

3 PROCEDURES

3.1 Development Plan Liaison

3.1.1 Current Arrangements

Development Plans are the responsibility of the Council's Planning department, who every 6 years prepare the maps of existing and future development for the County. The Planning and Development Act, 2000 requires that Development Plans should be compliant with Regional and Strategic Planning Guidelines. The Planning Department also prepares Local Plans for specific major development areas, and future development for each Local Authority. The Development Plans can be amended during their life by Planning Variations, authorised by the Council Members.

Section 11 of the Act requires the Planning Authority "to consult with...other services to ascertain any long term plans for the provision of the infrastructure and services in the area of the planning authority and the providers shall furnish the necessary information to the planning authority."

The processes for preparation, review and agreement of Development and Local Plans and their Variations are described in Sections 12, 13 and 19 of the Planning and Development Act, 2000. Each process involves public notification of the planning proposals and periods for comments and review. These reviews are the formal opportunity for the Drainage Departments to be involved in the preparation of County Development Plans, providing advice on the availability of sewerage and sewage treatment facilities to service the future developments.

3.1.2 Proposed Arrangements

It is proposed that the involvement of the Drainage Department, in the preparation of Development Plans, be formalised. The intention is for the Planners and Council Members to appreciate how development lands are serviced, rather than for the Drainage Department to dictate where development will take place. Planners also need to understand the flood risk attaching to all development lands, which could influence the type of development or indeed whether any development should be undertaken.

Where drainage and/or treatment are not available, then developments can be deemed to be "premature". In such circumstances, timescales for the development can be stipulated to suit the provision of supporting infrastructure.

The flowchart entitled "Development Plan Liaison" shows the sequence of actions involving the Planning and Drainage Departments.

Details of the Procedure

The enquiry stage involves the initial comparison of the draft Development Plan with the development assumptions within the Drainage Department's Strategy Plans for the affected foul/combined and stormwater catchments. These Strategy Plans will initially be those produced under the GDSDS, comprising upgrading works at both strategic and catchment levels. These Plans will thereafter be updated by the Councils as implementation of the Strategy Plans (and their subsequent amendments) takes place. The Drainage Department may require further clarification of development proposals, such as housing density, occupancy ratios, etc.

The consultation stage requires the Drainage Department to compare foul flows and surface run-offs generated by the proposed developments with those allowed for in the Drainage Strategy Plans. This will be done by quantifying the flows from the different types of development proposed and comparing with those from the assumed developments. Where there are appreciable differences, the hydraulic models should be modified and re-run to confirm the effects on system performance. Similarly the treatment loads should be compared with the assumptions in the Drainage Strategy Plan, and significant anomalies identified. Proposals for development lands should be compared with the Drainage Department's flood risk maps to confirm that proposed types of development are compatible with the flood risk categories, or indeed if lands should be developed at all.

The consultation stage ends with the Drainage Department comparing the proposed extent of development with the provision of infrastructure under the Drainage Strategy Plan. Any incompatibility identified will need to be scoped, costed and programmed and the Drainage Strategy Plan amended accordingly.

In the response stage the Drainage Department provides comments to the Planning Department on the ability of the existing and proposed infrastructure to service the intended development. These comments may well veto development, restrict its scope and timescale until the supporting infrastructure is in place, or suggest where excess drainage capacity is, or will be available. The flood risk categories and corresponding drainage requirements should be agreed. The Planning Department will then include all such comments in the final Development Plan.

The scope of construction of drainage infrastructure and implementation programmes will inevitably change, due to external constraints and opportunities, such as provision or lack of funds. The Drainage Department should therefore periodically update the Planning Department on such changes and their effect on the provision of drainage infrastructure serving future development in their area. Such information will ensure that the Planning Department understands the availability of drainage installations to service future development and allow them to manage planning issues accordingly.

All plans should be digitally mapped using Council approved software. Land Use categories, symbols and colours should be standardised across the Region. This will allow straightforward understanding and combination of Development Plans between Councils, and minimise confusion for the public.

The term "Development Plan" refers to the plans periodically produced for countywide development, as well as more localised planning documents, such as Action Plans and Local Area Plans. The intention is that all such planning proposals, which include drainage aspects, will have involvement of the Council's Drainage Department.

3.2 Planning Application Procedures and Approvals

3.2.1 Current Arrangements

Local Authorities encourage developers to discuss drainage requirements for major sites prior to submission of planning applications. Any such discussions are regarded as informal and non-contractual, as they represent the forum for all parties to gain an initial understanding of the issues affecting the development. This approach obviates the need to try and resolve complex drainage issues in a very short time period, and should be continued.

