Planning your POLYTUNNEL

Erecting a polytunnel is easy if you have a nice patch of level ground available, but what can you do if your land (like most land) is less than perfect? Mark Gatter and Andy McKee make a welcome return with the answers

WHATEVER YOUR POTENTIAL site is like, planning a polytunnel is one thing; putting one up is rather more work, and unless you know what to expect, don't imagine that you'll have the whole thing up and covered in a day. The larger the tunnel is, the longer it's all going to take – and remember, it's worth doing well: the better the build, the longer it will last.

Ideally, polytunnels should be put up on level ground with at least 90cm (3ft) of space on all sides, and should be even further from potential hazards such as hedges and ditches. However, very often these ideal circumstances just don't exist. If that's the case in your garden, don't despair: polytunnels can be put up on sloping ground, next to ditches and alongside hedges, and still produce fine crops. Of course, there are limits. For example, you wouldn't want to site a tunnel alongside a hedge if it also obscured the sun. But even when conditions seem perfect there's always an element of adventure in polytunnel gardening, and I'm sorry to say it may appear much sooner than you might have hoped!

UNEVEN GROUND

* **UP AND DOWN ON A SLOPE**
Polytunnels can be sited lengthwise on an incline with no trouble at all, so long as a couple of key points are followed. First, while the hoop at the top end can be higher than the hoop at the bottom end, each hoop must be exactly level from side to side. Second, the rate of descent must be even along the entire length of the tunnel, so that when you set the foundation poles you should be able to sight along them and see that none are set lower or higher than the rest.

If those two comparatively simple conditions are met, the cover can be pulled tight enough to stay secure, even during very strong winds. If not, uneven tension will allow it to move, leading either to immediate damage or a shortened lifespan.

* **SIDE TO SIDE ON A SLOPE**
If the tunnel is to run perpendicular to the slope, there are other problems to solve. The hoops still have to be set level from side to side, and this means that on the upper side the foundation tubes must be set deeper than on the lower side.

> "IT'S BETTER TO HAVE THE UPPER ROW OF FOUNDATION TUBES SET DEEPER THAN YOU MIGHT PREFER, THAN HAVING THE LOWER TUBES SET TOO SHALLOW"

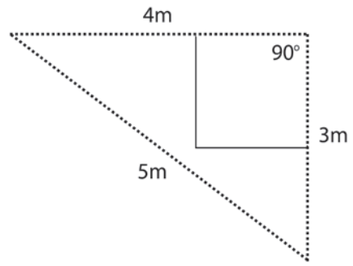
It's better to have the upper row of foundation tubes set deeper than you might prefer, than having the lower tubes set too shallow. If that happens, the entire tunnel will be weaker in strong winds, and there's a possibility that the frame could be pulled right up out of the ground. Then you no longer have a polytunnel – you have an extremely large, heavy and aggressive kite.

Getting the foundation tubes level on a slope is not an especially easy task. Even when constructing a fairly small polytunnel a regular spirit-level might seem inadequate, and the larger the tunnel, the more true this becomes. If this is the case you can take a different DIY approach.

First, plan the position of the foundation tubes accurately. The '3, 4, 5' method (see the diagram) will give you a perfect 90-degree angle for the corners, and measured lengths of twine allow accurate positioning of the foundation tubes on the opposite side. At these points, hammer stakes into the ground far enough to be stable – 15cm (6in) should be OK.

Clear, flexible plastic tubing is readily available at many DIY stores, pet shops and pond suppliers. Plan to buy enough to span the diagonal of the tunnel from one corner to the other, plus another 90cm (3ft) at each end. Fill the entire pipe with water and carry it to the site, taking care to keep the ends blocked so the water doesn't escape. From now on, it's best if two people do the work. It *can* be done by one, but it takes much more time, and is far more fiddly.

As you can see, much more earth was excavated to set the foundation tubes on one side of the tunnel than the other.



The idea is that the water level will be the same at both ends of the tube. It's a bit like having a twelve-metre-long spirit-level! Lower one end so that enough water runs out to leave an air space of 25–30cm (10–12in) at each end. Then block both ends with a finger to prevent more water escaping. One person then holds one end of the tube up against the first corner stake, while the other carries the other end to the diagonally opposite corner and holds it against that stake in the same way. If the tube ends look reasonably level – and this can be judged by eye – the fingers blocking the ends can be slowly removed. The water will then find its own level, and this can be marked off on the stakes. You will then have perfectly level marks on two opposite corners. While the first person remains at the first stake, the second person carries the other end of the tube to each stake in turn – blocking the tube end during each move – then makes another mark at the same level as on the first. At the end of this operation you will have an exactly level set of marks on all the stakes.

