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BEAR GRYLLS

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DISNEY HOSPITALS

Disney has announced a \$100m fund to transform childrens' experience of hospital stays. The five-year initiative will start in Texas and roll-out worldwide. We love it, but we'd also like to see a dual focus on prevention, to stop kids getting sick in the first place

Times when children are in hospital are some of the most upsetting and stressful for everyone involved. Now Disney has announced it will create a new programme for children's hospitals to help ease this pressure and make the hospital experience less distressing.

The \$100m initiative is part of Disney's Team of Heroes community outreach and philanthropy programme and will start at the Texas Children's Hospital in Houston, Texas.

Disney has a long association with hospitals going right back to Walt, but this new programme will be more comprehensive and wide-ranging.

Disney is sending in the Imagineers to create a kid-friendly atmosphere and will be using technology to bring characters to life.

RFID will enable patients to customise their hospital stay by unlocking special elements, so their favourite characters surround them for the duration of their time in hospital – enchanted artwork will come alive and interactive wall murals will tell Disney stories.

At the softer end of the experience, children will be able to choose bed linen and gowns, in-room entertainment and 'play carts' featuring their favourite characters – all with the aim of reducing fear, relaxing them and raising their spirits.

Finally, in-room, themed pop-up theatres will make just-released movies available specially for kids and parents.

Hospital design is at the forefront of research into ways in which the environment can aid healing, shorten hospital stays and speed recovery, so this initiative by Disney is very timely. There's also clear evidence that mental state has a significant

impact on recovery and wellbeing and we hope a research project will run alongside this initiative to assess the impact of both environmental and psychological interventions on the health of children. That way, lessons can be shared elsewhere, creating a great legacy for Disney.

American children are among the most stressed and medicated on the planet, consuming up to 95 per cent of the world's Ritalin, meaning many are on strong mood-altering drugs from a very young age and experiencing low levels of

mental and physical wellbeing.

We know that up to 90 per cent of disease is epigenetic and only 10 per cent is genetic – so much is preventable.

We would like to see Disney back up its work in the hospital sector with a new focus on prevention to stop kids getting sick in the first place.

With its reach and influence,

the company could be a huge force for good in teaching children self-care through its many channels and touch points.

In addition, a new focus on wellbeing in its theme parks would help to keep them out of hospital, leaving those resources for children for whom disease is unavoidable.

In addition to educating, there are many things Disney can do in its attractions – number one, improving the food, with more healthy choices and, dare I say, reducing the sale of soft drinks, which cause or exacerbate a range of serious diseases.

Let's hope this focus by Disney on kids' health and wellbeing can embrace prevention as well as cure.

Liz Terry, editor. Twitter: @elizterry

There are many things Disney can do in its attractions to help kids' wellbeing – number one, improving the food offerings and reducing the sale of soft drinks



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Attractions People

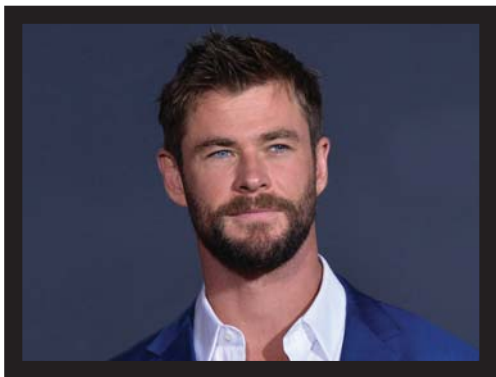


PHOTO: JIM RUMEN / PA

“It means a lot to be the ambassador for Australia”

Chris Hemsworth actor



The new campaign stars actors Chris Hemsworth and Danny McBride

Australia has turned to one of its most beloved film franchises, along with two of Hollywood's biggest stars, as part of a multi-million-dollar marketing push to draw visitors from across the world Down Under.

First aired during February's high-profile Super Bowl ad break, the A\$36m campaign by government organisation Tourism Australia casts popular actors Chris Hemsworth – who has been working with Tourism Australia since 2016 – and Danny McBride in a mock trailer for a sequel to the hit 1980s' film *Crocodile Dundee*.

As they travel around Australia, the pair explore pristine beaches, taste Australian wines and dine on the iconic Sydney harbour, with a brief cameo from *Crocodile Dundee* himself, Paul Hogan.

"It means a lot to be the ambassador for Australia," says Hemsworth in an interview with *CNN Travel*. "I had the greatest experience growing up, but it wasn't until I moved away that I really appreciated it."

The Super Bowl, the most watched TV broadcast in the US, kicked off the A\$36m marketing push



The actor, famed for playing Thor in the Disney/Marvel films, described his recommendations for places to go, including Melbourne, Victoria and Uluru.

After living in Los Angeles, California, for several years, he moved back with his wife and children to live near the Gold Coast.

"Mostly I just missed Australia. I missed the people. I missed the coastline," Hemsworth says. "Our three young kids spend 95 per cent of their time outdoors on the horses, on the beach, running through the bush. We're very, very lucky."

US tourists

In addition to the "trailer", Tourism Australia built up its social media presence, with teasers featuring the likes of famous Australians Margot Robbie, Hugh Jackman, Russell Crowe and Isla Fisher.

The stunt has proved an initial success, with advertising firm Amobee reporting a 681 per cent increase in digital mentions of Tourism Australia through the second half of January. In terms of Super Bowl



A poster is part of the materials promoting the fictitious movie sequel

advertising, the spot finished second overall for global digital engagement.

While targeting tourists worldwide, this campaign is paying special attention to the US, a critical market for Australia with 780,000 American visitors contributing A\$3.7bn annually to the national economy.

The campaign will likely be a welcome boost to visitor numbers at attractions across the country, with Australia's Gold Coast theme parks needing a particular push as they exit a financial dip stemming from the Dreamworld accident in 2016.

"A favourable exchange rate and strong aviation capacity leading to highly competitive airfares makes this the right time to increase our investment in [attracting visitors from] the US," says Australian minister for trade, tourism and investment, Steven Ciobo.

"This is the single largest investment Tourism Australia has ever made in the US market and one which we believe will grow annual spend by American visitors to A\$6bn by the year 2020," Ciobo says.



‘Bear Grylls Adventure will test the skills, strength and nerve of the most intrepid thrillseeker’

Bear Grylls celebrity survivalist

Ever thought about a visitor attraction where one moment you're scuba diving metres underwater and the next you're simulating a skydive?

Celebrity survivalist Bear Grylls – who's famous for starring in TV shows where he's stranded far from anywhere and must make his way back to civilisation – is partnering with Merlin Entertainments on an attraction concept to “bring adventure to millions”.

Bear Grylls Adventure will be split into five zones, each offering a different set of activities based on high-adrenaline experiences and inspired by Grylls' past expeditions, such as scaling Everest, traversing deserts and jungles, and training as an SAS reservist.

Targeting the burgeoning adventure-based experiences market, the first £20m Bear Grylls Adventure will be located at the Birmingham National Exhibition Centre (NEC) in the UK, and cover an 8,000sqm area. The Merlin Magic Making team is theming the attraction as an immersive wilderness, made all the more convincing by the addition of a real-life Chinook helicopter, light aircraft, army vehicles and Grylls' own survival equipment.

“I wanted to create a large-scale attraction so you don't have to travel the world to get a real taste of adventure,” says Grylls. “The adventure park is all based on experiences that have shaped my life, pushed me to my limits and so often taken me far out of my comfort zone.

“My late father – a friend, commando and climber – is my inspiration. He taught me to survive and climb. He showed me it was OK to have big dreams and that to fail a few times is essential to success.”

“It was such a logical next step to bring adventure indoors and to millions of people. The Bear Grylls Adventure will test the skills, strength and nerve of the most intrepid thrillseeker, and you can hone some of the core mental and physical skills for adventure at our Basecamp.”

Dive, fly, climb

The attraction will be staffed by trained “adrenaline advisors” and split up into five areas – Dive, Fly, Climb, High Ropes and Basecamp – and it's going to be hands-on.



Bear Grylls Adventure is inspired by the survivalist's high-adrenaline experiences, past expeditions and training



PHOTOS: MATT ALEXANDER

In the Dive zone, professional divers lead an underwater experience in a 886-cubic-metre tank. Guests do not need any previous experience and can choose between snorkelling or scuba diving, with equipment provided. "Underwater adventures can be the most exciting. The key is being calm under pressure and prepared for the unexpected," says Grylls.

In the Fly zone, trained experts teach skydiving skills inside a giant wind tunnel, with the chance to experience a freefall three times as long as an average skydive.

The Climb zone allows users to choose a route inspired by famous terrains, such as El Capitan in Yosemite National Park and the bouldering areas of Fontainebleau, France. Guests of all abilities can have a

go. "It's about helping you find the courage and tenacity to conquer your fears."

The High Ropes section sees visitors zipline from the Chinook before taking on a multi-level ropes course, billed as military standard and "the toughest in Europe".

Lastly, Basecamp is the heart of the attraction, made up of four mental, physical, group and individual challenges designed to teach the core skills needed for survival in the wild. Look out for an escape room and face-your-fears challenge.

Global rollout

Grylls sums up the experience in his own inimitable style: "Courage is about finding a way through the fear, not denying the fear. The more we do that's difficult, the

more empowered we become to tackle the big obstacles in our lives."

"This is all about developing that 'never-give-up spirit'. To build courage, determination and resourcefulness, we have to experience challenges that stretch us," he says. "That's what we do at Bear Grylls Adventure in spades."

Merlin expects to then take the product overseas in a major rollout and has an exclusive deal with Bear Grylls Ventures until 2026, which could be extended as new Bear Grylls attractions open worldwide.

"Bear Grylls is a truly international brand," says Merlin CEO Nick Varney. "As well as earning recognition in Europe, he is extremely big in the US and in China, which are the two big markets we're focusing on."

“The joust will be bigger than ever, with knights in armour and the clashing of steel against the backdrop of the medieval village”

Stephen Manion manager, Arundel Castle



Stephen Manion might have been at Arundel Castle for less than a year, but he's ready to celebrate the historic location's 950th birthday.

Construction on the first building at this expansive site, located in West Sussex in southeast England, began in 1068, shortly after William the Conqueror was crowned king. "In a way, we've been waiting 950 years for this," says Manion, "and our plans have been bubbling in the background for some years. It's my job now to deliver these celebratory events."

And the recent news that the Bayeux Tapestry, which is of the same period, is being loaned by France to the UK coincides happily with Manion's promotional phase.

"Like all these things, if you have an attraction that sits in a historical period and something national is happening, whether it's related to World War II or the Napoleonic era, or in this case Bayeux, it brings that period of history to the fore and can spark public imagination. In this business, we do like national stories like this and we'll be following the story as it progresses."

Manion brings experience from his work at National Museums Merseyside, Beamish Open Air Museum and, most recently, as manager of Alnwick Castle, built to defend England from the Scots in the 14th century. At Arundel, he wants to make more of that early history and the landmark's origins.

"A lot of historic houses emphasise the artworks, the furniture, the house itself, but we have this original keep from the Norman ►

Stephen Manion worked at Alnwick Castle in northern England before joining the team at Arundel



Arundel Castle will have a packed 2018 schedule of 13 historical events from the professionals at the Raven Tor Living History Group



- period and I want to bring the story back to these early days of the 11th century and ask: why is there a castle here?"

From battlefield to tulip field

To do this, Manion commissioned some new permanent exhibitions for the keep and old gatehouse. Set to open on 30th March, they'll tell the story of Arundel Castle from the 11th century through to the English Civil War in the 17th century. A new welcome zone to introduce visitors to the castle and its timeline is also opening.

Furthermore, the castle's series of live events from the Raven Tor Living History Group – a regular fixture over the past 10 years – will be bigger and better than ever.

There will be the 'Normans and Crusaders' weekend over Easter, where visitors will be whisked back to a 12th century encampment, with combat, falconry displays, archery and more. For history enthusiasts, the three-day '12,000

The Jousting and Medieval Tournament takes place in July and is set against the backdrop of a tented encampment on the American lawns

Years of Combat' reenacts battles from the Stone Age to the Victorian era. The Annual Tulip Festival takes place in April and, perhaps the most anticipated, there's also a six-day 'Jousting & Medieval Tournament' in July, with specially trained horses and armoured competitors.

"The joust will be bigger than ever, with international jousters and a Champion of Champions event. It's the 10th anniversary of our jousting, so it will be high profile, with knights in armour and the clashing of steel against the backdrop of a medieval village.

"It's all staged on the lawned area and throughout the 40 acres of grounds and gardens, where there's everything from the

main house and historic keep to woodland walks, medieval fishponds, sculpture and vegetable gardens – and our stumpery, which looks like something out of *Jurassic Park*. There's also the rare sight of a Roman Catholic chapel adjoining an Anglican church, which tells a story in itself."

A place made for exploring

Visitors will also bump into different characters as they roam the grounds – a medieval scribe or a dancer or performer, for example – who they can interact with.

"It's a place that's made for exploring. There are lots of nooks and crannies, tracks that meander and unexpected views and experiences. People find it quite surprising when they come here."

Arundel Castle attracts around 180,000 visitors per year, arriving mainly from the local area and the southeast of England, but also from continental Europe, especially France. Although Manion would like to reach out to a less-tapped audience to the west and from within London (less than 100km north), he is wary of increasing attendance.

"Interestingly, we're one attraction that's not in the numbers game," he says. "Last year, we welcomed 182,000, which was a 4 per cent increase, but the Duke of Norfolk and the Trust (who own the property) are not interested in increasing that figure. We'd all be very happy if it stayed at 170,000 to 180,000 because what we're really looking at is the quality of the visit.

"Having too many visitors at once can spoil the experience, especially indoors. That's why we've been increasing outdoor activities. Visitors often explore the castle and grounds for three or four hours. They feel they've spent their time and money well, which means they'll want to come back and they'll recommend us to others."



The Annual Tulip Festival in April will showcase 70,000 tulips throughout the gardens



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David Pearl is the artistic director of Impropera

“It’s a combination of a music concert, comedy show and a Night at the Museum experience”

David Pearl artistic director, Impropera



Over the years, Impropera has performed in the UK, Europe and the Middle East

With an improvising company it’s not about commissioning work and dramaturgy because, well, it’s all made up,” says David Pearl, artistic director at Impropera – an operatic improvisation group he co-founded in 2000.

“It’s about developing and sustaining the ensemble over time, creating the conditions where people feel secure to take the kind of risks that improvising opera on the spot entails.”

For the past few years, Pearl has been running Muso, where his troupe of singers and musicians delivers an improvised 75-minute performance to a small audience in an intimate museum setting.

With tickets costing from £5 to £10, the performance involves the cast taking the audience on an exploration of the museum, telling stories about certain artefacts and treasures from the collection. The players interact with the audience, inviting them to share their ideas and ask questions.



Muso combines academia, artifacts and improvisation for a unique and intimate museum late experience

Evocative surroundings

"It's a combination of a music concert, comedy show and a Night at the Museum experience," Pearl explains, saying that he got the idea for improvisational opera in a museum from a chance encounter with University College London (UCL) academic Chiara Ambrosio. "She mentioned there were some great hidden collections at UCL, including the wonderfully evocative Grant Museum of Zoology. It sounded intriguing and the rest is 'natural history'."

Supported by a grant from UCL Grand Challenges and development funding from the Arts Council of England, Muso has been allowed to blossom, and is halfway through a run of six shows this year.

"UCL saw the work that we were doing with the Grant Museum – bringing the collections alive, pulling into the university a range of people who would never normally go there and involving them in the creative process," Pearl says. "This was very consistent with their own UCL Culture programme and so they decided

to support our work. Our current tour couldn't be happening without them."

As Pearl says, improvised opera is very different from traditional performances and so preparation is different too. Usually, the group arrives early to spend some time at the museum, soak up the atmosphere and chat with the staff.

Expressing reactions

"We always promise we'll rehearse, but usually this degenerates into playing around and mistake making – which, funnily enough, is perfect preparation for improvisation," he says. "This is a balancing act, though, because while you want to respect the location and connect with the *genius loci*, people too prepared can be death for improv."

"The audience love that we know as little as – or less than – them. Our job is to express the audience's reactions to objects, not our own, but we do have a guest academic on hand to correct us and tell the audience what it's really all about."

The experimental opera group has performed at London's British Museum, Grant Museum of Zoology, and Horniman Museum, among others. From Impropera's original set-up, Pearl (tenor), Susan Bisatt and Morag McLaren (sopranos), Anthony Ingle (musician and musical director) and Peter Furniss (clarinet, recorder and saxophone player) all remain. Niall Ashdown, Louise Crane, Phillip Pellew, Fiona Finsbury and pianist and flautist Yshani Perinpanayagam complete the group that delivers the Muso events.

Pearl is open to seeking more museum partners, mentioning Dean Veall, an educator at Grant Museum, who has become the de facto producer and is helping promote Muso to other potential locations. "We didn't know how this would be received – that's the wonder and terror of improv. However, a couple of years into the experiment, museums are asking for more and audiences are growing. As long as they are asking for Muso, we'll be there, singing museums to life!" ●



Orlando is one of the US's fastest-growing cities and its most visited destination



“Tourism doesn’t just support tourism, it supports everything”

Buddy Dyer mayor of Orlando

Involved in politics for nearly three decades, Buddy Dyer is popular among his constituents.

He was Florida representative for the US Senate between 1992 and 2002, including three years serving as Senate Democratic leader. Now in his 15th year as mayor of Orlando – having been re-elected to the position four times since taking charge – the theme park capital continues to thrive as the US's most popular tourist destination.

“Tourism is the single most important piece of our economic pie,” Dyer tells *Attractions Management*. “People around the world know Orlando. If they think of Disney or Universal, they think of Orlando. It’s a fantastic brand.”

In 2016, Orlando welcomed a record 66 million visitors. Of those, 5.5 million were international and 60.5 million were from the US, driven largely by the area’s theme parks, with Orlando boasting six of the 10 most visited parks in the world.

“The market continues to increase in volume and our attractions continue to renew their offering,” he says. “They’re in the business of not just finding first-time visitors, but attracting returning tourists.”



Buddy Dyer is Orlando's longest-serving mayor. He has strived to make the city a place to live, work, learn and play

Dyer says major operators such as Disney and Universal are excellent “corporate citizens”, with taxes helping to generate further revenue sources for Orlando. “One in every three jobs here is related to tourism. Universal is the largest employer and largest taxpayer within the city limits, and Disney is the largest single-site employer in the country,” he says.

“I interact with them on a daily basis on things that involve the greater community or the greater region – one, for instance, being the tourism development tax.”

The tax, which applies to all of Orange County, Florida, is a bed tax charged at 6 cents for every dollar earned. That tax generates \$260m a year for Orlando. When the city built its three new venues in the Downtown area – the performing arts centre, the Amway Centre and the Camping World Stadium – about half of the \$1.2bn capital investment was generated through the tourism development tax.

“We continue to improve our tourism infrastructure, which in turn benefits Orlando even more. Tourism has been extremely good to us in terms of supporting community assets. Tourism doesn’t just support tourism, it supports everything.”



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World's largest planetarium opens doors

A 150-year-old gas storage facility on St Petersburg's Obvodny Canal, Russia, has recently been transformed into a record-breaking new planetarium facility.

Called Planetarium No.1, it takes the crown as the world's largest planetarium, with its 37-metre dome larger than the one at Nagoya City Science Museum in Nagoya, Japan.

Filling 4,000sqm, the dome features 40 8K projectors, offering a combined 100 million pixel screen resolution. The planetarium, capable of hosting up to 500 people, opened to visitors with a film telling the building's history, followed by one on the Earth's origins and then on space exploration.

In addition to the dome, the planetarium features an



■ The dome features 40 8K projectors

exhibition of space, guiding visitors on a journey through the cosmos. Called Starry Hall, the exhibition has two interactive tables showing an accurate map of the stars, which appear in 3D as individual constellations.

Elsewhere, the Lumiere Hall is an immersive

multimedia room with screens on every surface for astronomy displays and classic film presentations.

The new planetarium also includes a café, education spaces for free lectures on astronomy and an observatory.

■ Details: http://lel.sr?a=w3r3_U_T

INDUSTRY OPINION

Science engagement community gears up for Ecsite conference

Mikko Myllykoski

Professionals from the science engagement community will come together in June in the "biggest international village in the world", nestled between the Alps and Jura mountains, when Geneva hosts the Ecsite Annual Conference. Around 1,100 professionals from Europe and beyond are expected to participate and "collide creatively", as the theme of the conference suggests.

Both the sessions and the social programme are designed to create time and space for meaningful encounters in a friendly atmosphere. The local host is the Natural History Museum, in partnership with CERN (the European Organization for Nuclear Research), University of Geneva Sciencescope and Campus Biotech.

