

Quality Assurance (QA) Design Requirements Manual

Connections and Developer Services

(A Guide for Self-Lay Developers)

August 2020 (Revision 3)
Document IW-CDS-5010-01



Part of **ervia** group

This QA Manual outlines the approach that the Connections and Developer Services Design Teams will apply during the vetting of design documentation submitted by Developers to Irish Water following the issuing of a Confirmation of Feasibility and in advance of the submission of a Connection Application. It also covers the Pre-Connection Enquiry (PCE) process which allows early engagement between the Developer and Irish Water. The PCE process results in Irish Water issuing of a Confirmation of Feasibility indicating if capacity is available in Irish Water's Networks to provide water services for the development. A Confirmation of Feasibility is now a mandatory requirement for developments that are being progressed under Planning and Development (Strategic Housing) Regulations 2017 (Statutory Instrument 271 of 2017).

Developers' detailed designs are to be developed in accordance with the Codes of Practice (COPs) and Standard Details (STDs) for Water and Wastewater Infrastructure. These outline acceptable typical design and construction guidance that is required by Irish Water for the provision of water supply pipes and wastewater collection pipes and their related infrastructure which are to be connected to the Irish Water's Water and Wastewater Networks. The design vetting is to confirm that this requirement is being fulfilled.

The COPs and STDs shall be viewed in conjunction with the associated Design Risk Assessments that have been developed for each set of COPs and STDs. These identify the risks that designers shall take into account in the detailed design of the water supply pipes and wastewater collection pipes and their related infrastructure that are to be connected to the Irish Water Networks.

Ultimate responsibility (including, but not limited to any losses, costs, demands, damages, actions, expenses, negligence and claims) for the detailed design, construction and provision of such pipes and related infrastructure shall rest entirely with the Developer, his/her Designer(s), Contractor(s), or other related party. Irish Water assumes no responsibility for and gives no guarantees, undertakings or warranties in relation to the water supply and wastewater collection pipes and related infrastructure to be provided in accordance with this document or the Codes of Practice and Standard Details.

Irish Water does not have responsibility for surface or storm water drainage systems. These surface/storm water drainage systems are the responsibility of the Local Authority. It is Irish Water's policy not to accept storm or surface water runoff into its wastewater collection systems.

Revision Log

Date	Revision	Details of Revision
June 2017	0	Initial Issue
September 2017	1	Amended to take account of Strategic Housing Development Legislation (S.I. 271 of 2017)
January 2018	2	Minor Amendments
August 2020	3	General Amendment

Contents

Foreword	5
1 Glossary of Terms	5
2 Introduction	8
3 Irish Water Contacts	12
4 Pre-Connection Enquiry (PCE) Phase	13
5 Design Submission	14
6 Irish Water’s Review of the Design Submission	16
7 Strategic Housing Development Planning Application Submission	17
8 Connection Application and Connection Offer	18
Appendix 1: Water Design Submission Checklist	19
Appendix 2: Wastewater Design Submission Checklist	22

Guide to connect

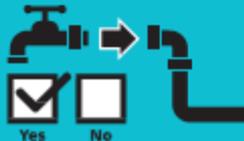
For developers

1



You submit a pre-connection enquiry form to us.

2



We will assess if the connection is technically feasible and issue a Confirmation of Feasibility.

3



You design in accordance with standard details and codes of practice and submit the design to us for review.

4

Objection



We will review the development design and issue a statement of Design Acceptance if the design is technically acceptable.

5



After planning is received, submit a Connection Application to us.

6



Connection Agreement is offered, including details of agreed Quality Assurance (QA).

7



You accept the connection offer, pay fees and deposit to us.

8



Meet with our Field Engineer. Commence to lay on-site water service infrastructure as agreed.

9



We carry out QA on site. We facilitate connection with our network, initiating the Defects Liability Period. Certificate of Conformance is issued.

10



You contact us to fit a meter at properties.

11



We fit meters as required. Defects Liability Period ends 12 months after the last meter is fitted.

12



Facilitate final QA by us and undertake remedial work, if required.

13



We complete final QA and we will refund you the Self Lay Deposit.

This QA Design Requirements Manual relates to Step 1 to Step 4 of the Guide.

Foreword

The QA manual, which relates to design submission Quality Assurance requirements for the provision of water supply and wastewater infrastructure, is based on the requirements set out in the Codes of Practice for Water and Wastewater Infrastructure on Development Sites. (IW-CDS 5020 03 and IW-CDS-5030-03)

1. Glossary of Terms

In this Guidance document, and in the overall End to End process, the following words and expressions shall have the following meanings.

Completion Certificate	means a certificate issued by Irish Water to the Developer at the end of the Defects Liability Period;
Conformance Certificate	means a certificate issued by Irish Water to the Customer/Developer following completion of construction, inspection and commissioning of the Works and the provision of the Final Documentation pursuant to the Standard Details and Codes of Practice;
Conformation of Feasibility	means a response issued by Irish Water on foot of a Pre-Connection Enquiry submission from a Developer indicating if Irish Water can provide a water and/or wastewater services connection for the development at that time;
Connection Agreement	means the written agreement, in this instance a Self-Lay Connection Agreement, entered into between the Customer and Irish Water setting out the commercial and technical terms governing the provision of a Connection;
Design Submission	means a submission to Irish Water from the Developer setting out the design proposals for the water supply and/or wastewater collection infrastructure on the site. Before an application for a new Connection or an additional Connection can be considered, appropriate information is required from the Applicant to allow Irish Water or its agents to assess the Developer's Works proposal. For developments, this should be provided in a Design Submission in advance of a Connection Application. Irish Water will engage with the Developer to vet the design of the Works ahead of the Developer finalising a planning application for housing and mixed use developments to ensure compliance with the Codes of Practice and Standard Details;

Design Engineer	means Irish Water’s representative responsible for assessing and/or inspecting the Design Submission and who is the Developer’s point of contact in Irish Water during the Design Stage;
Developer (also known as Customer)	means an Irish Water Customer who intends to provide Works for housing, mixed use and commercial developments and who intends to or has applied to enter into a Connection Agreement or has entered into a Connection Agreement;
Defects Report	means a list of correction works that is issued with the Conformance Certificate that Irish Water’s Field Engineers have identified and which require remediation by the Customer;
Defects Liability Period	means a minimum period 12 months or such other period as may be specified by Irish Water from time to time, between the issue of the Conformance Certificate and the issue of the Completion Certificate during which the Developer/Customer is responsible under the Connection Agreement for the cost of rectification of any defects in or connected to the Works;
Final Documents	means the suite of documents as set out at Section 1.8 of the Code of Practice for Wastewater and Section 1.7 of the Code of Practice for Water;
Pre-Connection Enquiry (PCE)	means a process whereby Developers can seek confirmation from Irish Water if a connection to its Networks to provide water services for the development is feasible at the time of the enquiry and by which Developers and their designers are made aware of the impact of their proposed development on Irish Water’s water and wastewater Networks, such confirmation to be provided by way of a Confirmation of Feasibility;
QA Folder	means a document that is developed and retained by the Developer to include information about on-site quality assurance records of the water services infrastructure installation which will be updated as required and made available to the Irish Water Field Engineers or Irish Water’s agents for inspection and which can be used to facilitate the collation of the Final Documents;
Statement of Design Acceptance	means a document that is issued by Irish Water following its examination and vetting of the Developer’s Design Submission indicating that Irish Water has no objection to the Developer’s design proposals for the water supply and wastewater collection infrastructure of the development;

