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Dreams -vision-reality: That is Handling's Specialty

In 30-plus years at Handling Specialty, president Tom Beach has seen a lot of amazing things, but talk to him for five minutes and you will know only the surface has been scratched.

Williscraft - Photo



Synchronized swimming scene from the Bellagio's "O" show,

By Mike Williscraft

Every chef has his secrets. In the case of Handling Specialty's president, Tom Beach, his ingredients - the HS teams - are not secret but the methodology and cooking time are.

"It is a mix of wisdom, energy and desire to get the job done," says Beach of the manner in which the company has continued to grow, innovate and provide premium service to its clients around the world.

"We try to mix in students from McMaster or Mohawk College, for example, and that is how we take care of our future by mixing them with our experienced and knowledgeable team to instill our culture, and, voila! The recipe for success."

Sounds easy, but just as with many of the groundbreaking projects HS has taken on over its 50 years in business, achieving success is a painstaking road.

Handling Specialty has developed an

iron-clad reputation for getting things done in a realm on which there is no floor to build. There are precious few known quantities and often even the destination is just a vision from the mind of a client.

"We do things that have never been done before," says Beach.

"Because of that, we go into things with two basic beliefs: one, confidence is what you have before you understand the problem. We love that saying."

"Two, we don't know what we don't know."

Never were those idioms more evident than one project with which HS truly earned its collective bones in the entertainment industry - the construction of the underwater lift system for Cirque du Soleil's O at the Bellagio in Las Vegas. This project started out as an inquiry for a small lift system but turned out to be a whole lot more when the apparatus ini-

tially developed for the 1.5 million gallon pool fell out of favour.

In the end, and it almost seems unfair to leave out many of the anecdotes about this project's trials and tribulations to get the final design, it was decided to go with 12 large cylinders buried into caissons in the desert floor to drive the lift system.

"This was very difficult due to ground water seepage which was stopped by corrugated tube inserts followed by an epoxy fill to keep the caisson clean," notes Beach.

That was not the only thing difficult in this job.

HS leased an old Slater Steel building in Hamilton in order to build the system which was too heavy and too tall for its Grimsby facility. Huge 'scissors' were constructed to guide the stage lifts perfectly vertical as the spec called for a gap between cylinders of no more than

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three-eighths of an inch at any point in travel.

A sophisticated control system was sub-contracted. The idea was to give each cylinder the intelligence to tell the main controller (the brain) where it was located, thousands of times per second. This way HS could control each lift individually or all together to make one full common stage floor or individual lifts.

The lifts are completely submerged at all times. Twice a year the pool is emptied and HS technicians perform maintenance. A sophisticated corrosion protection system is employed at all times.

The stages are all steel constructed with a very special coating. All welds are fully wrapped and sealed to prevent water seepage into the structural tubing.

Basically, no stone was unturned in the detail of development or planned maintenance. The proof of this is clearly evident to Tony Ricotta, who is now company manager for Cirque's Ka show, but spent 12 years with O spanning back to 1997 when the project was developed.

Ricotta realized Cirque was asking for something to be created which had never been developed previously. On top of that, he also knew the result needed to be able to act the same whether in water or in air, as well.

"It had to be able to perform in both, so we knew we were looking for a happy medium," recalls Ricotta.

"The best way I can describe it is it would be like riding a bike on sand and riding a bike on pavement. We had to figure out how packed the sand needs

to be to get the bike to move like it was on pavement. That's the same as moving with water and without."

Again, a great deal of effort went into getting them to the point where the work was done, hopefully, and the hundreds of thousands of gallons of water filled the tank for a test run.

"We held our breath and hoped nothing shorted out," recalled Ricotta.

All went well, except for a shimmy developed by the hydraulic cylinders when they were driving to raise the stage. Everything was calculated to the exact specifications but the system struggled ever so slightly.

The sand was packed just a little too tightly it would seem.

"We weren't sure, but we thought if we



(Left) The kidney lift on the Handling Specialty floor before being shipped overseas for installation on a Royal Caribbean ship. (Centre) The pool awaits. (Right) An artist's rendering of the final look.



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cut some bolts which held the system in place it may loosen it just enough to move freely," notes Beach.

"When we cut that last bolt, there was a huge 'crack' sound as the cylinders shifted to where they needed to be. They found their happy place. Problem solved."

Indeed.

"What we asked was the impossible," says Ricotta.

