

Points to Consider When Designing Land Drainage Systems

A land drainage system is just that, a system, and not just a pipe network, so it is key that the system is designed as a complete package.

To start the process we need to analyse why is the paddock wet in the first place?

There could be a bunch of answers to this question and you really need to consider them all because the solution could be different for each one of them.

Reasons such as:

- Compacted soil
- Impermeable soil
- High or perched water table
- Poorly contoured surface etc.

These are all possible issues causing the problem and then there could be a combination of any or all of these factors as well.

Once you know you have a problem as shown in the three photos opposite the next step is to develop a solution and to do this you need to carry out some investigation into items such as:

- Physical soil properties
- Water table level
- Surface shape

To get some of these answers you may need to dig some holes and survey the site.

With this information you can then develop a solution for the site and put together a plan and a budget to put that solution into action.

If the solution requires the installation of a pipe drainage network then we look at the ways of making that network perform at its best for as long as possible. We must say that a drainage network solution most likely doesn't just mean a pipe network system. For best performance some surface shaping may be required and we also need to consider other ground treatments such as mole draining. For the pipe network we need to consider trench backfill materials and perhaps even drain line flushing points.



The design of a successful drainage system will consider all of the following:

- Soil Profile
- Water table
- Surface profile
- Area to be drained
- Existing Network
- Outlet for new pipe work or system
- Irrigation use
- Budget
- Programme and or staging

First up, discussions are had with the client to discuss the scope of the solution required (one paddock, or the entire farm) and any staging that may be required to ensure the work remains within financial budgets for the year or for the years it may take to complete the project. This discussion will also consider pipe type and backfill materials. The site is then inspected and surveyed to establish a surface profile.



Using the survey data a drainage design can be prepared and we can also consider:

- The most effective drain spacing
- Pipe type
- Backfill materials.
- Other ground treatments to improve drainage performance.
- Any contouring which may be required

Some or all of the above will be impacted by the overall budget so we will advise on the best way to get value for money out of the drainage design we have prepared.

Once the final plan and budget has been approved the work can be programmed and then installed.

Mole draining etc will also be programmed for a suitable time and all of the above will be co-ordinated with your farming operation.



Because drainage can't be salvaged if it is designed or installed incorrectly, it needs to be done right the first time.

Our goals for this process are to provide the client with:

- The best value for money solution for their drainage needs by supplying experienced advice.
- To install that solution with the least interruption to their farming operation.

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