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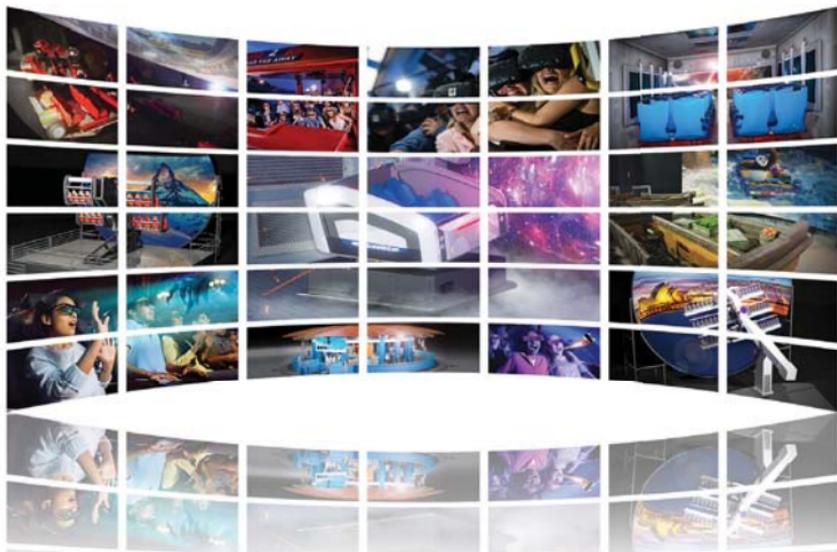


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VOL 23 2 2018

ART IN A DIGITAL AGE

Tokyo collective of
'ultra-technologists'
opens museum

DAMIEN HIRST

Artist takes over
country estate

PHOTO: BRIGITTE LUCOVSKI

Multi-Oscar-winning director on the power of VR

Alejandro González Iñárritu



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A NEW HOTEL GENRE

Attractions operators are discovering the profits that can be made from selling accommodation of all types – from hotels and resorts, to shared ownership. Early adopters have led the way and now the wider market is poised for growth

A recent visit to the wonderful Europa Park in Germany gave me serious pause for thought, as the scale of Roland Mack's hotel aspirations became clear.

We did a hard hat tour of the park's new hotel which is under construction, and it's ambitious – the size of the project is such it seems Europa Park is pivoting to become a hotel operator with a theme park attached, rather than a theme park operator with hotels on the side.

This will be the park's sixth hotel. Called Krønāsår, it will open in 2019 and have 276 rooms and 28 family suites, as well as conference and banqueting facilities and restaurants. The entire place will be themed as a natural history museum.

The Mack family, who own and run Europa Park, have more land and early work is underway on a seventh hotel.

Hotels and attractions are becoming closer bedfellows and the trend is all positive. With their experiential skills and theming expertise, attractions designers are capable of creating the most amazing places to stay – as far removed from the dull, cookie-cutter monotony of your average hotel as it's possible to get. Accommodation also adds significantly to the guest experience, as demonstrated by the occupancy rates being achieved by operators who have taken the leap.

The new *AECOM/TEA Theme Index* highlights this trend by logging important new hotel developments at Parc Asterix in Paris, Ocean Park Hong Kong and the Xcaret Park in Mexico, as well as the much anticipated Star Wars themed hotel at Walt Disney World Resort and Marvel hotel at Disneyland Paris.

Personally, I can't wait for someone to create a Harry Potter hotel – can you imagine how amazing it would be to actually stay at Hogwarts? Occupancy would be 100 per cent year-round.

With such strong catalogues of IPs to use as the basis for themed hotels, attractions owners and operators are ideally placed to either go it alone and own, build and operate themselves, or to do so in collaboration with hotel investors and hotel operating companies. The opportunity is there within the industry to roll out a wide range of accommodation offers.

These could be in any kind of attraction which is regional, national or international in scale and has a suitable catchment area and available land with the right consents.

The hospitality sector is experiencing strong growth, and hotel operators and investors are looking for partnerships to bring new developments

to market: the visitor attractions sector is a great fit, given it brings with it an existing clientele, marketing firepower, land and good travel links. Attractions operators also make great joint venture partners because they understand the service economy and have strong, consumer-facing brands.

Themed hotels already exist, but we think the experience and immersion can be taken to a new level with the next generation of properties to be built, to create a new genre of hotel.

Without serious accommodation portfolios, larger scale attractions will never fulfil their true potential, so building out this side of the business is the next stage in our evolution.

Liz Terry, editor. Twitter: @elizterry

I can't wait for someone to create a Harry Potter hotel – can you imagine how amazing it would be to stay at Hogwarts?



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On the cover: Alejandro Iñárritu

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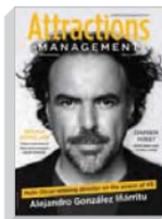
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Attractions People

It felt right to show them somewhere historic rather than in a conventional gallery space

Damien Hirst artist



PHOTO: DAMIEN HIRST AND SCIENCE LTD / OJACS 2018 / B&L & SCHIEFFERS

Famous for a tiger shark preserved in formaldehyde and a diamond-encrusted skull sculpture, Turner Prize-winning British artist Damien Hirst has

partnered with a stately home in Norfolk, UK, to exhibit a series of spot paintings.

A rather unusual backdrop for the contemporary artworks, Houghton Hall was built in the early 1700s for Britain's de facto first prime minister, Sir Robert Walpole. Now an attraction, visitors this summer will find the family portraits that adorned the walls of the State Rooms have been replaced by 46 new and previously unseen paintings from Hirst's Colour Space series, while nine of his large-scale bronze sculptures scatter the gardens.

Colour Space is an evolution of the Britart pioneer's iconic Spot Paintings, the first of which he painted in 1986.

"The Spot Paintings ... always look happy, although there's an unease there too because the colours don't repeat when you expect them to," says Hirst. "I originally wanted the Spots to look like they were painted by a human trying to paint like a machine. Colour Space is going back to the human element, so instead you have the fallibility of the human hand in the drips and inconsistencies. There are still no two exact colours that repeat in each painting, ►

Damien Hirst, one of Britain's best known contemporary artists, is exhibiting works at Houghton Hall



Clockwise from top left:
Damien Hirst's Colour
Space series; *The Virgin
Mother, Myth and Legend*
outside Houghton Hall;
Sensation in the grounds

PHOTOS: DAMIEN HIRST AND SCIENCE LTD / DAMASCUS / PETER HADGON



PEOPLE



Clockwise from top left: *Charity*; Hirst in the Saloon; *Wretched War - The Dream is Dead*; Colour Space series in the White Drawing Room



► which is really important to me. I think of them as cells under a microscope.

"It felt right to show them somewhere historic rather than in a conventional gallery space and Houghton's perfect. It feels totally right," the artist says.

Visitors to Houghton Hall can also enjoy the walled garden, restaurant and shop and experience the Soldier Museum, which contains the largest private collection of model soldiers in the world. The State Rooms themselves are richly decorated, filled with opulent furniture and sumptuous

furnishings, and were designed to impress Walpole's important guests.

"We're delighted to have this opportunity to show Damien Hirst's new paintings in the State Rooms at Houghton, together with some of his best-known sculptures in the grounds," says Lord Cholmondeley, who owns the property. "It is the first time that Hirst has shown a significant body of work in a classical country house setting."

Damien Hirst at Houghton Hall: Colour Space Paintings and Outdoor Sculptures is open to the public until 15 July.



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Volietarium at Europa-Park, Rust [DE] | [C] Frank Baudy

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Alejandro González Iñárritu
is an Oscar-winning director

PHOTO: SHUTTERSTOCK/ANDREA BIFFI

“VR requires a new way,
and I don’t know if it’s
anti-narrative, but it
should be much more
unexpected – a new way
with a new language”

Alejandro González Iñárritu
film director

At the 90th Academy Awards held in March this year, the Mexican film director Alejandro González Iñárritu – winner of best director Oscar for *The Revenant* in 2015 and for *Birdman* in 2014 – collected a special award for a virtual reality installation.

Special Oscar awards are rarely presented, but the Academy said Iñárritu was being honoured for *Carne y Arena* (Virtually present, Physically invisible) because the six-minute experience was “a visionary and powerful experience in storytelling”. It marks the first Oscar awarded to the medium of VR.

The director, writer and producer, whose other acclaimed films include *Rudo y Cursi*, *21 Grams* and *Babel*, created *Carne y Arena* to look at the plight of migrants crossing the Sonoran desert of Arizona and California.



Iñárritu directs *Carne y Arena*; Iñárritu and actor Leonardo di Caprio (below)



Iñárritu directs Yoni from El Salvador, who is dressed in a motion-capture suit (top); a poster for *Carne y Arena*



It premiered at the Cannes Film Festival in May 2017, before spending six months at Fondazione Prada in Milan, Italy, followed by six months at Los Angeles County Museum of Art (LACMA) in California. *Carne y Arena* is currently open to the general public at a location in Washington, DC.

In an interview with *Variety* magazine, Iñárritu discussed the potential and challenges of VR as a medium, saying it has elements of theatre, documentary and physical installation. "It's many different arts combined."

"VR has the potential to change the landscape of museums and galleries because you can go into the mind of an artist. I think great artists will be able to create amazing pieces where you will really walk into their brain, and that will be life-changing. The experience is huge," he says.

"Narratively, I think it will require the new generation to bring a new way to approach it. We should not be contaminating this with old narrative arts of theatre or cinema. I think this is its own beast. This requires a new way, and I don't know if it's anti-narrative, but it should be much more unexpected – a new way with a new language. That's what I

think is exciting about it. What I call it is a 'narrative space'. There's a narrative but it's more of a spatial, atmospheric narrative than a traditional narrative."

He comments that the drawbacks include the quality, the weight of the headsets and that it tends not to be a collective experience, but that the medium is being developed to overcome these.

He adds: "VR is really amazing, it challenges your conception of time and space in a way that nothing does."

The Academy of Motion Picture Arts and Sciences president John Bailey explained the reason for the special Oscar statuette: "Iñárritu's multimedia art and cinema experience is a deeply emotional and physically immersive venture into the world of migrants crossing the desert of the American southwest in early dawn light. More than even a creative breakthrough in the still emerging form of virtual reality, it viscerally connects us to the hot-button political and social realities of the US-Mexico border."

Iñárritu worked with longtime collaborator and cinematographer Emmanuel Lubezki, producer Mary Parent and ILMxLAB, Lucasfilm's VR entertainment laboratory.



Kouneva wrote the music for Heroes and Legends at the Kennedy Space Center in Orlando, Florida

“The objective is to create music that helps us remember viscerally the entire experience”

Penka Kouneva composer



Penka Kouneva has composed soundtracks for films, exhibitions and VR experiences

Penka Kouneva has worked as a composer on blockbuster movies and video games that have grossed some \$15bn worldwide. Millions will have heard her music without ever realising it.

Kouneva, who was one of the first female lead orchestrators in Hollywood, has recently been branching out into the world of attractions. She wrote the score for the \$30m immersive exhibit Heroes and Legends, which opened in late 2016 at the Kennedy Space Center, near Orlando, Florida, composing music for the 3D films, installations and multimedia.

“The NASA exhibit, Heroes and Legends, was the most unique composing job I’ve had,” Kouneva says. “It tells the stories of the space missions Mercury, Gemini and Apollo. I wrote music that celebrates the American heroes and heartswelling orchestral themes with arrangements to express our fascination with space.”

Kouneva worked closely with experience designers Falcon’s Creative, especially senior sound designer Rick Morris and media editor Jesse James Allen, but reveals hurdles arose when composing for an exhibit environment for the first time.



Music for the VR shooter game *The Mummy: Prodigium Strike* required a thoughtful approach

"The main 3D film is viewed in a spherical space and the acoustics were very challenging," she says. "The music itself had to create a variety of emotions – heroic; noble; danger, for a malfunctioning rocket; awe, for the Earth seen from space; regret, for a failed mission; hope.

"The objective is similar when composing for an attraction or a film or a video game: to create deeply emotional, engaging, memorable music that helps us remember viscerally the entire experience. The differences are in technology – how the music is implemented, how long the pieces need to be, the arrangements, and so on."

Road to success

Growing up in Bulgaria, Kouneva's father, an engineer, gave her books about science, space and astronauts, so working on the Kennedy Space Center project was a special experience.

"Space symbolised freedom for me. Science fiction was huge in Eastern Bloc countries because it's about longing for a more just future, or offering a critical view of society packaged as a futuristic story."

When she arrived in Los Angeles, California, almost 20 years ago, Kouneva

invested most of her time in developing a strong and individual musical style before she started to gradually pick up work.

"I came to LA with almost no money, so I had to work a lot, but that meant many credits, relationships and experience. Although I didn't have a business plan, I've always been intuitive and felt that my greatest capital was my music, my friendships, my people skills and my health. When opportunities fell on my lap, I jumped and made the best out of them."

Kouneva built her reputation and is now one of the field's great talents, but working as a freelancer still poses difficulties.

"Getting a substantial job that propels me forward takes much hustling and patience. Understanding the tastes and expectations of my collaborators is not easy, but with experience it gets easier. Also, the balance between being in a creative zone, with running the business, is challenging. I run a tight ship," she says.

New frontiers

In the realm of attractions, Kouneva scored the soundtrack for Universal's location-based VR shooter game, *The Mummy: Prodigium Strike*. "My objective in scoring VR was for the music to blend with the sound design and voiceover. Since VR is such a new frontier, it takes a thoughtful, innovative approach."

Among many others, Kouneva has composed for the *Prince of Persia: Forgotten Sands*, *Transformers* and *World of Warcraft: Legion* video games and worked on movies including *Elysium*, *Matrix Reloaded*, *Teenage Mutant Ninja Turtles: Out of the Shadows* and *Devil's Whisper*.

These projects are reflective of her music, "orchestral mixed with electronics – dramatic and haunting" and suits genres like action, horror, fantasy and sci-fi.

She has also penned three solo award-winning concept albums, including *The Rebirth of Id* and *The Woman Astronaut*. ●

Chinese science centres scrap admission

The Chinese government has announced it is allocating CNY545m (\$86m) in an effort to make some of the country's top science museums free to visit.

The money, allocated by the Ministry of Finance, will "ensure" free entry into a number of science museums across China.

The move is the continuation of a policy launched in 2015. Between 2015 and 2016, almost CNY900m was split between 123 selected science centres and museums, with entry fees for those institutions scrapped. In 2017, a further CNY553m was granted to 138 selected science museums for the same reason.

Popular destinations – primarily in Beijing and



■ China is making many of its science museums free to visit

Shanghai – are not included as part of the package, with attractions such as the China Science and Technology Museum already nearing capacity. Such a move, says the government, means more popular museums could not accommodate the "drastic surges" in visitor numbers.

China has more than 3,500 museums – including over 3,000 state-owned museums. Among the most popular is the China Science and Technology Museum in Beijing, which welcomes around 4 million visitors each year.

■ Details: http://ei.lsr?a=n6u3v_T

INDUSTRY OPINION

Pride in STEM: new International Day to promote LGBT in field

Andrea Bandelli

Is science too straight? This was the provocative title of an article published by Boston University last year, revealing how the STEM field has

a problem when it comes to sexual orientation and gender identity. Shaun O'Boyle, a science communicator from Ireland, puts it clearly: "While the scientific process treats all data equally, science does not treat all scientists equally." For LGBT+ people, studying and working in a STEM organisation often means lying about their sexual and gender identity, being afraid of coming out, and missing out on mentorship and support. And research shows LGBT students in STEM are less likely to finish their studies compared to their peers.

Yet it is well documented that more diversity and inclusion in STEM means better science. Science engagement organisations already play a fundamental role to strengthen diversity and inclusion in STEM education and are at the forefront when it comes to developing innovative approaches to gender balance, social inclusion and widening participation. Science engagement organisations get in direct contact with millions of young people and provide professional development opportunities.

This is why Ecsite, together with some of the world's leading science institutions and societies, supports the first ever International Day of LGBT in STEM on 5 July. The day is an opportunity and an instrument to celebrate all LGBT+ people working and studying in STEM, to give visibility to the community and to be part of a global push to increase diversity and inclusion. Anybody can take part. It's one day that can change a lifetime. prideinstem.org/lgbtstemday/ ●

Andrea Bandelli, executive director, Science Gallery International



Snøhetta look to stars for Norway planetarium

International architecture firm Snøhetta has designed a new planetarium and a visitor centre for Norway's largest astronomical facility, studying the night sky for design inspiration.

Nestled in the dense forest of Harestua, 45km north of Oslo, it will be the largest solar observatory North of the Alps. Its original observatory was built by the University of Oslo for the total solar eclipse of 1954.

The planetarium will be 1,500sqm in size, and situated next to the observatory's original research tower. It will be orbited, like the sun, by the 'planet' cabins.

The visitor experience, which will accommodate up to 118 guests, will be



■ The solar observatory is currently under development

"an intellectual, visual and tactile journey into the realm of astronomy," according to Snøhetta.

A 100-seat auditorium will feature inside the planetarium, from which visitors can watch realistically projected stars, planets and celestial objects. A

reception, café and exhibition area are also planned, while a gently swirling ramp will lead up to an exhibition mezzanine and an outdoor roofscape. Below ground, there will also be a large, bowl-shaped children's activity centre.

■ Details: http://ei.lsr?a=N46y_T

Saudi Arabia to invest billions in lifestyle culture destinations

Saudi Arabia's government has revealed plans to invest SAR50bn (\$13bn) into entertainment, health, sports and education initiatives, as the country attempts to modernise and improve its citizens' quality of life.

Announced on 3 May by the Kingdom's General Entertainment Authority (GEA), it is understood that the investment will generate upward of 300,000 jobs by 2020.

"Government spending on the initiatives will total around 60 per cent of the investment, with 40 per cent from the private sector," said Ahmed al-Khatib, GEA chair, speaking to Reuters.

"The entire benefit from this big spending will be for the private sector, and this supports the 2030 Vision that strengthens its role."

Part of Saudi Arabia's Vision 2030 plan – which, like much of the Middle East, is aiming to reduce the economic reliance on oil – includes a relaxation of the rules that govern its entertainment sector in an area which traditionally has been widely seen as ultra-conservative, particularly in relation to women's rights.



■ Saudi Arabia's King Salman inaugurates the Qiddiya entertainment project

Al-Khatib listed three theme parks, a waterpark, museums and cinemas as part of the initiative. By 2030, Saudi Arabia wants to have over 450 clubs offering cultural activities, with the aim of doubling household spending on recreation to 6 per cent.

Among projects announced, Six Flags has confirmed plans to develop its first theme park in Saudi Arabia as part of the Kingdom's new entertainment destination in Qiddiya.

■ Details: http://lei.sr?a=p8a3u_T



■ The attraction sat on Maine Wharf

Science centre in Portland to close

The city of Portland in Maine has lost its science centre after just three years, owing to poor ticket sales.

The Portland Science Center made its grand debut in September 2015, bringing Gunther von Hagens' famed Bodyworlds exhibit to the city.

Its owner – The Gold Group – has closed the attraction, which it said has suffered from lagging attendance in recent months.

■ Details: http://lei.sr?a=6f9h6_T

Former petrol station to become arts space

A disused petrol station adjacent to the BBC's former London headquarters will be transformed into an arts and culture space as part of a multi-million-pound regeneration of the area.

Starting in Q3, members of *Elephant* magazine will curate a series of shows at the redeveloped White City site – now called Elephant West – which will feature exhibitions and performances from emerging young artists.

Architects Liddicoat and Goldhill designed the concept for the arts space, which will also act as a meeting place and hub for performance, discussion, film screenings, talks and workshops. A café, shop and outdoor



■ Architects Liddicoat and Goldhill designed the concept

garden area are also included in the plans.

"Our aim is to bring together exciting makers of all stripes to create new multimedia works that break down the traditional barriers between different art forms, commissioning an ambitious programme of installations by emerging

artists, strengthening our support for the careers of exciting young artists," said *Elephant*.

Last year, designers Craig and Karl turned the petrol station into an immersive art piece, using vibrant colours and geometric design to create the unique work.

■ Details: http://lei.sr?a=Q3r2r_T

To infinity and beyond with launch of Disney's Toy Story Land

Disney chief Bob Iger was on hand in Shanghai, China, on 26 April, to launch the company's latest landmark attraction – the world's first Toy Story Land.

Also coming to Disney's Hollywood Studios park in Orlando, Florida, later this year, the all-new lands shrinks visitors "to the sizes of Woody and Buzz and the other toys in Andy's collection as they explore Andy's backyard".

Covering 10 acres, the new attraction is the first major expansion for Shanghai Disney resort since it opened in 2016. It features the popular Toy Story Mania ride, Rex's Racer, and a Slinky dog-themed family rollercoaster. The new land also features meet and greet areas for Toy Story characters, and immersive shopping and dining experiences created by the team at Walt Disney Imagineering.

"We're grateful to the people of China for wholeheartedly embracing Shanghai Disney Resort, for truly making it their own and also making it one of the most successful theme parks we've ever opened," said Iger, speaking at the launch.

"We're incredibly proud of the success of this one-of-a-kind, world-class destination, and we are thrilled to give



■ The all-new land shrinks visitors 'to the sizes of Woody and Buzz'

our Chinese guests even more to explore and enjoy at the resort with the addition of a spectacular new land based on Pixar's beloved Toy Story characters."

