



PIGS in Plastic!



all photos © Stuart Anderson

Stuart Anderson describes how he used sheets of recycled plastic to build a durable pig ark



Top: Assembling the pig ark. The recycled plastic sheeting is cut to size and screwed to a simple wooden frame.

Above: The completed pig ark is both strong and easy to clean.

Left: It seemed to go down well with the new arrivals.

We built our first pig ark out of a couple of sheets of old building site hoarding bought from the Brighton and Hove Wood Recycling Project. It's stood up well to pigs not only sleeping in it but also vigorously scratching themselves on the outside. The bottom edges of the ply, however, got wet, went soggy and rotted. After a couple of repairs, it was clear that we needed to renew it completely before this year's weaners arrive.

The ideal material would need to be able to stand up to whatever the weather could throw at it, cope with being thoroughly cleaned, stand up to the physical rigours of being home and scratching post to two or three pigs and also create a pleasant environment to bed down in. In line with our permaculture principles, it would also have to be made from an environmentally friendly material.

Plastic might not be the first thing that comes to mind when you search for green building material. It's versatile, ubiquitous and can be easily moulded but it has high-embodied energy and I struggled to justify its use to make something as large as a pig ark, ideal though it might be.

Plastic is, however, used for all manner of other things and so we create an awful lot of plastic waste, five million tonnes of plastic each year in the UK alone, of which an estimated 24% is currently being recovered or recycled. We might appease our consciences by popping our plastic into the recycling bin, but do we think much about what happens to it when the council lorry takes it away?

I've had the opportunity to go behind the gates at a landfill site. I encountered a dystopian scene, like something out of the film *Mad Max*, with gigantic bulldozers rolling on huge studded steel wheels spreading and crushing the fetid mass of detritus, with the apparent aim of squashing as much stuff in before that landfill is declared full and sealed up. Great... if you're a seagull or a rat. So we can throw our plastic in a big hole in the ground, somewhere out of sight or we can recycle it... but into what and how?

Products containing plastics are, in most cases, made from multiple plastics which are almost impossible to recycle through conventional methods because of their different chemical makeup. Whilst some methods of recycling have been established in the UK such as bottle-to-bottle recycling, the vast majority of mixed plastics still end up in landfill sites up around the country and, in some cases, even overseas.

2K Manufacturing have developed a process which eradicates the need for polymer separation and converts low-grade, mixed, waste-plastics into a powder which is then blended, heated and pressed into 2.4 x 1.2m (8 x 4ft) x 18mm thick panels. These are marketed as an alternative to plywood sheeting (often using imported wood) and virgin plastic panels, and are fully recyclable at the end of their useful life.

PIG ARK DESIGN

Our design for a pig ark uses exactly two 8 x 4ft sheets. One sheet is cut down the middle lengthways to provide the two sides and the other sheet is divided width ways to provide two ends. We were lucky to have a qualified carpenter, Max, volunteering at our smallholding who is currently doing his Permaculture Design Course with Brighton Permaculture Trust.

The ecosheet is easily worked with ordinary woodworking tools. Although it's sold as an alternative to plywood, it's probably more descriptive to compare it with MDF in that



it's made of fibres compressed together. As it doesn't have alternate layers of material with a grain at right angles to each other, it's less rigid than ply and is brittle in thin strips. We screwed the sheets onto a wooden frame (made of very durable and environmentally sustainable black locust), which is how I had made the original plywood ark. With boisterous pigs in mind, we used wide headed screws to spread the load but you could achieve the same effect by putting a washer under the screw head. With the smaller bird and bee boxes, it was OK to screw straight into the endgrain but we found that a smaller-than-the screw pilot hole useful to prevent break-out; one has to aim accurately for the centre of the 18mm panel for the same reason and countersinking helps the screw head bury itself. Overall, we found the ecosheets fit for the purposes we put them to. What would be useful is if 2K develop a glue and sealer that work with the plastic sheets; they tell me this is in the pipeline.

The only leftovers were the bits off the top of the arches and the cut-out to create the door. Determined not to create yet more plastic waste, we tried to think of smaller items that could be constructed out of this material and our next volunteers, Anne and Fiaz, knocked up a blue tit nestbox, leaving us most of what we needed to make a nuc box (honey bee nucleus colony hive).

In fact, I shouldn't have worried as 2K can, and do, recycle old boards. They have a rebate scheme in place with major contractors in the UK to recycle redundant hoarding panels back into more boards, thus closing the loop. They are also able to take boards back in from smallholders and individual consumers in an effort to prevent any material going into landfill, which is often the case with standard plywood. So when I collect my next boards, I will take the scraps to go back in their shredder.

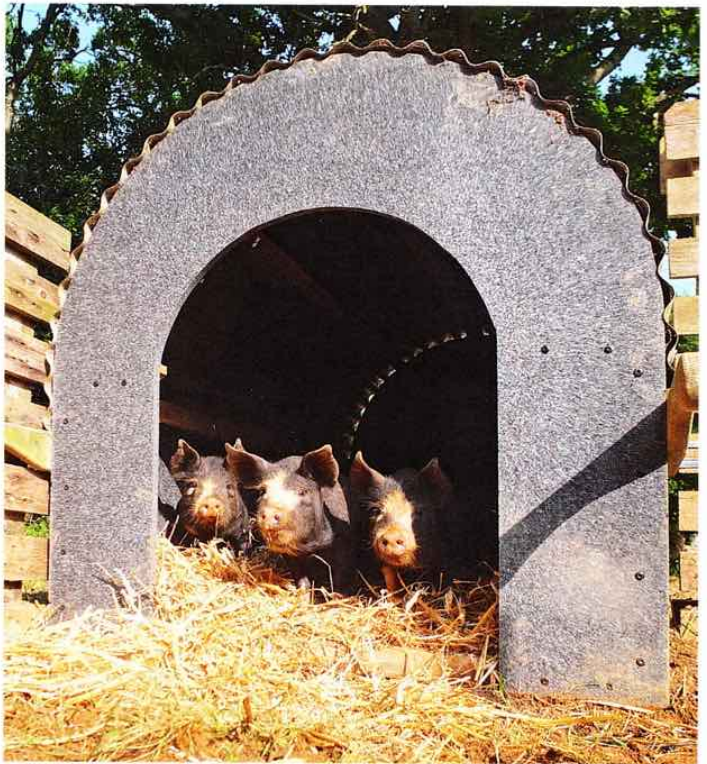
I can think of many uses where these recycled plastic sheets would be ideal, such as for sheds and other garden structures: Animal and poultry housing, dog kennels, green walls, compost toilets, worktops, planters, lining trailers, etc.

An 8ft x 4ft ecosheet costs around £40 plus VAT. For your local supplier, use the 'Stockist Locator' on their website www.ecosheet.com

Stuart and Gabrielle live on their 1.2 hectare (3 acre) permaculture smallholding in Brittany, France. They grow fruit, vegetables and firewood, raise sheep, pigs, chickens, ducks, rabbits and bees and rent out their holiday cottage: www.permacultureinbrittany.com



Above: The inside of the ark showing the wooden frame which supports the siding and corrugated roof. Bottom left: Ecosheets in the factory, showing some of the recycling they are made from beyond. Below: As happy as pigs in ... well, plastic.



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