Responsibility: Ramesh Maini, president of Zentech Engineering
Photo: ZENTECH ENGINEERING

Zentech's Maini attraction

Houston **engineering player's president** has experienced life on **both sides of the desk**

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RAMESH Maini can tell you first hand about the forces of nature. Working as a rig mover in the North Sea in the 1970s, he would watch seas flare from near calm to 30-foot waves in an hour, while huge 45-foot swells could keep a jack-up from moving for weeks at a time.

Maini, today president of Houston's Zentech Engineering, had worked on that rig's design before he qualified himself for the operations job, a way to stay at work during an industry downturn.

But over his 38 years in business, he has always insisted upon getting out from behind his engineer's desk and into the field, helping build a track record that today spans over 100 major rig and vessel design, upgrade and modification projects.

"If you don't have those experiences, you don't understand what design is all about," says Maini, who co-founded the company in 1978.

Zentech is well known for rig work, but also fields an eclectic mix of engineering and design business concerned with structure and motion, with a client list featuring top industry names.

The company's specialities include mooring analysis for many of the world's production spars, more recently Anadarko's Lucius and Williams' Gulfstar 1, but dating back to the early days of Kerr-McGee's spar projects.

However, Zentech also handles niche civil engineering projects, such as work for the expansion of New Orleans' Huey P Long bridge and the Tacoma Narrows bridge in the US state of Washington.

Origins Maini was born in the Indian state of Punjab and earned his bachelor's degree in civil engineering in 1967 from the Indian Institute of Technology in Mumbai.

He headed to Canada's University of British Columbia to continue his higher education, earning a master's degree in structural engineering.

Early engineering work took him to New York, Europe and later Houston, where he said it became an "obvious" call to pursue the "more exotic" engineering challenges of the oil and gas industry.

In 1973 he began work for Engineering Technology Analysts and served as principal naval architect on jack-ups Dyvi Beta and Dyvi Gamma, considered key precursors to later harsh-environment rigs.

It was on those rigs that he later worked as the mover, swapping locations every two weeks for about 18 months.

In 1978 he returned stateside and launched his own company with two partners. Work fell off again during the downturn of the 1980s, but 1987 brought with it a new joint venture and, in turn, the Zentech name.

Through the 1990s, the company made its name through jack-up design work and in the conversion of slot rigs to cantilever systems, a major industry shift taking place at the time.

It also assisted with conversion of semi-submersible units for deeper waters and even of accommodation units.

Maini also worked extensively with early engineering software.

At the time in the 1970s, calculations for loads and weights on the rig had to be done longhand with pen and paper, cumbersome especially for rig operators better versed in manual labour than intricate maths.

Accordingly, his company worked to develop systems to automate the number-crunching.

That analysis could help prevent listing during a load pickup, offer insight on what to do if a tank was damaged or provide advice if the jack-up encountered poor soil conditions. Such technology was applied on about 200 units, he says.

"These are mathematical calculations, but at the same time it ensures safety of people," he explains.

Zentech also works in collaboration with classification societies to evaluate fatigue and steel loss over time.

On a typical five-year rig survey, he says, replacement is needed when 15% or more has been lost to corrosion.

However, the company's analysis allows it to more precisely calculate risks and loads, aiming to prove the precise amount of steel replacement necessary to continue operations safely, a figure that might be above or below that general benchmark.

Extension project In addition to rigs, similar projects have included work for Brazil's navy, gauging a life extension for its flagship aircraft carrier Sao Paulo, as well as Mexican state oil company Pemex on a study of 63 platforms for a 20-year life-extension project.

In a similar job, Zentech worked with Anglo-Dutch supermajor Shell in 2012 and 2013 to provide an engineering package for the Kulluk barge rig for its drilling campaign off Alaska — and spent a fateful New Year's weekend in the office with crisis response after the unit slipped its mooring lines and ran aground off a coastal island. Zentech correctly predicted the hull would not breach. Zentech also remains in the rig business, signing an agreement in February this year for a pair of Z-210 liftboats at China's CSSC Huangpu Wenchong Shipbuilding Company, built with an eye on demand in Middle Eastern markets.

Singapore-based Alliance Offshore Drilling in 2015 expanded its order to a trio of jack-ups with Zentech's R-550D design.

In recent years, other key rig work clients have included Abu Dhabi's National Drilling Company and rig contractors Nabors, Shelf Drilling and Noble Corporation.

Maini does not take his professional responsibility lightly. "As an engineer, I have an oath to worry about the lives of people," he said.

Off duty, Maini's other passion is singing traditional Indian music. As a youth, he participated in an intensive travelling singing group with his school, and would sometimes practice six or seven hours a day.

These days he only performs for family and close friends, and his favourite artists include Bollywood legend Rafi as well as more contemporary singers such as Sonu Nigam and Udit Narayan.

Maini is married with a daughter and a son, who also works at Zentech, and has four grandchildren.