Waterman Moylan
Engineering Consultants

Strategic Infrastructure Review

01 Devaney Gardens Residential Development, Dublin 7.

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Comments

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Content

1. Introduction

Oô Devaney Gardens, located adjacent St. Bricanôs Military Hospital on a 5.5 Ha site off the North Circular Road, Dublin 7, was identified by the Housing Land Initiative as part of Dublin City Councilôs (DCC) response to Rebuilding Ireland. Oô Devaney Gardens was a Dublin City Council owned and managed residential estate of 13 No. apartment blocks containing 278 No. units which has now been largely demolished. There are two apartment blocks remaining on the site which will be demolished in the near future.

The reconfiguration of the site and the revised housing densities will allow for a minimum of 585 new units to be built. Dublin City Councilôs mixed tenure policy dictates that a minimum of 30% (175 units) of these units will be social housing, mostly funded through a combination of Dublin City Council and government grants. In an attempt to speed up the construction of the social units it was decided to frontload a portion of the scheme as outlined in the masterplan.

Planning was sought and granted by An Bord Pleanala (ref: 29N:JA0024) on 5th August 2011 for the development of Phase 1 of the site. Phase 1 comprises of 110 units, 56 (Phase 1A) of which are to be social and built immediately by Dublin City Council.

Development of the remainder of the site, including the 54 units of Phase 1 has gone out to tender under a Competitive Dialogue Procurement Procedure (PQQ and PIM live on e-tenders as of the 14 August 2017 and will be developed by way of a Development Agreement in conjunction with the preferred Bidder (Developer)). The negotiation of the Development Agreement involves a much more pro-active involvement of DCC in the design, layout, infrastructure, quality of the materials, etc. than if the land was sold and the contractor was allowed to build the new estate without direct involvement from the local authority.

The combination of the Competitive Dialogue and the Development Agreement acts as a double-lock, in ensuring that any infrastructure requirements are built to Dublin City Councilôs specification, without any scope for equivocation, as the title for the land does not pass over to the developer until all of the elements of the Development Agreement are in place (thus reducing the developerôs scope to sell any completed units).

Dublin City Council will be in a position to instruct the developer to provide an overall drainage plan incorporating Sustainable Urban Drainage Systems for the entire site, including the portion containing the 56 units being built by Dublin City Council.

The purpose of the Strategic Infrastructure Review is to outline the planning and architectural requirements in respect of the subject site.

In addition, the proposed civil engineering solutions for foul, surface water, water and roads with regards to the:-

- Permitted 110 units ï Phase 1 (Planning Ref. No. PL29N.JA0024),
- 2010 site masterplan ï prepared in conjunction with the Phase 1 Planning Application,
- 56 units to be built by DCC ï Phase 1A (currently at Tender Stage)

will be assessed, together with the utilities requirements for the subject lands (electricity, gas, telecoms and public lighting). The report will further identify the site specific planning, architectural and engineering information to be considered by the future developer of the residual Oô Devaney Gardens site.

2. Planning

2.1 Planning history of O'Devaney Gardens

Regeneration Proposals:

An Bord Pleanala Register Ref. 29N.JA0024:

On the 5th August 2011 An Bord Pleanla granted planning permission to Dublin City Council, under section 175 of the Planning and Development Act 2000 (as amended), for Phase 1 of a mixed use master planned urban regeneration of O'Devaney Gardens, containing 110 no. new residential units, a 325 metre boulevard linking North Circular Road to Montpelier Gardens and a centrally located public park.

The breakdown of the 110 no. residential units (50 private and 60 social units) is as follows:

- 51 no. three bedroom units,
- 47 no. two bedroom units,
- 12 no. one bedroom units;

The breakdown of unit type across Phase 1A is as follows:

- 43 no. apartments
  - 1 Bed c. 58 sq.m.
  - 2 Bed c. 76.5 sq.m.
  - 3 Bed c. 110 sq.m.
- 31 no. two storey houses,
- 23 no. three storey houses,
  - 2 Bed House c. 90 sq.m.
  - 3 Bed House c. 108-116 sq.m.
  - 4 Bed House c. 127 sq. m.
- 7 no. two storey duplex, (c. 86 sq. m.)
- 6 no. live work units. (c. 112 sq.m)

Demolition of O'Devaney Gardens Social Housing Estate:

Three separate planning processes were carried out under Part VIII of the Planning and Development Regulations 2001 (as amended) approving the demolition of the 1950's O'Devaney Gardens flat complex, which comprised 270 no. residential units contained within 13 no. flat blocks, a community building, crèche and retail units.

(1) Dublin City Council Register Ref. 3455/08: ï Permission granted by the City Council for the demolition of four flat blocks in addition to a single storey community building, a crèche and a two storey block containing 4 retail units. The buildings included under this application have now been demolished.

(2) Dublin City Council Register Ref. 3607/10: Permission granted by the City Council on the 24th November 2010 for the demolition of five blocks of flats at O'Devaney Gardens. The buildings included under this application have now been demolished.

(3) Dublin City Council Register Ref. 2945/16: Permission granted by the City Council on the 25th July 2016 for the demolition of the four remaining flat blocks at the O'Devaney Gardens. These blocks are still awaiting demolition.

3. Architecture

3.1 Outline of Architecture & Design Scope

3.1.1 Introduction

The purpose of this document is to communicate the significant possibilities afforded to the Design Team in formulating an overall Design strategy for this key development opportunity which is being offered primarily to provide an attractive high quality forward looking large scale mixed tenure Housing development in close proximity to Dublin City Centre.

The site is located to the East of Phoenix Park, and North Circular Road.

There is a recent history of Masterplanning & Feasibility Studies by Dublin City Council (which are referred to in detail in the ITPD appendices) to inform the general design direction and outline a masterplanning strategy for the development which should be reflected in the Outline Solutions being prepared for the Outline Submission, and later in the Final Tender Submission.

There have been a number of changes to the Size Standards, and Planning Guidelines in the last few years which will impact on the Feasibility Study and Masterplan as issued, and which must form the basis of any robust re-assessment of the site and the planning strategies employed by Dublin City Council to date.

The Dublin City Council Development Plan 2016 ï 2022 is identified as the primary reference document which must be employed to inform all key Design Team and significant development decisions to arrive at an acceptable Outline Solution for the project. This will provide a sound footing on which a Masterplan led solution will form the primary driver in the design approach to an overall site strategy, based in a realistic understanding of the possibilities on offer and the parameters within which the overall development scheme can be achieved.

The site boundary context presents single storey artisan type cottages located immediately to the North of the site, and along the northern boundary. There are 4 storey Georgian terraced type houses to North Circular Road to the West of the site, which present their rear elevations to the site. There are single and two storey Artisan type dwellings to the south west boundary of the site on Sullivan Street which have very limited private open space backing onto the existing boundary wall on that side, and there is a Victorian military hospital complex (St Bricins) located on the eastern side of the site which is up to four storey in height. There is a Dublin City Council Housing development immediately to the south of the site.

3.1.2 Key Challenges and Opportunities:

Adjoining Housing & street patterns:

A primary objective of the regeneration of O Devaney Gardens must be the creation of spatial and urban design inter-relationships and connections with the surrounding streets and communities. The design of new streets relating to the existing adjacent streets, such as Ross Street, Ashford Place, Montpelier Park must be carefully considered, and sensitive solutions proposed which could provide connection both to and from the O Devaney site.

Weak boundaries:

The positioning of the adjoining existing housing stock provides weak physical definition of space and relationship to both the site itself and surrounding residential streets, and amenities.

The entrances to the site are poorly defined, and the relationships between proposed new blocks, the spaces between them, location and sizing of proposed new amenity spaces in the Developers Outline Proposals are key factors in maximising the sustainability of the project in the longer term.

Respect for surrounding urban grain

The areas around the Old Devaney Gardens site comprise relatively large period houses on the North Circular Road and a variety of one and two storey, high density terraced housing from the late 19th Century. The proposed new development must take account of and respect the existing surrounding urban grain, to form a coherent street network and provide a variety of housing which sits comfortably within the surrounding street patterns and the area. A carefully considered Height Strategy is essential in delivering a quality development which can provide the required housing and apartments throughout the site.

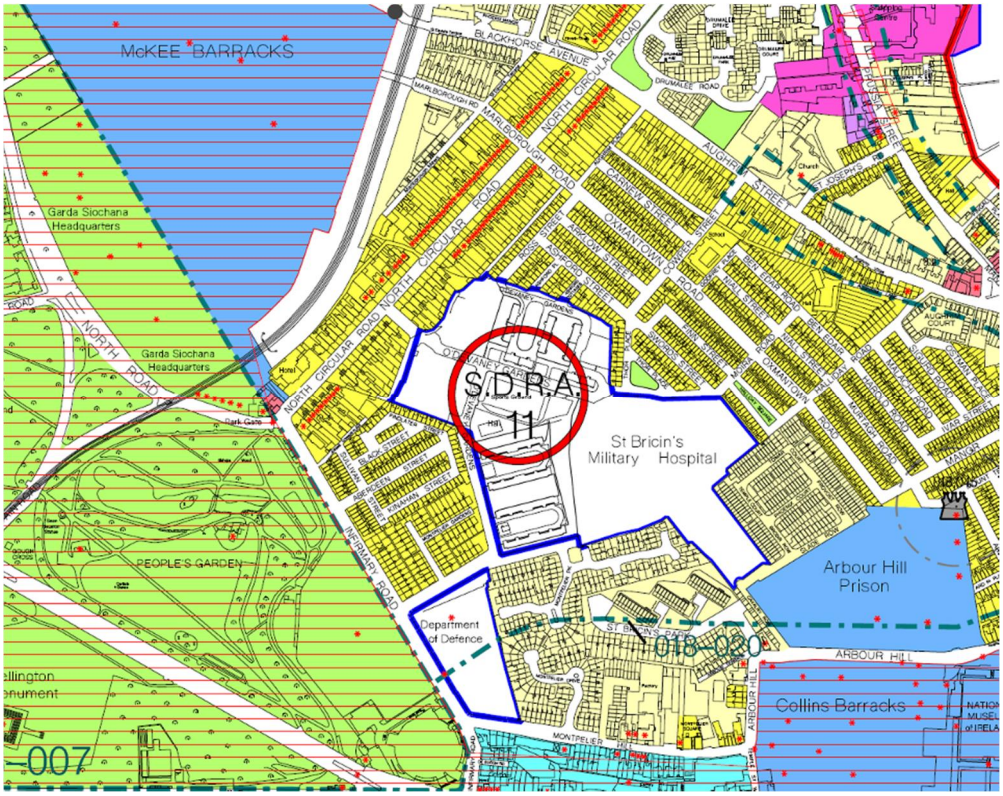
Creation of liveable streets

This Land Initiative project must address a sense of place and ownership of space. New buildings should directly front onto streets and spaces, maximising the number of own door dwellings where appropriate, with apartment entrances being strategically placed in relation to the open spaces, streets and roads into which the buildings will sit.

The Retail / business unit, and any proposed Creche facilities, recreational facilities and proposed community uses should be located at nodes within the development which can promote street level activity at these locations and seek to reduce any negative impact on any residential occupancy in the vicinity.

Creation of a sustainable neighbourhood

The creation of a sustainable urban community will require a cross-section of housing types and a mix of tenure, together with appropriate neighbourhood parks and play spaces to serve the new residents and the existing surrounding community. The opportunity presents itself in the approach to public realm design to incorporate self sustaining natural surface water infiltration systems using best practice water management solutions to provide functioning, sustainable and aesthetically pleasing public spaces for community.



Dublin City Development Plan 2016 – 2022 - Part Zoning Map E

3.1.3 Zoning Objectives in the Dublin City Development Plan 2016 - 2022 :

The entire OôDevaney Gardens site and the adjoining St Bricins Military Hospital are Zoned ñStrategic Development and Regeneration Areaòin the current Dublin City Council Development Plan, as indicated in the map above.

The Objective SDRA 11 is ñto seek the social, economic and physical development and/or rejuvenation of an area with mixed use, of which residential and õZ6ôwould be the predominant uses.ò in the Dublin City Development Plan 2016 - 2022 (details of the Dublin City Development Plan 2016 ï 2022 are available on the City Councilôs Website at www.dublincity.ie/planning).

The Zoning ñGuiding Principles for Developmentò are set out in Section 15 ï ñStrategic Development and Regeneration Areas: Guiding Principles for Developmentò on the current 2016 ï 2022 Dublin City Development Plan.

The OôDevaney Gardens complex is bounded to the west, north and east by areas of housing which are zoned Objective Z2 ñto protect and / or improve the amenities of residential conservation areasò in the Dublin City Development Plan 2016 - 2022.

This regeneration of OôDevaney Gardens will be required to ensure the protection of the amenities of these residential conservation areas. This will require particular attention being paid to the design, layout, orientation, scale and finishes of the proposed redevelopment.

Details of the Dublin City Development Plan 2016 - 2022 are available on Dublin City Councilôs Website at www.dublincity.ie/planning).

3.1.4 Public Open Space

The quality of landscaping in a residential development is a significant factor in the overall residential amenity of a development and in the level of satisfaction of the residents with their living accommodation. Open spaces must be designed so as to complement adjoining residential development and to be passively / informally supervised by residents. They should be visually attractive and functionally accessible to the maximum number of residents and dwellings within the development and the surrounding area.

Privacy, which is the freedom from observation, is an essential part of human life and is particularly important in relation to homes. The City Council seeks to ensure that residential amenity / privacy is protected, and that new development does not adversely affect the amenities of neighbouring properties. This can be ensured by attention to the alignment of new residential buildings and their relationships to adjacent existing dwellings and each other. Proper design of residential areas must ensure a high degree of privacy. Good design in terms of housing layout, configuration of houses, relationship of houses to each other, to open space (both public and private), and to road systems, should aim to achieve the provision of adequate open space and screening so as to be meaningful in terms of achieving freedom from observation.

The standards to be applied are set in the Dublin City Development Plan 2016 ï 2022

3.1.5 Private Open Space for Residential Development ï Apartments

Private open space for apartment development, which can include courtyards, roof gardens and usable balconies, shall be provided in accordance with the Dublin City Development Plan.

Access to communal courtyards and roof gardens should be made available to all residents, but particular attention is required in terms of safe and secure access to any such roof gardens or courtyards.

To optimise the residential amenities of the development, particularly in the inner city, favourable consideration shall be given to the provision of private balconies, provided these are of reasonable usable size (a minimum of 2m x 1.5m in area) with good orientation and outlook. Any such private open space provision must be positioned to minimise overlooking possibilities for any adjoining residential uses.

In all situations, adequate separation shall be provided between any surface car parking and open space.

In designing open space for apartments, designers should explore ways of developing visual links between these spaces and the adjoining streets, thus ensuring that the proposed development makes a more active contribution to the visual landscape of the city, and affords some level of connectivity and security to residents.

Open space design should also consider topography soil conditions and incorporate environmental green, sustainable infrastructures and natural infiltration systems to manage and limit rainwater and surface water runoff .

3.1.6 Internal Design and Layout of Apartment Buildings

Entrance halls and corridors in apartment complexes shall be well designed and naturally lit and ventilated. High quality artificial lighting and ventilation must be provided where there is limited natural light available in any particular lobby or hallway. Corridors shall be widened at entrance / hall doors to individual apartments and shall include natural lighting where possible.

In any proposed communal facilities in apartment buildings (including open space, washing and drying areas, Gym Room, Community Room, Refuse store, car parking, etc.) being provided within the development, provision shall be made for full Part M compliant access for all to and from these facilities.

3.1.7 Daylight and Sunlight

It is a requirement that all buildings are planned and located to maximise all available daylight and sunlight throughout the day. Careful design of residential buildings, where the amount of incoming light is important, can ensure that sufficient sunlight can enter main rooms to provide comfort and also reduce the need for artificial lighting.

In apartment developments, consideration must be given to providing dual-aspect apartments wherever possible, and there must be a good proposition of dual aspect apartments in accordance with the Dublin City Development Plan.

All habitable rooms must be naturally lit with all living rooms and bedrooms to be provided with openable windows for natural ventilation. Sunlight penetration must available for all dwellings, and most habitable rooms within any dwelling should be planned have some possibility of sunlight penetration during the year.

The Development should be guided by the principles of 2011 document - Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice (BRE, 2011).

3.1.8 Space Around Residential Buildings

All proposals for residential elements within the development, particularly apartment buildings, shall provide for an acceptable separation distance between residential blocks to provide sustainable residential living, and adequate visual oversight of any adjoining open spaces, providing views beyond the environs of the site boundaries where the opportunity presents.

The relationship between each residential building and other buildings must be such that blocks are not located too close to one another to result in mutual overlooking, loss of daylight penetration into apartments, or shadow effect, and which would also result in minimal light penetration into any private or communal internal open spaces provided.

3.1.9 Open Space Guidelines

Balconies

To optimise the amenities of residential units, favourable consideration will be given to the provision of private balconies in apartments, in addition to other on-site private open space provision.

Any balconies must be in keeping with the overall composition of the building and not be injurious in terms of overlooking or out of keeping with the streetscape. In general, it may be preferable that projecting

balconies should be located away from elevations overlooking streets or public roadways, or adequately set back to ensure over-sailing of public footpaths, streets or roadways does not occur.

For all balconies a minimum floor area of 2 x 1.5 metres of solid concrete base construction, good orientation and outlook, will be required for any upper level apartment.

Roof Gardens

In order to maximise opportunities for the provision of open space and contribute to reduction in surface water runoff favourable consideration shall be given to the development of roof gardens.

Roof gardens shall be provided with secure access arrangements which limit access to the residents within the building. The boundary treatment to the garden area must be carefully considered to reduce any risk of falling, or possible access to other adjacent roofs or balconies. All roof gardens must be provided with a CCTV system to view and record activities in the roof garden on a 24/7 basis. Additional windbreaks should be provided where appropriate.

In order to provide for a safer environment, it is desirable that the roof garden be overlooked by a number of residential units, preferably not immediately adjoining the roof garden.

Roof gardens shall be laid out in a manner to provide usable passive recreational amenities for the residents of the development.

Children must not be capable of gaining unsupervised access to any roof garden, and must be accompanied by an adult at all times in accessing any roof garden.

3.1.10 Waste Management and Refuse Storage

Refuse storage for apartments and houses within the development must be addressed at the design stage for all schemes. In order to prevent the use of balconies and communal areas for the storage of individual refuse bins, residents in apartments must be provided with a managed and easily accessible facility for the storage and disposal of their domestic waste.

In all apartments and tightly planned housing developments communal provision for waste storage and disposal is required. In all cases of communal provision of these facilities, the storage and handling of refuse should conform to BS 5906 or current EN equivalent (code of practice for storage and on-site treatment of solid waste from buildings). The waste Management Plan for the development must consider the 2005-2010 Waste Management Plan for the Dublin Region, and all facilities within the development must comply with any specific requirements as set out in this document including appropriate bin sizes. All storage facilities must be designed in accordance with any requirements noted in Appendix C of Storage Guidelines for Household and C&I Waste as a minimum. The Developer must consult with DCC Waste Management Section in reference to specific requirements for each such storage facility planned in the development.

Purpose-made compartments or shelters for containers for individual houses should be sited to minimise the visual impact on the street, and the height should facilitate deposit without withdrawing the container. Shelters for houses and small apartment blocks with open space should be located in the open air, but in shade and away from windows and ventilation openings.

Waste collection points must be carefully planned to provide safe access for both users, and the collection vehicles. Horizontal travel distance to a shelter or collection point should not exceed 20 metres from an entrance or exit to any apartment building, but where travel distances exceed 20 metres, additional collection points could be provided. There should be direct but secure access from the street to the shelter or collection point to reduce / prevent anti social activity.

3.1.11 Public Lighting:

Public Lighting of the development must consider a quality approach to the general lighting of public areas, with amenity lighting being used to supplement Public Lighting in parks, playgrounds, common areas, walkways, etc. Key buildings should be provided with feature lighting where appropriate, and key spaces should be considered for special treatment in design terms for amenity lighting generally.

3.1.12 Building Height:

Appropriate locations for higher buildings must be carefully considered in relation to the adjoining existing residential development pattern, and to reduce possibilities of overlooking / overshadowing.

Building height will form a key element in creating a new sense of place for the development, whilst serving to deliver residential density across the development.

The entire development should provide feature / key buildings to assist in forming a sense of place, and identify distinctive areas within the overall development proposals forming a memorable experience to assist identification of individual locations within the scheme.

3.1.13 Universal Access:

The scheme proposals shall take full account of the Part M Technical Guidance Document, and provide for universal access in full compliance with the Building Regulations and Disability Access legislation.

The entire development must be designed in accordance with the Best Practice standards, and recommended guidance documents referred to therein.

Any commercial / retail Crèche or Community units must have full universal access toilet facilities for staff and public use.

3.1.14 Car Parking:

The requirements of the Traffic Planning unit will be adhered to in terms of car parking provisions, and delivery / service type vehicular access should also be carefully considered, and included in the scheme proposals.

The developer / design team shall liaise with the Environment and Traffic Planning Section of DCC, and fully comply with all requirements as set out by the Roads & Traffic Planning Section.

3.1.15 Roads & Access:

The Developer / Design Team consultant shall comply in full with the Design Manual for Urban Roads and Streets.

Access for emergency vehicles throughout the development must be considered in detail to ensure that adequate access and turning arrangements are made for appropriate Emergency Vehicles, such as Fire Tenders, and Ambulances to comply with all relevant and applicable Codes of Practice and design Standards. Long term maintenance of roads will need to be fully considered and Road Safety Audits carried out at key stages of the design and construction.

3.1.16 Security & Monitoring:

The proposed development must include for CCTV monitoring of the scheme, with the possible future linking of the system to a central off site monitoring station.

Recommendations of the Garda Siochana shall be taken into account in the provision and siting of CCTV cameras and location of CCTV throughout the development along with adequate monitoring / recording facilities throughout the development.

Individual Apartment buildings will be required to have fully automatic and autonomous discrete CCTV and Emergency alarm systems, which will record events on a constant loop, with a monitored emergency alarm facility to provide the Management Co. with adequate security information to effectively manage security within any particular apartment building. CCTV cameras must be provided in each entrance lobby and at each lift exit and landing exit for each floor within the building, including any basement area.

3.1.17 Sustainability:

Generally the type and mix of units throughout the scheme shall be carefully considered, and designed in terms of flexibility of occupation, tenure, adaptability of individual units, live work units, location within the development, etc.

Materials proposed shall be environmentally sustainable, and recyclable wherever possible.

Every opportunity should be explored in achieving low energy consumption for all residential and commercial units and recreational facilities in accordance with current best practice.

Generally insulation levels should be in excess of those required under the current Part L of the Building Regulations, and Developers proposals must be to NZEB standard dwellings.

Green energy solutions will be encouraged wherever possible, and all systems should investigate the possibilities afforded by latest technological advances in solar PV, CHP, Wind, and other forms of on-site sustainable energy production.

The scheme proposed should be designed in accordance with the requirements and guidelines as set out in the Sustainable Residential Development in Urban Areas 2009 Planning Guidelines as issued by the Department of Environment, Heritage and Local Government.

The type, location and mix of uses and units throughout the scheme shall be carefully considered, selected and designed with the following key elements forming an outline of the brief which should be expanded on in detail at the design stage and included with any detailed submission on the project:

Provide for lifecycle flexibility in use of all residential elements.

- Type and mix of tenure.
- Adaptability & flexibility of individual residential units.
- Life cycle housing.

- Possibility of Live-Work residential units.
- Universal / Part M access.
- Mix and locations of other possible uses under Zoning objectives.
- Locations and types of civic, open & community spaces.
- Passive secure planning (eyes on the street).
- Private open spaces.
- Public security cameras / monitoring
- Secure pedestrian routes.
- Secure car parking, on and off street.
- Landscaping features.
- Waste Management proposals
- Recycling facilities
- Energy conservation
- Heating systems
- Artificial lighting proposals
- Durability of materials & finishes
- Public & private transport linkages
- Maintenance of property
- Management proposals.

3.1.18 Layout:

The overall layout shall be designed to provide for flexible use of the development by its occupants in the longer term, and allow for adaptability of the units in terms of life cycle use wherever possible.

3.1.19 Conservation of Energy:

All dwellings must be designed to comply with NZEB requirements, and must be insulated to the highest levels whilst providing demand controlled / heat recovery type ventilation to reduce risk of mould formation and condensation within individual dwellings and buildings.

Alternative energy generation on site must be included, and could consider Solar Photovoltaic panel installations, Wind Turbines, Mini CHP, etc. to provide that element of the energy strategy for the development.

Solar Thermal installations may be considered if they are forming part of a managed system including mini CHP.

Mini CHP and District heating systems may be considered, and generally it is considered that individually controllable heating systems will be required for each housing unit.

It may be possible to consider some form of district domestic hot water scheme, which could be provided as a metered supply, or as a yearly charge per housing unit.

If any form of communal heating is being proposed, the Developer must provide full details of how the billing arrangements can work across a missed tenure housing development, and also provide full information on maintenance requirements, and management of the system including lifecycle costs, how any such heating system is metered and charged to individuals, and on what basis (ie. Therm, kWh, etc.)

3.1.20 Internal Floor Space:

The minimum size standards of the DHPLG Space standards ï ñQuality Housing for Sustainable Communities 2007ò and ñSustainable Urban Housing ï Design standards for New Apartments 2015ò and the December 2017 ñDraft Planning Guidelinesò

All rooms should be of a sensible shape and proportion and provide adequate space with appropriate circulation space between furniture for normal living purposes. The shape and layout of rooms should provide for flexibility in use and maximise the amenity of residents.

The development must be planned such that overlooking of adjoining/adjacent residences is minimised, with living rooms and bedrooms located to reduce overlooking No residential unit should be designed with windows facing nearby high boundary or gable walls which.

All residential units throughout the development must provide adequate door and corridor widths to satisfy all requirements as set out in the Building Regulations TGD Part M.

3.1.21 Housing:

The height strategy will identify appropriate areas to achieve density in the development, and there are areas of the site which lend themselves to two and three storey development at a maximum, with other areas of the site being more appropriate in achieving height and density within the development.

Housing types could include a mix of 1, 2, 3, & 4 bed housing. Siting of any such development is context sensitive, and should be identified in reference to surrounding existing and adjoining boundary conditions and building heights.

Development strategies can include duplex type housing arrangements where appropriate, and compliant with Building Regulations. Two, three and up to four storey housing could be considered appropriate is some areas if the site, but again dependant on location and context.

Each phase of development should be carefully considered to deliver a mix of tenure and houses / apartments which should seek to meet with the tenure mix of 50% Private, 30% Social and 20% Affordable housing for each phase.

Site layout and phasing arrangements for delivery of the project, should be described in the Developers Outline Solution.

All houses must be designed to comply fully with the space standards as defined in the various standards and briefing documents as issued by the DHPGL, and should exceed these minimum requirements where possible.

All housing must seek to provide superior quality daylight, ventilation, and to provide a pleasing aspect and outlook to both private open space and public open areas. The location and position of housing, and individual houses within the overall site layout must be carefully considered and take account of orientation, overlooking, privacy, residential amenity, an security in how the houses are laid out both internally and in their location within the development. Due consideration must be paid to existing housing immediately adjoining the O Devaney site boundaries with respect to light and privacy of those existing houses.

There should be no discernible difference in materials or finishes between Private, Social and Affordable housing throughout the scheme.

3.1.22 Apartments:

The height strategy will identify appropriate areas to locate apartment buildings, and set a hierarchy of building height throughout the development which will form the basis of the Developers Outline proposal.

Duplex type housing can be considered, and where apartments form part of a duplex type arrangement, particular attention must be paid to Universal Accessibility.

Apartment buildings should be integrated in the Masterplan approach for the development which will ensure appropriate height is delivered throughout the development, and the Apartment buildings form an intrinsic element in the overall approach to forming a sense of place, and delivering quality open spaces throughout the scheme.

Ground floor apartments should be afforded some level of privacy to the surrounding streets, and should not immediately abut the back of pavement line in any area.

Designers must provide some level of private residential space between any ground level windows to any apartment and any pavements adjoining the building.

Low level plinth walls, with robust galvanised steel railings must be provided to any junction of Private Open Space to any apartment at ground level. The Landscaping proposal must take advantage of any such private space to a public street or road, and provide opportunities for screen planting on the private side of any such boundary.

Alternatively such interface areas could be landscaped, secured and managed by the Apartment Management on an ongoing basis.

Entrance lobbies to apartment buildings must be generous, welcoming, bright and warm, with good quality day lighting, to reduce requirements for artificial lighting during daylight hours.

All Entrance Lobbies and common areas must afford adequate security in design to limit and prevent unauthorised access to the building; with Materials proposed for such entrance lobbies must high quality, robust, low maintenance, sustainable and aesthetically pleasing.

Materials proposed for exterior of apartment buildings must be robust and solid materials such as brick, stone, metal.

Self coloured or painted rendered finishes have proven to be problematic in terms of maintenance in the longer term, and should only be used in areas which can be safely and easily accessed, but not generally in public areas at ground level.

Development strategies can include apartment buildings from two storey upwards if considered appropriate, and duplex type housing arrangements can also be where appropriate, and compliant with Building Regulations. Four storey and upwards can be considered where appropriate on the site in order to achieve minimum densities to deliver the minimum housing provision for the overall development, but would be dependent on location and context.

Each phase of development should be carefully considered to deliver a mix of tenure and houses / apartments which should seek to meet with the tenure mix of 50% Private, 30% Social and 20% Affordable housing for each phase.

Site layout and phasing arrangements for delivery of the project, should be described in the Developers Outline Solution.

All Apartments must be designed to comply fully with the space standards as defined in the various applicable standards and briefing documents as issued by the Department of Housing Planning and Local Government and should exceed these minimum requirements where possible.

All Apartments must seek to provide superior quality daylight, ventilation, and to provide a pleasing aspect and outlook to both private open space and public open areas.

The location and position of individual apartments within any one block must be carefully considered and take account of orientation, overlooking, privacy, residential amenity, and security in how the apartment layouts both internally and in their position within the Block and the overall development.