Keynote speaker James Beecham, a particle physicist at CERN, will be looking at infinity and discussing topical research such as dark matter. The other keynote will invite us to look inside ourselves. Giulia and Jill Enders, the authors of *Gut: The Inside Story of Our Body's Most Underrated Organ* (2014) will share the story, idea and method behind the phenomenally successful book that sold 2.1 million copies in Germany alone, and spent 74 weeks in the top 10 list of best-selling non-fiction literature.

Attendees can enjoy a two-day pre-conference workshop (5-6 June), three days of conference with more than 80 parallel sessions (7-9 June), and, as always, the Business Bistro trade fair. Thematic trends include escape rooms, narrative approaches and VR/AR applications.

My gut feeling tells me there's a giant fondue cooking for everybody... and not only at the Gala Dinner. See ecsitemeeting.eu/annual-conference. ●

Mikko Myllykoski, experience director, Heureka, and Ecsite's ACPG chair



Kennedy Space Center debuts Mars experiences

A new attraction has launched at Florida's Kennedy Space Center (KSC) Merritt Island visitor complex – sending visitors on a 54.6 million km virtual trip to Mars.

Taking off on 10 February, the new Astronaut Training Experience (ATX) uses immersive technology to make participants feel like they've been transported to the Red Planet.

During the experience, visitors train to live and work on Mars and learn what it's like to travel there using real NASA practices.

There are two different experiences available as part of ATX. The first allows guest to join a space crew as they undertake a mission simulation including



■ The experience uses advanced NASA Technologies

launching, landing and walking on Mars. During the five-hour experience, visitors get the chance to perform a spacewalk through an advanced microgravity simulation.

The second experience sees visitors transported to Mars to live and work on Mars Base 1. Teams will

spend a full day managing an operations centre on Mars, where they carry out activities including harvesting vegetables in the Botany Lab, programming robots to optimise solar energy intake and adapting to the challenges of thriving in the harsh Mars environment.

■ Details: http://lel.sr?a=W6i2G_T

Paul Noland resigns after five years at helm of IAAPA

Paul Noland, president and CEO of global attractions association IAAPA, is stepping down from the role – a position he has held since January 2013.

IAAPA will now start the process of finding a new chief executive, with current CFO Hal McEvoy taking the reins in the meantime.

Noland, who has overseen the organisation through a period of growth and expansion – including the recent relocation of its headquarters to Orlando, Florida – has accepted a new position as CEO of technology solutions provider Accesso.

The move comes as IAAPA starts its 100th anniversary year of celebration.

“Paul has led IAAPA through some of the most successful years in the association’s 100-year history,” said IAAPA chair Andreas Andersen, who is also president and CEO of Liseberg in Sweden. “In addition, he has managed an extensive expansion of member services, the continued globalisation of the association, and the complicated relocation of IAAPA’s headquarters from the Washington, DC, area to Orlando. For this, we owe him a very warm thank you.”



■ Paul Noland has accepted a new executive position elsewhere in the attractions industry

Attractions Management caught up with Noland during the IAAPA Expo in Orlando in November, where he was positive about the association’s move to Orlando.

“A move is a big thing, but it’s gone really well,” he said. “The expo is a good example

of the fact that although we have new faces around the office, they all came with huge passion for the industry and for IAAPA. IAAPA staff will be in temporary offices for a couple of years, but we hope to be in by 2019.”

■ Details: http://lei.sr?a=9d6t_T



GRIMSHAW ARCHITECTS

■ Grimshaw are working on the design

Edén Project signs £150m Qingdao deal

Sir Tim Smit’s Edén Project is making a giant leap in its journey to realising its first overseas attraction, following a recent trade meeting between the British and Chinese governments.

During the three-day trade mission, David Hardland, Edén Project chief executive, signed an agreement with China Jinmao Holdings, for a future £150m development in Qingdao.

■ Details: http://lei.sr?a=d4R9P_T

Ski and storytelling create unique experience

One of Finland’s most popular ski resorts is combining winter sport with storytelling experiences, creating a unique escape room-style game as it seeks to attract new audiences to the snowy destination.

Working with Escape Room Helsinki, Pyhä Ski Resort has created an adventure based on the local legend of Huttu-Ukko – a mighty creature that guards the fell – with players having to explore the mountain’s slopes to solve the mystery.

Called The Lost Spell, players must go on a journey to save the Pyhä fell from the evil plans of Pakkasnoita, the Frost Witch, by finding Huttu-Ukko’s lost spell.

“We believe that by building stories around



PYHÄ SKI RESORT

■ Players must go on a journey to save the fell

skiing we can introduce new people to the sport,” said Reino Tikkanen, director of marketing and digital business development at Pyhä Ski Resort.

“For us, skiing is not only a hobby. We believe it should be an adventure and last year we launched a mobile game that utilises

GPS-tracking to provide content and routes that are not visible on the slope map. Now we are bringing an escape adventure to a completely new environment.”

Escape Pyhä will make its debut on 7 April, running through to 22 April.

■ Details: http://lei.sr?a=X6h7w_T

Iger unveils €2bn expansion plans for Disneyland Paris

Disney has announced a major expansion of Disneyland Paris, near Paris, France, with the operator unveiling €2bn plans which will include new areas based on its Marvel, Frozen and Star Wars IPs.

Disney chair Bob Iger announced the plans in February alongside French President Emmanuel Macron at the Palais de l'Élysée, promising multiple new attractions and live entertainment for Europe's most visited attraction.

Touted as one of the most ambitious projects at the park since its opening in 1992, the investment is a commitment from Disney to the long-term success of the resort as its brand beacon in Europe.

"We're very excited about the future of Disneyland Paris and continue to invest in its long-term success," said Iger.

"The resort is already the leading tourist destination in Europe. This transformative expansion will add even more of our beloved characters and unparalleled storytelling to create new lands, attractions and entertainment that further elevate the guest experience and drive new opportunities for tourism in this dynamic region."



■ Disney is investing €2bn in three new lands themed on Marvel, Frozen and Star Wars

Set to break ground in 2021, the multi-year plan will include a significant expansion of the main Disneyland park. In addition to three new themed areas, the park will also gain a new lake, which will act as a focal point for entertainment

experiences, while also connecting each of the new areas with the rest of Disneyland.

The plans follow a move by Disney last year to take full ownership of Disneyland Paris, which has struggled financially.

■ Details: <http://lei.sr7a=F41K>



PHOTO: DUBAI ENTERTAINMENTS

■ DXB is rescheduling a loan agreement

DXB plans \$1.15bn finance restructure

DXB Entertainment – the operator of Dubai Parks and Resorts – is planning to restructure a debt of \$1.15bn as the attraction continues to struggle after to meet forecast attendance on visitor numbers.

According to multiple reports, the operator is planning to reschedule a loan agreement signed in 2014, and is requesting that repayments are frozen for a period of three years.

■ Details: http://lei.sr7a=a4R5S_A

Six Flags' solar power plans get green light

Six Flags Great Escape in New Jersey will be the world's first theme park to go solar after it reached an agreement with local groups over the game-changing plans.

In the works since 2015, environmental bodies had objected to the proposals because they would have included felling 19,000 trees to make way for the solar power facility.

But a new agreement will see the number of trees more than halved, with 16 hectares cut down rather than 36.

The amended plan states more than half the solar panels will be built on top of an employee car park, an overflow car park and part of the car park serving the waterpark.



SIX FLAGS

■ Plans will reduce Six Flags parks' carbon dioxide emissions

"This project represents a giant step towards becoming a net-zero carbon facility," said John Winkler, president of Six Flags Great Escape Park.

Six Flags then said it was launching an initiative to power two California parks – Six Flags Discovery Kingdom in Vallejo and

Six Flags Magic Mountain, near Los Angeles – almost entirely with solar power.

"We are committed to making all of our properties more energy efficient and sustainable for years to come," said Six Flags senior vice president, investor relations, Steve Purtell.

■ Details: http://lei.sr7a=g6E6X_A



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Six Flags targets waterpark acquisitions

Six Flags is planning to increase its attractions portfolio in 2018, after revealing discussions with a number of potential new partners as its waterpark acquisition strategy starts to pick up steam.

In April last year, Six Flags announced its ambition to make a bigger splash in the waterparks sector, with acquisitions of existing properties allowing the operator to expand capacity and attendance with minimal investment, providing a quick payback and high return on invested capital.

"We're speaking with a number of promising potential partners," said Six Flags president and CEO Jim Reid-Anderson during an earnings call. "The timing of the deal is hard to predict, but



■ Six Flags wants to increase its waterpark numbers

our goal would be to add parks in 2018."

Last year, Six Flags opened its newest waterpark in Oaxtepec, Mexico, and also reacquired Waterworld California in April as its 20th property. Under the strategy, the operator is looking to buy or

develop waterparks near its existing theme park assets in North America, with the goal of boosting revenues at both locations.

Reid-Anderson said: "In the right circumstances, you can bring these parks online very quickly."

■ Details: http://lei.sr?a=9Pn5_T

INDUSTRY OPINION

Accessible waterparks need to be the rule, not the exception

Aleatha Ezra

In the past few years, more and more water leisure operators are looking at how to make their websites, facilities and staff more accessible and welcoming to guests with disabilities. It makes sense that inclusive tourism has become a trending term because, according to the World Health Organization (WHO), "over a billion people live with some form of disability; this corresponds to about 15 percent of the world's population."

So what is inclusive tourism? As defined by Push Adventures (pushadventures.com.au), an inclusive tourism consultancy in South Australia, "inclusive tourism is about reducing uncertainty around what to expect from a destination or service. It creates increased participation in tourism activities and embraces the entire community of travellers, regardless of ability."

One waterpark that's already introduced a robust "access for all" approach is Sandcastle Waterpark in Blackpool, UK. Starting with its website, which has a helpful "plan your visit" section, Sandcastle enables anyone to visit, whatever their physical or cognitive impairment.

For the Sandcastle team, it's about the total guest experience – from pre-visit to visit to post-visit. The waterpark has a variety of inclusive services and trains staff to treat each guest, regardless of ability, with care and understanding. To learn more about their accessibility programming, visit sandcastle-waterpark.co.uk.

As Push Adventures says, inclusive tourism is more than providing a ramp. "Not all disabilities are visible and every person is unique. Small details can make the world of difference to a person's travel experience." ■

Aleatha Ezra, director of park member development, WWA



Atlantis Sanya prepares for May opening

One of Asia's most anticipated waterpark projects is almost complete, with the Atlantis Sanya resort approaching its May 2018 opening date.

The resort – like its sister, Atlantis The Palm, in Dubai – will boast a world-class Aquaventure waterpark with an array of twisting waterslides and theming inspired by the ancient Atlantis civilisation.

Atlantis Sanya is located at Haitang Bay in Sanya on the south of Hainan Island, China – a popular destination with domestic tourists from the mainland thanks to its tropical climate. The 540,000sqm Fosun International-owned resort is inspired by the underwater world, the jewel in the crown



■ Atlantis Sanya's waterpark, Aquaventure, is opening soon

being the 200,000sqm Aquaventure Waterpark and the Lost Chambers Aquarium and open-air lagoon, a saltwater marine environment home to some 86,000 sea creatures as well as being a centre for ocean protection and conservation.

The RMB11bn (\$1.7bn) Atlantis Sanya development, managed by Kerzner International, will have 1,314 guest rooms, including five underwater suites with views into the lagoon itself. ProSlide has been working on the waterpark and its 15 rides.

■ Details: http://lei.sr?a=s6s3x_T

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David Adjaye's Spyscape museum opens door in New York

An interactive museum dedicated to the art of spycraft, designed by the studio of David Adjaye, has opened in New York – “empowering visitors to seek the truth, form their own opinions and question everything.”

Guests of the new museum enter the enigmatic world of code-breakers, spycatchers, hackers and undercover agents at Spyscape, which has been developed in collaboration with investigative journalists, former directors of intelligence agencies and station chiefs.

Conceived as an “iconic destination that draws visitors into the secretive universe of espionage through a collection of world-class artefacts, dynamic storytelling and customised experience”, the three-level museum is located in a 5,500sqm building in Midtown Manhattan, two blocks west of the Museum of Modern Art.

On their arrival, visitors are guided into a 32sqm multimedia briefing elevator – one of the largest in the world – that orients them to the experience before transporting them to the first exhibition level. Galleries are housed across seven bespoke pavilions –



SCOTT FRANCES FOR SPYSCAPE

■ Guests will enter the enigmatic world of undercover agents at Spyscape

themed around encryption, deception, surveillance, hacking, cyber-warfare, special ops and intelligence.

Audio design was done by composer and sound designer Nick Ryan and lighting design was helmed by Lighting Workshop.

In addition, the Spyscape interactive experience houses a cafeteria, private event spaces, a spy-inspired retail store and a bookshop with over 1,000 rare and first edition espionage-related titles.

■ Details: http://lei.sr?a=a6x4H_T



■ Late night social events are on the up

‘Lates’ worth £10m a year to UK museums

A new study which investigates the effects of “museum lates” has revealed that after-hours events generate nearly £10m in ticket revenue for British museums and galleries each year.

The research, by Culture24 with support from Arts Council England, created three linked reports looking at these evening events, estimating that £9.6m was generated from 8,000 of these happenings.

■ Details: http://lei.sr?a=y8Q7t_T

Renovation due for Russia's largest museum

Architect Rem Koolhaas and his firm OMA's plans to renovate the largest museum building in Russia have been unveiled.

The New Tretyakov Gallery houses an extensive and important collection of Russian art, including work from Malevich, Kandinsky, Chagall, and Soviet artists such as Aleksandr Deyneka and Vera Mukhina.

The 61,000sqm building, which includes multiple exhibition halls, was originally designed by architects NP Sukoyan and YN Sheverdyaev in the 1960s, and took two decades to complete. Several additions have been added over time, fragmenting the vast hallways and grand



OMA

■ Architecture firm Reserve will collaborate on the project

exhibition spaces into clusters of smaller rooms.

OMA's redesign will create four sectors – art storage, an education centre, the collection galleries, and a festival hall – each with a distinctive identity and role. These will be linked by a new pedestrian route along

Moscow River, with cutouts in the museum's façade opening up its interior spaces to the city.

“Our proposal is a reconsideration of the New Tretyakov, focusing on improving its spatial infrastructure,” said Koolhaas.

■ Details: http://lei.sr?a=p5D5t_T

Shigeru Ban completes Mount Fuji World Heritage Centre

The Pritzker-winning architect Shigeru Ban has completed the dramatic Mount Fuji World Heritage Centre in Japan's Yamanashi prefecture, with a design that mimics the famous dormant volcano.

Located approximately 20 miles southwest of the natural landmark, Ban's 3,400sqm facility is formed by an inverted latticed timber cone, that appears mountainous when seen in the large reflecting pool at the front of the complex.

Inside, exhibitions tell the story of the 3,776-metre-high World Heritage site, the history of the Fuji-ko religion it inspired, and its role in popular culture.

Videos and audio recordings feature, as do artworks and a 15-metre-wide recreation of Mount Fuji made from Japanese paper.

Other facilities at the visitor centre include a 4K theatre, a library, an event space, a restaurant and a shop.

Visitors can ascend the building via a 193-metre spiral slope that simulates a climb up the volcano – Japan's highest peak. A viewing tower in the cone with full-height glazing frames the real thing in the distance.



■ Shigeru Ban's facility is located near Mount Fuji, a UNESCO World Heritage Site

Mount Fuji was recognised as a UNESCO World Heritage Site in 2013 and a competition was held shortly afterwards to choose a design for the Fuji World Heritage Centre. The winning submission was selected ahead of over 230 rival proposals.

Ban's best-known cultural buildings include the Centre Pompidou-Metz museum in France, the Aspen Art Museum in Aspen, Colorado, and his recently-opened 'music city' on Paris's Île Seguin island.

■ Details: http://lei.sr?m=P3x3T_I



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■ The historic centre of Prague

UNESCO developing tourism heritage tool

UNESCO has committed to improving tourism management at World Heritage Sites by announcing the development of a new tool for sustainability issues.

An expert panel met at UNESCO's Paris headquarters in January to discuss the creation of the new self-assessment tourism and visitor management tool – a process designed for tourism stakeholders to better manage World Heritage Sites.

■ Details: http://lei.sr?m=M3R3v_I

Plan for Liverpool as heritage status challenged

In a bid to protect its World Heritage status, the City of Liverpool and Historic England have drawn up a heritage action plan, created to navigate the threat posed by a proposed development of the city's waterfront, which could see it struck from the UNESCO register.

Granted outline planning permission in 2013, the £5.5bn Liverpool Waters 30-year development scheme from the Peel Group would "undoubtedly cause substantial harm to the outstanding universal value of the World Heritage property", according to the Heritage Impact Assessment report, which also said that the development would lead the World Heritage Committee (WHC) to delete Liverpool from its list.



LIVERPOOL CITY COUNCIL

■ The Peel Holdings masterplan threatens Liverpool's status

Among the concerns for the WHC is Everton Football Club's proposed development of a new stadium at Bramley Moore Dock. While land has been leased, according to the report "no planning application has been submitted, nor is such an application imminent". The report goes on to say that

should the move go ahead, it would be assessed according to the new action plan.

The city is also clamping down on the construction of tall towers, following controversial plans to build a duo of high-rise buildings overlooking the River Mersey.

■ Details: http://lei.sr?m=M2C7S_I



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Sarasota aquarium project seeks funds

A fundraising campaign has been launched following the announcement of proposals for a \$130m redevelopment of an existing aquarium in Sarasota, Florida.

CambridgeSeven, a Cambridge, Massachusetts-based architecture firm, is behind the plans, which will cover 10,000sqm, more than doubling the size of the existing Mote Aquarium, which will be renamed as Mote Science Education Aquarium.

In addition to aquatic displays across 3.8 million litres of water, the aquarium will offer teaching labs, onsite diving programmes, scientific demonstrations and a wide range of interactive technologies.

"The rebirth of Mote Aquarium will not only help



■ CambridgeSeven created the project renderings

us grow our informal science education and outreach programs and develop a more ocean-literate society; equally important, it will lead to the next step in the evolution of our City Island campus into an enhanced International Marine Science, Technology and

Innovation Park," said Dr Michael Crosby, Mote Marine Laboratory and Aquarium's president and CEO.

The capital campaign, called Oceans for All: Improving Access to Marine Science and Technology, launched on 8 February.

■ Details: http://lei.sr?a=K32Z_E_T

INDUSTRY OPINION

Zoos join forces to save saola and make conservation history

Bill Robichaud

Zoos from around the world have been proven themselves to be the most consistent supporters of saola conservation in recent years, even though saola – an elusive antelope-like species – have never been kept in zoos and, indeed, no biologist has ever seen one in the wild.

Twenty-five years since its incredible discovery in the Annamite Mountains of Laos and Vietnam, the saola is one of the world's rarest large mammals and on the brink of extinction. According to the International Union for Conservation of Nature (IUCN), only about 750 individual saola may still exist – and that number is likely much lower, with maybe even fewer than 100 left.

That is why zoos worldwide are answering the call to help save the critically endangered animal from extinction by supporting a fundraising campaign to build the world's first conservation breeding centre for the saola. The conservation breeding centre will be constructed this year in central Vietnam's Bach Ma National Park and will give the species its last, best and only hope for a future.

Through a crowdsourcing initiative, the World Association of Zoos and Aquariums (WAZA) has pledged more than \$11,000 in support of these efforts, led by the Saola Working Group and its partners. More than 20 other zoos globally are supporting the fundraising efforts.

Donations up to a total of \$250 will be matched by the Global Wildlife Conservation. We are tremendously grateful to the zoos that are clearly demonstrating their commitment to conservation and to the future of this rare, beautiful animal. ●

Bill Robichaud, coordinator, IUCN Species Survival, Saola Working Group



Vancouver plans to end cetacean displays

With pressures on cetacean captivity continuing to mount across North America, Canada's Vancouver Aquarium has announced it will no longer display such animals, instead choosing to focus on creating healthier oceans as part of its public education programme.

The aquarium faced controversy in 2017, when two of its whales died in quick succession, with Aurora and her daughter Qila dying just days apart, leaving the facility with its signature tank empty. A five-month investigation into the deaths determined that the cetaceans were killed because of an unknown toxin introduced "by food, water, or through human interference".



■ Only one dolphin remains at the aquarium

Starting 2017 with five cetaceans, the aquarium ended the year with just one: Helen – a Pacific white-sided dolphin rescued in 2005. The 30-year-old is not a candidate for release due to only having partial flippers and will remain.

"Despite independent polling, year over year, that

clearly shows overwhelming support for our cetacean programme, we have made the difficult decision to no longer display cetaceans at Vancouver Aquarium, with the exception of doing what is best for Helen," said a statement from the aquarium.

■ Details: http://lei.sr?a=n8H4_T

VR headset with brain sensors catches the eye at CES

A new technology utilising eye tracking and brain sensors has been named most innovative virtual reality product at this year's Consumer Electronics Show (CES).

