are due December 2015 with flood maps due December 2013.

In the absence of the CRAMS study, the main information to be used for the flood mapping comes form the Greater Dublin Strategic Drainage Study (GDSDS) which shows the computer modelled 1 in 100 year flood event extent; and also from a number of other sources below:

- Responses from statutory bodies during the consultation process were examined, with particular reference to concerns relating to flood risk.
- The nature and location of the area in the vicinity of the proposed development was described in terms of the existing hydrological environment.
- The existing site geology and hydrogeology was examined in terms of how they relate to the flooding history and the potential for drainage methods of the proposed scheme.
- All existing historical information on previous events, studies and surveys, was examined as made available from the Office of Public Works (OPW) flood hazard mapping website. www.floodmaps.ie.

The GDSDS was commissioned in 2001 to identify policies and works leading to the development of a sustainable drainage system for the Greater Dublin Area. As part of this study drainage models were produced for a number of foul and stormwater catchments including the Tolka River, the Camac River and Santry River. 100 year flood extent maps were prepared for each of the catchments as part of the studies. These maps were studied in the preparation of this flood risk assessment.

The main flood risks identified in the GDSDS for this area are flooding points 11 to 15 which refer to 100 year flooding of portions of Lansdowne Valley Business Park, Riversdale Industrial Estate, Bluebell Avenue, Sheldon Park Hotel (although some river widening has been carried out subsequently) and Kylemore Road.

The main risk to the Naas Road Area would be from both pluvial and fluvial flooding. All the areas identified above would be in Zone A when referring to the National Flooding Guidelines. The GDSDS did not carry out a 1,000 year flood extent map so Zones B and C cannot be accurately delineated until flood map outputs from the Eastern Region Catchment Flood Risk Assessment and Management Study are received around the end of 2013, however any development adjacent to Zone A must be considered to be in Zone B unless disproved by hydraulic analysis. A significant amount of road flooding is also indicated by the computer models in the 100 year event, especially on Bluebell Avenue and the Longmile Road.

For the purposes of this study an indicative 20m band outside the Flood Zone A has been identified which will act as a rough estimate for Flood Zone B.

As can be seen from the above, five specific areas have been identified in the GDSDS with potential conflicts between development and flood risk. These areas identified on the Flood Risk Map will be subject to a site specific flood risk assessment appropriate to the type and scale of the development being proposed. Mitigation measures will be incorporated to ensure that any development taking place will not exacerbate any flooding issues.

The five areas involved are largely confined to existing industrial estates and some existing residential area. These areas will be identified on a Flood Risk Map to accompany the plan and a policy will be included to state that any development proposal in these areas will be subject to a site specific Flood Risk Assessment appropriate to the type and scale of development being proposed. Mitigation measure will ensure that any development taking place will not exacerbate any flooding issue.

