

MS for Aquarium Gazette by Dr David Ford

The Dubai Mall Aquarium

In the April/May issue your editor reported that the Dubai Aquarium had sprung a leak with potential danger to the Dubai Mall and its customers. Intrigued, off I went to Dubai to have a look....

Dubai is a fascinating place – very hot and dry, yet green with grass and trees as the sand is fed with dripping water from a mesh of aqua-pipes. Skyscrapers make it look like New York but many are half-built as work stopped with the credit crunch. No graffiti, no litter, no lager louts, all is spotless and everyone polite.

In the business area is the amazing Burj Dubai (Burj is Arabic for Tower, the locals call it Burj Khalifa), the tallest building in the World at 828 metres or 2,717 feet (more than half a mile high) and in front is the largest Mall in the World, the Dubai Mall. With over 1,200 stores in 12 million square feet, it contains both an aquarium and a zoo (an aquatic one). It should be no surprise to find the aquarium is the World's largest too.

Dubai Aquariums

The UAE (United Arab Emirates) on the Persian Gulf has seven Emirates, one of which is Dubai and like the others, oil-rich. Once part of the British Empire, they speak Arabic and English. Mostly desert, the population have a natural preoccupation with water which is available, ex desalination plants, in copious amounts. Many of the hotels have aquariums, from a small Goldfish Tank in the Metropolitan Dubai to the giant Seawater Tank in the Atlantis (full title, the Royal Towers of Atlantis on The Palms) with 65,000 marine animals. Another famous hotel is the Burj Al Arab – the Sailboat shaped hotel featured in all the Dubai adverts. The only 7 Star Hotel in the World, it has an aquarium on each floor of the rising staircase and I did try to get in to photograph this but security stopped me (and I could not afford a £1000 a night suite).

The aquarium that sprung that leak is the World's largest – the Dubai Aquarium in the middle of the Dubai Mall. It is 51 metres by 20 metres and 11 metres deep (167 feet x 66 feet x 36 feet deep) and holds 10 million litres of seawater (2 million, 200 thousand gallons). It holds the 2010 Guinness Book of Records for the largest Acrylic Sheet (the front glass) ever made: 32.88 meters wide and 8.3 metres high (108 feet wide by 27 feet deep) and is 75mm thick (almost 3 inches).

The technology to produce this sheet was developed by the owners 'Ocean Australia Group' and is at the limit of current techniques, so it is unlikely to be exceeded for some years to come. But it was not the Acrylic Sheet that failed – it was the Silicone Sealer that bound one of the back panels in place. A faulty batch that did not cure correctly was just one and a half feet below the surface and sprung a small leak at 1pm on Thursday 25 February 2010. The seawater jetted out under pressure and started to flood the Mall, with customer panic.

At this time all the aquarium staff and technicians were on duty and so they stopped the leak within an hour. The draining pumps were opened to lower the seawater level below the leak. Fresh Silicone Sealer was used to seal the hole and this was inspected and approved some days later by the Dubai Authorities, and then the Aquarium topped up again. When the leak happened the Health & Safety programme meant the Aquarium had to be closed and the Mall evacuated, hence the panic and a World-wide news item.

Take a Boat Ride

Like most things in Dubai, it is not cheap to visit the Aquarium. Viewing from the Mall is free but to walk through the Tunnel (48 metres/158 feet/52 yards long) within the Aquarium costs 25 Dirhams (about £5) or you can take a glass-bottom boat ride on the Aquarium and visit the 'Underwater Zoo' on the floor above the Aquarium for 50 Dirhams (£10). With prior booking you can also 'dive with the Sharks' (they are Sand Sharks) and watch special displays such as Free Diving (no breathing apparatus using Apnea – suspension of normal breathing – for deep diving).

The glass-bottom boat ride allows you to look down on the 33,000 marine animals, 140 species, in the Aquarium. Also to see the heads of the tourists walking through the Acrylic tunnel many metres below! This trip also reveals the partitioned area where new fish are quarantined and trained to accept hand-feeding.

A diver enters the Aquarium every hour or so to hand-feed the fish with appropriate food of a size suitable for each species. This prevents the normal feeding habit of big fish eating smaller fish, so peace reigns.....

Maintenance of water quality is by pressurised sand filters with pumps that deliver 450,000 litres per hour (which is about 5 Olympic-sized swimming pools) and turns over the whole tank every 85 minutes. The seawater is natural, delivered by tankers from the Gulf, evaporation topped by that desalinated water. A low level of Ozone is added via protein skimmers. All this tends to give micro-bubbles that would cloud the water so a degassing chamber is installed before the return jets sited over the main tank.