Embedded with EEG sensors and eye-tracking cameras, LooxidVR allows time-synchronised acquisition of eye and brain data concurrent with VR content and provides an expandable user and application interface. The technology could be applicable to various VR sectors, helping to better understand users' emotional statuses, including stress levels, preferences and engagement levels.

"It's really encouraging to see our technology and potential recognised globally," said Looxid Labs CEO Yongwook Chae. "Stay tuned for future developments, including a comprehensive VR user analytics solution based on eye and brain interface."

Virtual reality has advanced significantly since entering the mainstream. Companies such as Anvio VR, Zero Latency and The Void have taken the concept of free roam VR to the next level, and the technology has been applied to moving objects such as rollercoasters.



■ LooxidVR is embedded with EEG sensors and eye tracking cameras

Pushing the limits of the medium, tech startups such as Neurable have created an entirely brain-controlled VR system, while Cornell University's Organic Robotics Lab has created a new method of delivering haptic responses within VR.

Taking place between 9 and 12 January, CES acts as a global stage for next-generation innovations, with the Las Vegas, Nevada, event welcoming more than 3,900 exhibiting companies each year.

■ Details: <http://lei.sr?r=R7H9I>



■ Samsung's patent uses drone tech

Samsung patents flying screen device

Samsung has patented a display that flies around and responds to and can be controlled by eye movements and voices. As well as acting as a floating hands-free device, the drone-meets-screen could have multiple applications across leisure sectors, especially with a combination of small screens or larger flying screens. The US patent was filed in early 2016 but only recently approved.

■ Details: <http://lei.sr?r=c9o0a>

Lab demos dynamic projection mapping

A laboratory that's part of the University of Tokyo has released a video showing projection mapping trained on a moving person, with the media even seeming to stretch and change form as they tug on their shirt.

Researchers at Ishikawa Watanabe Laboratory have created a system which they've called DynaFlash v2, as they aimed to "fuse reality and unreality in front of our eyes".

In the video, the content is projected onto the person and able to move around and stay on target wherever the person goes and as they manipulate their shape. The texture and smoothness of the image can also seem to change.

To make it happen, the researchers used an



■ DynaFlash v2 operates at 947 frames per second

ultra-high-speed projector capable of switching images at up to 947 frames per second. This works in conjunction with a high-speed tracking system that recognises changes in the form of the 3D subject.

"We have developed a black and white projector which switches images

at 1,000 times per second, linked it to a sensing system which runs at the same speed, and attempted to fuse digital appearance and deforming or moving physical objects," reads a statement on the researchers' website.

■ Details: <http://lei.sr?r=m0p8K>



Guests can choose their own story as the immersion
of a dark ride leads to a park wide quest with
experiences evolving individually in real-time.

BOB WHITE

After a tumultuous period for Australia's theme park industry, Village Roadshow COO Bob White talks to Attractions Management about riding the PR storm and coming out stronger. Tom Anstey reports

Australia's Gold Coast is known to overseas tourists for its pristine beaches, lush rainforests and spectacular landscapes. The region is also home to a number of world-class theme parks – and operator Village Roadshow leads the pack.

Founded in 1989, Village Roadshow is Australia's largest theme park operator, owning five Gold Coast properties including Australian Outback Spectacular, Paradise Country, Sea World, Wet'n'Wild Gold Coast and, the crown jewel of its collection, Warner Bros Movie World. These Queensland-based properties



regularly attract around 5 million guests per year.

Despite great successes and a fantastic safety record, Village Roadshow was placed under unprecedented levels of scrutiny in 2016 when four people died in a fatal ride accident at Village Roadshow's Gold Coast rival Dreamworld.

With around 60 per cent of visitors to Gold Coast attractions visiting from Queensland, a media focus on ride safety had a significant effect, with attendance declines and financial losses for every operator. Village Roadshow recorded full-year losses totalling A\$67m. If the company didn't respond smartly, serious



Horse races and fire displays are part of the charm during Village Roadshow's Australian Outback Spectacular shows

damage could be done, not only to the bottom line, but also to its reputation. That's where Bob White came in.

A "theme park lifer", in his own words, White started out in the industry while he was still at high school. He got a job at Carowinds in Charlotte, North Carolina, working as a ride operator through





DC Rivals HyperCoaster is a major new investment for Village Roadshow's Warner Bros Movie World

his college years, later moving on to a marketing position and spending two decades with the company. He eventually moved to Paramount Parks as general manager, later returning to Carowinds before joining Village Roadshow in 2008 as general manager and finally becoming COO.

Campaign of reassurance

Following the Dreamworld accident, Village Roadshow was under the spotlight. Wanting to change the direction of the conversation, management decided to engage in a campaign of reassurance.

"The big lesson we learned is that you have to be direct and you have to be timely," he says. "You can't wait around, do a statement and hope the problem goes away because, in the age of social media, it's not really going to cut it."

Following the accident, incidents such as ride stoppages were getting significant

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In this industry,
staying static and
maintaining the
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really work

press coverage, and the language the media used made what would be seen by the industry as a safe situation seem to the public as unnecessarily perilous.

With the increased scrutiny, Village Roadshow created its own ride safety videos explaining why, for example, a

rollercoaster might suddenly halt and why that's a safe procedure for visitors. The campaign, We're Serious About Safety, proved so successful that it has been emulated by operators such as Merlin Entertainments, who created similar videos for Alton Towers, which suffered its own tragedy in the Smiler accident of 2015.

"We're an overwhelmingly safe industry," says White. "However, the traditional media and also some of the social media vehicles have their own interests. Context is so important and it has to be a context people understand."

Despite the negative press and public concern, after a difficult two years, the Gold Coast market is finally starting to recover, with growth the next step.

Programme of investment

"We had a pretty tough period," White says. "Our margins were down about

► 30 per cent, but in September last year we finally got back to essentially flat so there's been a significant recovery."

To facilitate growth, Village Roadshow's investment programme has been impressive, last year debuting its record-breaking DC Rivals HyperCoaster at Warner Bros Movie World – a A\$30m purchase that opened to the public in September.

At 1,400 metres long and 62 metres high, the Mack-manufactured ride reaches speeds of up to 115kph, making it the longest, fastest and tallest hypercoaster in the southern hemisphere. Further investments are on the horizon, with White promising more new openings at Movie World over the next several years.

"In this industry, staying static and maintaining the status quo doesn't really work," he says. "You've got to invest, not only in your attractions, but everything else."

"You'll see that we'll concentrate on the IPs, which is one of the advantages that comes with working with Warner Bros. Our next announcement will detail more new additions coming in the next two years."

"On the Sea World side, we also have new attractions coming. We're opening up a new splash ground and we have a new sea jellies attraction opening in April."

Global playing field

According to White, theming and detail are more important than ever, with visitors and theme park enthusiasts from across the world travelling to the best attractions.



Paradise Country is a farm attraction with Australia's famed native animals



We have a pretty large international component. China particularly has become a significant business for us



"We're paying more attention than we ever have to quality because we're now competing with attractions all across the globe. People in Australia travel to America frequently, and we get a lot of international guests from places like China and India, for example, so guests are having experiences in different countries," White says.

"It's the details that draw people in. If you look at the kids' area we used to have at Sea World compared with the new one with Nickelodeon, they're quantitatively the same – the space is very similar and there are a couple of additional rides, but that's not really the point. We've taken it from a B-plus execution to something much better, on par with global operators like Universal and Disney."

Development plans

In addition to its core Gold Coast business, Village Roadshow runs Wet'n'Wild waterparks in Sydney and Las Vegas, and has future plans to launch Hainan Ocean Paradise and Hainan Wet'n'Wild in China, also signing a deal to open a 20th Century Fox World theme park in South Korea. Overseas and at home, things are looking very positive as the business continues to grow.

"We have a pretty large international component," says White. "China particularly is continuing to grow very fast. It's become a significant business for us."

No emerging from under the cloud of the Dreamworld tragedy, which hung for a long ►





VILLAGE ROADSHOW'S PORTFOLIO

Warner Bros Movie World

Opened: 1991

Located: Queensland, Australia

movieworld.com.au

Hollywood classics and DC comic heroes are the focus of this Gold Coast theme park

Sea World

Opened: 1971

Located: Queensland, Australia

seaworld.com.au

Australia's 25-hectare marine park offers the chance to interact with dolphins, seals and sharks and experience Polar Bear Shores and Dolphin Beach

Wet'n'Wild Gold Coast

Opened: 1984

Located: Queensland, Australia

wetnwild.com.au

One of the world's most famous waterpark brands, Wet'n'Wild Gold Coast is located alongside Australian Outback Spectacular and Warner Bros Movie World

Australian Outback Spectacular

Opened: 2006

Located: Queensland, Australia

outbackspectacular.com.au

Village Roadshow's live entertainment experience includes dinner and a show featuring many Australian animals, songs and stories

Paradise Country

Opened: 2005

Located: Queensland, Australia

paradisecountry.com.au

This Aussie farm experience tells the story of bush culture and features koalas, kangaroos and emus. Guests can also stay overnight in eco tents

Sea World Resort & Water Park

Opened: 1988

Located: Queensland, Australia

seaworldresort.com.au

Sea World Resort has 402 rooms, its own waterpark and conference and meeting facilities

Wet'n'Wild Sydney

Opened: 2013

Located: Prospect, Australia

wetnwildsydney.com.au

Located in Western Sydney, the waterpark boasts a selection of world-first rides and the latest in-park technology

Wet'n'Wild Las Vegas

Opened: 2013

Located: Spring Valley, Nevada

wetnwildlasvegas.com

Wet'n'Wild Las Vegas is Nevada's largest waterpark, with over 25 innovative slides and attractions catering for both families and thrill seekers

Wet'n'Wild Haikou

Opening: 2018

Located: Hainan Island, China

Mission Hills China, Guangxi Investment Group and Village Roadshow are expecting to open Wet'n'Wild Haikou at the Mission Hills development on Hainan Island

Lionsgate Entertainment World

Opening: TBC

Located: Henqin Island, China

Lionsgate Entertainment World will be an indoor experience centre, themed around some of the brand's key IPs, located at a new cultural and entertainment complex called Novotown



Sea World (top), Wet'n'Wild (above) and Paradise Country are central to the operator's Queensland offering



BB

We've looked at models like Universal's City Walk or Disney Springs and there's an opportunity to do something like that

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► time in the usually sunny Australian skies, what's next for Village Roadshow?

"We've got some good secrets, let's put it that way," says White. "Accommodation is one thing we're looking really hard at, particularly at Movie World, where we have a 140-hectare plot of land in addition to the 168-hectare park.

"We're looking at building accommodation there, then maybe developing the area beyond that. We've got the room for expansion and have looked at models like Universal's City Walk or Disney Springs, and we believe there's an opportunity to do something like that.

"Sea World sits on a piece of land called the Spit, which is a beautiful area and we have some opportunities there too as we go forward."

Topgolf partnership

Stepping outside the theme park realm, Village Roadshow is expanding its attractions presence on the Gold Coast even further, opening a A\$35m joint venture development in June on 6 hectares of the aforementioned plot next to Movie World – the first Topgolf attraction in

Australia and the first outside the US or Britain. Village Roadshow will manage the venue on a day-to-day basis.

Mixing fun point-scoring golf games for all skill levels with a family entertainment centre, Topgolf players aim microchipped balls at a number of giant circular targets to score points and measure distance,

completely changing the driving range experience. The Gold Coast destination is the first of eight Topgolf facilities that Village Roadshow is planning to open across the country in what is an exclusive Australian partnership with the US-based business. Topgolf and Village Roadshow are also eyeing opportunities in Asian markets.

"We'd like four or five things like Topgolf on that 140 hectares," says White. "We want to be worthy of three or four-day visits on our properties. Someone can, for example, spend a full day at Movie World, then go to Topgolf, then the Australian Outback Spectacular, and so on."

With plans for its future starting to come together and the company over the PR hump of 2016, everything looks very positive for Village Roadshow.

"The fundamental growth of the economy, the growth in Australia and the growth in the international marketplace around Australia tell us that this was a blip for sure. As long as we continue to run safe rides and offer good experiences that are well branded, then we're going to do really well in the future." ●



Wonder Woman at Warner Bros Movie World

ABOUT VILLAGE ROADSHOW

Village Roadshow's first operation was a drive-in cinema near Melbourne, Australia, in 1954. The company began to acquire traditional cinemas and went into film distribution in the 1960s and film production in the 1970s.

Continuing to pioneer modern multiplex cinemas with new styles of seating and cutting-edge sound and projection technology, in the 1990s the company diversified its entertainment business with the acquisition and development of parks including Wet'n'Wild (originally Cades County) in 1989, then building Warner

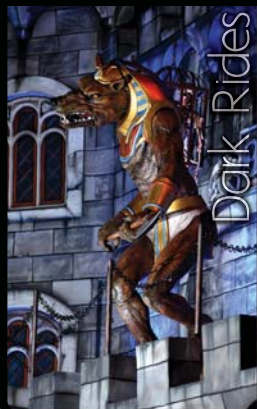
Bros Movie World, which opened in 1992, purchasing Sea World in 1992 and opening Australian Outback Spectacular in 2006.

Village Roadshow increased its waterparks business in 2013 with Wet'n'Wild Las Vegas, Nevada, and Wet'n'Wild Sydney, Australia, and is currently expanding its footprint in Asia.

Village Roadshow Entertainment Group continues to focus on the film production and distribution business, including titles like *Sully*, *The LEGO Movie*, *American Sniper*, *Happy Feet*, *The Great Gatsby*, the *Ocean's* series and *The Matrix* trilogy.



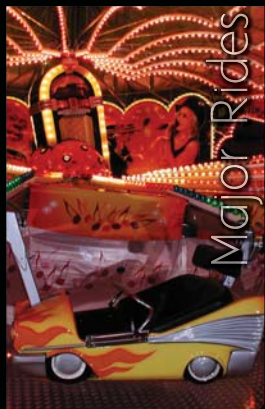
Venetian Carousels



Dark Rides



Bumper Cars



Major Rides



A beach cleanup and brand audit by Greenpeace and the #breakfreefromplastic movement in Parañaque City, Philippines

PHOTO: ALISON TILLY/GREENPEACE

Can attractions play a part in the fight against plastic?

The Plastics Oceans Foundation estimates 8 million metric tons of plastic are dumped into the ocean each year, causing untold damage to sealife, and even entering our food chain. Is it time for the attractions industry to ban single-use plastics altogether?

Sealife being strangled, choked and starved by plastic seems reason enough to look for alternatives, but despite this, we seem to live in a world swamped with plastic and with limited options. The attractions industry could be part of the solution, making changes and then educating its audiences to change their behaviours, and working together to put pressure on suppliers to come up with innovative, eco-friendly packaging.

More attractions are getting on board. The Natural History Museum in London says it is moving towards a refillable culture and is currently sourcing an alternative to bottled water to sell in its

shops. It has stopped offering plastic straws and plastic cutlery, with the exception of a handful of pop-up cafés, which do not have washing facilities.

Over the past 10 years, Disneyland Resort in Anaheim, California, has halved the amount of waste it sends to landfill and is working towards zero waste, which it has already achieved at its working ranch, Circle D Corral. Paper, cardboard, plastics and metal are recycled, while animal waste, hand towels, laundry lint and coffee grounds are composted.

How practical is it to stop using single-use plastic? What are the steps to take? Can you save the world without damaging the bottom line? We ask the experts.

Abi Aguilar

Campaigner

Greenpeace Philippines

Plastic pollution, especially pollution from single-use plastic, is a massive problem in the Philippines. Because of the mismanagement of waste in many areas, plastic finds its way into the ocean. Last September, Greenpeace spent eight days doing a beach cleanup and brand audit (to see which brands and companies generate the most plastic waste), but the morning after every cleanup, it looked like we hadn't even been there.

Because of the urgency of the issue, Greenpeace is calling for the banning of all

single-use plastics: bottles, condiment sachets, straws, bags and coverings. The best way to solve the problem is to stop producing single-use plastic in the first place. With its buying power, the attractions industry could play a big role in influencing manufacturers to use alternatives to plastic, or do away with coverings altogether.

Other practical measures attractions could take is to stop selling bottled water and install refilling stations, as well as stop offering plastic straws, plastic bags and condiments in sachets. Coffee lids are also a problem, so selling insulated mugs is an option. The industry should also create an environment which educates



and encourages visitors to think about their consumption.

Drastic moves have to be taken to stop production at source. Beach cleanups can raise awareness, encourage people to get involved and

develop concern, which can trigger changes in lifestyle, but they are not an effective answer to the problem. Reduction, coupled with the development of alternative delivery systems and packaging, is the way to go.

Following our beach cleanup last year, we did a brand audit and identified 15 main companies, who we are now trying to influence. We have started the ball rolling, but there is still a long way to go. We don't expect companies to change overnight, but we would like them to set realistic targets and stay true to those targets. These companies must realise the environment should not suffer in the name of profit, and that it's possible to be profitable as well as sustainable.

With its buying power, the attractions industry could play a big role in influencing manufacturers to use alternatives to plastic, or do away with plastic coverings altogether

David Rosenberg

Vice president of guest experience

Monterey Bay Aquarium

It is important to keep up with the demands of visitors and we are increasingly seeing a desire for more social responsibility. Millennials are having families and have high expectations of the attractions they visit. With this in mind, attractions need to show they are part of the solution and care for the future.

Working with our food and beverage partners, SSA, we've eliminated single-use plastic in the restaurant and café by supporting vendors who use materials other than single-use plastic. We are now working with vendors to find alternatives for our gift shop merchandise.



Bottled water was one of our biggest-moving items in food and beverage, but when we initially stopped selling it we found our visitors were leaving the aquarium and going to neighbouring shops to buy bottled water. Our plan to be socially responsible wasn't

working: visitors were still using single-use plastic bottles, but we were losing the revenue.

Realising we needed to meet our guests' desire for water, we regrouped. Now we sell steel bottles, which visitors can refill at water fountains, as well as water in aluminium re-sealable cans, which can be reused and recycled. This has been extremely popular and provides strong revenue while also meeting our visitors' needs.

Many guests like soft drinks, so we put those through the same filter. We only sell drinks in glass bottles or cans. In many cases, this led to offering high quality, unique beverages, which has increased sales, so implementing the change hasn't cost us anything and is contributing to less plastic being created, while



The café is a plastic-free zone at Monterey Bay Aquarium

educating our visitors about sustainable alternatives.

Making an impact beyond our walls is not new to us. In 1999, we launched the Seaford Watch Programme, helping consumers, vendors, chefs and business partners choose sustainable seafood. More recently, we spearheaded the Aquarium Conservation Partnership with the goal of reducing single-use plastic in aquariums in the US.

Kathryn England

Head of commercial

Zoological Society of London (ZSL)



We started to look at phasing out single-use plastic two years ago when colleagues of mine, who are conservation experts, saw first-hand the devastating impact that plastic use is having on our oceans. We challenged ourselves to make changes to our plastic consumption without costing the business more or passing any costs on to the consumer, and we have successfully managed to achieve this.

At the same time, this was an opportunity to educate, engage and inspire our 2 million visitors to change their own behaviours.

The attractions industry is in a great position to do this. We have the advantage of the high dwell time of visitors, and we are very skilled at integrating a message into the experience without being preachy.

The first change was halting the sale of single-use plastic water bottles and instead providing water in alternative packaging, such as cans. We then moved on to phasing out single-use plastic bottles from our drinks ranges, not just water. As we can't have glass bottles on site, because of the safety of our animals, this was a challenge, but we managed to source everything in cans, including wine and Prosecco.

Then we worked with our caterers to improve the packaging of food options, sourcing biodegradable products and phasing out all plastic disposables. Our caterers helped us with this, using their scale and buying power to ensure we could make this change without having to

make any dramatic increases to the prices that customers pay. We have also stopped the provision of plastic straws.

Our latest challenge is finding a viable alternative for drinks aimed at very small children, which have straws attached. We are working with brands to come up with alternatives, while encouraging our visitors to bring a beaker or buy a reusable bottle on-site.

As with any business, there is always a fear of the bottom line being affected, but operators need to zoom out from the financial challenge. As an industry, we need to work together to put pressure on suppliers to be more innovative with their packaging, especially big brands. If we work together we can make a difference.

We improved our food packaging, sourcing biodegradable products and phasing out plastic disposables. Our caterers helped us with this, using their scale and buying power so we didn't have to put up prices

Sam Walker

Business development manager

Biopac

The food-to-go sector has grown rapidly in recent years, producing a boom in single-use items, and the UK's waste management service has been unable to keep up with this rapid change. It's absolutely crucial that we start altering our mindset towards this ever-growing problem and for the UK government to provide suitable disposal routes.