OPW Classification of Flood Zones

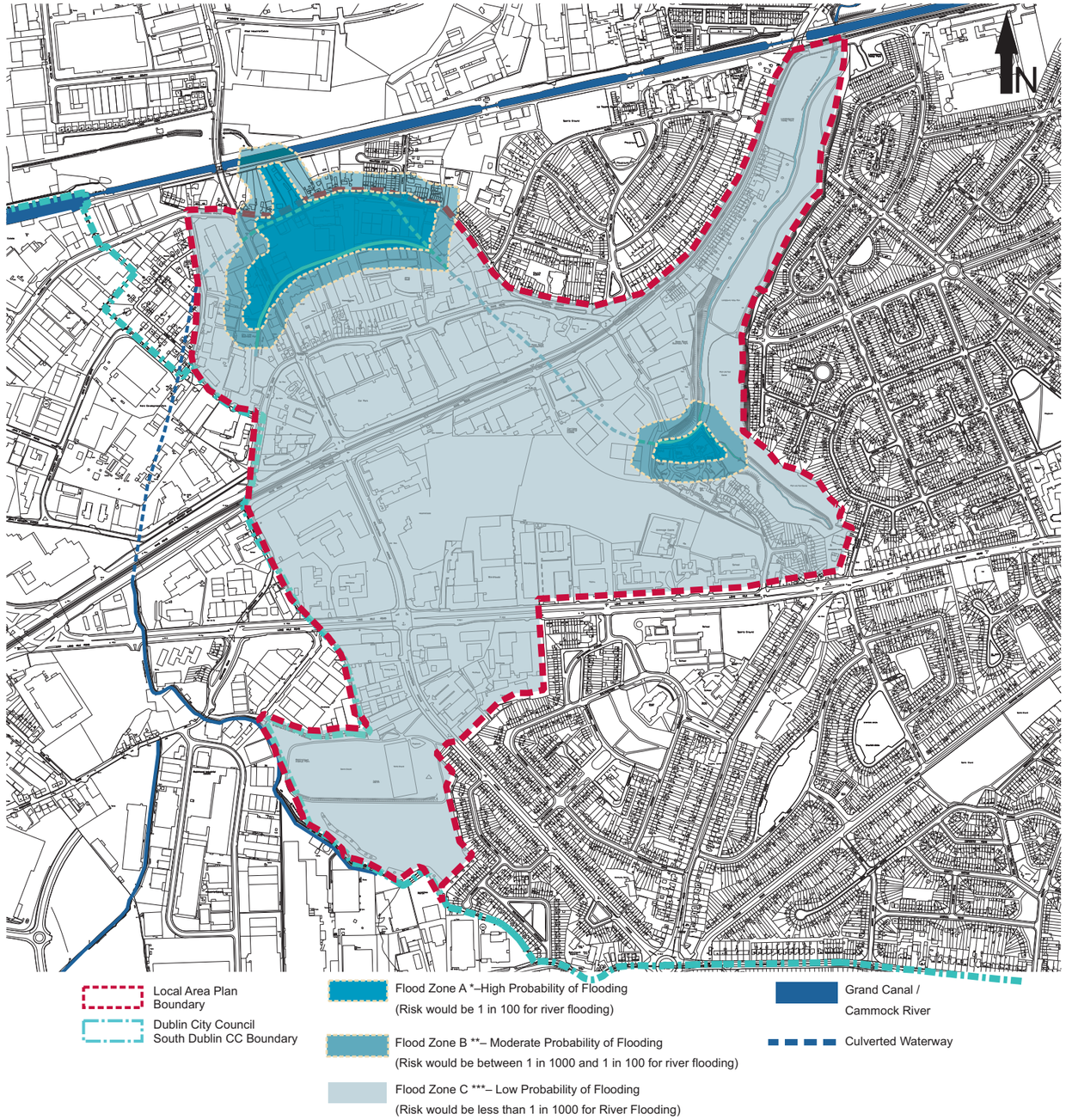
Flood Zones are geographical areas within which the likelihood of flooding is in a particular range and they are a key tool in flood risk management within the planning process as well as in flood warning and emergency planning. There are three types or levels of flood zones defined in the DECLG and OPW Guidelines on Flood Risk Management:

- Zone A – High probability of flooding – Where the average probability of flooding from rivers and sea is highest (greater than 1% annually or more frequent than 1 in 100 years for river flooding or 0.5% annually or 1 in 200 years respectively for coastal flooding). Most forms of development are deemed to be inappropriate here, only water compatible development including essential infrastructure which cannot be located elsewhere, would normally be allowed

- Zone B – Moderate probability of flooding – (Risk between 0.1% annually or 1 in 1000 and 1 % annually or 1 in 100 years for river flooding, and between 0.1% or 1 in a 1000 years and 0.5% annually or 1 in 200 years for coastal flooding) highly vulnerable development including hospitals, residential care homes, Garda, fire and ambulance stations, dwelling houses and primary strategic transport and utilities infrastructure would generally be considered inappropriate unless the requirements of the justification test is met. Less vulnerable development such as retail, commercial and industrial uses, short term let for caravans/camping, and secondary strategic transport and utilities infrastructure might be considered appropriate in this zone. Less vulnerable development should only be considered in this zone if adequate lands or sites are not available in Zone C and subject to a flood risk assessment to the appropriate level of detail to demonstrate that flood risk to and from the development can or will be adequately be managed.