Shanghai Disney resort already boasts the only Toy Story-themed

hotel in the world, which opened in 2016, with the park also already featuring Buzz Lightyear Planet Rescue, which the most advanced targeting system for the ride at any Disney Park.

■ Details: http://lei.sr?n=6p3v9_T



■ Hundreds of parks are in development

China clamps down on theme park boom

China's central planning body has warned developers about the country's ongoing theme park boom, raising concerns over unpayable debts and low grade or copycat developments.

When it comes to future plans, the body says that developers should involve the government more in planning developments, with particular care for those worth more than CNY1.5bn (\$237m).

■ Details: http://lei.sr?n=R9W3R_T

Jurassic Park undergoing evolution at Universal

At Universal Studios Hollywood in Los Angeles, California, the iconic Jurassic Park attraction is getting a redesign, with the attraction reopening in 2019 with a new theme based around the movie *Jurassic World*.

Scheduled to close on 3 September, the park's popular water ride – inspired by the original 1993

Jurassic Park movie – will be rethemed to reflect the newer *Jurassic World* movie. The new version will include all new audio-animatronics and special effects.

"This next-generation thrill ride will be a fully reimagined iteration of the ground-breaking adventure, elevating every facet of the experience," said Universal in a statement.



■ The iconic Jurassic Park attraction is getting a revamp

"With the introduction of never-before-seen dinosaurs, enhanced storytelling, lush scenic design, an entirely new colour scheme and uncompromised state-of-the-art technology, the ride will capture elements never experienced within a theme park."

The ride opened in 1996 and was manufactured by Vekoma, with a design from Universal Creative. Following its success, duplicate rides were built at Islands of Adventure and at Universal Studios Japan. A river rapids version opened at Universal Studios Singapore in 2010.

■ Details: http://lei.sr?n=W8p7g_T



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Laguna Waterpark opens in Dubai

Dubai's new beachfront leisure destination, La Mer, has added to its offering, with the launch of a major new waterpark.

Opened on 12 May, the Laguna Waterpark features five main attractions, two of which are firsts for the Middle East region.

The park includes the region's only WaveOz 180 FloRider, which utilises latest ride surface technology over 650sqm to create a 180-degree continuous wave for surfers. It also features the region's first Manta family raft ride and Aqualoop. Other slides include Constrictor, Freefall and Mad Racer.

A children's zone with a splash pad and aquaplay rainforest accommodates younger visitors. Plus, the park has a lazy river and



■ The waterpark is the second phase development of La Mer

infinity pool, also offering direct beach access and rentable cabanas. Guests will also be able to visit the surf club for food and drink, and they can also dine on the waterpark's rooftop balcony, which offers views of the Arabian Gulf.

The waterpark is the latest addition to La Mer

– a Meraas development which opened in October last year. Covering 1.24sq km, the La Mer neighbourhood features more than 130 shops, cafés, restaurants and beach activities.

The waterpark took two-and-a-half years to build.

■ Details: http://lei.lsr?a=Z2M2_M

INDUSTRY OPINION

What can your water leisure facility do to be a force for good?

Aleatha Ezra

Being a great community partner has proven to be a powerful tool for waterparks and aquatic venues looking to raise their goodwill profile. There are a couple of ways to launch a charitable initiative that can make a difference in your community while elevating your brand.

One way is to create your own charitable programme from scratch. For example, in 2008, Merlin Entertainments founded Merlin's Magic Wand, a charitable organisation that enables seriously ill, disabled and disadvantaged children to enjoy a day out at a Merlin attraction. Over the past decade, this program has helped more than 377,000 children and their families make precious happy memories.

A second way is to find a well respected partner and put your full support behind them to raise money or awareness. Since June 2016, Center Parcs has partnered with Together for Short Lives, a UK charity that raises awareness and funds for children's hospices. Center Parcs matches fund donations made by guests and donates 25 breaks a year to the charity. As well as national support, each Center Parcs village fundraises for their local children's hospice, allowing them to make a real difference to their local community.

Both examples have merit. However, if creating your own programme seems daunting, the second option can be a more manageable way forward. Whether you choose to host a duck race in your leisure river to raise funds for your local children's hospital or you hold a canned food drive once a month to support your local food bank, there are endless ways to become a force for good. ●

Aleatha Ezra, director of park member development, WWA



US's largest indoor waterpark breaks ground

Kalahari Resorts and Conventions has finally broken ground on its \$550m African-themed waterpark and resort in Round Rock, Texas – Kalahari's first venture in the southwest of the US and fourth property overall.

Opening in 2020, the resort will at its heart feature a waterpark, which at 20,700sqm will be the largest in the US. An adventure park is also included in the offering, with the 7,400sqm space set to include thrill rides, ropes course, climbing walls, indoor zipline, bowling, laser tag and mini-golf. A selection of outdoor pools covering 12,100sqm will also be on offer.

The resort will have more than 990 guestrooms



■ The resort has broken ground and will open its doors in 2020

made up of one, two and three-bedroom suites and residential suites. A 18,600sqm convention centre will also be included in the development. The resort will additionally offer a spa, five restaurants and 929sqm of retail space.

"When we design our resorts, we stay focused

on adding amenities that everyone can experience and enjoy – not only our overnight guests," said Todd Nelson, owner of Kalahari Resorts and Conventions, speaking at the ground breaking. "We look forward to contributing to the local economy."

■ Details: http://lei.lsr?a=A2K62_M



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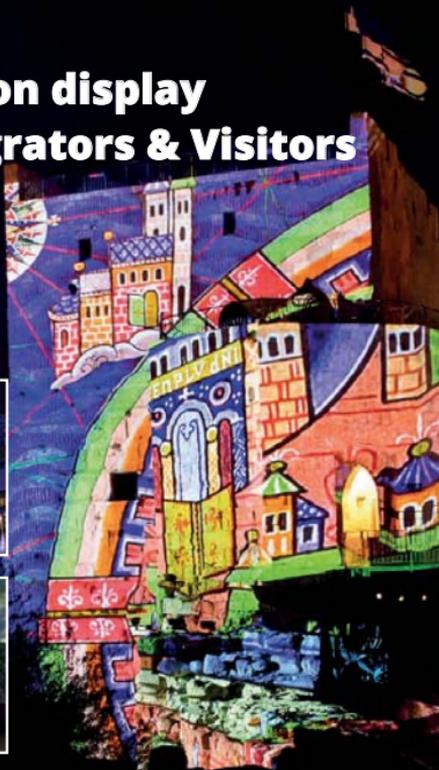
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Rio's Museum of Image and Sound entering final stages

The new home for Brazil's 50-year-old Museum of Image and Sound (MIS) is entering the final stages of its development, with the Diller Scofidio + Renfro-designed (DS+R) building taking shape on Rio de Janeiro's beachfront.

Opened in 1965, MIS offers a vast archive of photographs, film, documents and sound recordings reflecting the cultural history of Rio.

Set over an area of 9,800sqm, MIS overlooks the famous Copacabana Beach on Rio's seafront. The museum will offer a "vertical boulevard", which leads up to eight floors of galleries telling the story of image and sound in Brazil.

Within MIS, space for permanent and temporary exhibitions has been allocated, with research facilities, educational spaces, a café, panoramic restaurant and an open-air 280-seat auditorium also planned. Once open, the building will be topped off by a rooftop terrace.

Separate from the main construction, a beachfront kiosk is also included in the development. In addition to acting as a museum, the new building will also become a cultural centre for Rio, with MIS producing and promoting regular shows and events.



PHOTO: MUSEUM OF SOUND AND SOUND

■ The museum is currently expected to open before the end of 2018

The museum's opening – originally scheduled for 2014 – has been pushed back several times due to a variety of factors. During the construction of the foundation, there were problems that arose due to the nature of the sandy

terrain, which meant the project design had to be adjusted. During the third stage of the construction process, a contract for the building company responsible for MIS was rescinded.

■ Details: http://lei.sr?a=PSX9V_T



PHOTO: IAC

■ The fortress is in Favignana, Sicily

Architects design museum for fortress

Young Architects Competitions (YAC) has announced the winners of a contest for the transformation of a remote Italian fortress into "one of the most atmospheric centres of contemporary art in the Mediterranean".

Simposio have secured first prize for their proposal to carefully integrate new cultural and hospitality buildings into the rocky landscape of Favignana, an isle in Southern Sicily.

■ Details: http://lei.sr?a=C7f4k_T

Chicago Children's Museum reimagined

Visitors to Chicago's historic Navy Pier will soon be able to enjoy a new streamlined experience for its children's museum, which is currently undergoing an extensive design overhaul.

Reimagined by local firm Krueck+Sexton Architects (K+S), the Chicago Children's Museum redevelopment plan calls for a cleaner, less cluttered appearance, with refreshed exhibition spaces leading to a significantly more streamlined visitor experience, relocating all access to the main floor of the museum.

"The new visitor experience will be defined by significantly easier wayfinding and orientation," said Tom Jacobs, principal at K+S, speaking to *Attractions Management*.



PHOTO: ARCHITECTS/SEXTON ARCHITECTS

■ Work on the redevelopment started in Q3 last year

"The ground floor will be dedicated to ticketing, group entry and a gift shop, in clear sight of the main pier routes. The exhibits, located on two different floors, will be linked by a central circulation zone and elevator, alleviating the current maze-like path through the museum."

Work on the redevelopment started in the third quarter of 2017. The museum has pencilled in June this year for its grand reopening. The museum is part of a larger reimagining of the city's Navy Pier, which is being transformed by James Corner Field.

■ Details: http://lei.sr?a=g4h4H_T

UAE funds largest cultural restoration project in history of Iraq

The restoration of Iraq's cultural heritage has been given a huge boost following a US\$50m donation from the United Arab Emirates to restore damaged heritage sites in the northern city of Mosul.

Following years of turmoil in the Middle East, a 2017 military campaign succeeded in ridding Iraq of ISIS, with the group left controlling no territory in the country.

Though still a very tumultuous region, a decrease in violence in between regular cycles of warfare over a decade has led to a period of recovery for the country.

The city of Mosul, which was devastated under ISIS's control before being liberated in July 2017, has received the financial aid as part of an agreement between Unesco and the governments of the UAE and Iraq. It will be used for what has been called largest cultural restoration project in Iraq's history.

One of the project's main objectives will be to restore Mosul's Al Nuri Grand Mosque, an iconic part of the city built in 1172 and even featured on Iraq's 10,000 dinar note. The mosque, blown up by ISIS, will be completely



■ One of the project's main objectives will be to restore Mosul's Al Nuri Grand Mosque

restored to its former glory, including its 44-metre-tall minaret tower.

"The UAE supports the efforts of our Iraqi brothers in developments, stability and pushing the wheels of reconstruction especially for cultural and historic sites," said

Noura Al Kaabi, minister of culture for the UAE. "Heritage is one of the cornerstones of civilisation and as part of this, the image of Al Nuri Mosque will again become synonymous with hope and cultural revival."

■ Details: http://lei.sr?w=9E4t_T



PHOTO: SHUTTERSTOCK.COM

■ Improvements will benefit visitors

Eiffel Tower plans to improve experience

Four design teams have been short-listed for a project to reimagine the Eiffel Tower's visitor experience.

Groups led by AL_A, Gustafson, Porter + Bowman, Agence Ter and Koz Architects are in the running for the project, which covers a 540,000sqm area.

The project's completion in 2023 will allow the site to play a leading role in the 2024 Olympic Games.

■ Details: http://lei.sr?w=Y9b9_T

Unesco: Prepare youth to protect world heritage

Mechtild Rössler, director of Unesco's World Heritage Centre, has said that the youth population must be prepared to protect the world's heritage for future generations.

Speaking on the International Day for Monuments and Sites, Rössler said the education of young people would be the best way to protect heritage for the future.

"The World Heritage Education Programme gives young people around the world the chance to learn about their heritage, and to be a part of preserving it, through forums, animated films, volunteer action camps, seminars and workshops for teachers, and educational tools," she said. "It enables



PHOTO: UNESCO

■ Participants in Unesco's World Heritage Volunteers Initiative

tomorrow's decision-makers to participate in heritage conservation and to respond to continuing threats facing our World Heritage."

To date, Unesco's World Heritage Volunteers Initiative has seen more than 3,500 people take part in 359 action camps,

taking place across more than 142 World Heritage sites in 61 countries.

"If we want to protect our heritage, we have to know about it," said Rössler. "Education is the first step in protecting our shared heritage, now and in the future."

■ Details: http://lei.sr?w=P9t3c_T

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Dubai Safari closes after six months

Despite only opening in December, the AED1bn (\$272m) Dubai Safari has closed its doors for five months to undergo improvements, says its operator.

The Dubai Municipality, which has a management deal with prolific developer Meraas, appointed Parques Reunidos to oversee the day-to-day operations of the 119-hectare attraction, which is home to 2,500 animals and 250 species.

"In line with our commitment to offering a superior customer experience, the upgrades seek to provide a better habitat for our animals, and a more interactive and educational experience for our visitors," said a statement. "We are confident that our landmark



■ The park will reopen in October following improvements

destination will help attract even higher numbers of tourists to Dubai once it reopens after the summer."

The park closed on 15 May and will reopen on 1 October. The safari replaced Dubai Zoo, which was the oldest zoo on the Arabian Peninsula. Dubai Zoo's 1,000

animals were rehoused at the new Dubai Safari.

The park, located in Dubai's Al Warqa district, is divided into three different sectors – African, Asian and Arabian. The new attraction also features an open safari area.

■ Details: http://lei.sr?a=S7q5b_T

INDUSTRY OPINION

Animal welfare is a 24/7 priority across an animal's lifespan

Sabrina Brando

Chimpanzees fishing for termites with long sticks, elephants playing and socialising with their friends and family members in a pool, or a monitor lizard climbing to catch insects in a special high up feeder are interesting and wonderful activities to watch.

Promoting optimal animal welfare and predominantly positive experiences 24/7 across an animal's lifespan is one of the core responsibilities of accredited zoos and aquariums today.

Caring for Wildlife, a WAZA Animal Welfare Strategy, offers guidance on topics like assessment and monitoring of animal welfare, environmental enrichment, exhibit design, research, engagement and interaction with visitors. As animal welfare coordinator for WAZA, I work with members and external experts on matters related to animal welfare.

Where possible we also reach out to non-WAZA members to offer welfare support and advice. The expression "a rising tide lifts all boats" underscores one of WAZA's objectives, which is to collaborate with others in our shared commitment to maintain, improve and actively encourage optimal animal welfare in all facilities housing wild animals.

Animals should be provided with opportunities for choice and control through a stimulating and complex environment and enriching activities. Different climate zones and views, the ability to retreat from a group, having to solve a puzzle to access that valued nut – these are ways zoos not only engage animals, but also the visiting public. By engaging the public through activities – and seeing happy animals – zoos hope to promote human behaviour change, caring for animals, nature and the planet. ●

Sabrina Brando,
animal welfare coordinator, WAZA

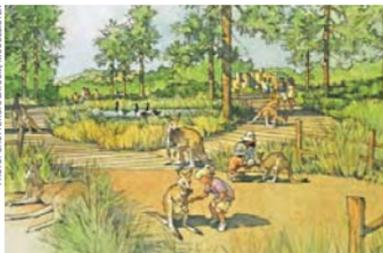


San Diego Zoo debuts Australian Walkabout

California's San Diego Zoo has opened a brand new \$17m Australian enclosure, which debuted on 25 May.

Called Walkabout Australia, the 14,500sqm immersive walkthrough experience features a range of native Australian animals and is themed around Australia's rural landscapes, with a selection of plants and signs of human habitation encountered along backcountry roads.

During the experience, guests explore four different types of Australian habitats: grassland, rainforest, wetlands and desert. As part of that, visitors will be able to walk through a meadow, which is home to western grey kangaroos,



■ A walkthrough kangaroo exhibit is part of the new area

red-necked wallabies and brush turkeys. While visitors must remain on the path, the cageless experience allows them to get up close with the animals as they journey through the enclosure.

"Australia is an extraordinary place and we are thrilled to provide

a snapshot of some of the wonders from Down Under," said Lisa Peterson, director at San Diego Zoo.

"This adds another dimension to San Diego Zoo global's efforts to save endangered species, such as the cassowary and Matschie's tree kangaroo."

■ Details: http://lei.sr?a=S7f3Y_T

CyArk and Google team up for World Heritage VR tours

CyArk – the non-profit foundation dedicated to digitally capturing and preserving cultural heritage sites around the world – has teamed with Google's Arts and Culture project to allow people to explore remote world heritage sites in virtual reality.

Founded in 2003, the non-profit organisation uses cutting-edge technologies to create detailed 3D representations of significant cultural heritage sites before they're damaged or destroyed by natural disasters, conflicts or the passage of time.

To create the representations that help preserve these sites for the future, CyArk uses an advanced system of laser scanners to mark millions of points that create an almost perfect 3D data set, which can then be used to create a solid 3D model.

Teaming with Google, CyArk has made its data library broadly accessible to the public, using the new Open Heritage site to distribute data on 27 important historical sites.

In the VR experiences, visitors can walk down virtual corridors, seeing examples of damage done by past incidents. Each experience is narrated, with videos available for the scanning conservation process.



■ Visitors can walk down virtual corridors, seeing examples of damage done by past incidents

"CyArk has accomplished some incredible things in the 15 years since it was started, capturing data on hundreds of sites on all seven continents, empowering local stakeholders with better information to make decisions about the sites they

manage in order to safeguard them for future generations, and now providing access to these incredible sites to anyone, anywhere with an internet connection," said John Ristevski, CEO of CyArk.

■ Details: http://lei.sr?a=6f9h6_T



■ The research looks at digital in museums

Research transforms digital in museums

New research aimed at transforming the ways museums use digital technologies to share their collections and engage new audiences with their work has suggested that the key to success lies within improving digital literacy of staff across all levels.

Called *Mapping the Museum Digital Skills Ecosystem*, the report outlines how digital skills are managed and shared by those working in museums.

■ Details: http://lei.sr?a=X6U9b_T

Disney Research creates VR haptic jacket

Disney's research arm is aiming to take virtual reality to the next level, developing a new haptic technology to simulate impact on the human body.

Dubbed the Force Jacket, 26 inflatable compartments are used to simulate pressures and forces, which adds a physical element to the realm of VR.

Disney Research led the project, working alongside MIT and Carnegie Mellon University to develop the wearable tech, which can stimulate a wide range of sensations. In a video showcasing the jacket, Disney shows users experiencing sudden muscle growth, a force strike from a snowball and a snake wrapping itself around their body.



■ Inflatable compartments are used to simulate pressure

"Immersive experiences seek to engage the full sensory system in ways that words, pictures or touch alone cannot," said a research paper headed by research associate Alexandra Delazio.

"The primary motivation of this research was to enhance the entertainment

value of HMD-based visual VR experiences in games and movies, by providing on-body force feedback."

Combined with the jacket, a haptic effects editor allows designers to create specific haptic effects, building a library of haptic sensations for use in VR.

■ Details: http://lei.sr?a=U2R2U_T

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SULTAN AL DHAHERI

Slowly but surely, Abu Dhabi has developed its attractions offer, helping the emirate on the way to achieving its wider tourism ambitions. With another billion-dollar park opening in July, we caught up with the Department of Culture and Tourism to find out more about the strategy

Alice Davis, managing editor, Attractions Management



Sultan Al Dhaheri is an executive director with Abu Dhabi's Department of Culture and Tourism

Abu Dhabi's Department of Culture and Tourism (DCT), like other government-run tourism departments in the region, is tasked with a mission to promote the destination to foreign visitors in line with long-term strategies designed to help relieve its economic dependence on oil and gas.

"We are targeting an increase in the number of visitors to Abu Dhabi from 4.4 million to 8.5 million visitors by 2021," says Sultan Al Dhaheri, executive director of the tourism sector at the DCT. "To achieve this we are working hard to continue to develop Abu Dhabi as an inspiring destination where visitors can experience cultural authenticity, diverse natural offerings, dynamic family-leisure entertainment and ambitious business opportunities."

The *Abu Dhabi Economic Vision 2030*, published in 2006, sets out a mandate to secure the future financial success of the emirate. Among those sectors identified as enablers for economic growth are the development of the private sector, healthcare, education, transport and infrastructure, in order to create a more dynamic economy, boost social development and create job opportunities for the growing, predominantly young, population. In the report, 12 sectors signal investment opportunities, including energy,

Ferrari World opened on Yas Island in 2010 and is home to Formula Rossa, the world's fastest coaster



petrochemicals, aviation, financial services, telecommunications, media and tourism.

Reaching out to international partners is also a major part of the *Economic Vision*, including efforts to make it easier for foreigners to do business with the emirate.

"Tourism is recognised as one of 12 'engines' of economic diversification, and a strategic pillar in the emirate's 2030 *Economic Vision*," says Al Dhaheri. "We are working hard to support private sector entrepreneurs in the creation of an innovative tourism product to create a sustainable tourism sector.

"When it comes to attractions, we work very closely with the developers to enhance their messaging and to promote and cross-promote their offerings via our global network and overseas offices; but the operating of the attractions is entirely left to the private entities," he says.

Something for everyone

There are various ways to help the market evolve, including promoting Abu Dhabi as a destination to different nationalities, and leisure and business travellers alike.

