

PROJECT PROFILE



Typhoon Theater at the Maritime Experiential Museum in Singapore

Take a Plunge Into a 360° Immersive Typhoon Adventure

Visitors to the Maritime Experiential Museum at Resorts World Sentosa, Singapore can get an up-close look at a shipwreck in the Typhoon Theater where Electrosonic provided audio-visual design, engineering, integration and installation of the audio, video and control equipment to help simulate an amazing historical journey. The company was hired by Sunray Woodcraft Construction and worked under the general guidance of museum designers Ralph Appelbaum Associates. Super 78 created the content for the attraction.

The museum was built to house the Jewel of Muscat, a reproduction Arab dhow which sailed on the Belitung route from Oman to Indonesia 1100 years ago, and some



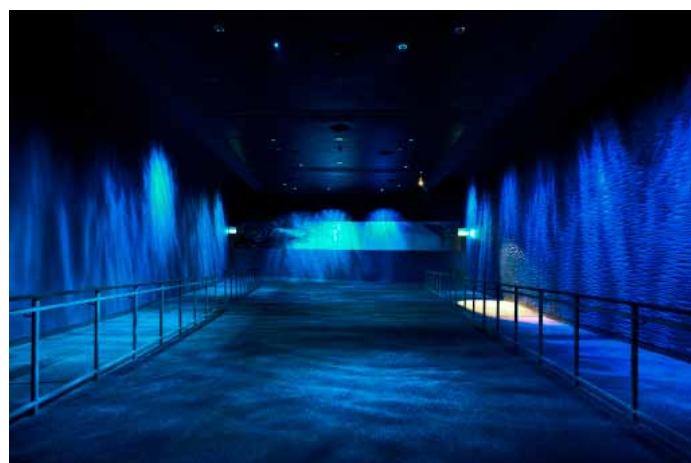
60,000 artifacts salvaged from the Belitung shipwreck found near Java. The centerpiece of the museum is the multimedia Typhoon Theater where visitors 'board' the Arabia-bound sailing ship, experience the storm it encountered, and sink in the sea as the theater floor descends. When the lights come back on, visitors find themselves in the depths with the shipwreck surrounded by marine life.

The experience begins with a pre-show set on the pier in China's Guangzhou harbor. The shutters of the harbormaster's hut part to reveal a screen displaying the ship's crew at work: an emissary carrying a priceless chalice wedding present which will be part of the cargo,



and an astrologer making dire forecasts about the ship's fate. Electrosonic provided a DLP rear-screen projector with mirror bounce to achieve the short throw required for the compact space, plus a pair of line arrays and subwoofers.

Visitors proceed to the Typhoon Theater for the main show. The 15.5-meter diameter circular space seats about 150 visitors in bench seating bolted to a floor whose hydraulic lift platform is activated when the ship sinks. A curved-wall surface is the display area for a 4K projector customized by Electrosonic with a fish-eye lens to fill a 180-degree space about six meters high. Four moving-head projectors cover the back of the theater wall screen surface with effects projections, effectively creating a 360-degree experience as a typhoon hits the vessel and causes the ship to sink.



A 13-channel audio system plays a key role in setting the scene and giving visitors the sensation of the storm. Five speakers are mounted atop the wall screen pointing down, five are mounted on the front platform angled up and bouncing off the screen and four are placed on the catwalks for left and right surround.

The theater's dramatic video presentation lasts about 4.5 minutes. Then the floor drops as the ship sinks and visitors follow a continuing image display that reveals an underwater landscape. Visitors exit through doors leading to a wide hallway, which houses the Shipwreck Approach exhibit with a full-scale aquarium, reproduction ship and chalice.

"Everything was designed for flexibility, expandability and growth," notes Pierce. "All of the Electrosonic AV racks are in one main control room, but the system was engineered to incorporate extra video and audio storage space on the servers. The AV show controller is expandable, and there is plenty of room in the racks for additional equipment."

Configuring the audio was a challenge due to the shape of the theater, reports Electrosonic project manager Thursday Pierce. "There was no depth to do a screen with speakers behind it," he says, "and sound bounces all over a round room." To solve the problem, Electrosonic teamed with acoustic consultants Sowden and Associates to skin the concrete space with acoustic insulation and strategically locate speakers to deliver the best possible expanded 7.1 surround sound.