However, small changes can make a big difference. An instant improvement – and tip we give all our customers in the catering industry – is to remove free counter straws from the customer's view. This

simple move can reduce use by up to 80 per cent.

Switching to compostable packaging demonstrates your commitment to sustainability and shows your customers your willingness to go that extra mile. Providing a more eco-friendly solution is often expected to carry a premium, however, there is only a small increase in cost. Crealy Adventure Park and Resort in Devon has made the switch to compostable products in its catering outlets, without it having any impact on the bottom line and sending a great message to its visitors.

Compostable products work exceptionally well in the closed environments in which attractions operate, as all food purchased is likely to be eaten on the premises so the



attraction has control over the disposal of the packaging. Standard collection bins can be placed around the grounds for all food waste and compostable packaging, so they can be disposed of together, thus reducing costs and providing

a streamlined waste collection service. Certified compostable packaging can be fully composted and turned back into soil in less than 12 weeks, and can then be actively employed to help fertilise crops.

As there is always likely to be a need for disposable products, we must all address the lack of consumer awareness and infrastructure in many countries around the world. Disposal routes for composting and recycling are often fragmented and vary depending on authorities' attitudes towards waste. Correct disposal is the key factor in reducing waste and this concerns both conventional plastics for recycling, and our own biodegradable ranges, which should not end up in landfill. ●

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OPENING DOORS

We've rounded up the hottest new attractions opening across the globe in 2018

Alice Davis, managing editor, Attractions Management

THE AMERICAS

■ PARKS AND ATTRACTIONS

Disney is transforming Paradise Pier at California Adventure Park into an area dedicated to Pixar creations. Renamed **PIXAR PIER**, the attraction will feature four different themed neighbourhoods using the studio's most popular IPs, anchored by the new Incredibles-inspired Incredicoaster. Meanwhile, at Walt Disney World's Hollywood Studios in Florida, the 4.5-hectare **TOY STORY LAND** is opening this summer, boasting a Slinky Dog Dash coaster and an Alien Swirling Saucers ride.

Elsewhere in the US, Carowinds in North Carolina is opening **CAMP SNOOPY**, upgrading its existing kids' zone and adding six new

junior rides and a new *Peanuts* theme. The **ORLANDO SKYPLEX**, the world's tallest coaster and entertainment complex, is aiming to launch in 2018 – reaching heights of over 150 metres. The Skyplex should also include an observation deck, rotating restaurant, drop ride, shopping

and entertainment complex, surf park, ziplines and a hotel.

In Canada, indoor theme park **MÉGA PARC** is undergoing a total redevelopment, with a record-breaking gravity coaster travelling through a spokeless Ferris wheel at its heart. Built in Quebec in the 1980s, the park will get a new steampunk

Once completed, the New York Wheel will be the US' largest observation wheel



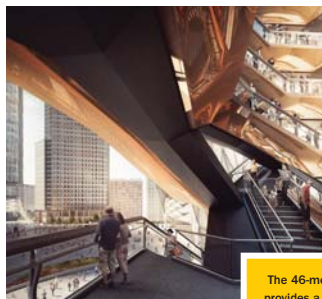
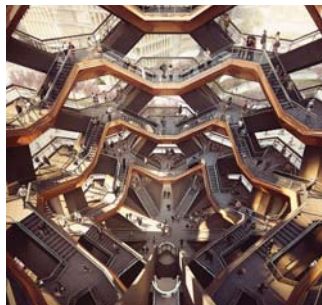
Toy Story Land is opening at Walt Disney World in Orlando, Florida

theme and the majority of rides are being replaced. Six Flag's **LA RONDE** in Montreal is opening Carnaval en Folie, a carnival-themed family zone with three exciting new rides.

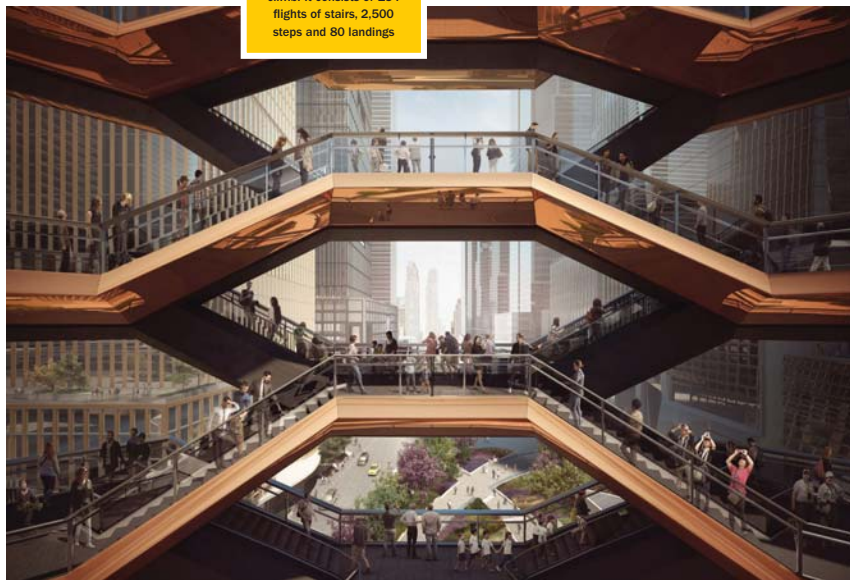
Established midways are also due to open, with **KIDZANIA** launching new franchises in Frisco, Texas, as well as Guadalajara, Mexico, and in Costa Rica, and **LEGOLAND DISCOVERY CENTRES**

opening in San Antonio, Texas, and the American Dream Mall, New Jersey. A **NICKELODEON UNIVERSE** is also set to open at the New Jersey mega mall.

New York hopes to see architect Thomas Heatherwick's **VESSEL** finished this year, a walkable landmark described



The 46-metre-tall Vessel provides a 1.6km vertical climb. It consists of 154 flights of stairs, 2,500 steps and 80 landings





Panda Passage is a brand new habitat at Calgary Zoo, Canada

► by its creators as “one of the most complex pieces of steelwork ever made”. Vessel is part of the ongoing Public Square and Gardens at Hudson Yards. There’s also hope that the stalled **NEW YORK WHEEL** will finally reach completion, and, in Rochester, the **KODAK EXPERIENCE CENTRE**, designed by Jack Rouse Associates (JRA), is scheduled to open its doors.

■ WATERPARKS

Leader in indoor waterpark destinations **GREAT WOLF RESORTS** continues its

ambitious expansion across the US, following December’s launch of Great Wolf Lodge Minnesota – the company’s fifteenth property – with new resorts in LaGrange, Georgia, in late spring 2018, and in Gurnee, Illinois, in summer. In 2016, the company opened new resorts in Garden Grove, California, and Colorado Springs, Colorado.

Gaylord Hotels are launching a major waterpark, dubbed **SOUNDWAVES**, in the autumn, bringing an air of luxury and adult appeal to the waterpark typology. Located at Gaylord Opryland, in Tennessee, the 16,000sqm, three-level

indoor/outdoor waterpark, will boast year-round undercover and open-air attractions.

Further south, Great Parks is completing Nicaragua’s first world-class waterpark, **LUNA POOL PARTY AQUA PARK**, near León. The \$1.5m waterpark is the brainchild of owner Wilton López, a former Major League Baseball player.

Out at sea, a world-first Dr Seuss waterpark will debut onboard cruise line operator Carnival’s newest vessel in April. Supplied by Polin, **DR SEUSS WATERWORKS** on *Carnival Horizon* will be a thematic take on the waterslide complexes typically used on

Carnival ships, including a Cat in the Hat water slide.

■ ANIMAL ATTRACTIONS

Animal lovers in North America are set to welcome some new residents this year with the opening of the Panda Passage exhibit at **CALGARY ZOO**, Canada – home to adult pandas Er Shun and Da Mao and cubs Jia Panpan and Jia Yueyue – and a \$3.3m extension at the **AQUARIUM OF NIAGARA**, New York, being built to facilitate a penguin breeding programme. More than 20 South American Humboldt penguins will occupy the upcoming exhibit.

Meanwhile, the **AQUARIUM OF THE PACIFIC**’s multi-million-dollar expansion will open in Long Beach, California. Called Pacific Visions, it will feature an immersive 4D theatre with 300 seats and an art gallery as well as new marine life.

The city of St Louis, Missouri, is planning a \$45m addition to its historic Union Station – a 75,000sq ft (7,000sqm) aquarium. The **UNION STATION AQUARIUM**, designed by PGAV Destinations, will sit in the station’s former mall area and



Soundwaves waterpark at Gaylord’s Opryland resort is aiming for a luxury vibe



ANIMAL LOVERS IN NORTH AMERICA ARE SET TO WELCOME SOME NEW RESIDENTS WITH THE OPENING OF PANDA PASSAGE AT CALGARY ZOO AND THE HUMBOLDT PENGUIN EXHIBIT AT THE AQUARIUM OF NIAGARA

feature a shark tank holding one of the largest collections of sharks in the Midwest.

Finally, Merlin is adding two **SEA LIFE** aquariums to its US portfolio, one in American Dream Mall, New Jersey, and one in San Antonio, Texas, opening in 2018 or early 2019.

MUSEUMS

June will mark the completion of the \$21m expansion of Pittsburgh's **CARNEGIE SCIENCE CENTER**, a new Science Pavilion adding 14,000sq ft (1,300sqm) of exhibition space. Designed by Indovina Associates Architects, the Pennsylvania attraction will boast nine new STEM learning labs and events spaces.

Also extending its science communication offer, the Bell Museum of Natural History is building a \$79m complex on the University of Minnesota's Minneapolis campus. Designed by Perkins+Will, and to be renamed the **BELL MUSEUM AND PLANETARIUM**, a 120-



The Museum of Image and Sound looks out over Copacabana beach, Brazil

seat domed planetarium and theatre will be among the main features, in addition to expanded galleries and a host of interactive exhibitions. It's slated to open in August 2018.

A contemporary art museum is under construction in San Antonio, Texas, designed by British architect David Adjaye. The red building, called **RUBY**

CITY, will house the Linda Pace Foundation's growing collection of more than 800 artworks by contemporary artists from around the world.

And, the late country music legend Merle Haggard will be celebrated with a museum, bar and restaurant in Nashville, Tennessee. Icon Entertainment Group (IEG) is developing the

MERLE HAGGARD MUSEUM next door to its two existing properties, which honour fellow country music singers Johnny Cash and Patsy Cline.

Designed by Diller Scofidio + Renfro, the **MUSEUM OF IMAGE AND SOUND (MIS)** is opening in Copacabana in Brazil. The museum explains the cultural history of Rio.

EUROPE



► **PARKS AND ATTRACTIONS**

An abandoned gas station and rest stop is being transformed into a vintage park on one of France's most iconic routes. The Bel Air service station was once a popular stop on the journey from Paris to the French Riviera. A small group of investors aims to recapture that retro holiday feel by restoring the service station and opening a 30-hectare leisure park. The project, dubbed **VINTAGE BEL AIR**, is located on the

road between La Rochepot and Beaune. Also in France, **PARC SPIROU** is opening at a site in the area of Beaulieu in Montoux, close to Avignon in southern France. The attraction will bring to life the well-known comic strip character Spirou and his friends.

At **YORKSHIRE SCULPTURE PARK**, Wakefield, a new £3.8m visitor centre is being built. Designed by architects Feilden Fowles and scheduled to open in the summer, the new centre will enhance the visitor experience with a restaurant,



Artificial ski slopes make waste-to-energy facility Amager Resource Centre available to local people



The Vintage Bel Air project is reinvigorating a former service station en route to the French Riviera

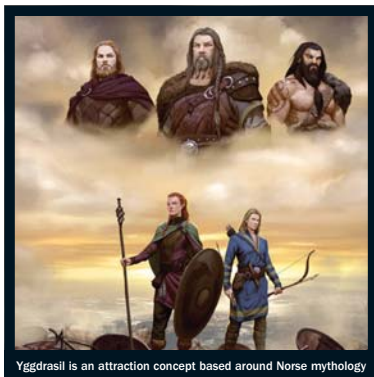
a gallery space, public foyer and shop. In Birmingham, Merlin is opening a **LEGOLAND DISCOVERY CENTRE** and a **BEAR GRYLLS ADVENTURE PARK**, and the operator is also working with Entertainment One (eOne) to open Peppa Pig themed attractions and accommodation outside the UK, with **PEPPA PIG LAND** opening at Gardaland, Italy, in 2018.

In Copenhagen, Denmark, Danish landscape architects SLA have designed the rooftop park for Bjarke Ingels Group's (BIG) forthcoming **AMAGER RESOURCE CENTRE** – one of the most-anticipated buildings of 2018. The centre is a waste-to-energy plant with unique public offerings – including a



climbing wall on one facade and a 500-metre ski slope on its descending roof. Hiking trails, playgrounds, street fitness zones, trail running, vantage points and shelters will be incorporated into the scheme.

Also in Denmark, plans are underway to develop a travelling virtual reality fantasy exhibition based on Norse mythology, which if successful will eventually be turned into a fully-fledged theme park unique to Scandinavia. Known as **YGGDRASIL**, the concept is rooted in the region's cultural heritage and folklore, with the startup initially developing an exhibition to go alongside a VR experience called Yggdrasil GO. The attraction will be centred



Yggdrasil is an attraction concept based around Norse mythology

around the VR experience telling the Yggdrasil story, with the accompanying exhibition explaining how the fantasy story matches up with Viking history and Norse mythology.

■ WATERPARKS

A number of waterpark developments are potentially completing this year in Europe, including Russia's largest indoor waterpark. Polin is working with local investment group Sibentel on the **TYUMEN WATERPARK** development. The all-season facility, designed to handle a sub-zero Siberian winter, has large translucent domes overhead to ►

- ▶ allow sunlight in while keeping the freezing temperatures out.

Long-touted proposals to include an indoor waterpark in the £80m expansion of the **WEST MIDLANDS SAFARI PARK** in Bewdley, UK, could be on course to complete this year. The waterpark is expected to include seven waterslides, a splash area, wave pool, external river rapids and a 200-seat restaurant. A 250-bedroom hotel, with conference centre and spa, has also been granted planning permission.

Nearby, Coventry City Council is opening a "game-changing" £37m waterpark, designed by architects Faulkner Browns. As well as flume rides, the **COVENTRY WATERPARK** contains toddler areas and lane swimming. Most of the water features and high octane rides, supplied by Polin, will be placed at the upper level of the vertical building – an unusual feature for waterpark design.

And in Belgium, Walibi theme park's **AQUALIBI** waterpark is undergoing a major transformation and expansion. The makeover, led by Jora Vision, follows a Caribbean theme to turn the facility into a tropical paradise. Walibi theme park is also being improved as part of the €100m plan.

ANIMAL ATTRACTIONS

Both Copenhagen Zoo, Denmark, and Prague Zoo, Czech Republic, are opening brand new panda exhibits.

COPENHAGEN ZOO is working with BIG (Bjarke Ingels Group) on a brand new \$22m panda enclosure that will be shaped like an enormous yin-yang symbol. The new exhibit will house two giant pandas that China has offered to loan to Denmark, and will be built on the footprint of the zoo's former elephant enclosure, which will be demolished. The pandas will be delivered from Chengdu at the end of 2018.

With China's giant pandas proving big business worldwide, the Czech Republic's **PRAGUE ZOO** is also getting in on the act, unveiling plans for a \$34m Panda Pavilion, while also adding space for the zoo's existing polar bears and gorillas. The pavilion will also include exotic birds and Australian wildlife exhibits, with Tasmanian devils among the planned additions. Prague is reportedly in talks with China about a loan of two pandas.

Elsewhere, **MARWELL ZOO** in Winchester is unveiling its Tropical House, a sustainable



rainforest and waterfall inside a state-of-the-art ETFE dome complete with mammals, birds, reptiles, fish and invertebrates.

MUSEUMS

In Scotland, the long-awaited £80m **V&A DUNDEE** is set to open before the year's end as part of the city's revitalised waterfront. The flagship Scottish museum will host major exhibitions, celebrate design heritage, inspire and promote contemporary talent, and encourage future design innovation. Architect Kengo Kuma's design was inspired by the cliffs along Scotland's north-eastern coastline.

A wide range of hands-on exhibits and science and art

Waterparks are opening in Coventry, UK, and in Tyumen, Russia (below)

installations will be part of the high-profile expansion at **EXPERIMENTA** science centre in Heilbronn, Germany. The extension, which is slated to open in late 2018, was designed by Berlin-based Sauerbruch & Hutton with exhibition design by Northern Light and Bruns.

In Norway, a museum dedicated to the world's only preserved Nordlansfjord – a 17th century Norwegian cargo ship – is expected to open in Bodo. Anna Karoline will form the centrepiece of the **BODO LAKE OPEN AIR MUSEUM** with a wider exhibition on jekt shipping heritage. Design firm Kvorning and Oslo-based Rintala Eggertsson Arkitekt are working on the project.

A new planetarium is coming to Iceland, opening as part of the existing **PERLAN MUSEUM**. The cutting-edge planetarium will boast a 360° immersive dome and observation deck with Skelwith Bridge, Lake District views over Reykjavik.

And lastly, in Dublin, Ireland, the north wing of the National Concert Hall is being turned into an interactive children's science centre, with a 200-seat planetarium at the heart of the multi-million-euro development. Known as the **EXPLORATION STATION**, the attraction will have 200 bespoke exhibits. ▶

RUSSIA'S LARGEST INDOOR WATERPARK IS DESIGNED TO HANDLE A SUB-ZERO SIBERIAN WINTER





Experimenta's 13,500sqm extension includes four themed galleries with a science dome and over 200 interactive exhibits



MIDDLE EAST & AFRICA

■ PARKS AND ATTRACTIONS

IPs such as Bugs Bunny and Scooby Doo will sit alongside brands including Batman, Superman and Wonder Woman when a \$1bn venture, **WARNER BROS WORLD ABU DHABI**, opens its doors on Yas Island. A wide range of Warner Bros' global IPs will feature at the park and hotel, as will DC Comics, with the brands incorporated into Gotham City, Metropolis, Looney Toons and Hanna-Barbera themed zones. The Miral owned and operated Yas Island is one of the Middle East's major entertainment destinations, attracting 25 million visitors a year.

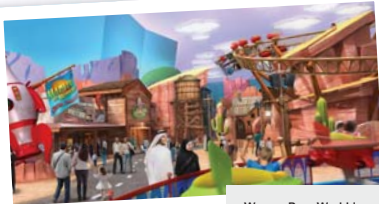
Also at Yas Island, **CLYMB**, a futuristic building that will hold a supersized flight chamber and climbing wall, is set to open. Miral has said the 9.75-metre flight chamber will be the widest in the world and the 43-metre indoor climbing wall will be the tallest.

Casablanca's seaside promenade will have a festive event space, resort and nature reserve

Unlimited Snow's snow park is scheduled to open in the Mall of Muscat (formerly called Palm Mall) in Muscat, Oman, creating what it calls "a true Alpine winterland and a world-first new-generation real snow and ice amusement park". The Dutch company, part of Unlimited Leisure Holding, said that as well as immersive Alpine theming, **SNOW PARK PALM MALL** will have real-snow snowfall and 20 different attractions, including an ice-skating rink, ice climbing, ropes courses and children's snow play areas, and food and beverage options.

Meanwhile, in Qatar, a \$300m indoor entertainment park, **ADVENTURE ISLAND**, is to open inside the new Doha Oasis Mall. The attraction will feature a signature rollercoaster, known as Dragonfire, created by Premier Rides. International Theme Park Services (ITPS) was leading consultant on Adventure Island.

Canadian studio Lemay has redesigned Morocco's Casablanca coast and created a leisure-filled promenade. The project is scheduled to open in June 2018. Real estate agency Casa Aménagement is developing the 5km stretch of



Warner Bros World is opening this year on Yas Island, Abu Dhabi



IPS SUCH AS BUGS BUNNY AND
SCOOBY DOO WILL SIT ALONGSIDE
BRANDS INCLUDING BATMAN,
SUPERMAN AND WONDER WOMAN

Casablanca's dramatic cliffside pathways as "a landmark destination in Morocco" and part of the **GRAND CASABLANCA** development plan. The design team have promised a festive event space, a seaside resort, a nature reserve, rest areas, walkways, outdoor sports facilities and observation points – all inspired by the concept of the classic multi-tiered Islamic garden.

■ WATERPARKS

A plan to build "Africa's biggest waterpark" near Durban, South Africa, has been revived. The multi-million-dollar **AMAZON VALLEY WATERPARK** will be located in the town of Scottburgh – tipped by some as the next hot tourist destination for the country. The park will include family slides, tube slides and wave riders.