"DCT Abu Dhabi together with its stakeholders coordinates international promotions across a wide geographic base," says Al Dhaheri. "We have six Tier 1 markets: the GCC [the Cooperation Council for the Arab States of the Gulf], the US, the



WHEN IT COMES TO ATTRACTIONS, WE WORK CLOSELY WITH THE DEVELOPERS TO PROMOTE THEIR OFFERINGS VIA OUR GLOBAL NETWORK AND OVERSEAS OFFICES

UK, India, Germany and China. However, the wide variety and scope of the offerings in the emirate mean we can appeal to a wide demographic of tourists from a wide spectrum of international visitors and the entire gamut of age ranges. We think we have something for everyone."

The DCT sends delegates to a range of trade fairs globally and organises promotional roadshows, which is part of

a drive to raise awareness and tap into emerging markets like China, India, the South American countries, and Russia and the former Soviet states.

"In the business arena we actively pursue conventions and conferences to host here in the emirate, with major successes in bringing notable events here," he says. "We also undertake joint marketing initiatives and proactive press ▶

INTERVIEW

► engagement in key markets to stimulate demand for the destination. Additionally, we have forged strategic partnerships with Etihad Airways in their priority markets.

"On the ground we are also actively encouraging the development of small and medium enterprises and encouraging 'emiratisation' to facilitate sector expansion," he says, referring to a new government policy aimed at helping more UAE nationals gain training and employment in the private sector.

Yas Island

Alongside Abu Dhabi's cultural heritage, beach resorts and sunny weather, its burgeoning attractions and leisure offer has doubtless helped boost interest in the emirate as a holiday destination.

Since the *Abu Dhabi Economic Vision* was released, world-class attractions have opened, namely, Ferrari World in 2010 and Yas Waterworld in 2013. Both are located on Yas Island, a manmade, multi-purpose



Yas Waterworld, located on Yas Island, welcomed over half a million guests last year

leisure, shopping and entertainment centre that marked a \$40bn investment.

Ferrari World – home to Formula Rossa, hitting 240kph, the world's fastest rollercoaster – welcomes over 1 million visitors a year. Yas Waterworld was the 10th most visited waterpark in the EMEA region in 2017, attracting 550,000 guests. And these big-hitting Yas Island parks are

about to be joined by another, with the Miral-developed Warner Bros World Abu Dhabi opening on 25 July (see below). Yas Island attracts 25 million visitors a year, with Miral predicting an increase to 30 million with the opening of the new park.

"Attractions are one of the key components of our tourism strategy," says Al Dhaheri. "Yas Island will see the opening ►

Warner Bros World Abu Dhabi

Warner Bros World Abu Dhabi, which signifies an investment of \$1bn and is set to open on 25 July, will feature six immersive lands across its 153,000sqm location on Yas Island.

The worlds of DC Comics will make up two of the six worlds, with Metropolis and Gotham City – homes to Superman and Batman, respectively – designed to draw fans of the comic book franchise to the attraction.

The next world, Cartoon Junction, will bring together popular Warner Bros

characters such as Bugs Bunny and Scooby-Doo and place them in a stylised cartoon world immersing guests in animation.

For fans of Hannah-Barbera's Flintstones, a recreation of Bedrock will make up the fourth world, while the Dynamite Gulch zone will feature both Looney Tunes and Hanna-Barbera characters.

The final part of the park will be Warner Bros Plaza – an area celebrating Hollywood and telling the rich history of the Warner Bros brand.

Metropolis

Look out for:

Superman, Wonder Woman, Green Lantern, The Flash

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■ Justice League: Warworld Attacks (5D dark ride)

■ Green Lantern: Galactic Odyssey (flying theatre)

■ Superman 360: Battle for Metropolis (3D attraction)

■ Teen Titans Training Academy (play area)

Cartoon Junction

Look out for:

Tom and Jerry, Bugs Bunny, Scooby Doo

Experience:

■ Tom and Jerry: Swiss Cheese Spin (spinning coaster)

■ Scooby-Doo: The Museum of Mysteries (dark ride)

■ Cartoon Junction Carousel (carousel)

■ Acme Factory (play area)

■ Ricochet Racin' with Taz (kiddie car ride)

Bedrock

Look out for:

Fred, Wilma, Pebbles, Barney, Betty, Bamm Bamm

Experience:

■ The Flintstones Bedrock River Adventure (river ride)



The DC Comics-inspired Gotham City zone

Gotham City

Look out for:

Batman, The Joker, The Riddler, Scarecrow, Catwoman, Harley Quinn

Experience:

■ Batman: Knight Flight (motion base ride)

■ Scarecrow Scare Raid (flight simulator)

■ The Riddler Revolution (spinning ride)

■ The Joker Funhouse (walkthrough)

Dynamite Gulch

Look out for:

Wile E. Coyote, Road Runner, The Jetsons, Yosemite Sam

Experience:

■ Fast and Furry-ous (inverted steel coaster)

■ The Jetsons Cosmic Orbiter (kiddie ride)

■ Marvin the Martian Crater Crashers (bumper cars)



Warner Bros World Abu Dhabi has cost \$1bn

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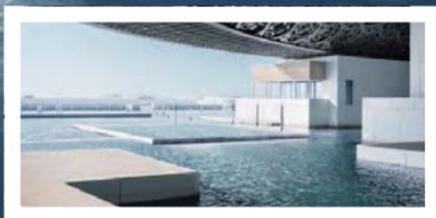
Louvre Abu Dhabi

The long-awaited Louvre Abu Dhabi opened to the public on 11 November, following a string of setbacks lasting more than a decade. Designed by French architect Jean Nouvel, the museum's domed roof is an artwork itself, with eight layers of steel made up of 7,850 patterned perforations that use the sun to create an intricate and ever-changing pattern on the building's interior.

Water is a key part of Nouvel's building, with a

system based on ancient Arabic engineering being used to allow water to flow between the outer areas of the museum and to the galleries inside, giving the illusion that it is floating on the water.

The museum's collection – its curation one of the reasons for the lengthy delays – consists of 600 works of art, including 300 loaned by 13 French museums for the inaugural year. The remaining collection has been sourced from all over the



Louvre Abu Dhabi is located on Saadiyat Island

world, with pieces spanning the entirety of human existence, from prehistoric objects to commissioned modern works.

In addition to 23 permanent galleries, the museum includes exhibition space, a children's museum and restaurant/café.

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WARNER BROS ABU DHABI AND SEAWORLD ARE PERFECT EXAMPLES

► of the highly-anticipated Warner Bros World Abu Dhabi and, looking further ahead, SeaWorld Abu Dhabi is scheduled to open in 2022, the first SeaWorld outside the US.

"We are proud to be a family-friendly destination and as we continue to increase our proposition, we make sure that each component adds to rather than replicates the attractions we already have online. Warner Bros Abu Dhabi and SeaWorld are both perfect examples of us identifying potential additions and strategically working to bring those to Abu Dhabi."



Foster + Partners design for the upcoming Zayed National Museum

"We have made sure that our touristic and cultural assets offer something for every possible demographic and nationality," says Al Dhaheri.

Saadiyat Island, situated 500 metres off the coast, is only partly completed, and there are long-term plans for further cultural facilities designed by equally famous architects. A Guggenheim Museum has been designed by Frank Gehry, but construction is yet to start. Zayed National Museum, which signed a partnership contract with the British Museum, has been designed by Foster + Partners, and preparatory work has

started. Zaha Hadid's performing arts centre, consisting of a music hall, concert hall, opera house and theatre, was unveiled in 2007, but is currently on hold.

Events and occasions

Al Dhaheri adds that another area where the emirate is expanding is the special events sector, with a new initiative launched that helps fund event organisers looking at Abu Dhabi as a host location. With more than 800 events currently on the calendar, including the Formula 1 Etihad Airways Grand Prix, the Abu Dhabi Food Festival, Abu Dhabi HSBC Golf Championship and the Abu Dhabi Classics international concert season, the DCT is offering incentives to companies who would be interested in doing similar.

"Led by the DCT's events bureau, the Advantage Events initiative is being introduced to boost the emirate's appeal as a thriving tourism destination by funding leisure and entertainment events driven by the private sector to support existing businesses, and also encourage new events to be introduced. In addition to this, we leverage our global network as well as our overseas offices to reinforce the message that Abu Dhabi is a true destination of distinction, with something extraordinary here for everyone." ●

Saadiyat Island

Beyond theme parks and waterparks, Abu Dhabi takes its cultural offer seriously. Developed by the Tourism Authority-held Tourism Development and Investment Company (TDIC), Saadiyat Island is set to become the emirate's cultural heart – and not in half measures. The \$600m Louvre Abu Dhabi, designed by architect Jean Nouvel, opened there in November 2017. A 30-year deal was signed between Abu Dhabi's and France's governments, with extra costs including a \$525m fee to be associated with the Louvre name and more than \$700m for loans of artworks, exhibitions and expertise. Early analysis points to tourism increasing in the months following the museum's launch.

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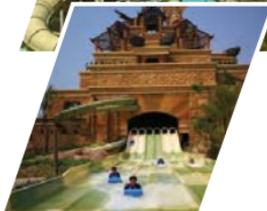
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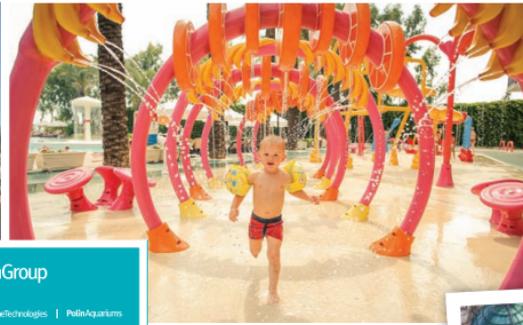
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POLIN ANNOUNCES NEW GROUP STRUCTURE

Recognised for its continuous innovation and its role as game changer, Polin now has the ability to grow even faster as it is formally reorganised under Polin Group



PolinGroup

PolinWaterparks | PolinGameTechnologies | PolinAquariums
PolinSafariParks |  | FUTURA
PolinDesignStudio | PolinParkServices | funtastic
PolinSprayParks | PolinWaveParks

Polin's offering includes waterparks, attractions, game tech, aquariums, safari parks and theming



A major milestone for the Polin brand was recently reached with the establishment of Polin Holding under the brand name Polin Group. All of the companies and brands incorporated within Polin Group will be housed under one of four main umbrellas: amusement attractions, composites manufacturing, park development and Funtastic parks.

Founded in 1976, Polin Waterparks has become a world leader in the design, production, engineering and installation of waterparks and waterplay structures while differentiating itself from competitors with its innovative solutions and sustained focus on research and development (R&D).

"This change recognises the new role that our company plays in the global amusement industry today," says Dr Baris Pakis, president of Polin Holding. "Our company is recognised as a leader in the worldwide market. Many know us as the 'game changer' due to our innovation and success in completing 3,000 waterpark projects in 105 countries. We are confident that our company can become even more successful in the future."



Polin Group is made up of amusement attractions, composites manufacturing, park development and Funtastic parks

The company's knowledgeable and creative team of engineers and designers have helped Polin to gain invaluable experience worldwide. Each team member

Baris Pakis (left) is the president of Polin Holding

Basar Pakis (right) is the CEO of Polin Group



WE ARE TRULY A ONE-STOP SHOP FOR OUR CLIENTS AND PARTNERS



shares their intelligence and successes with all other service units within the company, each now organised within its own structure and working toward the overall vision: to be "always innovative", to deliver "worldwide superior quality" and to maintain the level of "technology leadership" for each individual brand.

The birth of Polin Holdings

The internationally successful brands that Polin Waterparks created within its own organisation led to the firm's decision to reshape its organisational structure and develop into a holding company.

With this renewed organisational plan, Polin Group aims to increase profitability, efficiency and the scope of the group by offering more integrated solutions. Ultimately, the new organisation will allow the business to meet the varying expectations for best-of-class products and services in the amusement parks industry. The framework of the Polin Group will be:

- **Amusement attractions**, which includes Polin waterparks, attractions, game technologies, aquariums, safari parks and theming
- **Composites manufacturing**, which includes composites and the Fipol and Futuraform companies
- **Park development**, which includes the design studio, park services, project development and investment planning and management
- **Funtastic parks**, which includes Funtastic aquariums, Funtastic waterparks and Funtastic amusement parks

New management and structure

At the top management level of Polin Holding, Baris Pakis has been named president, and Basar Pakis takes the reins as group CEO. Four units will be deliver support services to Polin Holdings:

business development directorate, marketing and corporate communications directorate, strategy and human resources directorate and financial affairs directorate.

Within this context, there have been some organisational changes. Dr Kubilay Alpdogan has been appointed general manager of Polin Waterparks. Prior to this, Alpdogan was director of sales and design for five years and manager of sales and design for five years. Over these 10 years, Alpdogan has been managing the domestic and global sales teams, architectural and conceptual design teams. Before joining Polin, Alpdogan gained his career experience working with Arçelik-LG Electronics and EGS Bank and has and MSc in Engineering Management and PhD in Industrial Engineering.

Meanwhile, Bilge Pakis has been appointed to the position of sales and design director, having served as design manager of Polin Waterparks for 13 years.

Polin Group business development director Eyup Ispiroglu will be responsible for creating new products and services for the group companies. Marketing and corporate communications director Sohret Pakis will oversee marketing and communication activities of the Polin Group. Strategy and human resources director Muge Tolunay Gundogdu will handle all processes related to human resources. And financial affairs director Erdal Bulut will manage all finances.

Basar Pakis, CEO of Polin Group, says the new structure allows clients to receive all needed solutions under one umbrella with many value-added services.

"We will deliver the synergy that comes from a multi-levelled firm," he explains. "From our fully qualified human resources staff to our self-improved organisational structure, we are truly a one-stop shop for our clients and partners." ●

PAWS

FOR THOUGHT

They are the most majestic and charismatic of animals, but the outlook for big cats in the wild currently looks grim. Kath Hudson finds out how the Big Cat Sanctuary is on a mission to change the situation

The most important justification for zoos is that the animals act as ambassadors for their wild counterparts, by raising awareness

and support for conservation. There is a crisis for cats in the wild and my mission is to make a difference. We can't let these animals disappear."

So says Giles Clark, managing director of the Big Cat Sanctuary and star of the recent BBC documentary *Big Cats in the House*, in which he shares the limelight with Maya the jaguar and Willow the cheetah.

After watching the documentary and becoming immersed in Clark's world, it comes as something of a surprise to hear his voice on the phone. There is a distinct Aussie twang to it, legacy of his two decades of globetrotting, which helped him develop his big cat expertise.

He says amazing opportunities led him to his current position at the sanctuary, which is located in Ashford, Kent – the very southeast corner of the UK. "It's a vocation, not a career," he says. "It's a job that doesn't feel

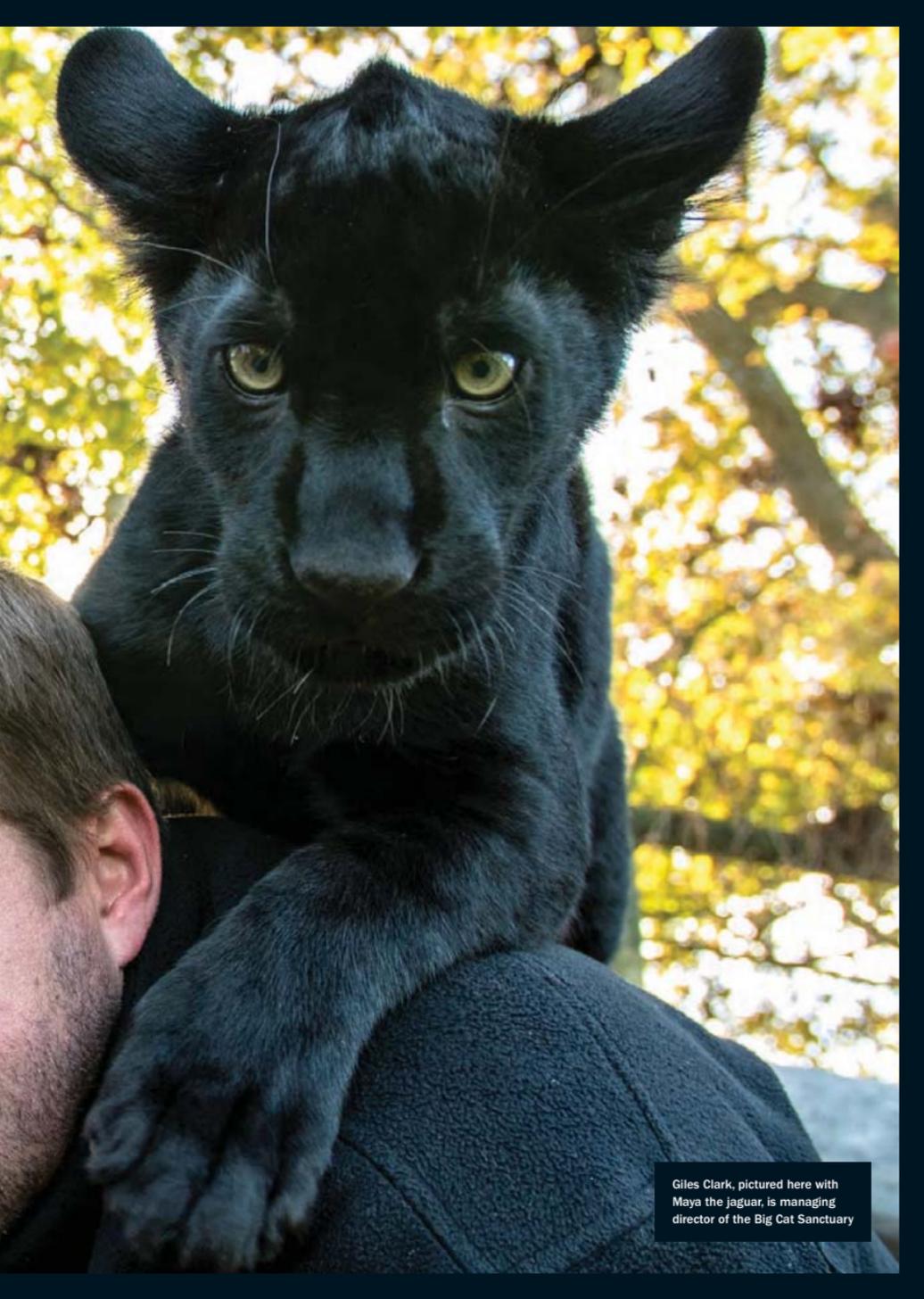
like a job, but nonetheless, it is all consuming and never stops. While we might all want to cuddle a mewling baby jaguar, not all of us would want to rub its bum with gauze to help her poo or camp out in the trees in the jungle to look for wild cats."

Clark has come full circle with his work. After 17 years of living abroad – volunteering in India and a long stint in Australia, including developing a state-of-the-art tiger facility at Steve Irwin's Brisbane Zoo – he has come back to work for his first boss. Peter Sampson is the owner of the Big Cat Sanctuary, as well as Paradise Park in Broxbourne, Hertfordshire, where Clark started his journey as a 14-year-old on work experience, leading to his first job.

Cat ambassadors

The Big Cat Sanctuary was initially established by Malcolm Dudley, who ran it purely as a sanctuary to provide new homes to big cats with inappropriate homes, like nightclubs or circuses; or no homes, as happened with the lions from Windsor Safari Park after it closed in 1992. ▶





Giles Clark, pictured here with Maya the Jaguar, is managing director of the Big Cat Sanctuary



Experiences on offer at the sanctuary include Big Cat Encounters and Ranger for the Day



Peter Sampson is the owner of the sanctuary

► There are approximately 50 big cats at the sanctuary at any one time. Some of the cats are part of a breeding programme, while others have retired from breeding, either because they are too old or because there are already enough of their genes in the cat population.

Since acquiring the 16-hectare facility in 2000, Sampson has turned it into a charity with a board of trustees, joined the European Endangered Species Programme, to help preserve species through breeding, and set up partnerships with global conservation partners.

Clark joined in 2016, with some big ambitions. Having worked with the BBC in Australia, one of his first initiatives was to arrange for a film crew to make a fly-on-the-wall documentary. The plans for a standard zoo-style documentary changed when Maya the jaguar entered the scene (see 'Maya the Jaguar' on page 46) and offered an irresistible and compelling storyline. If there was a feline who could mobilise the public to the plight of wild cats, it would be Maya.

Clark has also changed the mission statement to reflect his aim to use the sanctuary as a way of safeguarding wild cats. "We have four pillars of ethos: firstly to ensure the welfare of our resident cats and ensure they breed to maintain a healthy and sustainable population," he says. "Then we want to raise awareness

CAT STATS

- The Big Cat Sanctuary has 40 enclosures, and 50 cats
- There are 40 different species of wild cats and The Big Cat Sanctuary is home to 15 species
- During the winter the cats eat between 750 and 850 kilos of food per week
- Meat, chicken, fish, mice and rats feature on the menu
- It costs a minimum of £1m one year to run The Big Cat Sanctuary
- Last year the charity donated around £20,000 to global conservation projects
- The global illegal wildlife trade is worth some £18bn a year and is one of the top five international crimes. Cats are especially sought after.
- Tigers have been virtually wiped out in Cambodia by hunters, globally the population has dropped by 95 per cent since 1990.
- There are less lions than rhinos in Africa: with the population now below 23,000
- Cheetahs are the most endangered of big cats in Africa.



and educate people about the situation of wild cats. Finally, the overarching goal is to support in situ conservation. Our cats at the sanctuary are ambassadors to help safeguard their wild counterparts."