The depth to which each of the foundation tubes needs to be buried can then be figured out. Find the mark furthest from the ground and measure from it so that the pole at that position will be buried to the full depth recommended by the tunnel manufacturer. Then, the rest of them will be even deeper… and therefore, even safer.

Holes are dug for the foundation tubes and their anchor plates at the points determined by using the '3, 4, 5' method and simple measuring.

When siting a polytunnel on hard standing ground there is no need for a trench or foundation tubes. Instead, the base of the hoops is bolted directly into the concrete. Most manufacturers will supply tube fittings enabling you to do this easily enough. The cover is then held in place using base rails. ▶

SECURING THE FOUNDATIONS

Tempting as it may be, try to resist setting your foundation poles in concrete. Most counties in the UK will allow quite large domestic polytunnels with no planning permission at all, but this all changes if you use concrete for the foundations. Fortunately, if you use anchor plates the foundation poles will be held in place as securely as if they were set in concrete, but without damaging your planning status.

Anchor plates are square metal sheets with a hole in the centre to accommodate the foundation tube. The plate is held in place at the lower end of the tube with two clamps, one just below it to prevent it slipping off, and another just above it, holding it firmly in place. The anchor plate then goes at the foot of a hole that's at least 60cm (2ft) deep, and possibly more if you're on the 'up side' of a slope. When the hole is filled in, even if you live in an area with lighter, sandy soil, the sheer weight of the material holds the anchor plates – and therefore the entire polytunnel – in place. If you have heavier, clay soil, they will be even more secure. If your soil is lighter, try to mix in some rocks or bricks as you fill in the holes.

Once the foundation tubes are set, the main construction can take place.

SECURING THE COVER

Cover edges are traditionally 'trenched' in, i.e. buried in a trench that's dug all the way round the tunnel. This requires a decent depth of earth and a huge amount of work, but also means that a 90cm (3ft) space all the way round the tunnel is a necessity, or there just won't be enough room to move. Fortunately, if you use base rails instead, a trench – and most of the space that would be required to deal with it – isn't needed. This means you can build the tunnel just a handful of centimetres from the edge of a ditch, if you have to. So long as you can tuck the edges of the cover a few centimetres into the earth, you just don't need a trench.

Wooden base rails are clamped to the hoops. The cover is pulled tight over it, and another piece of wood is hammered down on the outside. This means that the tensioning of the cover can't be adjusted later and must be right first time – after all, you're putting nail holes in it.

Aluminium base rails sandwich the cover between the metal form and two plastic inserts. The end result is extremely strong.

On the upper side of a slope, foundation tubes need to be set deeper than on the lower side.

> ALUMINIUM BASE RAILS ARE MORE EXPENSIVE THAN THEIR WOODEN COUNTERPARTS, BUT THEY DON'T REQUIRE ANY NAILS TO BE DRIVEN THROUGH THE COVER

A storm brace (shown here with a crop bar) will hold the hoops even more firmly together in the event of a storm, giving further peace of mind.

Aluminium base rails (see below) are more expensive than their wooden counterparts, but they don't require any nails to be driven through the cover. Instead, it's held securely in place by two plastic inserts. As well as allowing more flexibility in siting the tunnel, using aluminium base rails also makes it much easier to tighten the cover. The clamps fastening the rails to the hoops are left loose at first, and the cover is sandwiched between the rail and the plastic inserts while it, too, is comparatively loose – just 'hand' tight. Then – and this is ideally a two-person job, so don't let your helper escape just yet – one person grabs the hoop for balance and then stands on the base rail, pushing it down, at which point the other tightens the clamps. Once this has been done along both sides of the tunnel, it should be done again, as the tension is unlikely to be even. When this operation is complete, the cover ends can be tightened without any further need to worry about the sides, whereas under the 'trenching' method, the entire cover has to be dealt with in a single operation, and uneven tension is the likely result.

The entire rail assembly is clamped into place on the hoops.

NEXT MONTH

We'll look at setting up the beds in a new tunnel, building paths and dealing with some of the bigger pests including mice, rabbits and voles. ❋

Further Info

Visit Mark and Andy at: http://www.farminmypocket.co.uk for info on self-sufficiency.