

# Eco-architecture could produce 'grow your own' homes

August 21 2008

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A computer-generated illustration of a TAU/Plantware "home." Credit: AFTAU

A bus stop that grows its own foliage as shade? A children's playground, made entirely from trees? A shelter made from living tree roots that could provide natural protection against earthquakes in California?

"Eco-architecture" may sound like a Buck Rogers vision of an ecologically-sustainable future, but that future is now thanks to the guidance of Tel Aviv University Professors Yoav Waisel and Amram Eshel. The concept of shaping living trees into useful objects -- known as tree shaping, arborsculpture, living art or pooktre — isn't new. But scientists are now ready to use this concept as the foundation of a new

company that will roll out these structures worldwide.

Pilot projects now underway in the United States, Australia and Israel include park benches for hospitals, playground structures, streetlamps and gates. "The approach is a new application of the well-known botanical phenomenon of aerial root development," says Prof. Eshel. "Instead of using plant branches, this patented approach takes malleable roots and shapes them into useful objects for indoors and out."

## **A Scientific and Commercial Partnership**

The original "root-breaking" research was conducted at the Sarah Racine Root Research Laboratory at Tel Aviv University, the first and largest aeroponics lab in the world. Founded by Prof. Waisel 20 years ago, the lab enables scientists to conduct future-forward and creative research that benefits mankind and the environment.

Commercial applications of the research are being developed by Plantware, a company founded in 2002. TAU and Plantware researchers working together found that certain species of trees grown aeroponically (in air instead of soil and water) do not harden. This developed into a new method for growing "soft roots," which could easily turn living trees into useful structures.

Completing the informal collaboration between Plantware founders and the university, the company's director of operations, Yaniv Naftaly, holds a degree in life sciences from TAU.

## **An Eco-Positive Abode**

It's even possible that, in the near future, entire homes will be constructed with the eco-friendly technology. An engineer by trade,

Plantware's CEO Gordon Glazer hopes the first home prototype will be ready in about a decade. While the method of "growing your own home" can take years, the result is long lasting and desirable especially in the emerging field of green architecture.

Prof. Eshel's team is also working on a number of other projects to save the planet's resources. They are currently investigating a latex-producing shrub, *Euphoria tirucalii*, which can be grown easily in the desert, as a source for biofuel; they are also genetically engineering plant roots to ensure "more crop per drop," an innovative approach to irrigation.

Source: Tel Aviv University

Citation: Eco-architecture could produce 'grow your own' homes (2008, August 21) retrieved 18 April 2024 from <https://phys.org/news/2008-08-eco-architecture-homes.html>

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