- Zone C – Low probability of flooding – (Risk is less than 0.1% annually or 1 in 1000 years for both rivers and coastal flooding) Development is appropriate from a flood risk perspective (subject to flood hazard from sources other than rivers and coast meeting normal proper planning considerations).

Flood Zones



Mitigation Measures Proposed

The Greater Dublin Strategic Drainage Study made a number of recommendations to address the flooding issues in the most extreme scenario (2031). In their report, the areas which showed the most network deficiencies were in the older areas of the catchment. In Dublin City Council the following industrial areas such as Bluebell , Ballymount and Cookstown Industrial Estate , where solutions generally involve upsizing of pipes. In Walkinstown flooding in this area is unverified and it was recommended in the report that a detailed study be carried out, which included manhole and CCTV surveys. There were also a number of areas identified in the minor network of the catchment where non critical flooding was predicted. This is addressed in a single drainage development option which proposes upsizing of smaller pipes across the network. The following areas were found to be at risk of flooding during the option development in the catchment namely, a) Kilmainham b), Kylemore Road/Bluebell Avenue, c) Robinhood Industrial Estate, d) Nangor Road Industrial Area, and e) Clondalkin. In general, the primary solution at each deficiency was the upgrade of structures on the river to reduce afflux and backwater effect. Where this was not possible, or where the effects would be minimal, it was recommended that flood protection walls and embankments be constructed to the height of the peak predicted water level + 300mml freeboard. The solution for flooding upstream of culvert CAM-CU10 under Kileen Road included a recommendation for the addition of a further 200,000m3 of attenuation area in Corkagh Park. It was recommended in the GDSDS that a more detailed study of the Camac River catchment be done to confirm the ultimate feasibility of this option.

Surface Water Management

Apart from recommendations made in the GDSDS, It is important that any new developments in the Naas Road LAP area deal with surface water at source, wherever feasible. The following principles should also be applied in the redevelopment of large brownfield sites, which will help reduce surface run off.

- Attenuating and filtering in the drainage layer of green roofs, podium gardens and tree planting pits at basement level.

- A porous approach to streets and hard landscape space, using permeable surface and storm water attenuating tree trenches.

- Preference for SuDS features with biodiversity and amenity benefits over inert/hard SuDS features e.g grass/planted swales, detention basins, infiltration basins, wetlands and storm water tree trenches in preference to attenuating in tanks, paving sub-base or cellular attenuation systems.

- In keeping with the Greater Dublin Strategic Drainage Study (2005), Sustainable Drainage Systems (SuDS) techniques will be incorporated into the development. The drainage strategy for the site will also take due cognisance of the objectives of the Flood Resilent City Project, which promotes an integrated approach to flood risk management, if it's results are available at the time of application. This project promotes 'Awareness, Avoidance, Alleviation and Assistance' when considering pluvial flood management. The OPW National Pluvial Study carried out by HR Wallingford should also be consulted.

- As part of the implementation of the local area plan, Dublin City Council will seek to remove the storm runoff from the combined system. In some cases, this will require new surface water pipes to be constructed. Any development in this area will be expected to manage surface water in accordance with modern sustainable principles to minimise peak flows in the system, for example, green roofs or rainwater harvesting.

- In the longer term Dublin City Council will explore more ambitious flood alleviation measures. After recent flood events in October 2011, which were the equivalent to a 1 in 100 year flood event, a large number of areas flooded due to large volumes of surface water entering the Camac, this led to substantial flooding downstream in the river. One future option to be considered is to introduce a flood relief scheme in Lansdowne Valley Park, which could include removal of the concrete channel from the north section of the river and reinstatement of natural riverbank vegetation or perhaps an area of wetland, which would be allowed to flood in times of increased volume in the river.

Settlement Strategy and Flood Risk

It is the strategy of Dublin City Council in accordance with the Guidelines to reduce the potential risk to people, property and the environment caused by flooding, through a hierarchy of avoidance, followed by substitution of lower vulnerability uses and, only if avoidance and substitution are not possible, reduction and management of the risks through a variety of techniques. Dublin City Council will continue its policy to steer new developments on Greenfield sites to areas with the lowest probability of flooding. Areas with moderate or high risk will require site specific Flood Risk Assessments in any new planning applications, and a subsequent Justification Test.

