

The architecture of invention



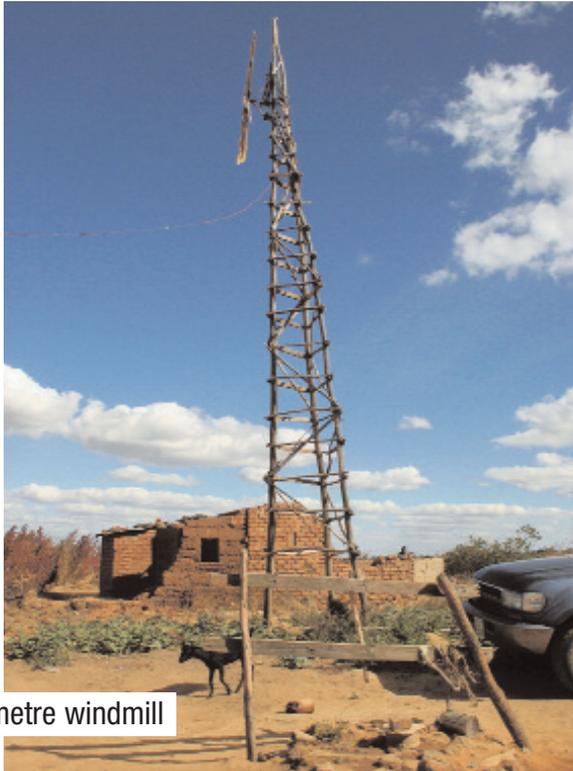
A Malawian teenager has designed an elegant 12-metre windmill from a bike, a pipe and bits of wood

What would you do if your house was lit by just one paraffin lamp? If you live in Ireland, you could pay off your electricity bill. Or perhaps you could buy every candle from the local hardware store. Failing that, maybe you could simply live in perpetual darkness. But what if you lived in Africa? Hmm, now that's a little harder, isn't it? How about designing a giant windmill from scratch? That's what teenager William Kamkwamba did - and his invention is quickly making him famous. The youngster, hailing from Mastala Village in the Kasungu district of Malawi, began making windmills when he left school at 14 because he couldn't afford the fees.

He started with a five-metre structure, which he fashioned from plastic piping, his father's bicycle and chunks of wood. Referencing a basic

design outlined in a schoolbook he had borrowed, the inventive teen would heat pieces of cut-up plastic piping and then fashion them into propeller blades. The handmade electricity generator was enough to power one lightbulb in his family home. But he wanted more. Reaching for the skies, he decided to construct a 12-metre version. This towering structure soars above the village and creates enough electricity to power four bulbs and two radios. The world found out about his achievement after he was invited to a Technology, Entertainment and Design global conference in Tanzania. There, he used the internet for the first time and set up a blog showcasing his handiwork and since then, his name has generated tens of thousands of hits. "Our family is poor like many families in Malawi and Africa, and as a result, we





The 12-metre windmill



The five-metre windmill

have no electricity in our village or my home. I decided to try to get as much education as possible by reading as many books as I could find," he says on the blog. "An organization called the Malawian Teacher Training Activity (MTTA) contributed a large quantity of books to the primary school library near my home. I read many of them. One of the books I read was called Using Energy, a primary school textbook about how energy is made. Inside the book there were plans for a windmill. I decided to build a windmill to provide power for my family," he explains. But the plans didn't make the job a walk in the park: "When I was making [the windmill], all these people were mocking me that I was going mad but I had confidence in what I was doing because I knew if it was written in the books then it was true and possible," he says.

Since the 12-metre windmill has gone up,

William has replaced broken plastic blades with metal ones. To make these, the enthusiastic innovator "took an old oil drum to the tinsmith at the trading center and asked him to help me cut it into new blades". William's neighbours now have their batteries charged at the windmill and he is further upgrading the structure using a treadmill motor. Donations made on his site have helped William get back to school.

"Due to your generosity, I have received many donations so far, which I shall apply to the projects that I am doing to improve the life of my family"

Donations have flooded in from North America, Europe, Asia and Australia. William lists the first names and last initials of donors and their cities in a blog post. He adds that he is "very grateful" to all who have contributed.

"These funds will also pay for the enhanced lighting and power in my home as documented on the blog. I'm working on a project right now to benefit my extended family, many of whom live in the five homes in my immediate neighborhood. I am eager to tell you about it, but want to wait until it is finished first."

See: <http://williamkamkwamba.typepad.com>