

Setting up a New Nursery – Points to Consider

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The following may seem basic to you, but it is amazing how many sites have not considered them! This is especially true of your business is expanding to a new site – take the opportunity to make sure the following are right and you will have a good foundation for the future.

Site

- Think ahead – how big will you be in 10 years? Minimum site size should be 1 ha with room for further expansion up to at least 5ha.
- Level ground – why build on the side of a mountain if you have the choice. Earthworks are relatively cheap these days but they make the job much harder in other ways, especially for the all important materials handling. Stick to a site preferably with no more than +/- 1m over the site.
- Access – you may not need to have artics for your own transport but someone el will certainly want to deliver to you with them. You must have sufficient for a 12m trailer to enter the site safely and turn to exit.
- Connections to main road networks – saves a lot of time.
- Availability of suitable staff.

Services.

- Ideally you should have the potential for connection to natural gas, so check the locations of networks. You won't be able to get a firm answer until you want th connection, as system loads change, but at least if you're near a pipe you've got chance! In general try not to be more than half a km from an existing supply.
- Water either mains or on site form a borehole or well. Check the quality and availability through the year. Consider a reservoir for roof-water run-off, as this will probably be necessary for buffering the discharge anyway and will save you money in the long term (subject to disease risk assessment to plants).
- Electricity – at the very least have a good sized 3 phase supply. For larger sites we usually consider a direct 11kV connection with site owned transformer, this makes it easy to install a CHP at a later date.
- CHP – consider if this is viable at this stage or not, don't rule it out immediately as it can be cheaper initially due to offset capital costs.

Type of structure.

- The usual progression is low cost poly tunnels, high cost poly tunnels and the glass. The capital costs generally increase as you move up the line, and the running costs go down.

- Unless you have specific reasons not to go for a structure with a larger working area, in other words bigger houses or in the case of plastic clad structures multi-spans. These give far better value for money and better environment for the crop usually.
- Think and plan ahead – don't add houses in on a random basis. Consider how the flow of materials will work, how it will fit in with future expansion, have a grand design!
- Go high – it may seem unnecessary now but will usually help later for other projects, particularly lighting, screens etc..
- Have a good ventilation ratio and system. There are a huge variety of systems available, but don't skimp on it!
- For glasshouses consider carefully the bay and section widths, particularly in relation to keeping the house flexible for future changes in handling systems. 9.6m is the minimum I would recommend for a house with container benching, also consider going up to 12m.
- Keep to rectangular shapes as much as possible – should you ever install benches you'll see why!
- Make sure the structure is designed and built to the relevant British or Euro standard, topographically adjusted for the weather in your area.

Internal services

There's a huge amount to say on all of these subjects so the following don't even scratch the surface but are a few major issues to consider before the detail.

- Heating – many types available the most common of which is hot water. Warm air is often installed as a lower cost alternative but in my opinion is generally not so appropriate to horticultural crops as the higher discharge temperatures cause stratification of the air and greater disease problems due to condensation on crop leaves. This is particularly true of dense crops, where low level pipe heating is far preferable. In my experience those that have changed over from warm air to hot water have always thought it incredibly worthwhile. Running costs will be significantly lower for like for like operating regimes. Under floor heating is good in certain applications – consider it if you're laying concrete floors in particular.
- Irrigation – overhead is cheap and cheerful, but has associated disease risks and quality issues for some crops. Drip irrigation is an accurate method typical for a lot of situations, and ebb and flood is ideal for certain pot plants and young plants.
- Screens – thermal and shade. Our advice is to go for twin systems now, as this really works better than dual purpose.
- Insect screens – expensive but can be very necessary, and possibly more so. There are several different approaches now, and some cost savings to be made to get the correct choice.
- Environmental computers. You don't have to be thinking huge sums, even for the smaller nursery there are systems around which do a good job for taking over the basic weather related issues like heating and vent control. Make sure you have

system linked to basic meteorological data to ensure that vents shut on wind spe
– you'll sleep easier at night and possible avoid large repair bills.

- CO2 enrichment. It has to be flue gas these days to be economic really, unless you use low volumes or are in a speciality market or require the guarantee of ext purity. This means kerosene, LPG or mains gas. Generally low level systems a best if you are on higher dosing rates, and this means a good design of distributi system and layout, with appropriate heat storage and controls.