Conclusions and Recommendations

Until the CFRAMS Study is completed and the flood protection and management options are finalised, the flood maps should only be taken as indicative. All planning applications will be required to submit a site specific flood risk assessment addressing risks from all sources of flooding. All new development will be required to comply with the Greater Dublin Strategic Drainage Study for surface-water management, with possible provision for the High End Future Scenario. This will ensure that there is no increase in flood risk to properties downstream as a result of future development. In addition, in order to mitigate against the effects of flooding to new development, floor levels should be set to recommended levels. It is anticipated that specific recommendations for floor levels may issue from the CFRAMS Study. In the meantime, a precautionary approach should be taken of the 100 year fluvial flood level plus a minimum of 10% increase in rainfall intensity plus 300mm freeboard. An assessment of the effects of existing development within the LAP lands on flood risk to properties downstream will be undertaken, and where possible, recommendations made in relation to possible retrofitting of additional flood storage areas within LAP lands in order to bring existing development in line with current best practice flood management methods. This may result in the creation of areas of multi-functional recreational space within the LAP lands using principles of sustainable drainage design.

Policy Requirements for Naas Road Local Area Plan

The following policies and measures are applicable to all development within the Naas Road LAP.

FRA1 - All planning applications, for proposed development within the LAP area should include a site specific flood risk assessment (FRA)

FRA (a) - Risk to other development

- If the development does not result in increased discharge to foul or surface-water sewers, then it can be confirmed in the FRA that the development does not cause an increased flood risk to other areas. Note that since the publication of the GDSDS, it has been a requirement that surface-water discharge rates are limited to green-field rates for the development, so compliance with this requirement for all pluvial event results in compliance with flood risk management guidelines for surface-water discharge. This requirement is best achieved by properly incorporating SuDS techniques into the development.

- If the development does result in increased discharge rates to sewers, then the developer may be required either to confirm that there is adequate capacity in the local network to cater for the increased flows without surcharge of the system or to propose a flood management solution to cater for the additional flows.

FRA (b) - Risk to the development itself

- The FRA should address risks from all sources, including but not limited to coastal, fluvial and pluvial sources, possible flooding from sewer surcharging and flooding from groundwater.

  i) Incorporating storage within the development to cater for surface-water falling within the development for up to the 100-year pluvial (with climate change factor of a minimum of 10% applied as appropriate).

  ii) Designing floor levels. A precautionary approach should be taken of the 100 year fluvial flood level plus a minimum of 10% increase in rainfall intensity plus 300mm freeboard.

  iii) Designing basements and basement access to prevent ingress of water from groundwater sources or pluvial or fluvial flood events. Reference should be made to the DCC policy on basements as set out in the GDSDS Regional Drainage policy – Volume 6 – Basements.

Appendix 1

Sequential Approach & Justification Test

The key principles of the risk based sequential approach (see Figure 1 below) is managing flood risk in the preparation of plans as set out in Chapter 3 of the DEHLG Flood Guidelines and these principles should be followed in the Naas Road LAP .