Innovative model

The sanctuary needs to generate £1m a year to operate. One of its biggest challenges is that cats living in captivity survive much longer than their wild counterparts. "Some of the big cats live until their early 20s – so they are expensive to keep, especially if they get health issues, we see problems which wouldn't happen in the wild," says Clark. "And if you think vet bills are expensive, imagine what root canal treatment on a lion costs!"

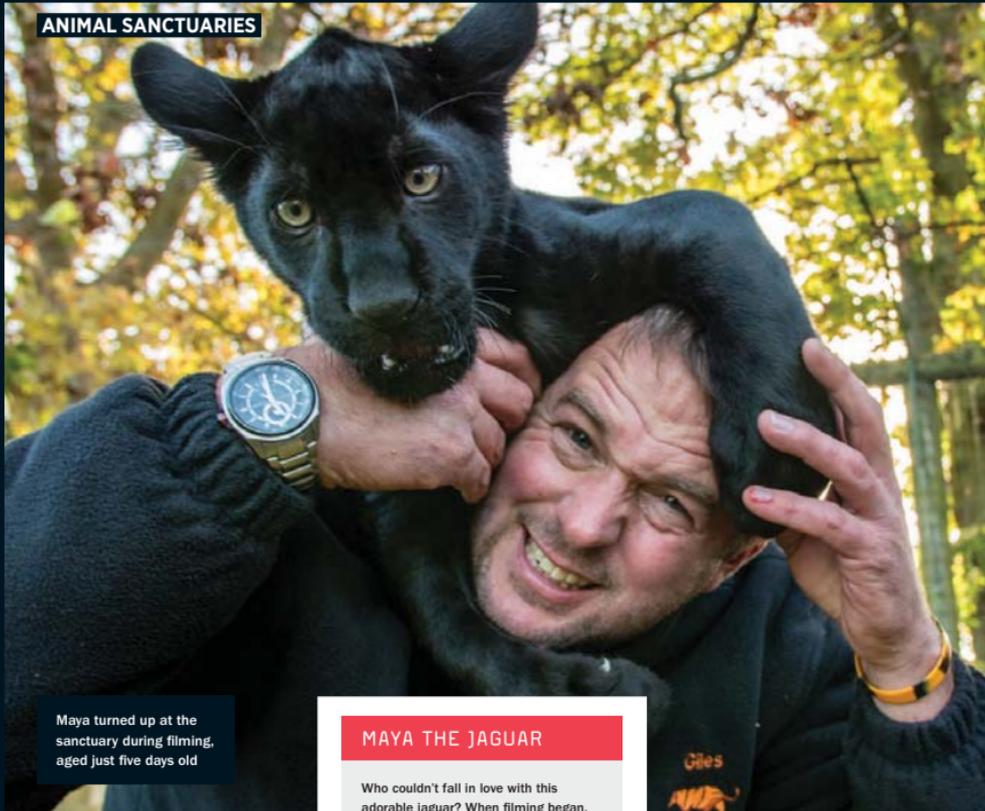
Running the sanctuary as a standard zoo has been deemed by the board to be unsuitable, since cats are generally reclusive and try to avoid humans if they can. For this reason, it is not operated as a standard attraction where visitors can turn up and buy a ticket, but instead people

Cheetah Willow arrived at the sanctuary as a cub with a fractured leg, but she made a speedy recovery



Some of the big cats live until their early 20s – so they are expensive to keep, especially if they get health issues. And if you think vet bills are expensive, imagine what root canal treatment on a lion costs!





Maya turned up at the sanctuary during filming, aged just five days old

MAYA THE JAGUAR

Who couldn't fall in love with this adorable jaguar? When filming began, Maya was not part of the equation, but her arrival as a five-day-old, neglected by her mum, meant hours of previous footage were shelved and the show was renamed *Big Cats in the House*.

The bond between Giles Clark and Maya is heartwarming. The documentary shows him feeding her every two hours, day and night, taking her swimming, an anxious vet visit and a lively appearance on BBC Breakfast.

As Maya nears her first birthday, Clark says she is showing less and less interest in him. Soon he will stop entering her enclosure as she becomes an independent and solitary adult.

She has already been a great ambassador for her wild cousins, helping the team raise £13,500 in an evening fundraiser, which led to the sanctuary buying tracking cameras for a jaguar research and conservation project in Costa Rica. And since the documentary, a meet-and-greet is on offer at the sanctuary with Clark, Maya and Willow, with tickets priced at £99.

that this won't happen on his watch. "I want to be part of the solution," he says. "The amount we are donating is growing year on year, but I want to grow it from thousands to tens of thousands."

The Big Cat Sanctuary has numerous conservation partners. The documentary shows some of the ongoing work, and much of it makes painful viewing: lions dying in Kenya after being poisoned; the seizure of big cat skins in Cambodia, revealing the extent of the poaching problem. However, it also reflects what is being done to help. The Big Cat Sanctuary funded GPS collars for lions in Kenya to help inform a conservation strategy and cameras to track movements of jaguars in Costa Rica.

"I don't ever switch off. I'm always thinking about something to do with the cats," says Clark. "But there aren't any bad parts to my job. I have been very fortunate to work with some amazing species and to form bonds and relationships. We've got a purpose to what we do, which gets me fired up and excited about making a difference." ●

► can book a selection of tailored packages, which give a superior experience: overnight stays at the safari lodge, photography workshops and big cat encounters. Added to this, a handful of open days are run each year, which generate around 25 per cent of the facility's annual income.

"Having crowds of people around all the time could stress the cats," says Clark. "When we have the open days, some cats go into hiding and are not seen. These packages mean we can have less infrastructure and fewer staff, but visitors get a better experience and it is more conducive to the cats' wellbeing."

Supporting conservation

Fundraising is important, not just for the running costs, but also to fulfil Clark's ambitions to support conservation projects in the wild. The clock is ticking: 80 per cent of the wild cat population is in trouble and experts believe many species could become extinct in the wild in the next decade, unless there are serious interventions. Clark is determined

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WOW FACTOR

WhiteWater is introducing two hot new attractions to its roster, including FusionFortress, a pre-fabricated waterpark structure that's ready to install anywhere

FusionFortress

Features

- Over 100 interactive waterplay elements
- The biggest splash in the industry with two tipping buckets
- Three models to choose from to meet any footprint requirement
- A variety of classic body slides
- Larger models also feature thrilling inner tube slides
- Maximised play space underneath the structure means even more interactive elements

Benefits

- Keeps guests entertained and playing for hours
- High instantaneous capacity reduces long lines
- The compact footprint minimises the number of staff required
- All-in-one construction makes for incredible value for money
- Easy to theme to create a one-of-a-kind attraction to suit any park
- Safe, durable and easy to maintain

WhiteWater, the waterparks and attractions company, is a leading global designer and manufacturer of innovative waterpark products and active family attractions, specialising in waterslides, multi-level water play structures, wave-generating equipment, FlowRider stationary surfing machines, harnessed attractions, interactive play, and water rides.

The road to innovation is paved not by technology but people, passion and constant reinvention. WhiteWater's commitment to creating 'new' experiences is more than just a mainstay, it is what drives the company forward.

Constantly striving to deliver innovative and fresh guest experiences, the company takes pride in making a difference in the world's best theme and water parks. WhiteWater's industry-leading innovation



is driven by a team of 600 extremely talented employees in eight offices around the world, working together to complete over 5,000 projects since 1980.

FusionFortress

Introducing the world's first all-in-one waterpark structure! Combining the interactivity of an AquaPlay with a wide range of water slides, from kids' slides to high-thrill slides, FusionFortress is a mini-waterpark in a compact footprint.

With multiple levels of fun to explore, families can spend the day revelling in all of the experiences that FusionFortress has to offer. Featuring some of WhiteWater's most legendary slides, two tipping buckets for maximum splash, and over 100 interactive features, FusionFortress would make an iconic cornerstone for any park. Or let it stand alone with a lazy river for a very viable starter waterpark.

Raft Battle

WhiteWater's latest addition to water rides, Raft Battle, represents a new age for the classic water ride experience, where interactivity and competition add to the river raft experience, making it truly immersive.

Inspired by epic water battles and the whole experience of playing and riding not just 'in' water but 'with' water, the Raft Battle takes the family-friendly group ride experience to a whole new level.

Creating a real-life battle environment for riders and spectators, the Raft Battle is all about enjoying the thrill of an ultimate water combat experience, that's truly immersive, and one-of-a-kind. Battle from the boat to the shore, battle from boat to the boat, and battle from boat to boat, it's mayhem and fun all around.



Raft Battle is a new addition to WhiteWater's water ride offering



FEATURING LEGENDARY SLIDES, TWO TIPPING BUCKETS FOR MAXIMUM SPLASH, AND OVER 100 INTERACTIVES, FUSIONFORTRESS IS AN ICONIC CORNERSTONE FOR ANY PARK



The all-in-one FusionFortress is a mini-waterpark that can fit in a compact footprint

NEED FOR SPEED

We look at five multi-million-dollar rollercoasters that have recently embarked on their maiden rides



INTAMIN

YUKON QUAD

Parc Le Pal
France

At the beginning of April, Parc Le Pal in Saint-Pourçain-sur-Besbre, France, launched its biggest ever attraction, Yukon Quad. Themed like a string of all-terrain vehicles, Intamin's Family Launch Coaster covers a whole kilometre of track.

With ride theming creating a journey through a wild Canadian landscape, the quads launch at speeds of 65kph, with riders experiencing a G-force of up to 3G.

The rollercoaster travels up, drops down, and winds its way along close to the ground, intensifying the feeling of speed. The coaster's second launch



North Canada's wilderness inspired the ride theming

reaches almost 90kph, following a series of tight bends and hills and an S-hump before the ride comes to an end.

"We've invested 10 million euros in this new attraction, that is to say 50 per cent of our turnover for 2017," Parc Le Pal CEO Arnaud Bennet told local press. "That's 5 million euros more than Twist, our most

expensive attraction, built in 2011. So, we hope for a nice return on investment. Thanks to Yukon, we are expecting 50,000 additional visitors this year."

The ride uses Intamin's cutting-edge friction wheel drive system and features an upright seating position. It's one of only three coasters of its kind in the world.



Time Traveller starts with an immediate, out-of-the-station, gravity-driven 90-degree drop



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RIDES

TIME TRAVELLER

Silver Dollar City
Branson, Missouri

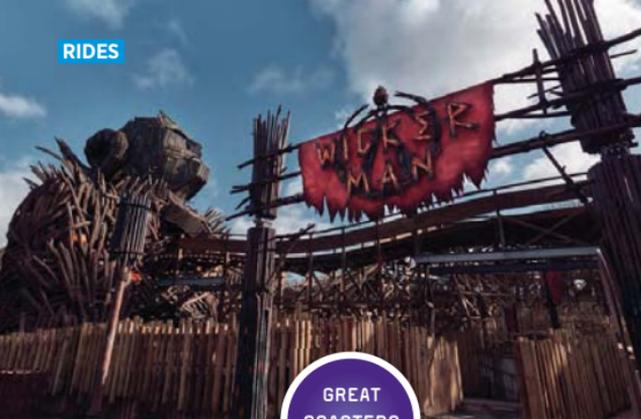
Time Traveller, billed as the world's fastest, steepest and tallest spinning coaster, delivers 360-degree controlled spins as the vehicle moves, meaning every ride experience is different from the last.

The Herschend-owned and run theme park invested of \$26m in the new double launch ride, and in return is able to boast an attraction with top speeds of 80kph, a 10-storey, 90-degree vertical drop, a top height of 30 metres; and a dive loop, vertical loop and a zero-G roll making up its three inversions. The 920-metre track crosses over itself 14 times in total.

"This coaster's state-of-the-art controlled spin provides riders a unique thrill experience while still appealing to families," says Brad Thomas, president of Silver Dollar City Attractions. "Time Traveller is a revolutionary coaster ahead of its time." ▶



"This coaster's state-of-the-art controlled spin provides riders a unique thrill experience while still appealing to families"



GREAT
COASTERS
INT.

WICKER MAN

Alton Towers
Alton, UK

- ▶ Alton Towers' highly anticipated Wicker Man ride opened in March, the theme park's first wooden coaster, which boasts a six-storey flaming centrepiece and is the first such ride to combine wood and fire effects.

Operator Merlin Entertainments used Great Coasters International to build and install the £16m ride. Holovis created the pre-show and queue line, which feature extensive theming and elaborate projection mapping, while Picsolve supplied the photo-capture solution.

"We started to come up with themes that made the most of wood as a material," says Bradley Wynne, creative lead at Merlin Magic Making. "We thought it was interesting that people really love that combination of wood and fire and so we began to think about how we could recreate that somehow in a safe way. That was the challenge – how to set a wooden coaster on fire and for it to be safe."

The 618-metre wooden coaster features a blazing 20-metre-tall wicker man that bursts into flames on three occasions during the course of the ride. Featuring a lift hill and 22-metre drop, the ride lasts about three and a half minutes. ▶



"That was the challenge – how to set a wooden coaster on fire and for it to be safe"



Wicker Man also has a themed area around the attraction, with a shop, games unit and kiosk

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ICON

Blackpool Pleasure Beach
Blackpool, UK

Mack Rides' ICON – the UK's first ever double launch rollercoaster – opened in May, marking a £16m investment for Blackpool Pleasure Beach in north England.

Riders board copper gold carriages, crafted from German steel, and are fired out of a tunnel, with the layout of the rollercoaster navigating in and out of the theme park's other rides multiple times. The 1.14km grey steel track boasts a high point of 27 metres, with drops of up to 25 metres.

"We have been on an incredible journey building this rollercoaster, seeing its towering presence on the park and entwining with some of our most popular rides. It really has been epic," says Amanda Thompson, the attraction's managing director. "It's a smooth but exhilarating ride like no other rollercoaster in the world."

German steel is manufactured using cutting-edge engineering processes for a smoother ride

THUNDERCHARIOT

Discovery Kingdom
Dalian, China

Italian ride maker Zamperla recently opened its third Thunderbolt coaster, at Haichang's Dalian Discovery Kingdom in Liaoning province, China. The rollercoaster follows a fairytale theme inkeeping with the design of the area in park.

Named Thunderchariot by Dalian Discovery Kingdom, riders traverse the 675-metre track in one of four, nine-seater vehicles, reaching speeds of up to 85kph.

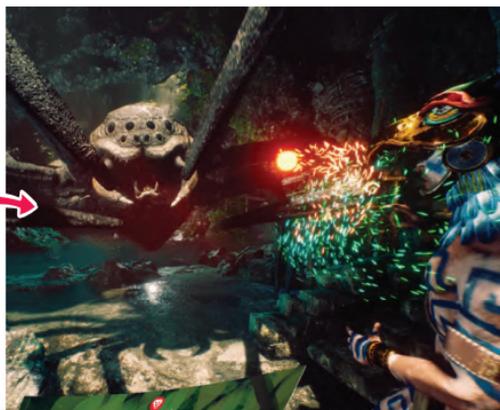
Zamperla has installed its Thunderbolt ride at Luna Park, New York, and OWA theme park in Foley, Alabama. A fourth is to open at Mason Robotland in South Korea. ●

ZAMPERLA



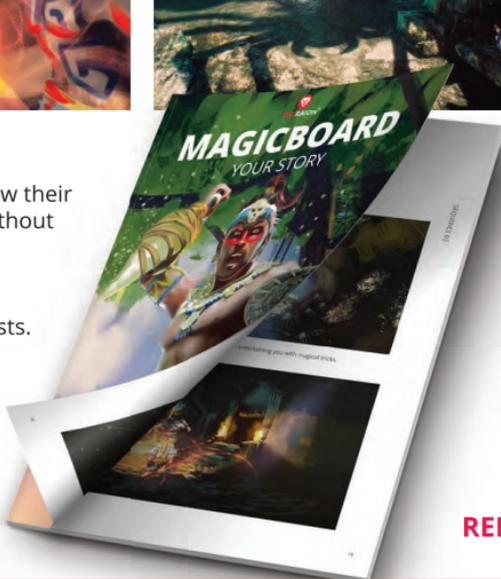
Thunderchariot is the third of Zamperla's Thunderbolt installations

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European trade show, which returns to the
historic city of Amsterdam. Don't miss out!

It's the largest gathering of the leisure, tourism and entertainment industry in Europe, and this year it's set to be bigger than ever. For the third time, the Euro Attractions Show (EAS) returns to the RAI Amsterdam Convention Centre in Amsterdam, the Netherlands, with the show expanding so rapidly that



EAS boasts 100 hours of seminars

Where and when ...

Location:

RAI Amsterdam Convention Centre

Dates:

Conference:

23-27 September, 2018

Trade Show:

25-27 September, 2018

the organisers have added an extra exhibition hall. The trade show floor will cover more than 14,000sqm over five halls to accommodate the ever-growing interest from exhibitors and attendees alike.

More than 12,000 leisure and attractions industry professionals – including 8,000 influential buyers – from more than 100 countries will descend on Amsterdam for EAS 2018, to network, discover the latest

trends, and explore the newest innovative technologies to the market, with more than 500 exhibiting companies.

Conference programme

Taking place 25 to 27 September, EAS 2018 boasts the most extensive conference programme yet, with a broad selection of seminars over the course of the three days. Want to learn how to better cater to guests with special needs? Or how to incorporate food trends from around the world into your F&B offer? How to run a more sustainable operation? Or how to reinvent your tired marketing campaigns? All of these topics and many more will be addressed by the best in the industry sharing their expertise and experience.

Furthermore, the 2018 edition of the Leadership Breakfast, Waterpark Forum, Young Professionals Forum, and Lunch and Learn will be taking place, along



100 years of IAAPA

Celebrating its 100th anniversary in 2018, the International Association of Amusement Parks and Attractions (IAAPA) began in 1918.

IAAPA has become the largest international trade association for permanently located attractions and is dedicated to the preservation and prosperity of the global attractions industry.

www.IAAPA.org

@IAAPAHQ

#IAAPA100



More than 12,000 attendees from 107 countries are expected, with more than 500 exhibitors at the expo



IAAPA EMEA Forums

IAAPA is continuing to develop its programming across the EMEA region, with the IAAPA EMEA Winter Forum held in Dubai in January and the Spring Forum held in May in Ireland. Look out for next year's forum dates.



On the show floor ...

- innovative tech
- rollercoasters
- dark rides and simulators
- children's rides
- water slides and aquaplay
- rafts and flumes
- swimming pools and wave pools
- theming and design
- architecture and masterplanning
- engineering and intergration
- scenery and sets
- park photography
- food and beverage
- light and sound
- 4D/5D films
- film/music production
- animatronics
- climbing walls and zip lines
- inflatables
- ticketing and software systems
- gifts, novelties and plush
- costumes and uniforms
- arcade and video games
- go-karts and bowling



with the flagship CEO Talks, which will be focusing on the Dutch leisure industry.

Networking and events

EAS offers unmissable occasions for expanding networks and connecting with colleagues from throughout the region and world. These connections can open the marketplace and information sharing can create opportunities to grow your business.

The EAS 2018 Opening Reception takes place at Strand Zuid, conveniently located next to the trade show halls. Following the show, attendees who have registered for the After-Show Tour will visit Toverland and Efteling, while this year's behind-the-scenes eduTour takes place at Walibi Holland. ●

Attended by ...

Attractions industry professionals, including owners, operators, suppliers, investors, and developers from:

- amusement and theme parks
- heritage and tourist attractions
- museums and science centres
- casinos
- parks and recreation facilities
- concessionaires
- waterparks
- family entertainment centres
- zoos and aquariums
- hotels and resorts

TO RESERVE BOOTH SPACE

www.iaapa.org/expos/euro-attractions-show/exhibit-sponsor

TO REGISTER TO ATTEND

www.iaapa.org/EAS

RED HOT ICE COLD

The eruption of the Eyjafjallajökull volcano in Iceland in 2010 led to explosive growth for its tourism industry.

Kath Hudson finds out more about how the tourism and attractions industries are growing up side by side



In the space of a couple of years, two disasters happened in Iceland. Firstly, the financial crash in 2008, when the banks collapsed and the Icelandic krona dropped 35 per cent against the euro. Then, in 2010, Eyjafjallajökull erupted for the first time in 180 years, causing massive disruption to European air travel and making sure everyone took notice of Iceland.

Happily some good came out of the chaos: these two big news stories helped put the country on the map. With extra assistance from Instagram – also established in 2010 – which acted as a shop window for Iceland’s spectacular scenery, news soon got around that this was the place to go. Plus, it was cheap and it had real volcanoes! In just seven years, the tourism industry quadrupled: from 459,000 in 2010, to 2.1 million in 2017. Tourism has become the country’s largest industry, with 2020 targets hit early.

Now that the country has recovered from the crash, it is no longer such a bargain place to visit, which means the spike in tourists has abated. Although the massive boom might be over, tourism is now growing at a more sustainable and manageable level. This year the industry is expected to expand by 10 per cent and tourism chiefs have a chance to look at the product and plan strategically.

It is also providing fertile ground for the attractions industry. Led by entrepreneurs, two major attractions launched last year, both of which are inspired by and aim to complement the natural wonders by providing interpretation and education.

