

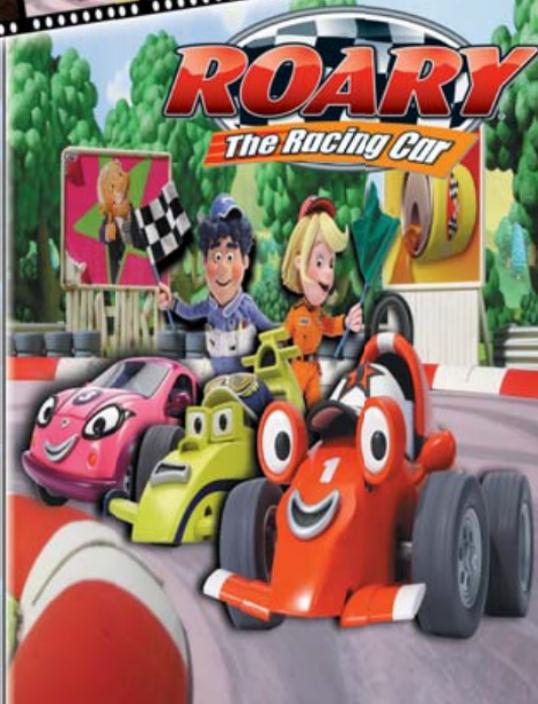
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VOL 15 Q3 2010

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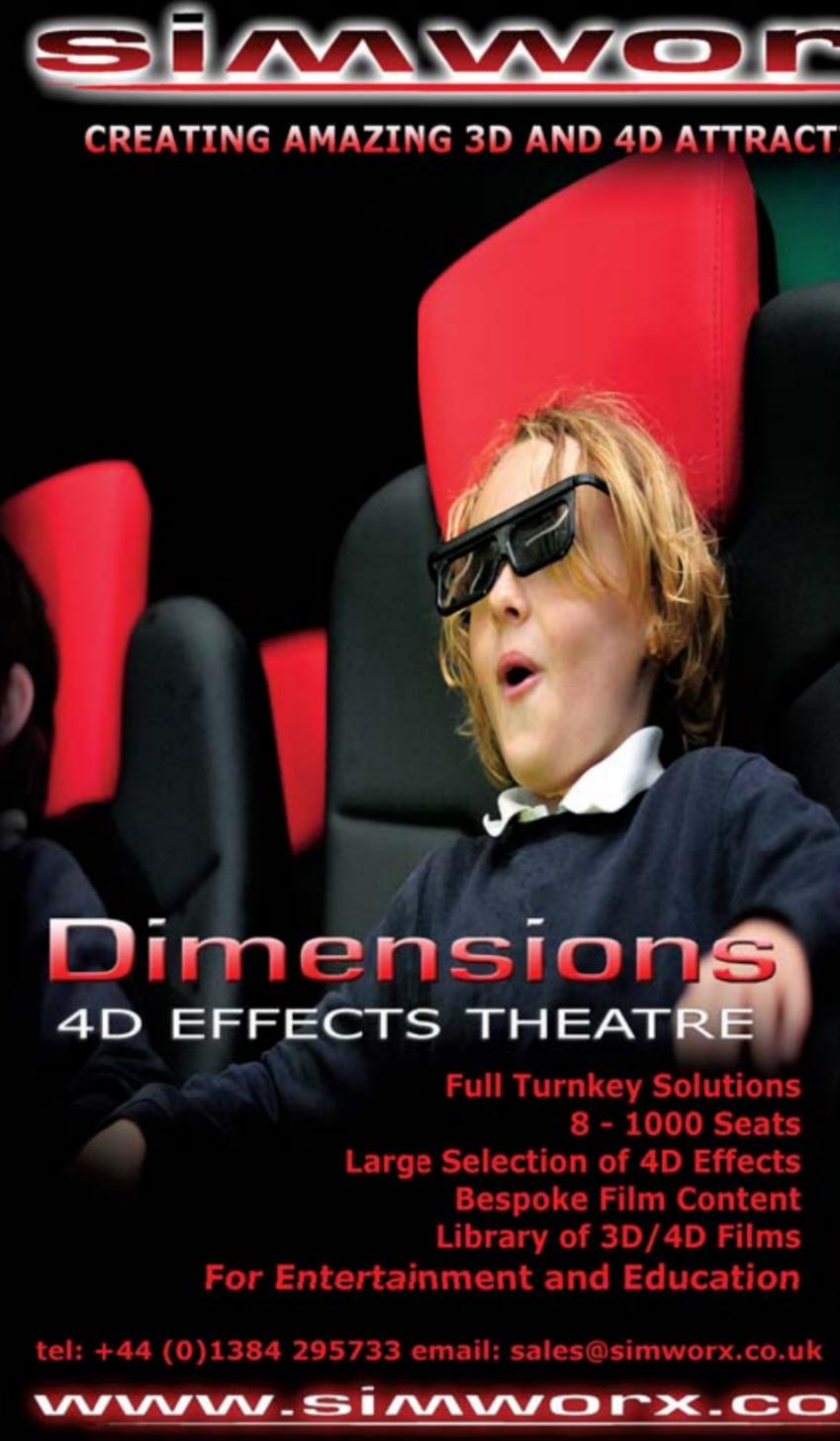