Due consideration must be paid to existing housing immediately adjoining the O'Devaney site boundaries with respect to light and privacy of those existing houses.

There should be no discernible difference in materials or finishes between Private, Social and Affordable housing throughout the scheme.

3.2 Site Layout Requirements

3.2.1 Site Development Works:

The site development must include for the following for each House and Apartment Building, (please note, this section should be read in conjunction with the civil engineering specification and documentation as issued at stage II of this competition):

- Landscaping and planting of open space to be prepared by a qualified Landscape Architect employed by the Developer.
- Topsoil and seeding to all areas indicated as grassed private open space / garden areas throughout the development. Planting including Shrubs and Trees to be located and selected by qualified Landscape Architect.
- 2000mm high brickwork / rendered blockwork boundary walls with concrete / brick cappings on DPC,s shall form the main boundary walls to any private open spaces onto public areas within the development, with internalised private garden boundaries to be completed in 2000mm high concrete blockwork walls with precast / brick cappings on DPC.
- All paving to pathways within the development shall be of solid, permeable, or monolithic paving. Minimum 200mm Topsoil and seeding to be provided to all private gardens, and to all landscaped and public areas to be in accordance with the Landscape Architectôs design proposals, and as agreed by Dublin City Council technical representative, prior to submission of the Planning application for Permission for this development.
- 1200mm high galvanised steel painted post and bar railings to be employed to all public areas where railing is preferred to solid walling. Steel bars / rails to be a minimum of 12mm galvanised solid steel, all to Landscape Architects proposals, and in accordance with the Planning Permission to be granted for this development
- All railings to any public boundaries shall be on concrete / brickwork / blockwork plinth minimum 400mm high with cast / brickwork cappings on DPCôc
- Individual gates providing residential access to private open spaces, should be in the order of 1200mm high minimum 12mm solid steel bar railings in brickwork / concrete blockwork Piers / walls, with 100x100mm galvanised steel gate posts with a painted finish to take galvanised steel gates, painted to match.
- Any electrically operated / automatic gates in the development are to be structurally sound, and designed, detailed and certified in compliance with the Building Regulations by specialist to all relevant design and construction Standards and Codes of Practice. All necessary precautions are to be included to prevent trapping of persons, limbs, arms, fingers or toes in the operation of any such gates, and provision is to be made for emergency stopping and release of the gates in operation in the event of an accident.
- Minimum 150mm deep x 1200mm wide reinforced concrete paved apron to entire perimeter of all apartment blocks, to Landscape Architects design and construction details.
- All car parking areas are to be designed and laid out in accordance with the Landscape Architects design and construction details, using robust and durable materials suitably textured to provide slip resistance relevant to the use proposed.

- Car Parking bays are to be a minimum of 2500mm wide by 5000mm long, with proximately located disabled parking bays to comply with Building Regulations Part M, and all other relevant design standards.
- Visitor car parking provision is to be included in accordance with current Dublin City Council Development Plan standards, and recommendations.
- All Roads, paving, and car parking arrangements are to be in full compliance with the ñDesign Manual for Urban Roads & Streetsò (DMURS). All works areas to be taken in charge are to be carried out in accordance with ó Construction Standards for Roads and Street Works in Dublin City Councilôand subject to Road Safety Audits.
- Only overflow in extreme weather conditions Sustainable Urban Drainage systems using good practice are to form part of the initial design of all open spaces. All surface water outlets and connections to each building within the development are to be designed, installed & certified as compliant with Irish Water Code of Practice, and the Greater Dublin Sustainable Drainage Code.
- Site specific Flood Risk Assessment is required as per DCC policy.
- Foul drainage connections from the development site to any mains drainage lines are to be designed, installed & certified as compliant with Irish Water Code of Practice, and the Greater Dublin Sustainable Drainage Code.
- All water supplies to each building within the Development is to be designed and installed strictly in accordance with the Irish Water Code of Practice

The quality of the overall design is key to the long term success of the development not only with regard to maintenance and management of the development, but also in the interests of the residents and the quality of the environment that they will inhabit.

Designers must encouraged to work together strategically from an early stage and focus on the creation of locally distinct, high-quality places.

Neighbourhoods where buildings, streets and spaces combine with distinctive local places and which individual characteristics making a positive contribution to the life of local communities, promote a sense of community and security within a particular development.

Streets make up the greater part of the public realm. Street design quality will contribute significantly to the quality of the built environment and play a key role in the creation of sustainable, inclusive, mixed communities consistent with the planning objectives as set out in the Dublin City Development Plan

Designers must:

- Apply a user hierarchy to the design process with pedestrians at the top.
- Implement a collaborative approach amongst the design team members to the delivery of quality streets & environment;
- Identify topography, soil conditions and flood risk and incorporate good quality surface water management and sustainable drainage systems wherever possible.
- Recognise the importance of the community function of streets as spaces for social interaction and informal play opportunities;
- Promote an inclusive environment that recognises the needs of people of all ages and abilities;
- Reflect and support pedestrian desire lines in networks and detailed designs;

- Develop a masterplan and prepare design codes that implement them for the larger-scale development, and using design and access statements for all phases / sectors of the development;
- Create a viable networks of streets that provide permeability and connectivity throughout the development, and into surrounding adjoining streets and existing urban connection routes;
- Develop street character types on a location-specific basis with reference to both the place and movement functions for each street;
- Encourage innovation with a flexible approach to street layouts and the use of locally distinctive, durable and maintainable materials and street furniture;
- Use quality audit systems that demonstrate how designs will meet key objectives for the local environment including suds strategy;
- Design to keep vehicle speeds at or below 30 kph on residential streets unless there are overriding reasons for accepting higher speeds; and
- Use the highway design features necessary to make the streets work properly.

3.2.2 Site Layout and Street patterns

A clear distinction can be drawn between streets and roads. Roads are essentially highways whose main function is accommodating the movement of motor traffic. Streets are typically lined with buildings and public spaces, and while movement is still a key function, there are several others, of which the place function is the most important.

Streets that are good quality public places can achieve a number of positive outcomes:

- Attractive and well-connected permeable street networks encourage more people to walk and cycle to local destinations, improving their health while reducing motor traffic, energy use and pollution;
- More people on the streets leads to improved personal security and road safety ï research shows that the presence of pedestrians on streets causes drivers to travel more slowly;
- People meeting one another on a casual basis strengthens communities and encourages a sense of pride in local environments; and
- People who live in good-quality environments are more likely to have a sense of ownership and a stake in maintaining the quality of their local streets and public spaces.

The choice of surface materials, planting and street furniture has a large part to play in achieving a sense of place. The excessive or insensitive use of traffic signs and other street furniture has a negative impact on the success of the street as a place. It is particularly desirable to minimise the environmental impact of highway infrastructure for example, where excessive lighting and the inappropriate use of kerbing, signs, road markings and street furniture can significantly affect the qualities of visual amenity and environmental sensitivity.

Design proposals should include a design rationale covering the site access, site layout, orientation of each Phase and Block within the site, along with a traffic management plan setting out principal traffic routes ï vehicular, cycles, and pedestrian within the development.

Orientation on buildings must be carefully considered to ensure adequate sunlight, daylight, and visual amenity are afforded to each dwelling, but also to account for solar gain / heat loss etc. to ensure privacy and comfort of the residents as far as is possible.

Detailed heat analysis may be required to ensure certain apartments within any block in the development do not overheat, and that all apartments can achieve the Building Energy Rating applicable at the time of construction of the apartments.

Locations of all Electrical and Mechanical plant and equipment installations must be carefully considered to avoid or minimise the impact of noise, emissions, ventilation requirements, fan operation, maintenance, fuel provision requirements, etc. on the residential amenity of any of the apartments within the development.

There shall be no exposed or boxing out of exposed mechanical and electrical plant / equipment within the apartments or any common / shared areas within the development at any level.

All service pipes and conduits shall be fully concealed within designated service access panels and zones in floors, ceilings, service riser shafts, and partition walls within the apartments and buildings throughout the development to ensure adequate and safe access for maintenance of the systems whilst at the same time providing some security to the systems to prevent vandalism of the systems.

3.2.3 Surface Materials and Finishes

The choice of surface materials, planting and street furniture has a large part to play in achieving a sense of place. The excessive or insensitive use of traffic signs and other street furniture has a negative impact on the success of the street as a place.

It is particularly desirable to minimise the environmental impact of highway infrastructure for example, where excessive lighting and the inappropriate use of kerbing, signs, road markings, and street furniture can significantly affect the qualities of visual amenity and environmental sensitivity. Wherever possible, materials should allow for surface water management using good practice in accordance with Sustainable urban drainage policy to ensure retention and infiltration close to source.

Areas to be taken in charge works are to be carried out in accordance with "Construction Standards for Road and Street Works in Dublin City Council".

Pedestrian access must be designed for people of all ages and abilities, and to comply with all Disability Access Legislation.

Providing frontages that are directly accessible on foot and that are overlooked from the street is highly desirable in most circumstances as this helps to ensure that streets are lively, active and more secure places.

3.2.4 Key Features

It is recommended that the following key features relating to street design will be addressed in the Developers Tender Submission:

- Connections to the surrounding area;
- Connections through the site;
- Street layout and dimensions;
- Building lines;
- Privacy zones / front gardens
- Building heights;
- Building separation distances

- Routes for utilities;
- Parking provision, design and control;
- Landscape design and planting structure;
- Public open space provision
- Formal parks strategy
- Public realm materials, management and maintenance regime;
- Servicing and access for emergency vehicles;
- Speed control; and
- SUDS and sewer routes.

Critical services separation distances must be provided to ensure compliance with the Service Providers requirements and recommendations for proximity to other adjoining underground services installations.

The overall dimensions for services and structural zones must be designed to accommodate the structure / structural frame and the extent of services to be provided. Moreover, adequate provision must be made for future flexibility in terms of use or occupation over the life of the building.

The minimum finished floor to ceiling height must be no less than 2.7M at ground floor throughout, and 2.4M minimum floor to ceiling height to all upper floors.

All room dimensions must comply with the requirements as set out in the DECLG best practice Guideline ôQuality Housing for Sustainable Communitiesôï Published 2007, and in accordance with Clause **16.10.2 Residential Quality Standards – Houses** of the Dublin City Development Plan 2016-2022.

For minimum dimensions for carriageways, roadways, access ramps, turning circles, junction geometries, etc. please refer to the D.M.U.R.S document, and all relevant NRA design guidelines along with the Construction Standards for Roads and Street Works in Dublin City Council, and the DHPLG 2015 document - ñSustainable Urban Housing : Design Standards for New Apartments ï Guidelines for Planning Authoritiesò and all requirements as set out by the Local Authority Roads Department.

3.2.5 Design Codes

Design codes are an effective mechanism for describing and implementing the design strategy for a particular site or development. They comprise detailed written and graphically presented rules and strategies for designing and building out a site or an area.

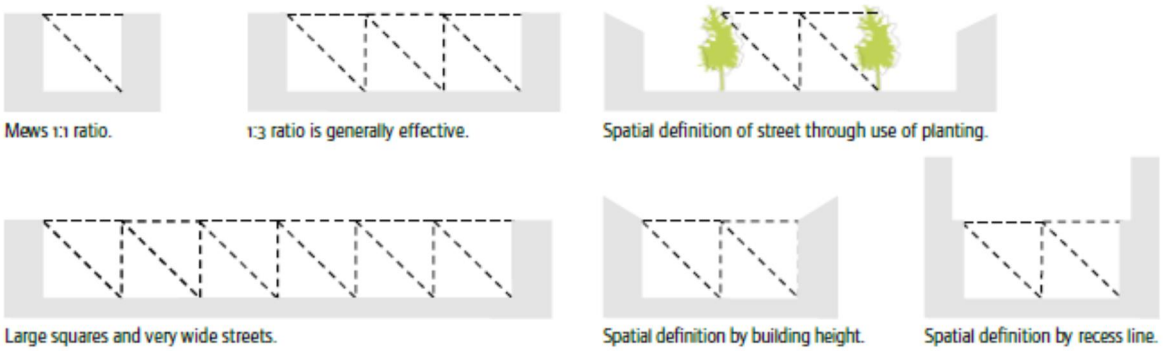
Design codes should seek to determine the two- and three-dimensional design elements which are key to the quality and success of a development.

The elements which are coded will depend on the overall design strategy being adopted for the development, and could aspects relating to layout, townscape and landscape considerations, architectural quality, building performance. Codes may also usefully establish the relationships of plots, sometimes the building form or even materials.

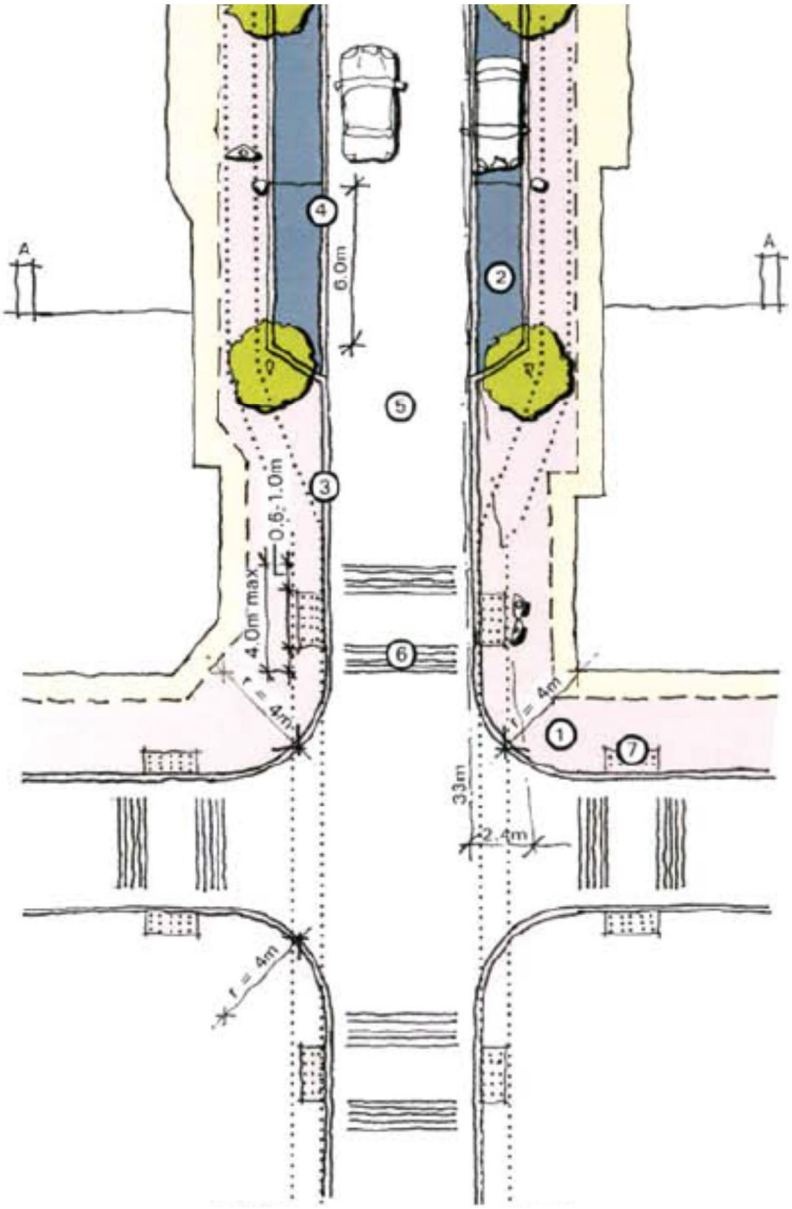
However, given the need to secure a quality streetscape and a sense of place, the most important role of a design code would be in securing lasting infrastructural elements of a place, such as the street pattern and street dimensions. Getting these elements right will enable the other elements of a design to evolve. To do this successfully, however, the design code will need to be underpinned by a specific design vision. The Masterplan should identify key design elements and strategies for inclusion in any design code or a design and development framework.

Typical street-related design elements and issues which a design code may relate to include:

- The function of the street and its position in the Place and Movement
- Hierarchy, such as boulevards, high streets, courtyards, mews, covered
- Streets, arcades or colonnades;
- The principal dimensions of streets;
- Junctions and types of traffic calming;
- Treatments of major junctions, public transport links, traffic control;
- Location and standards for on-and off-street parking, including car parks and parking courts, and related specifications;
- Street lighting and street furniture specifications and locations;
- Specifications for trees and planting;
- Location of public art;
- Sustainable Urban Drainage and rainwater run-off systems;
- Routing and details of public utilities; and arrangements for maintenance and servicing.



Typical Design Code Sketch: Building Separation Distances



Typical Design Code Sketch: Street Plan arrangement

3.2.6 Building Separation and open space

The public realm is defined by building height as well as width or, more accurately, the ratio of height to width.

It is therefore recommended that the height of buildings (or mature trees where present in wider streets) is in proportion to the width of the intervening public space to achieve a sense of security and enclosure.

The actual ratio depends on the nature and scale of street or open space being designed. The height ï to ï width enclosure ratios shown above illustrate the impact of width / height ratios can serve have on a development as a guide.

Street length can also have a significant effect on the quality of a place.

Acknowledging and framing vistas and landmarks can assist in the formation of a ósense of placeôin a neighbourhood and is orientation for users. Long straight sections of road can encourage high traffic speeds, which can be mitigated through careful design control.

The arrangement of buildings and footways has a major influence on defining the nature and quality of space at junctions.It is better to design the junction by considering the adjoining buildings, entrances, access routes, etc. rather than purely on vehicular movements.

Carriageways with tight, enclosed corners make better junctions than cutback corners with sweeping curves. This might involve bringing buildings tighter to the corner at some junctions, or by setting the buildings back from other junctions to provide open vistas, and clear lines of sight. DMURS will be a key reference document in relation to the design of the Roads and Street layout to provide adequate and safe routes for movement throughout the development.

Double-fronted buildings can also impact on the design quality of the streetscape, character, and amenity value afforded. Buildings on corners can have a significant design impact in the quality of a street / junction, and on orientation and overall sense of place within a development.

The layout of a new housing or mixed-use area will need to take account of factors other than street design and traffic provision including.

- The potential impact on climate change, such as the extent to which
- Layouts use existing and proposed topography and maximise efficient use of SUDS and mitigate against flood risk.
- layouts promote sustainable modes of transport or reduce the need to
- travel;
- Climate and prevailing wind, and the impact of this on building type and orientation;
- Energy efficiency and the potential for solar gain by orientating buildings appropriately;
- Noise pollution, such as from roads or railways;
- Providing views and vistas, landmarks, gateways and focal points to emphasise urban structure, hierarchies and connections, as well as variety and visual interest;
- Crime prevention, including the provision of defensible private and communal space, and active, overlooked streets (see chapter 4); and
- Balancing the need to provide facilities for young children and teenagers overlooked by housing, with the detrimental effects of noise and nuisance that may result.

3.2.7 The Street and Residential Amenity values

The space between the front of the building and the carriageway, footway or other public space must be carefully considered, designed and managed as it marks the transition from the public to the private realm. Continuous building lines are preferred as they provide definition to, and enclosure of, the public realm. They also make navigation by blind and partially-sighted people easier.

For occupiers of houses, the amenity value of front gardens tends to be lower when compared to their back gardens and increased parking pressures on streets has meant that many householders have converted their front gardens to hard standing for car parking. However, this is not necessarily the most desirable outcome for street users in terms of amenity and quality of place, and can lead to problems with drainage.

Where no front garden is provided, the setback of dwellings from the street is a key consideration in terms of:

- Defining the character of the street;
- Determining a degree of privacy;
- Security space, providing a semi-private buffer which intruders would have to pass through, thus reducing opportunities for crime.
- Private amenity spaces for plants or seating opportunities, etc.; and
- Functional private open space for rubbish bins, external meters or storage, including secure parking for bicycles, motorbikes, etc...

Keeping common parking areas level with, or behind, the main building line can be aesthetically beneficial for visual amenity.

Where on street parking is proposed, parking bays should be designed with intermediate green / planted ñbuild outò areas which can act as possible surface water attenuation areas, will assist in pedestrian movement around and across low volume trafficked streets.

Street furniture, signs, bins, bollards, utilities boxes, lighting and other public function items which tend to accumulate on a footway can restrict universal access, and clutter the streetscape. Such clutter is visually intrusive and has adverse implications for many disabled people, and young parents with Buggies and small children. This type of street clutter can be accommodated on ñbuild outsòbetween clustered parking bays which may reduce the impact of utility clutter on the actual footways.

The Development proposal should consider a design strategy (or code) for management of the visual impact of such utility installations as mini-pillars, service chambers, sub-stations, transformers, manhole covers, traffic signage, lighting columns, etc., and ensure that the relevant service providers have agreed to the strategy in order to minimise the visual and physical impacts and impediment to pedestrians, cyclists, vehicular traffic, etc.

Examples of reducing the impact include:

- Mounting streetlights onto buildings, or traffic signals onto lighting columns;
- Locating service inspection boxes within buildings or boundary walls;
- Specifying the location and orientation of inspection covers in the footway;
- Designing in ñBuild Outsòbetween parking bays to accommodate clutter
- Ensuring that household bins and recycling containers can be stored off the footway; and
- Ensuring that street furniture design and location will be in keeping with its surroundings.

Where terraced housing or flats are proposed, it can be difficult to find space for storage bins off the footway. The Developers Design Team will be required to liaise with the Waste Management section of Dublin City Council to ensure that their design proposals and siting of the bins are appropriate, and manageable.

3.2.8 Future Expansion

Whilst future expansion of the development is not envisaged, where possible the layout and design of the Houses should consider the possibility of extensions up to the limit of ñExempted Developmentò area size to the rear of houses. Apartment building design should consider the structural possibility of a future addition of 2 floors to be overall building height, and structural calculations should provide capacity for this additional loading. Mechanical and electrical capacity should be based on the number and types of apartments which the developer proposed to construct under this contract only.

3.2.9 Sense of Place:

Local identity and distinctiveness are important design considerations in the creating of a ñsense of placeò and can be strengthened by:

- Relating the layout to neighbouring development (if it satisfies the basics of good urban design);
- Using easily sourced robust materials (which may also be better environmentally);
- Using grain and street patterns to knit into the surrounding street layout form.
- Building design which are sympathetic, complementary, and welcoming to the establish a strong sense of place, as established in feasibility study and / or masterplan document;
- Retaining historical associations; and
- Engaging with utility companies to ensure that the design, quality and setting of their utility facilities, and street furniture does not detract from the overall street design, view points and vistas.

3.2.10 Landscaping Treatment / Greening:

Space for planting should be provided within the site layout and building designs, and, wherever possible, located on private land or buildings (generous balconies, roof gardens, walls) or public land intended for taking in charge, including the parks, playgrounds, boulevards, roadways, etc.

Planting adds value, helping to soften the urban streetscape, creating visual and sensory interest, and improves the air quality and microclimate, encouraging flora and fauna and providing sustainable habitats for wildlife.

The aromatic qualities or contrasting colours and textures of foliage are of value to all, and can assist the navigation of those with visual impairment. Flowers and fruit trees can add seasonal variety.

Planting can provide shade, shelter, privacy, spatial containment and separation and surface water infiltration.

Privacy buffer zones, security zones, visual barriers, or landmarks or gateway can also be enhanced by the addition of planted areas & features. Vegetation can be used to limit forward visibility to help reduce vehicle speeds.

Sustainable planting can be used to provide surface water attenuation given the right design approach and species selection, and will require the provision of:

- Healthy growing conditions;
- Space to allow growth to maturity with minimal intervention or management;
- Species appropriate to a local sense of place and its intended function, and site conditions; and
- Well-informed proposals for new planting (or the retention and protection of existing plants) and longer-term maintenance.

These proposals should be agreed with the adopting local authority, or community association or Management Company prior to completion to each Phase of the Development.

3.2.11 Maintenance:

Places need to look good and work well in the long term. Design costs are only a small percentage of the overall costs, but it is the quality of the design that makes the difference in creating places that will stand the test of time.

Well-designed places last longer and are easier to maintain, thus the costs of the design element are repaid over time.

The specification for materials and maintenance regimes should be written to provide high standards of durability and environmental performance. The development layout should be derived from a ólow maintenanceô perspective, and the provision of quality materials for low maintenance must be a primary consideration in the selection process for paving and finishes in any particular design approach.

Maintenance should be straightforward and management regimes should ensure that there are clear lines of responsibility.

3.2.12 Street user requirements:

When designing for pedestrians or cyclists, some requirements are common to both:

- Routes should form a coherent network linking trip origins and key destinations, and they should be at a scale appropriate to the users;
- Street / paved networks should allow people to go where they want, unimpeded by street furniture, footway parking and other obstructions or barriers;
- Infrastructure must not only be safe but also be perceived to be safe ï this applies to both traffic safety and crime; and
- Aesthetics, noise reduction and integration with surrounding areas are important ï the environment should be attractive, interesting and free from graffiti and litter, etc.

3.2.13 Pedestrians:

Pedestrian safety is a key consideration for the Design Team in the formulation of proposals for the site layout, and street patterns as follows:

- Pedestrian routes should be overlooked by buildings with habitable rooms

- All street users must be considered in arriving at design solutions
- Layouts should not create hidden, areas, or areas where Anti Social behaviour can take place out of sight of nearby residents
- Layouts should not provide hidden or obscured areas which could provide cover for would be assailants
- Layouts should avoid any dead end, or alleyways, and
- All areas should be provided with adequate levels of public lighting, oversight from surrounding residences, and CCTV should be sited to maximum coverage at appropriate locations and junctions.

The Design Team should ensure that pedestrian routes are as near to level as possible, with only very gradual variations on level where necessary. This will encourage maximum use of the public areas by all residents including residents with young children, residents with disabilities, and the elderly and infirm.

All surfaces to pedestrian routes must be designed to be free from trip hazard, irregularities in the surface finish, etc.

The use of stone cobbles / pebble finished concrete should only be considered as a method of traffic calming / management, and should not be proposed for any routes which are for general pedestrian use.

All paving throughout the development must be designed to ensure that ponding of rainwater does not occur, and that adequate surface water attenuation / drainage is provided throughout the development.

3.2.14 Cyclists:

Cyclists should generally be accommodated on the carriageway. In areas with low traffic volumes and speeds, there should not be any need for dedicated cycle lanes on the street.

Cycle access should always be considered on links between street networks which are not available to motor traffic. If an existing street is closed off, it should generally remain open to pedestrians and cyclists.

Cyclists prefer direct, barrier-free routes with smooth surfaces. Routes should avoid the need for cyclists to dismount.

Cyclists are more likely to choose routes that enable them to keep moving. Routes that take cyclists away from their desire lines and require them to concede priority to side-road traffic are less likely to be used. Anecdotal evidence suggests that cyclists using cycle tracks running adjacent and parallel to a main road are particularly vulnerable when they cross the mouths of side roads and that, overall, these routes can be more hazardous to cyclists than the equivalent on-road route.

Cyclists are particularly sensitive to traffic conditions. High speeds or high volumes of traffic tend to discourage cycling. If traffic conditions are inappropriate for on-street cycling, the factors contributing to them need to be addressed, if practicable, to make on-street cycling satisfactory.

The design of junctions affects the way motorists interact with cyclists. It is recommended that junctions are designed to promote slow motor-vehicle speeds. All Road design is to be in compliance with DMURS.

Where cycle-specific facilities, such as cycle tracks, are provided, their geometry and visibility should be in accordance with the appropriate design speed. The design speed for a cycle track would normally be 30 km/h (20 mph), but reduced as necessary to as low as 10 km/h (6 mph) for short distances where cyclists

would expect to slow down, such as on the approach to a subway. Blind corners are a hazard and should be avoided.

Cyclists should be catered for on the road if at all practicable. If cycle lanes are installed, measures should be taken to prevent them from being blocked by parked vehicles. If cycle tracks are provided, they should be physically segregated from footways/footpaths if there is sufficient width available. However, there is generally little point in segregating a combined width of about 3.3 m or less. The fear of being struck by cyclists is a significant concern for many disabled People. Access officers and consultation groups should be involved in the decision-making process.

Cycle tracks are more suited to leisure routes over relatively open spaces. In a built-up area, they should be well overlooked. The decision to light them depends on the circumstances of the site ï lighting may not always be appropriate.

3.2.15 Building & Street Identification Signage:

The Developer shall propose an external signage strategy and proposal to clearly identify each apartment block / core entrance, and individual numbering to each apartment within the development.

Proposals must include postbox locations, along with address / location / directional signage for the development which shall be of individual lettering on an enamelled / stainless steel plate fixed to steel posts, or solid brick / blockwork walls similar to the existing signage to streets in the vicinity, in accordance with ñConstruction Standards for Road & Street Works in Dublin City Councilò

This layout could also be employed to provide detailed information on wayfinding throughout the development, and how it is proposed to deal with this element of ñSense of Placeòand to provide guidance for visitors to the development.

4. Landscape Provision Requirements

4.1 Introduction:

The 2010 masterplan for the redevelopment of O'Devaney gardens provides a proposed spatial arrangement for open space as indicated on the plan below. This document provides guidance on the acceptable level of provision of open space areas and landscape provision, which shall be carried through the design and implementation of the scheme.

The categories of landscape proposed in the Masterplan are:

- Public Open Space : these are the two public parks as part of Phase 1 and Phase 2 of the masterplan
- Streetscape : includes all roadside landscape provision in the scheme
- Private Open Space: includes all private front & rear gardens, front and rear communal landscape areas
- Building greening: includes roof greening, vertical greening, balconies & atria.

4.2 Public Open Space:

The 2010 Masterplan proposed public open spaces under Phase 1 and Phase 2 as shown in the plans above.

The planning permission granted by An Bord Pleanala on 5th August 2011 for the 110 units in Phase 1 also includes: a new 325m central boulevard that will link the North Circular Road with Montpelier Park to the south. The new route is to comprise of a planted area 2m wide in front of the buildings, a 4m wide road carriageway and a 2 metre wide footpath. The area to the centre of the site is proposed to be a

neighbourhood park with an area of 4,680 sq. metres. The park is proposed to be a multifunctional space with landscaping, grassed areas, childrenôs play area and hard landscaped civic areas.

