

Drain and sewer systems in urban areas were developed to deal with the immediate problem of getting rid of wastewater and surface water. Initially that was done by utilising ditches and natural watercourses for the disposal of sewage and household waste, and as time went by those channels were gradually culverted and formally converted to combined sewers

The impact of that was soon felt on larger rivers as they were over-run with sewage. In response, interceptor sewers were constructed which took the daily foul flows to sewage treatment facilities.

However, overflows remained in place to enable combined foul and surface water peak flows to discharge into both rivers and the sea.

It was eventually recognised that building separate systems for foul sewage and surface water sewers would dramatically improve our ability to treat foul sewage while at the same time clean up discharges from surface water. As the pace of development increased, however, there was a growing awareness that there was a downside, in that the natural flow of smaller streams was being changed dramatically.

For long periods base flows in river systems would be reduced; then at times of rainfall the flows would be turned into a torrent, in turn leading to damage to flora and fauna and the erosion of banks, or possibly even flash flooding.

The reasons for that is that, when rain falls onto a greenfield site, the majority of the water soaks into the ground with only a small percentage resulting in direct contributory flow to watercourses. As development takes place sewers carry the flow direct to watercourses, resulting in an increase in the quantity of water and a decrease in its quality and in the time it takes to get the water to the river. That reduces the amount of water reaching underground strata, which depletes a major resource and increases the potential for flooding.

Sustainable urban drainage systems (SUDs) is a concept that focuses decisions about drainage on the environment and the community. It considers surface run-off quantity equally with the amenity value of water in the built environment.