Bardur Gunnarsson, managing director of LAVA, an Icelandic volcano and earthquake centre, says the development of these attractions is a sign of a more grown-up tourism industry: “Eight years ago it wouldn’t have been possible to have created an attraction like LAVA. It was a bit like the wild west here, but now the tourism industry has become more mature.”

Selling the off-season

Iceland has a great deal to recommend it: the natural wonders of the northern



Gunnar Sigurðarson
is manager of
Visit Iceland

lights and beautiful scenery; the volcanos and geothermal baths are a geographer’s paradise; the abundant wildlife to spot, including seals, whales and puffins; as well as adrenaline activities like hiking, ice climbing, skiing and cave exploring.

Gunnar Sigurðarson, manager of Visit Iceland & Creative Industries, says the main focus is consolidation rather than growth, making sure the offer is strong to boost visits in the off season and spread tourism across the country, rather than just the south, where Keflavik airport is located.

“Tourism is now the largest revenue generating industry: more than the fishing industry and aluminium sectors together.

When Promote Iceland started, tourism was ▶



Over 2 million tourists visited Iceland in 2017, a figure that quadrupled over a seven-year period



TOURISM



Into the Glacier offers various tours to a man-made ice cave on Iceland's second largest glacier, Langjökull



FROM THE GOVERNMENT POINT OF VIEW, NOW THE GOAL IS NOT TO GROW THE NUMBER OF TRAVELLERS, BUT TO ENSURE WE BUILD THE SKILLS, CAPACITY AND QUALITY



► the third largest industry and far behind the two others," says Sigurðarson. "Our focus over the past years, in cooperation with the tourism industry, has been to decrease seasonality and promote regional destinations in Iceland. From the government point of view, now the goal is not to grow the number of travellers visiting the country, but to ensure we build the skills, capacity and quality."

Currently Iceland is seen as a winter destination: 42 per cent come in the colder months, 26 per cent in the summer, 19 per cent in the spring and 12 per cent in the autumn. Promote Iceland is keen to even this out and so marketing efforts will be focused solely on the off-season, prioritising the wider regional destinations, particularly stimulating growth in rural areas.

The Promote Iceland website has created a brand identity for the seven different regions including the unspoilt wilderness of the Westfjords, the lava fields and mountains of the north and lush forests and farmlands of the east.

"We predict visitors will increasingly focus on visiting Iceland during winter and we will see the total number further increase," says Sigurðarson. "We have put more emphasis on our marketing efforts to educate and inform visitors before and during their stay about Iceland's fragile nature, responsible travel behaviour, local culture and Icelandic peculiarities."

To this end, visitors are asked to observe the Iceland pledge, which includes being responsible, not venturing off the beaten track, using campsites rather

than wild camping and taking care when photographing its natural splendours. There is even an Iceland academy on the website where would-be visitors can learn about everything from staying safe on glaciers to hot tub etiquette.

Sigurðarson believes demand will remain robust and that the attractions industry will play an important role in continuing to draw people to the country, as well as to educate them and instil respect for its environment. "Manmade attractions can make a huge impact," he says. "For example, LAVA is not only thought of as a tourist attraction, but an educational exhibition for Icelanders, where they can learn the science of Icelandic geology."

Although there have been news reports of some airlines dropping services from



Perlan Museum's Glacier and Ice Cave exhibit. A second exhibition – Land, Coast, Ocean – is opening soon as well as a new planetarium



Visitors on the tour are able to explore the glacier and see it from the inside

THE TRAILBLAZERS

INTO THE GLACIER

Located at Iceland's second largest glacier, Langjökull, this attraction lets visitors experience what it would be like underneath the ice of the glacier, and view the blue ice, with a manmade ice cave which leads to the glacier. The tour also includes a ride on the glacier in special vehicles, to enjoy spectacular views from the ice cap.

People leave with a greater appreciation of glaciers. Like other glaciers, Langjökull is shrinking and is expected to disappear within 80 to 120 years. Visitors are invited to offset the carbon of their transport to the site with a donation to plant a tree in a nearby forest, which aims to reduce the carbon in the atmosphere. Every year 5,000 trees are planted.

THE LAVA TUNNEL

Allowing visitors to witness the inner workings of a volcano, the Lava Tunnel is co-owned by Icelandic mountaineer Hallgrímur Kristjánsson and is the one of the longest lava tubes in Iceland. It promises a spectacular experience, where visitors witness the beautiful caves inside the volcano, lava falls and formations, as well as ice sculptures in winter.

Two tours are on offer. The standard tour takes 55 minutes, but the more adventurous can opt for the extreme tour which takes up to 3.5 hours and promises an unforgettable experience, going to the end of the 1.4km tunnel to see magnificent lava falls. Visitors will leave with an appreciation of nature, as well as more knowledge about volcanoes.

the UK to Iceland, the country still has flights to 80 destinations and is seeing a rise in Spanish tourists because of direct flights to Spain. In response to more tourists from Asia, it is only a matter of time before direct flights are set up with Asian countries.



Gunnar Gunnarsson is CEO of the new Perlan Museum

around the world. The first exhibition, the Glaciers and Ice Cave Exhibition, presents the history of glaciers, shows the lifeforms which live on them, their effect on the landscape and what will happen when, or if, they disappear.

A second exhibition opened in May, Land, Coast, Ocean, and it is based on earthquakes and volcanos, with highlights that include a life-size replica cliff, and virtual reality fish and birds. Work is already underway on the third attraction, a cutting edge, 150-seat planetarium, which ▶

Bringing nature to guests

Launched in 2017 by two friends who saw an opportunity, the Perlan Museum celebrates Iceland's natural wonders, through large-scale exhibits and the latest research and scientific findings. Noteworthy experiences offered include a view of Reykjavik from the 360-degree observation deck, taking a walk through the world's first indoor ice cave and feeling the force of an earthquake.

Founder and CEO Gunnar Gunnarsson says the aim of the museum is to interpret nature for tourists and Icelanders. "We wanted to create a huge exhibit, the biggest and best in Iceland," he says. "But you can't copy nature. Our idea is to bring nature to guests in the best way possible. We try to replicate some natural phenomena through virtual reality and stories. We allow our visitors to touch ice and educate them about protecting it."

The disappearance of glaciers is leading to enormous change both in Iceland and



Follow the lava path from the Leitahraun eruption, which took place 5,200 years ago

The Lava Centre is an interactive exhibition depicting volcanic activity, earthquakes and the creation of Iceland over millions of years



TOURISTS GAZE AT THEM WITHOUT UNDERSTANDING THE MAGNITUDE. WE WANTED TO CREATE AN ATTRACTION WHICH COULD INTERPRET VOLCANOES



has been designed by Bowen Productions and will launch in the autumn.

"This will be one of the first planetariums in the world to have 3D sound," says Gunnarsson. "It will present a show about Icelandic nature and feature both the Northern Lights and the Southern Lights as they appear from space."

Funded by investors, the museum cost £25m to develop and Gunnarsson says that each year £1.5m will be invested to keep it updated. He says the growth in tourism has allowed this project to come to fruition. "The growth in tourism has provided us with a fantastic opportunity. With more tourists we can invest in more attractions, which gives Icelanders the opportunity to learn more about their country."

Learning about nature

According to LAVA's managing director Bardur Gunnarsson, Iceland attracts a special kind of tourist: "Almost everyone who comes to Iceland is interested in nature. They are quite adventurous and want exciting experiences, but aren't willing to take risks. They want controlled, safe environments. They are keen on learning and like good guides and exhibitions."

"There are now a few great attractions in Iceland. Into the Glacier paved the way."

Into the Glacier offers various tours to Iceland's most significant new attraction, a man-made ice cave. The ice tunnel and the caves are located high on Iceland's second largest glacier, Langjökull, so there's the opportunity to explore the glacier and see it from inside.

"It talks about glaciers, how they behave and global warming," he says. "And the Lava Tunnel in Raufarhóshellir is also a beautiful project. It was a lava cave which was being impacted by tourism, so was closed to protect it and now they offer guided tours about geology."

Another landmark development, LAVA was established in spring 2017 to give the inside track on volcanoes. An educational, interactive exhibition depicting volcanic activity, earthquakes and the formation of Iceland, it has been developed with the support of the Icelandic Meteorological Office and the Department of Civil Protection and Emergency Management.

LAVA's Gunnarsson says the project was led by entrepreneurs who felt there was a huge need for some educational



Bardur Gunnarsson is managing director at LAVA

exhibitions: "Volcanoes are one of the biggest attractions of Iceland and our guests didn't really know that much about them. They stand on the black sand beaches and gaze at them without

understanding the magnitude. We

wanted to create an attraction which could interpret volcanoes, within their vicinity."

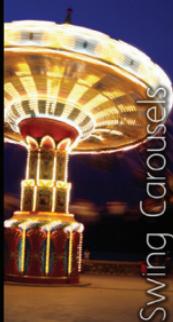
With dwell time of around 45 minutes, the attraction features two parts: an exhibition with interactive exhibits including a lava corridor, and an earthquake corridor. It concludes with a movie on the latest eruption.

"By far our biggest market is tourists, but we also hope it will spark an interest in volcanology among Icelanders, especially schools," says LAVA's Gunnarsson. "It is a great place to start a day sightseeing: have a coffee and a lecture and head further east so you understand what you are seeing. Alternatively, when the days are short in winter, visitors can come to reflect on what they have seen." ●

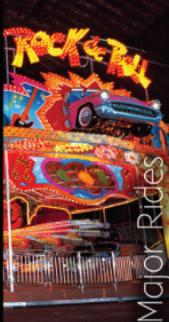
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GRANDE DESIGNS

With work well underway on its groundbreaking collaboration

with China's Evergrande Group, IDEATTACK shares details

of three brand new attractions in the pipeline

IDEATTACK, a global leader in tourism and leisure destination creation, is moving forward in the design phase of two major theme parks for China's Evergrande Group, located in Kaifeng and Changsha cities.

Evergrande, one of the largest real-estate companies in eastern Asia, has exclusively partnered with IDEATTACK on several theme parks set to open within the next few years, following a rigorous round of bidding and concept pitches by many of the top design firms in the industry.

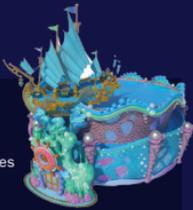
Over the past several months, IDEATTACK has been developing thrilling concepts for world-class attractions that will immerse guests in exotic, faraway places and enchanted worlds straight out of storybooks and the most fantastical reaches of the imagination.

IDEATTACK is dedicated to creating guest experiences of the highest order, combining excellence in storytelling with cutting-edge placemaking technology and dazzling visual effects that will redefine the art of themed entertainment in China and beyond.



Curse of the Jaguar is a terrifying walk-through haunted house attraction conceptualised by IDEATTACK

AIR RACE



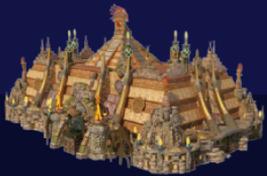
Air Race takes guests on a journey beneath the ocean, where a Mermaid King presides over a royal pavilion, entered through an antechamber made of coral fans and seashells of all shapes and sizes. Here in the boarding area, the king appears on a video wall to invite everyone to celebrate his reign.

The Mermaid King takes his guests on a "flying" tour of his underwater kingdom aboard shell-inspired vehicles, travelling through schools of fish, sharks and dolphins, while the long tentacles of jellyfish drift down from above.

CURSE OF THE JAGUAR

Curse of the Jaguar is a terrifying walk-through haunted attraction experience that places guests in the middle of an ancient Mayan pyramid, where evil spirits do their best to make the intruders permanent residents. The journey begins at an abandoned tourist expedition office in the South American jungle.

With startling visual effects and terrifying jump scare moments, will the jaguar god of the underworld show mercy on the group of guests?



GUARDIANS OF THE AMAZON

The Guardians of the Amazon is a river ride adventure through the heart of the rainforest. Filled with danger and wonder, the family-friendly attraction educates guests about the Amazon region, its people and many different creatures, and the dangers of deforestation.

Guests follow a jungle path into the village of an indigenous tribe where they meet Mateo, a native boy who talks about being a volunteer for the Amazon Patrol and the various beliefs of his elders.

Boarding a 20-passenger boat ride, the adventure begins, drifting past stunning sets accompanied by elaborate lighting and special effects, a rousing musical score, and a heart-pounding climactic moment – resulting in one of the largest flume drops in the country.



DOING THE HONOURS



The Museums + Heritage Awards is a highlight of the attractions calendar, with the overall winners announced at a ceremony in May. We found out what makes some of the shortlisted projects so special

Canadian Museum of History

SHORTLISTED

International Award

Canadian History Hall

Opened in 2017, the museum's revamped Canadian History Hall tells Canada's story through varied experiences and from different perspectives.

GSM Project handled the makeover, with the exhibition setting leading standards in universal accessibility.



"We set out to present an in-depth and authentic history of Canada, to understand where we came from and how we got here – including both successes and failures of the past, with a narrative that could withstand scholarly scrutiny. The story is as complete and honest as we could build at this moment"

Jean-Marc Blais, director general, Canadian Museum of History



Canadians walk through 15,000 years of history in the Canadian History Hall

Grant Museum of Zoology, UCL

The Whale Weekender

Members of the public were invited to the Grant Museum of Zoology, London, to help rebuild a northern bottlenose whale skeleton.

People who attended the weekender got to meet museum conservators while assisting with the cleaning and documentation of the 157-year-old bones.

SHORTLISTED
Project on a limited budget

PHOTO: UCL GRANT MUSEUM / NATALIA JENKINS



The hands-on initiative reached out to the local community and invited them to get involved



"It is so rare to be able to give visitors a chance to do real, meaningful conservation work. The skeleton was so big it had been scattered across several storerooms. It hadn't been put together since it arrived at the museum: we had no idea how complete it was. But 800 visitors painstakingly removed 157 years' worth of dust and grime, identified each bone and rebuilt the skeleton. It was incredible teamwork"

Jack Ashby, manager, Grant Museum

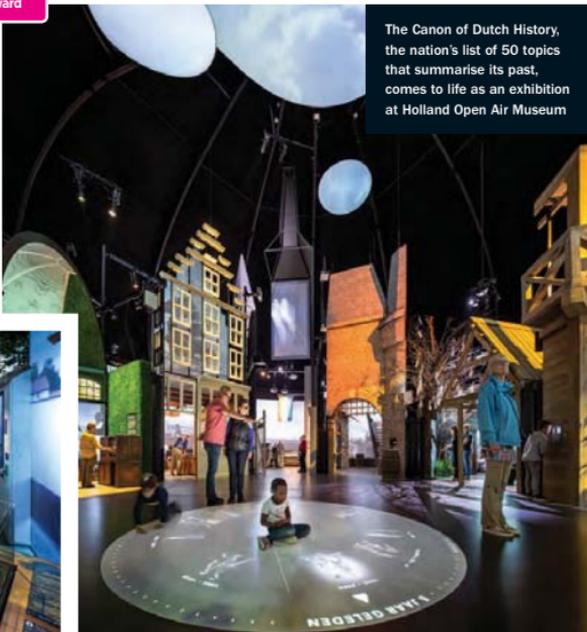


SHORTLISTED
International
Award

Holland Open Air Museum / Kossman.dejong

The Canon of Dutch History

Exhibition design firm Kossmann.dejong has been shortlisted for a 2,000sqm presentation in the Arnhem, Netherlands, museum. The Canon of Dutch History is a list of 50 topics that summarises and covers Dutch history from megaliths to the modern day. Through a combination of decors, objects and film fragments, visitors are invited to actively uncover information using hands-on elements and interactive games.



The Canon of Dutch History, the nation's list of 50 topics that summarise its past, comes to life as an exhibition at Holland Open Air Museum

PHOTOS: THE WOLFE

"We imagined the exhibition as a multimedia film set. The theatrical combination of physical, interactive and audiovisual media with unique collection presentations results in an engaging and fascinating visual narrative. The carefully reconstructed spatial collage of Dutch historic icons is interwoven with stories from everyday people, giving visitors an in-depth experience of the past from today's perspective"

Herman Kossmann, founder and creative director, Kossmann.dejong



Science Museum Group

Space Descent VR with Tim Peake

Working with Alchemy VR and astronaut Tim Peake, the Science Museum, London, developed an immersive experience that puts visitors in the pilot's seat of a Soyuz capsule. Guided by Peake, the VR experience tracks his 400km journey from the International Space Station back to Earth. "It truly is very close to the real thing," Peake says.

SHORTLISTED

Innovation Award



Astronaut Tim Peake tests the VR experience

PHOTO: SCIENCE MUSEUM GROUP

"VR allowed us to bring Tim Peake's spacecraft to life in a spectacular way. The capsule is one of our most iconic objects and we're using VR to create a firsthand experience of a journey only a tiny number of highly-trained astronauts have ever made. It's proven incredibly popular with visitors across the UK and it's attracting the attention of museums abroad who want to share it with their own visitors"



Mark Cutmore, head of commercial experiences, Science Museum Group



"TIRPITZ was a unique opportunity to combine nature and culture in a spectacular fashion. A visit to the museum is not a visit to an exhibition gallery, but a scenic journey through time and space of West Jutland. The idea is that the whole place itself comes to life following the rhythms of nature"

Erik Bär, partner and director, Tinker Imagineers



TIRPITZ Museum houses sunken galleries, exhibition areas and an events venue

Vardemuseums / Tinker Imagineers

TIRPITZ Museum

SHORTLISTED

International Award

Architects BIG transformed a former German WWII bunker into a cultural complex camouflaged among the protected dunes of Blåvand, Denmark, while Tinker Imagineers created the museum's

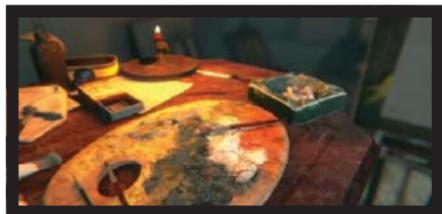
exhibitions, which showcase permanent and temporary themed experiences dedicated to exploring Hitler's European defence project, the Atlantic Wall and 100,000 years of coastal history.

Tate/ Preloaded / HTC VIVE

Modigliani VR: The Ochre Atelier

Part of London's Tate Modern's Modigliani retrospective, visitors were able to immerse themselves in the Ochre Atelier – a VR experience that reimagined the artist's Parisian studio where he lived and worked before his death in 1920. In the studio, visitors could interact with virtual artefacts, artworks and materials the artist used.

SHORTLISTED
Innovation
Award



Visitors were immersed in a virtual recreation of Modigliani's final studio, which used the actual studio space as a template



“We wanted to give visitors an experience which would help them understand Modigliani as a man as well as an artist. Transporting people into the space where he lived and worked, they felt a profound sense of empathy with him. A form of exhibition interpretation that's as much about feelings as facts and information, it gave visitors new ways to connect with the artist and his work”

Hilary Knight, head of digital content, Tate

Chiltern Open Air Museum

Literacy Theme Days for Primary Schools

The museum's theme days aim to engage young writers by bringing the historical context, characters and settings of a story to life. Different theme days offered at the facility in southeast England are based on stories from different periods of history, for example, *The Little Red Hen*, *Wolf Brother* and *Goodnight Mr Tom*. Children explore museum buildings and meet costumed characters from the stories.

SHORTLISTED
Educational
Initiative
Award



“When a context is explored and brought to life, children feel empowered and it is this ‘empowering’ that makes a real impact on the quality of their writing”

Cathy Silmon, head of learning, Chiltern Open Air Museum



Schoolchildren get to meet characters from the story

► MUSEUMS

Royal Museums Greenwich

Armada Portrait of Elizabeth I

The *Armada Portrait of Elizabeth I* received an extensive treatment before being returned to the Queen's House at Greenwich, London. The large-scale oil painting, created in the 1590s, has been

publicly owned since 2016, thanks to a funding appeal that raised £10m, including £7m from the Heritage Lottery Fund (HLF). It then underwent six months of complex and comprehensive conservation.

SHORTLISTED

Restoration/
Conservation
Award



"The conservation of the Armada Portrait has provided a unique opportunity to examine the original paint layers and later changes in detail whilst undertaking the removal of layers of old varnish to reveal the brilliance of the colours"

Elizabeth Hamilton-Eddy, senior paintings conservator, Royal Museums Greenwich



The panel painting represents the defeat of the Spanish Armada in 1588

PHOTOS: NATIONAL MARITIME MUSEUM



PHOTO: KAVETH HOUSTAMKHAN

The museum aims to raise awareness and appreciation for Syrian heritage

Museum of Islamic Art / Berlin State Museums

The Syria Initiative

The Syria Initiative of the Museum of Islamic Art in the Pergamon Museum Berlin aims to promote and document the Syrian cultural heritage, each project dealing with a special aspect of both tangible and intangible Syrian culture. In order to raise awareness and appreciation for the Syrian cultural heritage, the museum

has implemented extended documenting, archiving and damage assessment. In addition, the free guided tours invite refugees to explore the artefacts exhibited, discover common origins between cultures, find their own creative expression at workshops, discuss their cultural heritage and share their personal memories.