Strategic Housing Development Legislation

means the Planning and Development (Strategic Housing) Regulations 2017 (Statutory Instrument 271 of 2017) which came into force on 3rd July 2017 under the Planning and Development (Housing) Residential Tenancies Act 2016. These Regulations outline a fast track planning procedure, operated by An Bord Pleanála, for developments proposed within zoned land comprising 100 or more houses or 200 bed spaces for student accommodation, both of which may include a mixture of other uses. (See **Figure 1** below for process flow chart)

Vesting

means the process for vesting of the infrastructure into the sole ownership of Irish Water pursuant to the Connection Agreement;

Works

means the provision by the Developer/Customer of water supply and wastewater pipes and related infrastructure which are to be connected to Irish Water’s Network(s).

Figure 1 below shows in brief the procedure for the Planning and Development (Strategic Housing Development) Regulations 2017.

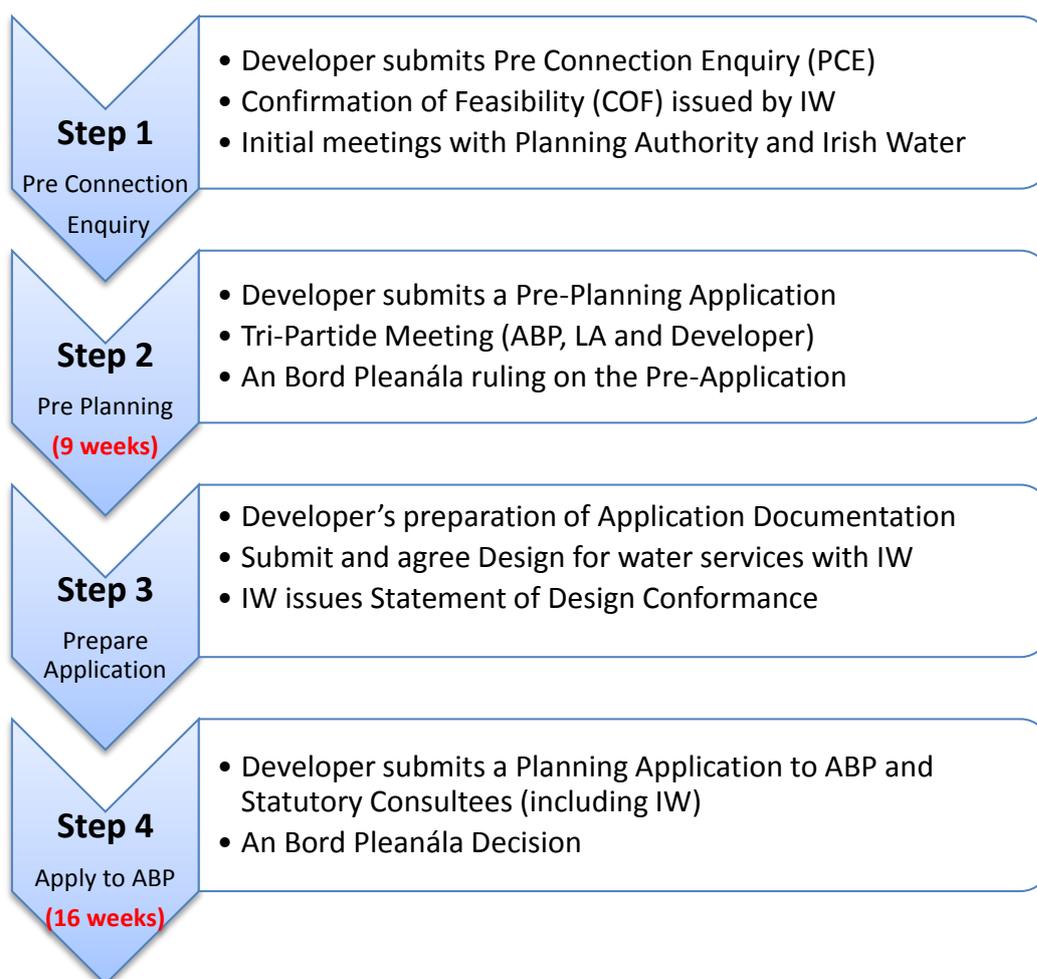


Fig 1: Strategic Housing Development Process

2. Introduction

2.1 Scope

This QA Manual outlines the **Design Submission Requirements** of the Codes of Practice for Water and Wastewater Infrastructure, to be submitted to Irish Water prior to the submission of an application for a Connection Agreement. This QA Manual relates to all developments where a Self-Lay approach is intended for the installation of the water supply and wastewater collection pipework within a development. It also outlines requirements for developments that are covered by the Planning and Development (Strategic Housing) Regulations 2017, where early engagement with Irish Water is mandatory.

This QA Manual forms part of a suite of documents made available to Developers to outline the Irish Water's Quality Assurance requirements for Design Submissions. **Figure 2** below shows the document hierarchy of Irish Water's Connections and Developer Services (CDS) QA.

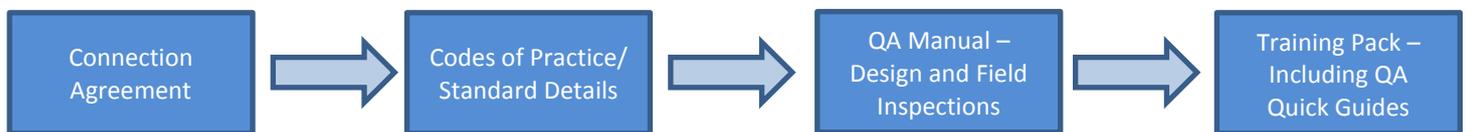
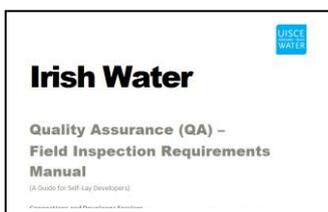


Fig 2: Document Hierarchy

The Quality Assurance approach that Irish Water's Connection and Developer Services will utilise for Developer Self-Lay installations is outlined in two documents which cover the following stages:



Pre-Connection Enquiry; (*mandatory* under the Strategic Housing Development Legislation, Statutory Instrument 271 of 2017 and recommended for all other developments)
Design Submission; (required for all developments)
Connection Application; (required for all developments)
Connection Offer; (followed by acceptance and payment)



Construction Stage; (including Irish Water inspections)
Commissioning Stage; (including infrastructure)
Connection of infrastructure to Network(s) (on issue of a Conformance Certificate)
Vesting; (on connection to Network(s))
Defects Liability Stage; (as per the Connection Agreement)
Completion (on issue of a Completion Certificate)

This is the overall staged process by which the Developer can obtain a connection and by which vesting of the Water and Wastewater Services Infrastructure installed as part of the development is achieved. The QA requirements for the Construction through to

Completion Stages are outlined in greater detail in [Quality Assurance \(QA\) Field Inspections Requirements Manual](#). Specific information is required with the Connection Application as outlined in the Codes of Practice. A Connection Agreement is required in all cases before Irish Water advances the provision of a connection to its Water and /or Wastewater Networks. This document outlines the acceptable typical minimum Design Submission documentation to be submitted to Irish Water Connections and Developer Services in advance of obtaining a Connection Offer.

