

The Alternative Kitchen Garden

Episode 49 transcript



“Hello and welcome to episode 49 of the Alternative Kitchen Garden. I’m Emma and today the sun is shining in Oxfordshire, so we’re having an outside broadcast. Well, not entirely, because I’m standing in my Grow Dome, which is my funky space-age greenhouse at the bottom of my garden. Some of you have asked about the Grow Dome, so today we’re going to have an audio tour of the Grow Dome.

I ordered my Grow Dome a couple of years ago now, it took us a while to put it up. And it became fully functional, sort of in the autumn, so this is its first season functioning as a proper greenhouse, so it’s all very exciting. And the idea of the Grow Dome is that it’s an environmentally-friendly greenhouse. It’s designed around sort of passive energy principles, so that it does as much as it can without needing an external power. So there’s no extra heat in the Grow Dome, or anything like that. I haven’t got a cable out here for electricity. It’s supposedly self-sufficient.

So there are 7 main selling points for the Grow Dome, and the first is its geodesic shape, so it’s a bit like the Eden Project – looks a bit funky, in the bottom of the garden I have a geodesic dome. So if you’re a hippy from the 70s, you’ll know exactly what that is. If not then I’ll give you a link to some pictures so you can see what it looks like from the outside. And mine is the 15 foot diameter version, so as you can it’s quite a large greenhouse. You can get a 12 foot version now, which is a little bit on the smaller side. When I bought it, the 15 foot was the smallest they did. So you can imagine, if you’ve got a lot of space you can have one pretty much as large as you want to go. There are some people who’ve got 32 footers over in the States, which is where the Grow Domes are made.

The geodesic structure means it’s very strong, so if you live in a place where there’s lots of snow it won’t collapse under the weight of snow. It also withstands high

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winds, which is a great thing in my garden because I have one of the windiest gardens in the history of man, I think, especially this year. Since we put it up we've had no structural issues with it in the winds.

The glazing is all double-glazed polycarbonate. I think if you want to you can upgrade to triple-glazed if you're in a cold part of the world. The polycarbonate glazing is all UV-stabilized, so it won't degrade in the sun. The nice thing about it is that it gives you a bit more of a diffused light than you would get with plain glass. Also, of course, it's unbreakable. And since the kid from the house over the road has a habit of kicking his balls into my garden, I thought that would be a good idea.

One of the interesting features of the Grow Dome is that it contains a thermal mass, which sounds very scientific, but basically it's got a large body of water in it which holds heat. When the sun shines on the Grow Dome, the water heats up and when the sun goes away it lets that heat out slowly. So it cools it down during the day and warms it up at night. When you buy the Grow Dome, it's in kit form and you get the bits needed to make a pond. We decided against that because we were getting very fed up with putting it together, and I have 3 large water butts, so I have 3 small ponds instead of one big one that do the same job. I've even got a little solar-powered fountain in the middle one, which is currently dribbling rather than doing anything else. It's a nice sunny day and the solar fountain is almost working. If you can hear a squawking noise, that's one of the chickens who's not very happy that I'm in here and ignoring them out in the garden.

My ponds are looking a bit scummy at the moment. There is a pond plant in each one, but as it's winter it's sunk to the bottom and it's not really doing the job. So they are looking a bit grim. I didn't have time to stock the ponds properly before the winter, there didn't seem to be any point putting pond plants in that were just going to die back over the winter, so stocking the ponds properly is one of the jobs for spring.

Feature number 4 is the automatic vents. Now these are quite common in greenhouses, they're hydraulically operated vents. So when the sun shines they open up the windows, in fact I'll just lean over and reconnect this one. I disconnected them for the winter so that the vents don't get caught by the wind. If I open this up and reconnect it, the vent might actually open itself today and give us some air flow. There we go. That might heat up enough to give us some air flow today.

There are 3 vents in a Grow Dome this size, there's one in the ceiling (I need a ladder to disconnect and reconnect that one) and there's two in the sides. There's one in the south-facing side and one on the east side which is very sheltered. When they're connected in the summer they open up according to the temperature inside the Grow Dome, so that's very much automatic. A very nice feature to have.

When you buy a greenhouse new, very often you don't have enough ventilation. They give you one vent and you can open the door, but really in most greenhouse you need at least 2 vents to get some air flow going and keep things nice and healthy.

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In fact, my plants in here are suffering a little bit from the lack of ventilation. The weather has been horrible these last few weeks and I haven't opened any of the vents. And some of them are getting a little bit mildewy and mouldy. Nothing too serious at the moment, so if we can get the ventilation going today that will help.