SHORTLISTED

International
Award



PHOTO: ANI BIA-SCHÖSSER



"Our vision is to create a sense of common ownership of cultural heritage. Syrians are involved at all levels of our activities and are decisively leading the development of the projects in the Syria Initiative. We want to engage new audiences with the museum in the ongoing discussions about cultural heritage in conflict and social responsibility"

Stefan Weber, director, Museum of Islamic Art

Royal Parks

Speak Up!

SHORTLISTED

Education
Initiative
Award

Speak Up! The Hyde Park Debating Challenge engaged hundreds of secondary students from seven London schools in a debating programme inspired by Speakers' Corner. Young people had the opportunity to improve their reasoning and presentation skills, inspired by the rich history of a pivotal landmark of the famous park.

In partnership with Debate Mate, the project launched in April last year with hands-on heritage activities, followed by dozens of workshops, and culminated with a celebration event last summer. The day saw hundreds of students preparing their motions and debating on topics chosen by them and their peers, surrounded by their families and the public.

The Royal Parks learning programme offers a wide range of events to help young people explore and discover the parks' landscapes and heritage.



“Speak Up! gave young people the skills and support they needed to voice their ideas with passion and conviction. And no better place to do it than at Speakers' Corner, a living reminder of our right to speak freely and be heard”

Lady Leyssen, head of learning, Royal Parks

Hundreds of London students took part in the challenge while learning about Speakers' Corner



Different schools came together for a debate, with some students chosen to hone their debating skills in preparation for a live competition at Speakers' Corner

Getting personal WITH HOLOVIS

Imagine all on-and-off-ride media across a park was able to independently tailor every individual's story, depending on where they are and the choices they make – and even their emotional responses. Holovis is delivering this revolutionary approach to park-goers

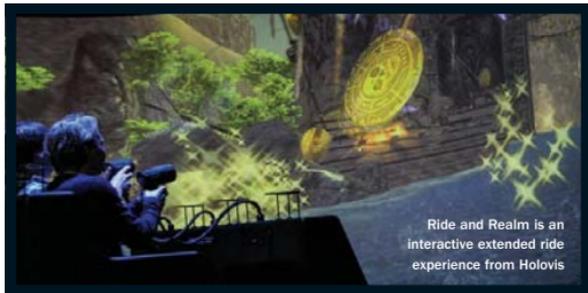
The attractions industry is being transformed by the use of storytelling and innovation to create some of the most immersive and narrative-driven experiences visitors have ever seen. Since the rise in popularity of media-based attractions, the ability to put guests at the heart of a powerful narrative and take them on adventures has changed guest expectations and boosted demand for significantly better all-immersive, multi-sensory attractions. They want engaging and unique experiences, not just a thrill.

Experience design firm Holovis knows this only too well and has been developing a recipe for taking immersive storytelling a step further by giving guests the ability to experience their own personalised interactions and engagements – and the secret to this lies in real-time technology.

“Real-time technology is driven by content rendered live from a game engine, rather than having a pre-rendered film with a fixed path and narrative that it always

follows,” explains Peter Cliff, creative director at Holovis. “This opens up a whole new world for guests, allowing them to interact and influence connected experiences throughout a venue, not just at one specific attraction or experience. Each guest has their own journey and based on the decisions they make or paths they choose to take, the world around them reacts differently each time, every time.”

“Unlike a game that plays out on a second screen, be that a computer, phone or in VR, the compelling approach Holovis delivers, through our Extended Experience platform, is having this take place in a real-world setting with physical objects and real-time media reacting differently for each guest based on their own interactions as well as the data collected.”



Ride and Realm is an interactive extended ride experience from Holovis



It's about creating memories, says Holovis's Peter Cliff

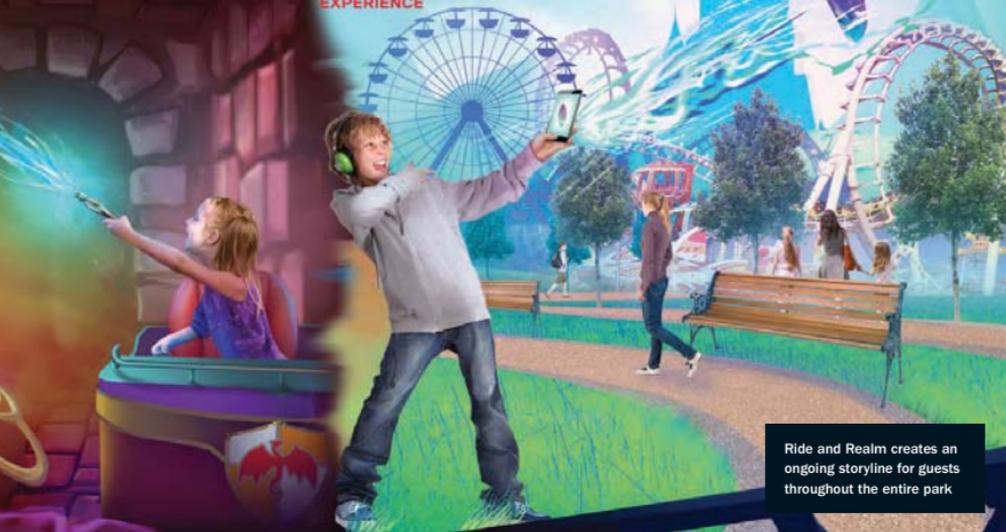
Ride and Realm

Holovis brought its Extended Experience technology to the traditional dark ride attraction to create Ride and Realm (R&R), the world's first guest and data driven real-time dark ride attraction. R&R gives guests the ability to choose their own adventure and then personalises the experiences they have based on these interactions and the data collected, with specific AI and analytics working behind the scenes to enhance the overall affect. “It begins with a real-time game-driven attraction, using onboard interactive devices to put control in the hands of the guest,” continues Cliff. “However, as guests leave the ride for the first time, there are a number of ways that the adventure continues to play out around the park. This includes through tracking technologies with no visible guest engagement required, therefore making the experience frictionless, through phone apps with AR experiences and physical devices utilised throughout the park. These all allow gameplay to continue throughout the day and even afterwards at home, triggering complex multi-threaded narratives that continue the guest's journey as the story unfolds.”



RIDE & REALM

EXPERIENCE



Ride and Realm creates an ongoing storyline for guests throughout the entire park

“This is more than just gamification and non-linearity; this is letting guests control and determine their own destiny”

Guests must solve puzzles, find clues in physical locations to unlock achievements and ‘level-up’ and engage with physical entities, or even cast members, before returning to the starting point, where the experience on the dark ride will have evolved to reflect their progress, making it a unique attraction all over again.

“Ride and Realm is a near limitless experiential platform that is always different, truly re-ridable, and scalable. Whatever guests do within the ride or across the whole park has a real-time impact on their adventure as it unfolds before them. This is more than just gamification and non-linearity; this is letting guest control and determine their own destiny whilst being at the heart of a multidimensional and compelling narrative.

“Holovis is now working with clients who want the capability expanding further so that all park-wide media, both on and off their rides, reacts differently for every individual, depending on where they are in their game and the evolving storyline. This is a true revolution in theme park-wide personalisation. This is what creates memories that guests will talk about



The graphic shows how a guest would experience Ride and Realm technology

for years to come,” says Cliff. “In this age of social media and the increasing demand for everything to be connected, this solution results in highly rich content being shared by guests continuously throughout their journey, further supporting and enhancing the parks social communications and brands.”

Technology driven

Behind the scenes, Holovis’s team of software engineers has been developing advanced data capture and artificial intelligence analytics, as part of the Extended Experience platform, that allow the story to become personalised to each guest based on their physical, intellectual and emotional reactions.

“We can now use our tracking technologies to measure reactions in highly personalised ways, with patents pending around our latest solutions. Artificial intelligence is being used to understand emotional responses from our audiences and to further adapt the story and the intensity of the attraction to their own preference. Our machine-learning systems are also being applied to interactivity platforms in order to learn about people’s responses, so we can, for example, alter the difficulty of the gameplay to keep them involved and engaged based on their individual skills and abilities, making the attraction far more inclusive for all.”

Cliff says: “This is the power of real-time-everything and we’re just at the beginning of telling this story.” ● ▶



Workshops for schools, like Tom Tits Experiment in Södertälje, Sweden, help build the science capital of local children and teachers

GETTING ENGAGED

Science museums and centres across Europe are embracing science capital to help develop more inclusive and integrated learning opportunities for all visitors.

Dr Amy Seakins and Dr Heather King tell us how



The idea of science capital is being used to rethink ways of increasing engagement

Science capital can be described as the bag of science-related knowledge, experience and attitudes that you carry throughout life – what you know about science, how you think about science, what you do, and who you know.

This concept is being adopted by a growing number of science engagement organisations and educational policy-makers as a way to (re)think what we might do to improve people's engagement with science. Our research explains why some students feel unable to identify with science and highlights the need to reflect on how institutions provide experiences that resonate with visitors' varied personal lives.

The concept of science capital draws from the work of French sociologist Pierre Bourdieu, who coined the notion of capital – the social, cultural and symbolic resources that individuals variously possess to 'get on' in life. Science capital is a form of capital that combines all the science-related social and cultural resources that Bourdieu defined.



Every moment in a science museum is an opportunity to engage and shape visitors' attitudes towards science



Science capital can help us to think creatively about how to improve everyone's engagement with science



Start with the personal, lived experiences of learners and then build upwards



PHOTO: MOMENT BUSINESS IMAGES/SHUTTERSTOCK

► By analysing a series of surveys carried out in the UK*, we've identified a distinct relationship between a young person's aspirations towards science and their science capital: just 5 per cent have high science capital and are more likely to continue with science post compulsory schooling; 69 per cent have medium science capital; but more than a quarter (27 per cent) have low science capital – the least likely to take science-related qualifications or a science-related career.

Importantly, the construct of science capital tells us more than who might aspire to a science-related career. It helps us understand why for some young people, science is not for them. It can also help us to think creatively and effectively about what we might do to improve everyone's engagement with science within our sites and spaces.

TWEAKING SCHOOL SCIENCE

Over the last few years, our research team has worked extensively with teachers and schools to explore ways to build student science capital to support more students, particularly those from diverse backgrounds, to engage with science. By encouraging teachers to spend time reflecting on their practice, and identifying small changes or tweaks to existing lessons, we've helped teachers create learning environments and opportunities that build science capital.

We recommend starting from the personal, lived experiences of learners and building upwards. It's about eliciting the experiences and interests that students already have, valuing these, and then linking these to canonical science.

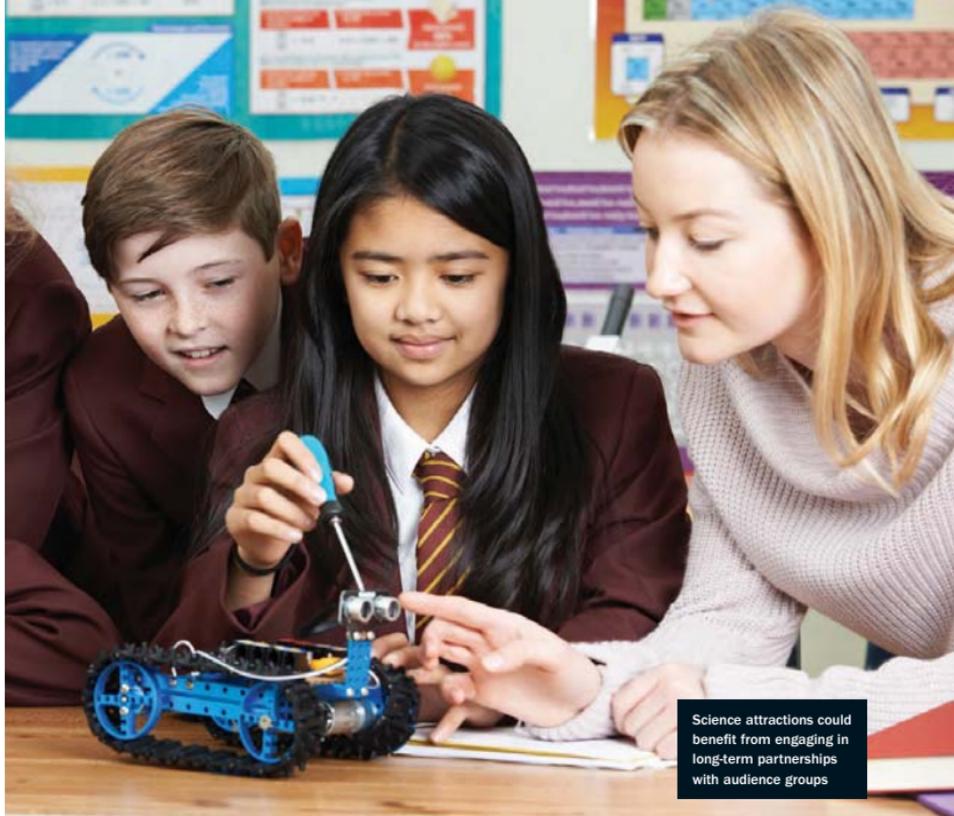
It's about encouraging young learners to speak with their family and friends

and others in their community about science, showing them how to recognise the science in their everyday lives and to acknowledge the many ways in which they participate in science-related activities. These principles apply within classrooms, but also outside school in other learning spaces and visitor attractions.

SCIENCE CENTRES CAN HELP

For science museums and science centres, our findings from the classroom highlight the need to reflect on the ways in which these institutions provide experiences that resonate with visitors' varied personal lives – and provide suitable spaces where individuals can build on their existing resources, helping them to fill up their science capital bags.

A science capital approach to museum and science centre practice would include



Science attractions could benefit from engaging in long-term partnerships with audience groups

Science museums and centres can encourage and help visitors of all ages to build their science capital

using visitors' prior experiences for educational programmes, eliciting and valuing their contributions and linking these to science. It might include long-term partnerships with audience groups.

A further valuable role would be to highlight how science can open doors to all sorts of different jobs and careers and demonstrate how it can also lead to active participation in societal decision-making.

By showcasing a wide range of science-related roles and careers, hosting debates and discussions, and encouraging science-related conversations, science museums and science centres can begin to encourage and help visitors of all ages and abilities to build their science capital.

BUILDING SCIENCE CAPITAL

Discussions and applications of science capital are spreading and growing.

The British Science Association and Science Museum Group provide practical examples. The concept has also gained interest at a policy level across Europe.

In summary, a science capital approach does not suggest that a lack of awareness or interest explains why students choose not to pursue science or, similarly, why people do not visit science centres or science museums. Rather, it explains why some people feel unable to identify with science: they do not have the resources or experiences that would lead to a more full science capital 'bag'.

Our findings suggest that future initiatives and policies should aim to build learners' science capital and reflect on the design of learning experiences. This will ensure that more learners from varied backgrounds, experiences and interests will develop greater science alignment.

About the authors

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*ARCHER ET AL. (2015) 'SCIENCE CAPITAL': A CONCEPTUAL, METHODOLOGICAL, AND EMPIRICAL ARGUMENT FOR EXTENDING BOURDIEUSIAN NOTIONS OF CAPITAL BEYOND THE ARTS. *JRST*, 52(7), 922-948.

NORWAY'S NATIONAL PRIORITY

Målfrid Snørteland director

Per Inge Bøe project manager

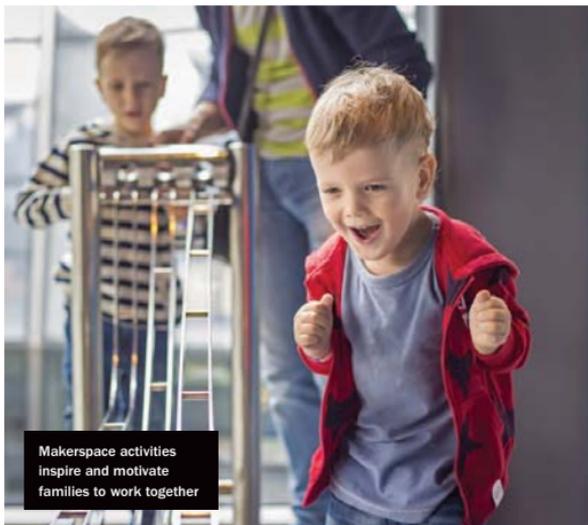
Jærmuseet, Nærbø, Norway



Norwegian educational authorities and the Norway Research Council have embraced science capital – one of our country's three main goals in 2016-19 is to *Grow Families' Interest in Sciences*.

At Jærmuseet's 10 regional science centres, we already have exhibitions and activities aimed at reaching this goal, but four of our facilities will now specifically focus on this strategy to embed more systematic and effective assessment methods and evaluation tools.

For example, Trondheim Science Centre will organise workshops involving the whole family, ranging from children through to grandparents. Courses and makerspace activities aimed at inspiring and motivating families to work together will be evaluated by questionnaires completed before and after the workshops



Makerspace activities inspire and motivate families to work together

PHOTO: MARIA COLOMANNO/SHUTTERSTOCK

“ This new focus on science capital will certainly push us to be more systematic and inclusive in our approach to audiences ”

to see whether the families' attitudes towards science changed.

This new focus on science capital will certainly push us to be more systematic and inclusive in our approach to audiences. Rather than focusing on entertainment, we'll be more aware of how to communicate and engage our visitors. ■



SWEDEN REACHES OUT TO TEACHERS

Cecilia Ekstrand

education manager

Tom Tits Experiment, Södertälje, Sweden

As a teacher with an engineering background, I believe it's important to ground work in robust concepts. While looking for the right paradigm for Tom Tits science centre, I heard a lecture on science capital at the 2013 Ecsite conference – and knew I'd discovered the right tool.

Since we started to apply the learnings of science capital at Tom Tits, we've developed teacher training. Although local school visits to our science centre are free, many teachers weren't bringing

their students because their own science capital was rather low and they didn't feel comfortable enough with science to facilitate a visit. To overcome this barrier, we decided to run teachers' workshops.

Science capital has also helped us to debunk biases. One workshop required visiting teachers to build a dome using teamwork. I love assembling furniture and compared this task to it, so I expected enthusiastic responses. But most of the teachers shut down! So I then switched to a cooking recipe analogy and got very



Science attractions should extend the science capital of teachers and adults

positive results. The objective was to demonstrate that skills used to plan and deliver meals (or build furniture) involve engineering, shifting each teacher's mindset about science and technology.

Parents are a key audience as they play a pivotal role in their children's education. To help parents, we've trained staff to focus on adults during family visits. ■

“ Visiting our science centre is free for local schools – yet many teachers weren't taking their students ”



SCIENCE SPARKS IN POLAND

Howiecka-Tańska, PhD

head of research department
Copernicus Science Centre,
Warsaw, Poland

For the research team at Copernicus Science Centre, science capital is a very inspiring concept. To get a broad picture of school children's science capital, we launched a nationwide survey and found that the most common source of science capital is from parents motivating their children to engage with science.

We also found that fewer children in Poland compared with those in the UK thought they'd met a scientist. As many scientists who interact with our visitors dress informally, the children may simply have not realised that they'd just met a real scientist! So we may change that.



School children from similar backgrounds don't interact with exhibits in the same way

For the research team, science capital is a very inspiring concept

Furthermore, we'd noticed that school children from similar backgrounds didn't interact with our exhibits in the same way, so we tested the hypothesis that those with higher science capital experienced deeper engagement. But the results were very surprising: there was no direct

relation between science capital and visitor behaviour, indicating that our exhibits already cater to a wide audience.

We now plan to test whether there's a correlation between science capital and the motivation to learn and engage in cognitive efforts. Copernicus is central to spreading this concept in Poland and, as science capital is also proving effective in mobilising broad educational coalitions, we're also interacting with policymakers, teachers and academics. ■

PHOTO: COPERNICUS SCIENCE CENTRE



STEMMING FROM THE UK

Beth Hawkins

learning resources manager
Science Museum, London, UK

The Science Museum Group has been working in partnership with King's College London on the Enterprising Science project since 2012 to develop the science capital concept. It will help us create experiences to engage our visitors with science, technology, engineering and maths (STEM).

As such, the number one core priority in our 2017–30 strategic ambitions is to 'grow science capital in individuals and Society'. Our organisation-wide efforts will translate science capital learnings into operational realities – and you can follow this process on our 'Transforming Practice' blog.

Our museums play a key part in the STEM engagement landscape by supporting and encouraging audiences to extend their learning within and beyond our sites. Science capital gives us an insight into what influences and shapes people's attitudes towards science, which can help us to identify new ways to reach out and connect with absent or infrequent visitors.

We want to create an environment where everyone feels welcome and where every moment in our science museum is an opportunity to engage and shape our visitors' attitudes towards science – from the website, front desk and cafés through to the galleries and exhibitions.



Wonderlab: The Statoll Gallery was developed with science capital in mind

We're gradually rolling out a reflective practice approach through workshops and toolkits to shape and design our exhibits and experiences, such as our recently opened interactive Wonderlab: The Statoll Gallery. We wanted the labels in the gallery to make a link between our exhibits and our visitors' everyday lives. The text for the Icy Bodies exhibit, for example, originally mentioned that dry ice is commonly used for special effects at theatres – but after reflecting on our science capital research we changed this example to the cinema, making it relevant to a wider audience. ■

Science capital can help us to identify new ways to reach out and connect with absent or infrequent visitors

LIGHT FANTASTIC

Digital art collective teamLab creates jaw-dropping installations and is set to open its first museum in Tokyo later this year. Magali Robathan hears the story

Made up of about 500 members that include artists, programmers, architects, designers, CG animators, engineers, and mathematicians, the art collective teamLab uses the latest computer modelling techniques to create installations that involve the viewer in the art.

