**You’ve probably noticed that I make regular references to this guy, called Edward de Bono in my videos. Not just because he’s got a cool name and a charmingly outdated English correctness to his presentations….**

**but mainly because he came up with the notion of lateral thinking, which I genuinely believe to be one of the most important philosophies that will help us dig ourselves out of the catastrophic mire that we now find ourselves in as a species.**

**I think I might have stumbled upon another technological example of smart lateral thinking THIS WEEK actually, but as always, I’ll let you be the ultimate judge. This one involves waste plastic…BAD, and concrete, also BAD – at least from a greenhouse gas point of view anyway. How about collecting up all the waste plastic and using it to replace concrete building blocks? Now, before you switch off and tell all your friends that the pressure of making weekly videos appears to have caught up with Dave, and the poor guy has finally lost his mind…this is NOT some idea that I dreamt up in a psychotic episode as a result of a lack of essential nutrients in my plant-based diet. Oh no my friends, it’s someone else’s idea! So there! And they’re proper grown-ups too, with an actual company and everything.**

**So, allow me to explain…**

**Hello and welcome to Just have a think,**

**I must admit, during the long hours spent alone in a cabin day after day, I do sometimes wander off on some slightly rambling mental tangents. I generally try to keep those episodes out of your way though, and I promise you, this is not one of them!**

**The concept of using plastic as a structural building material is not quite as fanciful as you might imagine. These guys are called ByFusion. They’re a relatively new company, founded in twenty seventeen in California. Their mission is to play a part in addressing what they, quite rightly, see as one of the planet’s biggest challenges, which is the appalling mismanagement of plastic waste. Their answer is a technology that they call a Micro Diversion Platform, or MDP which they say can convert all types of plastic into a high-performance building material that they call the ByBlock.**

**Now that all sounds like pretty standard marketing BS so far, so what does their process actually do, and is the end-product any good?**

**Well, it’s really very simple really. They take in any kind of plastic waste from plastic bags and bottles in municipal facilities to fishing gear recovered from the sea.**

**There’s none of the fiddly sorting stages that you get at other recycling plants to filter out polycarbonates from polyethylenes or any other polymer types. They just chuck it all into an industrial-sized shredder and then send the shredded fragments into an automated machine that uses nothing more than steam and compression to mould the waste material into a very dense solid block. There’s zero additional adhesives or chemicals here, and there’s precisely zero waste. Ten kilograms of waste plastic makes one ten-kilogram building block measuring forty by twenty by twenty centimetres. The blocks can be customised to specific densities. They don’t crack or crumble like concrete blocks can and, most importantly, they result in eighty three percent fewer carbon dioxide emissions than equivalent concrete blocks. Byfusion claim these to be the first ever construction-grade blocks made from otherwise unrecyclable plastics, offering a sustainable alternative to traditional building materials while reducing the environmental impact associated with plastic waste.**

**Their so-called Micro Diversion Platform is designed for material recycling facilities, as well as municipal and private waste management operations processing up to three hundred and twenty tons or plastic per month.**

**ByFusion themselves are a certified B-Corporation, which probably doesn’t mean much to us folks over here in Europe, but in the USA it means a business entity that aims to balance profit-making with the pursuit of social and environmental goals. Unlike traditional corporations, B-Corporations have a legal responsibility to consider the impact of their decisions on various stakeholders, including employees, communities, and the environment, in addition to their shareholders. By voluntarily meeting rigorous standards of transparency, accountability, and social and environmental performance, B-Corporations, or Benefit Corporations as they’re sometimes known, demonstrate their commitment to using business as a force for good and making a positive impact beyond financial returns.**

**They’re not alone though. There are a couple of other competitors in the market place, albeit each with slightly different propositions.**

**A company called Precious Plastic, based in the Netherlands, also takes mixed plastic waste and grinds it up into variously coloured granules that can be made into a whole range of products from sheet materials and wall bricks to electrical plug sockets and furniture. They started six years ago as an open-source project encouraging consumers in their various global locations to take plastic waste to their recycling facilities. They even provide business starter kits for anyone wanting to set up a Precious Plastics operation in their own neigbourhood with the ultimate ambition of building an interconnected global web of facilities that they call the Precious Plastic Universe, with each location sharing best practice to continuously improve the overall service.**

**Over in Taiwan, this guy, Arthur Huang, was building new, rapid construction wards for COVID 19 patients back in twenty-twenty one using materials like aluminium, polypropylene and polyethylene, much of which came directly from the mind-boggling volume of garbage generated every day by the medical waste stream.**

**Arthur’s company, Miniwiz, is an environmental technology business that focuses on upcycling waste materials into high-performance products. They’ve developed more than twelve hundred different products from reused materials in all sorts of different sectors, from high fashion to interior décor.**