The park design process will require approval of concept and detail design by Parks & Landscape Services. It is the intention to have the public parks taken in charge following an appropriate DLP and maintenance period.

The large open space under Phase 1of the Masterplan is the central open space of the scheme (4,680 sq.m). This is envisaged as a Community Grade 1 Park, which is defined as:

Serve local communities, have a good range of amenities and have a high standard of design or horticultural presentation.

The key design features of a this neighbourhood park include:

1. A park design and facilities that will encourage use by all sections of the community.
2. Promote interaction and provide a focal point / meeting place for the wider local community.
3. Park recreational facilities to include a childrenôs playground with materials and surfaces complying with EN1176 & EN1177 . The playground will provide a diversity of play experiences for both younger and older children.
4. Planting within the park will comply with BS 3936 (Nursery Stock). Planting design will promote seasonal interest and biodiversity.
5. The park will include provision of Sustainable Urban Drainage where appropriate to tie in with overall landscape design. Sustainable green infrastructure and landscape design shall therefore be integrated.

Phase 2 of the development located at the southern end of the Site provides two options for a park/public open space. Option 1 requires a 1,100 sq. metre park and the Option 2 makes no provision. The park in Phase 2 (option 1) is a open space which will emphasis biodiversity in the city. Dublin City Council actively promotes biodiversity and has recently seen the enlargement of the UNESCO Dublin Bay Biosphere. Parks and Landscape Services take an active role in conservation of natural areas and biodiversity.

The key design features of this type of park include:

1. The location of the park to the south of the development which will include provision for Sustainable Urban Drainage where appropriate to tie into the overall landscape design.
2. The park design will promote biodiversity through the provision of habitat using water, such as ponds/constructed wetland/ rain garden.
3. Sustainable green infrastructure to manage surface water and landscape design shall be integrated.
4. Key species for habitat creation will include bees, butterflies and birds.
5. The park will have a minimum size of 1,100 sq.m
6. Access to an open space will be designed to create undisturbed an area where flora and fauna can establish unhindered.
7. Interpretation of the habitats and the wider city biodiversity will be included.

4.3 Streetscape

The landscape provision along the proposed streets in the scheme will include the provision of street trees and grass verges. A streetscape planting theme shall be developed for all roads in the development scheme to give identity to individual roads and streets.

An example of streetscape landscaping is provided in Appendix D.

The key requirements of streetscape landscape will be:

1. All planting will comply with BS3936 (Nursery Stock).All tree species selected shall be suitable for urban environments. Trees will be planted with a minimum of 1.5m^3 planting pit per tree. Trees shall be 12-14 cm girth standard size. Tree planting trenches shall be deployed where a linear planting arrangement is possible. Tree planting spacing shall be between 10m and 15 m. All street tree planting in hard landscape areas will have a finished surface suitable for pedestrian traffic and tree trunk expansion, e.g. tree grille or resin bound gravel.
2. Grass verges with tree planting shall be a minimum of 1.5m wide.
3. Tree planting underground and overhead areas shall be free of services and utilities. An integrated approach to the design of road services/utilities alignment and street tree planting is required.
4. Cellular planting systems and the Stockholm planting system may also be deployed for streetscape planting.
5. Where streetscape space for greening is limited then consideration shall be given to enhancing greening by adjacent lands, e.g. residential front gardens & apartment grounds.

4.4 Private Open Space.

Private open space includes areas to the front and rear of residential buildings. The following general requirements shall apply to their provision:

1. All front courts/gardens shall be landscaped with shrub, tree and grassed areas. Softworks shall be protected & separated from public area by use of a boundary e.g.: railings, walls etc. All boundaries shall be coordinated in design. All ownership boundaries between private open spaces shall be delineated using similar boundaries of wall, fence or railings.
2. All paving access to buildings shall comply with Part M of the Building Regulations.
3. All landscape areas will be free from buried builderôs waste and shall have a minimum loam top soil depth of 150mm for grass turf areas, and 600mm for shrub and tree planting areas over sub-soils.
4. Waste bins (wheelie bins) located in front courts/gardens will have a defined holding areas with screening.
5. For apartment buildings buffer landscape planting will be provided between the building façade / private patios and communal open space to enhance privacy for ground level units.
6. Rear court/garden spaces of private housing will include finished paving areas to the building boundary, grass lawn area and a minimum of one tree per garden/ residential unit. Waste bins (wheelie bins) located in rear courts/gardens will have a defined holding areas with screening.

7. Rear court/open space to the rear of apartments will be landscaped with shrub, tree and grass planting. Landscape design shall provide privacy for ground floor apartments/patios through appropriate set pack planting and path alignments. Passive recreational facilities shall be provided. Play provision for younger children shall be provided where 25 or more units of accommodation are provided ï please refer to guideline: Sustainable Urban Housing, Design Standards for New Apartments 2015.
8. An integrated design approach should be adopted where the apartments open space is located on underground car parking. In particular, structural loading of landscape elements should be considered while the car park is being designed .Air vent distribution shall also be coordinated to be located away from seating areas, play areas etc. Air vents should be suitably designed to blend in with the landscape proposals.

4.5 Building greening

The deployment of landscape greening on building facades and roofs will be deployed within the development to enhance their aesthetics, biodiversity and SUDs. The success of greening buildings will depend on integrating them into the early design of buildings as well ensuring that a programme of maintenance exists into the future. The following requirements apply to their provision.

1. Green roofs shall be provided where practicable on all flat roofs and shall cover at least 50% of roof area. Requirements for green roof function and loading should be considered as part of the building design development. The extent of green roofs shall be illustrated on all concept and master landscape plans for discussion with Parks & Landscape Services.
2. Vertical greening may deploy specialized growing systems on facades or more traditional approaches such as by using ground planted climbers. They should be deployed in particular where there is limited on ground planting space or where blank facades may occur. Residential and commercial balconies/atria can also introduce planters to great greening effect and are preferably designed as part of the balcony/atria structures rather that add-on elements.

5. Foul Water Drainage

Irish Water (IW) is the statutory body responsible for foul/combined drainage. New connections to the drainage systems will be granted by IW subject to their requirements. It is advised that applicants should contact IW in advance through a pre-connection enquiry form to ensure their requirements are identified and complied with so as to avoid any delays in granting the connection to the wastewater system. All foul/combined sewer works must be in compliance with Irish Water new connection standard details, design risk assessments and code of practise (available on https://www.water.ie/help-centre/connections/).

5.1 Phase 1 - Permitted 110 Units

It was proposed to drain the foul water from Phase 1 of the site via gravity and discharge to the public 375 mm combined sewer which traverses the site.

The total foul discharge from the 112 No. permitted units was calculated as 59,400 l/day, or 0.69 l/s (DWF). The peak flow (6 x DWF) was calculated as 4.13 l/s.

The receiving sewer on Montpelier Gardens, which forms part of the combined sewer drainage network has a diameter of 375mm and is laid at a gradient of 1/240, providing a capacity of 148 l/s.

5.2 2010 Masterplan

As outlined in Section 5.1, the development would drain via gravity and outfall via the 375mm combined sewer on Montpelier Gardens at the south western corner of the site

The 2010 foul drainage masterplan is shown in Waterman Moylan Drawing No. 09-195-P104. .

The total foul discharge from the entire Old Devaney Gardens site was originally calculated as 221,740 l/day, or 2.46 l/s (DWF). The peak flow (6 x DWF) was calculated as 15.3 l/s.

5.3 Phase 1A 56 Units (Tender Stage)

It is proposed to drain the foul water from the 56 No. units (Phase 1A) via gravity and discharge into the existing 300 mm combined sewer on the south of the Phase 1A site. This will be a temporary connection in place until the remaining lands at Old Devaney Gardens are developed.

Further to correspondence with Irish Water, including the submission of a pre-connection enquiry form, Irish Water have confirmed that there is sufficient capacity in the existing combined wastewater network to service Phase 1A of the development (56 social housing units).

Irish Water have also approved a standard details exemption form application for Phase 1A of the development to maintain the foul collector drains in the rear of the terraced units.

The foul sewer has been revised within Phase 1A to omit the foul pumping station in the courtyard area. Revisions to the design approved under Planning Ref. No. PL29N.JA0024 include construction a deep 150 mm foul sewer, c. 1m below basement level, which serves the 7 unit blocks shown in Waterman Moylan Drawing No. 09-195A-T020 & T021. Due to the requirement of having this foul sewer below basement level, there will be two manholes constructed on the proposed road at c. 3m depth.

The total foul discharge from the 56 No units will be 33,600 l/day or 0.39 l/s (DWF). The peak flow (6 x DWF) was calculated as 2.33 l/s. Flow calculations have used the updated Irish Water Standards.

5.4 Site Specific Foul Water Requirements

The foul drainage for the site should generally follow the layout proposed in the 2010 masterplan and shall fully comply with the GDSDS Code of Practice, City Development Plan and Dublin City Main Drainage Division and Irish Water requirements.

Both Irish Water in their pre connection enquiry response and Dublin City Council Drainage Division have raised the issue of limited capacity available in the downstream combined sewer network. Irish Water specifically require that ñin order to accommodate the remaining 644 units, upgrade works are required to remove storm flows from the Northern Interceptor Sewer and divert them to the River Liffeyò

In this regard, in order to generate the required capacity in the combined sewer (Northern Interceptor sewer) catchment, it is proposed to direct surface water run-off from Old Devaney Gardens to a new 750 mm surface water sewer to be provided to the south of the site on Infirmary Road at the point where the existing surface water culvert through the Phoenix Park joins the 1810 x 740 mm combined sewer. This new c. 750 mm diameter culvert will extend from the Zoo stream culvert (830 mm x 630 mm) along Infirmary Road to the surface water culvert along Parkgate Street over a distance of c. 200 m.

Two possible options to drain surface water from Old Devaney Gardens to this culvert are outlined below and shown in Waterman Moylan drawing No. 09-195A-SK003.

Option 1: Surface water runoff from Old Devaney Gardens is to be discharged (at the existing greenfield runoff rate of 11 l/s) to the existing surface water network in Montpelier Park. This surface water network currently discharges back into the combined sewer network at the junction of Montpellier Hill and Infirmary Road. This would involve the construction of c. 50 m of surface water sewer along Infirmary Road between the junction with Montpellier Hill southwards.

Option 2: Surface water runoff from Old Devaney Gardens is to be discharged (at the existing greenfield runoff rate of 11 l/s) to the new c. 750 mm surface water culvert c. 50 m south of the Montpellier Hill / Infirmary Road junction. This would involve the construction of c. 260 m of new surface water sewer along Montpelier Gardens and Infirmary Road as far as the junction of Montpellier Hill and Infirmary Road. The c. 50 m of surface water sewer referenced in Option 1 would also be required to be provided. This option would further provide the opportunity to drain existing road gullies and runoff from future developments along Infirmary Road to a separate surface water sewer as opposed to the existing combined sewer along this route.

The options outlined above would require agreement with Dublin City Council from both a planning and funding perspective. In this regard, Dublin City Council Drainage Division have accepted in principle the proportionate sharing of costs for this surface water public sewer infrastructure to the River Liffey between the developer, Dublin City Council and Irish Water.

6. Surface Water Drainage

Dublin City Council (DCC) is responsible for all aspects of Storm Water or Surface Water drainage issues. Applications for new connections to the Storm Water systems must be made to DCC and will only be granted when the development has complied with all the requirements of DCC. All Storm Water drainage works must be in compliance with the Greater Dublin Regional Code of Practice for Drainage Works (available on www.dublincity.ie).

A surface water drainage masterplan for OôDevaney Gardens was prepared as part of the original planning application for Phase 1 which was granted permission by An Bord Pleanala on the 5th August 2011.

A full description of the surface water drainage design was provided in the Engineering Assessment Report which was submitted with the original planning application. The proposed drainage layout is shown in Waterman Moylan Drawing Noôs. 09-195-P104 & 09-195-P105

The developer should prioritise a greener sustainable approach to surface water management, which incorporates all aspects of design and flood risk management in order to minimise the need where feasible, for piped systems which would only be required in normal weather conditions. This would be subject to compliance with Dublin City Council Standards.

6.1 Phase 1 - Permitted 110 Units

It was proposed to drain surface water runoff from the Phase 1 site to a hydrobrake manhole at the south of the subject site. The flow was to be restricted to 11 l/s (2.0 l/s/Ha) in accordance with the requirements of the Greater Dublin Strategic Drainage Study. Surface water from the site shall discharge via a petrol interceptor and outfall to the existing 225 mm diameter public surface water sewer in Montpellier Park.

This surface water sewer outfalls to the 450 mm combined sewer on Infirmary Road via a 300 mm / 375 mm surface water sewer in Montpellier Park and Drive. This 450 mm combined sewer is also the outfall for the existing combined sewer serving the OôDevaney Gardens site.

The site was divided into two equal sized catchments, Upper and Lower, with each catchment attenuated in an above ground detention basin. Restricted flow from the upper catchment drains into the lower catchment. The storm water attenuation was designed to cater for a 1 in 100 year storm plus 20% for climate change.

Phase 1 of the development proposed the construction of an attenuation area in the Upper Catchment and a temporary attenuation area in the Lower Catchment. The temporary attenuation was to remain until future phases of OôDevaney Gardens were developed.

6.2 2010 Masterplan

The 2010 surface water drainage masterplan for OôDevaney Gardens was prepared on the basis of the development comprising of c. 400 residential units, 1,600 m^2 of community/commercial facilities and 1,900 m^2 of commercial retail development.

6.3 Phase 1A 56 Units (Tender Stage)

The drainage design for Phase 1A has been updated to include current Best Management Practices (BMP) for urban storm water drainage and as set out in the Greater Dublin Strategic Drainage Study (GDSDS).

This includes the implementation of additional Sustainable urban Drainage Systems (SuDS) published by the Construction Industry Research and Information Association, and compliance with the Greater Dublin Regional Code of Practise for drainage works for storm water, Irish Water Code of Practise for Wastewater and the latest Dublin City Council requirements.

The proposed surface water drainage system for this development has been designed as a sustainable urban drainage system (SuDS) and uses, green roofs, filter drains, permeable paving and underground attenuation together with flow control device and petrol interceptor to:

- Treat runoff and remove pollutants to improve quality
- Restrict outflow and to control quantity
- Increase amenity value

The above measures ensure a suitable **management train** is provided.

The management train commences with **source control** through the provision of water butts and draw off taps in each dwelling. The water butts in each dwelling will be for external re-use only. This will reduce the water consumption required of each housing unit.

The second stage of the management train, **site control**, is provided by the introduction of permeable pavement and filter drains. The second stage of the management train, **site control**, is provided by the introduction of green roofs, permeable paving and filter drains. This will reduce the volume of storm water being discharged into the sewer network by allowing storm water to filtrate through the ground closer to source. Any remaining water which does not filtrate directly to the ground will drain to the surface water network.

The storage tank offers a third stage of treatment, **regional control**, by slowing the storm water discharge down and removes any additional silt which may remain in the storm water.

It is proposed that surface water from Phase 1A will drain via gravity and discharge at a restricted to the existing 300 mm combined sewer to the south of the site. This will be a temporary connection in place until the remaining lands at Old Devaney Gardens are developed.

The surface water shall discharge via a hydrobrake set at a restricted rate of 2.0 l/s/ha in accordance with the recommendations of the GDSDS and Dublin City Council.

Any excess storm water runoff shall be attenuated within a **temporary** 560 m^3 underground storage tank.

Please refer to Waterman Moylan drawing Nos. 09-195A-T020 & T021 for details of the proposed drainage arrangements for Phase 1A.

Please note that the proposed masterplan for the full site shall incorporate Phase 1 works into a detailed sustainable surface water management system for the full site and remove the need for a temporary attenuation tank for Phase 1.

6.4 Site Specific Storm Water requirements

Following detailed application of SUDs to the entire site any surface water drainage still required for extreme weather events for the site will be required to drain via a new separate surface water outfall to the south of the site shall fully comply with the GDSDS Code of Practice, City Development Plan and Dublin City Main Drainage Division requirements.

Requirements outlined by Dublin City Council in regard to the Strategic Development and Regeneration Area at Oõ Devaney Gardens are included in Appendix C.

Dublin City Council Main Drainage Division has specifically advised of the following requirements with regards to the storm water drainage strategy of the Oõ Devaney Gardens site.

6.4.1 Storm Water Masterplan with Integrated SuDS Strategy

Dublin City Council has indicated that any proposed development on the Oõ Devaney Gardens site shall be accompanied by a comprehensive Storm Water masterplan. All Storm Water drainage details must comply with the Dublin City Council requirements as outlined in the Greater Dublin Regional Code of Practice for Drainage Works, available at http://www.dublincity.ie.

6.4.2 Appropriate Use of SuDS Devices

A comprehensive, substantive and detailed SuDS (Sustainable Urban Drainage Systems) plan shall be incorporated into the development. CIRIA document C753 ñThe SuDS Manualò should be referenced for guidance on this issue.

The following is a brief outline of various SuDS techniques which are open to consideration for use at Oõ Devaney Gardens and which are consistent with achieving an appropriate integrated suds strategy and an appropriate treatment train approach. The proposed scheme should aim to include as a minimum a 3-staged treatment train, however, a 2-staged treatment train may be accepted due to site constraints.

Tree pits which retain runoff must have overflows to the surface water system.

The developer must indicate the maintenance requirements and responsibility for all the surface water runoff controls.

Source Control

1. *Minimise directly connected impervious areas.*

Provision of rainwater harvesting, rainwater butts, soakaways with overflows, disconnecting roof drains and directing flow to vegetated areas, directing flows from hardstanding areas to stabilized vegetated areas. These should be considered in all private areas.

2. *Permeable pavement.*

A permeable hardstanding designed to promote infiltration of surface runoff into a permeable sub-base. These should be limited to private driveway areas, privately managed areas and areas removed from underground services.

3. *Infiltration trench:*

A trench, usually filled with permeable granular material, designed to promote infiltration of surface water to the ground. These can be considered along roadways adjacent to public open space / green space areas subject to the agreement on the overall landscape treatment of the open space.

4. Building Greening - Green roofs or vertical:

A roof or façade with vegetation growing on its surface which contributes to local biodiversity. The vegetated surface provides a degree of retention, attenuation and treatment of rainwater and promotes evapo-transpiration. These can be considered on all commercial and multi-unit buildings.

5. Rainwater Harvesting:

A system that collects rainwater locally, rather than allowing it to pass to the drainage system. This rainwater once harvested can then be treated and be reused for domestic uses other than human consumption such as flushing of toilets, washing machines, garden irrigation. These can be considered on all buildings.

6. Bioretention Area / Tree Pit:

A planted area or tree pit that filters surface water through engineered filter material before runoff discharging treated surface water through a perforated overflow pipe back into the main drainage system. This can be used in private areas for run off from roofs and paved areas and also from public roads through integrated kerb inlet slots. A parallel positive drainage system should be provided where tree pits are utilised along public roadways.

Site Control

7. *Swale:*

A grass channel for stormwater collection with shallow side slopes and gradients, to allow ease of maintenance and which is normally dry except during rainfall. These can be considered along roadways adjacent to public open space / green space areas subject to the agreement on the overall landscape treatment of the open space.

8. *Filter Strip:*

A gentle uniformly sloping vegetated area designed to drain surface runoff as sheet flow from impermeable surfaces and remove sediment. These can be considered along roadways adjacent to public open space / green space areas subject to the agreement on the overall landscape treatment of the open space.

9. *Extended detention basin:*

A vegetated depression, normally dry, constructed to store surface water temporarily during periods of rainfall to attenuate flows and provide some treatment and possibly infiltration. These can be considered within public open space / green space areas subject to the agreement on the overall landscape treatment of the open space.

10. *Infiltration basin:*

A basin, which is normally dry, that is designed to store and infiltrate surface runoff into the ground. These can be considered within public open space / green space areas.

11. *Existing Ditches:*

These can be utilised where possible to convey runoff from the development to a proposed attenuation area. The ditch will provide treatment, infiltration and storage and mimic the natural catchment behaviour. Existing ditch systems should be retained where possible. Not applicable in this instance.

12. *Bioretention:*

A drainage practice that utilizes landscaping and soils to treat urban stormwater runoff by filtering it through a designed planting soil media and collecting the flow through perforated under-drainage pipework. These can be considered within public open space / green space areas subject to the agreement on the overall landscape treatment of the open space.

Regional Control

13. *Retention pond:*

A SuDS pond consisting of a significant sized permanent pool of water (up to 4 times the treatment volume for the site) designed to treat surface runoff by detaining the water to provide settling of sediments, and chemical and biological processing as well as provide attenuation. This is often used to provide high amenity value. These can be considered within public open space / green space areas subject to the agreement on the overall landscape treatment of the open space.

14. *Stormwater wetland:*

A continuously wet area, in which the water is shallow enough to enable the growth of bottom-rooted plants. It has a requirement for a continuous base flow to maintain healthy vegetation. Treatment of stormwater can be very effective, but if used for attenuation, consideration needs to be given to the effect of fluctuating water levels on plant life. These can be considered within public open space / green space areas subject to the agreement on the overall landscape treatment of the open space.

6.4.3 Site Specific Flood Risk Assessment

A comprehensive Site Specific Flood Risk Assessment (SSFRA) report in accordance with the OPW document ôThe Planning System and Flood Risk Managementôand the Dublin City Development Plan 2016-2022 Strategic flood risk assessment (SFRA) Volume 7 shall be submitted. The flood risk impact assessment shall identify and quantify the potential risks from all sources including coastal, fluvial, pluvial (direct heavy rainfall) and groundwater. Reference shall be made to the Greater Dublin Strategic Drainage Study and Parkgate Street flooding on the Luas Line downstream of the development.

Appropriate flood mitigation measures shall be incorporated into the development (i.e. the proposed storm water sewer on Parkgate Street). The developer / architect shall confirm to the Drainage Division that the development has been designed such that the risk of flooding has been minimised.

7. Water Supply

Irish Water (IW) is the statutory body responsible for drinking water. New connections to the water supply network will be granted by IW subject to their requirements. It is advised that applicants should contact IW in advance through a pre-connection enquiry form to ensure their requirements are identified and complied with so as to avoid any delays in granting the connection to the water main network. All water supply works must be in compliance with Irish Water new connection standard details, design risk assessments and code of practise (available on https://www.water.ie/help-centre/connections/).

7.1 Phase 1 - Permitted 110 Units

It was proposed to provide water to Phase 1 of the development from an existing 150mm diameter watermain located in Montpellier Park and the 300 mm watermain along North Circular Road.

The total water requirement for Phase 1 of the development was estimated at 52.8 m^3/day.

Waterman Moylan drawing No. 09-195-P102 shows details of the watermains to serve the site.

7.2 2010 Masterplan

As outlined in Section 7.1, it was proposed to provide water to the development from connections to an existing watermains on Montpellier Park and North Circular Road.

The total water requirement for the development was estimated at 195.4 m^3/day.

Waterman Moylan Drawing No. 09-195-P102 shows details of the watermains to serve the site.

7.3 Phase 1A 56 Units (Tender Stage)

It is proposed to provide water to the development of 56 No. units via a new connection to the existing 300 mm water main on the North Circular Road. The new watermain within the development is proposed to be 150 mm diameter. The existing watermain located on the site will be decommissioned and removed as part of the Phase 1A works.

Water supply infrastructure will conform to the Irish Water Code of Practice.

Further to correspondence with Irish Water, including the submission of a pre-connection enquiry form, Irish Water have confirmed that there is sufficient capacity in the existing 18ö and 12ö CI watermains through Infirmary Road to service Phase 1A of the development (56 social housing units).

Waterman Moylan Drawing Noôs. 09-195A-T010 and T011 shows details of the watermains to serve Phase 1A of the site.

The total water demand for the 56 No units has been estimated at 22.7 L/day.

7.4 Site Specific Water supply requirements

The proposed watermain for the site will generally follow the layout proposed in the 2010 masterplan.

Irish Water have confirmed by response to a pre-connection enquiry, that it is feasible to connect c. 700 domestic units in Oôl Devaney Gardens to the existing 18ö and 12ö CI watermains through Infirmary Road without upgrade.

All water infrastructure and connections will be agreed with Irish Water and comply with the Irish Water Code of Practice.

8. Transport

8.1 Phase 1 - Permitted 110 Units

Access to the site will was proposed via a new main spine road linking the existing Old Devaney Gardens entrance at North Circular Road (R101) to Montpellier Gardens to the south. Secondary accesses to Thor Park and Montpellier Gardens will also be provided.

It was intended that the new spine road would have priority at its junction with Montpellier Gardens.

The junction of the new spine road and North Circular Road would continue to be a priority junction.

The proposed access arrangements are indicated on Waterman Moylan Drawing No. 09-195-P108 included as part of the application.

8.2 2010 Masterplan

The layout was designed to ensure a certain road hierarchy is developed.

It was proposed that the main spine road from North Circular Road to Montpellier Gardens would be 6.0 m wide and serve as the primary route through the site and as a bus route. This road would have 2.1 m wide parallel parking spaces in certain areas, with 2.0 m wide footpaths and 2.0 m wide private defensible space to building lines, typically.

The secondary link roads serving the site would be 6.0 m wide through routes linking the spine road to Montpellier Gardens and the spine road to Thor Park. These routes may of facilitated perpendicular parking where required.

The remaining minor roads would serve as minor access roads through the development, and would be traffic calmed to ensure very low operating speeds, and be constructed as cul-de-sacs where appropriate.

Road layouts would be designed to ensure adequate turning facilities are provided on all cul-de-sacs in excess of 20 m.

The road layout shall ensure adequate traffic calming, through the provision of change of priority along straight lengths of roadway, introduction of chicanes / road narrowings and other traffic calming features. The main through route, which was to facilitate buses, would have either traffic calming cushions or bus friendly tables in excess of 10 m in length provided.

8.3 Phase 1A 56 Units (Tender Stage)

As part of Phase 1A in Old Devaney Gardens it is proposed to construct a section of the primary distributor road, a secondary link road and a local road only as shown in Waterman Moylan Drawing No. 09-195A-T010 and T011.

The primary distributor road will have parallel parking only and would be 6.5 m in order to future proof for any bus routes. Again 2.4 m parallel parking bays and c 1.8 m footpaths would be provided.

The secondary link road would be 6.0 m in width and have c. 1.8 m footpaths.

Local roads will be 5.0 m in width with and have c. 1.8 m footpaths.

The road layout ensures adequate traffic calming through the provision of change of priority along straight lengths of roadway, and the introduction of speed ramps.

All of the new roads, footpaths and car parking areas will be designed in accordance with DMURS and constructed in accordance with the ôConstruction Standards for Road and Street Works in Dublin City Council ï October 2015ô

The proposed road layout and construction details, Waterman Moylan drawing No. 09-195-T012, have been agreed with Dublin City Council.

8.4 Site Specific Roads requirements

The proposed road layout for the site will generally follow 2010 masterplan as detailed in Section 8.2. All new roads, footways and car parking areas will be agreed with Dublin City Council prior to construction and be designed in accordance with DMURS. The road construction details will be in accordance with the ôConstruction Standards for Road and Street Works in Dublin City Council ï October 2015ô

Any proposals to deviate from the 2010 Masterplan are to be agreed with Dublin City Council Roads Department.

This will include, but will not be limited to:

- Maintenance of vehicular routes the site to facilitate access to Phase 1A units
- Maintenance of vehicular through routes the site to facilitate access to adjoin residential areas
- Maintenance of vehicular through routes the site to facilitate existing Dublin Bus services

Dublin Bus was consulted in respect of any specific requirements with regard to the development of a road hierarchy within the redeveloped Oôdevaney Gardens site. The 46A bus route currently uses the existing roadways within the Oôdevaney Gardens site to perform turnaround movements. There are not terminus facilities (lay-bys) within Oôdevaney Gardens. Dublin Bus does not envisage the requirement for terminus facilities with Oôdevaney Gardens in the long term. Dublin Bus also requires that a road width in excess of 6.0 m be provided maintained along any roadways to be used by buses.

It should be noted that currently the ôBus Connects ï Transforming City Bus Servicesôstudy in ongoing. Therefore there is limited certainty regarding the 46A or other bus routes in the surrounding areas. The ôBus Connects ï Transforming City Bus Servicesôplan, due to be released in draft format to the public later in 2018, should be consulted for potential changes that impact the site.

9. Utilities

9.1 Introduction

Set out below are the requirements of each utility provider in respect of maintenance of services during the development of the OôDevaney Gardens site.

9.2 Electricity

ESB Networks were contacted regarding Phase 1 of the development and have provided designs for the infrastructure required to serve the dwellings in this phase.

The proposed works required will involve the decommissioning of a sub-station within the Phase 1 site and the construction of a new substation within the boundary of what will become Phase 2 of the development. The existing sub-station serves the remaining occupied dwellings within the original OôDevaney Gardens scheme and also provides services to properties on the North Circular Road and beyond. As such, the new sub-station will serve all services currently provided by the existing sub-station in addition to the 56 dwellings in Phase 1A and will need to be constructed before the existing unit can be de-commissioned.

Detailed discussions were held between ESB Networks, Dublin City Council Architects and Waterman Moylan to agree a position for the sub-station in Phase 2. The location was chosen primarily to meet ESB Networksô requirements regarding the position of and access to the sub-station but also to minimise potential impacts on the Phase 2 scheme as much as possible. The Sub-station will be located near to the North-Western boundary of the Phase 2 site thereby reducing the extent of land sterilised by the sub-station and the required access route. The access route will have to be maintained during the Phase 2 works and in the final scheme designs for Phase 2.

ESB Networks have been made aware of the scale of the proposed development within Phase 2 but cannot provided any meaningful design input regarding the scheme at this stage as there are no layouts available. It is s not anticipated that there will be any difficulty in providing services to the scheme subject to an application being made and subject to all required ESB Networks infrastructure being accommodated in accordance with their requirements in the normal manner. ESB Networks will typically require one sub-station per 150 dwellings.

There are no works being carried out as part of the Phase 1 scheme that are considered to be abortive or that will negatively impact on the ability of ESB Networks to provide a service to Phase 2.

A new application will need to be made by the Phase 2 project team detailing the full extent of the proposed works.