ANIMAL ATTRACTIONS

OMAN AQUARIUM will be one of the largest aquariums in the Middle East as the Sultanate continues to diversify its tourism offering to draw overseas visitors. Set to open in the Mall of Muscat in the first quarter of 2018, the aquarium, designed by Crossley Architects, will be 8,000sqm in size and will feature 30,000 marine creatures across 55 exhibit tanks and three storeys.

MUSEUMS

Architect Jean Nouvel celebrated the opening of the long-awaited Abu Dhabi Louvre late last year, and this year should see the arrival of another of his large cultural projects for the UAE. Scheduled to open in Doha in December 2018, the **NATIONAL MUSEUM OF QATAR** will host



A former planetarium in Jerusalem will become the Einstein Museum

permanent and temporary exhibition galleries showcasing the culture and heritage of Qatar, a 220-seat auditorium, a forum, two cafés, a restaurant, a Heritage Research Centre and conservation laboratories.

And the \$550m **GRAND MUSEUM OF EGYPT** (GEM), on a site about 2km from the Pyramids of Giza, is

preparing to launch, with some 100,000 artefacts in house. The building was designed by Heneghan Peng Architects of Dublin, Ireland, with Arup acting as structural engineers.

An abandoned planetarium will be converted into a museum dedicated to Albert Einstein as part of a \$5m project to showcase his

personal archives. Architects Arad Simon are behind the plans for the **EINSTEIN MUSEUM**, which will be built on Hebrew University's Givat Ram campus in Jerusalem. Arad Simon were selected from four local firms, with the university saying the winning proposal was "modest, not grandiose, and it spoke to us".

ASIA & AUSTRALIA

■ PARKS AND ATTRACTIONS

After a string of delays, the under-construction **20TH CENTURY FOX WORLD** theme park in Genting, Malaysia, looks set to open. The park includes movie-inspired rides and experiences based on Fox IPs like Ice Age, Rio, Predator and Night at the Museum.

Silay City in the Philippines has confirmed it's planning a theme park, **MAGIC ISLAND**, rumoured to be operated by Enchanted Kingdom.

A number of projects are nearing completion in China. Among them, Chinese real-estate group Evergrande is working on **FAIRYTALE THEME PARK** in Xixian New District, Shaanxi province. Working with entertainment design firm IdeAttack on the development of a theme park brand, up to six more Fairytale Theme Parks are planned for different locations in China.

Meanwhile, the \$1.5bn **ORIENTAL SCIENCE FICTION**

As well as a luxury hotel with underwater suites, Atlantis Sanya has a waterpark and aquarium



Big-budget projects are opening in Asia, including China's \$1.5bn Oriental Science Fiction Valley and 20th Century Fox World (right) in Malaysia



VALLEY park, featuring VR attractions and hi-tech experiences, is expected to open in phases this year.

Also in China, Merlin is set to launch a **LEGOLAND DISCOVERY CENTRE** in Shenyang, a **DUNGEONS** attraction in Shanghai, and a **LITTLE BIG CITY** in Beijing.

Village Roadshow is expanding its presence in China with **LIONSGATE ENTERTAINMENT WORLD** on Hengqin Island, Zhuhai. The indoor experience centre, designed by Thinkwell, is slated to open by the end of 2018.

■ WATERPARKS

Village Roadshow is also expected to launch its long awaited **WET'N'WILD** branded waterpark in Mission Hills, Haikou, Hainan Island, as early as April. The attraction will cover 50,000sqm with around 8,000sqm allocated to an indoor section of the waterpark. Water Technology Inc and WhiteWater West worked on the project.

Another major waterpark operation set to open this year on Hainan Island is the **AQUAVENTURE WATERPARK**

at the upcoming Atlantis Sanya. Built around the myth of the Lost City of Atlantis and overlooking the spectacular South China Sea, the resort offers exhilarating waterplay on Aquaventure Waterpark's twisting waterslides. ProSlide is supplying the rides, including SuperLoops, Tornadoes, a BehemothBowl and ProRacers.

■ ANIMAL ATTRACTIONS

Designed by Goddard Group, **SHANGHAI HAICHANG POLAR OCEAN WORLD** is on track for its targeted August 2018 debut, not far from Disney's park. The park will have four marine animal zones, with reports saying the park will have the largest collection of marine species in the world.

Elsewhere in China, in Tianjin, **LINGANG BIRD PARK**, a wetland bird sanctuary on a former landfill site, is opening. Landscape architects McGregor Coxall designed the zone as a refuge for the 50 million birds who journey through there on their migration course each year. There will also be a





Cox Rayner Architects designed a complex of shell-like structures for the China Maritime Museum

visitor centre and bird hides on site to cater for the expected 500,000 annual guests.

A A\$36m "cage free" zoo in Sydney, Australia, is in development. The **WESTERN SYDNEY PARKLANDS**

– designed by Misho + Associates and landscape architects Aspect Studios – will create natural-looking spaces to showcase animals from around the world. The zoo will feature 30 exhibits, including African safari animals and an Aboriginal and natural heritage programme focusing on Western Sydney's Darug people. The zoo is expected to draw around 745,000 visitors each year.

Also near Sydney, **TARONGA ZOO** is building a A\$31m science and conservation education centre. The Taronga



THE MUSEUM WILL EXPLORE CHINA'S NATURE AND OCEANS, MARITIME HERITAGE AND HISTORIC VESSELS

Institute of Science and Learning (TISL) has been designed by New South Wales architecture firm NBRS to offer an immersive and interactive experience. Part funded by the government, TISL serves researchers, students and the public and be equipped with state-of-the-art technology labs and classrooms.

Elsewhere, **UNDERWATER WORLD AQUARIUM**, in Yangon, Myanmar, is reportedly nearly completed and slated to open in April. The aquarium,

at Kandawgyi Lake, was designed by Singapore-based urban architects Surbana. It will boast a freshwater section, complete with alligators, crocodiles, newts, salamanders, turtles, land tortoises and freshwater fish.

MUSEUMS

In India, the **MUGHAL MUSEUM**, which was designed by David Chipperfield, is dedicated to the history of Northern India's Mughal dynasty. It will be located near the Taj Mahal. In Mumbai, the **DR BHAI DADI LAD MUMBAI CITY MUSEUM** is set to unveil its new wing, which was designed by Steven Holl Architects. The new wing centres around the Mumbai Modern Gallery and will also have education and research centres, a conference centre, a library, shop and restaurant.

In Taiwan, Foster + Partners' **NATIONAL MUSEUM OF**

MARINE SCIENCE AND TECHNOLOGY (NMMST) is soon to open in Keelung City.

China's new **NATIONAL MARITIME MUSEUM**, in Tianjin, created by Australian practice Cox Rayner, is likely to be realised in 2018. The project was named the Future Project of the Year at the World Architecture Festival in 2013. The museum will house exhibits exploring China's nature and oceans, maritime heritage and historic vessels.

And finally, **PINGTAN ART MUSEUM**, a floating cultural island designed by Beijing-based innovators MAD, is under development in China's Fujian province. Pingtan is the largest island in the region and has been designated by the government as a primary location for cultural and tourism development. The museum will be the cultural centerpiece of the zone. It will float in waters just off Pingtan Island, connecting to the mainland by an undulating pier. ●

Lingang Bird Park has been described as an 'airport' for 50 million migratory species



Intamin is opening two more of its ATV family launch coasters, in France and in Vietnam

LAUNCHING COASTERS

It's another busy year for rollercoaster openings.
We round up some key projects ride makers are working on



A Fantawild park in Guangxi province, China, is opening a Martin & Vlemminck Trailblazer coaster



S &S Worldwide is getting started on the installation of a 4D Free Spin wing coaster at Six Flags Mexico. The free-flying **WONDER WOMAN COASTER** suspends guests on both sides of the track, where their cars rotate at random throughout the ride. The experience

depends on the rider's weight, position and interaction, making for a different ride every time. The Wonder Woman Coaster track is 310 metres and the height is 36 metres, with top speeds of 61kph.

■ Maker of traditional wooden rollercoasters Martin & Vlemminck is opening its 11th wood coaster in China this spring, at Fantawild Asian Legends in Guangxi province, China. **JUNGLE TRAILBLAZER** measures in at 973 metres long and 33 metres high, with a 30-metre drop and speeds of up to 87kph.

■ VR Coaster is reinventing more than 15 rides this year, not least the **GREAT LEGO RACE VR** coaster, produced in cooperation with Figment Productions, for Legoland parks in Florida, Germany and Malaysia. VR Coaster already this year launched **VR MINE TRAIN** at Ocean Park Hong Kong and **FINAL FANTASY XR RIDE** at Universal Studios Japan.

Great Lego Race VR is a new addition for several of Merlin's Legoland parks





■ Among Intamin's busy roster of openings are the five-inversion vertical lift coaster for Ocean Paradise in Hainan, China; the **FAST & FURIOUS** suspended family coaster at the upcoming Warner Bros World Abu Dhabi in the UAE; and the 142kph mega coaster, **HYPERION**, boasting a 80-metre drop and a 1,449-metre track length, is opening at Energylandia, Poland. There'll also be two of the ride maker's ATV family launch coasters opening this year, with **YUKON QUAD** opening at Le Pal in Auvergne, France, and another being installed in Vietnam.

■ Rocky Mountain Construction (RMC) is going to be working hard to complete a wide range of global projects, including two of its new single-rail steel coaster concept.

WONDER WOMAN GOLDEN LASSO is set to debut at Six Flags Fiesta Texas, while **RAILBLAZER** – themed around the Pacific coastline highway State Route 1 – is opening at Cedar Fair's Great America, California.

Also for Cedar Fair, RMC is opening two hybrid coasters: **TWISTED TIMBERS** at Kings Dominion, Virginia, featuring a 33-metre-tall barrel roll downdrop;



and **STEEL VENGEANCE** at Cedar Point, Ohio, with speeds of up to 119kph and a 61-metre, 90-degree drop. A further steel-wood hybrid is coming to Six Flags Over Georgia, **TWISTED CYCLONE**.

■ Vekoma is opening several new rides in Asia, including the new **FIRESTORM** launch coaster, a high-energy ride developed from the Space Warp ride system. They'll open at Vinpearl in Thu Thiem, Vietnam, and Evergrande, Hainan Island, China. Custom-designed **HYPER SPACE WARP** looping coasters are also opening at Fantawild's parks in Handan, Taiyuan and Wuhu in China.

Vekoma is working on installations of Firestorm, based on its Space Warp system

German ride maker Mack is completing the £16m **ICON** at Blackpool Pleasure Beach (right) and Time Traveler, a spinning coaster at Silver Dollar City (main image)



■ Mack Rides has a couple of major projects debuting in 2018. The highly anticipated £16m **ICON** at the UK's Blackpool Pleasure Beach is billing itself as "one of the most thrilling in the world". Set to reach heights of 30 metres, with drops of up to 24 metres, the double launch will propel riders at high speed at the start and halfway through the 2.5 minute experience.

At the same time, Mack is building a triple-inversion, 30-metre-tall spinning coaster at Silver Dollar City, Missouri. The \$26m **TIME TRAVELER**, which resembles a time-travelling machine with gears, cogs and industrial components, boasts a cutting-edge 360-degree

adjustable magnetic spin control and free-spinning cars that provide a different ride each time.

■ Zamperla is installing nine coasters in 2018, spearheaded by its **FACTORY COASTER** at Wuxi Wanda City. The multi-feature, seven-car steel coaster will reach heights of 26 metres and a track length of 610 metres. Plus, the Italian firm is completing its fourth **THUNDERBOLT**, at Masan Robotland Park, Incheon, South Korea. An **AIR FORCE 5**, four **TWISTER COASTERS**, and two **FAMILY GRAVITY COASTERS** are also in the works. ●

Zamperla's Factory Coaster is headed to Wuxi Wanda City



OPEN TO ALL

For various physical, social or economic reasons, many people find themselves alienated from the experiences our industry offers. Happily, more operators are now seeking ways to ensure everyone shares the fun. Kath Hudson looks at some inspiring initiatives

In a time when the most powerful man in the world has made inflammatory racist comments and joked about disability, it has never been more important for attractions to reach out to those who are marginalised.

I'm not convinced that embracing otherness is something which comes naturally to humans. It goes against the rules of survival of the fittest. Children sometimes stare and ask awkward questions about people who are different and often have trouble playing with children who aren't the same as them.

Entrepreneur Gordon Hartman noticed children were wary of playing with his daughter, who has cognitive disabilities, while they were on holiday. His response was to create Morgan's Wonderland, a fully inclusive theme park in San Antonio, Texas, where disabled people can enjoy every experience and where anyone with a special need receives free entry. Last June, the park unveiled another world first – an ultra accessible splashpark, with five tropically themed splash pads, waterproof wheelchairs and a river boat adventure ride.



An Art Beyond Sight programme (above) runs at Seattle Art Museum; A Dialogue in Silence session (below)

Removing barriers

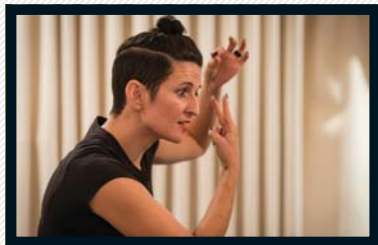
Not everyone, or every operator, can go this far, but having an awareness of the barriers and seeking to remove them is

a great start. US-based organisation Art Beyond Sight helps operators to make their experience more inclusive for people with vision, mental or cognitive disabilities, through reviewing space, policies, programmes and promotional materials, as well as training staff on how to deliver experiences through the implementation of tactile access and verbal descriptions.

The Seattle Art Museum (SAM) in Seattle, Washington, worked with Art Beyond Sight to train some of its staff to lead tours for people with low or no vision, which now run once a month and are free to take part.

"Art Beyond Sight invites our low to no-vision visitors to participate in free group tours where they visit the galleries, learn about artworks, ask questions, and share ideas," says Kayla Skinner, deputy director for education and public programmes.

"Attendees tell us they join the tours both to learn more about works of art and also to be in community with other art lovers. SAM is so grateful to the docents and staff who support this programme, which helps make the museum more accessible to our community. We are lucky ▶



PHOTOS: STEFFEN BARANUK



PHOTOS: ROBIN JERSTAD

Gordon Hartman and his daughter Morgan (left) are the family behind an accessible theme park and waterpark in Texas





Including children in our activities and programming is a creative and effective way to make them feel welcome, show human solidarity and some hope for a better tomorrow

► to have visitors who have attended Art Beyond Sight tours for years and bring so much knowledge and amazing perspective to SAM. I learn something new about SAM's collection every time I attend a tour."

Overcoming prejudices

Able-bodied people can unknowingly patronise or give false pity to people with disabilities, and the Dialogue Social Enterprise was created to subvert this relationship: putting disabled people in charge and taking away senses from the able-bodied. A number of different experiences have been developed, which attractions can offer as a social franchise, all of which empower the guides.

In Dialogue in the Dark exhibitions, blind guides lead people through a dark exhibit, which replicates the experience of everyday activities, such as visiting a café or walking in a park. The blind person teaches visitors how to use their

other senses and cope with the unknown. Dinner in the Dark involves blind waiters serving dinner in a dark restaurant.

Dialogue in Silence gives visitors an insight into deafness. Wearing noise-cancelling headsets, visitors are taught, by deaf people, to read non-verbal communication, posture, hand movements and facial expressions. The most recent variation from the organisation is Dialogue with Time, which explores ageing.

Singapore Science Centre in Singapore launched a permanent Dialogue with Time exhibition in November 2017, in partnership with the Ministry of Health. By 2030, one in every four Singaporeans will be aged 65 years and above – about double that of today – so the centre believes it is important to develop understanding of ageing and overcome stereotypes.

Visitors experience weakened hearing, vision and mobility; see the effects of UV and smoking on physical appearance and

get an impression of how they will look in years to come, as well as having the chance to discuss ageing with the guides, who are all aged between 65 and 85 years.

Empathy and understanding

"Dialogue with Time brings to the fore some of the challenges related to ageing and seeks to foster a greater understanding, empathy and preparedness for something we must all eventually face," says Professor Lim Tit Meng, chief executive of Singapore Science Centre.

"We hope this exhibition will help to positively re-frame and present the opportunities of ageing, as well as encourage more factual, objective and interactive conversations led by the senior guides who are role models themselves."

Age is also the focus of a business running in the UK, Oomph, which is seeking to collaborate with operators to offer day trips to care home residents.



NOESIS responds to Greece's migrant crisis with a special programme (left); the de Young Museum's Beam Tour



PHOTO: THE FINE ARTS MUSEUMS OF SAN FRANCISCO

Starting out as an initiative to get care home residents exercising, Oomph recently diversified to offer days out. One successful outing was to the Bombay Sapphire Gin Distillery in Hampshire.

"When you talk to people living in care homes, and witness their quality of life, you can see their frustration," says founder Ben Allen. "After you take away the time they are sleeping, being fed and cared for, they still have 11 hours a day when they need to be given a reason to live. A real life is a varied life, not lived exclusively indoors."

Reaching out

Homelessness and the refugee crisis has led to millions of people being marginalised and the attractions industry has the ability to reach out and make them feel part of society by inviting them to engage with programmes. NOESIS Science Centre in Thessaloniki, Greece, has invited children living in the refugee camps of

Thessaloniki to visit through its Welcome Refugees initiative. Children are given the opportunity to watch a planetarium film, have a guided tour in their native language and, as they learn Greek, take part in activities offered with their local peers.

"Including children in our activities and programming is a creative and effective way to make them feel welcome, show human solidarity and some hope for a better tomorrow," says NOESIS general manager Thanassis Kontonikolaou. "Through their activities, learning programmes and collections, science centres can contribute to the social need of meeting and getting to know the unknown 'other'."

Since Welcome Refugees launched in 2016, 1,100 refugees have visited and the programme received a special mention for courageous leadership at the 2017 Mariano Gago Ecsite Awards. Elisavet Konstantinou, communication and public relations executive for NOESIS, says: "The

children are very excited to take part in this programme and have a precious smile on their faces as they leave our science centre. That is all we need to continue our effort, knowing at the same time that we are doing the right thing."

Giving back power

By teaming up with The Wallich, a charity which works with homeless people, National Museum Wales smashed down barriers last year, not just inviting people who feel alienated from culture into the space, but putting them in charge.

The new curators provided a fresh insight with their selection of paintings, sculptures, films, prints and drawings from the collection that the museum and the Derek Williams Trust acquired over the past 10 years. They were involved in all aspects of the Who Decides? exhibition, including design, installation, public events, marketing and programmes for schools. ▶

These engaging mobile exhibits will shorten the learning gap during children's hospitalisation and motivate them to pursue STEM learning

► Nick Thornton, head of fine and contemporary art at National Museum Wales, says it was a wonderful experience.

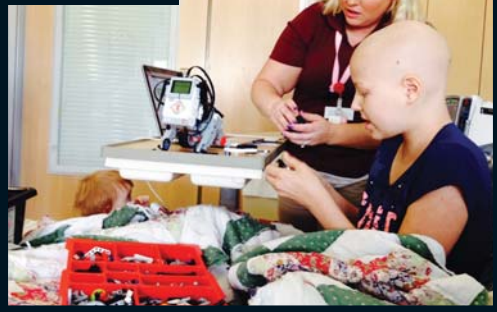
"The co-curators from The Wallich had a unique perspective on the collections, which has produced an ambitious exhibition which makes contemporary art accessible to all our visitors," he says. "It's been a fascinating journey for all of us and underlines the huge benefits which can be had from creating opportunities for all parts of our community to contribute to the work of cultural organisations."

Curator Michael Pugh says initiatives like this encourage wider participation in culture: "I wouldn't have come into the museum before, but now I'm here and I've loved it all. I'm not afraid to come here by myself. I'm not daunted anymore."

Virtual access

Illness can also lead to a feeling of disconnection from society, but technology means it doesn't have to be a problem. The de Young Museum in San Francisco, California, offers a programme which allows those unable to visit the museum in person because of a disability or illness to enjoy the collections through its Beam Tour, created by Suitable Technologies. The device's sensitive lenses allow offline visitors to see the art in high resolution, while its microphone, screen and speakers enable interaction with guides or friends

Florida children's hospitals benefit from STEM-focused outreach programmes



in the museum. Comments or questions from the offsite visitor can be relayed and responded to immediately.

According to the museum website, this programme is the first of its kind and broadens access for a previously underserved segment of the population.

De Young is part of the Fine Arts Museums of San Francisco, which offer programmes to people with disabilities, including tours for people with dementia and Access Days where people with special needs can visit for free or at a reduced cost when the museum is closed to the public.

Beyond four walls

Outreach programmes, taking exhibits beyond the facility, are another way of broadening the audience and including those who can't or feel unable to attend. Orlando Science Center in Orlando, Florida, is engaged in a programme to reach out to children receiving treatment at three of the state's hospitals. NASA has committed

\$1.2m over five years for the centre to develop and implement the programme, which will take stimulating science and maths activities into hospitals on mobile exhibit carts, aimed at 10 to 18-year-olds.