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❖ 3D/4D ❖

ARE CINEMAS TAKING VISITORS AWAY FROM ATTRACTIONS?

ANIMAL
INSTINCT

ZOOS AND AQUARIUMS' CONSERVATION WORK FOLLOWING THE OIL SPILL

★ GUY DROUIN ★

on opening Calypso,
Canada's biggest waterpark

REACH FOR THE STARS

Expert advice on building a planetarium



EXPERIENCE: REFRESHMENT

The JRA-designed Coca-Cola Pavilion at Shanghai Expo 2010 immerses guests within the whimsical world of "The Happiness Factory." The dynamic pavilion brings the company's popular advertisement to life, allowing guests to meet all of the eclectic characters who work together to deliver the perfect soft drink. Filled with one-of-a-kind walk-around characters, a custom animated film, walkthrough environments and an area where visitors can experience the company's latest product innovation, the Coca-Cola Pavilion provides Expo visitors with an experience that is equally fun and refreshing.

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EDITOR'S LETTER

POTTER ENVY

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The latest 3D/4D projects, p70

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As The Wizarding World of Harry Potter opens at Universal Studios in Orlando, Florida, the rest of the world is suddenly realising it wants a piece of the action and Harry Potter envy has broken out – nowhere more so than in the UK.

London Mayor Boris Johnson has publicly expressed his indignation that this great British franchise has been brought to life overseas, leaving the UK Potterless. He's called for a second Potter attraction to be built in east London.

Meanwhile, Warner Brothers' Leavesden Film Studios in Hertfordshire, north-west of London, is rumoured to be considering opening a new visitor attraction based on the Harry Potter characters as part of a wider expansion of the site. Leavesden was the location for much of the filming and production work on the films, and the new 'Hogwarts Experience' could include recreations of locations, such as Hogwarts school hall and Albus Dumbledore's study, which was built at the studio.

Visitors would be given a chance to explore the studios where the Harry Potter movies were filmed, with costumes worn by characters such as Hermione, Lord Voldemort and Hagrid also likely to go on show. Leavesden has been the proposed site for a number of large-scale attractions developments over the years, including a Warner Brothers Movieworld and a James Bond attraction.

While we were busy giving the Harry Potter books a Safeway supermarket award for its contribution to tourism, Universal was busy negotiating and planning the theme park in Florida

Alnwick Castle in Northumberland – used as a stand-in for Hogwarts in some scenes – has successfully marketed its links with the films (see *Attractions Management* Q1 10), while a station in the West Highlands which featured in two Harry Potter films has been awarded £195,000 (US\$300,000, €236,000) by the Heritage Lottery Fund towards work to improve the site as a visitor attraction.

But all this is painfully small potatoes compared with the lavish attraction that has taken shape in Florida. It's clear that the UK missed the boat in a major way in letting this once-in-a-lifetime opportunity slip away. While we were busy giving the Harry Potter books a Safeway supermarket award for Outstanding Contribution to English Tourism in 2003, Universal and others were already negotiating to bring the stories to life on a vast scale.

But the good news is that this is likely to be just the beginning for Harry Potter attractions, with more on the drawing board and potential to scale them to fit different markets and applications. And with the right approach, we may yet see world class Potter attractions both in the UK and other countries before long. As Boris Johnson is planning to stand for London mayor again at the end of his term, maybe one of them will be in the capital.