**A similar initiative is going on in Colombia, run by a company called Conceptos Plásticos, who also specialize in converting plastic waste into modular plastic bricks that are used to build houses, classrooms, and other structures, particularly in under-served poorer communities.**

**Building is currently the most material-intensive industry in the world, consuming forty-two billion tonnes of resources annually and producing about a third of all global waste material. So, any initiative that might help the construction industry clean up its act a bit must surely be a good thing. But it certainly won’t all be plain sailing. As we’ve seen in various previous videos on this channel looking at building materials like low carbon cement and engineered timber, the construction industry is a notoriously conservative and risk averse environment, for understandable reasons. The industry sticks very closely to established standards and regulations when it comes to construction materials, so introducing new materials like the ones we’ve seen today will require them to meet very stringent performance criteria and undergo testing and certification processes to gain broader acceptance. Even if all that certification is achieved, materials like breeze blocks or cinder blocks have been widely used for a long time, and professionals in the industry are familiar with their characteristics, handling, and performance. The challenge for recycled structural building material producers will be to educate those industry experts and demonstrate the long-term viability and reliability of their product in order to build trust and familiarity among builders, architects, and engineers, some of whom may have serious concerns about the strength and durability of these products compared to traditional materials. Then there’s the question of cost. Right now, it’s very difficult to say how competitive these recycled products really are compared to traditional products that amortised their set up costs decades ago. (Probably not very, is the honest answer – at least not yet anyway). Most projects live or die by their cost projections, so if recycled building blocks prove to be significantly more expensive, then that will inevitably deter widespread adoption, even with their overtly green credentials.**

**The bottom line though, is that until we find a way to wean ourselves off the self-destructive activity of refining a hundred million barrels of crude oil EVERY DAY – honestly that’s the number –I know it’s hard to believe, but here it is, written down in actual words in the latest report from the International Energy Agency…until we stop refining a hundred million barrels of oil EVERY day into hydrocarbon fuels and petrochemicals, including plastics, we will sadly have to try to make as much good use of the SOLID products as possible so that we can at least keep THEM and their poisonous chemicals out of land fill and the oceans and ultimately out of our own human digestive systems, where there is growing evidence of their carcinogenic effects. Part of that challenge will be to embrace a much more circular global economy that can redefine the traditional linear model of "take-make-waste" into a more sustainable and regenerative system. That will certainly involve using our resources far more efficiently, and minimising waste through recycling and reusing materials for secondary functions like the ones we’ve just looked at. But it will also require product designers, architects and corporate bean counters to ensure their products are designed for durability, repairability, and eventual recycling, instead of making stuff with so-called planned obsolescence with limited lifespans and reduced functionality that encourage us all to buy new versions far sooner than we really need to. The goal of a circular economy is to create a closed-loop system where materials and resources are continuously circulated and reused, reducing reliance on finite resources, minimizing environmental impact, and promoting long-term sustainability. If we can design out waste and pollution right at the drawing board stage, then we’ll be able to keep products and materials in use for a very long time indeed, which might just give us a chance to regenerate earth’s natural ecosystems. And if you want to find out more about how we might achieve this kind of revolutionary change to our way of life, I can highly recommend getting yourself a copy of a book called Doughnut Economics, written by a radical economist called Kate Raworth. It doesn’t mean we can all start EATING doughnuts I’m afraid, it just uses the visual METAPHOR of ring doughnut to help explain how the global economy of the future must change from what we’ve got today, which is an economy that continues to grow, regardless of whether it lets humans and other species thrive, to one that DOES enable humans and all the other species on earth to thrive, regardless of whether or not it grows. That means an economy that’s large enough to protect the vulnerable and provide basic services like energy, water, health and education –that’s the inner circle, but one that doesn’t get so big that it requires more resources than our planet can provide –that’s the outer circle, which for the absence of any doubt, is the one we humans are currently smashing our way through with ever-increasing fervour.**

**Anyway, that economic concept is the subject of at least an entire video to itself, which I’m sure I will be working on sometime soon. In the meantime, no doubt you’ve got your own views on how the world should work, and I’m sure you’re champing at the bit to express them, so why not jump down to the comments section below and leave your thoughts there.**

**That’ll do us for this week though I think. Thanks, as always to our fantastic Patreon supporters, who enable me to run this channel on a full-time basis without having to include ads and sponsorship messages in any of my videos. If you feel I’ve earned that level of support from you and you’d like the chance to influence future content, then you can do that over at Patreon dot com forward slash just have a think where you’ll also get early access to all my videos plus exclusive additional monthly content from me.**

**And if you feel I’ve earned your support here on YouTube then you can demonstrate that absolutely for free by subscribing and hitting that like button. It’s dead easy to do that. You just need to click down there or on that icon there.**

**As always, thanks very much for watching! Have a great week, and remember to just have a think. See you next week.**