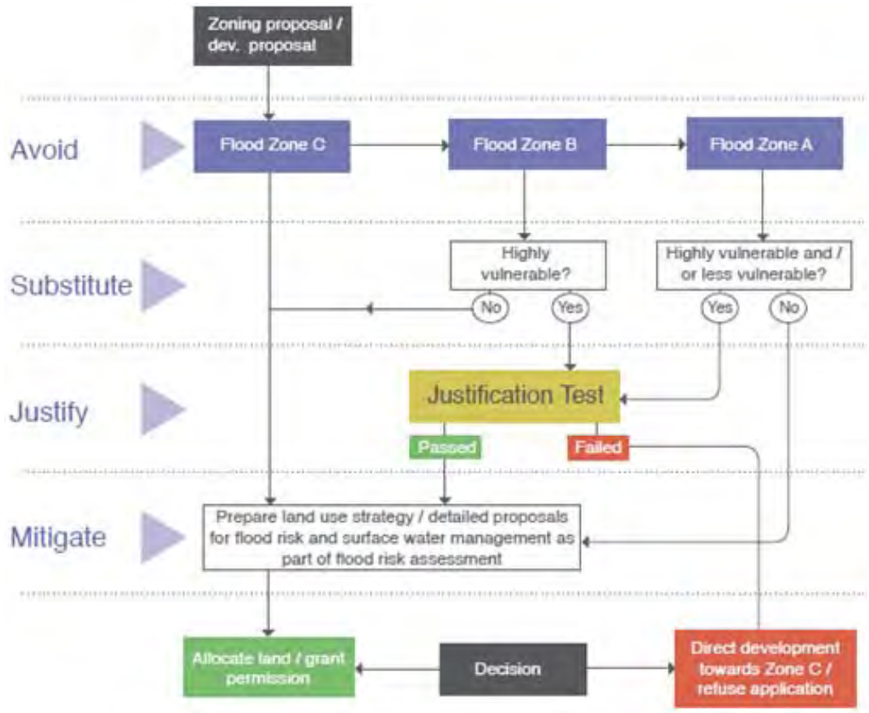
This is the key tool in the decision making process of preparing plans to ensure that development is first and foremost directed towards land that is at low risk of flooding. See primary FRA maps at

www.cfram.ie/pfra/interactive-mapping

This approach makes use of existing flood risk assessments (FRA's) and of prior identification of flood zones for rivers, coastal flooding and pluvial flooding and classification of the vulnerability of flooding of different types of development.

The sequential approach in terms of flood risk is based on the following principles:

- The primary objective of the sequential approach is that development is primarily directed towards land that is at low risk of flooding (AVOID).
- The next stage is to ensure that the type of development proposed is not especially vulnerable to the adverse impacts of flooding (SUBSTITUTION).
- The Justification Test is designed to rigorously assess the appropriateness, or otherwise, of particular developments that, for various reasons, are being considered in areas of moderate or high flood risk (JUSTIFICATION).
- The test is comprised of two processes, namely The Plan-Making Justification Test and The Development Management Justification Test.



In summary, the planning implications for each of the flood zones are:

Zone A - High probability of flooding. Most types of development would be considered inappropriate in this zone. Development in this zone should be avoided and/or only considered in exceptional circumstances, such as in city and town centres, or in the case of essential infrastructure that cannot be located elsewhere, and where the Justification Test has been applied. Only water-compatible development, such as docks and marinas, dockside activities that require a waterside location, amenity open space, outdoor sports and recreation, would be considered appropriate in this zone.

Zone B - Moderate probability of flooding. Highly vulnerable development, such as hospitals, residential care homes, Garda, fire and ambulance stations, dwelling houses and primary strategic transport and utilities infrastructure, would generally be considered inappropriate in this zone, unless the requirements of the Justification Test can be met.

Less vulnerable development, such as retail, commercial and industrial uses, sites used for short-let for caravans and camping and secondary strategic transport and utilities infrastructure, and water compatible development might be considered appropriate in this zone.

In general however, less vulnerable development should only be considered in this zone if adequate lands or sites are not available in Zone C and subject to a flood risk assessment to the appropriate level of detail to demonstrate that flood risk to and from the development can or will adequately be managed.

Zone C - Low probability of flooding. Development in this zone is appropriate from a flood risk perspective (subject to assessment of flood hazard from sources other than rivers and the coast) but would need to meet the normal range of other proper planning and sustainable development considerations.

Table 1 classifies the vulnerability of different types of development while

Table 2 identifies the appropriateness of development belonging to each vulnerability class within each of the flood zones as well as identifying what instances in which the Justification Test should be undertaken.