The Aquatic Zoo

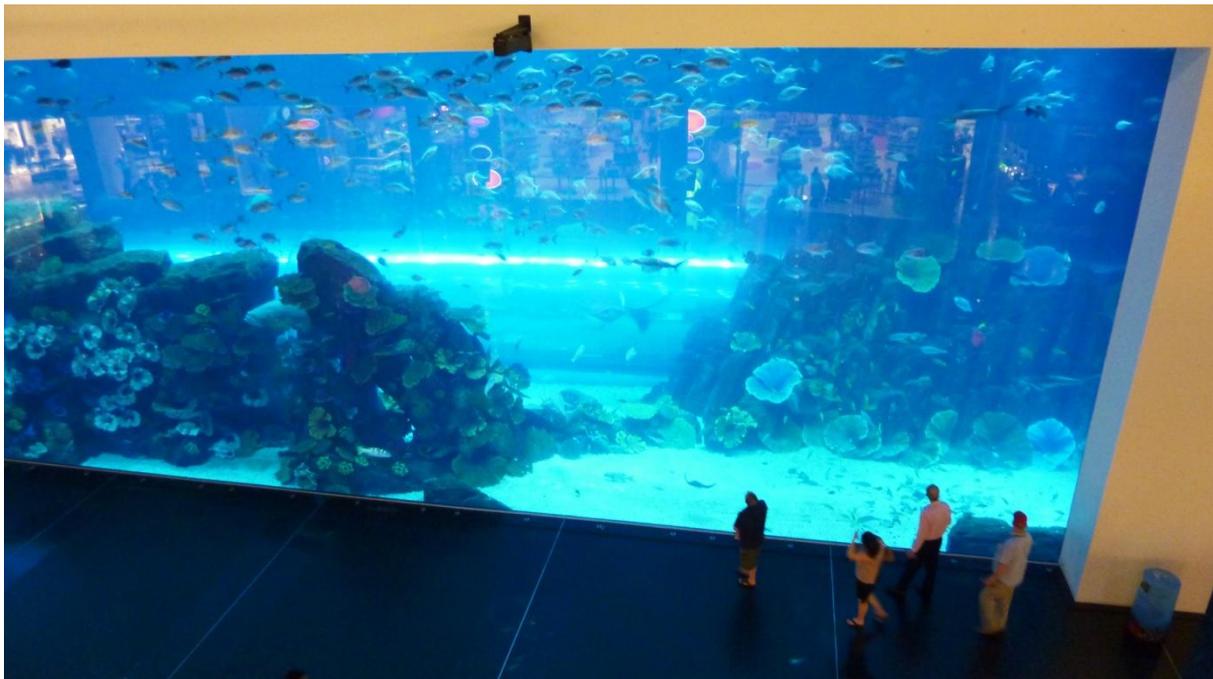
Called in Arabic 'The Underwater Zoo' this unit is two floors up above the Aquarium. Divided into 'environments' the displays are walk-through Rainforest, Rocky Shore and Living Ocean exhibits. Beautifully clean and brightly-lit, each unit has attractive low level acrylic tanks stocked with appropriate fish. The forests or corals or aquatic plants are all artificial but look absolutely real.

Posters explain in Arabic and English the species on display and their habits and habitats. Species include everything from Angelfish to Piranha, Silver Dollars to Arowana, even Otters, Penguins and Seals.

The laboratory for treatment and quarantine etc. is visible behind glass walls, the area also having a glass floor below which is the Dubai Aquarium. It is from the Underwater Zoo that you take the glass-bottom boat ride on that Aquarium.

The Mall has a fantastic Aquarium and beautiful Aquazoo and it is a must for any aquarist who can afford the trip. I am so glad it was a minor leak....Silicone Sealer that fails usually unzips the whole length of a seam. That would have been catastrophic for the Mall visitors but death for thousands of fish and probably the end of giant aquarium building world-wide.

PHOTOGRAPHS



Dubai Aquarium frontage in the Dubai Mall



The Acrylic Tunnel through the Dubai Aquarium



The Glass-bottom Boat Ride



The Underwater Zoo – the Rocky Shore Scene



Rainforest Display



Artificial Coral but colourful Marine tanks



Your Author meets a Lionfish!

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