

PLANNING APPLICATIONS – DRAINAGE EFFECTIVENESS AND IMPACT ASSESSMENT PROCEDURE

New developments must have effective, durable drainage and must not increase flood risk or pollution. All significant developments should be carried out in accordance with the principles of sustainable drainage (SUDS).

In order to ensure this, it is advisable that the City Council is consulted at the pre-Planning Application Stage.

At Pre-Planning Application or Outline Application Stage

A Drainage Impact Assessment (DIA) is required for all significant¹ developments.

The DIA submitted by the developer should include the following checked (✓) items. Note that the Land Drainage Team will insert the appropriate ticks for each specific development:

| TOPIC | Req'd (✓) | Item | Date Supplied |
|-------------------------|-----------------|--|---------------|
| EFFECTIVENESS APPRAISAL | ✓ ²² | A description of current drainage pattern | |
| | ✓ ² | A concept drawing of the development proposal | |
| | ✓ ² | A brief summary of how the drainage design provides SUDS techniques | |
| | | A summary of the SUDS to be incorporated | |
| | | The soil classification for the site | |
| | | The results of soil porosity test (preferably at the location of proposed infiltration devices) | |
| | | Confirmation of maintenance responsibility | |
| | | Existing site flood risk assessment | |
| IMPACT APPRAISAL | | Calculations showing pre- and post-development peak run-off rate for the agreed critical rainfall event(s) | |
| | | A survey of the condition of agreed sections of existing downstream culverts and watercourses | |
| AMENITY APPRAISAL | | An assessment of impact on habitats | |

¹ The following types of development **are not** regarded as significant in this sense.

- Individual householder applications
- developments of less than ten new dwellings (unless a sensitive area may be affected)
- non-householder extensions under 100 square metres
- changes of use not involving new buildings or hardsurfacing
- developments which are part of a larger development for which a DIA has already been accepted

² This information is always required and should be submitted with the planning application. The Council may also ask for other list items to assist with the appraisal of the application.

At Detailed Application or Reserve Matters Stage

Before development proceeds, the following items should additionally be submitted, in an approved format, for approval and recording. Note that the Land Drainage Team will insert the appropriate ticks for each specific development

| TOPIC | Req'd (✓) | Item | Date Supplied |
|--|--------------|---|------------------|
| IMPACT APPRAISAL | | Finished floor, road and footpath levels | |
| | | Flood levels on site for the agreed critical rainfall event(s) – from sewers and watercourses | |
| | | Hydrological/ hydraulic models of receiving watercourse at agreed locations for the agreed critical rainfall event(s) | |
| | | Details of downstream flood mitigation works | |
| GENERAL DRAINAGE INFRA-STRUCTURE | | Scale plan and longitudinal sections of site drainage installations (including dimensions, depths, material types, strengths) | |
| | | Summary of design flow rates | |
| | | Summary of design (structural) loading conditions | |
| | | Calculations to illustrate capacities, performance and strengths | |
| DETENTION PONDS, RESERVOIRS OR BASINS | | Catchment plan | |
| | | Flood inflow calculations | |
| | | Topographic plan of pond, reservoir or basin | |
| | | Flood routing calculations for the design events | |
| | | Flood spillway and outlet hydraulic design | |
| | | Embankment stability and seepage calculations | |
| | | Plan and section of outlet pipework and valves | |
| PUMPING STATIONS | | General arrangement drawing for pumping station | |
| | | Summary of design inflows and pumping capacity | |
| | | Details of emergency overflows, alarms, telemetry | |
| MAINTENANCE | | Confirmation of maintenance responsibility for each element of the drainage system | |
| | | Handbook, manual or guidance given to maintainer | |

Some relevant guidelines (for information only):

Reservoir Engineering

Floods and reservoir safety – The Institution of Civil Engineers (ISBN 0 7277 2503 3)

Small embankment reservoirs – CIRIA Report 161 (ISBN 0 86017 461 1)

Design of Flood Storage Reservoirs – CIRIA (ISBN 0 7506 1057 3)

Sustainable Drainage

Sustainable urban drainage systems, Design manual for England and Wales – CIRIA Report 522 (ISBN 0 86017 522 7)

Sustainable urban drainage systems, Best practice manual – CIRIA Report 523 (ISBN 0 86017 523 7)

Pumping Stations

Design of low-lift pumping stations – CIRIA Report 121 (ISBN 0 86017 312 7)

Guide to the design of thrust blocks for buried pressure pipelines – CIRIA Report 128 (ISBN 0 86017 359 3)

Hydraulic and Hydrological Design

Culvert design guide – CIRIA Report 168 (ISBN 0 86017 467 0)

Flood estimation handbook – Institute of Hydrology (ISBN 0 948540 94 X)

General Guidance

Framework for Sustainable Drainage Systems (SUDS) in England and Wales – National SUDS Working Group