9.3 Natural Gas

Gas Networks Ireland was contacted regarding Phase 1 of the development and have provided designs for the infrastructure required to serve the dwellings in this phase. Part of the works proposed in Phase 1 does involve the disconnection and purging of gas mains existing within the Phase 2 site but will not involve the excavation or removal of these services as they extend beyond the site boundary of the Phase 1 works

They have also been made aware of the scale of the proposed development within Phase 2 but have not / cannot provided any meaningful design input regarding the scheme at this stage as there are no layouts, to assess.

They have, however confirmed their network will have sufficient capacity to serve the proposed scheme. Additional network re-enforcement and/or the installation of pressure reducing installation may be required depending on the confirmed final scale and phasing of the proposed development however this would be normal for a development of the scale that is proposed for Phase 2.

There are no works being carried out as part of the Phase 1 scheme that are considered to be abortive or that will negatively impact on the ability of Gas Networks Ireland to provide a service to Phase 2.

A new application will need to be made by the Phase 2 project team detailing the full extent of the proposed works.

9.4 Virgin Media

Virgin Media were contacted regarding the designs for Phase 1 of the development and have provided designs for the infrastructure required to serve the dwellings in this phase.

They have also been made aware of the scale of the proposed development within Phase 2. Their existing network within the Old Devaney Gardens is limited, having services in the footpaths at the entrance to the estate from the North Circular Road.

While they cannot provided any meaningful design input regarding the scheme at this stage as there are no layouts available they have indicated a willingness to serve the proposed development and do not envisage any undue difficulty in doing so. Their designs for Phase 1 includes several ducted road crossings from access chambers that will be built as part of the Phase 1 works which will, in due course, provide connectivity to Phase 2.

There are no works being carried out as part of the Phase 1 scheme that are considered to be abortive or that will negatively impact on the ability of Virgin Media to provide a service to Phase 2.

A new application will need to be made by the Phase 2 project team detailing the full extent of the proposed works.

9.5 Eir

Eir have been contacted on numerous occasions regarding the proposed Phase 1 works however have not engaged with the design team despite the best efforts of both Waterman Moylan and Dublin City Council.

As such, their ability to provide a service to Phase 2 cannot be determined at this time.

9.6 Public Lighting

A lighting design for Phase 1 has been prepared and issued to Dublin City Councils Public Lighting Department for review and approval.

A lighting design will need to be prepared for Phase 2 of the scheme by the designers of the development and will also have to be designed and installed to Dublin City Councils standards and approved by the

Public Lighting Department. Any areas of the proposed Phase 2 development that require non-standard lighting designs (such as bollards, accent lighting, street furniture lighting etc.) or lighting columns that do not meet Dublin City Councils taking in charge standards; painted lighting columns or bespoke architectural fittings, will not be taken in charge by Dublin City Council and will remain the responsibility of the Management Company.

APPENDICES

A. Employer's Requirements for Provision of Apartments

Refer to www.dublincity.ie/hli

Comhairle Cathrach Bhaile Átha Cliath
Dublin City Council

EMPLOYER'S REQUIREMENTS

FOR

PROVISION OF APARTMENTS

IN

DUBLIN CITY COUNCIL'S ADMINISTRATIVE AREA

FOR

DUBLIN CITY COUNCIL

SECTION 1

OUTLINE PROJECT AND SCOPE OF WORK

1. OUTLINE OF PROJECT AND SCOPE OF WORK

1.1 Introduction

The purpose of this document is to communicate the Employer's Requirements in respect of the provision of New Apartments for Dublin City Council lands within Dublin City Council's Administrative Area on a number of separate project sites.

This document may be subject to amendment, and the final version together with any additional information will be issued to shortlisted applicants at Stage 2.

Dublin City Council Housing department requires the provision of new, quality apartment units which must:

- Deliver quality apartment accommodation for families in the form of three bedroom, 6 person units, two bedroom, 4 person units, and one bedroom, 2 person units. Apartments can be a mix of single, dual and triple aspect, and single storey or duplex units. In some locations own door access units may be desirable, or a requirement. All apartment buildings should sit comfortably in context with the surrounding existing established housing patterns, or in accordance with the current Dublin City Council Development Plan.

- Be of robust permanent construction and have a life span of 60 & 25 Years as set out below in section 2.9: Design Life.

- Be constructed of suitable quality materials to ensure maintenance requirements are minimised over time and take into account Dublin City Council's requirements set out in Section 2: Apartment Requirements.

- Be constructed using robust materials, in full compliance with the Building Regulations (see below).

- Conform to all relevant Department of Environment standards and codes of practice applicable to current Apartment developments.

  Be designed and constructed in accordance with all applicable Irish Building Regulations, codes and standards, and the requirements of the Building Control (Amendment) Regulations 2013-2015.

Building Regulations 1997-2017 (SI 497 of 1997 as amended – refer to www.environ.ie for latest)
Part A –Structure - 2012
Part B – Fire Safety - 2017
Part C – Site preparation and resistance to moisture - 2004
Part D – Materials and workmanship - 2013
Part E – Sound -2014
Part F –Ventilation - 2009
Part G – Hygiene - 2008

Part H – Drainage and wastewater disposal – 2016
Part J – Heat producing appliances – 2014
Part K – Stairways, ladders, ramps and guards – 2014
Part L – Conservation of fuel and energy - dwellings - 2011
Part M – Access and use - 2010

- Meet any additional requirements which exceed the Building Regulations and DECLG Best Practice Guidelines, in order to comply with the provisions of the Dublin City Development Plan, 2016-2022, and as listed in Section 2: Apartment Requirements of this document.

- Be certified as fully compliant with all applicable Irish Building Regulations, statutory codes of practice and other requirements as set out in the tender documents on completion of the development by the Assigned Certifier and the Builder in accordance with the Building Control (Amendment) Regulations (S.I. No. 9 of 2014, S.I. No. 243 of 2015, and those in force at the time of entering into contract).

The above criteria must inform the Developer's approach to the completed development and the individual apartment units, and are core objectives of the delivery of the New Apartments to be provided on these projects.

This document contains performance specifications for the new apartments and the various elements which combine to form a modern sustainable and liveable home & community for the long term.

The room data sheets collectively set out the requirements of the Employer of how the Apartments are to be designed, constructed, and finished.

It should be noted that room data sheets will be issued at Stage 2 to shortlisted applicants.

1.2 Programme

The successful applicant must be in a position to deliver the project/s to a programme which must be submitted at Stage II by the shortlisted developers, and which may form part of the marking process.

1.3 Location of Site

The sites identified in this competition for the provision of New Apartment Unit (including a Social Housing element) are within Dublin City Council's Administrative Area.

Individual site locations will dictate parking requirements, and the current DCC Development Plan standards should be applied for parking provision, location, basement requirements, etc.

Roads and streets, which define the boundaries of the subject sites for development will contain services e.g. water, foul and surface water drainage, gas, electricity, telecoms etc. Details of all existing services (where available) will be provided in Stage 2 documentation for shortlisted applicants for the Works Contract.

1.4 Scope of works

The Developer's scope of work for the project is as follows:

The Developer must:

- Provide a full design team that will design and certify the entire project in accordance with the provisions of the Building Control Amendment Regulations 2013-2017, all DCC Development Plan standards, DECLG Apartment Design Guidelines, and to DECLG size standards
- Design and install suitable superstructure with all necessary service connections, insulation, radon and damp protection, etc. in accordance with the Irish Building Regulations, as required.
- Design and complete all Mechanical and Electrical installation throughout.
- Complete all external and internal finishes.
- Complete all mechanical and electrical installations in accordance with the relevant service providers' standard requirements and Codes of Practice, and arrange and deliver connections to all necessary utilities in accordance with the Irish Building Regulations.
- Install all bathroom and kitchen fittings and finishes and ensure all services are properly and safely completed and commissioned in accordance with the requirements of Irish Water and the Irish Building Regulations.
- Provide all paving, hard standing, parking areas, roads, paths, etc., contained within the site boundary of the site to the appropriate Dublin City Council and NRA Road standards.
- Ensure that all testing is completed in accordance with all service providers standards and codes of practice, and to be fully certified by installers and testers as compliant on completion of testing.
- Provide all required testing Certificates to the Assigned Certifier as works and testing progress.
- Complete external public and private open spaces and services within the curtilage of the Apartment development including boundary treatments and landscaping in accordance with the Planning Permission for the development, and the DECLG Design Guidelines.
- Certify and complete the project in accordance with the new Building Control (Amendment) Regulations 2013-2017.
- Hand over completed apartment blocks & individual apartments fit for permanent residential occupation.

The Developer will be required to complete all necessary works, including but not restricted to the construction of such roads, paths, paving and external works, landscaping, ramps, utilities, services, etc. as may be required to facilitate this development as described above, and in accordance with all Stage II (Invitation to Tender) documentation

1.5 Certification & Documentation

The Developer must provide sufficient documentation to verify that all residential units within the development conform to the requirements and intent of these Employer's Requirements.

Sufficient information must also be given to demonstrate how the following can be achieved:

- Identification of Materials & Products proposed in Developer's Design & Construction of the Residential Development
- How operation, maintenance, cleaning, and replacement of the materials, finishes, and systems contained within the development can be undertaken sustainably and safely.

Prior to entering into contract, the Developer must submit a document schedule listing the specific documents it proposes to provide to meet these requirements.

This document schedule must include document numbers, title and proposed submission date. All documents must be produced in a timely manner, and at the latest, prior to handover.

All documentation must be in English.

S.I. units must be used in all cases.

1.6 SAFETY FILE

The following is a non-exhaustive list of items to be included in the Health & Safety File on completion of the apartment development, and all items on this list must be included as a minimum standard for the Health & Safety File which shall be submitted in both hard and soft copy versions to Dublin City Council on completion of the Social & Affordable Housing elements of the development. All apartment blocks must be included, and all apartment types must be included, along with all landscape – site layouts for all services connect to the development:

- A complete set of Architect's as built drawings including site plans, plans, sections, elevations, details, etc;
- A complete set of Civil & Structural Engineers as built drawings including plans, sections, elevations, details, mains services layouts, etc;
- A complete set of Fire Safety Certificate documentation, including all drawings, plans, sections, elevations, and all reports as submitted to achieve approval for the Fire Safety Certification of the site, building, block & apartment types.
- A complete set of Mechanical as built drawings for the apartment development on a Block by Block basis, including pipe layouts, sizes, positions, equipment details, tank details, meter rooms, locations of all isolation switches, service duct locations and layouts, etc., full technical

details, manufacturer details, photographic location details of all components which comprise the systems within the development, and including maintenance requirements for the systems and components;

- A complete set of Electrical as built drawings for the apartment development on a Block by Block basis, including individual panel layouts and locations, sub-station details, site electrical service ducting & wiring runs, cable tray details & positions, Public Lighting layout, amenity lighting layouts, etc., all light fitting locations and details, all power outlet locations and details, all electrical switch positions including manual, automatic, seasonal, etc. All fire Alarm and Detection systems installation layouts and details, full details of CCTV camera locations, wiring routes and conduit layouts, Security hub location and layout, details on connection to off-site monitoring, and modems hubs, etc including full technical details, manufacturer details, photographic location details of all components which comprise the systems as installed, and including maintenance requirements for the system and components;

- A complete set of Mechanical Ventilation / Air Conditioning as built drawings, including all details of boiler layouts, pump positions, valve details, pipe layouts, insulation materials and details, radiator positions & details, etc. etc;

- Full technical details, manufacturer details, photographic location details of all components which comprise the Mechanical Ventilation system, including maintenance requirements for the system, components, filters, etc.;

- A complete set of Hot & Cold Water system as built drawings for the apartment development on a Block by Block basis, showing pipe runs, insulation materials, valve positions, water storage tanks, cisterns, calorifiers, water pump details & positions, isolation switches, electrical connections, overflow pipe locations, expansion vessel locations, back-up power supply provisions for any Break Tank rooms, etc;

- Full technical details, manufacturer details, photographic location details of all components which comprise the Hot & Cold Water system, including maintenance requirements for the system and components;

- A complete set of Heating system as built drawings, showing heat generating equipment (boiler, heat pump, panels, etc.) all pipe runs, insulation materials, valve types locations and positions, water pump details, radiator positions, any automatic slam shut valves, shut off valves, etc., all electrical connections, isolation switches, pressure vessels, storage tanks, blow down valves, overflow pipe positions, expansion vessel locations, etc;

- Full technical details, manufacturer details, photographic location details of all components which comprise the Heating System, including maintenance requirements for the system and components;

- A complete set of security wiring system as built drawings showing alarm panel location, keypad location, contact / sensor locations, etc. etc., including full technical details, manufacturer details, photographic location

details of all components which comprise the system, and including maintenance requirements for the system and components;

- A complete set of Fire detection, CO detection, smoke / heat detectors & alarm system as built drawings showing alarm panel location, detector locations, sounder locations, etc. etc., including full technical details, manufacturer details, photographic location details of all components which comprise the system, and including testing carried out and certification of completed systems prior to handover, along with maintenance requirements for the system and components;

- Fully detailed technical literature for all sanitary ware to include full technical information, drawings & details, material details, plumbing connector details, components, etc.

- Installation, test and completion certificates for all pipe work, wiring, systems, plant and equipment installed in the buildings and individual apartments;

- Maintenance procedures and schedules for the buildings & its systems, plant and equipment;

- Operation manuals / procedures for the systems, plant and equipment installed in the buildings, including emergency procedures for shutting down suspect installations in the buildings, or in the event of Fire;

- Operation / maintenance manuals for all components in the building;

- Full details of all systems, plant and equipment installers & maintenance contact names and telephone numbers including 24 hr. callout numbers in case of emergencies;

- Full details of any hazardous materials present in the building, the locations of same, and methods for safely working in those areas, and removal or replacement procedures to be followed;

- Whilst the design of confined spaces, and necessity for maintenance being carried out in such areas is discouraged, and should be designed out wherever possible, full details of locations, dimensions, and nature of any such confined spaces contained in the development must be provided, along with method statements / and safe working procedures for working on any maintenance issues in those areas;

- Full details of any areas of high risk in terms of maintenance in the development, e.g. working at height, flat roof repairs & maintenance, etc. etc., and method statements / safe working procedures for working on maintenance in those locations.

1.7 Building Regulations – Minimum Requirements

Building Regulations: The Irish Building Regulations will apply in full to the proposed development as listed in the table below:

Building Regulations 1997-2017 (SI 497 of 1997 as amended – refer to www.environ.ie for latest)
Part A –Structure - 2012
Part B – Fire Safety – 2017 – Volumes 1 & 2
Part C – Site preparation and resistance to moisture - 2004
Part D – Materials and workmanship - 2013
Part E – Sound -2014
Part F –Ventilation - 2009
Part G – Hygiene - 2008
Part H – Drainage and wastewater disposal - 2016
Part J – Heat producing appliances - 2014
Part K – Stairways, ladders, ramps and guards -2014
Part L – Conservation of fuel and energy - dwellings - 2011
Part M – Access and use - 2010

The full requirements of the Building Regulations will also be applicable.

For products or systems that do not fall within the scope of existing standards, or deviate from established norms, third party certification must be used to demonstrate compliance with the Irish Building Regulations.

The Developer must comply with all relevant & applicable EN Standards & Codes of Practice, Irish Standards and British Standards (or equivalent) are applicable where no equivalent EN standard exists.

All Local Authority Codes of Practice are applicable, along with all statutory regulations appropriate to the provision of Housing.

All Codes of practice, standards, and requirements of the statutory service providers (ESBN, GBN, Irish Water, Dublin City Council, Eir, etc.) are applicable in full to the development.

1.8 Risk Assessment

The Developer shall prepare and issue to Dublin City Council's Technical Representative a full risk assessment for the completed Apartment development and all individual apartment types within the overall development detailing all risks to maintenance personnel, confined spaces, access to maintenance and working areas, emergency evacuation procedures etc.

The Risk Assessment document must set out clearly particular hazards which remain and will affect the ongoing management and maintenance of the apartments being provided to Dublin City Council, along with full details of what safety procedures have been considered and must be employed to ensure any such risks identified have been reduced of eliminated as appropriate.

SECTION 2

APARTMENT REQUIREMENTS

2. APARTMENT REQUIREMENTS

2.1 General

All apartment units must comply with the Building Regulations and other statutory approvals as noted above. These apartments are to be included in Dublin City Council's standard housing stock. All requirements as set out in this section must be included in the Developer's proposals.

The quality of the overall design is key to the long term success of the development not only with regard to maintenance and management of the development, but also in the interests of the residents and the quality of the environment that they will inhabit.

Kitchen, Dining and Living room areas should be designed to have as much natural light incorporated into the design as possible and take into account the orientation of the sun in relation to the main living areas within individual apartments.

The materials used must be robust and durable but also create a pleasant place to live for the residents. They should be made from sustainable and/or renewable resources and not present a health risk for the residents.

N.B. Developers may propose alternative materials & products where they have established and developed standard manufacturing methods, tested, and approved systems and / or products which have third party approval or certification.

Please find below more detail in relation to the performance specification for this development. Room Data Sheets will be provided at Stage II of the procurement process giving further information and details of the above. These should be read in conjunction with the employers requirements.

The Developer should note that the Room Data Sheets represent Dublin City Council's minimum requirements and the Developer must also allow for the adequate and safe provision of circulation, electrical / mechanical plant space, and access for maintenance of all services to all apartments units throughout the development including all building services.

2.2 Site Development Works:

The site development must include for the following for each apartment, (please note, this section should be read in conjunction with the civil engineering specification and documentation as issued at stage II of this competition):

- Landscaping and planting of open space to be prepared by a qualified Landscape Architect employed by the Developer.
- Topsoil and seeding to all private open space / garden areas throughout the development
- 2000mm high brickwork boundary walls shall form the main boundary walls to the development, with internalised boundaries to be completed in 2M high concrete blockwork walls with brick cappings on DPC.

- All solid, permeable, or monolithic Paving, paths and topsoil and seeding to all landscaped and public areas to be in accordance with the Landscape Architect's design proposals, and as agreed by Dublin City Council technical representative, prior to submission of the Planning application for Permission for this development.

- 1200mm high painted, galvanised steel post and bar railings to be employed to all public areas where railing is preferred to solid walling. Steel bars / rails to be a minimum of 10mm galvanised solid steel, all to Landscape Architects proposals, and in accordance with the Planning Permission to be granted for this development

- Individual gates to ground level apartment private open spaces, should be in the order of 1200mm high minimum 10mm solid steel bar railings in brickwork / concrete blockwork Piers / walls, with 100x100mm painted galvanised steel gate posts to take painted galvanised steel garden gates.

- Any electrically operated / automatic gates in the development are to be structurally sound, and designed, detailed and certified in compliance with the Building Regulations by specialist to all relevant design and construction Standards and Codes of Practice. All necessary precautions are to be included to prevent trapping of persons, limbs, arms, fingers or toes in the operation of the gate, and provision is to be made for emergency stopping and release of the gates in operation in the event of an accident.

- Minimum 150mm deep x 1200mm wide reinforced concrete paved apron to entire perimeter of all apartment blocks, to Landscape Architects design and construction details.

- All car parking areas are to be designed and laid out in accordance with the Landscape Architects design and construction details, using robust and durable materials suitably textured to provide slip resistance relevant to use proposed

- Car Parking bays are to be a minimum of 2500mm wide by 5000mm long, with appropriately located disabled parking bays to comply with Building Regulations Part M, and all other relevant design standards.

- Visitor car parking provision is to be included in accordance with current Dublin City Council Development Plan standards, and recommendations.

- All surface water, and foul drainage outlets and connections to each apartment building within the development are to be designed, installed & certified as compliant with Irish Water Code of Practice, and the Greater Dublin Sustainable Drainage Code.

- All surface water, and foul drainage connections from the development site to any mains drainage lines are to be designed, installed & certified as compliant with Irish Water Code of Practice, and the Greater Dublin Sustainable Drainage Code.

- All water supplies to each apartment building is to be designed and installed strictly in accordance with the Irish Water Code of Practice

2.3 Plan Form & Shape

The plan form and shape of the individual apartment types, and the entire apartment blocks within the development must take account of Dublin City Council's preferred requirements regarding unit mix ratios as set out in the DCC Development Plan and numbers of each apartment type required.

Design proposals should include a design rationale covering the site access, site layout, orientation of each block within the site, along with a traffic management plan setting out principal traffic routes – vehicular, cycles, and pedestrian within the development.

Bathrooms, kitchens and toilets should be located adjacent to each other, insofar as is practicable, and on external walls where this can be managed without compromising the quality of light and amenity provided in the main living, dining and bedroom areas.

Apartments should be laid out and designed to take maximum advantage of any possible views afforded from the site, and within the site to designed landscaped features.

Orientation must be carefully considered to ensure adequate sunlight, daylight, and visual amenity are afforded to each apartment, but also to account for solar gain / heat loss etc. to ensure comfort of the residents as far as is possible.

Detailed heat analysis may be required to ensure certain apartments within any block in the development do not overheat, and that all apartments can achieve the Building Energy Rating applicable at the time of construction of the apartments.

Locations of all Electrical and Mechanical plant and equipment installations must be carefully considered to avoid or minimise the impact of noise, emissions, ventilation requirements, fan operation, maintenance, fuel provision requirements, etc. on the residential amenity of any of the apartments within the development.

There shall be no exposed or boxing out of exposed mechanical and electrical plant / equipment within the apartments or any common / shared areas on the development at any level.

All service pipes and conduits shall be fully concealed within designated service zones in floors, ceilings, service riser shafts, and partition walls within the apartments and buildings throughout the development.

2.4 Headcount

Each four bedroom house will cater for a total of seven persons.

Each three bedroom house will cater for a total of six persons.

Each two bedroom house will cater for a total of four persons.

Each one bedroom house will cater for a total of two persons

Cold & Hot water services to each dwelling must be sufficient to accommodate a minimum of three visitors per day, or as defined in the Irish Water Code of Practice.

2.5 Critical Dimensions

The overall dimensions for services and structural zones must be designed to accommodate the structure / structural frame and the extent of services to be provided. Moreover, adequate provision must be made for future flexibility in terms of use or occupation over the life of the building.

The minimum finished floor to ceiling height must be no less than 2.7M to ground floor throughout, and 2.4M minimum floor to ceiling height to all upper floors.

The finished floor to ceiling height to the "visitable" WC must have 2.4m over at least 50% of the floor area, with an absolute minimum headroom of 2.1m in any location within the WC area.

All room dimensions must comply with the requirements as set out in the DECLG best practice Guideline 'Quality Housing for Sustainable Communities' – Published 2007, and in accordance with Clause **16.10.2 Residential Quality Standards – Houses** of the Dublin City Development Plan 2016-2022.

For minimum dimensions for carriageways, roadways, access ramps, turning circles, junction geometries, etc. please refer to all relevant NRA design guidelines along with the Construction Standards for Roads and Street Works in Dublin City Council, and the DECLG 2015 document - "Sustainable Urban Housing : Design Standards for New Apartments – Guidelines for Planning Authorities"

2.6 Acoustics

The buildings must be designed to control flanking noise and noise transmission through the Party walls and external walls as per the requirements of the Technical Guidance Document for Part E (Sound – 2014) of the current Irish Building Regulations.

Care must be taken in detailing party walls and party floors to minimise transmission of mechanical noises through existing structures.

Transmission of noise from building services and equipment within apartments and tank rooms between the various spaces must be attenuated. All mechanical pumps must be on noise & vibration isolation pads, and selected on criteria of energy efficiency, pump performance, warranty period, and minimum noise output.

Standard construction detailing as set out in the Acceptable Construction Details – TGD Part L 2011 General (or latest update) should be considered wherever valid.

2.7 Sustainability

All Apartments and all Apartment Buildings must be fully compliant with relevant latest version of Building Regulations Technical Guidance Document Part L, and the requirements of the Energy Performance of Buildings Directive.

In addition to this standard, the development must be designed for low maintenance with ease of maintenance being a key requirement. Whole life costs must also be borne in mind when selecting design solutions. Issues to be considered include but are not limited to:

- The Developer shall ensure that Building Regulations & Energy Directive compliant BER Certificate is provided for each unit upon completion,
- Overall extent and quantity of insulation standards and other energy-saving design features;
- Automatic temperature and lighting controls with manual override facility;
- Water conservation;
- Use of durable Sustainable and/or renewable materials is a requirement
- The use of non-renewable materials is to be avoided where possible;
- Flexibility in design for adaptation & extension
- The building service systems must provide and maintain a comfortable indoor environment with minimum adverse impact on the environment with optimum whole life costs.

2.8 Future Expansion

Whilst future expansion of the development is not envisaged, where possible the layout and design of upper level apartments within apartment buildings should consider the possibility of a future addition of 2 floors to be overall building height, and structural calculations should provide capacity for this additional loading. Mechanical and electrical capacity should be based on the number and types of apartments which the developer proposed to construct under this contract only.

2.9 Design Life

The buildings must be designed and constructed using materials, systems and components with a minimum life as set out below from Substantial Completion (exceptions listed hereunder) given that normal maintenance will be carried out and fair wear and tear accepted.

Element	**Minimum Required Lifespan**
Structural elements	*60 years*

Floors, Walls, Roofs & Ceilings	*60 years*
HVAC & Mechanical Services	*25 years*
Electrical Services	*25 years*

Note Where proprietary materials or systems are mentioned in the accompanying performance specifications or data sheets it shall be the Developer's responsibility to assess such materials and systems and select only those materials and systems which achieve the minimum life spans set out above.

Please note that the information provided below in sections 2.10 – 2.25 is issued for information only, and a full specification shall be provided to the shortlisted parties with the stage II documentation.

2.10 External Finishes

The external finishes for all apartment buildings must be durable, robust, and selected to reflect Dublin City Council Requirements as set out in 1.1 above. Materials will be sympathetic to existing surrounding developments using natural materials where possible including clay brickwork / stone / metal / rainscreen cladding, glass etc.

Timber cladding is not recommended, and should not be proposed as an exterior finish unless it is used in limited areas where a comprehensive and detailed method statement is provided setting out safe access arrangements and frequency for maintenance.

All major finishing materials and finishes including colour selection to be clearly set out in the Developer's Proposals and agreed with the Dublin City Council Planning Department prior to submission of the developers Application being submitted for Planning Permission. All Conditions of any Planning Permission must be fully satisfied and verified prior to handover of the apartments.

All materials shall be selected to reflect the overall quality of the development, design life and ease of maintenance as set out above.

Additional performance specifications will be issued during the second stage of the procurement process. All external materials and finishes must be fire resistant and in accordance with the requirement of the Irish Building Regulations.

2.11 Glazing & External Doors

External glazing throughout must be of a proprietary triple glazed superior quality thermally broken glazing system designed, built and installed to latest relevant European standards, Codes of Practice, and installed in accordance with the Manufacturers requirements and recommendations.

Whole frame U value of 0.8W/m2K will be required for all windows and external doors

All glazing must be internally beaded/secured.

External doors must be "High security" impact resistant timber hall doors to EN 1627, with level access threshold, & 5 point locking system. Architraves to external doors must be of 100x19mm hardwood detailed to match architraves to internal doors.

A Manufacturer's Thermal Performance Certificate will be required for each window type in each house type throughout the development for inclusion with the BCAR information and Certification process, and shall be included in the Health & Safety file to be handed over at Substantial Completion stage or the project prior to occupation of the development.

Alu-clad, timber framed windows are preferred where cavity closers are employed to provide fire protection to the wall cavities.

PVC windows cannot be used.

2.12 Roofs

Any pitched roof must be of natural slate / clay tiling / concrete tiling etc. non combustible material, screw fixed to pressure preservative impregnated timber battens on vapour permeable roofing underlay, on timber / steel roof structure to a suitable roof pitch to meet with tile / slate manufacturers requirements and recommendations.

Party walls must be sealed to underside of roof finish with suitable fire resistant sealant to provide smoke-tight joint preventing smoke and fire infiltration from across party walls.

All facia, soffits and rainwater goods must be finished in minimum 0.7mm gauge powder coated aluminium – developer to propose appropriate system and colours.

PVC is not acceptable as a fascia or soffit material for finishing around roofs.

All timber used for roof construction must be pressure preservative impregnated to EN standards.

2.13 Building & Street Identification Signage

The Developer shall include external signage to clearly identify each apartment block / core entrance, and individual numbering to each apartment within the development. Proposals must include postbox locations, along with address / location / directional signage for the development which shall be of individual lettering on an enamelled / stainless steel plate fixed to steel posts, or solid brick / blockwork walls similar to the existing signage to streets in the vicinity, in accordance with "Construction Standards for Road & Street Works in Dublin City Council".

2.14 Internal Materials & Finishes

The internal materials and finishes must be selected to reflect Dublin City Council's Employer's Requirements as set out in 1.1 above. All major finishing materials and finishes including colour selection must be indicated in the Developer's Proposals and agreed with the Dublin City Council Housing City Architect's Representative prior to commencement of works on site. Materials must be selected to reflect the overall high quality of the development, design life and ease of maintenance.

Room Data Sheets will be issued at Stage II for further detail. Additional performance specifications will be issued during Stage II of the procurement process.

2.15 Floors

All floors throughout apartments shall be on concrete construction, and to structural engineers design and certification.

All ground bearing floor construction must include a moisture and radon barrier, thermal insulation, and be detailed to avoid thermal bridges.

Floors as constructed, must achieve compliance with the current Irish Building Regulations and Technical Guidance Documents, as Listed in the table at Section 1.6 above.

2.16 2.16.A – Internal (Non-party) Walls

Internal partition walls must be insulated timber / metal stud partitions with minimum 12.5mm Moisture Resistant or Fire Resistant plasterboard / etc. boards each side with filled and taped joints – such walls to span from top of structural slab to structural soffit.

All jointing, external / internal corners, etc., to be smooth finished.

Any service penetrations in concealed ceiling voids through internal partitions to escape routes shall be adequately fire stopped to prevent smoke / fire infiltration of the escape route.

Internal partitions generally to be finished with 3 no coats of selected colour emulsion paint finish, and fitted with minimum 125x19mm solid timber skirting boards mechanically fixed to partition studs, and filled, primed, undercoated, and gloss paint finished on completion throughout.