Liz Terry, editor, attractions@leisuremedia.com

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PHOTO © SIMON WEBB

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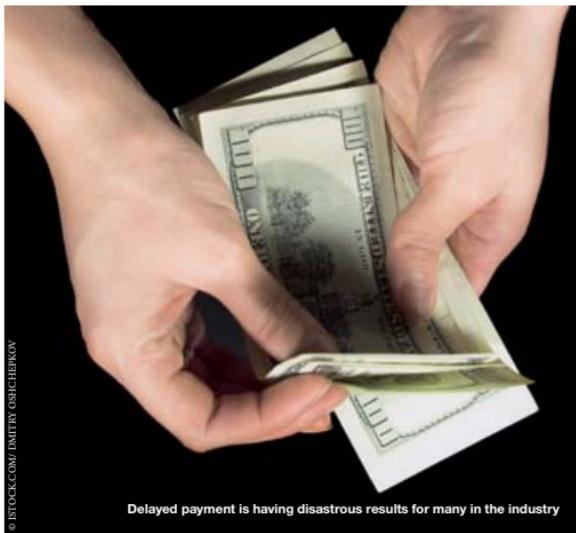
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ATTRACTING OPINIONS



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Delayed payment is having disastrous results for many in the industry

Money talks

Your feature on *When and how am I going to get paid?* (Attractions Management Q3 09) made for interesting reading with its focus on the Middle East. However, this isn't a problem confined to that region. No doubt it has been exacerbated by the credit crunch and its pernicious effects, but it certainly pre-dates the recent crisis and is something we all have to deal with, all of the time.

Private sector clients in particular may approach projects with the best of intentions to their contractors and consultants, but then find the gap between the moment a bank may nominally agree to provide funding for a project and the point when that funding is actually paid over, to be lengthy and subject to periods of great uncertainty, as the banks take an ultra-cautious approach to a sector that they see as inherently risky.

When combined with the bank's own traditional inertia and seeming reluctance to embrace modern technology, funding schedules that clients had assumed to be secure become entirely arbitrary in practice. This can have serious knock

on effects for those being employed to design, manage and deliver the project, as they each have their own financial commitments, which are then put at risk.

Additionally, as projects progress, there is an unfortunate tendency, with which we are all familiar, of clients making the decision to hold on to both their own and borrowed funds as long as possible to underwrite their own cashflow often at the expense of that of the contractors and consultants. Payment often goes to whoever has the critical path in their hands at any given time or who could cause the most collateral damage by 'downing tools'.

This isn't a healthy or desirable state of affairs, but is likely to be the case for the foreseeable future. Is this the time for industry-wide acknowledgement of the problem and an action plan on promoting good practice before good contractors and consultants go to the wall?

Keith Thomas, director, Petersham Group

Historical changes

I believe that managers and curators within the British museums and heritage attractions sector are facing a challenge that's greater than they realise.

We all know that the new government is committed to cutting the debt currently being carried by the country. At the same time, local authorities are having their budgets cut and, to make matters worse, the current funding agreements are reaching the end of their existence.

Put these facts together and it seems likely that funding for museums, galleries and heritage attractions will be cut sooner rather than later. This is widely acknowledged, as is the fact that managers will have to find new sources of money to keep their establishments operational.

This is bad enough, but danger also lies in managers accepting what appear to be obvious solutions to a very real problem.

To take a very simple example, a manager may decide the only option is to charge on the door. The manager may then decide that a cash drawer and roll of tickets at the main entrance is all that's needed. While this may suit some organisations, others are likely to find difficulties only after they have become problems.

There are many other areas relating to charging for either general entry or for specific exhibitions that carry significant risks. For example, the need to reduce exposure to fraud and the need to comply with regulations regarding the processing of credit cards. Managers often don't have the experience to identify these risks.

The challenge for a manager is that there are many companies that will offer a universal panacea without explaining the other possibilities. Yet it's vital to understand that there are options at every stage.

Managers need to become as well informed as possible on the whole subject. If they can do that, they're much more likely to make the right decisions.

Andy Povey, director business development, RefTech Services Ltd

Share your insights, opinions, concerns and hopes with the rest of the attractions industry. Send your letters to **Attractions Management, Portmill House, Portmill Lane, Hitchin, Herts, SG5 1DJ, UK or e-mail attractions@leisuremedia.com**

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GALLERY NEWS



The building was designed by Japanese architect Shigeru Ban

£61m Pompidou-Metz opens

Centre Pompidou-Metz, the offshoot of Paris's famous Pompidou Centre, has opened in France. The €70.8m (£60.8m, US\$89m) new centre, located in the north eastern city of Metz, is the first provincial branch of the famous art gallery.