Inappropriate development that does not meet the criteria of the Justification Test should not be considered at the plan-making stage or approved within the development management process

Table 1 Classification of vulnerability of different types of development

Vulnerability Class	Land Uses and Types of Development which include:
Highly Vulnerble Development Including essential infrastructure	Garda, ambulance and fire stations and command centres required to be operational during flooding; Hospitals;Emergency access and egress points; Schools; Dwelling houses, student halls of residence and hostels; Residential institutions such as residential care homes, children's homes and social services homes; Caravans and mobile home parks; Dwelling houses designed, constructed or adapted for the elderly or, other people with impaired mobility; and Essential infrastructure, such as primary transport and utilities distribution, including electricity generating power stations and sub-stations, water and sewage treatment, and potential significant sources of pollution (SEVESO sites, IPPC sites, etc.) in the event of flooding.
Less Vulnerable Development	Buildings used for: retail, leisure, warehousing, commercial, industrial and non-residential institutions; Land and buildings used for holiday or short-let caravans and camping, subject to specific warning and evacuation plans; Land and buildings used for agriculture and forestry; Waste treatment (except landfill and hazardous waste); Mineral working and processing; and Local transport infrastructure.
Water Compatible Development	Flood control infrastructure; Docks, marinas and wharves; Navigation facilities; Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location; Water-based recreation and tourism (excluding sleeping accommodation); Lifeguard and coastguard stations; Amenity open space, outdoor sports and recreation and essential facilities such as changing rooms; and Essential ancillary sleeping or residential accommodation for staff required in this category (subject to a specific warning and evacuation plan) by uses in this category (subject to a specific warning and evacuation plan).
	• Uses not listed here should be considered on their own merits.

Table 2 – matrix of vulnerability versus flood zone to illustrate appropriate development and that required to meet the Justification Test

	Flood Zone A	Flood Zone B	Flood Zone C
Highly Vulnerable Development (including essential infrastructure)	Justification Test	Justification Test	Appropriate
Less Vulnerable Development	Justification Test	Appropriate	Appropriate
Water Compatible Development	Appropriate	Appropriate	Appropriate

The Plan-Making Justification Test

Where, as part of the preparation and adoption of a development / local area plan, a planning authority is considering the future development of areas in an urban settlement that are at moderate or high risk of flooding, for uses or development vulnerable to flooding that would generally be inappropriate as set out in the Guidelines, all of the criteria listed below, as stated in the Guidelines, must be satisfied.

This is referred to as the Justification Test for Development Plans.

(I) The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act 2000, a amended.

(II) The zoning or designation of the lands for the particular use or development type is required to achieve the proper and sustainable planning of the urban settlement and in particular:

(i) Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement;

(ii) Comprises significant previously developed and/or under-utilised lands;

(iii) Is within or adjoining the core of an established or designated urban settlement;

(iv) Will be essential in achieving compact or sustainable urban growth;

(v) There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.

(III) A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere.

MITIGATION is the process where the flood risk is reduced to acceptable levels by means of land use strategies or by means of detailed proposals for the management of flood risk and surface water, all as addressed in the Flood Risk Assessment.

The decision to PROCEED should only be taken after the Justification Test has been passed.

Development Management Justification Test

This is used at the planning application stage where it is intended to develop land at moderate or high risk of flooding for uses vulnerable to flooding that would generally be inappropriate for that land. (as set out in Table 1),The Planning Authority must be satisfied that the development satisfies all the criteria of the Justification Test as it applies to development management .

When considering proposals for development which may be vulnerable to flooding, and that would generally be inappropriate (as set out in Table 2 above) , the following criteria must be satisfied:

1. The subject lands have been zoned or otherwise designated for the particular use or form of development in an operative development plan, which has been adopted or varied taking account of these Guidelines.

2. The proposal has been subject to an appropriate flood risk assessment that demonstrates

   (i) The development proposed will not increase flood risk elsewhere and, if practicable, will reduce overall flood risk;

   (ii) The development proposed includes measures to minimise flood risk to people, property, the economy and the environment as far as reasonably possible;

   (iii) The development proposed includes measures to ensure that residual risks to the area and/or development can be managed to an acceptable level as regards the adequacy of existing flood protection measures or the design,implementation and funding of any future flood risk management measures and provisions for emergency services access, and

   (iv) The development proposed addresses the above in a manner that is also compatible with the achievement of wider planning objectives in relation to development of good urban design and vibrant and active streetscapes,

The acceptability or otherwise of levels of residual risk should be made with consideration of the type and foreseen use of the development and the local development context.