MDF or PVC skirtings cannot be used.

All partition walls to wet areas such as kitchens, bathrooms and toilets must be lined with 12.5mm Moisture resistant plasterboard / etc. boards finished in accordance with relevant Room Data Sheets.

2.16.B – Party Walls

All party (Compartment) walls must be so designed and constructed as to achieve compliance with Part B – Fire of the current Irish Building Regulations and Technical Guidance Documents as listed in section 1.6 above.

All party (Compartment) walls must be adequately fire stopped in accordance with Building Regulations Part B – Volume 1 to underside of structural soffit / roof, and external wall junctions, and in accordance with the Fire Safety Certificate issued prior to commencement of the development.

2.17 Internal Doors and Screens

All internal doors must be solid core flush doors with hardwood lipping and vision panels where required by Building Regulations and in all circulation areas.

All doors within apartments shall be a minimum FD30 grade or higher. Fire rated door sets must be fitted with mechanical self closing devices, and bear the manufacturer's "Fire Door" tags, along with "Fire door keep shut" tags fitted.

All doors must have three no. 100mm satin finished stainless steel ball bearing hinges, with brushed stainless steel lever handles on roses & escutcheon plates to both sides.

Two lever mortice locks must be used on all internal doors throughout.

Five lever mortice locks / five point security locking must be employed to all external doors.

All internal door sets must be installed / constructed to allow for full width architraves (125mm) to each side. All architraves to be ex 125 x19mm solid timber with chamfered leading edges.

All internal doors must be paint finished including base coat / primer, undercoat and final satin coat painted on completion, or three coat clearcoat finish to Developers proposals.

2.18 Ceilings

All suspended ceilings throughout the development must be of minimum 12.5mm plasterboard with filled and taped joints and three coats of emulsion paint throughout in accordance with specification.

A ceiling void of a minimum 150mm shall be provided above all suspended ceilings to provide a service zone for water, heating, electrical services, and ventilation ductwork.

All board joints must be fully scrim taped with 75mm wide scrim tape, and filled and sanded prior to finishing with 3 no coats of selected colour emulsion paint.

Fire rated downlighter housings must be installed where recessed downlighters are proposed by the developer.

2.19 Bathroom / Toilet Facilities

Sanitary Ware & Fittings - A matching suite of ceramic Wash Hand basin, quality ceramic low level close couple suite with integral cistern, dual flush, and back to wall – concealing the soil pipe connection / multiwick at back of floor mounted w.c. pan, a 750mm wide by 1800mm acrylic bath (not fibreglass) with fixed side and end panels to match.

Adequate & visitable WC facilities must be provided for persons with disabilities and be so designed and constructed as to achieve compliance with Parts M & G of the current Irish Building Regulations as listed at section 1.7 above.

All wall construction for timber/steel stud framing to provide suitable grounds for fixing of W.C., WHB, towel radiator, etc., and for future fixing of support handrails, folding rails, etc. for disabled assistance in W.C. area.

2.20 Common Staircases, Landings, Lobbies, Hallways, Corridors, etc.

All staircases to Apartment buildings (both external and internal) must be of solid concrete construction, and may be finished in selected floor finishes to accord with the Fire Safety Certificate Application documentation, and the Fire Safety Certificate on completion and handover of the works.

Soffits to stair flights and landings shall be smooth skim plaster finished and blemish free with three coats emulsion / eggshell painted finish to developers proposed colour scheme.

The Rise of each step must be consistent throughout rise of each staircase, and shall conform with Part K and Part M of the Building Regulations TGD's.

The Going of each step must be consistent throughout the each staircase, and shall conform with Part K and Part M of the Building Regulations TGD's.

Minimum headroom throughout staircase must be 2000mm.

Ballustrades to staircase shall be of mild steel painted finish throughout with stainless steel handrails provided throughout all in compliance with Building Regulations.

Strings, trims, and skirting boards to all shared Landings, lobbies, hallways, corridors and staircase areas shall be robust, and of suitably durable solid material such as hardwood timber, ceramic tile, stone, etc.

MDF or plywood cannot be used in common areas for strings, trims, skirtings, architraves, etc.

2.21 Mechanical Installations

The apartments must be fitted with standard hot / cold water services including cold water storage tank, calorifier (hot water cylinder), isolation valves, non return valves, taps, and all necessary hot and cold supply pipe work throughout.

Adequate cold water storage must be provided within each apartment in accordance with all applicable Dublin city council, and Irish Water codes of practice.

Hot & Cold water supplies must be provided to bathroom, W.C. and wash hand basin, kitchen including sink, utility area / room (if provided) washing machine & dishwasher. Washing machine and dishwasher water outlets must be fitted with suitable shut off valves for direct connection of supply pipes to white goods.

All pipe work must be copper, and must be concealed within timber / metal stud partitions, floors and ceilings.

Additional performance specifications may be issued at Stage II of the procurement process.

Visible boxing out of services outside of partition walls, ceilings or floors is not permitted.

All service routes must be accommodated within internal partitions, ceilings and floor voids.

Fire resistant construction to party walls must be imperforate.

Any services which are required to penetrate party walls to common areas must be run in suspended ceiling void / services zone with plasterboard slab and skim finish to underside, and all such penetrations must be fire stopped in accordance with the Building Regulations Part B, and as set out in the Fire Safety Certificate documentation, and certified by the Fire Safety Consultant as compliant on completion of the works at handover stage of the project

The proposed Heating System to each apartment must be energy efficient, and designed and installed to minimise Carbon footprint of the development.

Heat pumps, exchangers, generators, boilers, etc. must be sited and designed to enable optimum efficiency and performance in operation. CHP / mini CHP plant will be considered, and the Energy strategy must be detailed, and clearly set out with the developers proposal on submission of tender.

All mechanical equipment and systems meter rooms, pump rooms, break tank rooms, boiler / heater exchanger / CHP plant rooms, etc., must be suitably located within individual apartments, blocks, or the overall development to ensure ease of maintenance and security of the service area within which they are located in the individual apartment of the development.

Mechanical ventilation will be required to all internal W.C. / bathroom / en suites located in inner locations. Additional mechanical ventilation may be required in order to comply with the overall ventilation strategy for the apartment. This needs to be coordinated with the air-tightness strategy for each individual apartment.

A separate mechanical ventilation duct / shaft will be required to the kitchen cooker area.

Details of the ventilation strategy are to be agreed with Dublin City Council relevant Mechanical, Electrical, and City Architect's Representative prior to commencement of works on the houses.

2.22 Electrical Installations

Developer will be responsible for all necessary applications for new supplies & connections along with arrange for the provision of power distribution within the development including all incoming mains, power distribution circuits, Public Lighting, traffic signals, external lighting throughout the development, and all electrical supply requirements within each apartment building including but not limited to all common areas, corridors, staircases, lobbies, storage areas, waste management areas, delivery areas, plant rooms, parking areas etc on Substantial Completion of the development prior to handover of the Housing units to Dublin City Council.

The Developer must ensure that an individual metered electricity supply is delivered to each apartment, and within each apartment building all common areas, common, lobby, staircase, corridors, staircases, lobbies, storage areas, waste management areas, delivery areas, plant rooms, parking areas etc., lift, lift motor room, break tank room, etc., etc. are supplied by separate landlord metered supply on Substantial Completion of the development prior to handover of the Housing units to Dublin City Council.

General power requirements including electrical power outlets in each room must be in accordance with the Room Data Sheets to be issued with Stage II documentation.

Electrical switches, sockets, power outlets, data / telecom outlets, cover plates, etc., to all apartments and common areas must be of switched, brushed / stainless steel.

Entire electrical installation, wiring, panels meters, etc., must be completed in accordance with the requirements of the ETCI, and RECI standards.

Additional performance specifications will be issued at Stage II of the procurement process.

Mains powered maintained Emergency lighting, wired smoke / heat detectors must be suitably located throughout all apartments, common areas, lobbies, staircases, storage rooms, plant rooms, etc. area in accordance with Building Regulations Part B.

Mains wired smoke detector must be suitably located in the hall & landing areas.

All wiring throughout the apartment building and individual apartments must be contained in galvanised steel conduit.

Visible boxing out of services outside of walls, ceilings or floors is not permitted.

All electrical service routes must be contained in steel conduit throughout, and must be accommodated within internal partitions, ceiling and floor voids within apartments, and all electrical service routes in common areas, staircases, lobbies, etc., shall be in steel conduit concealed within wall finishes, service voids, and service risers, will all necessary fire stopping provided in accordance with the Fire Safety Certificate Application documentation.

All the as-constructed drawings must accurately reflect the locations of conduits within walls, and service voids.

Fire resistant construction to separating / party walls must be imperforate.

Electrical system to every apartment, and each apartment building must be fully earthed, with earth rod / mat location clearly identified with coloured junction box.

All electrical panels must be located at high level in entrance lobbies and individual apartment entry hallway with all circuits clearly marked and identified.

Electrical meter cabinets must be fitted in secure locations and at the ground floor level in proximity to the main entrance of each apartment block / core, for ease of access for meter reading, Fire Brigade access, and tenant access, etc.

All meter installation panels shall be fully designed and approved with ESBN prior to installation, and fully certified on completion of the works prior to handover of the development.

2.23 Gas Installations

Where any proposed Heating systems involve a gas fired boiler, the Developer must ensure that the natural gas supply is delivered to each boiler via a metered supply, in accordance with the service providers requirements, recommendations and all relevant Codes of Practice, Building Regulations, etc.

The entire development must be fully commissioned, certified and operated for a period of at least 24hrs. prior to Substantial Completion of the development prior to handover of the Apartment units to Dublin City Council.

Any Gas installation must be fitted, tested, completed and commissioned in accordance with the requirements of RGI and Bord Gais, and Certified as compliant by an RGI registered installer prior to connection to the Bord Gais network.

All gas meters must be fitted in secure locations and at the ground floor level in proximity to the main entrance of each apartment block / core, for ease of access for meter reading, Fire Brigade access, tenant access, etc., and all fitted strictly in compliance with Gas Networks installation requirements, recommendations and codes of practice.

2.24 Heat Pump installations

Where any proposed Heating systems involve a ground source, air source, or exhaust air source heat pump, the Developer must ensure that the Heat pumps are located in suitably secure Plant room locations throughout the development, and that a heat meters are fitted for each apartment unit in order to monitor and charge for heat supply.

The developer must propose a viable and valid heat tariff with appropriate provision for adjustment to accord with market influences on energy costs.

Any heat pump installation should be powered via an independently metered electrical supply so that heat pump efficiency can be monitored and managed in an efficient manner.

The fitting of individual heat pumps to the development must make provision for safe "turning off and isolation" of the Pump from electrical and water service connections, to allow for ongoing maintenance of the pump on a regular and planned maintenance regime.

2.25 Photovoltaic Panel Installations

The Developer must ensure that all photovoltaic panel installations as designed to provide alternative energy requirements to Part L of the Building Regulations, are fully isolatable by the installation of an isolation switch at or near the

B. Employer's Requirements for Provision of Housing Units

Refer to www.dublincity.ie/hli

Comhairle Cathrach Bhaile Átha Cliath
Dublin City Council

EMPLOYER'S REQUIREMENTS

FOR

PROVISION OF HOUSING UNITS

IN

DUBLIN CITY COUNCIL'S ADMINISTRATIVE AREA

FOR

DUBLIN CITY COUNCIL

SECTION 1

OUTLINE PROJECT AND SCOPE OF WORK

1. OUTLINE OF PROJECT AND SCOPE OF WORK

1.1 Introduction

The purpose of this document is to communicate the Employer's Requirements in respect of the provision of New Housing Units for Dublin City Council lands within Dublin City Council's Administrative Area on a number of separate project sites.

This document may be subject to amendment, and the final version together with any additional information will be issued to shortlisted applicants at Stage 2.

Dublin City Council Housing department requires the provision of new, quality housing units which must:

- Deliver quality living accommodation for families in the form of three bedroom, 5 person, 2 storey houses, and two bedroom, 4 person, 2 storey terraced houses, and one bedroom, 2 person 2 storey, and single storey houses which will sit comfortably in context with the surrounding existing housing.
- Be of robust permanent construction and have a life span of 60 & 25 Years as set out below in section 2.9: Design Life.
- Be constructed of suitable quality materials to ensure maintenance requirements are minimised over time and take into account Dublin City Council's requirements set out in Section 2: Housing Requirements.
- Be constructed with a concrete ground floor to each house, which complies with the Building Regulations (see below).
- Conform to all relevant Department of Environment standards and codes of practice applicable to current housing development.
- Be designed and constructed in accordance with all applicable Irish Building Regulations, codes and standards, and the requirements of the Building Control (Amendment) Regulations 2013-2015.

Building Regulations 1997-2017 (SI 497 of 1997 as amended – refer to www.environ.ie for latest)
Part A –Structure - 2012
Part B – Fire Safety - 2017
Part C – Site preparation and resistance to moisture - 2004
Part D – Materials and workmanship - 2013
Part E – Sound -2014
Part F –Ventilation - 2009
Part G – Hygiene - 2008
Part H – Drainage and wastewater disposal – 2016
Part J – Heat producing appliances – 2014

Part K – Stairways, ladders, ramps and guards – 2014
Part L – Conservation of fuel and energy - dwellings - 2011
Part M – Access and use - 2010

- Meet any additional requirements which exceed the Building Regulations and DECLG Best Practice Guidelines, in order to comply with the provisions of the Dublin City Development Plan, 2016-2022, and as listed in Section 2 – Housing Requirements, of this document.

- Be certified as fully compliant with all applicable Irish Building Regulations, statutory codes of practice and other requirements as set out in the tender documents on completion of the development by the Assigned Certifier and the Builder in accordance with the Building Control (Amendment) Regulations (S.I. No. 9 of 2014, S.I. No. 243 of 2015, and those in force at the time of entering into contract).

The above criteria must inform the Developer's approach to the completed development and the individual housing units, and are core objectives of the delivery of the New Housing Units to be provided on these projects.

This document contains performance specifications for the new housing units and the various elements which combine to form a modern sustainable and liveable home for the long term.

The Room Data sheets collectively set out the requirements of the Employer of how the Houses are to be designed, constructed, and finished. It should be noted that Room Data Sheets will be issued at Stage 2 to shortlisted applicants.

1.2 Programme

The successful applicant must be in a position to deliver the project/s to a programme which must be submitted at Stage II by the shortlisted developers, and which may form part of the marking process.

1.3 Location of Site

The sites identified in this competition for the provision of new Housing Units (including a Social Housing element) are within Dublin City Council's Administrative Area.

This contract is for the provision of the New Social Housing Units and all associated site works only. The schematic plans, which are included in this invitation to tender are indicative and are for information purposes only.

Roads and streets, which define the boundaries of the subject sites for development will contain services e.g. water, foul and surface water drainage, gas, electricity, telecoms etc. Details of all existing services (where available) will be provided in Stage 2 documentation for shortlisted applicants for the Works Contract.

1.4 Scope of works

The Developer's scope of work for the project is as follows:

The Developer must:

- Provide a full design team that will design and certify the entire project in accordance with the provisions of the Building Control Amendment Regulations 2013-2017
- Design and install suitable foundations with service connections, insulation, radon and damp protection, etc. in accordance with the Irish Building Regulations, as required.
- Design and install concrete ground floor slabs.
- Erect the superstructure for the houses.
- Complete the external and internal finishes.
- Complete all mechanical and electrical installations in accordance with the relevant service providers' standard requirements and Codes of Practice, and arrange and deliver connections to all necessary utilities in accordance with the Irish Building Regulations.
- Install all bathroom and kitchen fittings and finishes and ensure all services are properly and safely completed and commissioned in accordance with the requirements of Irish Water and the Irish Building Regulations.
- Provide any and all roads, paths, paving etc., contained within the site boundary of the site to the appropriate Dublin City Council and NRA Road standards.
- Ensure that all testing is completed and fully certified by installers and testers on completion of testing.
- Provide all required testing Certificates to the Assigned Certifier as works and testing progress.
- Complete external public and private open spaces and services within the curtilage of the houses including boundary treatments and landscaping in accordance with the Planning Permission for the development.
- Certify and complete the project in accordance with the new Building Control (Amendment) Regulations 2013-2017.
- Hand over completed housing units fit for permanent habitation.

The Developer will be required to complete all necessary works, including but not restricted to the construction of such roads, paths, paving and external works, utilities, services, etc. as may be required to facilitate this development as set out in the Stage II (Invitation to Tender) documentation.

1.5 Certification & Documentation

The Developer must provide sufficient documentation to verify that all residential units within the development conform to the requirements and intent of these Employer's Requirements.

Sufficient information must also be given to demonstrate how the following can be achieved:

- Identification of Materials & Products used in Developer's Design & Construction of the proposed Housing Development

- How operation, maintenance, cleaning, and replacement of the materials, finishes, and systems contained within the development can be undertaken.

Prior to entering into contract, the Developer must submit a document schedule listing the specific documents it proposes to provide to meet these requirements.

This document schedule must include document numbers, title and proposed submission date. All documents must be produced in a timely manner, and at the latest, prior to handover.

All documentation must be in English.

S.I. units must be used in all cases.

1.6 SAFETY FILE

The following is a non-exhaustive list of items to be included in the Health & Safety File on completion of the dwellings, and all items on this list must be included as a minimum standard for the Health & Safety File which shall be submitted in both hard and soft copy versions to Dublin City Council on completion of the Social Housing development:

- A complete set of Architect's as built drawings including site plans, plans, sections, elevations, details, etc;

- A complete set of Civil & Structural Engineers as built drawings including plans, sections, elevations, details, etc;

- A complete set of Mechanical as built drawings for the dwellings, including pipe layouts, sizes, positions etc., including full technical details, manufacturer details, photographic location details of all components which comprise the system, and including maintenance requirements for the system and components;

- A complete set of Electrical as built drawings for the dwellings, including panel layouts, wiring runs, cable tray details & positions, light, socket, switch positions, any special systems, etc., including full technical details, manufacturer details, photographic location details of all components which comprise the system, and including maintenance requirements for the system and components;

- A complete set of Mechanical Ventilation / Air Conditioning as built drawings, including all details of boiler layouts, pump positions, valve

details, pipe layouts, insulation materials and details, radiator positions & details, etc. etc;

- Full technical details, manufacturer details, photographic location details of all components which comprise the Mechanical Ventilation system, including maintenance requirements for the system, components, filters, etc.;

- A complete set of Hot & Cold Water system as built drawings, showing pipe runs, insulation materials, valve positions, water pump details & positions, electrical connections, storage tanks and cisterns, overflow pipe positions, expansion vessel locations, etc;

- Full technical details, manufacturer details, photographic location details of all components which comprise the Hot & Cold Water system, including maintenance requirements for the system and components;

- A complete set of Heating system as built drawings, showing pipe runs, insulation materials, valve positions, water pump details, radiator positions, electrical connections, pressure vessels, storage tanks, blow down valves, overflow pipe positions, expansion vessel locations, etc;

- Full technical details, manufacturer details, photographic location details of all components which comprise the Heating System, including maintenance requirements for the system and components;

- A complete set of security wiring system as built drawings showing alarm panel location, keypad location, contact / sensor locations, etc. etc., including full technical details, manufacturer details, photographic location details of all components which comprise the system, and including maintenance requirements for the system and components;

- A complete set of Fire, CO detection, smoke / heat detectors & alarm system as built drawings showing alarm panel location, detector locations, etc. etc., including full technical details, manufacturer details, photographic location details of all components which comprise the system, and including maintenance requirements for the system and components;

- Fully detailed technical literature for all sanitary ware to include full technical information, drawings & details, material details, etc.

- Installation, test and completion certificates for all pipe work, wiring, systems, plant and equipment installed in the building;

- Maintenance procedures and schedules for the building & its systems, plant and equipment;

- Operation manuals / procedures for the systems, plant and equipment installed in the building, and emergency procedures for shutting down suspect installations in the building;

- Operation / maintenance manuals for all components in the building;

- Full details of all systems, plant and equipment installers & maintenance contact names and telephone numbers including 24 hr. callout numbers in case of emergencies;

- Full details of any hazardous materials present in the building, the locations of same, and methods for safely working in those areas;

- Full details of any confined spaces in the building, along with method statements / and safe working procedures for working on maintenance in those areas;

- Full details of any areas of high risk in terms of maintenance in the building, e.g. working at height, flat roof repairs & maintenance, etc. etc., and method statements / safe working procedures for working on maintenance in those locations.

1.7 Building Regulations – Minimum Requirements

Building Regulations: The Irish Building Regulations will apply in full to the proposed development as listed in the table below:

Building Regulations 1997-2017 (SI 497 of 1997 as amended – refer to www.environ.ie for latest)
Part A –Structure - 2012
Part B – Fire Safety – 2017 – Volumes 1 & 2
Part C – Site preparation and resistance to moisture - 2004
Part D – Materials and workmanship - 2013
Part E – Sound -2014
Part F –Ventilation - 2009
Part G – Hygiene - 2008
Part H – Drainage and wastewater disposal - 2016
Part J – Heat producing appliances - 2014
Part K – Stairways, ladders, ramps and guards -2014
Part L – Conservation of fuel and energy - dwellings - 2011
Part M – Access and use - 2010

The full requirements of the Building Control (Amendment) Regulations 2013 – 2017 will also be applicable.

For products or systems that do not fall within the scope of existing standards, or deviate from established norms, third party certification must be used to demonstrate compliance with the Irish Building Regulations.

The Developer must comply with all relevant & applicable EN Standards & Codes of Practice, Irish Standards and British Standards (or equivalent) are applicable where no equivalent EN standard exists.

All Local Authority Codes of Practice are applicable, along with all statutory regulations appropriate to the provision of Housing.

All Codes of practice, standards, and requirements of the statutory service providers (ESBN, GBN, Irish Water, Dublin City Council, Eir, etc.) are applicable in full to the development.

1.8 Risk Assessment

The Developer shall prepare and issue to the Client / City Architect's Representative a full risk assessment for the completed housing units and the overall development detailing all risks to maintenance personnel, confined spaces, access to maintenance and working areas, emergency evacuation procedures etc.

The Risk Assessment document must set out clearly particular hazards which remain and will affect the maintenance of the Houses being provided to Dublin City Council, on an ongoing basis, along with details of what safety procedures have been considered as appropriate in order to reduce, or eliminate those risks as identified.

SECTION 2

HOUSING REQUIREMENTS

2. HOUSING REQUIREMENTS

2.1 General

The units must comply with the Building Regulations and other statutory approvals as noted above. These houses are to be included in Dublin City Council's standard housing stock. All requirements as set out in this section must be included in the Developer's proposals.

The quality of the overall design is very important in the long term regarding the maintenance and management of the development but also in the interests of the residents and the quality of the environment that they will be living in.

Kitchen, Dining and Living room areas should be designed to have as much natural light incorporated into the design as possible and take into account the orientation of the sun in relation to the main living rooms.

The materials used must be robust and durable but also create a pleasant place to live for the residents. They should be made from sustainable and/or renewable resources and not present a health risk for the residents.

N.B. Developers may propose alternative materials & products where they have established and developed standard manufacturing methods, tested, and approved systems and / or products which have third party approval or certification.

Please find below more detail in relation to the performance specification for this development. Room Data Sheets will be provided at Stage II of the procurement process giving further information and details of the above. These should be read in conjunction with the employers requirements.

The Developer should note that the Room Data Sheets represent Dublin City Council's minimum requirements and the Developer must also allow for the adequate and safe provision of circulation, electrical / mechanical plant space, and access for maintenance of all services to all apartments units throughout the development including all building services.

2.2 Site Development Works:

The site development must include for the following for each house, (please note, this section should be read in conjunction with the civil engineering specification and documentation as issued at stage II of this competition):

- Landscaping and planting of open space to be prepared by a qualified Landscape Architect employed by the Developer.
- Topsoil and seeding to all private open space / rear gardens throughout the development
- 2000mm high boundary walls / robust fencing to all rear of house boundaries.
- Paving, paths and topsoil and seeding to all gardens to be in accordance with Landscape Architects design proposal as included in the statutory Planning Submission.

- Any railings proposed shall be a minimum of 1200mm high painted galvanised steel post and bar railings throughout with a minimum bar size of 10mm solid mild steel.

- 1200mm high steel post and bar railing on brick / concrete plinth walls, with 100x100mm galvanised steel gate posts to take galvanised steel garden gates with a minimum bar size of 10mm solid mild steel.

- Minimum 150mm deep x 1200mm wide reinforced concrete paved apron to entire width of house at rear.

- Minimum 150mm deep x 1200mm wide concrete paved apron to entire width of house to front

- A minimum 150mm deep x 3000mm wide x 5000mm hard paved area to front of house to allow for car parking space for individual parking areas within curtilege or shared parking areas provided in accordance with current Dublin City Council Development Plan, and the Greater Dublin Sustainable Drainage Standard

- Surface water drainage outlet and connection to rear of each house & Mains surface drainage to Greater Dublin Sustainable Drainage Standards

- Surface water drainage outlet and connection to front of each house & Mains surface drainage to Greater Dublin Sustainable Drainage standards

2.3 Plan Form & Shape

The plan form and shape of the Houses must take account of Dublin City Council's preferred requirements regarding unit mix and numbers of each house type required.

Bathrooms, kitchens and toilets should be located adjacent to each other, insofar as is practicable.

There shall be no exposed or boxing out of exposed mechanical and electrical plant/equipment in any room or area at any level.

All service pipes and conduits shall be sully concealed within floors, ceilings, and partition walls.

2.4 Headcount

Each four bedroom house will cater for a total of seven persons.

Each three bedroom house will cater for a total of five persons.

Each two bedroom house will cater for a total of four persons.

Each one bedroom house will cater for a total of two persons

Cold & Hot water services to each dwelling must be sufficient to accommodate a minimum of three visitors per day.

2.5 Critical Dimensions

The overall dimensions for services and structural zones must be designed to accommodate the structural frame and the extent of services to be provided. Moreover, adequate provision must be made for future flexibility in terms of use or occupation over the life of the building.

The Minimum finished floor to ceiling height must be no less than 2.4m to ground floor and first floor rooms throughout all dwellings.

The finished floor to ceiling height to the "visitable" ground floor WC must have 2.4m over at least 50% of the floor area, with an absolute minimum headroom of 2.1m in any location within the WC area.

All room dimensions must comply with the requirements as set out in the DECLG best practice Guideline 'Quality Housing for Sustainable Communities' – Published 2007, and in accordance with Clause **16.10.2 Residential Quality Standards – Houses** of the Dublin City Development Plan 2016-2022.

2.6 Acoustics

The buildings must be designed to control flanking noise and noise transmission through the Party walls and external walls as per the requirements of the Technical Guidance Document for Part E (Sound – 2014) of the current Irish Building Regulations.

Care must be taken in detailing party walls to minimise transmission of mechanical noises through existing structures.

Transmission of noise from building services and equipment noise, noise transfer (within dwellings) between the various spaces must be attenuated.

Please see Room Data sheets for further detailed information regarding acoustic requirements in each area.

2.7 Sustainability

The houses must achieve a minimum of an A3 BER Rating, and be in compliance with Part L (Conservation of fuel and energy – Dwellings – 2011) of the current Irish Building Regulations. In addition to this standard, the houses must be designed for low maintenance with ease of maintenance being a key requirement. Whole life costs must also be borne in mind when selecting design solutions. Issues to be considered include but are not limited to:

- The Developer shall ensure that a BER Certificate is provided for each unit upon completion, confirming that the unit as constructed achieves a minimum A3 rating.
- Overall extent and quantity of insulation standards and other energy-saving design features;
- Automatic temperature and lighting controls;
- Water conservation;
- Use of durable Sustainable and/or renewable materials is a requirement

- The use of non-renewable materials is to be avoided where possible;
- Flexibility in design for adaptation & extension
- The building service systems must provide and maintain a comfortable indoor environment with minimum adverse impact on the environment with optimum whole life costs.

2.8 Future Expansion

The completed building shall be capable of being extended by the addition of a single storey extension to the rear of the building.

Additionally, heating plant shall have the capacity to accommodate a 20 Sq. M. extension to the building, with pipe work adequately sized to carry the services for extension to a defined connection point to the rear of the house.

2.9 Design Life

The buildings must be designed and constructed using materials, systems and components with a minimum life as set out below from Substantial Completion (exceptions listed hereunder) given that normal maintenance will be carried out and fair wear and tear accepted.

Element	**Minimum Required Lifespan**
Structural elements	*60 years*
Floors, Walls, Roofs & Ceilings	*60 years*
HVAC & Mechanical Services	*25 years*
Electrical Services	*25 years*

Note Where proprietary materials or systems are mentioned in the accompanying performance specifications or data sheets it shall be the Developer's responsibility to assess such materials and systems and select only those materials and systems which achieve the minimum life spans set out above.

Please note that the information provided below in sections 2.10 – 2.25 is issued for information only, and a full specification shall be provided to the shortlisted parties with the stage II documentation.

2.10 External Finishes

The external dwelling finishes must be durable, robust, and selected to reflect Dublin City Council Requirements as set out in 1.1 above. Materials will be sympathetic to existing surrounding housing finishes.

All major finishing materials and finishes including colour selection to be indicated in the Developer's Proposals and agreed with the Dublin City Council City Architect's Representative in entirety prior to commencement of works.

All materials shall be selected to reflect the overall quality of the development, design life and ease of maintenance as set out above.

Additional performance specifications will be issued during the second stage of the procurement process. All external materials and finishes must be fire resistant and in accordance with the requirement of the Irish Building Regulations.

2.11 Glazing & External Doors

External glazing throughout must be of a proprietary triple glazed superior quality thermally broken glazing system designed, built and installed to latest relevant European standards, Codes of Practice, and installed in accordance with the Manufacturers requirements and recommendations. Whole frame U value of 0.8W/m2K will be required for all windows and external doors

All glazing must be internally beaded/secured.

External doors must be "High security" impact resistant timber hall doors to EN 1627, with level access threshold, & 5 point locking system. Architraves to external doors must be of 100x19mm hardwood detailed to match architraves to internal doors.

A Manufacturer's Thermal Performance Certificate will be required for each window type in each house type throughout the development for inclusion with the BCAR information and Certification process, and shall be included in the Health & Safety file to be handed over at Substantial Completion stage or the project prior to occupation of the development.