2.2 Codes of Practice and Standard Details

The Code of Practice for Water Infrastructure and the Code of Practice for Wastewater Infrastructure outline Irish Water's **technical requirements** for the design, construction and commissioning of water supply and wastewater collection infrastructure for housing and mixed use developments, which will be subsequently vested by Irish Water. Connection and Developer Services also has two suites of Standard Details, one for water infrastructure and one for wastewater infrastructure which also indicate the construction requirements for new infrastructure. The Codes of Practice and Standard Details are available on the Irish Water website www.water.ie/connections/

2.3 Roles and Responsibilities

The **Developer** is the proposer of the works and is responsible for:

- Obtaining all necessary Requisite Consents and other permissions for the proposed Development including the Works.
- Signing and returning to Irish Water the Connection Agreement along with all required fees, charges and surety's as required.
- Providing the Works in accordance with the Connection Agreement, Codes of Practice/ Standard Details and Irish Water QA requirements.
- Appointing a Developer's Design Engineer, a Developer's Construction Engineer and a Contractor to carry out the Works in accordance with the Codes of Practice, the Standards Details and the Connection Agreement.
- Complying with the Safety, Health and Welfare at Work Act (2005) and associated Safety Health and Welfare at Work (Construction) Regulations.
- Seeking approval from Irish Water for any revisions or alterations to design or Works as set out in the agreed connection offer.
- Submitting to Irish Water the Commencement Notice, appended to the Connection Agreement as well as informing Irish Water prior to the commencement of the Works, of the details of all the parties engaged to deliver the Works.
- Ensuring that a 'Pre-Construction Meeting' with Irish Water's Field Engineer prior to commencing the Works is arranged by contacting the Irish Water Call Centre on 1850 238238.
- Provide to Irish Water, all easements, wayleaves, rights of way and land acquisitions as per the requirements of the Connection Agreement.
- Issuing and signing off on the Final Documents and requesting the provision of a Conformance Certificate.
- Respond to all IW correspondences in a timely manner
- If required, apply to Irish Water for a Temporary water and/or wastewater Connection(s) in a timely manner.

- If applicable, ensure that all Arterial Routes (as outlined in the Connection Agreement) that relate to third party infrastructure which the proposed Works will connect to, is vested to Irish Water and is fit for purpose and that any required easements are provided in favour of Irish Water by whoever has legal title to the relevant land/infrastructure. Irish Water may require additional investigations on such Arterial Routes and request may remedial works be carried out to the Arterial Route to upgrade it to accommodate the Works. Such work will be undertaken by the Developer at the expense of the Developer.

The **Developer's Design Engineer** is responsible for:

- Designing the Works required to service the development in accordance with Irish Water's Codes of Practice and Standard Details.
- Certifying that the design complies with the Codes of Practice and Standard Details.
- Accepting liability for compliance through their professional indemnity insurance, this shall be kept in place for a period of 6 years after the completion of the Works.
- Accepting responsibility for the design and ensuring that all aspects of the design meet current Building Regulations, Planning Permission, and any relevant Standards and legal requirements.
- Developing a risk assessment to ensure that risks to both the local community and operators of the water supply or wastewater collection and associated treatment system are minimised.
- Forwarding to Irish Water's Design Engineer for approval of any proposed revisions to the agreed vetted design
- Assisting in development of the Final Documents
- Responding to all IW correspondences in a timely manner

The **Developer's Construction Engineer** is responsible for:

- Managing and arranging the construction of the Works in accordance with the requirements of the Connection Agreement, relevant Codes of Practice, Standard Details and Connection Agreement.
- Prior to starting the Works and following submission of the Commence Notice to Irish Water, arranging and attending a "Pre-Construction Meeting" with the IW Field Engineer.
- Preparing and submitting for review to the IW Field Engineer an Inspection and Testing Plan for the Works, in accordance with the requirements of the relevant Codes of Practice.
- Requesting the IW Field Engineer's attendance on site to witness **all** mandatory testing and commission of the Works.
- Ensuring that the Works are acceptable to Irish Water.
- Maintaining quality assurance documentation and as built records on site (in the form of the **QA Folder**).
- Facilitating site inspections by the Irish Water Field Engineers.
- Ensuring as-constructed information is accurately recorded.
- Assisting in the development of the Final Documents.
- Submitting the Final Documents to the Field Engineer along with a request for provision of the Conformance Certificate.

- Responding to all IW correspondences and any Non-Conformance Notices issued in a timely manner .

The Irish Water **Field Engineer** is the Developer’s point of contact at construction and is responsible for:

- Attending the “Pre-Construction Meeting” with the Developer’s Design and Construction Engineers prior to commencement of the Works,
- Reviewing the Developers Inspection and Tests Plan
- Inspecting the Works during construction, such inspections can be both scheduled and unscheduled,
- Reviewing the quality assurance records held on site. (A QA Folder is provided by IW to the Developers Construction Engineer at the “Pre-Construction Meeting”).
- Witnessing both the testing and commissioning of the Works
- Reviewing the **Final Documents** and making recommendations for the issue of the Conformance Certificate.
- Carrying out a Site Walk-Off Inspection prior to issuing a **Conformance Certificate**.
- Issuing the **Defects Report**, if required.
- Undertaking inspections during the **Defects Liability Period**.
- Carrying out a Final Inspection and making recommendations in respect of issuing a **Completion Certificate** and release of the **Self-Lay Surety**
- Assessing any revisions or alterations proposed by the Developer and escalating these, where relevant, to the Irish Water Design Engineer.
- Liaising with the Developer and with Irish Water Asset Delivery in respect of the delivery of the physical connection to the Irish Water Network(s) by the Regional Contractor or agents of Irish Water.

The **Connection and Developer Services** (CDS) team is Irish Water’s Department which is responsible for:

- Assessing Pre-Connection Enquiries, vetting of Design Submissions, issuing a **Statement of Design Acceptance** and issuing **Connection Offers**.
- Being the point of contact in Irish Water for the Developer/Customer.
- Reviewing any revisions or alterations to the design or Works as set out in the agreed Connection Agreement.
- Issuing of **Statement of Design Acceptance**
- Issuing the **Conformance Certificate**.
- Issuing the **Completion Certificate**.
- Administrating the release of the **Self-Lay Surety**.

The CDS **Design Engineer** is the Developer’s point of contact during the Design Stage.

