

Crystal Lagoons

Solving Some of the World's Biggest Problems

By Gabrielle Shiha

Scientist and real-estate developer, Fernando Fischmann, dreamed of creating a large, turquoise colored crystal-clear water lagoon which would provide for swimming and water sports in a safe, clean, environment. He traveled the world looking for the technology that would allow for a large body of water to be maintained efficiently. But to his surprise, the technology did not exist.

He then decided to create his own innovative system. Fischmann, a biochemist by profession, experimented for years until developing the pioneering technology, Crystal Lagoons. The patented technology allows building and maintaining lagoons of unlimited size any place on the planet.

The first tourist and real estate project called San Alfonso del Mar, is on the west coast of Valparaiso, Chile where frigid and dangerous ocean conditions are not apt for swimming. It quickly became the most successful residential development in South America with surrounding land instantly selling at much higher prices. The 20 acre lagoon of pristine, crystal clear water was subsequently awarded the 2007 World Guinness Record as, "The Largest Man-made Lagoon in the World."

Super-size It

While Texas is known for things that come super-sized, it should come as no surprise the first Texas Crystal Lagoon is on its way. Bayside in Rowlett will be the first lagoon in Texas with others to follow. The largest built to date is in Sharm El Sheikh, Egypt at approximately 24 acres for a luxurious resort's recreational use. The largest in the world, yet to be completed, is in Dubai, UAE at 90 acres in total with separated lagoons, which will be connected.

Industrial Use

In addition to recreational use, Fischmann has developed and patented technology to use the lagoons as part of cooling for industrial processes. So, lagoons are now used for thermal power plants, data centers, foundries, paper and steel mills, among others. A cooling lagoon is built in connection to an industrial process to provide sustainable high quality cooling water. This alleviates environmental damage caused by typical systems where during the water intake, many aquatic organisms are caught up in the process and subsequently killed. Also, at the water outlet, hot water is discharged back into the sea, lakes or rivers causing thermal pollution and severely altering ecosystems. Instead of connecting such facilities to natural bodies of water, a Crystal lagoon can be used to eliminate the environmental impact.

Desalination

Rapid over draw and depletion of water reserves is a critical problem worldwide. To alleviate the problem, Crystal Lagoons has developed a revolutionary technology that allows using large amounts of normally wasted thermal energy from indus-

Bayside in Rowlett, TX is a \$1 billion-dollar mixed use lake-front development that will boast an 8 acre Crystal Lagoon equivalent to 10 football fields of water, ideal for sailing, stand-up paddle boarding and more. The highlight of the Crystal Lagoon will be the largest fountain in Texas, home to daily and nightly live entertainment.

(Photo at bottom right)



trial processes to produce freshwater from saltwater. The technology used for this process is called membrane distillation. Water is driven by a temperature gradient that allows extracting fresh water from hot salt water, creating large volumes of quality water at a surprisingly low cost. Other desalination processes are available, but on a limited, cost-prohibitive basis.

Aquifers

Crystal Lagoons has also developed a technology that allows treating and purifying surface runoff water at very low costs through a lagoon. This provides a reliable and high quality water supply in times of drought or water shortage. Subsequently, water stored in lagoon aquifers can be used for agriculture, mining and sanitary purposes.

Vision of the Future

Currently, more than 300 projects are in progress in 60 countries. US projects include Texas, Nevada and Florida. Besides Bayshore-Rowlett, many other lagoons are planned for Texas, so Crystal Lagoons has plans for a Dallas office on its way. Crystal Lagoons is focused on improving the lives of people by solving some of the world's biggest problems such as water scarcity, energy, contamination, and lack of open public spaces. The Crystal Lagoons City concept visualizes all of the recreational and industrial technologies to work together so a community can benefit from recreation, to clean energy and water at very low costs. Changing real estate markets worldwide, this innovation is aimed at transforming cities into idyllic beach locations. So, let the city beach-sides begin!