Timber framed windows are preferred where cavity closers are employed to provide fire protection to the wall cavities.

PVC windows cannot be used.

2.12 Roofs

The roof must be of proprietary concrete tile / natural slate / clay tiling / etc. non combustible material, screw fixed to timber battens on vapour permeable roofing underlay, on timber / steel roof structure to a suitable roof pitch to meet with tile / slate manufacturers requirements and recommendations.

Party walls must be sealed to underside of roof finish with suitable fire resistant sealant to provide smoke-tight joint preventing smoke and fire infiltration from house to house across party walls.

All facia, soffits and rainwater goods must be finished in minimum 0.7mm gauge powder coated aluminium.

PVC is not acceptable as a fascia or soffit material for finishing around roofs.

All timber used for roof construction must be pressure preservative impregnated to EN standards.

2.13 Building & Street Identification Signage

The Developer shall include external numbering to each house to identify postal locations, along with signage for the housing scheme which shall be of individual lettering to include Dublin City Council logo on a steel plate fixed to steel posts, or solid brick / blockwork walls similar to the existing signage to streets in the vicinity, in accordance with "Construction Standards for Road & Street Works in Dublin City Council".

2.14 Internal Materials & Finishes

The internal materials and finishes must be selected to reflect Dublin City Council's Employer's Requirements as set out in 1.1 above. All major finishing materials and finishes including colour selection must be indicated in the Developer's Proposals and agreed with the Dublin City Council Housing City Architect's Representative. Material must be selected to reflect the overall high quality of the development, design life and ease of maintenance.

Refer to Room Data Sheets for further details. Additional performance specifications will be issued during the second stage of the procurement process.

2.15 Floors

The Ground floors to the Housing units must be of concrete. All ground floor construction must include a moisture and radon barrier, thermal insulation, and be detailed to avoid thermal bridges.

Floors as constructed, must achieve compliance with the current Irish Building Regulations and Technical Guidance Documents, as Listed in the table at Section 1.6 above.

2.16 2.16.A – Internal (Non-party) Walls

Internal partition walls must be insulated timber / metal stud partitions with minimum 12.5mm Moisture Resistant or Fire Resistant plasterboard / etc. boards each side with filled and taped joints – such walls to span from top of structural slab to structural soffit.

All jointing, external / internal corners, etc., to be smooth finished.

Internal partitions generally to be finished with 3 no coats of selected colour emulsion paint finish, and fitted with minimum 125x19mm solid timber skirting boards mechanically fixed to partition studs, and filled, primed, undercoated, and gloss paint finished on completion throughout.

MDF or PVC skirtings cannot be used.

All partition walls to wet areas such as kitchens, bathrooms and toilets must be lined with 12.5mm Moisture resistant plasterboard / etc. boards finished in accordance with relevant Room Data Sheets.

2.16.B – Party Walls

All party (Compartment) walls must be so designed and constructed as to achieve compliance with Part B – Fire of the current Irish Building Regulations and Technical Guidance Documents as listed in section 1.6 above.

2.17 Internal Doors and Screens

All internal doors must be solid core flush doors with hardwood lipping and vision panels where required by Building Regulations and in all circulation areas.

Any fire rated door sets must be fitted with mechanical self closing devices, and bear the manufacturer's "Fire Door" tags, along with "Fire door keep shut" tags fitted.

All doors must have three no. 100mm satin finished stainless steel ball bearing hinges, with brushed stainless steel lever handles on roses & escutcheon plates to both sides.

Two lever mortice locks must be used on all internal doors throughout.

Five lever mortice locks / five point security locking must be employed to all external doors.

All internal door sets must be installed / constructed to allow for full width architraves (100mm) to each side. All architraves to be ex 100 x19mm solid timber with chamfered leading edges.

All internal doors must be paint finished including base coat / primer, undercoat and final satin coat painted on completion, or three coat clearcoat finish to Developers proposals.

2.18 Ceilings

All suspended ceilings to houses must be of 12.5mm plasterboard with filled and taped joints and three coats of emulsion paint throughout in accordance with specification.

All board joints must be fully scrim taped with 75mm wide scrim tape, and filled and sanded prior to finishing with 3 no coats of selected colour emulsion paint.

Recessed downlighter light fittings should not be used.

2.19 Bathroom / Toilet Facilities

Sanitary Ware & Fittings - A matching suite of ceramic Wash Hand basin, quality ceramic low level close couple suite with integral cistern, dual flush, and back to wall – concealing the soil pipe connection / multiwick at back of floor mounted w.c. pan, a 750mm wide by 1800mm acrylic bath (not fibreglass) with fixed side and end panels to match.

Adequate & visitable WC facilities must be provided at ground floor level for persons with disabilities and be so designed and constructed as to achieve compliance with Parts M & G of the current Irish building regulations as listed at section 1.7 above.

All wall construction for timber/steel stud framing layout of ground floor to provide suitable grounds for fitting of W.C., WHB, towel radiator, etc., and for future fixing of support handrails, folding rails, etc. for disabled assistance in W.C. area.

2.20 Internal Staircases

All internal staircases must be of solid timber, or timber-faced steel construction.

Entire staircase must be finished with three coats clear satin varnish, and sanded between each coat to provide smooth blemish free finish on completion.

The Rise of each step must be consistent throughout rise of staircase, and shall conform with Part K and Part M of the Building Regulations TGD's.

The Going of each step must be consistent throughout the staircase, and shall conform with Part K and Part M of the Building Regulations TGD's.

Optimum rise of 175mm, and going of 250mm should be considered wherever possible.

Minimum headroom throughout staircase must be 2000mm.

MDF or plywood cannot be used in staircases.

2.21 Mechanical Installations

The houses must be fitted with standard hot / cold water services including cold water storage tank, calorifier (hot water cylinder), isolation valves, non return valves, taps, and all necessary hot and cold supply pipe work throughout.

All water services installations must comply with the technical requirements and details of Irish Water Code of Practice.

Hot & Cold water supplies must be provided to bathroom, downstairs W.C. and wash hand basin, kitchen including sink, washing machine & dishwasher. Washing machine and dishwasher water outlets must be fitted with shut off valves to direct connection of supply pipes to white goods.

All pipe work must be copper, and must be concealed within timber / metal stud partitions, floors and ceilings.

Additional performance specifications may be issued at Stage II of the procurement process.

Visible boxing out of services outside of partition walls, ceilings or floors is not permitted.

All service routes must be accommodated within internal partitions, ceilings and floor voids.

Fire resistant construction to party walls must be imperforate, as per Section 2.16.B above.

Any services which are required to party wall side of houses must be run in battened out services zone with plasterboard slab to housing unit side of party wall.

The Heating System to each house must be of high efficiency condensing gas fired boilers. Room sealed appliances to be used only, and must be located on external walls to allow balanced flue intake / extract discharge in accordance with the manufacturer's requirements, and relevant RGI Codes of Practice.

The gas fired heating system must be capable of providing adequate heat for space heating and water heating to the entire house as set out in the Mechanical specification, and must have adequate spare capacity to take future expansion of the house by 40 Sq. M.

Each gas boiler must be accompanied with carbon monoxide detector and alarm, interlinked to boiler electrical supply to BGE requirements.

Mechanical extract ventilation must be provided above cooker area located in the kitchen.

Mechanical ventilation will be required to all internal W.C. / bathroom / en suites located in inner locations. Additional mechanical ventilation may be required in order to comply with the overall ventilation requirement for the house. This needs to be coordinated with the air-tightness strategy for the house.

Details of the ventilation strategy are to be agreed with Dublin City Council relevant Mechanical, Electrical, and City Architect's Representative prior to commencement of works on the houses.

2.22 Electrical Installations

Include for incoming mains, power distribution circuits, lighting distribution circuits, etc.

The Developer must ensure that an individual metered electricity supply is delivered to each house on Substantial Completion of the development prior to handover of the Housing units to Dublin City Council.

General power requirements including electrical power outlets in each room must be in accordance with the Room Data Sheets to be issued with Stage II documentation.

Electrical switches, sockets, power outlets, data / telecom outlets, cover plates, etc., to all houses must be of switched, brushed stainless steel.

Entire electrical installation, wiring, panels meters, etc., must be completed in accordance with the requirements of the ETCI, and RECI standards.

Additional performance specifications may be issued at Stage II of the procurement process.

Mains wired smoke / heat detector must be suitably located in the kitchen / dining area in accordance with Building Regulations Part B - Volume 2.

Mains wired smoke detector must be suitably located in the hall & landing areas.

All wiring throughout the house must be contained in galvanised steel conduit.

Visible boxing out of services outside of partition walls, ceilings or floors is not permitted.

All electrical service routes must be contained in steel conduit throughout, and must be accommodated within internal partitions, ceiling and floor voids.

Fire resistant construction to party walls must be imperforate.

C. Dublin City Council Surface Water Drainage Requirements

Drainage Planning and Developer Services shall review and agree surface water management proposals for development within the Multi Unit Housing Development Site (MUHDS) of Old Devaney Gardens.

The Dublin City Development Plan 2016-2022 includes important initiatives on quality of development and best practice such as initiatives on *Green Infrastructure* and *Sustainable Environmental Infrastructure* with an emphasis on an integrated design approach. Each surface water management submission shall apply these principles.

Each submission to Drainage Planning and Developer Services shall include ï

- Site location map with planning boundary indicated in red.
- Overall surface water drainage layout indicating;
  -Existing public surface water
  -Proposed surface water infrastructure to match/take cognisance of the overall development of the Old Devaney Gardens area.
  -Proposed connection points to existing public sewers.
  -Spine sewers, if any.
  -Detail of any surface water sewer extension, diversions, surface water sewer upgrades etc to be clearly indicated.
- Longitudinal section details of proposed surface water connections indicating route, levels, pipe size, gradient etc.
- Surface Water Management Plan (SWMP) incorporating the principles of sustainable drainage for this area. The allowable discharge for this overall development shall be limited to 2l/s/ha and this shall be incorporated into design approach. This may require that land for surface water storage features is agreed with appropriate stakeholders at an early stage. The plan shall include a minimum of a 2 staged treatment approach to manage surface water for the 1 in 100 year storm event plus 20% climate change, preferably at source.
- Site Specific Flood Risk Assessment (SSFRA);
  -A detailed report shall be submitted in accordance with the Strategic Flood Risk Assessment which forms part of the Development Plan. The SSFRA shall identify the key areas of the site that may or may not be suitable for SuDs components and will identify any flood hazards for the operation and maintenance of the drainage system. The preferred approach would ensure any flood mitigation measures are incorporated into the overall surface water management approach.
  -A modified flow route analysis drawing.
  -Details on any proposed basement structure and associated groundwater issues shall be discussed. Comprehensive percolation testing and winter groundwater monitoring shall be performed.
- Phased development ï Where development under a planning permission is phased or under various contract arrangements, coordination of the overall surface water management strategy shall be implemented at the first phase in order to ensure the overall integrated design is implemented. This would allow different parts of a site to be developed at different times, while ensuring that the final developed site shall meet the overall design criteria set out here.
- All surface water infrastructures shall be constructed in accordance with the Greater Dublin Regional Code of Practice for Drainage Works.

Sustainable Drainage Approach for this Strategic Development and Regeneration Area

Dublin City Development Plan 2016 -2022, Chapter 9 identifies the need for Sustainable Environmental Infrastructure as part of any development in the city. The criteria listed in Chapter 9 are linked to the other major environmental themes within the Plan specifically in relation to Climate Change, Green Infrastructure, Open Space and Recreation, and Sustainable communities. The Developer is expected to integrate the principles of Sustainable Urban Drainage Systems for this Development with all other environmental aspects of the Development, using best practice solutions in the approach to public realm design, parks etc to limit run off and facilitate infiltration systems wherever possible. As a result, discharge managed via a pipe and an attenuation tank system being the last option considered where possible.

Surface water management should be given appropriate consideration at preplanning stage for all developments. The Developer is expected to consider the topography of the site pre and post development to assess the natural run off for surface water to ensure that the proposed sustainable drainage solutions are factored into the overall approach to the design layout etc, using the more integrated thought process highlighted above.

This approach provides better flood management, climate resilience, reduced energy costs, community value, and biodiversity and enhanced landscaped areas creating high quality places to live.

DCC therefore requires this softer engineered approach to be used to manage surface water at source as it is a greener, more environmentally effective approach for managing stormwater on developed lands. Over ground soft engineering solutions are necessary and a minimum 2-staged treatment approach in accordance with best SuDs practice would be the preferred

Management of surface water at source is the priority and ideally, only overflow in extreme weather events shall be directed to main surface water infrastructure.

It is noted that best practice SuDs design is site specific and there may be mitigating circumstance which provide challenges in relation to infiltration rates or ground water etc. However, the design will be required to identify these issues and propose measures to ensure compliance with the four pillars of SuDs design namely, water quantity, quality, amenity and biodiversity. It is therefore necessary that at the commencement of the design process, appropriate site investigations are completed including soil infiltration tests.

* SuDs for public road and paved areas - A secondary overflow system to a conventional piped system shall be incorporated into the design for these areas.

Taking in Charge

Surface water sewers and spine sewers constructed in accordance with the Greater Dublin Regional Code of Practice for Drainage Works will be taken in charge by the Drainage Division.

Ownership and maintenance of SuDs within public roadways and parks shall be taken in charge following consultation with DCC at Design/Preplanning stage.

Site Specific Issues for O Devaney Garden site:

- The SWMP shall outline drainage discharge rates from the proposed development and details and calculations of SW attenuation features. It shall also address the issue of temporary SW attenuation system for the 56 units in phase 1A of this development. The final proposal for surface water management for the full site must incorporate this Phase 1 development and, where feasible, a plan for the removal of this temporary attenuation tank to allow for appropriate SUDS measures to incorporate Phase 1 into the design for the full site. In the event that the proposed temporary attenuation has to be maintained, this maintenance will be at the expense of the private developer.
- Comprehensive, substantive and detailed SuDS (Sustainable Urban Drainage Systems) shall be provided in the SWMP in accordance with best practice and by referencing the most up to date CIRIA documentation.
- Proposals for Surface water discharge from this site should be via the South of the site and incorporate an additional spur to the West towards Infirmary Road to allow for the possibility of future upgrade to the Surface Water network along this road. Detail is to be agreed with DCC.
- The SSFRA will make reference to the Greater Dublin Strategic Drainage Study and recent Parkgate Street flooding. Appropriate flood mitigation measures shall be incorporated into the development.
- The outfall is required for surface water shall be to the south of the site with a spur to the west to Infirmary road to allow for future upgrade of the network. This detail will be agreed with DCC.
- The temporary attenuation tank constructed for Phase 1 A shall be removed and the surface water management plan for this area shall be incorporated into the full site masterplan.

One off Housing Developments

Minimum requirement would be 2-staged treatment train to manage runoff.

- Filter drains
- Infiltration systems
- Permeable paving
- Soakways
- Green gardens
- Rainwater butts ï May be used but are not considered as SuDs

Commercial and Apartment Developments

A 3-staged treatment train would be welcomed however a 2-staged treatment train may be accepted due to constraints.

- Filter drains
- Infiltration systems
- Green roofs
- Soakaways
- Green gardens
- Rainwater harvesting (as part of a more complex SuDs design)
- Detention Basins

Large Housing Developments

A 3-staged treatment train would be welcomed however a 2-staged treatment train may be accepted due to constraints.

- Filter drains
- Infiltration systems
- Permeable Paving
- Soakaways
- Green gardens
- Rainwater harvesting (as part of a more complex SuDs design
- Swales

- Detention Basins

*A significant portion of green spaces needs to be available within this type of development to incorporate best practice SuDs design.

Public areas (to be taken in charge)

- Permeable paving for carparking spaces (number of spaces to be agreed with Roads Department)
- Soil filled Tree pits
- SuDs components such as filter drains, swales or other surface channel designed to run alongside the impermeable surface to take runoff directly.
- Swales
- Detention basins
- Retention Ponds
- Wetlands

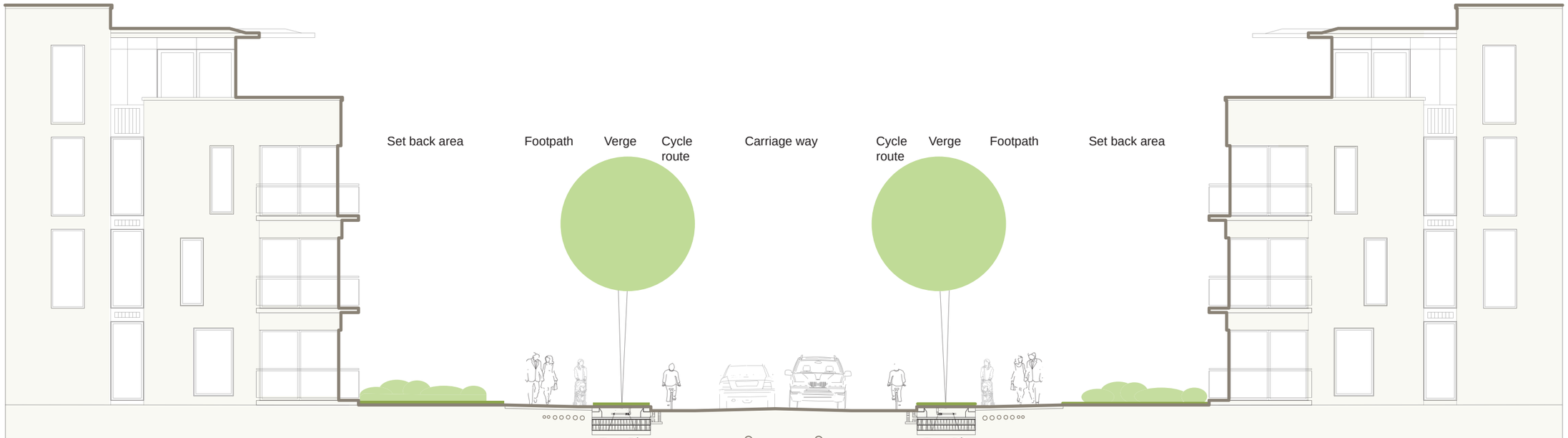
* SuDs for public road and paved areas - A secondary overflow system to a conventional piped system shall be incorporated into the design for these areas.

Taking in Charge

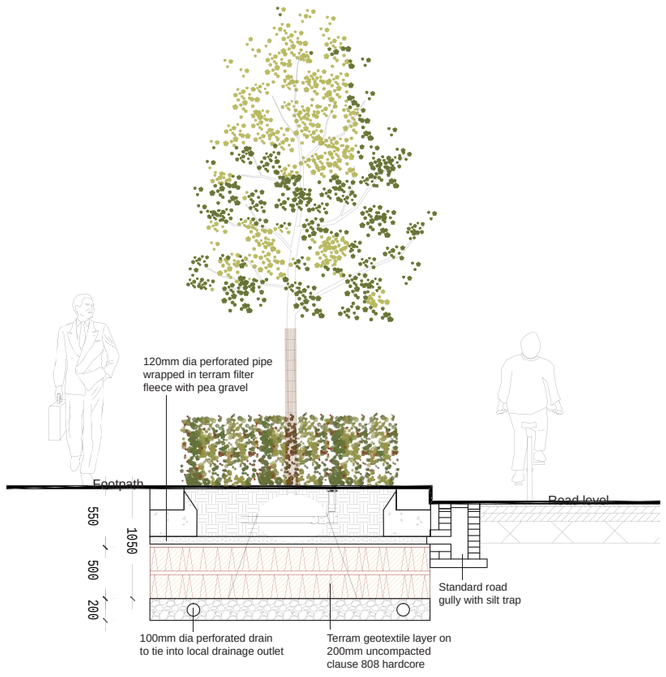
Surface water sewers and spine sewers constructed in accordance with the Greater Dublin Regional Code of Practice for Drainage Works will be taken in charge by the Drainage Division.

Ownership and maintenance of SuDs within public roadways and parks shall be taken in charge following consultation with DCC at Design/Preplanning stage.

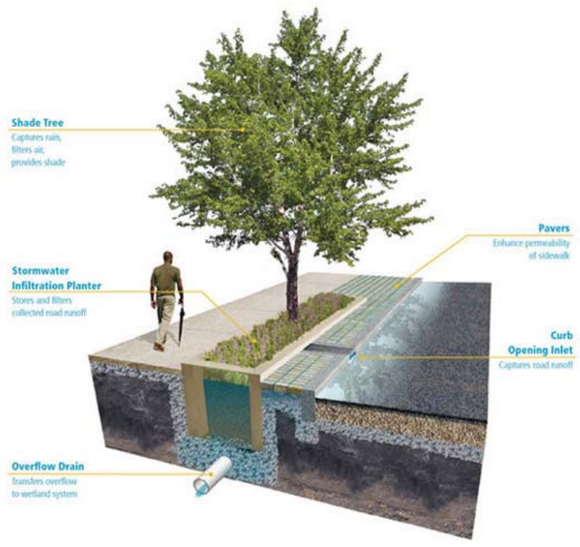
D. Example of Streetscape Landscaping



O'Devany Gardens Boulevard

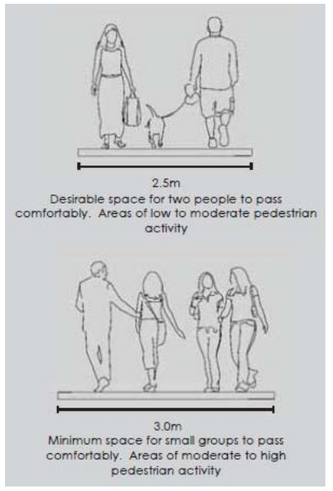


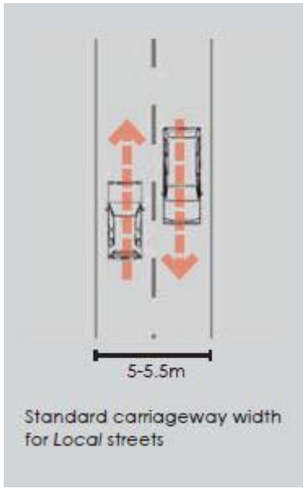
Constructed tree pit detail incorporating SuDS



Notes:

Extracts from DEMURS





Verges

The need and size of the verge will largely be dependent on the function of the street and the presence of on-street parking. In general:

- On *Arterial* and *Link* streets with no on-street parking a verge of 1.5-2m should be provided as a buffer and to facilitate the planting of large street trees and items of street furniture.

Comhairle Cathrach Bhaile Átha Cliath
Dublin City Council

Rannóg na bPárceanna agus Seirbhísí Tirdhreach
Rannán Suirbhéireachta agus Léarscáilithe
Parks & Landscape Services Division

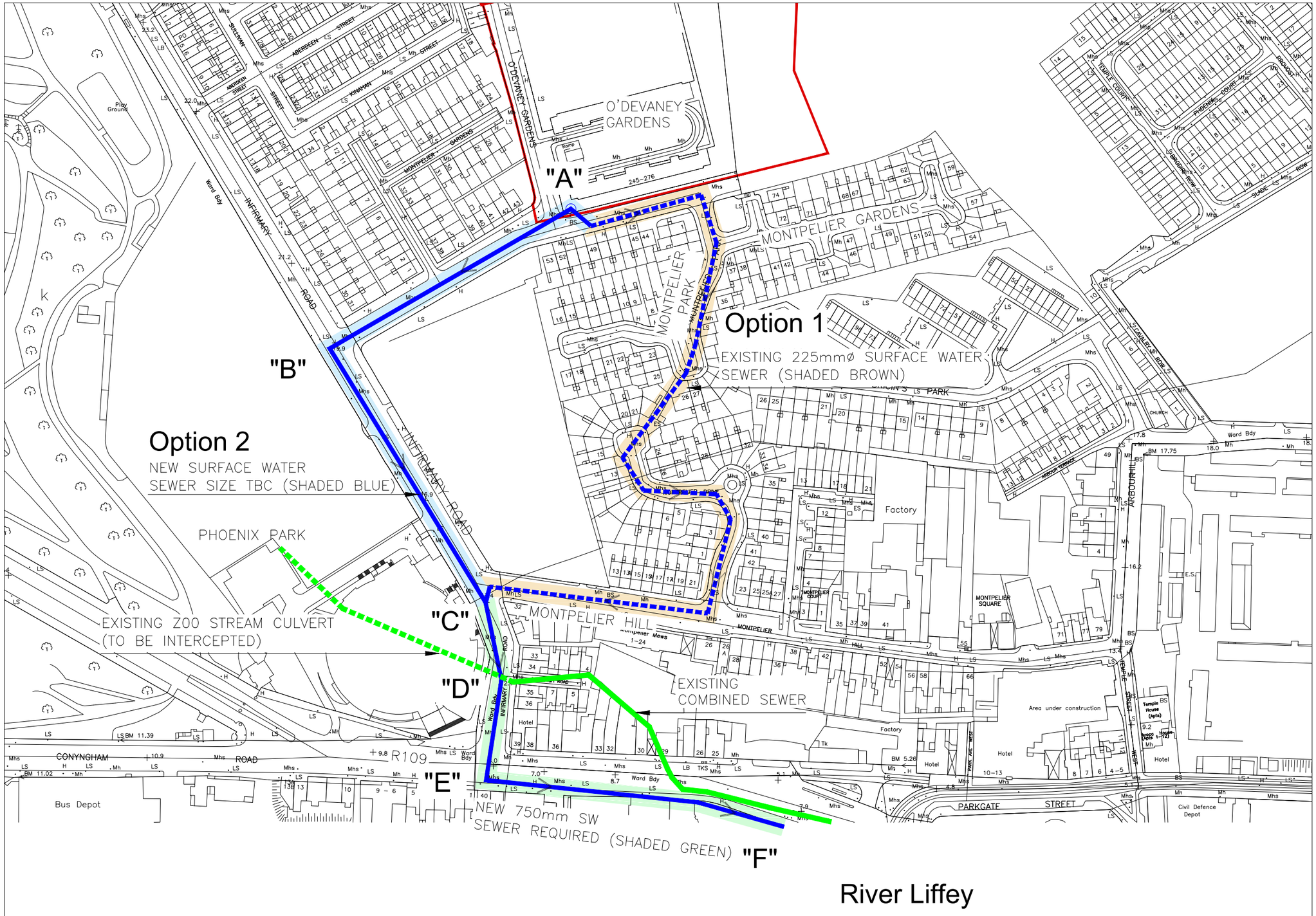
	SCALE	INDEX No	FOLDER No	CODE	DWG No	REV
	As Shown	FILE NO O'Devany Gardens				
DATE DEC/2017	DRAWING / PRODUCED BY GT					

L. MOORE
CITY PARKS SUPERINTENDENT

THIS MAP IS CERTIFIED TO BE COMPUTER GENERATED BY DUBLIN CITY COUNCIL FROM ORDNANCE SURVEY DIGITAL MAPBASE
SURVEY, MAPPING AND RELATED RESEARCH APPROVED
APPROVED
LESLIE MOORE
PARKS & LANDSCAPE SERVICES DIVISION
DUBLIN CITY COUNCIL

INDEX No.

