

THE ROOT OF THE PROBLEM

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The problems caused by roots finding their way into underground drainage pipes are not often considered or discussed. However, root ingress is a very real problem to drainage systems and therefore in order to ensure that you get the most effective use of your drainage scheme, education in the causes and how to prevent the damage or deal with blockages once they have occurred is necessary.



When a drainage scheme is installed consideration should always be given to ensure that the system is functional, the pipes and backfill are at the right depth and sized correctly. However, how many consider the implications of the planting that provides the landscaping feature?

A good drainage design will consider and accommodate the implications of the present landscape on the drainage system. There is a rule of thumb, which suggests that a drain should never be laid under the canopy of a tree, others will say that a drain should not be installed within 10-metres of a tree. If there is no option but to lay the pipework within the canopy of the tree then it is imperative to lay a section of unperforated pipe. This is not ideal,

as time passes and the tree grows, the roots will spread and there is always the possibility that they will eventually find their way into the pipe and cause serious problems.

Roots of trees and woody plants naturally grow in the upper layers of soil, usually not extending beyond the tree or plant's drip line. However, if the sensitive tips of root shoots, called the 'meristem', detects a good source of nutrition or moisture they will grow one cell at a time towards that source.

Roots enter the pipes as tiny hair-like structures. They grow quickly inside the pipe and can separate or crack pipe joints and eventually block the system. Because both pipes and roots are underground and out of sight Golf clubs are often unaware of root



invasions until serious and costly damage has occurred.

So what can be done? One option is to cut the roots in the pipes or rod the pipes to clear blockages. This is only a temporary measure, as this often encourages faster thicker re-growth. Nigel Law, Contract Supervisor for White Horse Contractors tells the story of a recreation ground in Reading where the company had been asked to review the drainage and establish the problem. A wet spot was identified in the field and small-scale excavations took place, which showed the roots had attached themselves and entered the drainage pipe. The only course of action on this occasion was to cut the pipe and remove a section and pull the roots out, this was quite remarkable as the roots were removed in a single piece measuring 12-meters and 100mm diameter, the size of the internal pipe. On this occasion the pipe was replaced and rejoined.

"Cutting down established trees on Golf Courses in general is not welcomed", says Robert Donald Managing Director of White Horse Contractors, "and landscaping is an important aspect. Trees provide many of our courses with a natural architecture that could not be mimicked in land formations alone. However, we have noticed on so many occasions that the drainage of a recently constructed course suffers as planting schemes are introduced after the contractors have left and take little account of drainage schemes. Some of the worst species are willows and poplars, these

are frequently introduced to provide rapid cover as they are quick growing and tolerant of heavy soils. Unfortunately, these are also water loving plants and the roots have a propensity to seek moisture, the drainage becomes the target"

To manage and maintain root ingress it is possible to install a plastic or synthetic root barrier. Using a chain trencher a trench is cut to a minimum 1.25m depth the barrier is installed between the drainage scheme and the roots, thereby preventing future growth in that particular direction. The trench is backfilled and reinstated and a permanent solution achieved. An alternative to this is to dig a trench only, around the fairway, green, or drainage scheme and then every other year the trench is re-excavated and the roots effectively pruned. This method is widely used in Portugal, where many of the courses are surrounded by dense coniferous woodland.

If you consider that the drainage scheme efficiency is diminishing on your course you would do well to explore the possibility of root ingress as well as the usual capping compaction and general deterioration. Have an inspection, expose some pipe work adjacent to tree planted areas and see if you can get to the root of your drainage problem.

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