The current procedure for planning applications is governed by the Planning and Development Act, 2000 and managed by the Council's Planning Department. The sequence of events is:

1. The developer consults the Council's Drainage Department regarding the availability of foul and storm drainage. The Drainage Department will provide drainage plans for viewing, and discuss the options for connection;
2. The developer submits his application for the site to the Planning Department, accompanied by layout plans and calculations for the foul and surface systems;
3. Section 34 of the Act requires the Planning Authority to make its decision on the application within 8 weeks, so the Planning Department therefore distributes paper copies of the application to the relevant Council departments (drainage, roads, building control, lighting) for comment;
4. Drainage comments often include requests for revised proposals and more information. Such comments are collected by the Planning Department, and requested of the applicant, in which case a further 4 week period is allowed for decision, from the date of receipt of the additional information;

5. The Planning Department collates all departmental comments and conditions into a single reply to the developer;
6. Where no decision is given within the 8-week period, the planning application is deemed to have been granted. Extension of the decision period is allowed with the agreement of the applicant. Applicants for complex or contentious developments often agree to extensions to avoid receiving refusal decisions;
7. Section 48 of the Act allows the Planning Authority to make agreements with applicants restricting the development of lands. This process can be valuable in regulating developments which are premature for the local drainage infrastructure.

The Planning Departments favour standard drainage conditions for simplicity with developers. This system is already being implemented in some Councils, with each Department having its own standard conditions, modified as necessary to suit particular developments.

Section 248 of the Act permits documents or other information to be transmitted in electronic format. The documents or other information include:

- ◆ A development plan or any draft or variation of it;
- ◆ A planning application and related documents and reports;
- ◆ Maps, plans and other drawings;
- ◆ Written submissions and observations.

Section 248 also allows the Minister to specify the technology and procedures for producing and managing documents in electronic format.

3.2.2 Proposed Arrangements

The overall principle being proposed is that the events required to carry out development be arranged as a seamless sequence, with each step being recorded in a shared database. This database will follow the life of the development from initial planning application through to processing of as-built records, and hence allow all involved bodies access to information about the status of the sequence, and to make their required contributions. The database would be held and managed by the Planning Department with data exchange to the Drainage Departments through the Regional Drainage GIS.

The same file on the database would then be used to track progress of the planning application through review, construction on site, taking in charge and customer information. Based on the application dates, the database could provide reminders on deadlines for processing, as well as highlight delays in taking in charge, etc.

The new Planning Act aspires to planning applications being managed electronically, and Regional Policy should promote such principles. Fingal County Council has such a system using an electronic, GIS linked, planning register (called PACES) that records applications and decisions. Dun Laoghaire and South Dublin County Councils are using the APAS system, from GIS supplier Swift.

The proposal is that planning applications be categorised, depending on parameters such as number of premises, population, type and plan area. This information would be entered into the planning register database with GIS co-ordinates. Applications should be encouraged to be in electronic format, with digital maps and plans compatible with OSI, to allow ready inclusion in the County development maps. It is recognised that small developers may be unable to provide digital maps and plans, but most other documentation should be possible in digital format, given the widespread use of word-processing and spreadsheet systems on computer.

The ultimate intention would be for planning applications to be made electronically, with developers entering their proposals directly to the database.

The proposed Procedure is demonstrated on the enclosed flow diagram, showing that the Planning Database is the central source of information, sourced by the interested parties.

Details of the Procedure

The Database will contain all applications, but each department providing comments will be interested in particular types of development. The Drainage Department should be made aware of all developments, so that they can assess the impact on the drainage system and the flood risk to the development. All development should be compatible with the flood risk maps and associated categories.

Small developments can present great risk to the drainage system in terms of damage and inflow/infiltration since workmanship may be of a poorer standard than with a large development. For small developments the builder may well be tempted to illegally connect surface water drains to the foul sewers to avoid the inconvenience and expense of installing stormwater drainage. In such circumstances local SuDS measures, such as soakaways could present an effective solution.

Each Council department would have access to the database, being able to select the developments of most relevance, and thus manage their inputs in providing comments. The degree of filtering of planning applications will depend on available resources, and would be the decision of the individual Council.

Comments would be made directly to the database, under the relevant file. Comments would include both standardised and purpose-made conditions. Standardised conditions would be common across the Region. Purpose-made conditions would be those required by the Council and those required for the individual development. The developer should be required to provide the information listed in Appendix A, in support of his application.