At a Tokyo restaurant, the walls change and birds appear to fly from diners' plates, while at other shows, viewers see flowers blossom or crumble and die on their bodies and split waterfalls with their feet.

This June, a permanent attraction called "MORI Building DIGITAL ART MUSEUM: teamLab Borderless" is opening in Odaiba, Tokyo.

Here we speak to the people behind the artworks.

How and when was teamLab born?

In 2001, Toshiyuki Inoko founded teamLab with several of his friends as a space of co-creation. It was the year Inoko graduated from university, and most of the initial members of teamLab were programmers and designers.

We were creating art installations from the beginning, but we didn't have the opportunity to present them anywhere, nor could we imagine how we could financially sustain our teams producing art.

On the other hand, we all believed in the power of digital technology and creativity, and we loved what we were doing. We just wanted to keep on creating new artworks.

While the collective took part in various projects to maintain teamLab, we increased the number of technologists in the team, with members including architects, CG animators, painters, mathematicians and hardware engineers.

What happened next?

As time went on, we gained a passionate following among young people, but we were still ignored by the Japanese art world.

Our debut finally came in 2011, when the celebrated Japanese artist Takashi



Toshiyuki Inoko founded teamLab with a group of friends in 2001

PHOTO: NOLOGO



Murakami invited us to exhibit at his gallery, the Kaikai Kiki Gallery in Taipei, Taiwan. This was a major turning point for teamLab. In 2013, we took part in the Singapore Biennale, and in 2014, New York PACE Gallery started to help promoting our artworks.

These opportunities allowed us to expand rapidly. Finally, in 2015, we were able to hold our own exhibition in Japan.

Since then, teamLab has gone on to exhibit our work internationally; in London, Paris, the US, China, South Korea, Indonesia, Thailand and elsewhere.

This summer, we will open a permanent digital art museum in Tokyo, together with urban developer MORI Building. ▶



Paris' La Villette will host teamLab's Au-Dela des Limites exhibition this year



LED lights created the illusion of crystals in this installation in Toyko

WANDER THROUGH THE CRYSTAL UNIVERSE

This artwork was created using teamLab's interactive 4D vision technology and LED lights hanging from the ceiling, creating the illusion of various patterns moving in space.

Viewers were invited to enter and walk around within three dimensional light space, with the idea that they became the 'centre of the universe' - their movements causing changes to the lights across the entire space.

Viewers were also able to interact with the work by using their smartphones to trigger 3D animated light visuals. While Crystal Universe was created by elements selected by the viewers, each action or change affected the other. The viewer's position within the artwork also influenced how the work was created; thus, the artwork was continuously changing.

► How would you sum up what you do?

Our aim is to explore a new relationship between humans and nature through art. teamLab is an art collective, an interdisciplinary group of ultra-technologists whose collaborative practice seeks to navigate the confluence of art, science, technology, design and the natural world.

When we started out in 2001 at the dawn of the digital age, we were passionate about eliminating boundaries and working beyond existing disciplines. To make that happen, we wanted a place where we could get people from all different specialisations, and decided to make one on our own.

Our name, teamLab, comes from that idea; we wanted to create a team of specialists and a place like a laboratory for all kinds of creations.

What does digital art offer that traditional art doesn't?

We want to change the relationship between people and art, and we want to make people feel that the presence of others is a positive experience when interacting with our artwork.

Traditional media, such as paintings, doesn't change in relation to the presence of viewers or their behaviour. The artwork is based on a relationship with an individual viewer. For the majority of art up until now, the presence of other people tends to constitute a hindrance. If you happen to find yourself alone at an exhibition, you consider yourself to be very lucky.

When an artwork changes based on the presence or behaviour of people, it blurs the boundaries between artwork and viewer. In this case, the viewer becomes part of

the artwork. Similarly, when the artwork changes due to the presence of others, those people also become part of the art. This changes the relationship between a work and an individual into a relationship between a work and a group of individuals.

Whether a viewer was present five minutes ago, or how the person next to you is behaving now, becomes important.

Tell us about the digital art museum you're launching in Tokyo this summer.

Currently, there aren't any digital-only art museums. We wanted to deliver a borderless artwork world, and we needed to establish a museum to make that happen. MORI Building provided us with this chance to realise our ideas.

The museum in Tokyo, teamLab's first permanent exhibition and flagship facility, will boast a massive 10,000 square metres of floor space. It will house a permanent digital art exhibition run by the museum's operating body, created jointly by MORI Building and teamLab.

MORI Building actively works to integrate art in cities and helps stage cultural activities. teamLab aims to explore a new relationship between humans and the world through art. With this collaboration, we're aiming to create a unique destination that will enhance the appeal of Tokyo leading up to the 2020 Tokyo Olympics and beyond.

Tell us about your work with children.

teamLab's experimental digital art project, which is called Learn & Play! teamLab

STORY OF THE FOREST

This permanent installation in the Glass Rotunda at the National Museum of Singapore sees 69 drawings turned into a single giant animated interactive illustration.

Titled Story of the Forest, the digital piece, which is 15 metres high and 170 metres long, is based on the museum's drawings collection and mimics the dense tropical rainforests of Southeast Asia. The design is inspired by the 19th-century collection

collected by William Farquhar, the first Commandant of Singapore.

Starting at the bridge spanning across the dome, visitors enter a dark room with falling petals projected onto the ceiling, before walking down a spiral path with animals running through a vast, interactive forest. The exhibition ends in a room raining petals. As visitors stand still while close to the wall, an area of ground emerges, a forest rises up, and animals appear.



This installation sees the Glass Rotunda turned into a digital art piece



Sketch Aquarium invited children to colour a sea creature, which is scanned and projected on an interactive virtual aquarium



We're ultra-technologists navigating the confluence of art, science, technology, design and the natural world

Future Park, focuses on a project that explores the theme of 'co-creative' learning through digital technology.

Children often play by themselves. This project aims to encourage them to become aware of what the child next to them is drawing or creating. They may come to think it would be more fun to build something together and be inspired to create and appreciate their own work in new ways.

Through digital art, children who are inclined to work individually may think more positively about working with other children. This project aspires to transform an individual's creative action into a collaborative creative activity – and help children realise that playing together might be more fun than playing alone.



Moving Creates Vortices and Vortices Create Movement (top) at the recent NGV Triennial in Melbourne, Australia; **Digital Light Canvas** is a permanent exhibition at the Marina Bay Sands in Singapore

What is your focus over the next year?

We want to keep creating. And we want more people to experience what we create.

Who else do you admire?

Anybody who believes in the future. ▶



MORI BUILDING DIGITAL ART MUSEUM:

IN NUMBERS

- 520 computers
- 470 projectors
- 10,000 square metres
- 21.6.18 opening

TEMLAB BORDERLESS

Set to open in just a few weeks, we take a look inside

On 21 June, teamLab is set to open a new digital art museum in Tokyo. The project is a collaboration between the Tokyo-based urban developer Mori Building and teamLab. Called MORI Building DIGITAL ART MUSEUM: teamLab Borderless, the museum will cover 10,000sqm and will house teamLab's first permanent exhibition.

It will be located in the Palette Town shopping and entertainment complex in Tokyo's Odaiba district. According to teamLab, the word 'borderless' expresses "the museum's aim to tear down the borders between one art and another, art and visitors, and oneself and others, by allowing visitors to melt into the art and become part of it."

teamLab's first permanent museum will open in Tokyo this summer



Athletic Forest aims to get kids moving, boost social skills and be educational

ATHLETIC FOREST

An interactive digital art space in the museum inspired by the idea of helping children understand the world through the body and thinking of the world three-dimensionally.

The space is fitted with objects and shapes to interact with as the immersive world changes around the guest. Visitors can jump in Boing Boing Universe, climb in a light-filled bouldering space, traverse hanging

bars surrounded by flying birds, interact with shapes in the Block Town softplay environment, climb and descend slopes in Graffiti Nature and drift through an expanse of coloured balls in Weightless Forest. ●





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PROFESSIONALISING YOUR ATTRACTIONS SECURITY TEAM

Nigel Peers, senior consultant at NW Security Group, shares his tips on how to build a security team that performs at its best

This article is written with newly recruited security managers in mind. Coming into any new security management role can feel daunting, so it makes sense to look at some of the building blocks for getting more out of your security team – helping them to become a highly motivated, professional team.

We live in a world where, particularly in large visitor attractions, there is increased need for vigilance and mutually supportive, overlapping security provision. Organisations must do all they can to define and mitigate risks and that involves the professionalisation of in-house security teams.

Starting point

When starting any new role, you are a 'fresh pair of eyes'. You'll be able to spot vulnerabilities and assess security risks unencumbered by the 'we've always done it this way' type of thinking that can

hinder improvement and innovation.

When I first took up my previous role as security manager at Chester Zoo, UK, in 2013, I spent time walking around the attraction to assess the levels of perimeter security, spot key vulnerabilities and assess the vigilance, response and effectiveness of patrolling officers.

By doing this, it was possible to determine how security-aware and incident-ready the site team was, often by simply making observations and asking questions of members of staff, as well as contractors and other people entitled to be on site. Contractors' experience of security checks, and entry and exit processes often proves more revealing than talking to the



Nigel Peers, senior consultant at NW Security Group

patrolling officers themselves.

Make sure that you document these first impressions very carefully. You will find that they very often form the seeds of your Security Vulnerability Risk Assessment

report, which is likely to be the first job you will need to complete before you get to work, which enable you to recommend and implement improvements.

Assessing capabilities

A key task then is to assess the skill level, work ethic, management potential and temperament of members of your security team. Interview them to find out more.



A motivated and professional team is central to optimum security provision



A new security manager should walk around the attraction to assess checks and processes

Organisations must do all they can to mitigate risks and that involves the professionalisation of in-house security teams

Firstly, you should find out what Security Industry Authority (SIA)-licensed qualifications they have. You may find you have SIA licence holders in a mix of relevant and useful areas, including cash and valuables in transit (CVIT), public space CCTV monitoring, door supervision, and security guarding. In-house teams don't generally need to be licensed unless conducting licensable activities, but training courses can underpin a professionally-trained team and are recommended.

Identify any immediate skills gaps and find out who has an appetite to expand their skills by doing more training. Draw up a training schedule for the next 12 months and attach training module targets for each quarter that can be added to your quarterly key performance indicator (KPI) report. This should become your key management information document for reporting progress to senior management.

Building the team

If you are in the fortunate position of having budget to improve security provision, it's important to focus on balancing, as well as building a security team.

It is great to be able to retain people with long service. They will be able to provide you with vital knowledge about what has been tried before and found not to work. In this way, it's possible to avoid wasting too much time early on trying to implement and manage changes which might encounter heavy resistance – instead focusing on banking some quick wins that build confidence and momentum.

When you are selecting new staff, think about the capabilities and skills gaps that you've already identified in the team. It's also important to have both genders well represented in the team and a good example of why this is important in visitor attractions is that it provides the capability to conduct person searches. Same-sex searching is a licensable activity and must be conducted to strict guidelines. It can also sometimes be more prudent or effective to deploy either a male or female officer to deal with some scenarios, and having this option is a clear advantage.

A number of courses including the SIA and conflict management courses can train your staff to handle and diffuse tension and conflict, including early recognition

of triggers and identifying and applying inhibitors to anger – valuable skills.

Building team spirit

Introducing some friendly competition can really help morale and performance. For example, you might operate a four-days on, four-days off shift system in which Team A logs its performance over the same timeframe as Team B. Suddenly, KPI targets become very real when you have an opportunity to win recognition within your own team by edging ahead of your 'opposing' team. It's a great foundation building team spirit and helps drive the whole team onto higher performance.

Tightening patrols

It's important to know how well the team performs its duties. For example, you could run tests to probe whether processes and procedures are being flouted. Penetration testing is considered one of the key ways to prevent physical and cyber-attacks, as knowledge gleaned by these tests can be used to strengthen systems. Why not attempt to go through an entrance or two without detection, check a gate, even scale ▶

Quickstart guide to professionalising your team

1. Walk the Site

Make observations, talk to staff and contractors and assess levels of vigilance. Document impressions of your assessment

2. Assess Team Capabilities

Find out their SIA-licensed qualifications and identify skills gaps. Draw up a training schedule for those want to train

3. Get Team 'Mix' Right

People with long service can provide you with vital knowledge. Having both genders is advantageous

4. Build Team Spirit

Friendly competition can help boost morale

5. Tighten Patrolling Regime

Increase the vigilance of patrols by zoning a large site into several sub-zones. Develop a patrols matrix for different types of patrols. Change routines daily

6. Create Wider Team Roles

Match staff with wider management tasks that suit their background and skills. These responsibilities increase motivation

7. Involve Staff in Change

Involve the whole team in the process of their professionalisation. Ask for their input and ensure they feel valued. Share best practice thinking from events you attend

8. Set Meaningful KPIs

KPIs should relate to operational effectiveness over a given timeframe. Think about what represents progress from a security and wider operational perspective and put in a system to measure progress

9. Centralise Control and Monitoring of Surveillance Cameras

Centralising the monitoring of all cameras is a vital aspect of a move from reactive to proactive security. Invest in network infrastructure and good quality network cameras and video management software

10. Test Routine and Technical Capabilities

Conduct individual and team capability tests, particularly for some of the more technical tasks. Identify weaknesses and recommending further training

a wall and see whether you throw any alerts which trigger the arrival of a guard.

Also look at the patrolling systems. One way to increase the vigilance of patrols is to zone a large site into several sub-zones. Develop a patrol matrix which takes in different types of patrol including mobile (vehicle-based) patrolling, foot patrolling and control room-based CCTV patrols.

Routines should be changed daily to avoid making patrol schedules a security vulnerability in their own right. Specific checking routines should be specified by sub-zone to make sure these checks are run by patrolling officers. They might check if footpath lighting is all operational, others may demand physical checks of perimeter fencing, gates or barriers for example.

Teams patrolling at night, when visitors are not around, often have more time to run visual and listening checks. Techniques like 'stop, look and listen' can be much more effectively applied to spot 'pattern of life' anomalies where things are not in their usual place – a door to a building left unlocked or a piece of equipment left out in the open, for example. These changes could signal that something out of the ordinary that could be worthy of further investigation or bringing up at the next meeting. No change is too small to report; it lends towards a culture of alertness.

Patrol systems

Patrol systems can be implemented cost-effectively today. They are based on handheld data loggers and RFID sensors. The system provides a means of recording the time when the patrolling officer reaches certain points on his or her tour. Checkpoints are commonly placed at the extreme ends of the tour route and at critical points of vulnerability where physical checks need to be carried out. It is essential managers educate officers on what they need to be doing between checkpoints; lack of leadership in this area can result in individuals simply moving from one checkpoint to the other without conducting professional patrol techniques.

Some of these systems are set so that the interval between stations is timed, so if the officer fails to reach each point within a set time, other staff members are dispatched to ensure the officer's wellbeing. An example of a modern set-up might work as follows: the employee carries a portable electronic sensor or electronic data collector, which is activated at each checkpoint. The data collector stores the serial number of the checkpoint with the date and time. Later, the information is downloaded from the collector into a computer where the checkpoint's serial number will have an assigned location.

A team will deal with a wide variety of events, from diffusing confrontations to returning lost children to their parents – a lot of great work



It is worth matching staff with tasks that suit their background and skills

Managers must ensure that lone working regulations are adhered to and that officers are conducting their duties in an effective and, at the very least, in a safe manner.

Data from these checkpoints can provide evidence of the number of patrols completed in each timeframe. This information could be included in KPI information at the end of each month. So, if your target is 700 patrols in a given month, during that period your team may have dealt with a wide variety of events from diffusing confrontations, returning lost children back to their parents, nipping anti-social behaviour in the bud and even identifying potential hostile reconnaissance. That's a lot of great work and worth celebrating when the team meets their patrol target.

Assignment instructions

Once you have developed your strategic security plan, it's critical that this is communicated to the security team. This plan is only as good as the people that are implementing and enforcing it.

All staff need to fully understand their role in improving security by increasing vigilance and the level of proactive security. This communication extends to assignment instructions being written in addition to staff contracts. They need to know precisely what is expected and their role in meeting these requirements. They must know what their tasks are and how to perform them. Much of this detail may have to be written into revised policies and procedures, which should be reviewed and changed as new systems and processes are agreed.

Professional development

As well as routine tasks that security officers must complete like patrolling, it is worth matching particularly able staff with tasks that suit their background and skills. These additional tasks will help the officers feel valued and accountable, and part of the bigger organisational picture.

It was my job to make sure I explained the implications of any new best-practice thinking I gleaned from attending National Counter Terrorism Security Office training sessions, meeting with local counter terrorism security adviser, reading up on *Crowded Places Guidance* and attending talks on improving attractions security.

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



It's important to conduct individual and team capability tests, particularly for some of the more technical tasks like finding and taking a copy of video evidence in the control room after a security incident has taken place, and ensuring the continuity of evidence is maintained. Get team members to show you how they would do these specific tasks, watch and then recommend refinements where necessary. This is a great way to identify skill fade, shortfalls and what remedial training is required.

Respect

It's important to get the right balance of democratic and autocratic management. Some officers need to be told when the job they've done was not good enough so they will learn and do it better next time.

However, it's also important to involve all your team in the process of their professionalisation. Lead team members as you would hope to be led yourself. Ask for their advice on improvements they think should be made and put the best ideas into action. Security officers often do not get the respect

they deserve, yet their role is increasingly critical to the reputation and operational effectiveness of many organisations. Make them feel valued and you will be amazed how the resulting improved morale feeds through into higher levels of engagement and performance. ●

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.





For Wincomn, working in partnership with 7thSense enables incredible levels of realism

REAL DEAL

7thSense Design, maker of the Delta Media Server range, strengthens presence in China with partner Wincomn Technology

With more than 100 theme parks in the pipeline, China's attractions boom is showing no signs of abating. Responding to this rapid expansion, 7thSense

Design, the UK-based manufacturer of the Delta Media Server range, has been working with Beijing audiovisual solutions provider Wincomn Technology, providing a trusted partner on projects across the country.

Wincomn, which is headquartered in Beijing with sub-branches in Shanghai, Shenzhen, Hong Kong, Chengdu, Wuhan, Xi'an and Shenyang, provides products, software and hardware solutions for control rooms and conferences, culture and entertainment, and VR and simulation projects.

With expertise in the attractions sector, Wincomn acts as the preferred distributor and integrator for 7thSense Delta Media Servers for theme parks, live shows, museums, science centres and planetariums across China, delivering content for dark rides and theatres, projection mapping and other world-class multimedia experiences. The partnership means clients are offered creative planning, design consulting, system design, hardware and software development, software and hardware integration, operation maintenance and after-sales support.



■ Matt Barton, 7thSense managing director

“Our job is to listen and bring together the visions of the end user and the content producers”

7thSense has worked closely with the team at Wincomn on more than 30 projects, bringing state-of-the-art installations to China's most popular visitor attractions.

Incredible realism

For Wincomn, working in partnership with 7thSense enables incredible levels of realism when delivering digital experiences, having recently worked on installations for Wanda, such as Harbin Wanda Movie Park and Nanning Wanda Theme Park, Hunan Museum in Changsha, Hunan province, and large-scale cultural water/light shows in places including Xiamen, Fujian province, and Hancheng, Shaanxi province.

For 7thSense, delivering unparalleled media serving technology involves the ability to offer multi-tool, comprehensive feature sets which can be customised to meet specific client needs and project demands. Delta Media Servers deliver high frame rate, high colour intensity, high-resolution content which is fully supported by a proprietary content management system to enable design, scheduling and show control, and much more.

“Display resolution is now at, or nearing, an eye-limiting level,” says 7thSense Design managing director Matt Barton. “That means pixels can no longer be ‘picked out’ by the human eye. Instead, attention is now turning to other elements that impact

7thSense delivers unparalleled media serving technology

SELECTED PROJECTS

- Chisui
- Dragon Palace White Whale Water World
- Haikou 5D Theater
- Hangcheng Water Show
- Harbin Wanda Movie Park
- Hunan Museum
- Nanning Wanda Theme Park
- Shanxi Shangluo Danhe Building Mapping Show
- SuperD Visual Experience Center
- Xiamen Haichang Lake Water Show
- Zhengzhou Meisheng Miaoli Sales Center



display perception and visitor experience: colour bit-depth, colour space, frame rate.

"The cinema world has already been experimenting with high frame rate production and playback with the likes of *The Hobbit* and *Billy Lynn's Long Halftime Walk* – the latter we supplied our media serving technology to for the testing and uncompressed playback of 4K resolution in 3D at 120Hz (per eye) in 10-bit colour at the film's worldwide premiers."

Bringing IPs to life

As the Chinese market develops an appetite for introducing IP-led experiences, demand is growing for large-format 3D/4D/5D rides and theatres powered by cutting-edge multimedia technology. Movie-based rides are an effective way to bring big-name IPs to life with highly realistic and visually stunning content, at the same time helping attract more visitors to the park.