2.4 Notification

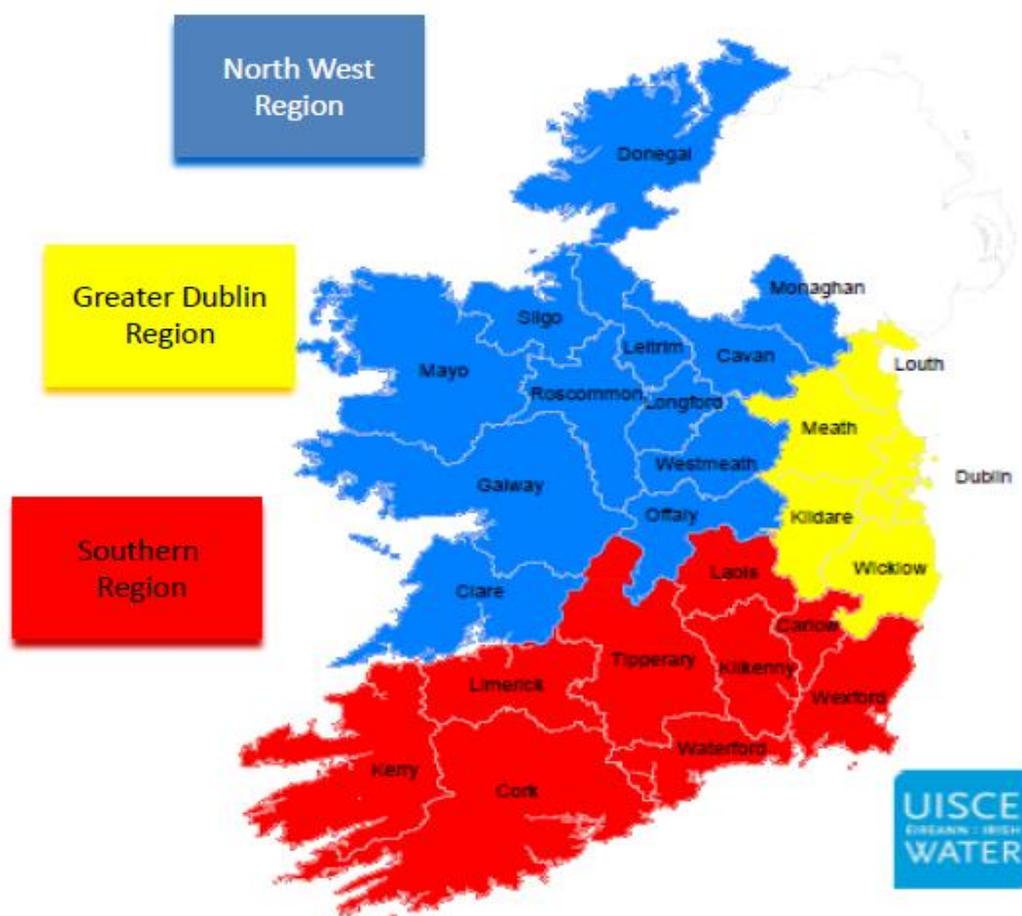
Prior to commencing the Works, the Developer should inform Irish Water in writing of the details of all the parties engaged to deliver the Works. The provisions of the Safety, Health and Welfare at Work Act 2005 and associated Safety, Health and Welfare at Work

(Construction) Regulations shall apply in respect of the appointment of competent designers, Project Supervisor Design Process (PSDP), Project Supervisor Construction Stage (PSCS) and Contractor. Prior to commencing the Works the Developer shall issue a Commencement Notice to Irish Water, a template of which is appended to the Self-Lay Connection Agreement, outlining the commencement of the installation of the water services infrastructure and a 'Pre-Construction Meeting' with Irish Water shall be arranged.

3. Irish Water Contacts

3.1 Connections and Developer Services

Connections and Developer Services (CDS) has regional representatives in the three CDS Regions who can be contacted in relation to any queries. The three CDS Regions are as follows



Contact may be made with Connection and Developers Services through the following:

Web: www.water.ie/connections/

Email : newconnections@water.ie (for Pre-Connection Enquiry Submissions to IW)

Email : [cgsdesignqa@water.ie](mailto:cdsdesignqa@water.ie) (for Design Submissions to IW)

Email : spatialplanning@water.ie (for Planning Application Submissions under the Strategic Housing Development Legislation)

Twitter: [@IWCare](https://twitter.com/IWCare)

4. Pre-Connection Enquiry (PCE) Phase

The Pre-Connection Enquiry (PCE) Process is an aid for Developers and their designers in understanding the impact of their proposed development on Irish Water's Water Networks and Wastewater Networks and to ascertain if a connection to these Networks is feasible

Developers may also use this Pre-Connection Enquiry stage to enable early discussion on issues such as capacity checks, upgrade requirements and the feasibility of a connection service of their development from a water services perspective.

The Pre-Connection Enquiry (PCE) process is a mandatory requirement for developments that are to be progressed under the Strategic Housing Development (SHD) Legislation. To avail of the fast-track SHD Legislation, a PCE has to be submitted to Irish Water and a Confirmation of Feasibility from Irish Water must be obtained by the Developer in advance of entering the Pre-Application Phase.

Once Irish Water has received the Developer's PCE application, Connections and Developer Services (CDS) will undertake a desktop study to determine the impact of the provision of water services to the proposed development on its Networks and to identify if any detailed further analysis, studies or modelling is required. If further studies are required, the Developer may be requested to enter a Project Works Services Agreement (PWSA) with Irish Water in order to identify if capital infrastructure upgrades will be required as a result of a particular new or modified connection. A Project Works Services Agreement will require the applicant to pay the financial costs relating to the necessary engineering assessments prior to entering into a formal Connection Agreement.

Once CDS has completed the assessment of the Pre-Connection Enquiry, Irish Water will provide the Developer with a response which will include the following:

- A preliminary assessment of any restrictions and potential connection points to the existing network.
- A preliminary assessment of any reinforcement/upgrade works that will be required to service the development.
- Details of any protective measures for Irish Water assets which may require a diversion or easements.
- A **Confirmation of Feasibility** which will outline if Irish Water can provide a water and/or wastewater services connection for the development at that time and
- A request for the submission of a Design Submission for the development in advance of the Developer making an application of Planning Permission so that a Statement of Design Acceptance can be issued.

If proceeding, the Developer designs the infrastructure in accordance with the Standard Details and Codes of Practice and liaises with CDS in relation to the water and/or wastewater infrastructure design proposals.

For developments that are not being progressed under the Strategic Housing Development Planning process, the Developer can submit the Confirmation of Feasibility to the Local Authority with the planning application for the development, to indicate to the Planning Authority that early engagement has taken place with Irish Water, and that there is agreement in principle with regard to the provision of water and/or wastewater services for the proposed development.

For developments that are being progressed under the Strategic Housing Development Planning process, the Developer is required to submit the Confirmation of Feasibility to An Bord Pleanála with the Pre-Application Planning submission for the development. This is a mandatory requirement of the Strategic Housing Development Planning process.

