

# Israeli inventor has backers for cardboard bicycle

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(Phys.org)—Don't tell Izhar Gafni that a bicycle can't be made of cardboard. An Israeli engineer working in industrial design, he was always fascinated by the potential that comes from the interplay of technologies applied to materials. Gafni was too curious about turning materials into new uses and he could not take no for an answer. What's more, bicycles, he said, went beyond "hobby." With him, it was "in my soul." That might explain his three years of efforts in coming up with a

fully functioning bicycle made of cardboard, which has been accorded ample research and development to reach final stages and readiness to show the world.

Gafni says it all started the day he went to a bicycle shop to purchase parts and he overheard a customer talking about his building a canoe made of cardboard. "The idea stuck in my mind," he said. "Why not build a bicycle made out of cardboard."

He consulted several engineers. They told him it was impossible. For an [inventor](#), "impossible" is often a green light. "At the time, I just knew cardboard was a material for making packages but I explored it further," he said.

Basically, he said, his method was like that in Japanese origami, as he demonstrated how cardboard can be cut and folded for strength. He said his very first prototype looked like something between a box and a [bicycle](#). He knew he had real work ahead. Gafni worked for several years in his tool shed to make a suitable model. He studied how he was going to structure the frame, seat and other parts, prototyping and tweaking, planning, sketching, running plans through [computer programs](#). He did not use any metal parts. Once the desired shape was formed and cut, he treated the device with what is generally described as "organic materials." The treatment he used made the cycle waterproof and fireproof. He coated the [cardboard](#) with lacquer paint. The tires were made from recycled rubber.

The estimated cost to make such bicycles would be between nine and twelve dollars. The obvious benefit would be usefulness as an affordable means of transport. Not only is the design now in its final prototype stage but plans are under way for production.



Gafni has secured backing for his project by partnering with ERB, which is managing business and financial aspects of the project.

ERB said that it is raising funds to reach the point where they can have a detailed manufacturing plan under way for the first two platforms, a commercial, urban bike and a kids/youth bike. According to ERB, "These models will be made of almost 100 percent recycled materials and will have the option of adding an electric motor. At this stage we

have only the prototype for the commercial bikes as shown on the video."

**More information:** [www.erb.co.il/en/](http://www.erb.co.il/en/)

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