Owned by Communauté d'Agglomération de Metz Métropole, the building was designed by Japan-based Shigeru Ban Architects (SBA) in partnership with French architect Jean de Gastines. The centre will boast paintings, sculptures, installations, graphic arts,

photography, video, sound works, film, architecture, design and more within its 5,000sq m (107,000sq ft) of gallery space – by artists including Henri Matisse, Pablo Picasso and Joan Miro.

The arts centre will include public areas in addition to the many exhibition areas, a creative studio for projections and performances, an auditorium, a bookshop-boutique, and a restaurant-cafeteria.

The Pompidou-Metz is the cornerstone project of an ambitious urban renewal programme of the city of Metz.

Frick Collection to create new gallery

New York's Frick Collection is revisiting an idea first mooted almost 100 years ago to create a permanent gallery dedicated to sculpture and the decorative arts.

This will be achieved by enclosing an under-utilised section of the property on East 70th Street, the portico in the Fifth Avenue Garden, which is visible from inside the house but not open to the general public.

Pending approval by the Landmarks Preservation Commission, the enclosure of the portico, set back from the original limestone columns and cornice, will create a new gallery within the existing footprint of the institution. It is anticipated that construction will begin in the autumn of this year, with an expected completion date of September 2011. A private foundation will fund the project and the Frick is raising endowment funds to support the costs of the new gallery.

New York-based David Brody Bond Aedas Architects and Planners (DBBA) will be undertaking the enclosure of the portico.

New building for Whitney Museum

The Whitney Museum of American Art in New York is to construct a new building in downtown Manhattan, with work commencing in May 2011.

Situated in the Meatpacking District on Gansevoort Street between West Street and the High Line (a linear park created on the route of an old railway track), the six-storey, 195,000sq ft (18,116sq m) building – designed by Pritzker Prize-winning architect Renzo Piano – will provide the Whitney with essential new space for its collection, exhibitions, and education and performing arts programmes.

Fundraising for the structure has already reached US\$372m (£257m, €304m), 63 per cent of the museum's US\$590m (£407.6m, €481.6m) target.

Revamp for Baltimore Museum of Art

Following the award of a four-year US\$10m (£6.7m, €8.1m) funding package from the State of Maryland, US, the Baltimore Museum of Art (BMA) is to commence a US\$24m (£16m, €19.4m) revamp project.

The project includes renovating galleries for three major art collections – contemporary, American, and African – in addition

to improving visitor facilities and upgrading essential infrastructure. The work is expected to be completed in 2014 in time for the BMA's 100th anniversary.

Capital contributions to 'In A New Light: The Campaign for The Baltimore Museum of Art' will fund the renovations. The state has appropriated US\$2.5m (£1.7m, €2m) in capital funding for 2011, with an additional US\$7.5m (£5.1m, €6.1m) projected to follow over the next three years. The BMA must match each US\$2.5m allocation from the state in order to receive the capital funds. So far, more than US\$2m (£1.3m, €1.6m) toward the state match has been raised from public and private funds, including US\$1.25m (£844,703, €1m) in bonds approved by the City of Baltimore. An additional US\$1.2m (£811,828, €971,411) in city bond funding will be on the ballot in November 2010.



The project includes three new galleries

MUSEUM NEWS



The V&A in London, which will soon benefit from a sister site in Scotland

V&A Dundee design shortlist revealed

Six companies have been shortlisted to draw up plans for a landmark new building to house the proposed V&A museum at Dundee, Scotland.

Located at Craig Harbour as part of city's redeveloped waterfront area, the attraction will host travelling and permanent exhibitions, as well as providing a resource for design and creativity.

Among the shortlisted design teams is Vienna, Austria-based Delugan Meissl Associated Architects, along with Kengo Kuma and Associates of Tokyo, Japan, and Snøhetta from Oslo, Norway.

REX and Steven Holl Architects – both based in New York, US, and Sutherland Hussey Architects of Edinburgh are the

other three teams in the running to be appointed to the scheme.

The V&A at Dundee project is being led by Design Dundee - the result of a partnership between the Victoria and Albert Museum, London; the Universities of Dundee and Abertay Dundee; Dundee City Council and Scottish Enterprise.