In either case, a Planning Application to a Local Authority or a Planning Application under the Strategic Housing Development Legislation to An Bord Pleanála, it is necessary that the Developer makes a Design Submission to Irish Water outlining the details of the water supply and wastewater collection proposals for the development. It is necessary that Irish Water is afforded ample time to assess the Design Submission so that a Statement of Design Acceptance may be issued before the Developer makes a Planning Application to either the Planning Authority or to An Bord Pleanála.

5. Design Submission

5.1 Purpose of the Submission

Before an application for a new Connection or an additional Connection can be considered, appropriate information is required from the Applicant to allow Irish Water to assess the Developer's Works proposal. This should be provided in a design submission in advance of a Connection Application for developments. The Design Submission should be forwarded to Irish Water via the e-mail address, cdsdesignqa@water.ie. Irish Water will engage with the Developer to vet the design of the Works ahead of the Developer finalizing a planning application. If Irish Water is satisfied with the water and/or wastewater infrastructure design proposal, a '**Statement of Design Acceptance**' will be issued to the Developer in respect of the proposal.

5.2 Design Requirements

The Developer's Design Engineer shall take account of the outcome and recommendations of the Pre-Connection Enquiry Process. The layouts and alignments for water and/or wastewater infrastructure outlined by CDS after the Pre-Connection Enquiry Stage shall form part of the Design Submission unless otherwise agreed with CDS e.g. the size, location and layout of pumping stations.

5.3 Land Requirements

Irish Water will require wayleaves/easements along all routes of pipelines that are not located in public roads or public lands. In addition, if wastewater pumping stations and water booster stations are required, Irish Water will require such land to be transferred to its ownership at the time of vesting. The requirement associated with wayleaves, easements and land acquisition at design submission stage is as follows:

- All easements and land that will be required by Irish Water for the Works shall be shown on the design drawings.
- Where easements or wayleaves are required and are outside the developer's land holding, evidence of agreement in-principle of the arrangements necessary to acquire the easements from the registered landowner is required.

5.4 External Approvals

During the preliminary stages of design for any Works, the Developer's Design Engineer shall take into account the requirements of other utility providers. If an Environmental

Impact Statement (EIS), Environmental Impact Assessment (EIA) or an Appropriate Assessment (AA) screening report is required for the development, the Developer shall ensure that the impact of constructing water and/or wastewater infrastructure is allowed for in the associated report(s).

Particular attention and early liaison needs to take place where any Works are adjacent to, within or crossing an asset that is controlled by Irish Water, Transport Infrastructure Ireland (TII), ESB Networks, Gas Networks Ireland (GNI), Irish Rail, etc.

Prior to discussing the scope of the Works proposals with all impacted parties, the Developer's Design Engineer should consider alternative options that would/could reduce the impact to the relevant party. Irish Water must be party to these discussions and may provide comments on a design proposal prior to formal or informal approvals being sought.

The Developer shall, as part of the design submission, submit all relevant consents from relevant third party bodies.

5.5 Design Responsibilities

The Developer's Design Engineer is responsible for ensuring that the design of the Works complies with Irish Water's Codes of Practice and Standard Details. Any feedback by Irish Water in relation to a design submission shall not relieve the Developer's Design Engineer of this responsibility or the responsibility for any discrepancies, errors or omissions in the submission, or for the inadequacy of the design.

5.6 Requirements of the Design Submission

The Design Submission shall contain:

- The Design Submission Checklist for the relevant asset type (see Appendices).
- A digital copy (PDF) of the design drawings, including site plan information.
- The information required in Section 2.3 of the Codes of Practice for Water and Wastewater Infrastructure.
- A letter from the owner of any lands other than the Developer's, agreeing in principle, to granting any easements or reserves required for the works.
- Relevant documentation arising from liaison with the Fire Authority in relation to the provision of fire flows (See Section 1.17 of the Code of Practice).

Note: A design submission will not be accepted where the relevant documents are not supplied, or are incomplete.

5.7 Drawings

Each drawing and document that is submitted shall be signed by the Developer's Design Engineer who has the authority to act on behalf of the Developer. The drafting for all submissions shall be in accordance with Irish Water CAD Standards, which are available from Irish Water by contacting cdsdesignqa@water.ie. The drawings shall show the relevant infrastructure on site layout plans, longitudinal sections, etc. The drawings shall be provided in PDF and shall be prepared using an electronic CAD system. The plan shall be clear and legible and only include information that is relevant. Information that should be included is typically:

- Road kerb lines,
- Trees,
- Power/light poles,
- Storm water pipes and gullies,
- Other utilities services e.g. electricity, gas, etc. where located in proximity to the water and wastewater infrastructure (an integrated utility layout plan).

6. Irish Water’s Review of the Design Submission

6.1 Irish Water Design Vetting

The design submission will initially be checked for conformity with Irish Water’s requirements. This initial check/validation assessment may result in the request of additional information or clarification. The Developer’s Design Engineer will be contacted and advised of the outstanding documentation and requested to submit the omitted documentation. The Developer’s Design Engineer should submit the additional documentation and this will be recorded as received. Once the submission is deemed complete, a detailed vetting of the submission will be carried out by CDS. The outcome of this design vetting review will result in one of the following:

- The issue of a **Statement of Design Acceptance** – Design of the Work is acceptable.
- The issue of a **Statement of Non-Acceptance** indicating that the submission is “Not Accepted - Revise and Resubmit. The Design of the Works is not acceptable.”

Following the receipt of the Design Submission, CDS may engage with the Developer’s Design Engineer outlining areas which require revision or the requirement for revised Design Submission documentation.

Following the CDS review of the Design Submission and any revised documentation submitted by the Developers Design Engineer and the deeming of these to be in accordance with the Codes of Practice and Standard Details, Irish Water will issue a **Statement of Design Acceptance** along with PDF copies of the design drawings that have been deemed acceptable.

The **Statement of Design Acceptance** does not constitute a Connection Offer, in whole or in part, to provide a connection to any Irish Water infrastructure. Before a connection is allowed to the Irish Water Network, a Connection Agreement with Irish Water is required. This can be applied for by completing the connection application form at www.water.ie/connections. Irish Water’s current charges for water and wastewater connections are set out in the Water Charges Plan as approved by the Commission for Regulation of Utilities (CRU) (https://www.cru.ie/document_group/irish-waters-water-charges-plan-2018/).

The Developer (including any designers/contractors or other related parties that have been appointed) is entirely responsible for the design and construction of all water and/or wastewater infrastructure within the Development which is necessary to facilitate connection(s) from the boundary of the Development to Irish Water’s network(s) (the “Self-Lay Works”), as reflected in the Design Submission. Acceptance of the Design Submission by Irish Water does not, in any way, render Irish Water liable to provide a subsequent connection to its Network(s)

Once the Design Submission is acceptable to Irish Water and before construction has started, any alterations to the design shall be discussed with Irish Water's Connections and Developer Services who will determine whether an additional revised design submission is required.

In the event that a Design Submission is not acceptable and CDS engagement with the Developers' Design Engineer does not result in a design submission in accordance with the Codes of Practice & Standard Details, CDS will issue a Statement of Non-Acceptance which will be accompanied by an indication of the areas of deficiency. Please note that the Statement of Non-Acceptance will be issued after a time period of 90 days of non-engagement with CDS.