Note: See section 5.27 (The Planning System and Flood Risk Management Guidelines for Planning Authorities, 2009) in relation to major development on zoned lands where sequential approach has not been applied in the operative development plan.

Refer to section 5.26 (The Planning System and Flood Risk Management Guidelines for Planning Authorities, 2009) in relation to minor and infill developments.

Appendix 2: Taking in Charge Standards, Open Space Design Guidance and SuDS Guidance

Section 1: Guidelines for Open Space Development and Taking In Charge

How open space areas are managed and maintained after their provision is an important consideration at the design stage, particularly to ensure that public open space can be taken into charge by Dublin City Council successfully.

It is also important that topsoil is recognised as an important on site resource for biodiversity and landscaping. Considering the extent of lands still to be completed for development in the LAP area, a successful open space strategy is dependant on high quality soil being retained and appropriately stored on site for future landscaping purposes.

The Culture, Recreation and Amenity Department of Dublin City Council have produced a set of guidelines called "Guidelines for Open Space Development and Taking in Charge" which provide important information for landscape designers of new public open space.

Some of the important guidance provided, which will benefit open space provision in the LAP area, includes the following:

- Tree surveys should be carried out by a qualified Arboriculturist.
- Landscape works are to be completed before occupation of the development or initial phase of development.
- A detailed survey should be made of existing hedgerows, trees and other natural site characteristics to evaluate their potential for protection and augmentation within landscape proposals.
- Based on the survey information, works proposed to existing hedgerows and trees must be agreed with DCC. Vegetation supporting nests may only be altered between the period of 1st September to the 1ST February each year in the interest of protecting wildlife.
- A two stage consultation with the Parks and Landscape Devision is advised. The first should set out the existing site survey and analysis with the concept plan prior to an application being lodged. The second consultation should include the detailed design (at planning stage).
- For any public open space/streetscape to be taken in charge by the Dublin City Council, landscape submissions shall consider:
  - Landscape plan at an approved scale.
  - Location plan with areas intended to be taken in charge.
  - Sections / elevations.
  - Images
  - Specialist opinions.
  - Landscape maintenance specification.
- The principle of SuDS should be adopted in the treatment of surface water drainage.
- In general the developer will be responsible for the maintenance of the public open space for an 18 month period after the completion of works. At the end of the maintenance period Dublin City Council and landscape consultant will inspect the open space prior to taking in charge.
- As a general rule, areas designated for public open space purposes should be fenced off prior to the commencement of any development works on site and should not be used as site compounds etc.
- All development works should ideally be carried out during summer months under the supervision of the landscape consultant. In general all gradients in grassed areas shall not be greater than 1:4.
- Any excess top soil to be removed from the site is subject to agreement with the Dublin City Council. The developer shall store any top soil to be used in future public open space in accordance with the requirements of the Council. Existing topsoil is to be viewed as a resource to be valued and managed in accordance with Dublin City Council's Biodiversity Action Plan 2008 - 2012.
- Dublin City Council may require testing of material to be used as topsoil on any future public open spaces, at the cost to the developer, to ensure quality control. Any importation of topsoil will be subject to national legislation and Dublin City Council shall be informed of the source of any imported material.
- All areas to be grassed on public open space should be provided with an adequate layer of good quality top soil. A minimum depth of 150mm freely draining soil is required. The finished level of the topsoil shall remain 50mm above adjoining roads and footpaths to allow for settlement.
- All areas to be planted for trees and shrubs shall be provided with a minimum of 300mm depth of topsoil with a minimum depth of 300mm subsoil underneath.
- For street trees, a 600mm depth of topsoil, at a radius of 1m from the base of the tree, should be provided at all street tree planting positions. Street trees should not be planted under or within three metres of street lights.

Section 2: Private and Communal Open Space Design Guidance

Maximising the amenity value of homes and residential schemes is important for quality of life of the residents and in particular to encourage longer term residency. Attracting long term residents to develop the neighbourhood and a strong community, particularly in a new developing area such as the Naas Road Lands, was noted in the public observations as a target for this LAP. Providing good quality amenities for occupants is an important design consideration which will help to encourage a longer term resident base.