Volunteers from BASE Camp Children's Cancer Foundation will be trained by science centre educators to facilitate these programmes, due to launch in the autumn. They will incorporate data and artifacts from NASA missions, University of Central Florida Planetary Science Group collections and Kennedy Space Center resources.

"Children with critical illness can struggle with formal education due to the fact that their hospitalisation keeps them from engaging in active study and attending classes" said science centre president and CEO, JoAnn Newman. "These engaging mobile exhibits will not only shorten the learning gap during their hospitalisation, they will help motivate these children to pursue STEM learning and careers."

According to Tate, which has completed a four-year programme, Circuit, looking for ways to connect 15 to 25-year-olds with arts and culture and make gallery spaces relevant to them, young people frequently feel alienated from the arts.

Many of the report's recommendations seem applicable to all attractions and could be applied to all sections of the population who feel left out: seek out partnerships with organisations which share your priorities and values; find ways for young people to work within your organisation as a producer and use short term projects to create long term strategies for change. ●

Who Decides? invited homeless people to curate an exhibition for National Museum Wales, with the help of a local homeless charity





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LOFTY IDEALS

The vaults above Westminster Abbey are opening to the public for the first time as the Queen's Diamond Jubilee Galleries. Scott Craddock, head of visitor experience, explains

Alice Davis, managing editor, Attractions Management

London's Westminster Abbey, one of the UK's busiest attractions, is undergoing work on a new museum – marking the first addition to the visitor experience at the historic site since 1745.

The £23m museum, named the Queen's Diamond Jubilee Galleries, will be located inside the triforium – the loft-like space above

the arches of the nave of a church – some 15 metres above the Abbey's floor.

To provide access to the triforium galleries, a slim tower – constructed from stone, glass, lead and oak – is being built in a courtyard at Poet's Corner. The tower, inspired by the Gothic architecture of the 1,000-year-old Abbey, was designed by conservation and restoration

architect Ptolemy Dean, who is Surveyor of the Fabric at the Abbey. Inside the Queen's Diamond Jubilee Galleries, more than 300 artefacts will be on display, with exhibition design by MUMA (McInnes Usher McKnight Architects).

Visitors will be able to browse a variety of objects from the Abbey's collection, including the 14th-century Liber Regalis – a manuscript

that explains the schedule for a coronation service – an ancient altarpiece, a corset belonging to Elizabeth I and artefacts from the reigns of Henry V and VII, guidebooks to the Abbey dating back to 1600, Prince William and Kate Middleton's marriage license and artist Ralph Heimans' celebratory Diamond Jubilee portrait of Queen Elizabeth II.

The museum opens in June.



Westminster Abbey attracts 1.5 million visitors every year

SCOTT CRADDOCK

Head of visitor experience
Westminster Abbey

How long have you been at Westminster Abbey and what does your job entail?

I have been head of visitor experience at Westminster Abbey since 2014. My role involves overseeing our visitor operation, promoting engaging visitor services, and ensuring a warm welcome for over 1.5 million visitors and worshippers each year.

How did the idea to transform the triforium into a museum come about?

The Abbey has been planning to create a new museum in the triforium for several years. As well as giving visitors the chance to see this hidden attic space for the first time, it will also allow us to display the greatest treasures from the Abbey's collection, many of which have never been shown before.

Can you describe what the visitor experience will be like?

For visitor access to the Galleries, a new tower has been built outside Poets' Corner, tucked between the Abbey's 13th-century Chapter House and 16th-century Lady Chapel. The tower houses a lift and staircase and will offer full disabled access. It is also the most significant addition to the Abbey since Nicholas Hawksmoor's west towers were completed in 1745.

Once visitors have travelled up the new tower, they will enter the triforium – a gallery which runs more than 15 metres above the floor of Westminster Abbey. Here the museum will tell the history of the Abbey through 300 objects from our collection.

Visitors will also get to experience a new perspective on the Abbey's interior – a view that the poet John Betjeman described as the best in Europe, and which has so far only been seen by the public on



▲ Scott Craddock oversees visitor engagement and guest services at Westminster Abbey

television. The Galleries will also offer amazing views out towards Parliament and the Palace of Westminster.

Have you been in the triforium and what is it like? How do you get up there at the moment?

It's an incredible experience – being in a space high above the Abbey floor that has not been accessible for visitors for 700 years. The views are amazing and there will be so much to see from the Abbey collection too. During the building works, we have been accessing the space via an external builders' lift, which in itself was an experience.

What are your main aims with the galleries – for example, what do you hope visitors will learn or take away with them?

Westminster Abbey has a rich thousand-year history and we really wanted to offer a place where visitors can deepen their understanding of the Abbey and



COURTESY WESTMINSTER ABBEY



The coronation portrait of Queen Elizabeth II by Ralph Heimans (above) and historic artefacts are part of the museum display



PHOTOS: JAMES BRITANN

explore treasures from our collection in a spectacular setting. People don't always realise that we are a working church and we are holding 28 services every week.

Was there any opposition to any aspect of this project?

Despite the new tower and exhibition being the most significant addition to the Abbey for more than 250 years, there were no objections to our plans.

How many visitors will be allowed at one time? Is it a limited space experience and how will you handle that?

The Queen's Diamond Jubilee Galleries will be able to manage a capacity of up to 230 people at a time, which will be managed by a timed ticket allocation system.

How will the ticketing/entry system work?

Entry will be managed through a mix of advance online sales and a limited number of tickets available on-site on the day.

Will there be a charge?

The new museum experience will be offered as an optional additional part of a visit to the Abbey. There will be an extra £5 charge to visit the Galleries.



▲ Henry V's funeral armour is part of Westminster Abbey's collection

How long do you expect visitors will stay?

We estimate that visitors will spend around 45 minutes browsing the new Galleries.

How many visitors do you expect annually?

We're expecting to welcome around 200,000 visitors to the Galleries in their first year.

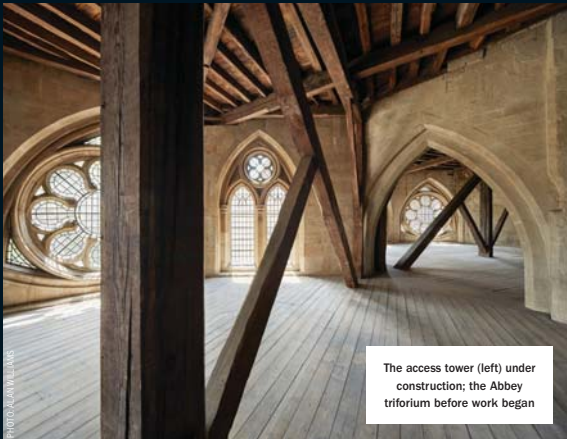
Carrying out any work at the Abbey must be very complex. How have you worked with Ptolemy Dean to make sure the new tower will be sympathetic?

Ptolemy Dean is the Abbey's Surveyor of the Fabric (consultant architect). His design for the tower is in keeping with Gothic style of Westminster Abbey. He has worked closely with Dædalus Conservation, a specialist contractor that has extensive experience working with Britain's built heritage and whose purpose it is to preserve and protect ancient buildings, through the use of traditional tradesmanship.

The tower has been built from traditional materials used in the Abbey: stone, glass, lead and oak, whilst taking advantage of modern materials, including steel and concrete, to keep the new structure as slim and slender as possible. It is clad in lead with leaded light windows set in metal frames. Stained glass fragments which were found during the excavation of the triforium vaults have also been included in the new windows.

Do any of these considerations apply to the exhibit design?

The aim of the design is to preserve the atmosphere, contemplative character, natural daylight and spiritual quality of the space. Both the architectural design by



The access tower (left) under construction; the Abbey triforium before work began

“ ONCE VISITORS TRAVEL UP THE NEW TOWER, THEY ENTER THE TRIFORIUM – A GALLERY 15 METRES ABOVE THE FLOOR OF WESTMINSTER ABBEY ”

Ptolemy Dean Architects and the exhibition design by MUMA have had a minimal impact on the quality of the space and the fabric of the building.

Can you tell us a bit about MUMA's plans for the exhibition?

The exhibition will tell the story of the Abbey's history presented through four separate themes.

■ **Westminster Abbey: The Building** – Exploring the way the Abbey buildings have evolved over 1,000 years. Westminster Abbey is one of the great medieval Gothic churches and yet most generations have left their distinctive mark.

■ **Worship and Daily Life** – Exploring the Abbey's life as a working church with daily worship at its heart, from its medieval monastic origins to the present day.

▼ **The marriage of Prince William and Kate Middleton took place at the Abbey in 2011**

Today, special services and other occasions make the Abbey the focus of national attention and some of the objects on display are still in use from time to time.

■ **Westminster Abbey and the Monarchy** – Exploring the close links between Westminster Abbey and the crown. The Abbey has been the coronation church since 1066 and is the burial place of many monarchs, including St Edward the Confessor, whose shrine can be seen from the Galleries. The Abbey's role as a Royal Peculiar (subject to the direct jurisdiction of the monarch) gives it a special relationship with the crown.

■ **The Abbey and Nation's Memory** – People from all walks of life and fields of endeavour are buried or commemorated in the Abbey. The Abbey has been a visitor attraction for at least 400 years, partly because of its monuments and memorials. This theme explores memorialisation and commemoration, the process of placing memorials in the Abbey and the forms of remembrance arising from military conflicts.

Do you plan to have docents or guides?

Yes, we will have a team of Abbey Marshals, ticketing staff and Abbey Guide volunteers who will be working in the Queen's Diamond Jubilee Galleries, with support from Heritage Cleaners too, to ensure our collection and the space itself is well cared for.

Is there scope for changing the exhibits/hosting temporary or special exhibitions?

The space is a permanent exhibition space, so the layout won't change. Some objects will be rotated for conservation reasons or because they are sometimes still used in the daily life of the Abbey. ●

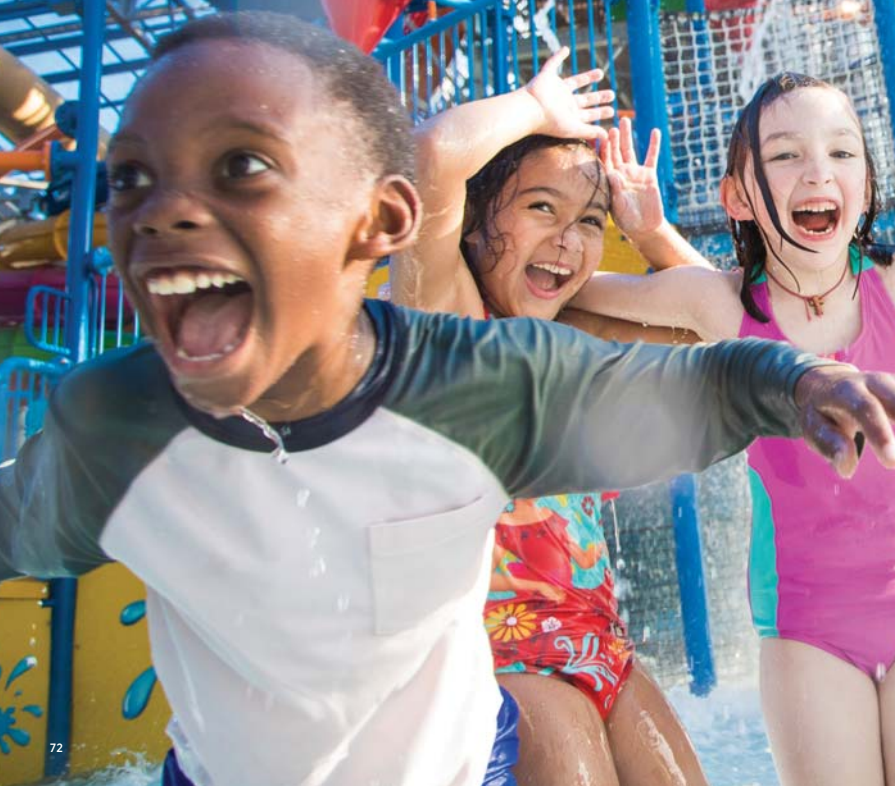
PHOTO: FEATURE LASH/SHUTTERSTOCK




UNDER THE WEATHER

A major waterpark has opened in Texas boasting a retractable roof.
Come rain or shine, this 'epic' year-round attraction is set to wow its visitors

Alice Davis, managing editor, Attractions Management





In Grand Prairie, Texas, the average January temperature is -13°C (9°F), but that didn't stop a new waterpark opening its doors at the beginning of this year.

Even in July, it's hardly sweltering, around 16°C (61°F). So it's a good job that this \$88m attraction is fully covered and insulated – making it the largest indoor waterpark under a custom curved retractable roof in the US.

It saves energy on warm days when the roof can be opened, reducing the need for air conditioning, and means the waterpark is open and operating even when it's cold and wet outside.

Appropriately named Epic Waters, the 7,400sqm indoor/outdoor attraction is operated by hospitality management firm American Resort Management and it's the first step in the 696,000sqm Epic Grand Central recreation centre development. A lifestyle centre, called The Epic, is to open later in the year along with an accessible playground, PlayGrand Adventures, and an amphitheatre.

The city parks department pushed forward the project and is receiving praise for developing one of the most important community water facilities in the US in many years.

"Grand Prairie is generating a lot of interest in our industry," says Steve

Brinkel, president of the parks and recreation division at WhiteWater West, who supplied the rides at Epic Waters. "A lot of other cities and recreation departments are looking at this project with admiration. This development will set a new standard of what a community development can be, with the right plan, team, and most of all, vision for community."

Epic Waters has been designed by Wisconsin-based architecture and engineering firm Ramaker and Associates, with attractions supplied by WhiteWater and the retractable polycarbonate roof by OpenAire. We spoke to the people who helped bring this epic project to fruition. ►



WATERPARKS



► SUZANNE DOODY

Business development
manager

Ramaker & Associates



This is a major waterpark, in size, scale and cost. Can you explain what makes this an “epic” attraction?

It's definitely epic! At 80,000 square feet, you don't see many indoor waterparks of this size, especially in a community recreation setting. The Epic team was all-in for a large waterpark and the community voted to use tax dollars to build something that fit the energy and grandness of the city.

What was the inspiration for this design?

The Jay Peak Pump House [an indoor waterpark in Jay, Vermont], The Summit at Grand Prairie [a fitness centre for the over 50s], and the city of Grand Prairie are all inspirations for the design. The Epic team visited the Jay Peak Pump House and were amazed by the openness, natural light and all the activities within. The Summit at Grand Prairie, which preceded the Epic, was so well received that the city knew they could provide their community with more amenities. And Grand Prairie itself is a fast-growing city in the Dallas metroplex, where everything is big and grand. This could not be missed when it came to building a new waterpark.

What story does the waterpark tell? Are there any elements relating to theming or storytelling?

The waterpark has a vibrant atmosphere. From the brightly coloured waterslides and play structure to the decorative table umbrellas and party rooms to the plethora of natural light from the OpenAire structure, Epic is bright and sunny.



Epic Waters boasts a wide selection of slides and activities, including the Lassoloop, Yellow Jacket Drop and Aquanaut

ON OFFER AT EPIC WATERS

- 11 waterslides
- Outdoor wave pool
- Activity pool and children's area
- FlowRider surf simulator
- Lazy river
- Shop
- Arcade
- Food and beverage outlets
- Full-service bar
- Cabana rentals
- Birthday parties
- Group outings and private rentals
- Event and meeting space

What makes this waterpark different to other waterparks you've worked on?

The enthusiasm and commitment of the Epic team and the many “firsts” make this project different. While most owners and operators are happy to be building a waterpark that will bring nothing but smiles to people, the Epic team was 100 per cent behind everything they could do to make their park special. Part of this were the “firsts” and “bests” designed into the park. The Lassoloop is the nation's tallest indoor AquaLoop slide. The Yellow Jacket Drop is the first slide of its kind as a fusion inner tube slide. The Aquanaut is the first double-rider inner tube slide of its kind and the lazy river is one of the longest in the US.



The family-focused waterpark offers a huge aquaplay structure for younger kids and lots of food and beverage options



DARYL MATZKE

Project manager

Ramaker & Associates



What was Ramaker's role on this project?

Ramaker was the aquatic design engineer.

Why did the role appeal to you?

From the first time we met with the Epic team, we could see the passion and dedication these people had to their community. They truly wanted to not only create a one-of-a-kind waterpark, but also to make it so that everyone in the Grand Prairie area would have access to a truly amazing family-oriented fun zone.

Please describe the waterpark's design.

The waterpark is capable of showing patrons everything it has to offer through a tiered design. From the moment you walk in the door, you can take in all the attractions. Directly in front of you is the zero-depth entry beach and lazy river. As your eye wanders up and back you see the activity pool and large, multi-level play structure. Then if you continue to look up, you follow the stairs of the slide tower complex up to the three separate landings that offer a fun and exciting ride from each level. This all culminates at the top of the slide tower with the Lassoloop and the drop-away floor that will send you speeding back down to the main level again.

What have been the challenges in designing and building the waterpark? How did you overcome these?

Incorporating all of the requested elements into the waterpark, within the space provided, while keeping the feel of the park open, was one of the main challenges. In order to not have one attraction feel like it was too close to another attraction, or a wall, our design team had to be resourceful when it came to efficient use of space. This was accomplished through both the OpenAire structure that allows light and fresh air into the waterpark, along with the tiered pool design that allowed for some separation between attractions.

WATERPARKS

MARK ALBERTINE

President and CEO

OpenAire



This was a mega project! Is this one of the largest jobs you've had to date?

It's certainly one of OpenAire's larger projects. Epic Waters has set a record for the largest indoor waterpark under a single retractable roof in the US, but we have been building record-breaking enclosures around the world for years. Aqua Sfera Water Park in Donetsk, Ukraine, was built in 2012 and holds the record for the largest freestanding retractable dome in the world, as well as the biggest aluminium dome in the world. Last year, we also finished a series of skylights and a large retractable roof for a two-phase expansion at Kalahari Pocono Mountains Resort in Pocono Mountains, Pennsylvania. That renovation brought Kalahari to 220,000 square feet, making it the largest indoor waterpark in the US.

What material is used?

Epic Waters was built using OpenAire's exclusive, thermally broken aluminium truss system. Our aluminium structures are lightweight, naturally rust-proof and require virtually no maintenance. This makes OpenAire roofs perfect for waterparks, which are exposed to moisture and pool chemicals constantly. We also used large, glazed polycarbonate panels on the roof to let in the sun throughout the year. With all this natural light and the very large span of the structure, Epic Waters really feels like an outdoor waterpark. It creates a great atmosphere for guests and it will save Grand Prairie a great deal on energy and maintenance in the long term. The operable enclosure reduces the need for air conditioning and dehumidification, which is estimated to cut Epic Waters'



Indoor waterparks are increasingly popular in the US and internationally

An indoor retractable roofed waterpark gives all the sunshine and fresh air of an outdoor park along with the shelter of an indoor park

energy use by up to 27 per cent annually compared to traditional structures. It's an exciting, year-round design with tremendous long-term value.

What were the main challenges you faced on this project?

Every project has some challenges. At Epic Waters, multiple contractors were working within the same space, so it required careful coordination to make sure we all achieved what needed to be done. We were fortunate to have a great team, all working under the site supervision of Lee Lewis.

Are indoor waterparks growing in popularity?

Yes, not only indoor waterparks, but outdoor waterparks too are on the rise across the

US and internationally. It makes complete sense for waterparks to operate as year-round facilities and not just seasonally, and retractable roof enclosures are one of the best ways to design a year-round park. An indoor retractable roofed waterpark gives all the sunshine and fresh air of an outdoor park along with the shelter of an indoor park. Communities all over are realising how big these advantages are: the National Recreation and Park Association (NRPA) reported that 24 municipal waterparks were built in the US from 2014 to 2015, and that number did not include private waterparks. At OpenAire, we see how popular they are every day. After 25 years in operation, we have built close to 1,000 retractable roof projects around the globe, each one custom designed to our clients' needs.



Epic Waters is one of the largest indoor waterparks in the US and it's protected by a custom-made retractable roof by OpenAire



An exterior view shows the slide path exiting and re-entering the building and the cupola at the top

NANCY PATTERSON

Director, design and business development

OpenAir®



natural ventilation in arid areas such as the UAE, withstand seismic disturbances in regions such as California, and continue functioning in high winds and heavy rains during hurricane season. We're ready for practically any requirement in any location.

What makes Epic Waters special or different?

Epic Waters is not just a waterpark; it's part of Grand Prairie's plan to make Epic Grand Central the grandest recreation complex possible for its residents. Epic Waters is a large park with many exciting attractions in its own right, but it's also part of a 172-acre complex with indoor and outdoor facilities designed to meet the needs of people of all ages, abilities and demographics. When it's finished, Epic Grand Central will be a true hub for this city – there will be something for everyone. We're honoured that Epic Waters and its year-round enclosure were a key part of the Grand Central vision from the start of development.