A Statement of Non-Acceptance does not preclude the Developer from a re-submission of an alternative design proposal to address the deficiencies identified by Irish Water. A Design Submission shall not be considered acceptable to Irish Water until a Statement of Design Acceptance is issued to the Developer.

6.2 Objections to Irish Water's requirements

Any objections that the Developer has to design requirements by Irish Water shall be made in writing to Connections and Developer Services. The objection shall state the reasons and efforts made to resolve any issues. Any unresolved objections between the Developer's Design Engineer and Connections and Developer Services will be referred to the Regional Manager, Connections and Developer Services. A review will be carried out and a response issued to the Developer of the final decision on the Design Submission.

6.3 Designs accompanying Connection Application

Irish Water's preference is that Design Submissions are provided for CDS assessment at an early date, ideally when the developer is preparing Planning Application documentation. By engaging at pre-planning stage, layouts that are included in a Planning Application development will align with an acceptable layout of water supply and wastewater infrastructure that are to the requirements of the Irish Water's Code of Practices and Standard Details. Early engagement will reduce this risk of a possible re-application for Planning Permission for an unacceptable layout of the water supply and wastewater infrastructure.

Irish Water will assess design submission that are submitted as part of a Connection Applications in the same manner as outlined in Section 6.1 above. On issue of the Connection Offer, it may be taken that Irish Water has issued a de-facto statement of no objection to the design proposal.

7. Strategic Housing Development Planning Application Submission

In the case of developments that are being progressed under the Strategic Housing Development Legislation, it is necessary that the developer submits the Planning Application Documentation to An Bord Pleanála. The Planning Application Documentation is to be forwarded also to the Statutory Consultees (which include Irish Water) at the same time as the Planning Application is made to An Bord Pleanála. The submission to Irish Water should be made to spatialplanning@water.ie. This Planning Application

Documentation must include the **Statement of Design Acceptance** outlining Irish Water's acceptance of the detailed design of water supply and wastewater collection proposals for the development. It is also necessary that the detailed design, including drawings, calculations, etc. are also included in the Planning Application Documentation.

8. Connection Application & Connection Offer

Once the design submission is complete and Irish Water has issued a **Statement of Design Acceptance**, and provided that Planning Approval for the development has been obtained from either the Planning Authority or An Bord Pleanála, the Developer can apply to Irish Water for a connection to the public Network(s) using the relevant Irish Water Connection Application form.

While early engagement through the Statement of Design Acceptance process is encouraged, a design submission may also be made with a Connection Application as outlined in Section 6.3 above.

Upon validation of the connection application Irish Water will draft a Connection Offer and issue it to the Developer. The Connection Offer is issued to the Customer/Developer by Irish Water outlining the commercial and technical terms and conditions governing the provision of the Connection to the Public Network.

Once the Connection Offer is accepted by the customer and the relevant precedent conditions have been completed including the payment of the Connection Fee, a Connection Agreement is put in place. A Commencement Notice is to be submitted to the Local Authority in accordance with the Planning and Development Act. The Developer should also submit a Commencement Notice to Irish Water in accordance with the requirements of the Connection Agreement to arrange a 'Pre-Construction Meeting' with Irish Water's Field Engineer.

Appendix 1: Water Design Submission Checklist

Name of Company	_____
Address	_____
Phone No	_____
Email	_____
Developer's Design Engineer	_____

1	Planning Considerations	Y/N
1.1	The design complies with the current Development Plan	

2	External Approvals	Y/N
2.1	All consents are in place.	
2.2	No clash detected with other utilities.	

3	Drawing Format	Y/N
3.1	The drafting is to the appropriate Irish Water CAD Standard	
3.2	The drawings contain all of the relevant Irish Water referencing to Standard Drawings	
3.3	Individual properties to be connected have been identified and numbered.	
3.4	All easements have been denoted.	
3.5	Drawings to have the following notation: Length and type of mains. Number of valves and hydrants	
3.6	The design submission has all the relevant documentation as outlined in Section 2.3 of the Codes of Practice	

4.	Design Criteria (Tick Y/N for each individual Item below)	Y/N
4.1	<p>The design meets the fundamental objectives of the Code of Practice and Standard Details for Water Infrastructure:</p> <ul style="list-style-type: none"> a) Water Main layouts shall be arranged in loops or rings so as to avoid "dead ends" or terminal points. All Mains shall terminate in a loop or ring to accommodate one-directional flushing of the network. The loop pipe size shall match the size of the spur Main to which it is connected. Loops shall have a minimum of four connected houses and one hydrant. b) The minimum pipe size shall be 100mm internal diameter in housing Developments of 40 houses and up to 100 houses. Developments of 100 houses and above shall have minimum pipe sizes of 150mm internal diameter spine Main with 100mm branch Mains. Nominal internal diameters of 80mm and less may be allowed in smaller Developments but not where hydrants are located and only after prior written agreement has been received from Irish Water (See Section Error! Reference source not found. of the Code of Practice, Water Infrastructure). c) The minimum pipe size shall be 150mm in industrial or commercial Developments, or as agreed with Irish Water. d) Every property, whether domestic or business, shall have a separate Service Connection. A connection shall not be taken from an existing service connection. The use of common service pipes is not allowed. Service Connections shall be as short as reasonably possible. Long Service Connections (in excess of 15m) will not be allowed. Service Connections shall be a minimum pipe size of 25mm outside diameter, 20mm internal diameter. e) Service Connections shall not be taken across roads where the width of the road is greater than 15m, except with the prior agreement of Irish Water. In certain circumstances, a rider Main, located entirely on public property, may be provided to serve small numbers of houses at the street-side remote from the Water Main. This rider Main shall be looped back to the Water Main. Individual house Service Connections shall be provided off the rider Main. f) Water Mains should be laid to provide the optimum circulation in the local water network. Water Mains may terminate in a dead end only with Irish Water approval, in which case a washout hydrant, located within a Chamber or kiosk, shall be provided at the dead end. g) Valves shall be arranged at junctions and spine water mains in such a manner so as to ensure that water shut-down will affect no more than 40 properties at any one time. h) Water mains greater than 300mm in diameter laid under heavily trafficked roads shall be 	

ductile iron.