"We had a bid process and there were much larger companies involved, but Handling Specialty's design made the most

sense. Since that time others have tried to replicate O and, maybe, in some ways, they have, but nobody has surpassed it."

With that calling card in hand, HS has continued to excel in the entertainment industry completing intricate works for other Cirque projects as well as Royal Caribbean Cruise Lines and Franco Dragone's Dragone Entertainment, which includes La Reve's theatre-in-the-round style structure at Wynn Resort in Las Vegas and the House of Dancing Water at the City of Dreams in Macau.

The House of Dancing Water's

infrastructure is the largest underwater stage lift system in the world.

A key feature with the La Reve production was dealing with staging issues for performers.

"The challenge with the theatres in the round is how do you get performers and equipment from back stage to on stage and back again," notes Beach.

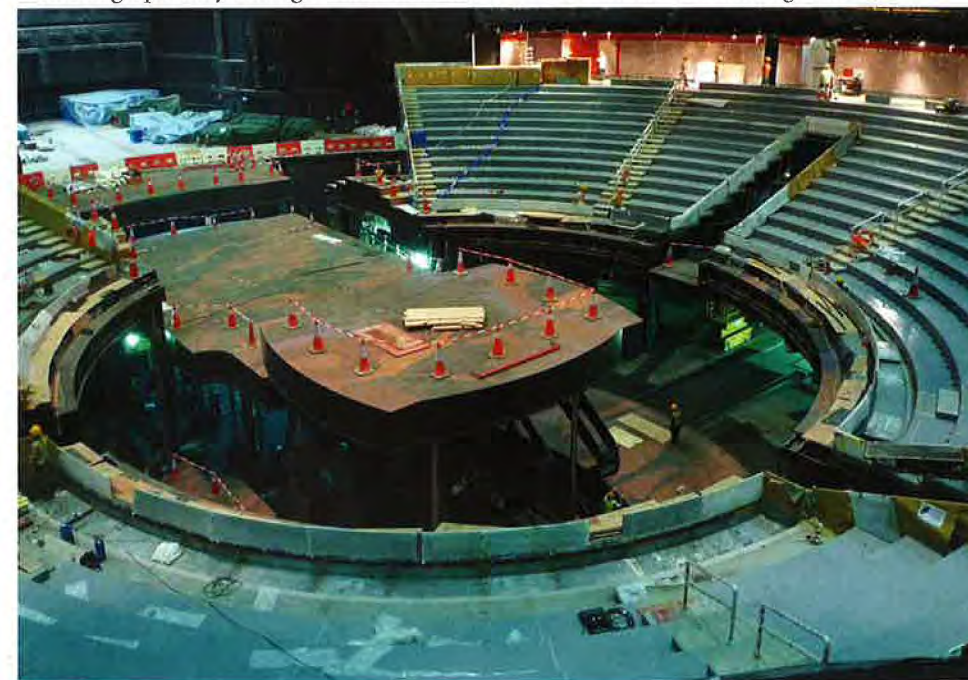
"This is where our vomitory lifts come into play. They are the access 'bridges', for lack of a better term, that allow performers to either run onto stage or swim onto stage. The lifts raise and lower to allow for either wet or dry access."

Dragone's Dancing Water project drew on all the knowledge HS had accumulated by constructing both theatre-in-the-round with La Reve and O's proscenium style stages as it employed both.