Feature number 5 is the bit that makes it look really space-age. The entire north wall of the geodesic dome is covered in Reflectix insulation, so it looks a bit like tin foil but actually it's sort of like bubble wrap covered in tin foil. So it works on an insulation level and it also reflects light – any light that comes in from the south side is reflected back into the Grow Dome. Of course, at this time of the year in the UK all the light comes from the south, which is why if you have a greenhouse in the UK, if you can orient the long side sort of east-west, so that the greenhouse is south facing, it will get the most light in the winter which is when it's important if you're going to use the greenhouse over winter. During the summer, light levels are not usually an issue.

I did once meet someone who thought that insulating the entirety of the back wall would cut out a lot of light, but that isn't the case. Especially in this garden, since there's a fence on two sides of the Grow Dome and a hedge on the other. So really all the light comes in from the top and from the south. It's also a nice sheltered spot.

Feature number 6 we haven't installed yet. You get an under-soil heating system which basically consists of a solar-powered fan and some plastic tubing so that it moves the air around the Grow Dome and drags warm air under the soil to stop the soil freezing, which is not an issue – hasn't been an issue in the Grow Dome this year and I don't think it's going to be so I might not fit that.

And feature number 7 is the insulation in the walls. Now it's not entirely a geodesic dome, it has a retaining wall around the bottom and there's foam insulation in the wall itself to keep some heat in.

So those are all the selling points of the Grow Dome. I have to say when I saw a picture of one I just fell in love with it, so 2 years ago I fell in love with the Grow Dome and I had to have one. They're not cheap, but I had the money, so it wasn't an issue.

The construction process was interesting. One of the things that took us a long time was clearing the ground. You need a flat space for the Grow Dome. It doesn't have any foundations as such, but you do need a flat area and you put a ring of gravel round that acts as the sort of base for the walls. And considering the end of our garden was a bramble thicket for many, many years, clearing it was an absolute nightmare. And that took us quite a long time.

The actual construction of the frame, with the geodesic stars, was quite fun. Although I'm not sure Pete would agree, because he did most of the work. Putting it together has been a bit of a labour of love and I'm not entirely convinced that either of us would do it again. If we moved and if I had enough money to buy a Grow Dome

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again I would put somebody else to put it up! It was a bit of a stretch of our DIY skills.

Once the Grow Dome is up of course you have to decide what you want to do inside it. Now I have a raised bed that runs along one side of it, so the east side and round to the south side is one long raised bed. Which is about 3 feet deep, we built it out of big concrete blocks. It's not entirely full because I couldn't afford as much topsoil as would be needed to fill it, but we're getting there with that one.

And there is space in the middle for a lower bed, and the bed in the middle is lower so that it doesn't stop light reaching the thermal mass in the ponds. And we've got the bricks for that, but we haven't had time to put them in and I haven't got the money to fill them at the moment so that's pending for this year as well. So as well as things growing in the raised beds I've got some things growing in containers.

So as I've said, this is the Grow Dome's first season as a proper, fully functioning Grow Dome. I only filled the ponds back in the autumn, so the thermal mass has only been in there for a couple of months. And so I'll tell you what's growing in the Grow Dome at the moment, and what's working really well and what's not working quite so well.

I've got a couple of pots of coriander, which are now running to seed. The interesting thing about that is that they haven't died. Now, as I said, there's no extra heating in the Grow Dome, it's all done by passive solar heating and thermal masses. Of course, the huge concrete blocks that we made the raised bed out of are a thermal mass in their own right. So the structure takes in heat during the day and lets it out at night. So coriander, being a very tender plant, has not died, even though the temperature in here has dropped below freezing. I came out one particularly cold morning, and I had a bucket of water and the top of that had frozen and it was down to about -5 C. But of course you don't get any of the issues of frost, you don't get any frost in the Grow Dome, and you don't get plants being windswept or anything like that. So everything has survived pretty much, including the coriander, which is nice.

I've got some special onions growing here, I've got some Amish onions which are one of the sets of walking onions where the new bulbs form at the top of the stems and then fall over and plant themselves. My nectarine has a new home in here. My nectarine has had a bit of a chequered history. It lived in a container on the patio, which it didn't really like, so I'm hoping that it will now be happier with a permanent home in the Grow Dome. It's a dwarf nectarine, so it won't grow too big, and it's surrounded by little kale plants. Now I planted these a little bit late in the season for them to be winter food, but they're doing very nicely, my little seedlings, and come spring they should put on a burst of growth and give us something to eat.