"Audiences also want to control their journey through a story more than ever before. They want to have a level of control over what they see on screen. Interactivity is a hugely important feature of AV that's

Testimonial

"Wincomn is an important AV integrator in China and 7thSense supports us greatly in development of the theme park and exhibition market and we value the partnership with 7thSense very much. 7thSense media servers are very important to theme park AV systems and we have found Delta

Media Servers provide the best technical features and most reliable technology. Setting them apart from other media servers, Delta Media Servers have excellent uncompressed playback, warp and blend ability, and outstanding bandwidth up to 6.5 Gb/s, supporting 8K movie play and 120 fps,



4:4:4, 12-bit formats."
Hansen Yang
deputy general manager
Wincomn

becoming increasingly in demand and that's something Delta Media Server delivers."

"Our job is to listen and bring together the visions of the end user and the content producers, developing our technologies to enable their ambitions. Behind the scenes, the means of transporting this huge amount of data from source to display are developed to allow for higher fidelity."

Tech you can rely on

In a multimedia experience, it's crucial that the technology won't let

Delta Media Servers deliver high frame rate, high-resolution content

you down. Nobody wants to see guests disappointed after finding a ride is closed.

Barton says: "Dependability and reliability are vital. Technology should never interrupt the show and distract the visitor from the story. Many attractions operate for long hours and have little availability for maintenance, so things need to work well and any maintenance must be fast."

"Working with Wincomn and 7thSense makes sense for clients, as we not only deliver the best quality solutions on the market, but we also have close working relationships with attraction end users, other manufacturers and integrators – across China and the world." ●





This year's Asian Attractions Expo takes place at the Hong Kong Convention Centre

ASIAN ATTRACTIONS EXPO

The Asian edition of IAAPA's trade show descends on Hong Kong this June. Here's what to expect from the show – plus, news from a selection of exhibitors

From June 5 to 8, the Asian Attractions Expo (AAE) takes place at the Hong Kong Convention and Exhibition Centre, Hong Kong, the premier international business event for attractions industry professionals in the growing Asia Pacific region.

More than 8,000 attendees are expected, travelling from more than 50 countries to learn about the latest innovations, solutions, trends and products on offer on the 9,500sqm trade show floor. Professionals from theme parks, waterparks, FECs, zoos and aquariums, museums, science centres, cultural and heritage attractions and the hospitality and tourism industries will be in attendance.

Over 300 global companies will be represented, presenting the best the sector has to offer, including state-of-the-art rides, virtual reality attractions, motion simulators, waterpark attractions, video and skill games, design and theming services, innovative technology, ticketing solutions, and food and beverage.

NEED TO KNOW

What: Asian Attractions Expo 2018

When: 5 - 8 June 2018

Where: Hong Kong Convention & Exhibition Centre, Hong Kong

How much: \$69 - \$149

Tweet: @IAAPAHQ #AAE18

Register: iaapa.org/expos/asian-attractions-expo/home



The IAAPA Safety Institute and the IAAPA Institute for Attractions Managers will be held. Educational offerings can be used as credits by those seeking IAAPA Certification.

There will be a variety of educational sessions and networking events and the opportunity to visit some of Hong Kong's best attractions, including Ocean Park Hong Kong and Hong Kong Disneyland.



HUSS's recent Condor 2G

TRIOTECH

Booth 401

Triotech is presenting its VR Maze for the first time in Asia. This attraction features exclusive content developed in partnership with Ubisoft including Virtual Rabbids: The Big Maze and Assassin's Creed, both based on the widely popular video game franchises. The VR Maze combines VR and a physical maze in a minimal footprint, immersing guests in a compelling interactive adventure complete with individual scoring. Visit the booth to learn more.

ROCAS & DESIGN

Booth 710

Rocas & Design and the Sharjah Investment and Development Authority (Shurooq) have launched Rocas Emirates, a joint venture created to meet the rising demands of the GCC (Gulf Cooperation Council) area. The

company specialises in taking care of large-scale projects and offers all design and theming construction services without subcontracting.

SIMWORX

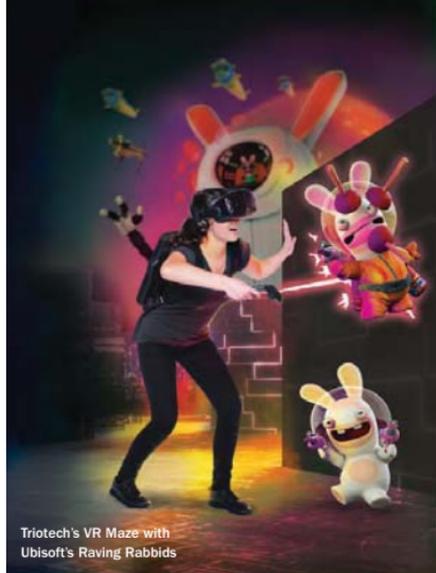
Booth 702

Simworx is promoting its extensive range of media-based attractions and is currently working on many projects globally, several of which are in the Asia region. China continues to be a strong market, with the recent installation of three new attractions for a FEC group in Shenyang – a 4D VR attraction, an Immersive Adventurer and a 360° 4D Cinema. Fourteen rides are being produced for clients in China, while Simworx is also involved in projects in Vietnam and Indonesia.

HUSS

Booth 1424

German ride manufacturer HUSS has announced the opening of its Condor 2G at Sun Tzu Cultural Park in Shandong, China. The cultural park features over 30 rides, from children's attractions to thrill rides. The 31-metre high Condor 2G makes a striking landmark and offers an exciting family ride. The Sun Tzu Cultural Park ride features the classic gondola design and carries up to 56 passengers.



Triotech's VR Maze with Ubisoft's Raving Rabbids

IDEATTACK

Booth 1331

Evergrande, one of the largest real-estate companies in East Asia, has exclusively partnered with IDEATTACK on several theme parks set to open within the next few years. IDEATTACK has been developing thrilling concepts for world-class attractions that will immerse guests in exotic, faraway places and enchanted worlds. IDEATTACK aims to redefine the art of themed entertainment by combining storytelling with cutting-edge placemaking technology and dazzling visual effects.

DIGITAL PROJECTION

Booth 107

Digital Projection is launching its INSIGHT Laser 8K Projector, set to be the first commercially available high-performance DLP laser 8K projector. The INSIGHT Dual Laser 8K provides an ultra-high 8K resolution of 33-million pixels through 25,000 ANSI lumens of solid-state laser-phosphor illumination. The flagship projector is a solution for elaborate installations and large-venue applications. Visit Digital Projection at the AAE show at Navitar's booth.

SEVERN LAMB

Booth 716

Leisure transport specialist Severn Lamb is delivering two large projects into China this year. Haichang Polar Ocean World will be taking delivery of three battery electric 'steam outline' Texan trains, each with an 84-person capacity. These trains have been modified to run on an elevated track significant gradients. Suzhou Amusement Land will be taking delivery of two brand new 144-passenger diesel hydraulic 'steam outline' Lincoln trains. Visit the booth to learn more about Severn Lamb's offer.

SALLY

Booth 1420

Sally Corporation is a worldwide leader in turnkey dark rides. From innovative custom designs to collaboration with famed IPs, Sally creates highly marketable attractions and memorable experiences for guests, from classic storytelling dark rides to repeatable interactive gaming experiences or mixed-media attractions. Talk to Sally about Jim Henson's SPLASH AND BUBBLES, The Walking Dead: Battle For Survival and Five Nights At Freddy's – The Ride!



IDEATTACK is working with Evergrande in China

**VORTEX****Booth 415**

Vortex now offers PrecisionRide series waterslides, engineered for performance and made with state-of-the-art technology. This new series offers smooth, comfortable rides and Vortex says the PrecisionRide features the highest strength-to-weight ratio of any waterslide structure today. Its glossy finish and smooth frictionless connections ensure an enhanced ride.

CAVU DESIGNWERKS**Booth 232**

CAVU Designwerks creates world-class attractions and experiences. CAVU rides use European and American components, certified by CSEI for Chinese installations and TÜV for global installations. With a portfolio that includes theatres, dark rides, suspended coasters and thrill rides, CAVU offers efficient

manufacturing with integration and management of the complete attraction.

INTERLINK**Booth 2115**

Interlink is announcing various new ride projects in Southeast Asia. In Indonesia, the company is working on two new water rides – one a rapid river and the other, the “world’s first” Immersive SuperFlume. The Immersive SuperFlume is the result of a technical collaboration between Simwox and Interlink. A motion base and immersive screens are added to a SuperFlume 16-seat boat ride, featuring a 12-metre vertical lift and chute/splash, along with other effects.

SIMEX-IWERKS**Booth 1520**

Simex-Iwerks announced a collaboration with Talbot Films on a custom production for

Lagotronics launches its farm-themed ride; Simex-Iwerks announces a new film for the National Aquarium (right)

the National Aquarium. *Being Dolphin 4D* tells the story of an aquatic journey through the eyes of a charismatic dolphin. The 4D experience tackles the topic of marine conservation, with a musical score to complement the beauty of the film. Find out about Simex-Iwerks’ library at their booth.

LAGOTRONICS PROJECTS**Booth 1323**

Lagotronics Projects provides turnkey solutions for interactive attractions, show experiences and dark rides. The company is showing its innovative ride concepts, including Farm Fair GameChanger, an interactive rotating dark ride, designed in a farm theme, which premieres at Bayern Park in Reisbach, Germany, in June. The farm theme can also easily be integrated in a traditional media-based dark ride and the rotating dark ride GameChanger can also be designed to match a park’s own story, IP or theme.

KRAFTWERK LT**Gold Sponsor**

As Gold Sponsor of AAE 2018, Kraftwerk Living Technologies



is promoting its expertise in audiovisual system integration for media-based attractions, including its latest generation 4D SFX motion seats, hybrid dome theatres, 4D theatre solutions, flying theatres and more. The firm will not have a booth in Hong Kong, but CEO Manfred Meier, CTO Christian Hofer and sales and marketing director Kevin Murphy will be at the show and available to meet.

ALTERFACE**Booth 2532**

Alterface is presenting two new projects, Qingdao Wanda in China and Bazyliszek in Poland. Alterface has joined forces with Jora Vision and ETF to build a next-generation dark ride in Poland. Bazyliszek opened this spring as part of the recently rebranded Legendia theme park. Alterface also worked on the Qingdao Wanda interactive indoor rollercoaster, which combines ancient Chinese storytelling with thrills and detailed mixed-media sceneries.

JORA VISION**Booth 123**

Design and build firm Jora Vision is showcasing new



Vortex works on waterslide structures around the world



Alterface and Jora Vision worked on the Bazylisek ride

projects such as Los Piratas de Bacalar, a pirate themed walkthrough and Simworx Immersive Tunnel planned for the Mexican Riviera Maya area, as well as the new Bazylisek dark ride, a collaboration with Alterface. Other projects include Legendary Trunks – The Exhibition, which journeys into the world of Louis Vuitton's iconic luggage.

CLIP 'N CLIMB

Booth 3335

Clip 'n Climb is launching BelayMate, an innovative new safety device for the fun-climbing industry. BelayMate eliminates the need for close supervision thanks to a unique internal sequencing mechanism. Learn more at booth 3335.

HOLOVIS

Booth 208

Holovis is unveiling Li-Fly, a patented solution where guests soar through content as if they are flying. Li-Fly uses 5-DOF motion systems that securely hold and tilt 100 guests into a prone position before elevating them over a highly immersive ultra-high-resolution dome to deliver compelling experiences.

This solution advances and transforms traditional Flying Theatres from passive lean-back seated experiences into active ones that deliver more realistic sensations of flying.

PICSOLVE

Booth 705

Visit PicSolve's booth to find out about its latest product launch, the Experience Wall, a collection of floor-to-ceiling HD screens that replaces the traditional green screen. Visitors stand in front of the Wall, which is programmed to display customised content for a more engaging and interactive photo capture experience.

SEEPER

Seeper is committed to innovation, with R&D central to its mission. Last year Seeper received a grant from the UK government to create the world's first holographic ride. This combines mixed-reality headsets, immersive audiovisual, 4D effects and multiplayer interactive gaming in a motion ride. The first experience created with this unique mix of technology allows guests to take a seat in a near-future space-tourism adventure.

PROSLIDE

Booth 1011

Visit booth 1011 to learn how 2018 is proving to be a momentous year for ProSlide. ProSlide's presence in the Asia-Pacific region continues to grow with installations at top-brand parks. The anticipated Atlantis Sanya Aquaventure park opened in May, featuring signature ProSlide attractions like China's first RocketBLAST water coaster and BehemothBOWL40/TORNADO60 funnel. ProSlide rides will also open at parks in Malaysia, Indonesia, South Korea, and elsewhere in China.

SIMTEC SYSTEMS

Booth 1640

Simtec Systems is presenting its HEXaFLITE Flying Theatre product range from HEXaFLITE 16 up to HEXaFLITE 72/80, the largest flying theatre in Simtec's product range. HEXaFLITEs are flying theatre indoor simulator attractions based on a 6-DOF motion base with a breathtaking initial movement. Attendees will also have the chance to learn more about Simtec's FUNRIDE motion simulator systems and interactive dark rides.

JRA

Booth 720

Located within Jeju Shinhwaworld in Jeju, South Korea, Lionsgate Movie World will feature six immersive zones based on the studio's biggest franchises. Working with Landing Jeju Development Company and Lionsgate, JRA is providing masterplanning, design and project management for this destination, which will be Korea's first theme park built exclusively around global films and Lionsgate's largest theme park project to-date.

IPLAYCO

Booth 2142

IPlayCo's new Patented Turbo Tube Slide is a revolutionary standalone twin-lane slide with clear dome entity. The high-octane experience can be added to numerous areas within a facility or on to any existing playground. This is a great addition to a family entertainment centre or existing playground. Along with new trampolines and the Adventure Ninja range, look for announcements on new products and services from the IPlayCo group of companies. ●

PRODUCT INNOVATION

Suppliers tell Attractions Management about their latest product, design and technology launches

For the latest supplier news and company information, visit attractions-kit.net



● Filmmaker Luc Besson (right) previously worked with the Mack family to turn his Arthur IP into Europa-Park's Minimoys Kingdom

'Sensational space story a perfect fit' for new Mack VR coaster, says Michael Mack

Mack Rides has teamed up with acclaimed film director Luc Besson to develop Eurosat Coastality, a brand new VR dark coaster experience at Europa-Park.

Expected to open this summer, Eurosat Coastality is based on Besson's 2017 blockbuster, *Valerian and the City of a Thousand Planets*, and will take riders on an epic space-themed adventure.

It will be located inside the Eurosat sphere in the newly-renovated France-themed area of the park, and will share its home with the Moulin Rouge-themed Eurosat-CanCan Coaster. It will be the first attraction of its kind to host two rides, which use the same track, within the

same space, and will feature a second station with a shift track and separate trains in order to accommodate the experience.

"*Valerian and the City of a Thousand Planets* on Eurosat Coastality will



● Michael Mack, MackMedia



be both exceptional and exclusive," explains Besson, chair of French motion picture company EuropaCorp.

"I cannot imagine a better partner for the Eurosat Coastality project," says managing partner of MackMedia, Michael Mack.

"The combination of Luc Besson and *Valerian's* sensational space story is a perfect fit for us. I am happy to pick up on the popular space

theme and offer it once again to our visitors," Mack adds.

Mack Rides will work with VR Coaster to create and install the technical elements of the ride, while Mack's media development arm, MackMedia, will create the 360-degree content for the rollercoaster, which riders will view on a VR headset.

ATTRACTIONS-KIT KEYWORD

MACK



● Picsolve's Experience Wall offers visitors a fun and interactive photo opportunity at Madame Tussauds in London

PROMOTION



Picsolve offers an immersive experience beyond the traditional green screen



Capturing a visitor's image while visiting an attraction is a staple offer for any operator.

However, over time, visitors have been getting used to the traditional green screen set-up and many see it as a forced activity rather than something they actively engage with. Attractions worldwide have been looking for the next step forward in innovative content capture that is engaging and compatible with their experience or theming, but can also cope with high footfall.

Thanks to its acquisition of Freeze Frame, Picsolve's patented Experience Wall technology solves these issues and offers visitors an immersive and seamless capture experience.

How does it work?

A collection of floor-to-ceiling HD screens forms the backdrop of the Experience Wall, replacing the traditional green screen. Visitors stand in front of the Wall as they would normally. However,



● David Hockley, Picsolve

the content of the screen is fully customisable to fit the attraction's theme and brand messages. Engaging content encourages visitors to interact with the photographer and the attraction. When the photo is taken, visitors are unaware that the Wall behind them turns green for a split second, allowing for post-production effects to be applied.

The Experience Wall can be seen at global destinations, including the iconic One World Observatory, New York. The latest installation can be found at Madame Tussauds London.

David Hockley, CEO at Picsolve, says: "We are hugely excited to be launching the Experience Wall in Europe. Madame Tussauds London is one of the most

recognisable destinations in Europe and we believe this is the ideal opportunity for us to cement Picsolve's position as the number one content creation partner for world class destinations."

Key benefits:

- Immersive capture experience
- Fully customisable content
- Ideal for world-class attractions

Visit the Picsolve team at booth #705 at the Asian Attractions Expo to find out more about the Experience Wall the company's other new content capture experiences.

ATTRactions-KIT KEYWORD

PICSOLVE

New Middle East Galleries at Penn Museum are 'attractive and inviting', says hsd's Alisdair Hinshelwood

The Penn Museum of Archaeology and Anthropology has unveiled a brand new exhibit that takes visitors on a journey through 10,000 years of human history.

The Middle East Galleries, a suite of galleries themed Journey to the City, explore the impact

that ancient Mesopotamian societies had on modern life, particularly how the earliest settlements in these societies gave rise to the modern city.

The galleries, which opened at the end of April, form the first phase of a major refurbishment project at the museum.

UK-based design consultancy Haley Sharpe Design (hsd) was responsible for the overall design of the exhibition, which features three themed galleries: Towards Cities; Ur: The Great City; and The World of Cities.

Almost 1,200 objects from the museum's extensive collection, including the crown jewels of a Mesopotamian queen and one of the world's oldest wine vessels, are displayed throughout the galleries, alongside large-scale video projections, scale models, interactive stations and touchable reproductions of artefacts.



● Around 1,200 artefacts are on display at the museum



● Interactive exhibits help engage museum visitors



● Alisdair Hinshelwood, hsd

"The Middle East Galleries were designed to appeal to a broad spectrum of visitors", says hsd designer and director Alisdair Hinshelwood. "Our design optimises visitor flow and routing, stylistically acknowledging the historic character of the spaces, whilst offering an attractive and inviting gallery environment."

ATTRACTIONS-KIT KEYWORD

HALEY SHARPE

Attraktion's Markus Beyr on custom-made experience at Yas Waterworld

Austrian media-based attraction developer Attraktion has created a brand new multimedia experience for Yas Waterworld in Abu Dhabi, UAE.

Combining an immersive 4D theatre attraction with a traditional waterpark experience, Cinesplash 5D, which opens in June, submerges guests in 50cm of water as they experience the immersive film *Legend of the Lost Pearl*.

Based on the region's rich pearl diving heritage, *Legend of the Lost Pearl* takes visitors on a thrilling quest with scrappy young protagonist Dana, heroine of Yas Waterworld, as she journeys across Abu Dhabi to find the Mother Pearl.

As the action unfolds on screen the cinema floods, immersing guests in water, and water effects, including rain, waterfalls, water explosions, sprays, fountains, water guns and neck blasts, are deployed. Additional effects, including RGB lighted bubbles in the walls and ceiling, as well as wind effects, ground fog, seat vibrations and leg ticklers, are used throughout.

"The development of Cinesplash for Yas Waterworld took several years. Besides building the full attraction, our studio also produced the custom movie for the waterpark, bringing their original characters to life and telling



● Dana stars in *Legend of the Lost Pearl* at Yas Waterworld



● Markus Beyr, Attraktion

the story of the park," says Attraktion CEO Markus Beyr. Yas Waterworld's general manager Bianca Sammut says: "Cinesplash 5D is one of the most exciting new additions to our lineup of experiences and we are proud to be the first waterpark to introduce it."

ATTRACTIONS-KIT KEYWORD

ATTRAKTION

Family Coaster fun!

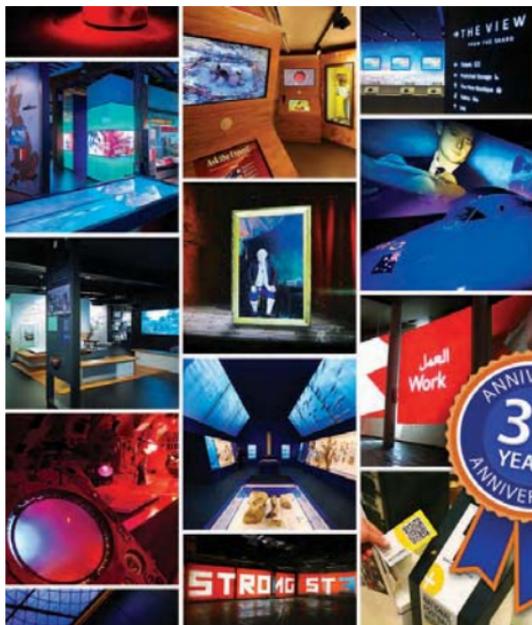


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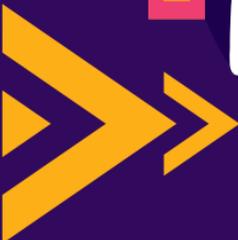
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