DAILYGOOD
News that Inspires

10 Open Hardware Projects To Save The Earth

by Tristan Copley Smith

On the coattails of the rise of intellectual property and economic monopolies, the Open Source movement is thriving, expanding public access to knowledge, culture and tools. Advocates have opened up everything from software to science, media to politics...and of course, data. Now we even have an emerging model in which to implement and develop this openness, as Michel Bauwens describes in the following video.

As Alastair Parvin of WikiHouse put it:

“This increased access to knowledge is hugely important...it acts as the foundational infrastructure on which we can start to build a whole new economy.”

'Open' stands as a definitive yet diverse movement, void of historic or cultural stigma, under which many disparate but synergistic disciplines are sharing, collaborating and innovating. I’ve been fortunate to document some radical examples of this movement working with WikiLeaks and Open Source Ecology. At OSE, I was exposed to the challenges and triumphs of developing the physical side of open, known as Open Source Hardware. Currently I’m working with former OSE members at the Open Tech Collaborative to develop hardware.

Here are some of the 10 most promising Open Source Hardware projects that might just save the world:

1. Agriculture: FarmBot

We live on a planet that is experiencing exponential population growth. Everybody needs to eat, so many companies are working to make agriculture as efficient as possible. Problem is, they’re all proprietary (or “closed source”). So Rory Aronson, founder of FarmBot, is taking on the challenge of opening up agricultural technologies so we can all start to grow our food as efficiently as possible.

2. Waste: Precious Plastics

Commercial recycling operations are great, but often the applications for recycled materials, especially plastics, are limited. So Design Academy Eindhoven graduate Dave Hakkens recently showcased a series of open source machines he’s developed for repurposing waste plastics into new and useful things. Now anyone can build a local micro-recycling centre to service their (and their communities?) needs.

3. Housing: WikiHouse

WikiHouse is an open source construction. Users can freely download a series of files, purchase a bunch of plywood, and cut the designs out using a CNC router. The pieces all snap together like a giant puzzle (with instructions) and you can even cut out wooden mallets to help knock the joints together. This project is lowering barriers of entry to house building, so almost anyone can do it.

4. Ecology: Open Source Beehives

Bee colony collapse is a crisis we’ve heard a lot about over the past several years. Many people are aware, but there are very few grassroots solutions on the table. The OSBH project is helping citizens prevent bee population decline by bringing sensor-enhanced bee conservation into their backyards. Confession: I’m one of the founders of this project, but I really believe in it’s significance, otherwise I wouldn't be putting all my energy behind it. If you care about colony collapse, please check out our Indiegogo!

5. Connectivity: Spark.io

With all this talk of “The Internet of Things” there needs to be a piece of hardware that connects your technologies to the Internet, right? And it needs to be open source, so you can change it to suit your needs. Thats where Spark.io comes in. This Arduino compatible board lets even non-programmers start to make their hardware smarter.

6. Environment: Public Lab

Since our Governments and Corporations have become as corrupted as they are powerful, and democratic process is in many ways broken, the time has come for citizens to look after our own environment. Public Lab is facilitating this movement by developing open source hardware tools to generate knowledge and share data about community environmental health.

7. Fabrication: Lasersaur / Blackfoot

In order to utilise some of the open hardware designs out there, we need reliable digital fabrication tools to bring them from the digital into reality. These two projects give us considerably cheaper access to these tools in the increasingly important areas of laser

cutting and CNC milling.

8. Clean Energy 1: The Gasifier Experimenters Kit

Ever wonder if you could turn you compost (or biomass) into energy? With this open source gasifier kit from All Power Labs, you can. This kit, available at multiple levels of energy output, can help you to lower your carbon footprint, while lessening your waste output. As an Open Hardware company, APL offer their kit for sale, but give the plans to make it yourself for free!

9. Clean Energy 2: Zenman Energy

Since energy production is one of the major issues of our time, here's another open source energy project coming at the solution from a different angle. Zenman Energy have been working tirelessly to develop a cheap solar concentrator for you to harness power from the mother of all energy resources, the sun. Check out what even a mall solar concentrator can do here.

10. Transport: The Tabby

The Tabby is an open source, electric car designed by the team at Open Source Vehicle. According to the team, the whole car (once you have the parts) can be assembled in only an hour. This is a relatively new project, and definitely one to keep an eye on.

Two important notes:

First of all, the projects listed above could indeed contribute to saving our problem-embattled planet, but they will do so only if we take advantage of what this community is giving to us, and support their efforts. You can do this by contributing your skills and expertise to improve what's out there, by taking that liberating leap into the unknown and building one yourself, or by donating your money. Oh yeah - and you can also spread this article!

Second, there are a number of needed hardwares that are not yet open source. For example, I could not find a well documented open source water filter for this article (although the knowledge is out there). I would encourage readers to think about what they can offer. What knowledge could you open up? What designs couldyou share? We are all part of this ecosystem, and we all benefit with every contribution.

It's easy for me, or any author to write the words "blah blah will...save the Earth" but doing so is a different story. The organisations I have seen operating in this arena have struggled, sweated, and sacrificed to make these things available to us. Now its up to us to put these open designs to use, and in so doing, to move our civilisation forward within the Earth's limits.