I've got some lovely Chinese greens that I planted in the autumn and they look absolutely stunning. You know those pictures in magazines you get of really healthy-looking plants? Well they look like that, I'll give you a link to some [pictures](#). I've got some Pak Choi growing there and some Chinese cabbage. We could take some leaves off of those now, they look absolutely lovely. And they are currently escaping the

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slight greenfly issue that the Oriental spinach has, which I think is probably due to stress because it is in a container and it might have been thirsty, so I'm taking care of that.

Next to the Chinese leaves I've got some lamb's lettuce growing. They've only just been transplanted into the bed. I did sow some beetroot seeds there, but I think it was a bit late in the year and also the bed was a bit dry, so most of those didn't come up. So the lamb's lettuce has been transplanted there from a container.

I've got some Pilot peas growing up some twiggy sticks and they're mostly making a break for freedom because my twiggy sticks aren't long enough. So they will start producing peas maybe in the next month or so, certainly by March I would think. They are looking healthy, if a little straggly.

Next to them we've got an experiment, which may not work. I've got some baby leeks growing. I sowed the seeds very late in the season, so they're far too young really to expect anything of them. A lot of them seem to have died actually, and a couple of them have got a bit of a greenfly problem. But it might be that we get some leeks from those, otherwise it was an experiment and you might consider it a failure.

And right at the end of the bed, another permanent planting, I've got some saffron crocuses. Saffron crocuses produce saffron, one of the most expensive spices in the world because it's grown in small quantities and it's very labour-intensive to pick it. They need a Mediterranean climate, they actually grow their leaves in the winter time because of heat and moisture issues in the Mediterranean summer. So they're pushing their leaves through now. I think, since they've only just been planted in there, I think it's too early for me to expect them to flower this year but they are growing leaves so they've settled in quite nicely. And there's some leaf beet growing on the top of there because saffron crocuses are quite low-planted.

I've got some lovely broad bean seedlings in modules that will be planted out later in the year, and in a pot on the floor I've got some Tastoï, so some more Chinese greens that are growing quite nicely with some more coriander. And I've got my little fig tree, which has one leaf on it at the moment, but of course figs are deciduous in the winter so hopefully it will be fine and have a bountiful year this year.

In another container over here I've got some land cress which is a new one on me and this seems to be growing quite nicely as well. So everything in here is currently growing quite nicely, but the reason that that is so is because the things that didn't grow very nicely I took out. I had a couple of things that didn't like the cold. Most things, it seems, in the winter will survive the cold and it's the damp and the harsh weather conditions outside they don't like, so they thrive quite well in the Grow Dome.

Two things I've found which don't like it out here in the winter because it gets too cold are peppers. I've got some sweet peppers growing, and they're actually seedlings, they're quite young. I'm overwintering seedlings for an early start on the season and the ones I've got growing indoors in the house are very healthy and

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growing very well. The ones that I had in the Grow Dome for comparison didn't do very well at all. They were very stunted, I think because they're not getting enough light. And one of them has succumbed to mould, which I think is partly because of the cold and partly because of the ventilation issues. One died, two have been rescued and taken indoors and they I think will survive and be a bit behind the ones which have been growing inside all winter.

The other thing that didn't survive is the Dragon fruit, which is not very surprising. Again, I've got some more of those growing inside the house. So it does get cold in here over the winter, but not cold enough to kill most things. I think the biggest issue in the winter is going to be lack of light. This is a south-facing greenhouse, but because it's a built-up area there's quite a lot of things between it and the sun and I think, on overcast days, it just doesn't get enough sun either to keep it warm or to help the plants grow, so that will be one of the limiting factors.

It will be interesting to see how much the ponds change it in the summer, because before I put the raised bed in, when we put the structure together, on hot days in the summer it did get very, very warm in here. So it will be interesting to see what difference the thermal mass makes with the raised beds. Of course, one of the factors in keeping greenhouses cool in the summer is actually the plants themselves. So if you've got a nice lush rainforest going on, that helps keep the atmosphere humid – nice and buoyant.

So, this is my greenhouse, my lovely Grow Dome, my work in progress. It's all very new and exciting, so I'll be keeping you updated on the progress. I'll let you know how we get on through the different seasons, what's growing in here and how it's doing. I'll put lots of link in the show notes to the photos of how we got on [building it](#), [how it went up](#) and the information pages about the people who make them, called [Growing Spaces](#), if you want to investigate buying your own Grow Dome.

If you want to send me an email about your greenhouse, what's growing in it, how much you love it, or how much you really want one because you haven't got one, then the email address is akgpodcast@gmail.com. You can leave me a comment on the show home page, which is <http://coopette.com/akg> and of course you can join in the discussions on [Facebook](#).

That's it from me, have a great week in your garden. Goodbye!"