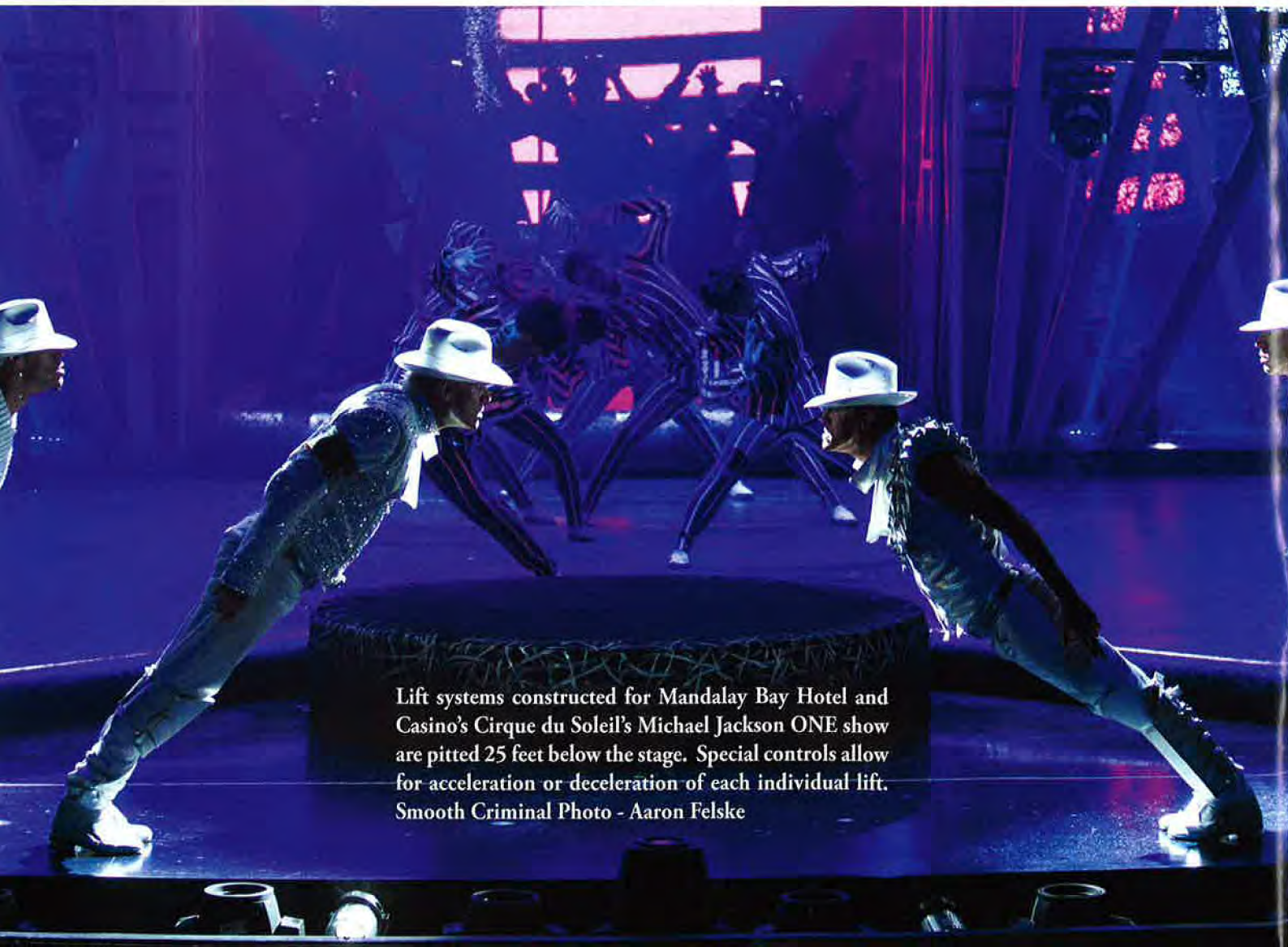
"(The design) allows for the show to use Sea Doos and motorcycles for a very dynamic viewer experience," says Beach, adding the theatre was constructed at a cost of \$240 million taking nearly 3.5 years to complete with 18 months of installation time in Macau.

To give an idea of the size, Beach noted the surface would allow for 115 mini-vans to be parked on it.

"Again a sophisticated control system was employed so that our controller knew where each axis of motion was at all times. This system has over 40 axis of motion



The Dancing Waters stage under construction in Macau. The system employs more than 2,000HP of hydraulic power.



Lift systems constructed for Mandalay Bay Hotel and Casino's Cirque du Soleil's Michael Jackson ONE show are pitted 25 feet below the stage. Special controls allow for acceleration or deceleration of each individual lift. Smooth Criminal Photo - Aaron Felske



Tom Beach relates a story to Nick Moskaluk, left, and Jerry Sloat, right, on the Handling Specialty floor.
Williscraft - Photo

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that “the brain” has to control at all times. Fluid compression, water motion, show loads all come in to play when tuning out a system so that the audience sees a perfectly flat, smooth motion of any one lift or all lifts together at once,” says Beach.

“The costs were significant in that the project had to be manufactured, then broken down and sent out for special blasting and painting, then re-assembled for fit-up, then broken down into overseas containers, extracted and lowered down into the gigantic pool, re-assembled, capped with flooring, power on, tuning, commissioning.”