Vetting of Planning Applications

All Planning Applications are to be vetted by the Drainage Department, irrespective of size of development or whether the drainage will be taken-in-charge or not

Having the applications mapped and GIS linked will enable direct comparison of the development proposals with the County Development Plans, the availability of services to serve the site, and the flood risk to the development.

Comments from all Departments involved in approval of the development are co-ordinated and issued to the developer by the Planning Department under the Notice of Approval. The developer's subsequent detailed proposals would be vetted by the Drainage Department to ensure that all requirements in the Notice of Approval have been taken on board by the developer and the necessary designs, modifications and other measures have been carried out by him. The results of this vetting are issued through a Compliance Report, ideally prepared by the engineer responsible for the original Notice of Approval. It should be mandatory that a satisfactory Compliance Report is prepared before a Commencement Notice is submitted to the Council.

This procedure details the actions and responsibilities of the main parties to the planning approval process, being the planners, drainage engineers and the developer. As well as technical vetting and approval of Planning Applications, the procedure covers completion of planning agreements and processing of fees and deposits.

3.3 Construction and Connection

3.3.1 Current Arrangements

All Councils acknowledge that quality of construction of drainage works is of utmost importance to the performance of the asset over its lifetime, which can be up to 100 years. Among the results of poor quality materials and workmanship are:

- ◆ Premature failure of the pipeline, through cracking or collapse;
- ◆ Infiltration of groundwater through poorly jointed pipes and connections;
- ◆ Inflow of stormwater into foul systems through improper connections;
- ◆ Outflow of sewage resulting in groundwater contamination;
- ◆ Increased maintenance through poor quality jointing.

The effects of these problems are already evident in the existing substantial amounts of inflow and infiltration, which are compromising the capacity of collection systems, pumping installations and treatment facilities of the Dublin region. This situation will lead to restrictions on future development and increased maintenance costs. Further information on the adverse effects of defects in the drainage fabric is contained in the Regional Policy on Inflow, Infiltration and Exfiltration.

Monitoring of drainage construction varies, depending on availability of suitably skilled staff. The perception is that the hugely increased pace of development seen in recent years has put much strain on the situation, in that more sites are under construction, using less experienced, and probably less conscientious contractors. Evidence can be seen from the recent modelling results for the Grand Canal catchment, revealing substantial inflow and infiltration from areas of separate drainage and relatively recent construction.

Connection of the site to the main drainage is seen as the best opportunity that the Council has to enforce standards on the developer. This principle should continue.

Councils currently either carry out connections themselves, or allow suitably qualified developers to make the connections, under their monitoring. This practice should continue.

A large number of connections to the system are made as development proceeds and is occupied. These are generally to the newly laid sewers within the development before being taken in charge. There is generally only one connection to the public sewer. However the developer may well connect further phases of development, in which case all phases need to be monitored to ensure that drainage construction for the overall site is satisfactory.

3.3.2 Proposed Arrangements

The proposed procedures are intended to formalise and strengthen the monitoring of construction, with the benefit of much reduced future maintenance and improved performance of the systems. It is proposed that monitoring be carried out by the Local Authority Drainage Department. This arrangement would require increased technical staff in the Drainage Departments or out-sourcing if resources are not available.

The management of construction monitoring and agreements should remain with the Planning Department, with drainage matters being the responsibility of the Drainage Department. The Planning Department would remain responsible for upkeep of the Planning Database, and for collecting monitoring results from the various departments involved in the development.

3.3.3 Details of the Procedure

Together with specific drainage requirements for planning approval, the Council Drainage Department will have supplied the developer with their requirements for drainage construction, in terms of construction details and specifications, and the monitoring and approvals procedure. The Drainage Department will also have approved any Flood Impact Assessment and agreed the Sediment and Water Pollution Control Plan.

The concern with the monitoring process is that although there is overall certification for all phased developments, the connection approval for an early stage should not be extended to subsequent stages without further monitoring of construction. Certification should not be allowed until all drainage construction is satisfactory.

The procedure shown on the Flow Diagram is therefore reiterative, with monitoring at three stages:

- Initial connection of development (of first phase);
- Checking of connection to subsequent phases, or individual premises;
- Latent defect check of drainage for the whole development.

The procedure starts with notification from the developer of site work starting and his intended programme, thus allowing the involved departments to alert their inspectors of their forthcoming involvement in the development. This is done by the developer submitting a Commencement Notice to the Planning Department, which is lodged on the database. The Planning Department can then advise the developer of any particular Council requirements for the construction. These requirements would include the points during and after construction when inspections are required, as well as any testing and survey work required.