Is the structure built to survive extreme weather conditions?

Yes; OpenAir® structures have been proven to perform in all climates. Our team of engineers and manufacturers has built retractable enclosures around the globe to withstand the weight of heavy snow loads in Vermont, insulate against subarctic temperatures in Moscow, Russia, offer

What other design attributes are there?

Epic Waters opens to the outside from all angles: from above thanks to its 40 retractable roof panels, from the sides with its 35 sliding windows and 18 motorised pivot windows, and of course, five main doors and three overhead doors. Probably the most exciting feature about Epic Waters is that it has the advantages of two parks in one. The retractable roof panels offer all the sunlight and fresh air of an outdoor park, plus the year-round reliability of an indoor park.



How does the retractable roof work?

The retractable panels on the main roof and in the cupola have separate controls and can be operated independently. The motorised roof panels take 12 minutes to open fully. There are also 18 motorised centre-pivot windows that open easily. Both sets of panels are controlled by the operator and can be opened or closed at the touch of a button. The opened structure creates a chimney effect, allowing the air to come in through the side windows and push upwards and out through the roof. This natural process circulates air and vents moisture.

FAST FACTS

Cost: \$88m

Size: 7,400sqm (80,000sq ft)

Rides: 11 waterslides, outdoor wave pool, lazy river

Amenities: retail store, arcade, F&B outlets, bar, cabanas

Operator: American Resort Management

Expected attendance: 500,000

Adult ticket: \$14 (resident), \$24 (non-resident)

How long did it take to build?

OpenAir® worked on concept, design, engineering, fabrication and installation. A team of 15 installers worked to build the enclosure and cupola. Construction started in December 2016 and the entire structure was completed by November of 2017. Epic Waters required 35 shipments of materials on 53-foot flatbed trucks; 280 tons of aluminium; 54 columns, 27 rafters and 77,300 square feet of polycarbonate; and 34,000 square feet of glass. ▶

WATERPARKS



WhiteWater's mat racer slides are always popular with guests

► ERIC SINCLAIR

Project manager

WhiteWater West



What was the design process?

The design process was in two stages. In the pre-contract stage, everybody gets together and tries to decide what the vision of the park is. The city took a big role on that and did a lot of background research by visiting a lot of waterparks. They liked a lot of elements from Jay Peak Pump House so we started from there. Architect HKS was steering the project and pulling all the elements together. We bring to the table almost 40 years in the waterpark business and we've built a lot of waterparks. That enables us to take a somewhat unique place at the design table in terms of people wanting to know what we've seen and done in other parks, what ride mix we recommend and so on.

What's special about the experience?

The roof of Epic Waters waterpark boasts a glass cupola with our slide tower inside it. As you ascend the tower, you see all these people flying around you in different directions and when you get to top, about 60 feet high, and you're standing on the tower, it's probably one of the best views in

If you look at our 3D CAD model,

it's pretty insane how we fit all this in

and made sure every detail is accounted for

the Dallas area. You can see right across the city. There's a lot more going on than just getting the nerve to ride the AquaLoop.

What ride mix did you install?

We specially designed a couple of rides for the park. The client wanted something new that no other park had yet so we custom created some slides. Alongside the regular flumes, there's the first indoor inner tube Boomerango plus Constrictor fusion – which they called Yellow Jacket Drop – the US's tallest AquaLoop, called Lassoloop, and a AquaSphere slide called Aquanaut. Epic's Aquanaut is also the first indoor inner tube AquaSphere. Riders take high-speed twists and turns down an enclosed serpentine flume before zooming into giant spheres where their tubes make huge oscillations on 90-degree corners. The park also has our FlowRider Double surf simulator and the longest lazy river in Texas.

Did you provide any waterplay features for younger children?

We provided an AquaPlay 1050, which is a sizeable unit. Usually, indoor parks aren't large enough to accommodate this massive multi-level play structure, but there's

nothing 'usual' about Epic. It looks great in the space and provides an interactive focal point where families can play.

What was the main challenge you faced?

The tolerances were probably the most challenging. It was crucial all the parties – HKS, Ramaker, OpenAire, Lee Lewis and us – worked closely at the beginning to make sure the drawings were spot on. When you're inside the waterpark, for example, one of the AquaSpheres sits between the roof structure, and that roof moves, so it was vital the AquaSphere was rightly placed where it wouldn't interfere with any of the roof beams. Even though the park is 80,000 square feet, we filled the space up pretty tight. There are six building penetrations where three slides start inside and go outside and come back in. The wall is glass so you have to make sure the penetrations are made and resealed correctly. You can't even be off by a few inches or you'll run into the framing of the glass. If you look at our 3D CAD model, it's pretty insane how we fit all this in and made sure every detail is accounted for. By and large, that planning paid off when it came to the installation phase and luckily places where we were worried about it being close tolerance turned out fine. ●

PROJECT PARTIES

Owner/client: The City of Grand Prairie

Architects: HKS

Water Consultant: Ramaker & Associates

Rides and attractions: WhiteWater West

Retractable Roof: OpenAire

Construction Company: Lee Lewis Construction

Management: American Resort Management

Feasibility Consultant: Hotel & Leisure Advisors



Where Dreamers Play

By understanding different play types, you can ensure
that your park brings play to life for everyone

ADVENTURERS | CHALLENGERS | SOCIALIZERS | DREAMERS

ANDREAS ANDERSEN

IAAPA's new chair Andreas Andersen talks Attractions Management's Tom Anstey through his plans for his year at the helm of the organisation



An IAAPA Attractions Expo marks the start of the tenure of a fresh IAAPA chair. In 2018, the global attractions body has turned to Sweden for leadership, with Liseberg CEO Andreas Andersen taking on the role in what could prove to be a big year for IAAPA as it continues to grow.

What's your background?

I originally have a background in law. I used to work at the Danish ministry of finance and then in 2000 I became a company lawyer for Tivoli in Copenhagen, Denmark. I didn't hold the job for very long as I soon got into the operations side of things. I was COO there and then in 2008 I transitioned into a role with IAAPA, where I helped to relaunch the European regional office in Brussels. Two years prior, we had taken over EAS. In 2011, I came to Liseberg, where I am today. I'm a very enthusiastic rollercoaster rider, so that's really why I love the industry.

You have one year as chair. What do you want to achieve?

It's not about what I want to achieve, rather what we as a team at IAAPA would like to achieve. It's about how we can benefit the members because that's what it's all about.

There are a few things I care a lot about. Safety is one of them. The work that has been done over many years and also the great focus on safety and security during the past year is something I will continue.

I care a lot about the internationalisation of IAAPA so we can become a truly global body. We're on that path. We have strong regional offices and more and more members outside North America.

The third thing is sustainability. It's one of the things that our industry will have to face on a much more structured level in the years to come. It's one of the things that I would like to put on the agenda.

You take over from Greg Hale. What kind of a legacy is he leaving you? What has he built over the past year?

Greg has been an integral part of everything we, as an association, have achieved when it comes to safety over



Andreas Andersen started in the industry as a company lawyer at Tivoli



I think the sustainability agenda is knocking on the door. It's an area where we can do better as an industry

the past three decades. When it comes to standards, reporting, legislative achievements and lifting the general knowledge in the industry, I don't think you can underestimate the impact he's had for IAAPA and Disney. He is a champion of safety for our industry.

What's exciting you most about the industry?

One of the things I think a lot about is how the digital world is affecting our industry. If you take a look at the IAAPA Attractions Expo show floor, you're seeing much more digital innovation. Whether it's distribution, marketing, CRM or digital solutions for navigating attractions, the digital world influences how we communicate, develop and sell our product. It also influences the whole competitive situation we're in.

That's one thing I really think a lot about. It's something we discuss a lot at an IAAPA level and in my day-to-day work at Liseberg. Nobody wants to end up like Blockbuster. We want to make sure we're relevant in the future digital marketplace.

Where are you seeing growth in the industry?

The axis of the industry remains to some extent in the East, with development in China, India and the Middle East. It gives both the industry in general – but especially the manufacturers and suppliers – a lot of tailwind. I think that Latin America is an area where we're going to see growth in the coming years as well. It's very much to do with the overall economic situation, as well as legislation, so hopefully we'll see more there.



IAAPA's 2017 trade show was the organisation's most successful ever, with 39,000 attendees

What are the current strengths of the attractions industry and what can be improved on?

It's interesting if you look at the industry from a historical perspective. It's a very resilient industry in the sense that in times when you see a downturn in the general economy, people tend to visit regional parks instead of travelling. When people have money to spend, they tend to go to the destination parks. Its resiliency has to do with the fact that what we are providing is a very fundamental thing. It's an escape from everyday



Volcano Bay tackles the problem of queueing with its TapuTapu technology

100 YEARS OF IAAPA

This year, 2018, IAAPA celebrates its 100th birthday. Marking the success of the global attractions body, IAAPA is relocating its headquarters from Washington, DC, to brand new offices in Orlando, Florida. The organisation also invites all its members and industry professionals to join the festivities during this year's events:

■ **IAAPA Leadership Conference**
6-9 March, 2018
Tokyo and Osaka, Japan

■ **Asian Attractions Expo**
5-8 June, 2018
Hong Kong

■ **Euro Attractions Show**
23-27 September, 2018
Amsterdam, The Netherlands

■ **IAAPA Attractions Expo**
12-16 November, 2018
Orlando, Florida

Find out more at
www.iaapa100years.org

► life, it's memories, it's expectations, it's experiences. I think that that's fundamental – even in a digital world. That's the strength of visitor attractions. It's something that family or friends do together and you do it in real life. It's something that will always provide a very strong foundation to build on.

What can we do better?

I think the sustainability agenda is knocking on the door. It's an area where

IAAPA officials mark the start of construction on the association's new offices in Orlando, following relocation from Washington, DC



we can do better as an industry. We also have to be very aware of the fact that change is happening faster and faster. As an industry, we have to be very nimble and be able to adapt at a much higher pace.

Queueing is something to think about too. Today we don't queue in the bank, we don't queue in the supermarket, everything is online and accessible. We don't queue, but we expect people to stand in line when they come to a theme park. It's one of those areas which is a real threat. If we don't figure it out, it's one that could become a problem in the future. Tapu Tapu at Volcano Bay, Universal Orlando Resorts, is a good example of innovation, but it's an area where most of us have to adapt. We have to be quick on our feet and able to change to meet guests' expectations.

Where do you see the sector expanding?

Twenty years ago, you could categorise an attraction. There were zoos, aquariums, amusement parks and so on. Today, we're all becoming hybrids. There are two main tracts when it comes to this type of development. The first is this hybridisation: Chimelong Ocean Kingdom, for example, is it a theme park or is it a zoo? The other tract is resortification. Everyone wants to add a hotel. We'll see continued development in those directions.



www.PennyPressFactory.com

THINK BIG

With work on Liseberg's upcoming €200m expansion expected to start in 2019, we asked CEO Andreas Andersen why he wanted to diversify the product offering

Liseberg, the historic attraction in the heart of Gothenburg, Sweden, celebrates its centenary in 2023. In the build-up to this significant milestone, plans for a new indoor waterpark and hotel were unveiled for 50,000sqm of land acquired in 2013.

"This was the last available expansion area in conjunction with Liseberg," CEO Andreas Andersen tells *Attractions Management*. "Our park is in the city centre so it was important we acquired that land."

"We looked at a number of ways we could use the space and quite early on it became clear that the best option for Liseberg and the destination would be to build an indoor waterpark and hotel."

The waterpark, being developed by Water Technology Inc, will operate year-round with capacity for 2,800 guests over 17,000sqm. The waterpark will follow a historic theme based on the Swedish East India Company, which has strong roots in the city. Included in the attraction will be a galleon, eight experience pools, 10 water slides, two waterplay areas and a 400-seat restaurant.

The 453-bedroom family hotel is being designed by Swedish architectural firm Wingårdhs. The property will adjoin the waterpark and feature a 550-seat restaurant, a smaller themed restaurant for up to 250 people, a bistro and a spa.

"We've finished concept design and are currently between schematic and detailed


design," says Andersen. "We have all the permits and permissions, and we've secured financing for the project."

A projected opening date is set between 2021 and 2023, possibly over two phases, depending on construction times.

"It's a very big investment, but it's also a necessary one in the sense that we need to expand into other business areas if we want to keep the theme park running as we know it today," says Andersen.

CHALLENGES

"We have a couple of challenges when it comes to our existing business model," he says. "The first is it's very seasonal. We bring in a lot of the revenue in just



Andreas Andersen is planning ahead as Liseberg builds up to its 100th anniversary in 2023



Valkyria (inset) opens this season, while the €200m indoor waterpark and hotel expansion could open by 2021

a few weeks through July and August. Our seasonality is significantly more concentrated than most other large amusement parks in Europe.

"The other challenge is that we are owned by the municipality. That gives us owners with a long-term perspective, which is great, but at the same time, there are some constraints on the way that we manage the park."

"We have a lot of cultural obligations and we donate a lot to charity. We are also trying to take care of a very long history and the heritage of the park in ways most other parks don't have to. It's very important to us that we are part of the Gothenburg community and play a central role in the



We're part of the Gothenburg community and play a role in the cultural fabric of the city, so we need a strong financial foundation. The hotel and waterpark will be part of that foundation

cultural fabric of the city, so we need a strong financial foundation to stand on. Building the hotel and the waterpark will be part of that strong foundation."

NEW ADDITIONS

Liseberg has invested significantly over the course of the past six years, spending €120m on new additions to the park to combat declining visitor numbers.

"We were seeing a declining attendance, especially in our summer season," says Andersen. "We've invested heavily in our core business – the amusement park – with new rides, new theming and investment into our Halloween season."

"This investment strategy has worked very well for us. The past three years have been the most financially successful in the history of the park, so we're very happy with that," Andersen says.

According to Liseberg, the hotel and waterpark plans will have positive effects for both local residents and tourists, boosting employment and the regional economy and increasing tourism numbers. This will include an additional 600,000 visitors on top of the 3 million people that visit the park each year, as well as €50m in tourist revenue for Gothenburg.

Liseberg's next major investment is Valkyria – a steel dive coaster by Bolliger and Mabillard – which is currently under construction and set to open this year. Based on Norse Mythology, Valkyria is part of a €25m investment, which also includes a Gyro Swing manufactured by Intamin.

"In 2023, we celebrate our 100th birthday. We have a few things in the pipeline in terms of attractions," he says. "It's a strategic investment, not just in the short term, but also the long term." ●





SECURITY 3 PART SERIES

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PROTECTING YOUR VISITOR ATTRACTION

Nigel Peers, senior consultant at NW Security Group, looks at the UK government's guidance on crowded places and shares his expertise on how to make an attraction safe and secure

On 8 June, 2017, the UK's National Counter Terrorism Security Office (NaCTSO) published its 174-page *Crowded Places Guidance*. This comprehensive advisory report focuses on protecting crowded locations, including visitor attractions, shopping centres, sports stadia, bars, pubs and clubs, which are easily accessible to the public and could present a potential target.

This article focuses on the parts of NaCTSO's *Crowded Places Guidance* that provide protective security advice to those who own, operate, manage, secure or work in visitor attractions. It's an area where I personally have in-depth expertise, having

managed security for the UK's busiest zoo – Chester Zoo, boasting 1.9 million visitors a year – for several years before joining NW Security Group.

Rather than summarising what is an incredibly detailed and instructive document, I thought it helpful to present some of the thinking and processes that I went through during a three-year-plus period to harden security systems, plans and procedures and mitigate against key risks which were identified when I began my time in that role.

Identify assets

Much of the hard work begins with asset identification and assessment. You need to assess and prioritise all assets to be protected and then the security risks across four different parameters:

- People – staff, visitors, contractors

Nigel Peers, senior consultant at NW Security Group

- Physical assets – infrastructure, buildings, etc.
- Information and data assets
- Policy and procedures

In any risk assessment you must be able to identify and

rank risks based on a detailed assessment of the likelihood of a type of threat happening and the possible impact on the organisation should such an event occur.

Four key questions to ask are:

- What assets need to be protected?
- What threats and vulnerabilities are out there?
- What is the impact on the attraction if a given asset is compromised/attacked/breached?
- What existing measures, systems and equipment already aid protection of



Complete a risk assessment
before proceeding to draw up
a strategic security plan





Police officers stand near the Louvre, Paris

Expect to reduce the risk to 'as low as reasonably practicable' while maintaining the friendly atmosphere of providing a great day out

these assets, mitigating against pre-identified threats?

All threats need to be placed in order of importance and any remedial action to improve mitigation measures needs to be proportionate to the level of threat and the assets identified for protection.

Consider stakeholders

During the process of prioritising which risks to mitigate first and which to devote most resources to improving, it is worth considering key stakeholders and their priorities and concerns. So, for a visitor attraction, key stakeholders might be:

- CEO and other board directors, responsible for the reputation and wellbeing of the organisation
- IT director/IT manager, who may have to assist in preventing a cyber attack
- Marketing department, who may have to ensure they are not making information public, which could be of use for hostile reconnaissance intelligence gathering
- Security team, who are going to be pivotal to strengthening any security systems and procedures
- Health and safety management team,

monitoring for slips, trips, falls and other potential injury, personal property damage or anti-social behaviour that may place staff, visitors or assets at risk

- Visitors, who may well have a part to play by remaining vigilant to surroundings and people around them that may be behaving unusually. They can be encouraged to report anything unusual, including unattended bags
- When drawing up the risk assessment it is important to bear in mind that the best you can expect to do is reduce the risk to 'as low as reasonably practicable', while maintaining the friendly and welcoming atmosphere which is compatible with visitors enjoying a great day out.

Building a security plan

Once the risk assessment has been completed, the next step is to draw up a strategic security plan. The security plan must be simple, clear and flexible as far as is possible. It will need to detail:

- Policies, for helping staff and visitors to be security-aware and as far as possible knowledgeable about what should be done if an incident happens

- Operational change recommendations; for example, profiling of visitors by your security team, increasing patrolling levels, randomising patrol timings
- Physical change recommendations; for example, barriers, IP (internet protocol) video/digital video cameras, access control, bollards, fixed furniture, bins
- Training and awareness requirements for the security team and wider organisation
- Validation procedures, to check you have got priorities and mitigations right
- Partnership; you should be running plans through your local Counter Terrorism Security Advisor (CTSA) and other strategic partner agencies
- Review and monitoring regime; how often will the plan be checked?
- Communication and media elements, including understanding what should and what should not be communicated about your security systems, procedures and assets. For example, some information could potentially assist hostile reconnaissance operatives whereas other information should be made very public to deter hostiles from targeting your venue. ►

Quickstart guide to securing your facility

1. Identify & Prioritise Assets

Assess and prioritise all assets and security risks

2. Identify Threats & Prioritise Mitigation

Identify risks and their possible impact. Put mitigation measures in place

3. Satisfy Needs of Key Stakeholders

Terrorism-related threats and cybersecurity are moving further up directors' agendas

4. Build Strategic Security Plan

Consider the following: policies, operational changes, site changes, staff training, partnering with local Counter Terrorism Security Advisor, external communications

5. Combat Hostile Reconnaissance

Be able to spot a hostile reconnaissance team and provide identification-worthy CCTV evidence to the authorities

6. Link new Security Equipment to Operational Requirements (OR)

Attach an OR statement to each piece of new security equipment being installed stating what security or other operational needs it addresses. Each camera will have a specific purpose

7. Stiffen Access Control Procedures

Procedures for issuing visitor and contractor passes are worthy of close attention. Multi-layered security systems may well be needed

8. Incident Management

Should an incident happen, all people on-site must know where to go and what to do. This could mean full or partial evacuation or 'inactivation' to a secure place

9. Keep up to speed with NaCTSO

Use the latest *Crowded Places Guidance* published by NaCTSO as your go-to reference for change, training specification, as well as procedures and processes reinforcement

10. Centralise Video

Surveillance Monitoring

CCTV is only valuable if coverage is comprehensive and can be used to positively identify people. Build a centralised/networked video surveillance infrastructure with professional video management capability manned by fully-trained security officers



Crowded Places Guidance is aimed at attractions, stadia, bars and other busy places

Access control is fundamental to planning a security solution. Know who or what can go where and allocate passes to reflect this

Deny, deter, detect

One key consideration is to work hard to "deny, deter and detect" hostile reconnaissance. The more your security regime can deny would-be terrorists access to reconnaissance intelligence, the less likely your venue will be subject to a major attack. Spotting them early is the first crucial step to stopping any hostile reconnaissance team from gathering useful intelligence. Thereafter, if you can demonstrate a strong security appetite by proactively indicating you've 'spotted them', and provide identification-worthy CCTV evidence to the authorities, the more likely they are to be deterred from returning.