“There is a huge amount of coordination as the lifts must employ thousands of feet of water hoses for the water cannons which sit within the stage flooring. The show is called the House of Dancing Water for a reason - hundreds of water cannons set to music and light make for a very eye-catching presentation.”

“...Hundreds of water cannons set to music and light make for a very eye-catching presentation,”
Handling Specialty president Tom Beach

And if you’re already in the pool, so to speak, why not get involved in a water on water project...enter Royal Caribbean Cruise Lines, which sought a “wow” venue for the stern of its new largest-cruise-ship-in-the-world lineup: the Oasis, Allure and Harmony of The Seas.

After 10 months of technology exchanges, vessel interface design changes and an agreement signing, HS was contracted to produce the underwater stage lift system, the trampoline rotating special EFX and dual parallelogram diving board assemblies for RCCL.

Midway through design of the kidney-shaped stage lift system, it was discovered a key element was not taken into consideration.

Because any vessel shifts left and right of plumb, RCCL very specifically designs the size of their pools to allow for control of the water, but the stage pool was much larger to allow for the production. Unattended, the result could have produced swells which could have displaced water as much as six rows into the crowd.

The project was immediately halted.

“We came up with a very creative “runway lift” which doubled as a retaining wall down the centre to calm water in the pool during difficult seas,” notes Beach.

“This telescoping wall sits in between stage left and stage right of the ‘kidney bean’ shape. The project was re-started and, to this day, there are three lifts in the show with the centre runway lift also acting as a water retaining wall.”

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Not all of HS’s entertainment industry venture have been all wet. A great variety of unique projects of the more traditional stage variety have also been part of the mix.

Productions of The Lion King, Mama Mia, Mary Poppins, Dirty Dancing, The Scarlett Pimpernel, Sunset Boulevard and Cyrano de Bergerac have also benefited from HS’s skills.

A show which Rolling Stone Magazine says is “a virtual parade of WOW moments” - Cirque du Soleil’s Michael Jackson “ONE” at the Mandalay Bay Hotel and Casino is also part of the roster.

“The stage lifts are lowered into a 25-foot-deep concrete pit and elevate to the audiences line of sight when they bring up special FX or performers,” says Beach.

“A special controls technology is employed so that the lifts can be accelerated

or decelerated at any ramping speeds as well as keeping three individual lifts level to one another.”

No matter the venue, no matter the country, no matter the vision, Beach is confident his team can hit the mark set by their customers each and every time.

That confidence is built on track record, but also on the qualities and abilities of his team.

“When we go in to bid a job, someone might say, ‘You’re a small company. Why should we go with you?’” notes Beach.

“‘You’ll know when something goes wrong’, I tell them. Our strength is our people. We have great employee retention and that allows us to compile experience and years and years of wisdom.”

The track record of consistency and success has allowed Beach and his crew to maintain a pretty simple sales pitch

when they get to the right person.

“If I get to show them with my tablet to show them the pictures, show them what we’ve done, it’s usually very fast. You’re in or you’re out,” says Beach.

“We sell motion. What we have to do is make motion smart.”

Their efforts are good enough for Pratt and Whitney, which requires jet engine test cell lifts. These lifts have a 40,000-lb. capacity and hold engines for testing before they get shipped for installation.

The future looks bright to Beach and his team at Handling Specialty, but his future does not focus that far down the road.

“I don’t like to look more than five years down the road but I don’t like limiting it to two years, either. We have projects that take two years,” he says.

“But we can see expansion in the AGV (automatic guided vehicle) sector - controls, processors, tuning and programming. We are good to go with the physically big projects. We’ll also see growth in the project management end of things.”

“We’ve done well and I am very proud of that. I’m proud we are in Niagara and Grimsby. Our families are here. We grew up here. We were educated here.”

“We want to represent the province and the whole country. We want people to know we’re Canadian and we do cool stuff!”

Tony Ricotta knows they do cool stuff and he will gladly serve as a reference.

“We have contracts with all kinds of suppliers who have support built in. We did not have that with Handling Specialty, but they came anyways whenever there was an issue. I cannot think of when we had a relationship that was so supportive and attentive,” said Ricotta.

“Tom would show up himself, the GM of the company. You don’t get that kind of service anywhere, but that’s Tom, no matter who the client is. He says, ‘this is my product and I want my product to be outstanding now and when we work together in the future.’”

“He doesn’t do it to sell. He just wants to make sure what they did sell was done right!”



Mark Vanderbeek welds a component for a jet engine test cell.