- i) Looped water mains shall return to the spur main downstream of a sluice valve to allow for one directional flushing.
- j) The location of hydrants should be such that they can be accessed in an emergency. Hydrants should not be located in roads or parking areas. Off line hydrants shall have dead end pipe lengths of 3.0m or less.
- k) Where possible, a hydrant should be located within 20m of each junction.
- l) No domestic property within a Development shall be more than **46m** from a hydrant. Hydrant details and locations shall be subject to the approval of the relevant Fire Authority. This requirement should not take account of dead-end or wash-out hydrants which are used for operational flushing. A hydrant shall not be closer than 6m to a property.
- m) Fire hydrants should not be supplied from water mains less than 100mm diameter.
- n) The location of branch valves, hydrants or other apparatus shall be in agreement with Irish Water.
- o) Where a water main is located in an area of restricted access such as under motorways, canals, railways, rivers etc., a duplicate water main (or a sleeve with a replacement main) shall be installed to maintain water supply in the event of a problem with the live main until access is available to carry out repairs. The second main shall be the same as the first main in regards to material, diameter and flow capacity. Isolation valves shall be provided on both sides of the inaccessible area to allow the water supply to be redirected between the live main and the duplicate main.
- p) Where a water main is to be located within a structure such as a bridge or culvert, the Developer shall consult with Irish Water to establish if the water main is to be duplicated. In most instances Irish Water may require that the mains are placed within sleeves to facilitate easy replacement of the pipe. In general, however, Irish Water discourages the construction of water mains within bridge or culvert structures and the installation of the mains across the watercourse adjacent to the bridge/culvert structure is preferred.
- q) Surface water attenuation tanks shall not be constructed over water mains.
- r) Irish Water will require the Developer to provide bulk metering of the water supply connection to developments with a water demand exceeding 20 m³ per day. The bulk meter will be linked to an Irish Water telemetry data collection system in cases where the water demand exceeds 200 m³ per day. Developments with water demands less than 20 m³ per day will not require a flow meter but separate infrastructure shall be provided in these Developments to measure night flow. (Refer to Section 3.15.4 of the Code of Practice for Water Infrastructure). Irish Water will choose and supply the bulk meter and associated equipment based on the range of flow at the Development.
- s) Where there is the possibility of connecting into or extending the water main network into adjoining land that is not developed, the water mains shall be extended to the boundary if required by Irish Water and easements for these extensions provided and executed to include Irish Water as the named beneficiary as part of the overall easement for the Water and Wastewater Services Infrastructure for the Development (Refer to Section 1.23 of the Code of Practice for Water Infrastructure).
- t) Pressure control shall be provided at the take-off point of the new connection if required to control high pressures by way of a pressure reducing valve (PRV). Where possible their need shall be determined in advance but in some cases Irish Water may require these to be installed after the main is made live. The cost of this work shall be borne by the Developer. The need for PRVs shall be agreed with Irish Water. Pressure sustaining valves (PSV) may be required in specific exceptional circumstances and only by agreement with Irish Water. The PRVs and PSVs will be chosen and supplied by Irish Water for installation in Developer supplied chambers.
- u) Individual service connections shall generally not be taken across roads and their length shall be kept to a minimum. The provisions outlined in (e) above may be used to limit long service connections.
- v) Water supply mains shall be laid in common areas and not through individual private gardens or driveways etc.
- w) Any redundant water services shall be traced back to the Irish Water supply main by the Developer and shall be blanked off by Irish Water at the Developer's expense.
- x) Any existing lead services pipes to the site shall be replaced / made redundant at no cost to Irish Water. This work shall be carried out to the satisfaction of Irish Water.
- y) Water main bends and road crossings should be kept to an absolute minimum.
- z) A three-way sluice valve arrangement shall be provided at all water main junctions.
- aa) The water main pipework to new developments should be located at the right hand side of

	the entrance to the new development (from a view facing into the development) if possible, and where the properties served are equally or reasonably distributed at both sides of the estate roadway.	
4.2	The design should relate to finished surface levels when specifying cover to pipes.	
4.3	Connections to existing works have been appropriately designed.	
4.4	Alignments have been approved by both Irish Water and other service providers.	
4.5	The design should consider the proposed construction technique and/or constraints	

5	Influencing Factors	Y/N
5.1	The Developer's Design Engineer confirms that the design has made allowance for existing or proposed physical features of influence i.e. retaining walls, significant trees, other services, buildings etc. in established green field's areas	
5.2	In the case of designs in existing established or green fields areas the Developer's Design Engineer confirms that the route has been "walked".	
5.3	Where the design requires the approval of other parties these must be obtained.	

<i>I certify that this design has been reviewed and complies with Water Irish's Code of Practice for Water Infrastructure requirements.</i>	
_____	_____
Signature	Date
Print Name and Firm	

Complete this form and send to: newconnections@water.ie	

List of Attachments

Ref	Description	Comment
1		
2		
3		
4		
5		

Appendix 2: Wastewater Design Submission Checklist

Name of Company	_____
Address	_____
Phone No	_____
Email	_____
Developer's Design Engineer	_____

1	Planning Considerations	Y/N
1.1	The design complies with the current Development Plan.	

2	External Approvals	Y/N
2.1	All consents are in place.	
2.2	No clash detected with other utilities.	

3	Drawing Format	Y/N
3.1	The drafting is to the appropriate Irish Water CAD Standard	
3.2	The drawings contain all of the relevant Irish Water referencing to Standard Drawings	
3.3	Individual properties to be connected have been identified and numbered.	
3.4	All easements have been denoted.	
3.5	Drawings to have the following notation: Length and type of mains. Number of valves.	
3.6	The design submission has all the relevant documentation as outlined in Section 2.3 of the Codes of Practice	

4	Design Criteria (Tick Y/N for each individual Item below)	Y/N
4.1	<p>Without compromising the planning, the design meets the fundamental objectives the Code of Practice and Standard Details for Wastewater Infrastructure:</p> <ul style="list-style-type: none"> a) The external face of any new Sewer shall be at least 3.0 m or a distance equivalent to the depth of the Sewer below the foundation, whichever is greater, from the external face of any building or Development structure. Modified foundation arrangements do not obviate the need for this separation distance. This is to allow future access for maintenance, operation, future renewal, replacement, upgrading work, etc. of the pipeline. Foundations and basements of adjacent buildings should be designed to ensure that no extra loads are transferred to the pipeline, i.e. the pipe should be located outside the zone of influence of the building foundation. The minimum clear distance shall be increased if the Sewer is greater than 3m deep or if the diameter is greater than 375mm. The minimum clear distances for pipe diameters of 450mm diameter and greater (outside the diameter size covered by this Code of Practice) or depths exceeding 4.0m shall be based on specific consultation with Irish Water. These separation distances also apply to separation from other existing structures, including attenuation structures and swales; b) Sewers and service connections should not be constructed under any building or structure. No building may be constructed over the line of a Wastewater Sewer, service connection or Drain, This approach is in accordance with the Section 29 of the Public Health Act 1878 and the Water Services Act; c) Sewers and Rising Main locations shall be agreed with Irish Water and, where practicable, shall be located in areas that are or will in future be maintained by the Local Authority, i.e., road verges, roads and public open space or a space where they are reasonably accessible and visible. Wayleaves and Deeds of Easement shall be provided for all Sewer routes. Sewers shall not be laid in enclosed private land, where there is a practicable alternative route; d) Between Manholes, Sewers shall be laid in straight lines in both the vertical alignment (profile) and horizontal alignment (plan). However, long radius bends up to 45 degrees may be laid on 100mm wastewater service connections downstream of the private side 	