E. Waterman Moylan Drawings



NOTES:

1. DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTURAL AND ENGINEERING DRAWINGS.

LEGEND:

- INDICATES SURFACE WATER OPTION 1
- INDICATES SURFACE WATER OPTION 2

REV.	DATE	AMENDMENT	DRN	APPD

STATUS **FOR INFORMATION ONLY**

Waterman Moylan
Engineering Consultants
BLOCK S, EASTPOINT BUSINESS PARK, ALFIE BYRNE ROAD, DUBLIN D03 H3F4 IRELAND. Tel: (01) 664 8900
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CLIENT DUBLIN CITY COUNCIL

ARCHITECT

PROJECT O'DEVANEY GARDENS DUBLIN 7

TITLE PROPOSED SURFACE WATER OUTFALL OPTIONS

DRAWN	DESIGNED	APPROVED	DATE
G.Byrne		JC	FEB. '18
SCALE 1:1000 @A1	JOB NO. 09-195A	DRG. NO. SK003	REVISION

Mar 28, 2018 - 4:29pm Drawing Location: M:\Projects\09\09-195A\Cad\Civil\Sketch\09-195A-SK003.dwg

FOR CONTINUATION SEE RIGHT

NOTES:

1. DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTURAL AND ENGINEERING DRAWINGS.

LEGEND:

WM — WM	EXISTING PE WATERMAIN
150mm ø	PROPOSED PE PE WATERMAIN
WM — WM	EXISTING PE WATERMAIN TO BE DECOMMISSIONED
H	EXISTING HYDRANT TO BE REMOVED
SV	PROPOSED SLUICE VALVE
H	PROPOSED HYDRANT
TB	PROPOSED THRUST BLOCK
BWM	PROPOSED BULK WATER METER
BB	PROPOSED BOUNDARY BOX & CONNECTION
CH40	PROPOSED CHAINAGE
26.80	PROPOSED ROAD LEVEL
1/30	PROPOSED ROAD GRADIENT
FFL	PROPOSED FINISHED FLOOR LEVEL

WATER METER TO COMPLY WITH IRISH WATER DETAILS AND SPECIFICATIONS

150mm ø PE WATERMAIN

RAISED TABLE

4IN. CL 1920

F.F.L. 27.900m

F.F.L. 27.525m

F.F.L. 27.450m

F.F.L. 27.375m

F.F.L. 27.300m

F.F.L. 27.225m

F.F.L. 27.150m

F.F.L. 27.075m

F.F.L. 29.100m

F.F.L. 28.050m

F.F.L. 27.750m

F.F.L. 27.150m

F.F.L. 26.925m

F.F.L. 26.700m

F.F.L. 26.475m

F.F.L. 26.250m

F.F.L. 29.100m

F.F.L. 27.525m

F.F.L. 27.375m

F.F.L. 27.225m

F.F.L. 27.075m

F.F.L. 26.925m

F.F.L. 26.775m

F.F.L. 26.625m

F.F.L. 26.475m

F.F.L. 26.325m

F.F.L. 26.175m

F.F.L. 26.025m

F.F.L. 25.875m

F.F.L. 25.725m

F.F.L. 25.25m

BREAK TANK TO MECHANICAL ENGINEERS DETAILS (INDICATIVE LOCATION ONLY)

MV ESB SUBSTATION

FOR CONTINUATION SEE LEFT

SCALE 1:250

SHEET 1 OF 2

SHEET 2 OF 2

KEYPLAN

SCALE 1:2000

ROADS & WATERMAIN LAYOUT SHEET 1 OF 2

SCALE 1:250

REV.	DATE	AMENDMENT	DRN	APPD

STATUS **FOR TENDER**
NOT FOR CONSTRUCTION

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CLIENT **DUBLIN CITY COUNCIL**

ARCHITECT **DUBLIN CITY ARCHITECTS**

PROJECT
O'DEVANEY GARDENS DUBLIN 7

TITLE
ROADS & WATERMAIN LAYOUT SHEET 1 OF 2

DRAWN	DESIGNED	APPROVED	DATE
PJD	BW	IW	JAN 18'
SCALE	JOB NO.	DRG. NO.	REVISION
AS SHOWN @A1	09-195A	T010	

NOTES:

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LEGEND:

WM — WM	EXISTING PE WATERMAIN
150mm ø	PROPOSED PE PE WATERMAIN
WM — WM	EXISTING PE WATERMAIN TO BE DECOMMISSIONED
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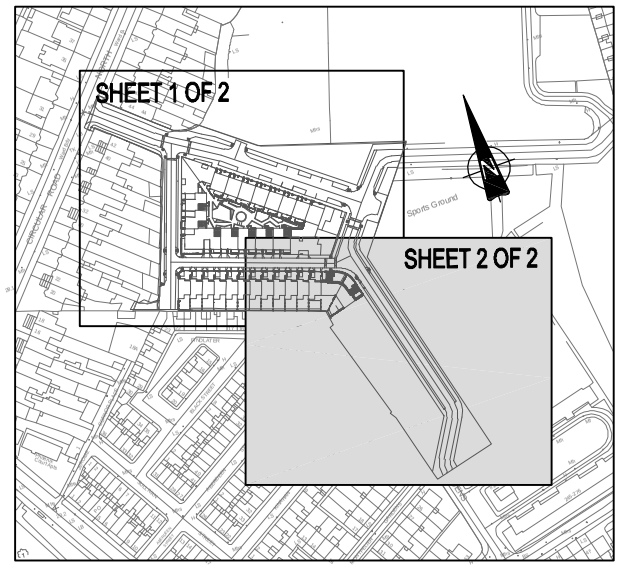

KEYPLAN
SCALE 1:2000

ROADS & WATERMAIN LAYOUT SHEET 2 OF 2
SCALE 1:250

REV.	DATE	AMENDMENT	DRN	APPD

STATUS **FOR TENDER NOT FOR CONSTRUCTION**

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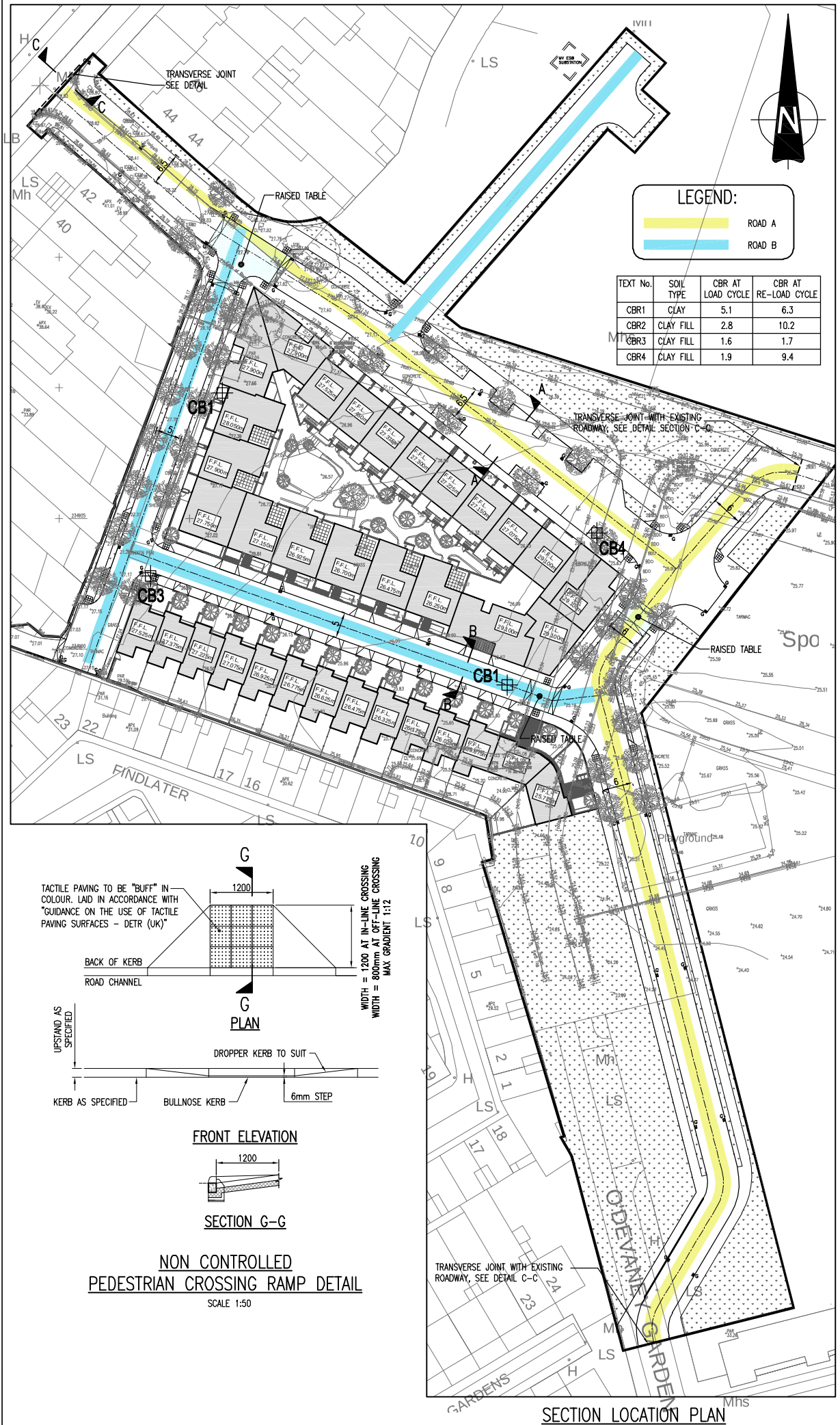
CLIENT	DUBLIN CITY COUNCIL
ARCHITECT	DUBLIN CITY ARCHITECTS
PROJECT	O'DEVANEY GARDENS DUBLIN 7
TITLE	ROADS & WATERMAIN LAYOUT SHEET 2 OF 2

DRAWN	DESIGNED	APPROVED	DATE
PJD	BW	IW	JAN 18'
SCALE	JOB NO.	DRG. NO.	REVISION
AS SHOWN @A1	09-195A	T011	



TEXT No.	SOIL TYPE	CBR AT LOAD CYCLE	CBR AT RE-LOAD CYCLE
CBR1	CLAY	5.1	6.3
CBR2	CLAY FILL	2.8	10.2
CBR3	CLAY FILL	1.6	1.7
CBR4	CLAY FILL	1.9	9.4

SECTION LOCATION PLAN
SCALE 1:500

PLAN

FRONT ELEVATION

SECTION G-G

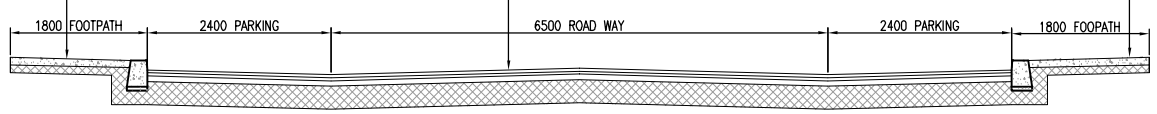
NON CONTROLLED PEDESTRIAN CROSSING RAMP DETAIL

SCALE 1:50

FOOTPATH CONSTRUCTION:
100mm CONCRETE 30N/20 ON
100mm CLAUSE 808 SUBBASE (COMPACTED)
NOTE: TO BE INCREASED TO 150mm CONCRETE ON 150mm CLAUSE 808 AT VEHICLE CROSSOVERS

ROAD CONSTRUCTION: AS PER TABLE 1
40mm CLOSED GRADED HRA TO CLAUSE 911, 915, 943 OR PMSMA SURFACE COURSE TO CLAUSE 942 ON
60mm ASPHALT CONCRETE BINDER COURSE TO CLAUSE 906 ON
80mm ASPHALT CONCRETE BASE COURSE TO CLAUSE 906 ON
200mm MIN SUB-BASE – CLAUSE 808 GRANULAR MATERIAL NOTE: THE DEPTH OF THIS CAPING LAYER IS DEPENDENT UPON THE CBR OF THE FORMATION. SEE TABLE 1.

FOOTPATH CONSTRUCTION:
100mm CONCRETE 30N/20 ON
100mm CLAUSE 808 SUBBASE (COMPACTED)
NOTE: TO BE INCREASED TO 150mm CONCRETE ON 150mm CLAUSE 808 AT VEHICLE CROSSOVERS



A–A TYPICAL SECTION THROUGH ACCESS ROAD
SCALE 1:50

NOTES:
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The minimum thickness of the capping layer (if required) is as outlined in Table 1.
Table 1.

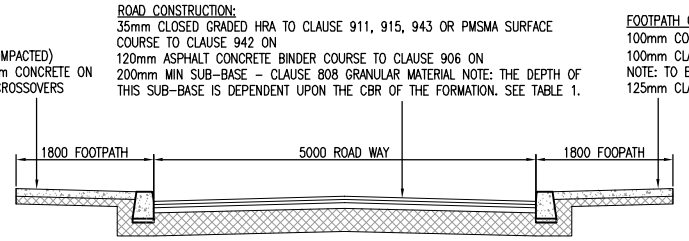
CBR of Subgrade (%)	Minimum Thickness of Subase Layer (mm)	Minimum Thickness of Capping Layer (mm)
Less than 2*	200	600
2-5	200	350
5 and over	200	0

*For subgrade with a CBR of less than 2%, geotextile separartor should be used and specialist advice sought regarding minimum thicknesses

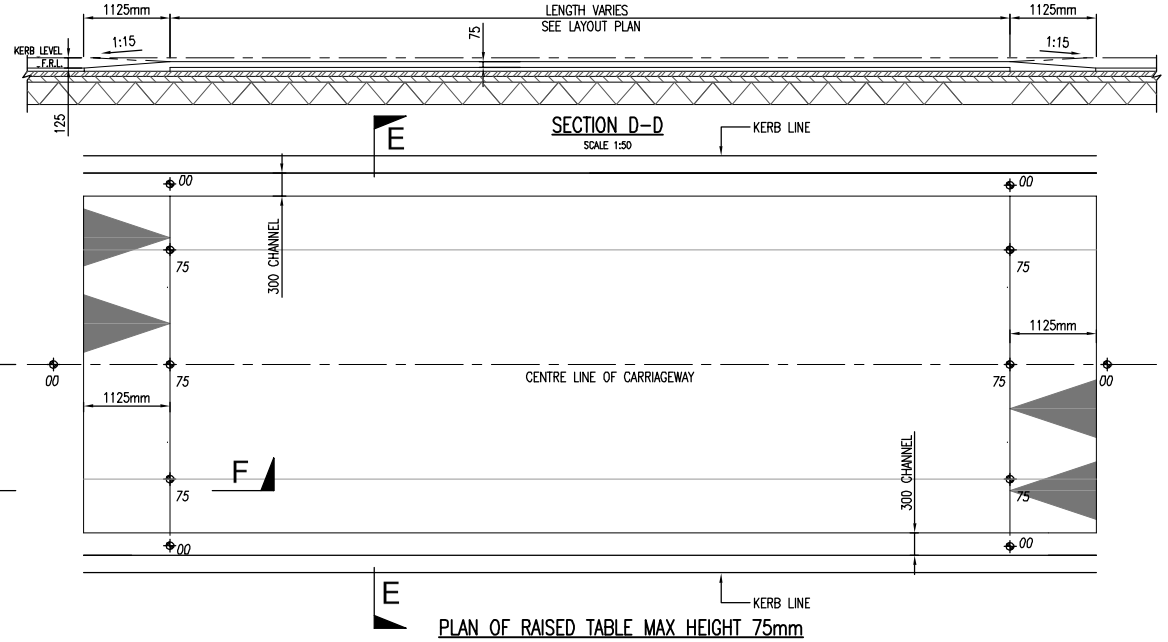
FOOTPATH CONSTRUCTION:
100mm CONCRETE 30N/20 ON
100mm CLAUSE 808 SUBBASE (COMPACTED)
NOTE: TO BE INCREASED TO 150mm CONCRETE ON 125mm CLAUSE 808 AT VEHICLE CROSSOVERS

ROAD CONSTRUCTION:
35mm CLOSED GRADED HRA TO CLAUSE 911, 915, 943 OR PMSMA SURFACE COURSE TO CLAUSE 942 ON
120mm ASPHALT CONCRETE BINDER COURSE TO CLAUSE 906 ON
200mm MIN SUB-BASE – CLAUSE 808 GRANULAR MATERIAL NOTE: THE DEPTH OF THIS SUB-BASE IS DEPENDENT UPON THE CBR OF THE FORMATION. SEE TABLE 1.

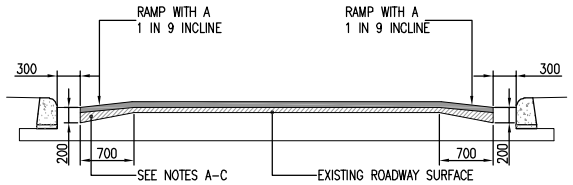
FOOTPATH CONSTRUCTION:
100mm CONCRETE 30N/20 ON
100mm CLAUSE 808 SUBBASE (COMPACTED)
NOTE: TO BE INCREASED TO 150mm CONCRETE ON 125mm CLAUSE 808 AT VEHICLE CROSSOVERS



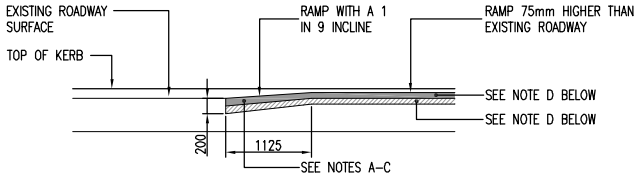
B–B SECTION
SCALE 1:50



PLAN OF RAISED TABLE MAX HEIGHT 75mm
SCALE 1:50



SECTION E-E
SCALE 1:50



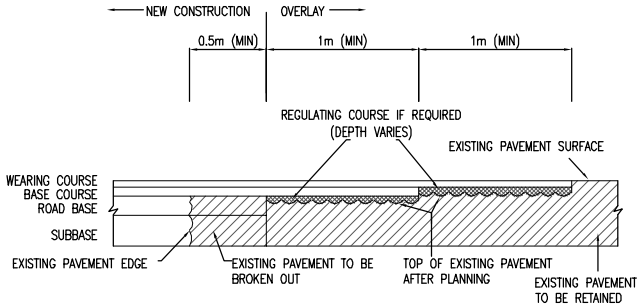
SECTION F-F
SCALE 1:50

NOTE:
A. EXISTING CONCRETE SURFACE TO BE SAW-CUT AS SHOWN ON DRAWING 'SECTION E-E'
B. PLANE TRIANGULAR PROFILE AND PRIME USING BITUMEN
C. DEPTHS OF TIE-IN MAY VARY, SEE WORKS REQUIREMENT FOR FULL DETAILS
D. 35mm OF SMA 10 SURF PMB 65/105.6 ON BOND COAT TO NRA SRW CLAUSE 942
E. 65mm AC20 HEAVY DUTY MACADAM BASECOURSE WITH GRADE 40 PEN BINDER(HDM50) TO NRA SRW CLAUSE 929, ON BOND COAT TO CLAUSE 920

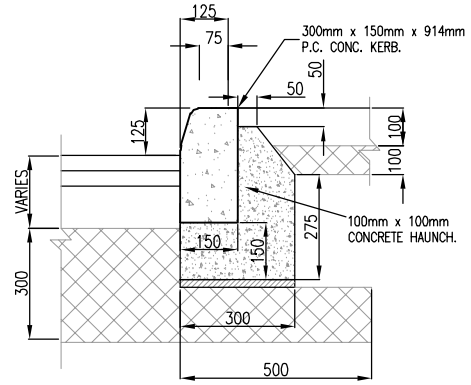
NOTES FOR TRANSVERSE JOINTING:

1. EDGES OF EXISTING CARRIAGEWAY TO BE CUT BACK BY 0.5m WITH A ROTARY SAW TO FORM A VERTICAL FACE AND PRIMED IN ACCORDANCE WITH CLAUSE 920.

2. WHERE THE ROAD BASE IS TO BE LAID IN TWO LAYERS, THE UPPER LAYER OF ROADBASE SHOULD BE STEPPED INTO THE EXISTING PAVEMENT BY 1m MIN. WITH THE BASECOURSE AND WEARING COURSE TO BE EACH STEPPED IN A FURTHER 1m MIN. RESPECTIVELY.



SECTION C-C
TRANSVERSE JOINT BETWEEN NEW CONSTRUCTION AND EXISTING ROAD
SCALE 1:25



TYPICAL PRECAST CONCRETE KERB DETAIL
SCALE 1:10

REV.	DATE	AMENDMENT	DRN	APPD

STATUS **FOR TENDER NOT FOR CONSTRUCTION**

Waterman Moylan
Engineering Consultants
BLOCK S, EASTPOINT BUSINESS PARK, ALFIE BYRNE ROAD, DUBLIN D03 H3F4 IRELAND.
Tel: (01) 664 8900 Fax: (01) 661 3618
Email: info@waterman-moylan.ie www.waterman-moylan.ie

CLIENT **DUBLIN CITY COUNCIL**
ARCHITECT **DUBLIN CITY ARCHITECTS**
PROJECT **O'DEVANEY GARDENS DUBLIN 7**
TITLE **ROAD CONSTRUCTION DETAILS**

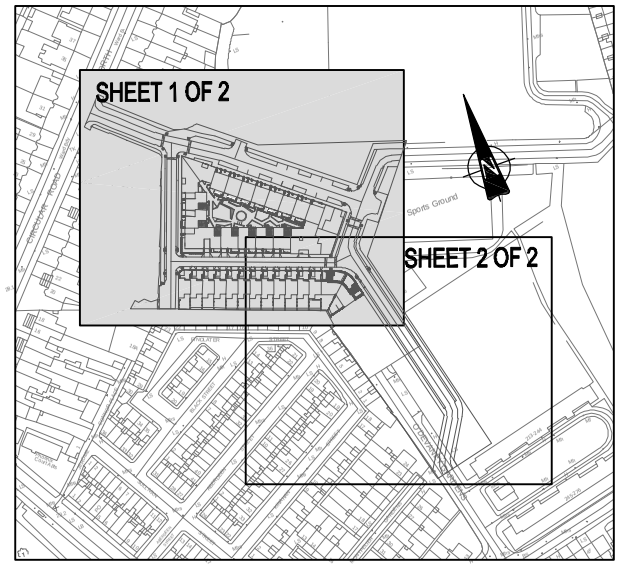
DRAWN	DESIGNED	APPROVED	DATE
PJD	BW	IW	JAN 18'
SCALE AS SHOWN @ A1	JOB NO. 09-195A	DRG. NO. T012	REVISION

NOTES:

1. DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTURAL AND ENGINEERING DRAWINGS.

LEGEND:

CS	EXISTING COMBINED SEWER
CS	EXISTING DRAINAGE TO BE DECOMMISSIONED
XXXmmø @ 1/XXX FX CL X IL X	PROPOSED FOUL WATER SEWER WITH PIPE SIZE, GRADE, MANHOLE REF. AND INVERT LEVEL
XXXmmø @ 1/XXX SX CL X IL X	PROPOSED SURFACE WATER SEWER WITH PIPE SIZE, GRADE, MANHOLE REF. AND INVERT LEVEL
XXXmmø @ 1/XXX CS CL X IL X	PROPOSED COMBINED SEWER WITH PIPE SIZE, GRADE, MANHOLE REF. AND INVERT LEVEL
	PROPOSED FOUL WATER PRIVATE DRAIN AND INSPECTION CHAMBER
	PROPOSED SURFACE WATER PRIVATE DRAIN AND INSPECTION CHAMBER
G	PROPOSED GULLY AND CONNECTION
OG	PROPOSED OVERFLOW GULLY
	ATTENUATION STORAGE
	PROPOSED RAINWATER PIPE AND CONNECTION
	PRIVATE GULLY TO ARCHITECTS DETAILS



KEYPLAN
SCALE 1:2000

PROPOSED DRAINAGE LAYOUT SHEET 1 OF 2
SCALE 1:250

REV.	DATE	AMENDMENT	DRN	APPD

STATUS **FOR TENDER**
NOT FOR CONSTRUCTION

Waterman Moylan
Engineering Consultants
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CLIENT DUBLIN CITY COUNCIL
ARCHITECT DUBLIN CITY ARCHITECTS

PROJECT
O'DEVANEY GARDENS DUBLIN 7

TITLE
PROPOSED DRAINAGE LAYOUT
SHEET 1 OF 2

DRAWN	DESIGNED	APPROVED	DATE
PJD	BW	IW	JAN 18'
SCALE	JOB NO.	DRG. NO.	REVISION
AS SHOWN @A1	09-195A	T020	

NOTES:

1. DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTURAL AND ENGINEERING DRAWINGS.

LEGEND:

CS	EXISTING COMBINED SEWER
CS	EXISTING DRAINAGE TO BE DECOMMISSIONED
XXXmmø @ 1/XXX FX CL X IL X	PROPOSED FOUL WATER SEWER WITH PIPE SIZE, GRADE, MANHOLE REF. AND INVERT LEVEL
XXXmmø @ 1/XXX SX CL X IL X	PROPOSED SURFACE WATER SEWER WITH PIPE SIZE, GRADE, MANHOLE REF. AND INVERT LEVEL
XXXmmø @ 1/XXX CS CL X IL X	PROPOSED COMBINED SEWER WITH PIPE SIZE, GRADE, MANHOLE REF. AND INVERT LEVEL
	PROPOSED FOUL WATER PRIVATE DRAIN AND INSPECTION CHAMBER
	PROPOSED SURFACE WATER PRIVATE DRAIN AND INSPECTION CHAMBER
	PROPOSED GULLY AND CONNECTION
G	PROPOSED OVERFLOW GULLY
OG	ATTENUATION STORAGE
	PROPOSED RAINWATER PIPE AND CONNECTION
	PRIVATE GULLY TO ARCHITECTS DETAILS

ATTENUATION STORAGE TANK
CL 25.500m
IL 22.690m
V 560m3
A 330m2
D 1.7m

HYDROBRAKE S13
2.4 L/S
CL 24.500m
IL 22.577m
SUMP IL22.277

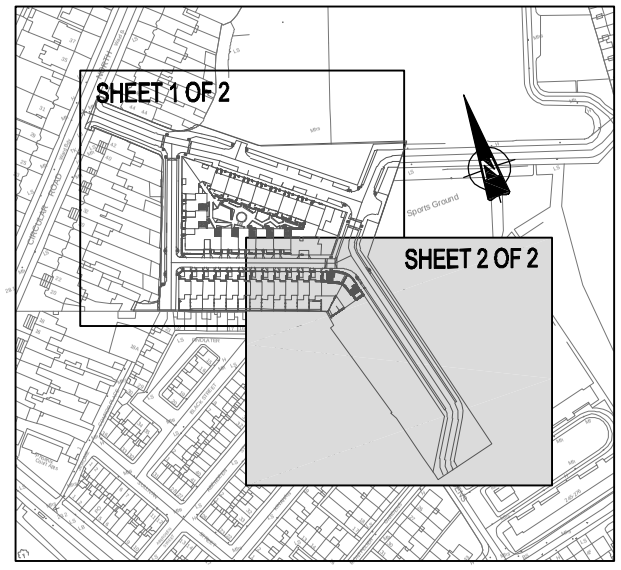
PETROL INTERCEPTOR
NSBP003 BY-PASS TYPE
OR SIMILAR APPROVED

"PROPOSED NEW MANHOLE TO BE BUILT ON EXISTING COMBINED" SEWER

Playground

O'DEVANEY GARDENS

STREET



KEYPLAN
SCALE 1:2000

PROPOSED DRAINAGE LAYOUT SHEET 2 OF 2
SCALE 1:250

REV.	DATE	AMENDMENT	DRN	APPD

STATUS **FOR TENDER NOT FOR CONSTRUCTION**

Waterman Moylan
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CLIENT	DUBLIN CITY COUNCIL
ARCHITECT	DUBLIN CITY ARCHITECTS
PROJECT	O'DEVANEY GARDENS DUBLIN 7
TITLE	PUBLIC DRAINAGE LAYOUT SHEET 2 OF 2

DRAWN	DESIGNED	APPROVED	DATE
PJD	BW	IW	JAN 18'
SCALE	JOB NO.	DRG. NO.	REVISION
AS SHOWN @A1	09-195A	T021	

NOTES:

1. DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTURAL AND ENGINEERING DRAWINGS.
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4. LAYOUT INFORMATION SUPPLIED BY DUBLIN CITY COUNCIL ARCHITECTS DEPARTMENT

ORDNANCE SURVEY

EXTRACT FROM ORDNANCE SURVEY
SHEET No's 3263-03 & 3197-22

LEGEND

FFL	INDICATES FINISH FLOOR LEVEL
24.02	INDICATES PROPOSED ROAD LEVEL
1:60	INDICATES PROPOSED ROAD GRADIENT
	DENOTES LANDS WITHIN THE OWNERSHIP OF THE APPLICANT
	DENOTES EXTENT OF PLANNING APPLICATION BOUNDARY

REV.	DATE	AMENDMENT	DRN	APPD

CAD REF. M:\PROJECTS\09-195\CAD\CIVIL\PLANNING

STATUS **FOR PLANNING ONLY NOT FOR CONSTRUCTION**

Moylan
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t 01 6648900 f 01 6613618 e info@moylan.ie, web www.moylan.ie

CLIENT DUBLIN CITY COUNCIL

ARCHITECT DCC ARCHITECTS DEPARTMENT

PROJECT O'DEVANEY GARDENS

TITLE PROPOSED SITE LEVELS & LAYOUT

DRAWN	DESIGNED	APPROVED	DATE
G.Byrne	IW	MH	Nov. '10
SCALE	JOB NO.	DRG. NO.	REVISION
1:500@A1	09-195	P102	-

NOTES:

1. DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTURAL AND ENGINEERING DRAWINGS.
3. SURVEY INFORMATION SUPPLIED BY LAND SURVEYS LTD., 22 MELLIFONT AVENUE, DUN LAOGHAIRE, CO. DUBLIN.
4. LAYOUT INFORMATION SUPPLIED BY DUBLIN CITY COUNCIL ARCHITECTS DEPARTMENT

LEGEND

- INDICATES EXISTING COMBINED SEWER AND MANHOLE
- INDICATES EXISTING SURFACE WATER SEWER AND MANHOLE
- INDICATES EXISTING COMBINED SEWER TO BE REMOVED
- SMH10 CL: 27.300 IL: 25.867 — INDICATES PROPOSED SURFACE WATER SEWER AND MANHOLE
- MHF19 CL: 27.350 IL: 25.900 F7.000 225mm Ø @ 1:44.9 — INDICATES PROPOSED FOUL WATER SEWER AND MANHOLE
- SMH10 CL: 27.300 IL: 25.867 S5.001 225mm Ø @ 1:40.0 — INDICATES PROPOSED SURFACE WATER SEWER AND MANHOLE OTHER PHASES
- MHF19 CL: 27.350 IL: 25.900 F7.000 225mm Ø @ 1:44.9 — INDICATES PROPOSED FOUL WATER SEWER AND MANHOLE OTHER PHASES
- 150ø 1/150 — INDICATES PROPOSED SURFACE WATER FILTER DRAIN AND MANHOLE. PLEASE SEE DETAIL
- 150ø 1/150 — INDICATES PROPOSED FOUL WATER FILTER DRAIN AND MANHOLE. PLEASE SEE DETAIL
- INDICATES PROPOSED SURFACE WATER DRAIN OUTFALL MANHOLE
- INDICATES PROPOSED FOUL WATER DRAIN OUTFALL MANHOLE
- INDICATES PROPOSED SURFACE WATER ATTENUATION LAND DRAIN
- INDICATES PROPOSED PERMEABLE PAVED SURFACE
- DENOTES LANDS WITHIN THE OWNERSHIP OF THE APPLICANT
- DENOTES EXTENT OF PLANNING APPLICATION BOUNDARY