Design Dundee chair Lesley Knox said:

"The high quality and wide variety of the shortlist will enable the partners to create a building which will not only be part of the transformation of Dundee's waterfront but also be a landmark for visitors from Scotland and all over the world."

The winning design bid will be revealed later this summer.

NASA to fund museum exhibits

Innovative planetarium shows and travelling museum exhibits are among nine projects which NASA (National Aeronautics and Space Administration) has chosen to receive agency funding this year.

Its Competitive Program for Science Museums and Planetariums will provide US\$7m (£4.8m) in grants to improve educational outreach related to space exploration, aeronautics, space science, Earth science and microgravity. This year's grants range from around US\$177,000 (£122,409) to US\$1.25m (£864,468) and have a maximum five-year performance period. The projects are situated in Arizona, Connecticut, Indiana, Louisiana, Maryland, Minnesota, Ohio, Utah and Washington and all will work with NASA's Shared Service Center in Mississippi to complete the business review necessary before a NASA award is issued.

All will partner with NASA's Museum Alliance, an Internet-based, national network of more than 400 science and nature centers, planetariums, museums, aquariums, zoos and related organizations.

The projects will provide both the public and teachers with NASA-inspired space, science, technology, engineering and mathematics learning.

Grand Museum of Egypt inaugurated

Suzanne Mubarak, wife of the president of Egypt, has inaugurated the first two phases of the new US\$550m (£372m, €444m) Grand Museum of Egypt.

The new 100,000sq m (1.1m sq ft) museum, which occupies a 120-acre (48.5 hectares) site about 2km (1.2 miles) from the Pyramids of Giza, now has a power plant, a fire station and a conservation centre. One of the milestones in the museum's construction has been the completion of the conservation centre. This contains 12 laboratories for restoring, scanning and studying mummies, as well as artefacts

made from pottery, wood, textiles and glass. More than 120 conservators are already at work in the centre, restoring and preparing 6,800 artefacts for display in the Grand Museum.

Funding for the museum has included a loan of US\$300m (£203m, €242.4m) from Japan, while the Egyptian Culture Ministry will provide US\$150m (£101.4m, €121m). A further US\$27m (£18.2m, €22m) has so far been received in donations and the rest is expected to be collected from Supreme Council of Antiquities and other donors and private funds.



More than 6,800 artefacts will be displayed

BALPPA NEWS



The pier was destroyed by fire in 2008

Weston Pier rides nearing completion

The design and build of the eight rides that will be installed at the redeveloped Grand Pier in Weston-super-Mare are nearing completion. The bespoke rides, supplied by Stroud-based ride manufacturer Gravitron, are part of a £3m (US\$4.5m, €3.7m) contract secured two years ago when the 106-year-old pier was destroyed in a fire.

The flagship ride will be a 300m (984 ft) long go-kart track on two levels – one of the biggest of its type in the world – with 22

electric karts, two of which are twin-seaters, travelling at speeds of up to 70 mph.

Also being installed are a 12.5m (41 ft)-high twin slide helter-skelter as well as dogdgers, a ghost train, a 'crazy house' with 36 fun obstacles, a mirror maze and a 'groovy house' containing a psychedelic, three-dimensional light show.

There will also be two electric trains, each able to carry up to 32 passengers along the 400m (1,300 ft) pier.

Merlin signs Animalive deal

Interactive theatre and animation company Digital Interactive Booth Systems (DIBS) has secured a deal to deliver its Animalive concept at four Sea Life centres across the UK.

Merlin Entertainments, which operates the Sea Life portfolio of attractions, will install Animalive's Chatterbox Minis at Sea Life centres in Brighton, Birmingham, Weymouth and Scarborough. The Animalive booths provide a live interactive animation system which combines motion capture with real time animation rendering. Animalive won the best product for show production and entertainment at the IAAPA Expo in 2009. A special character called Kiah the Turtle has been created for the Sea Life centres, which will host an interactive quiz.



Peppa Pig World will open in Easter 2011

Peppa Pig attraction for Paultons Park

An attraction based on the children's TV show Peppa Pig is being built at Paultons Family Theme Park in Hampshire, UK.

Peppa Pig World, scheduled to open by Easter 2011, was created in partnership with Paultons, E1 Entertainment and the show's creators, Astley Baker Davies.

The park will feature seven rides inspired by the show including Peppa Pig's family car and Miss Rabbit's helicopter.



