

Water is a vital resource and as rising demand puts global supplies under increasing pressure, the search is on for imaginative ways of bringing arid regions to life. The Seawater Greenhouse, a unique concept developed in the UK, offers a 'green' option in every sense of the word. Recreating natural processes, it transforms dry areas into fertile agricultural land and achieves this in an environmentally friendly, sustainable way.

Helping dry regions go green

Designed for use in coastal regions, the Seawater Greenhouse is a low-cost, light but strong, polythene-covered structure that enables high-value crops to be grown all year round.

A natural solution

The front wall acts as a seawater evaporator and the moisture produced is used to cool and humidify the air, ventilating the greenhouse. Meanwhile, sunlight is harnessed to distil seawater into fresh, pure water ideal for irrigating crops.

The first pilot project began in Tenerife in the Canary Islands during 1992, and a second greenhouse was built in the United Arab Emirates in 2000. These two greenhouses have produced excellent results, in terms of both crop quality and quantity.

“The Seawater Greenhouse is a truly new idea which has the potential to impact on the lives of millions of people living in coastal, water-starved areas around the world”

Marco Goldschmied, President of RIBA

Unlike 'conventional' techniques for turning seawater into fresh water, it needs relatively little energy to function. It is designed to maximise the capture of sunlight and so aid crop growth, and to act as a 'wind catcher' to assist ventilation. Its modest electricity needs can be met with clean, renewable technologies such as solar photovoltaic panels located on site. This avoids the need to buy in power generated from fossil fuels.

Global collaboration

The concept has been developed by Seawater Greenhouse Ltd, based in London. The company is now actively seeking partners around the world to collaborate in taking the technology forward. It has recently worked with Sultan Qaboos University in Oman on a project to design, build and operate a 1000 m² greenhouse to revitalise land on Oman's Batinah coast.

The Seawater Greenhouse could make an important contribution wherever arid climates are a problem. Charlie Paton, the firm's Managing Director, says: 'We want to develop partnerships that lead to higher agricultural productivity and reduced demand for mains and ground water – the shortage of which is a key factor in global poverty'.



Dawn inside Seawater Greenhouse, Abu Dhabi



Inside the greenhouse built in Oman as a collaboration between Seawater Greenhouse Ltd and Sultan Qaboos University

Contact

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