The Drainage Department's inspectors then monitor the works for each phase of the development throughout the construction period, concluding with the issue of a snag list on substantial completion. Substantial completion would be when all foul and storm systems are installed and tested and house connections completed. The inspectors will require powers of access to private lands and back gardens.

Having carried out any remedial works, the developer applies for final inspection and connection through the Drainage Department. Further inspection, and snagging as necessary, is carried out until the Drainage Department is satisfied that the systems are of satisfactory quality and then agrees to the connection being made, by issue of the Certification of Rectification of Defects. The connection is then made, and recorded on the Planning Database, thus providing evidence of the existence of new customers and their discharges to the drainage systems.

For subsequent phases of development the same procedure would be followed, with Certification of rectification of Defects issued for each Phase, or individual premises. When the development is completed the Drainage Department carries out a latent defect check on the whole development. The overall Completion Certificate is issued through the Planning Department, and the maintenance period started.

3.3.4 Recommendations for Drainage Inspectorate

Increasing the level of inspection will inevitably result in additional costs to the Councils for more inspectors. These costs can be offset by:

- Increasing charges to developers for processing of their development;
- Charging developers on a time and expenses basis for additional services, such as repeated visits to site;

- Reduction in sewerage infrastructure, pumping and treatment costs as a result of reducing illegitimate flows;
- Increased revenue from new developments able to connect as a result of reducing illegitimate flows.

It is worthwhile to assess the cost of the presence of inflow and infiltration to drainage and treatment systems, using the Ringsend WwTW catchment as an example.

Sewerage modelling under the GSDSDS has confirmed that infiltration flows exist in the following major catchments contributing to flows to the Ringsend WwTW:

Catchment	Approximate Infiltration Flow
Grand Canal System	200 l/s
City Centre/Docklands	600 l/s
Dun Laoghaire Rathdown	500 l/s
Rathmines & Pembroke High Level	500 l/s
Total	1800 l/s

Table 3.1 *Approximate Infiltration Flows to Ringsend WwTW*

The Study also found substantial amounts of infiltration to predominantly separate systems, shown by rapid increases in flow rates in response to rainfall. Figures for inflow are more difficult to quantify, since they require flow monitor information for long periods. Nevertheless the presence of substantial amounts of inflow and infiltration in separate and fairly recent systems indicates that the drainage fabric is in unsatisfactory condition.

Inflow and infiltration can be reduced but it is a difficult and expensive process, and subject to “diminishing returns.” It is much more cost-effective to minimise its occurrence in the first place, and hence there is a pressing need to improve the quality of drainage construction and maintain its condition for as long as possible.

Significant savings in the costs of conveyance and treatment could be achieved by minimising inflow and infiltration, which would in itself pay for the drainage inspectorate. Further information is available in the Inflow/Infiltration/Exfiltration Policy document (Ref: GSDSDS/NE02057/028-04).

Cost-effective methods of achieving more widespread and intensive drainage inspection for the Dublin Region would include:

- Sharing inspection work across the Region and Council boundaries, so that staff requirements could be flexibly matched to demands;
- Setting up a small team of dedicated, expert staff of inspectors;
- Providing inspectors with the authority to enter private lands and back gardens to investigate and inspect drainage systems;
- Supporting the team with laptop computers containing maps, sewers records, GIS information, so they can operate independently from Council offices;

- Provide electronic data links for the team to transfer records and information without having to return frequently to Council offices and depots.

The overall objective would be that the Drainage Inspectorate be a well-equipped and knowledgeable team, supported by electronic communications, so that they can maximise their time on site.

3.4 Taking-in-Charge Procedures

Taking in charge is the process whereby ownership and future maintenance of drainage assets passes from the developer to the Council Drainage Department. The Drainage Department therefore needs to be satisfied that the assets have been designed and constructed properly, are functioning satisfactorily and have accompanying record drawings, manuals, etc. to enable them to be maintained in the future.

Taking in charge is undertaken at the developer's request, since the developer does not normally want to retain responsibility for the drainage assets after he has sold the development properties. Some drainage systems, such as those within apartment complexes and industrial estates, remain in private ownership, with maintenance being carried out by the owners or a separate maintenance firm.

There are instances where such systems have had to be taken in charge due to default, and have caused considerable expense to the Councils in refurbishment to achieve satisfactory performance. Since private systems are subject to little or no monitoring of construction, there is the likelihood that many of the defects are located in private drains.