	<p>inspection chambers to facilitate the transition from horizontal to vertical at the point where the service connection drops into the trench to connect to branch connection on the Network Sewer;</p> <p>e) The angle between any inlet pipe to a Manhole and the outlet pipe from the Manhole shall not be less than 90 degrees, i.e., the inlet flow from any inlet pipe should not run counter to the outlet flow direction and suitably profiled benching shall be provided to ensure smooth flow conditions;</p> <p>f) Where Wastewater and Storm Water Manholes are adjacent, their positions shall be staggered to allow for crossing over of Sewers. Staggered positioning of Wastewater and Storm Water Manholes is required with a full separation between the Wastewater and Storm Water Sewer systems (Note that Irish Water does not have responsibility for Storm Water Sewer systems.). The external walls of the staggered manholes shall be separated by at least 500mm to allow compaction of backfill material between the structures;</p> <p>g) The design of landscaping shall be undertaken at the same time as the design of the Drains and Sewers so that the impact of tree roots on the Works can be considered (see Section 3.21 of the Code of Practice for Wastewater Infrastructure). Trees/bushes/shrubs shall not be located closer to the Sewer or Drain than the canopy width at mature height, except where special protection measures are provided. A tree should not be planted directly over Sewers or where excavation onto the Sewer would require removal of the tree;</p> <p>h) When in a road or highway, the outside of the Sewer should be in the vehicle carriageway (not footway) and shall be at least 1.0 m from the kerb line. The external faces of Manholes and chambers should be at least 0.5 m from the kerb line;</p> <p>i) A Storm Water sewer or a Wastewater Sewer should generally not be installed to cross over a Water Main. When the surface water or Wastewater Sewer is being installed under a Water Main, adequate structural supports shall be provided to maintain the structural integrity of the Water Main. A method statement for the proposed crossing shall be provided. Where crossing over a Water Main is unavoidable, the surface water or Wastewater Sewer crossings shall not be located directly above the joints in the Water Main. No other utility service should be laid longitudinally directly above the line of the Wastewater Sewer;</p> <p>j) Any Sewer crossing of a Water Main shall do so at right angles, or as near to as possible, to avoid prolonged envelopes of influence between the services. Crossings shall be located midway between the Water Main joints with a minimum vertical clear distance of at least 300mm and up to 500mm or more in some instances between the Sewer pipe and the Water Main. All such crossings shall be to Irish Water approval and shall not be undertaken until Irish Water or its agents has examined the work at the crossing point and deemed it fit for backfilling;</p> <p>k) Specific vertical separation distances for wastewater service connections and Sewers to other pipework, including utility service pipes and ducts, shall be in accordance with the Table at the end of Section 3.5 of the Code of Practice for Wastewater Infrastructure;</p> <p>l) There should be a minimum clear horizontal distance of at least 900mm between the external face of a Gravity Sewer/Rising Main and other pipe/duct utilities running parallel to it, with a clear local horizontal distance of 300mm between the external face of a Gravity Sewer/Rising Main and cabinets, poles, junction boxes, Manholes or chambers;</p> <p>m) Specific separation clearance distances in excess of those outlined above shall be provided for services such as gas, electricity, fibre-optic or oil filled cables as the case may be. The particular utility providers shall be consulted to determine these minimum separation distances and evidence of this consultation, with the specified separation distances, shall be provided to Irish Water at design submission stage. For example, the minimum separation distances for Gas Networks Ireland infrastructure shall be in accordance with IS329 'Gas Distribution Mains' and IS328 'Code of Practice for Gas Transmission Mains' as amended/updated;</p> <p>n) A Deed of Grant of Easement shall be provided for all Sewers and Rising Mains prior to their construction. Connections to the Irish Water Network will not be permitted without such Easements having been submitted and accepted by Irish Water. Construction and permanent Deed of Grant of Easement, comprising a conditional Burden on the Title, are to be provided complying with particular widths requirements outlined in the Connection Agreement and such Easement should be to the benefit of and registered with Irish Water as the owner following Vesting. The Easement shall not be built upon after the installation of the Sewer or Rising Main. The construction techniques should be</p>	
--	--	--

	<p>selected to ensure that the maximum settlement is within the agreed limits;</p> <p>o) Rising Mains shall be laid in straight lines or in gentle curves, to manufacturer's requirements, or using long radius bends. Where bends are used, they should be formed with proprietary bends of suitable material allowing for a fully integrated joint, and securely anchored with thrust blocks, if deemed necessary;</p> <p>p) The provision of access points, comprising rodding points and chambers, for pigging, rodding or cleaning of the Rising Main is required along its entire length, especially along long Rising Mains;</p> <p>q) Where possible, Rising Mains shall be evenly graded between the intake point and the discharge point. If a continuous rise cannot be achieved, the Rising Main should be fitted with sewage air valves and scour valves as per the hydraulic design of the system. Both of these should be suitable for use with raw Wastewater. The valve locations shall be clearly marked by the provision of indicator plates and posts;</p> <p>r) The design of the Rising Main shall take account of the containment of the Wastewater volume during pigging, rodding and cleaning operations at the scouring point and provisions shall be made for ease of collection of the Rising Main contents by vacuum tanker and transportation of this to a suitable point for treatment or reintroduction into the Wastewater collection Network;</p> <p>s) The route of Rising Mains should be marked at every field boundary and, where practicable, at every change of direction by marker posts. The marker plates shall be labelled "RM" and the depth to the top of the Rising Main as well as the distance to the main shall also be provided;</p> <p>t) Non-degradable marker tape, red or orange in colour, shall be installed 300mm above the crown of the Rising Main. In the case of non-metal pipe material, the marker tape should incorporate a trace wire which is linked to the marker posts and terminating at the Wastewater pumping station and the discharge Manhole. The trace wire shall be tested to ensure that it is continuous and capable of transmitting locating signals.</p>	
4.2	The most appropriate Access Chamber types have been shown where required.	
4.3	All properties served have drain junctions at a location and depth suitable to correctly serve the development and inspection chambers where required.	
4.4	All fill requirements are denoted (i.e. if design based on contours appropriate tolerances have been applied)	
4.5	All sewer grades are within acceptable tolerances.	
4.6	Connections to existing works have been appropriately designed (i.e. flow to flow where called for) and isolation from live works requirements have been considered and designed appropriately.	
4.7	The design considers the proposed construction technique and/or constraints.	
4.8	Irish Water approval has been sought for any design standard variations.	

5	Influencing Factors	Y/N
5.1	The design makes appropriate allowance for existing or proposed physical features of influence i.e. retaining walls, trees, other services, buildings etc.	
5.2	In the case of designs in existing established areas the route has been "walked".	
5.3	Where the design requires the approval of other parties (i.e.; affected landowners, other service providers) a strategy to obtain these approvals has been developed.	
5.4	<p>A report is included for projects that relocate/divert assets and includes:</p> <ul style="list-style-type: none"> • Details of the proponent and justification for of the works (including alternative options) • Plan for the abandoned main • Plan for managing shutdowns for piece-ups 	

I certify that this design has been reviewed and complies with Water Irish's Code of Practice for Wastewater Infrastructure requirements.

Signature

Date

Print Name and Firm

Complete this form and send to: newconnections@water.ie

List of Attachments

Ref	Description	Comment
1		
2		
3		
4		
5		