The Dublin City Development Plan 2011-2017 provides important guidance for the design of homes and Section 17.9 in particular sets out important quality standards which must be met. Of note for residential developments are the following:

For Apartments

- Where balconies are provided, they should be functional, screened, have a sunny aspect, be wheelchair accessible and allow table and chair seating. The primary balcony should be located adjacent to the main living area.
- Communal open space may include sheltered roof gardens and communal landscaped areas at ground or podium level accessible to all the units it serves.
- The design of communal open space should take into account good passive surveillance, children's play, wheelchair access, good sunlight penetration, appropriate maintenance and management arrangements (including factors of storage and water supply).
- Outside the city centre area , combined private and communal open space provision shall be 12-15 sq.m per bedspace at a minimum.

For Houses

- A standard of 15 sq.m private open space per bedspace will normally be applied.
- At the rear of dwellings, there should be adequate separation (traditionally 22 metres between two storey houses with first floor opposing windows). This distance can be shorter if the design is such that the privacy of adjacent occupiers is preserved.
- The provision of defensible space behind the public footpath by means of a planting strip is important for housing units that address a street with own door access and ground floor windows. In particular where on street parking is provided, a landscaped strip of 2 metres minimum depth should be provided.
- Rear gardens and private garden space should be screened from public areas, provide safe and secure play areas, be overlooked from a living or kitchen area, have robust boundaries and should not back onto roads or public open spaces.

Playgrounds and Children's Play Spaces

Incorporating opportunities for children's play and activity, inclusive of young children and teenagers, is an important consideration for open space design. In particular a network and sequence of different open space character areas can provide opportunities to provide amenities for different age groups. Providing safe routes between different character amenity areas can be very beneficial to encourage active use.

While all open space areas should have flexible design principles to encourage recreation for all ages, making sure that children and teenagers have access to recreational facilities is important for the development of the community, especially in a new developing community.

Section 17.16 of the Dublin City Development Plan 2011-2017 provides some valuable guidance on playgrounds and play spaces which will is valuable for designers creating open space within the LAP area.

Some guiding principles include:

- Play spaces for small children (under 5s) should be close to residential dwellings, safe from traffic, overlooked with housing and frequented streets and footpaths, have both sunny and shaded parts, and be equipped with both natural play elements and play equipment.
- Recreation facilities for older children and teenagers should take into account multi use game areas, teenage shelters, skate parks, meeting places (seating) etc. Such locations should be well positioned within the neighbourhood with good visual prominence and connections to the residential area.

Dublin City Council are creating a Play Plan and accompanying Play Checklist which will provide valuable guidance for designers.

Section 3.0 SuDS Design Guidance

The following general guidance is provided to guide future developments within the LAP area:

Domestic Designs

SuDS measures can have effective outcomes on management of surface water drainage if implemented as part of domestic design. The design of individual houses should take into consideration design features including:

- Roof drainage could incorporate green roofs or drain to a soakaway, permeable paving area or mini detention basin.
- Permeable materials (especially for driveways)
- Cost savings could be made if surface water is recycled for domestic use.

Commercial/Office/Apartment Blocks

Larger schemes will have optimal opportunities to incorporate SuDS measures, particularly where they can be incorporated as part of the site masterplan features. Using the scale of buildings, (roofscapes in particular) can provide good opportunities. Some design considerations would include:

- A 3 stage treatment train , or if there are space restrictions a 2 stage treatment train, would provide an optimal solution.
- Consider a green roof on all or part of the development.
- Consider rainwater harvesting as one stage in the process.

Large Scale Housing Development

The co-ordination of SuDS design measures into an overall integrated system at the masterplanning stage is important and an opportunity to benefit both the scheme and the environment. In particular, the planning and design of roads, open space areas and cumulative impact of roof drainage can be envisaged and co-ordinated.

Some design considerations will include:

- A 3 stage treatment train is optional.
- Roofs and roads could be drained by filter drains, soakaways, swales and detention basins.
- Use of green space and landscaping so that usable amenity space and a drainage function can co-exist.

Some images of SuDS incorporated into residential developments (examples from Finland)