There is therefore a strong case for insisting that all drainage systems shall be designed and constructed to the same standards as those to be taken in charge.

Quality of Drainage Construction

All drainage shall be designed, constructed and monitored to a standard equivalent to that required for systems being taken-in-charge

3.4.1 Current Arrangements

The taking in charge process is managed by the Council's Planning Department, with drainage often being taken in charge in conjunction with the roads. As-built records are held by the Planning Department, and there is often no formal system for transferring such information to the Drainage Department.

Taking in charge agreements and associated bonds are generally managed by the Planning Department. There have been instances where the bond has been insufficient to finance remedial works. In such cases funds have had to be raised from the residents or financed by the Council.

3.4.2 Proposed Arrangements

Management of the taking in charge process should remain with the Planning Department. When the drainage systems have been connected the maintenance period starts, with the Planning Department publishing dates on the Planning Database. The Planning Department issues all Council requirements for meeting Taking-in-Charge requirements, which would include:

- ◆ Update of all information supplied in the Taking in Charge Submission to reflect actual construction;
- ◆ Up to date Health & Safety file;
- ◆ CCTV records of all pipelines;
- ◆ Data records in accordance with Local Authority requirements;
- ◆ Hydraulic models for medium to large developments, using Council approved software;
- ◆ Design calculations, checked and reflecting the final systems installed;
- ◆ Records of all tests of materials, installations and equipment;
- ◆ Operation and Maintenance manuals for all equipment;
- ◆ Maintenance plans for all SuDS installations;
- ◆ Flow surveys to be carried out as required by Local Authority;
- ◆ As-built record drawings of all pipelines, installations, buildings and compounds.

The arrangements are shown on the Flow Diagram entitled "Taking in Charge of Drainage."

The maintenance period would be a minimum of one year, with final inspections being arranged for month 10, to allow time for remedial works. The Planning Department would continue to manage the agreement and financial arrangements, and the Drainage Department would have the option of undertaking remedial works at the developer's expense, should he be in default.

Further details of taking in charge requirements, based on "Sewers for Adoption, 5th Edition" are contained in Appendix B.

3.5 Taking in Charge Requirements for Sewerage and Drainage

3.5.1 Current Arrangements

Sewerage, sewage pumping and sewage treatment facilities are currently taken in charge by the Council Drainage Department. Taking in charge of drainage is shared between the Council Drainage and Roads Departments. Responsibility for the drainage of motorways and trunk roads rests with the Roads Department.

Road drainage for developments is taken in charge by the Roads Department in conjunction with the road itself, but the responsibility for the drainage systems remains with either with the Drainage Department or the Roads Department. Maintenance of highway gullies in such taken-in-charge roads rests with either the Roads or Drainage Departments.

3.5.2 Proposed Arrangements

The taking in charge arrangements for the various elements of sewerage and drainage should be in accordance with Table 3.2.

All pipelines of 150mm diameter and above which are to be taken-in-charge shall be surveyed by CCTV, and the results supplied to the Drainage Department.

The developer shall provide a SUS25 survey of all manholes, etc, within 6 months of completion, with quality monitoring by the Drainage Inspector.

Sewerage and Drainage Element	TiC Responsibility	Comments
Foul Gravity Sewers and Drains	Drainage Dept.	Excepting private drains which are not TiC
Surface Water Gravity Sewers	Drainage or Roads Dept.	Excepting private drains which are not TiC
Road Drains in urban areas	Roads Dept.	Connecting road gullies to storm sewers
Road Drains in non-urban areas	Roads Dept.	Motorways, trunk and rural roads
Outfalls	Drainage Dept.	From WwTW, PS, CSO, etc, including headwall and flap valve
Pumping Mains	Drainage Dept.	Including discharge chamber
Manholes and Chambers	Drainage or Roads Dept.	Excepting on private drains which are not TiC
Ancillary Chambers	Drainage Dept.	CSO chambers, air valve and washout chambers, etc
Ancillary Equipment	Drainage Dept.	Valves, penstocks, CSO screens, etc
Road Gullies in urban areas	Drainage or Roads Dept.	
Road gullies in non-urban areas	Roads Dept.	Motorways, trunk and rural roads
Sewage Pumping Stations	Drainage Dept.	Including compounds and access roads
Stormwater Pumping Stations		Not recommended for TiC
Wastewater Treatment Works	Drainage Dept.	Major Works only. Residential Works and septic tanks are not TiC

Table 3.2 *Taking in Charge Arrangements*