Add to the proactive profiling of possible hostiles by communicating the effectiveness of your security systems – or, as the NaCTSO guidelines put it, deterring them by putting out the message 'come here and you are likely to get caught' – and you start to reduce the risk of an attack considerably.

Phased mitigation

You won't be able to purchase and install the full shopping list of equipment and training requirements that you've identified in the first few months of completing the risk assessment – budgets rarely allow it.

So, if you need 200 new surveillance cameras and a new highly-secure control room, you will need to consider phasing in this work. So, is there scope to re-use a

portion of the old analogue CCTV cameras for a period and bring the serviceable ones onto the network? And if there is budget for only 50 new network cameras, where exactly do those priority cameras need to be placed? The 'top priority' threats must be tackled first so that the biggest threats are mitigated before moving to the lesser threats as budgets and resources free up.

One valuable way to prioritise work is to attach an Operational Requirement (OR) statement to each piece of security equipment going in. Essentially, this needs to state precisely what security or other operational need this piece of equipment addresses. Each new camera has a specific purpose: one might be for perimeter security, another for animal welfare, a third for health and safety monitoring on a pedestrian thoroughfare, and so on.

It must be clear which area is covered by each camera. Further, the displacement consideration must be documented for all surveillance cameras: it's important to understand that if a new camera is put in to cover one known area where crime is likely to be committed, that this crime may just move into a different area. Although this is a more significant concern in public space CCTV installations, displacement risk is always worth considering.

Access control

The OR process is fundamental to planning an efficient security solution

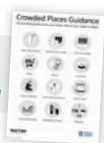


and access control is no exception. Be it controlling pedestrian access to certain areas, or vehicles into the site, the principles are the same. Know who or what can go where and allocate passes to reflect this. Any access control system is only as good as the procedures and people that govern its use and a good security culture is paramount in ensuring your site remains secure.

Processes and procedures for issuing visitor and contractor passes are worthy of close attention as it is normally in these sorts of procedures and processes that vulnerabilities lie. Hostile Vehicle Mitigation (HVM) strategies are detailed in NaCTSO's *Crowded Places Guidance* and I advise that they should be read carefully as this type of threat is being encouraged by terrorist groups via the internet right now, as we know all too well from recent Vehicle as a Weapon (VAW) attacks in Nice, London and New York.

VAWs, like many threats, demand defence in depth, multi-layered and overlapping security systems, processes and procedures. Retractable and fixed bollards at vehicle and pedestrian entrances, fencing, barriers, landscaping, fixed furniture, identification and pass checking, profiling, as well as well-placed CCTV and speakers to send audible alerts, can all work together to make a site as secure from a VAW as is practicable – particularly given the fact that you don't want a visitor attraction to feel like Fort Knox.

To read the NaCTSO guidance, go to www.gov.uk/government/publications/crowded-places-guidance



Many major attractions now have well-trained security staff and well-placed security equipment

Incident management

You need to be thoroughly drilled on the procedure to keep staff, visitors and other assets safe should an incident happen. All people on-site must know where to go and what to do in the event of a security incident. This could mean full or partial evacuation or 'invacuation' to a secure place either on-site or off-site.

You will want to deter any new people from entering an area where a security breach has occurred. By doing so you will reduce the risk of increasing the number of people exposed to the threat.

Alarm control points should be considered and sited where mustering points have been agreed and communicated. Methods for good communication flow must also be multi-layered so any public address can be supported by shortwave radio for security officers. Police and emergency services must be called in as early as possible to assist. Staff should be tested with regular scenario-based exercises, including desktop and practical activities.

Summary

The information and guidance discussed here allows for investigation of just some of the elements of securing a visitor attraction. It cannot be as comprehensive as the new NaCTSO guidance, which covers mitigation of many more threats than I've been able to cover here.



Threats are bound to be different for each attraction. Legacy security systems, range of assets, layout and size of the site and existing security personnel are all issues which need to influence your security priorities. However, the principles of good security planning and risk assessment should form a firm foundation for building a new and up-to-date security plan for any visitor attraction. ●

About the author

Nigel Peers is a security consultant, data protection practitioner and trainer. With a military background and founder of a workplace compliance training company, Peers possesses a wealth of expertise in conducting security site surveys, vulnerability assessments and delivering Security Industry Authority (SIA) and other industry-related training courses.

About NW Security Group

NW Security Group provides security planning consultancy and training as well as planning and physical security equipment specification, configuration and installation services.

THE STORY BUILDERS

Creatives from Disney and Universal on the power of IPs in the attractions industry and how to implement them

Some of the attractions industry's brightest and most respected minds have shared their thoughts on the creative process and challenges involved with turning some of the world's most popular IPs into real-life places.

Examining how fantasy worlds such as Pandora – The World of Avatar and The Wizarding World of Harry Potter progressed from fiction to reality, Universal's Thierry Coup and Disney's Joe Rohde and Scott Trowbridge shared personal and professional insights at November's IAAPA Expo with an audience of next-gen creators, operators and leaders.



Joe Rohde

Executive designer and vice president of creative

Walt Disney Imagineering

Joe Rohde, executive designer and vice president of creative at Walt Disney Imagineering, recently launched Pandora at Animal Kingdom in Orlando, Florida.

Revealing his secrets to building and telling stories in theme parks, Rohde says that to successfully use an IP, attractions creators must put visitors at the centre of their own immersive fantasy world.

"We build story worlds, not necessarily story plots," says Rohde, explaining the differences between using an IP in a theme park with using an IP in the movie theatre.

"A film is a format that allows you to explore the character-based side of the storytelling world. You follow characters through a plot for about 90 minutes. What we do is much more about direct experiences – what could and is going

to happen to you inside this world where things also happened to those characters."

According to Rohde, who joined Walt Disney Imagineering in 1980 during the development of Epcot, the main trap that attractions creators can fall into when working with a film IP is managing to recreate a world but failing to include that visitor as an active part of that world.

"When you go into a theatre to watch a movie you're rendered pretty much inert," he says. "You sit in the dark, in the

PHOTO: UNIVERSAL ORLANDO



Rohde led the creation of Pandora – The World of Avatar at Disney's Animal Kingdom, a project which took six years to complete





The Amazing Adventures of Spider-Man is a 3D dark ride at Universal's Orlando and Osaka parks

It's exceedingly compelling and convincing if you accept it as a world instead of a film

quiet, and you watch something happen to somebody else. A lot of our emotional attachment to the story comes from the things that happen to this person. But it takes time. It's not done in the first two minutes like it might be in a theme park; it's done over an hour-and-a-half.

"When I go into a theme park, I'm up on my feet, my body is moving through space either of my own volition or in a vehicle. In the theme park, I'm anything but inert. I don't have the spare mental framework to pay attention to what's happening to some other person, I'm paying attention to what's happening to me.

"The whole meaning of the story has to turn upside-down. We have to figure out what it is about this world that could ever be meaningful to a person who is experiencing it directly happening to them."

One key thing, according to Rohde, that can make or break an IP is originality. Building an attraction exactly as its seen on film can be a success. However, creating

an attraction based on elements distinctly linked to that IP but that have never been seen before, could prove more fruitful.

"In the case of Pandora – The World of Avatar, I would be hard pressed to come up with an object, character or form that you saw in the actual movie," Rohde says.

"Nothing I can think of is copied from that film – not a rock, not a plant, even the particular Na'vi characters you meet. It's exceedingly compelling and convincing if you accept it as a world instead of a film.

"We have a land at Animal Kingdom called Africa. There was a movie shot in Africa called Africa, but when I go to Africa, I don't expect to see Meryl Streep because I understand that Africa is a place where you can go to make a movie. In the same sense, Pandora is a place where you can go to make a movie. Our piece of Pandora is not where that movie was made. It's world building, which helps to increase your storytelling opportunities instead of a basic retelling of an existing film."



Thierry Coup

Senior vice president

Universal Creative

Leading creative development for Universal Parks and Resorts globally, Thierry Coup, senior vice president at Universal Creative, has spent more than two decades working for the company.

Coup – who has worked on Universal projects including The Wizarding World of Harry Potter, The Amazing Adventures of Spider-Man, Transformers: The Ride and Skull Island: Reign of Kong – believes that operators looking to stay ahead of the curve must go above and beyond to deliver entirely new levels of immersive experiences unseen before by the public. ►



PHOTOS: UNIVERSAL STUDIOS

Visitors at the Wizarding World of Harry Potter at Universal Studios Hollywood in Los Angeles, California



► Following successes such as Universal's Harry Potter worlds, public expectations are higher than ever and attractions must live up to them, according to Coup.

"We have to deliver experiences that are much more immersive than anything you can find out there," he says. "You can use technologies like VR or AR, but there's nothing like entering a world where you feel like you have been transported completely. It's not just about igniting the basic senses like touch and sound."

For the Wizarding World of Harry Potter attraction – first opened at Islands of Adventure in Orlando and then replicated at Universal's parks in Los Angeles, California, and Osaka, Japan – Coup described how multi-sensory design was integral.

"You walk into the Wizarding World and you can smell things coming from the restaurant and it feels very much the way it was described in JK Rowling's books. She did such a great job of describing every one of the senses. When you finally taste the Butterbeer, it's like a system of engaging everything and placing you in a world that you can't find anywhere else but there."

There are, of course, challenges when it comes to IP collaboration, which Coup describes as "almost like marrying someone for their wonderful child".

"You have to get along, you have to develop this relationship, but the goal is to ensure together that this 'child' is successful," he says. "That comes with a

lot of complexity from the partner, but there are many great things that come with that.

"For Harry Potter it was small shops, small stores, no marquees, no signage, small entrances – it goes against all the rules we have set for the perfect operating theme park. We learned from that and we were very open. We had to be.

"For the Transformers ride, we were working with Michael Bay. We told him slow-motion won't work on a ride, but then we tried it and it was actually a great success.

"You have to make compromises. You have to learn as much as you can about where the IP came from and was born from. You have to put your ego away and both sides have to speak to each other. It becomes a crazy great marriage and you end up with this amazing final product."

Another challenge is involving a wider audience perhaps not familiar with an IP

"Within the theme park setting, you can't design something just for the fans," says Coup. "You have to make sure that you have a very compelling story, with transportive, inviting environments. For example, when we created the Spider-Man ride at Universal in 1999, none of the films had yet been released. We had to adapt Spider-Man and bring the story to life in a way that didn't even exist yet.

"Whether you're a fan or not, I think that the surprise of Spider-Man jumping on your car and taking you on this journey appealed to anyone on the ride.

"The worlds we create come to life and bring you into them. No matter whether you work in our industry or not, or are a fan of a particular property or not, within seconds you stop trying to analyse it because you're drawn into the experience. That requires very careful design and crafting." ►

It feels very much the way it was described in JK Rowling's books

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Mark Hamill, aka Luke Skywalker, poses by a scale model of Star Wars: Galaxy's Edge during the D23 Expo in Anaheim, California; (right) renderings of that project

PHOTO: JOSHUA SLOOCH/DISNEY PARKS



Scott Trowbridge

Creative portfolio executive

Walt Disney Imagineering

Disney Imagineer and creative lead for the theme parks' Star Wars projects Scott Trowbridge says that attractions developers cannot take one format and paste it on to another expecting great results. Instead, an IP must be broken down and built back up in a format that is appropriate for a visitor experience.

"It's not about taking one medium designed for something else and then

Star Wars: Galaxy's Edge will 'change the lens' on who is the protagonist in the park experience

trying to shoehorn that into another medium," Trowbridge says. "A successful use of IP is to take the essence of what made that story or creative work successful, understand its DNA and then find the best possible way to express that DNA through a creative medium."

Talking about the immersive Star Wars: Galaxy's Edge lands under construction at Disneyland California and at Disney's Hollywood Studios in Orlando and opening in 2019, Trowbridge says the additions will "change the lens" on who is the protagonist in the theme park experience – something that Disney wants to apply to all of its projects going forward.

"You go into traditional theme park experiences and you're kind of invisible. With Pirates of the Caribbean, you ride it, but the pirates don't acknowledge you."

Trowbridge, who has the task of taking the work of Star Wars creator George Lucas and translating it into a physical world, wants to do more than just recreate famous scenes from the franchise. Instead, he is creating something completely new and distinctly Star Wars, placing visitors right at the heart of the immersive story, which plays out over multiple days to encourage repeat visits.

"It would have been easy to tell you Luke's story on Tatooine – an iconic scene from the first movie – but we know those scenes and we know Luke's story. We know we're not in that story and we have no business being on that planet with Luke as some kind of weird voyeur," he says.

"Instead what we want to do is create this universe, laying out and introducing new stories, characters and places, and to include you in these stories should you want to take part. There's no obligation to do this, but there's a significant part of our audience who want to feel more engaged and more connected to the stories they are experiencing, so we're trying to find ways to take that and extend it to our parks."

According to Disney, both Star Wars lands will transport guests to a never-seen-before planet, a remote trading port and one of the last stops before "wild space". There will be two signature attractions: one allowing guests to take control of the Millennium Falcon and another that puts guests in the middle of a giant battle between the First Order and the Resistance.

"There's an invitation to engage. There's an invitation to play," says the Imagineer. "Stay tuned, we're very excited about it." ●



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● The show features thrilling live-action sequences inspired by *The Fast and the Furious* film franchise

Inition's crowd participation tech 'reinvents' live experiences, says **Adrien Leu**

Inition, a UK-based tech innovation agency, has created a live-audience participation experience for *Fast & Furious Live*, a live entertainment experience based on the hit movie franchise.

The show features thrilling live-action sequences inspired by the films, where audience members can actively participate in the events taking place on stage. It also includes a live drag race where the audience is split into teams and given control of two real competing cars.

Inition created a bespoke crowd detection engine for the show, which gives the audience

the power to dictate car speed, gear changes and vehicle customisation options simply by raising their voices or holding up voting cards at specific times.

The company also developed a large crowd gaming solution, using cameras, microphones, crowd sensors and advanced motion sensing technologies, to calibrate audience activity and turn it into real-time data to shape the on-stage action.

Real-time visual feedback means the audience can see their choices via on-screen animated 3D renderings.

Dr Adrian Leu, who's the CEO of Inition, says:



● Adrian Leu, Inition

"Thanks to the continual evolution of technology, audience participation mechanisms are becoming increasingly sophisticated.

"By devising different permutations of cameras, microphones, crowd-sensing and advanced motion sensing technologies, we can completely reinvent the live experience. With the experience economy taking hold, these types of large crowd gaming ideas should be high on the agenda for all high-profile live events."

Potential applications for this technology for the attractions industry include interactive dark rides and live entertainment.

ATTRACTIONS-KIT KEYWORD

INITIATION

CAVU's Peter Schnabel on 'culturally significant' Beautiful Hunan attraction

Canadian dynamic media-based attractions developer CAVU Designwerks (CAVU) has partnered with Macrolink Group to supply a new turn-key flying theatre attraction at the upcoming Tongguan Kiln International



● A rendering shows CAVU's Beautiful Hunan flying theatre

Cultural and Tourism Centre in Changsha, China.

Billed as a unique and exhilarating flying experience, the attraction, titled Beautiful Hunan, takes guests on an exhilarating journey across Hunan, showcasing breathtaking sites and historical locations.

Riders will soar over the ancient kilns of Tongguan, the Wulingyuan mountains (which inspired Avatar), the Yeyang Tower, Mao Zedong's house and Changsha city.

CEO Peter Schnabel says: "CAVU is thrilled to be a part of this culturally significant project that showcases the history of the Hunan region."

"We are especially excited about the addition of several revolutionary drone-captured segments in the media that are perfectly synchronized with the motion, bringing a new vantage point for this attraction."



● Construction is underway on the cultural destination resort



● Peter Schnabel, CAVU

CAVU will serve as the ride integrator and will be responsible for the installation of the AV equipment, media and ride programming.

The centre is expected to open in June 2018 and is a historical destination resort that offers themed experiences based on Chinese tradition and culture.

ATTRactions-KIT KEYWORD

CAVU

Peter Cliff on 'revolutionary' new ride concept from Holovis

Immersive experience design firm Holovis has launched Ride and Realm, a next-generation concept designed to give guests personalised experiences using real-time media.

During a dark ride, guests control their experience via onboard interactive technology. As they exit the ride, they download an app that extends the ride's narrative. Using the app, guests can solve puzzles and unlock achievements as they travel through the park. When they return to the dark ride, their experience changes to reflect their progress.

Proximity beacons, geofencing and WiFi triangulation enable users to navigate the park using a live, digital

map and guides users in a scavenger hunt, offering clues throughout. It also allows users to unlock levels, play games and interact with live actors.

The experience can even be extended as the app features games and tasks that can be completed outside the park.

Peter Cliff, creative director at Holovis, says: "Ride and Realm presents a near limitless experiential attraction that is always different and truly re-ridable. Whatever you do within the ride or across the park has a real-time impact on the adventure that unfolds before you. This is more than gamification and non-linearity: this is letting people determine their own destiny whilst being at



● An app can extend the ride narrative and boost return visits



● Peter Cliff, Holovis

the heart of a multidimensional, compelling narrative.

"We see this expanding so that all park-wide media, both on and off rides, reacts differently for every individual, depending on where they are in their game and evolving storyline. This is a revolution in park-wide personalisation."

ATTRactions-KIT KEYWORD

HOLOVIS

BYU study creates 'images of the future', says **Daniel Smalley**

Researchers at Brigham Young University in Provo, Utah, have developed a method of creating 3D images that float in mid-air.

The research group, which includes holography expert Dr Daniel Smalley, took inspiration

from a scene in the first Star Wars film, where R2D2 projects a 3D image of Princess Leia. The famous projection – widely believed to be a hologram – is actually a volumetric image.

Holographic images are created by light scattered across 2D

surfaces, and can only be seen when the viewer is looking directly at the surface. A volumetric image is a 3D rendering created when light is scattered across a number of different points spread across a 3D space, meaning it can be seen from every angle.

To create the images, the group developed a free-space volumetric display platform, based on photophoretic optical trapping.

"It's like a 3D printer for light," says Smalley. "You're actually printing an object in space with these little particles. We're providing a method to make a volumetric image that can create the images we imagine we'll have in the future."

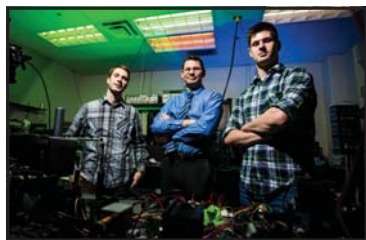
The study was co-authored by Erich Nygaard, a BYU undergraduate. Explaining the process, he says the method



● Researchers say the method is 'like a 3D printer for light'

uses a laser beam to trap particles in the formation of images. "When we trap the particle, we can steer the laser beam around to move the particle and create the image."

Volumetric imagery is being researched by groups outside BYU. However, Smalley's team is the first to effectively utilise optical trapping and colour.



● The team at Brigham Young University was inspired by Star Wars

ATTRACTIONS-KIT KEYWORD
BYU

Fusion's **Ian Carling** handles tech integration at Little Big City

AV specialist Fusion has been named as the tech integrator behind Merlin Entertainment's Little Big City attraction in Berlin, Germany.

The attraction, which takes visitors on a journey through Berlin's history dating all the way back to the Middle Ages, was in development for two and a half years.

Merlin's creative team partnered with production company Fignment Productions and Fusion to create the attraction, which features 3D interactive miniature sets and projection mapping to showcase key events and bring the experience to life.

Fusion was responsible for the installation of all the AV tech, which included approximately

100 speakers, 36 projectors and 15 screens, carefully placed in and around the model sets.

The company installed a range of Optoma projectors including the Optoma ZH400 ultra short throw laser projector and the ZU510 laser projectors.

Fusion's director Ian Carling says: "We used mostly Optoma lamp-free laser projectors as they provide 20,000 hours operation with virtually no maintenance. We also chose laser because they offer versatile orientation, including portrait mode and downward projection, which gave us the flexibility we needed."

"Optoma projectors deliver high-quality imagery while being reliable and cost-effective. We knew they would deliver the team's ambitious vision within the budget without compromising quality or reliability."

"Little Big City brings the history of the city to life in a very entertaining way. Visitors get absorbed in the stories

and experience a real mix of emotions as they walk through.

"This emotional response is not just due to the content but also how it is delivered – the sounds and special effects play a major role in making this such an exciting attraction to visit. We are really pleased with the performance of the AV equipment. It looks brilliant."



● Ian Carling, Fusion

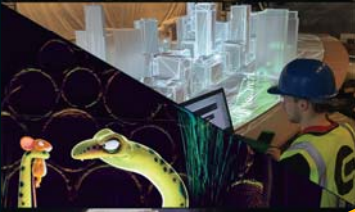
ATTRACTIONS-KIT KEYWORD
FUSION



● Audiovisual techniques bring Merlin's Little Big City to life



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