REV.	DATE	AMENDMENT	DRN	APPD

CAD REF. M:\PROJECTS\09-195\CAD\CIVIL\PLANNING

STATUS **FOR PLANNING ONLY NOT FOR CONSTRUCTION**

Waterman
mail@waterman-group.co.uk www.watermangroup.com

CLIENT DUBLIN CITY COUNCIL

ARCHITECT DCC ARCHITECTS DEPARTMENT

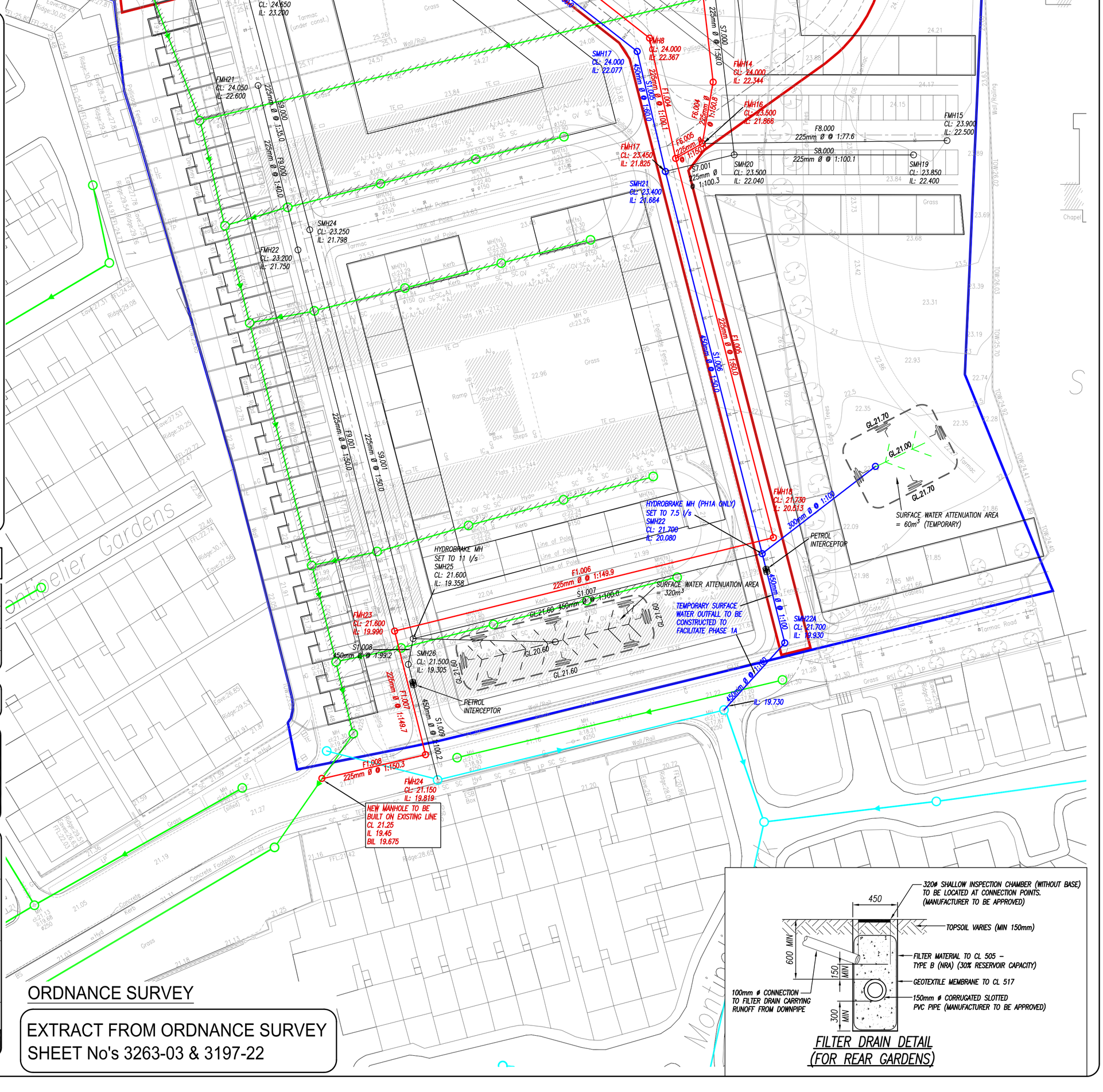
PROJECT O'DEVANEY GARDENS

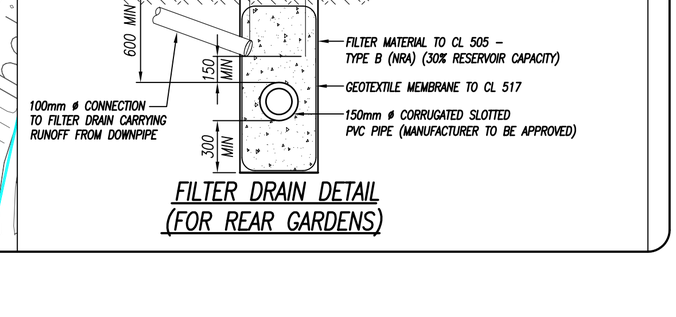
TITLE PROPOSED DRAINAGE LAYOUT SHEET 1 OF 2

DRAWN	DESIGNED	APPROVED	DATE
G.Byrne	IW	MH	Nov. '10
SCALE	JOB NO.	DRG. NO.	REVISION
1:500@A1	09-195	P104	-

ORDNANCE SURVEY

EXTRACT FROM ORDNANCE SURVEY SHEET No's 3263-03 & 3197-22





FILTER DRAIN DETAIL (FOR REAR GARDENS)

NOTES:

1. DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.
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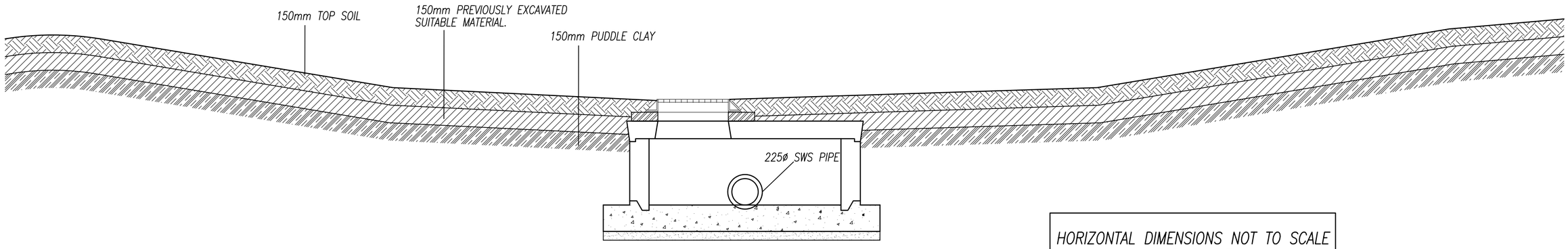
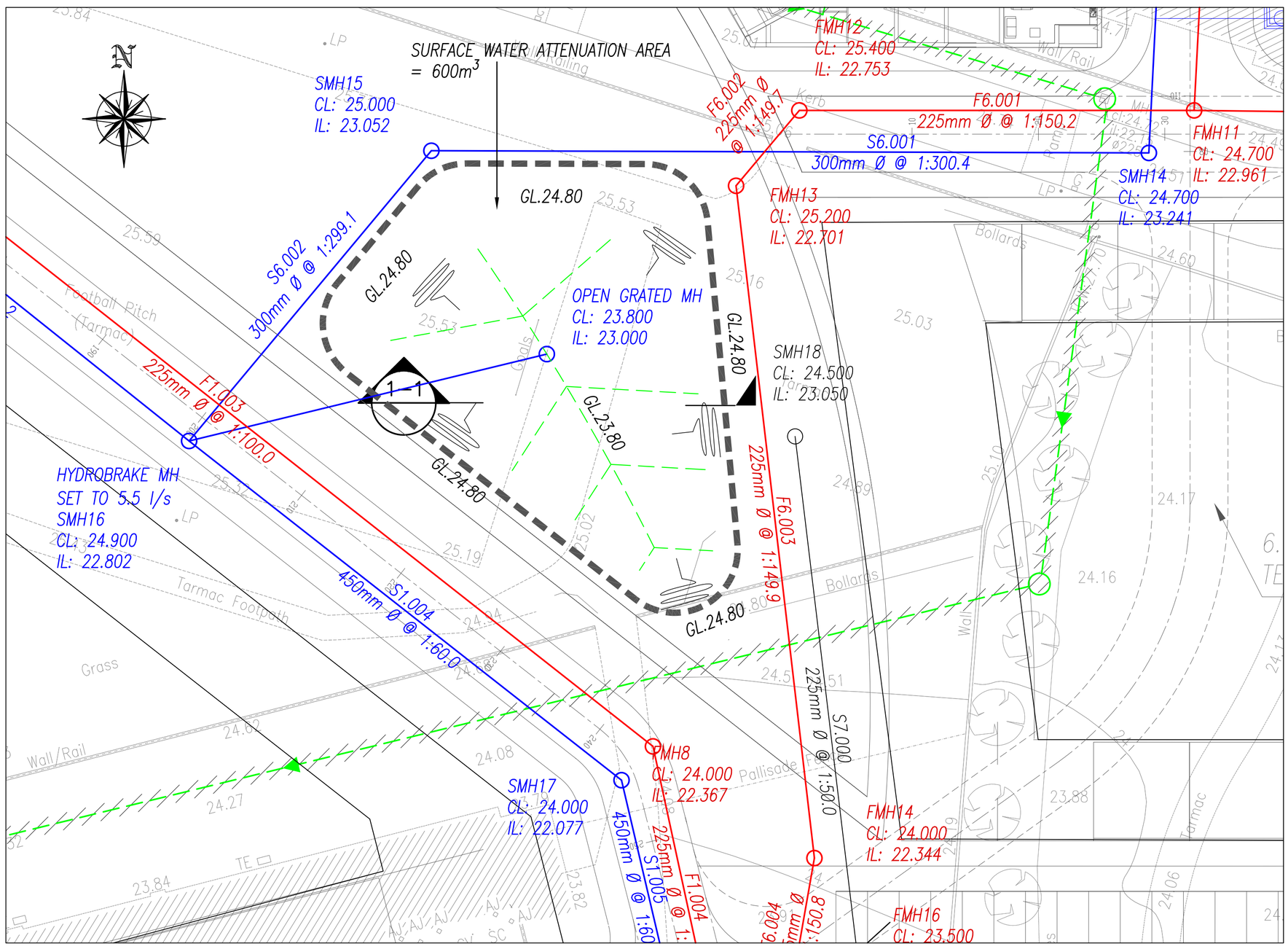
3. SURVEY INFORMATION SUPPLIED BY LAND SURVEYS LTD., 22 MELLIFONT AVENUE, DUN LAOGHAIRE, CO. DUBLIN.
4. LAYOUT INFORMATION SUPPLIED BY DUBLIN CITY COUNCIL ARCHITECTS DEPARTMENT



HORIZONTAL DIMENSIONS NOT TO SCALE FOR CLARITY

SECTION 1-1

SCALE 1:50



PLAN VIEW

SCALE 1:50

ORDNANCE SURVEY

EXTRACT FROM ORDNANCE SURVEY SHEET No's 3263-03 & 3197-22

LEGEND

- INDICATES EXISTING COMBINED SEWER AND MANHOLE
- INDICATES EXISTING SURFACE WATER SEWER AND MANHOLE
- INDICATES EXISTING COMBINED SEWER TO BE REMOVED
- SMH10 CL: 27.300 IL: 25.867 — S5.001 225mm Ø @ 1:40.0 — MHF19 CL: 27.350 IL: 25.900 — F7.000 225mm Ø @ 1:44.9 — INDICATES PROPOSED SURFACE WATER SEWER AND MANHOLE
- SMH10 CL: 27.300 IL: 25.867 — S5.001 225mm Ø @ 1:40.0 — MHF19 CL: 27.350 IL: 25.900 — F7.000 225mm Ø @ 1:44.9 — INDICATES PROPOSED FOUL WATER SEWER AND MANHOLE
- SMH10 CL: 27.300 IL: 25.867 — S5.001 225mm Ø @ 1:40.0 — MHF19 CL: 27.350 IL: 25.900 — F7.000 225mm Ø @ 1:44.9 — INDICATES PROPOSED SURFACE WATER SEWER AND MANHOLE OTHER PHASES
- INDICATES PROPOSED FOUL WATER SEWER AND MANHOLE OTHER PHASES
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- INDICATES PROPOSED SURFACE WATER DRAIN OUTFALL MANHOLE
- INDICATES PROPOSED FOUL WATER DRAIN OUTFALL MANHOLE
- INDICATES PROPOSED SURFACE WATER ATTENUATION LAND DRAIN
- INDICATES PROPOSED PERMEABLE PAVED SURFACE

REV.	DATE	AMENDMENT	DRN	APPD

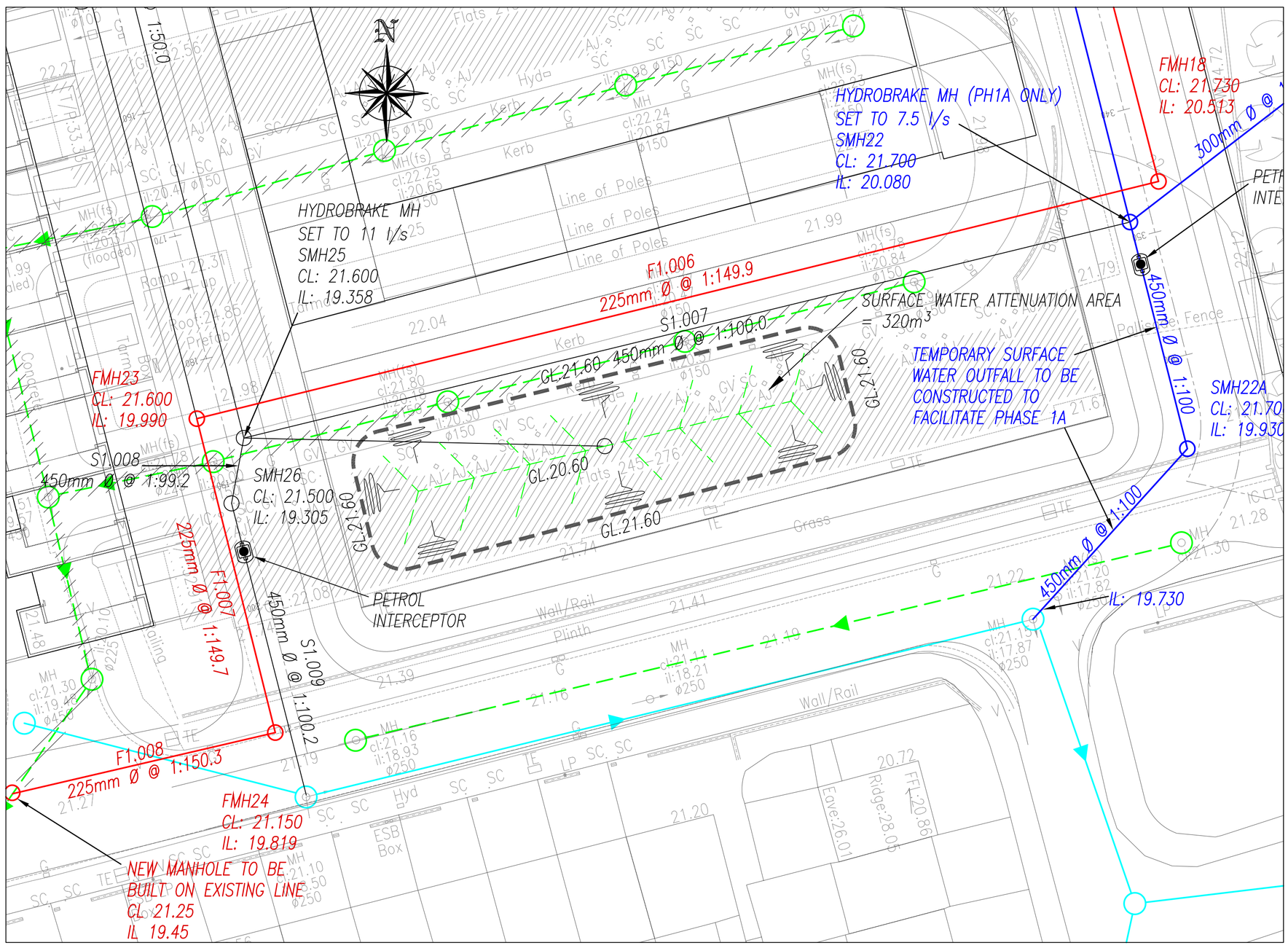
CAD REF. M:\PROJECTS\09-195\CAD\CIVIL\PLANNING

STATUS **FOR PLANNING ONLY NOT FOR CONSTRUCTION**

Waterman
mail@waterman-group.co.uk www.watermangroup.com

CLIENT	DUBLIN CITY COUNCIL
ARCHITECT	DCC ARCHITECTS DEPARTMENT
PROJECT	O'DEVANEY GARDENS
TITLE	PROPOSED DRAINAGE ATTENUATION LAYOUT AND DETAILS

DRAWN	DESIGNED	APPROVED	DATE
G.Byrne	IW	MH	Nov. '10
SCALE	JOB NO.	DRG. NO.	REVISION
1:250@A1	09-195	P105	-



PLAN VIEW

SCALE 1:50

NOTES:

1. DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.
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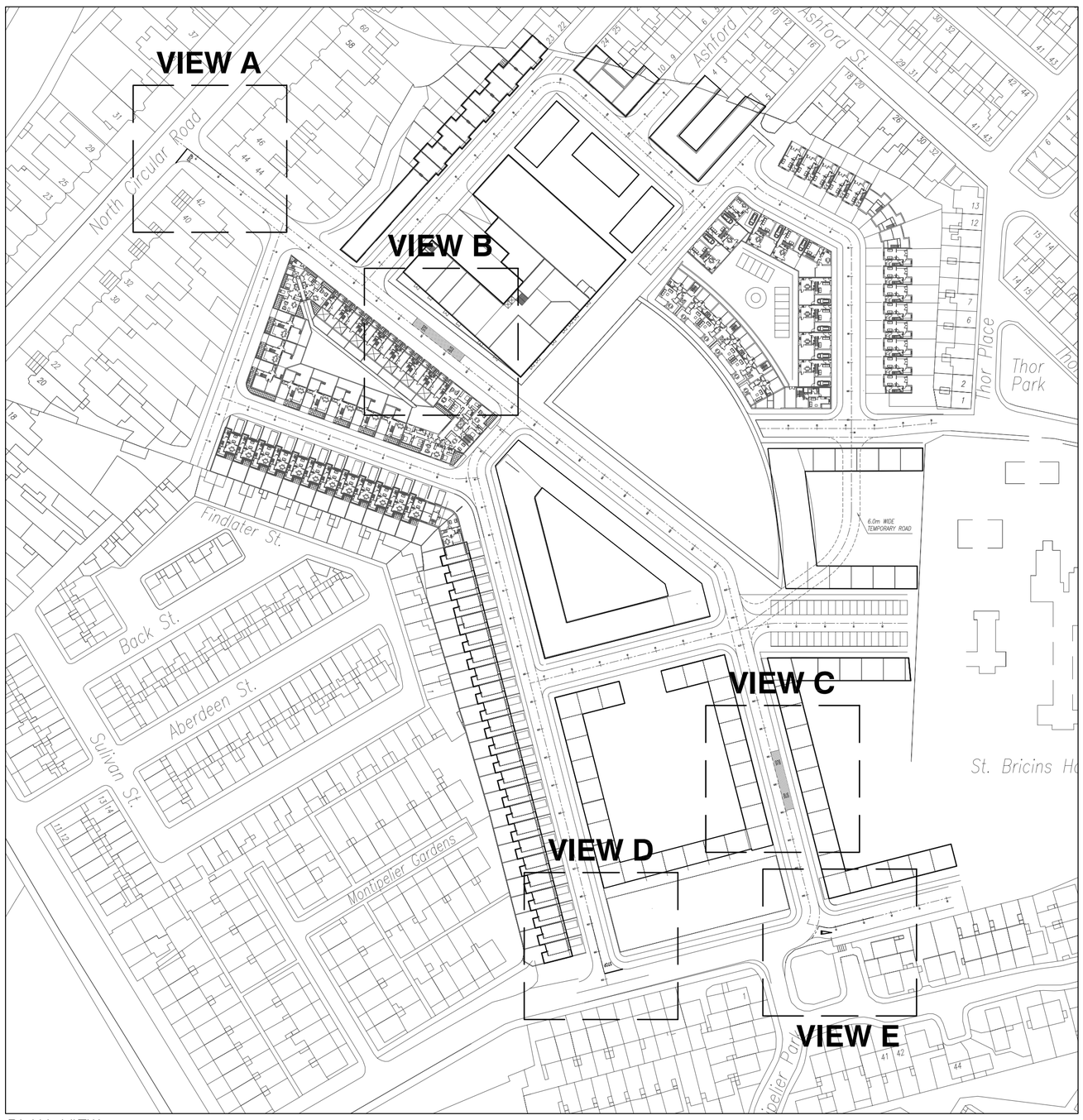
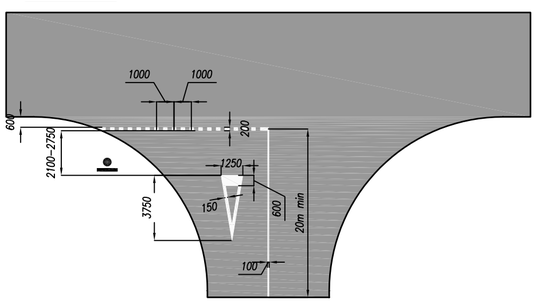
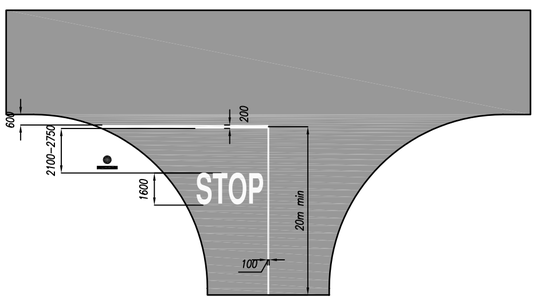
3. SURVEY INFORMATION SUPPLIED BY LAND SURVEYS LTD., 22 MELLIFONT AVENUE, DUN LAOGHAIRE, CO. DUBLIN.
4. LAYOUT INFORMATION SUPPLIED BY DUBLIN CITY COUNCIL ARCHITECTS DEPARTMENT



PLAN VIEW
SCALE 1:1250



TYPICAL MARKINGS FOR USE WITH YIELD SIGN
N.T.S



TYPICAL MARKINGS FOR USE WITH STOP SIGN
N.T.S

ORDNANCE SURVEY

EXTRACT FROM ORDNANCE SURVEY
SHEET No's 3263-03 & 3197-22

REV.	DATE	AMENDMENT	DRN	APPD

CAD REF. M:\PROJECTS\09-195\CAD\CIVIL\PLANNING

STATUS **FOR PLANNING ONLY NOT FOR CONSTRUCTION**

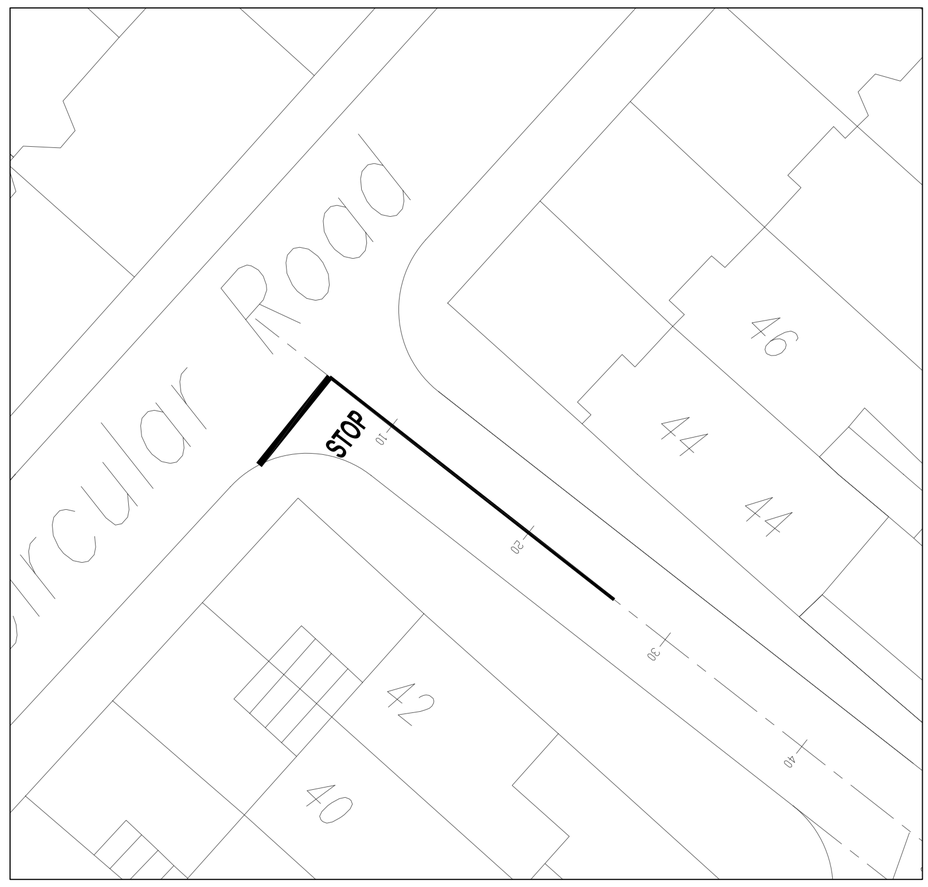
Waterman
mail@waterman-group.co.uk www.watermangroup.com

CLIENT	DUBLIN CITY COUNCIL
ARCHITECT	DCC ARCHITECTS DEPARTMENT
PROJECT	O'DEVANEY GARDENS
TITLE	PROPOSED ROAD MARKINGS

DRAWN	DESIGNED	APPROVED	DATE
G.Byrne	IW	MH	Nov. '10
SCALE	JOB NO.	DRG. NO.	REVISION
AS SHOWN @A1	09-195	P108	-

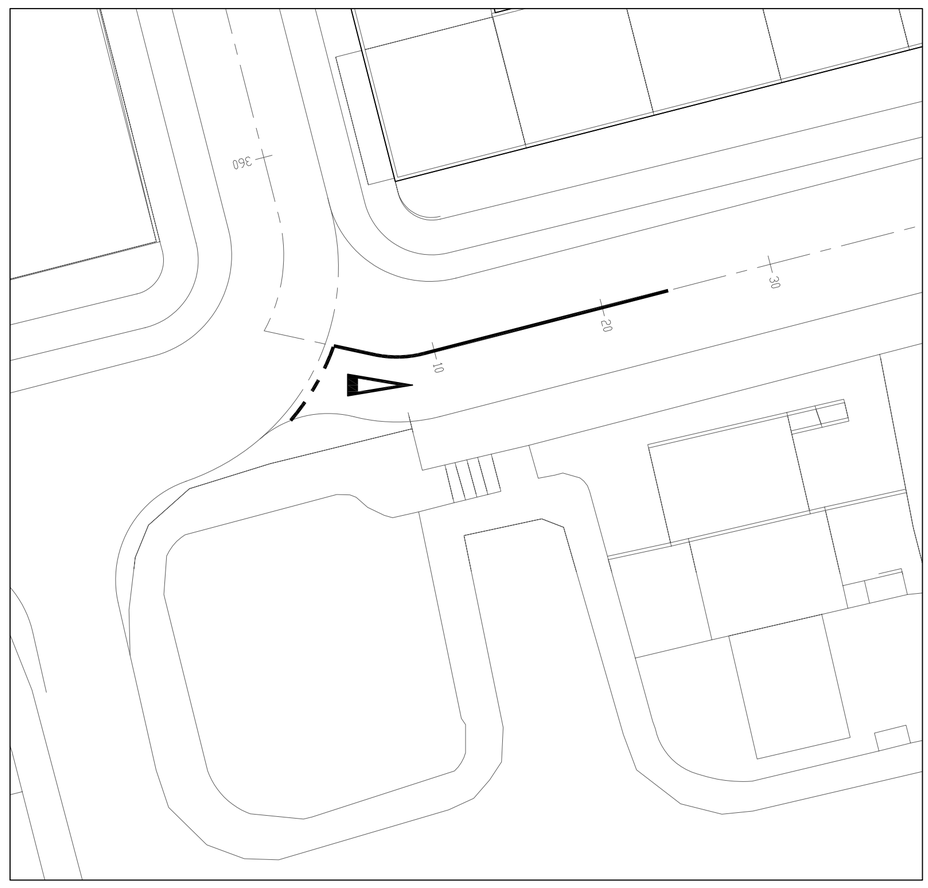
PLAN VIEW C
SCALE 1:250

PLAN VIEW D
SCALE 1:250

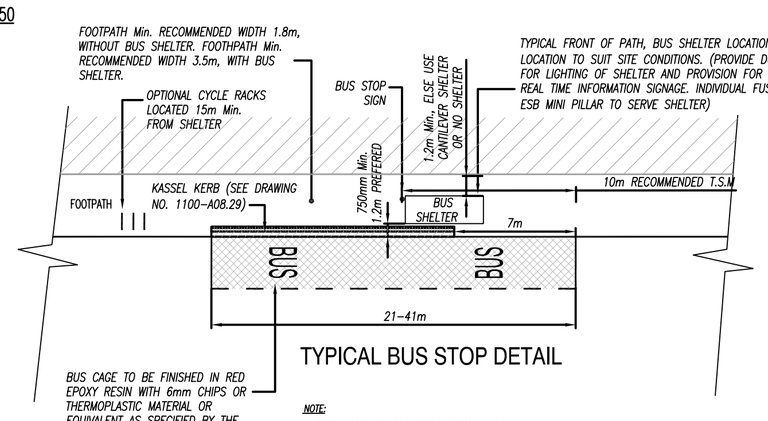


PLAN VIEW A
SCALE 1:250

PLAN VIEW B
SCALE 1:250



PLAN VIEW E
SCALE 1:250



TYPICAL BUS STOP DETAIL

NOTE:

1. (TSM) – TRAFFIC SIGNS MANUAL (DOE) – 2003 (PCF) – PROVISION OF CYCLE FACILITIES (DOE)
2. ALL ROADSIDE FURNITURE AND PROPOSED SIGNAL HARDWARE TO HAVE A MINIMUM CLEARANCE OF 0.5m FROM ROADSIDE AND OR CYCLE TRACK EDGE OF FURNITURE TO FACE OF KERB.
3. ALL SIGNS INSTALLED TO HAVE A MINIMUM HEADROOM CLEARANCE OF 2.5m AS INDICATED IN FIGURE 3.1 (PCF).
4. ALL ROAD MARKING TO BE IN ACCORDANCE WITH TSM.
5. ALL ROAD MARKING TO BE WHITE UNLESS SPECIFIED OTHERWISE.
6. EXACT SETTING OUT TO BE AGREED WITH THE SCHEME ENGINEER ON SITE.
7. HIGH VOLUME BUS STOPS MAY DICTATE THE EXTENSION OF THE KASSEL KERB OVER THE FULL LENGTH OF THE BUS CAGE.

UK and Ireland Office Locations