

Bowl-Shaped Roofs Harvest Rainwater To Naturally Cool Homes In Arid Environments



BMDesign Studios

By Amanda Froelich | [True Activist](#)

Water scarcity is a conundrum that affects every continent. Approximately 1.2 billion people (or 1/5 of the world's population) live in areas of physical scarcity, and another 1.6 billion people face economic water shortage, [relays](#) UN-Water. To help remedy this conundrum, [BMDesign Studios](#) developed an innovative roof that is capable of collecting rainwater *and* cooling homes in arid environments.

The Concave Roof which looks like a bowl sits on top of a domed roof. When it rains and water is collected, the life-saving resource is funneled through the bowl into cooling reservoirs. Space between the [double roofs](#) allows for wind

circulation and shade.

The architects explain that the system is designed to “help [make] even the smallest quantities of rain [flow down] the roof and eventually coalesce into bigger drops, just right for harvesting before they evaporate.” Considering hot, [dry climates](#) can be almost unbearable for residents during the summer, this intriguing concept has a variety of positive implications.



BMDesign Studios

Not only will inhabitants of the homes benefit from the cooling reservoir which is placed between building walls and helps regulate indoor temperatures, but the carbon footprint of the natural air conditioning units is also reduced. *Inhabitat* [relays](#) that initial testing of the concave roofs shows a 60% efficiency. 989 cubic feet of water can be harvested out of just 9,935 square feet of concave roof.

This is only the beginning. The [studio](#), which is based in Tehran, Iran, intends to continue research in order to improve

the design's efficiency. Developments that take place now will undoubtedly affect many in the future, as it is predicted that arid areas will drastically increase over the next 30 to 40 years.

Following are some photos of the concept provided by the architects:



BMDesign Studios



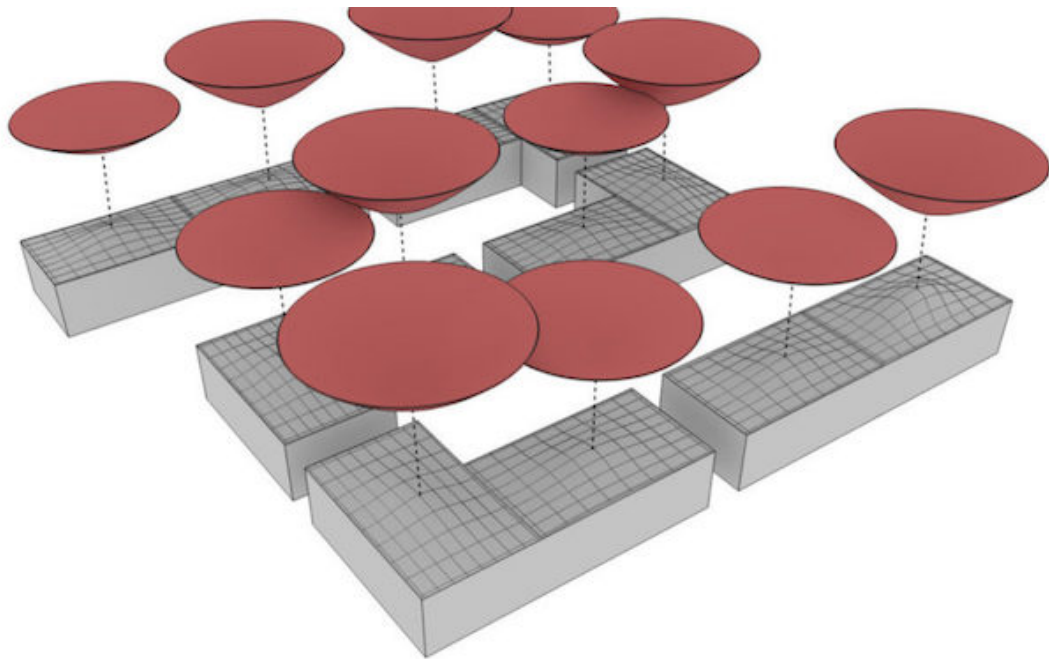
BMDesign Studios



BMDesign Studios

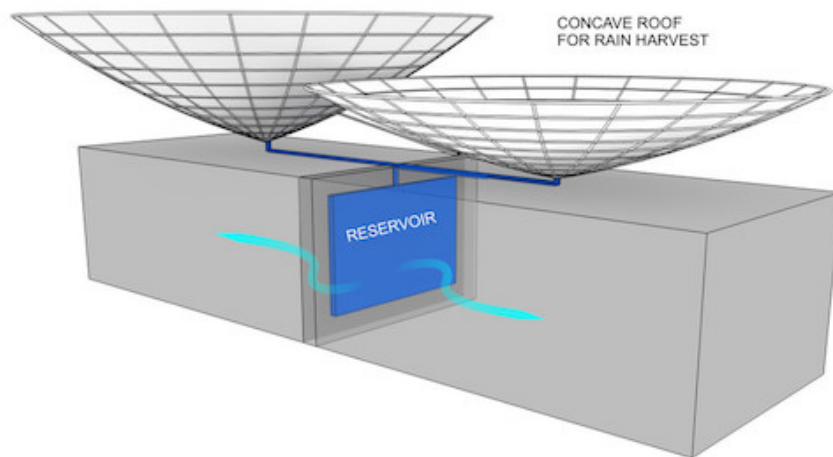


BMDesign Studios



RAINWATER HARVESTING CONCAVE ROOF
NOT ONLY R.W.H DISHES CAPTURE THE SMALLEST AMOUNT OF RAIN BEFORE BEING
CONTAMINATED, BUT ALSO THEY PROVIDE ADDITIONAL SHADE FOR THE DOMED
ROOF WHILE LETTING THE WIND TO COOL IT OFF.

BMDesign Studios



TEMPERATURE CONTROL
BY PLACING RWH RESERVOIRS IN BETWEEN
BUILDING WALLS, AND USING EXTRAORDINARY
HEAT CAPACITY OF WATER

BMDesign Studios



BMDesign Studios



BMDesign Studios

What are your thoughts? Please comment below and share this news!

This article ([Bowl-Shaped Roofs Harvest Rainwater To Naturally Cool Homes In Arid Environments](#)) is a free and open source. You have permission to republish this article under a [Creative Commons](#) license with attribution to the author and [TrueActivist.com](#)

[Read more great articles at True Activist.](#)