Martin Barratt

Let's show them how it's done

Every year in the UK, a group of business people decide to build a visitor attraction. Their usual starting point is to develop a great idea that one of them had at the end of last week's dinner party. Well, why not build a Robin Hood theme park on that brownfield site just off the M42...?

Why do people outside our industry think they're qualified to develop and operate a visitor attraction just because they visited Orlando once?

Is it because we make what we do look so easy? No – it's because we haven't helped our customers to understand the expertise and hard work that's needed to make a success of running a visitor attraction.

The papers run stories about how much it costs to take a family to a theme park, implying that it's a rip off. They don't consider how much it costs to run a park professionally and safely, or how many families are supported by each attraction business.

This is partly our fault – our industry is still too fragmented. We must improve the way we communicate the value of what we do. We like to form little groups that represent small parts of the attractions sector, but our customers and our legislators don't understand such distinctions.

Unless we present a unified view of our industry, we'll never be valued as we deserve. That has to be an objective worth pursuing.

Martin Barratt, CE, BALPPA

HERITAGE NEWS



The heritage attraction was founded in 1999 by local residents

New York's High Line gets award

New York mayor Michael R. Bloomberg has presented the 2010 Doris C. Freedman Award to the Friends of the High Line, for the latter's work in preserving a piece of New York's industrial history and transforming it into an innovative public space and heritage attraction.

The High Line is a public park built on an elevated freight rail structure on Manhattan's West Side. Originally built in the 1930s to remove dangerous freight trains from Manhattan's streets, the High Line delivered milk, meat, produce, and

raw and manufactured goods into the upper-floor loading docks of factories.

Bloomberg said: "It's an honour to present the Doris C. Freedman Award to Friends of the High Line for its invaluable work in bringing the City's historic High Line back to life."

Founded in 1999 by two neighborhood residents, Friends of the High Line was formed as a non-profit organisation dedicated to the preservation of the entire historic structure and establishing it – and its landscape – as a heritage attraction.

£17m investment in heritage skills

More than 50 training projects in the UK are set to benefit from a share of £17m (US\$25.5m, €20.9m) from the Heritage Lottery Fund (HLF) as part of its Skills for the Future programme. Launched in July 2009, the one-off funding initiative aims to support organisations across the UK to create training places over a five-year period, with grants ranging between £100,000 (US\$150,394, €123,123) and £1m (US\$1.5m, €1.2m).

More than 800 placements are expected to be delivered as part of the investment, which is treble the amount originally set aside by the HLF and will support traditional conservation training. Among the projects to receive funding is Training the Curator, a British Museum-led scheme that will receive more than £510,000 (£767,000, €627,000) to train 15 people – with half from ethnic backgrounds.

The Waterways Trust, Glamorgan Archives and the National Heritage Ironwork Group are among the beneficiaries. Heritage minister John Penrose said: "This investment is a great way of giving people access to practical on-the-job training."

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THEME PARK NEWS



The park is themed on multimedia, cinematography and audio-visual techniques

CDA in Futuroscope merger talks

Compagnie des Alpes (CDA) is in discussions with the Conseil Général de la Vienne with a view to merging the CDA group with the Futuroscope theme park near Poitiers in west central France.

The move would see CDA becoming the controlling shareholder of the park's operating company and taking over Futuroscope's current operations and financing. The Vienne département, which currently owns 70 per cent of the park, would remain a significant shareholder, with minority blocking and governance rights.

Parc du Futuroscope - France's third-largest French theme park and based on multimedia, cinematographic futuroscope and audio-visual techniques - welcomed 1.7 million visitors in 2009, compared with 500,000 in 2003. Sales in 2009 were €80m (£68m, US\$102m), with a net income of €8m (£6.8m, US\$10.2m).

CDA operates 36 leisure sites across six European countries - France, Switzerland, the Netherlands, Belgium, Germany, and the UK - with 15 leading ski areas in the Alps and 21 leisure parks.

New Zealand theme park for China

A NZ\$400m (£140m, €164m, US\$202m) New Zealand-themed visitor attraction is to be built at Qufu, China - the birthplace of philosopher and thinker Confucius.

The 25sq km New Zealand Gardens project will boast a replica Maori village, rock climbing facilities, a vineyard, a kiwi fruit orchard, a dairy farm and a luxury golf resort.

The brainchild of a Chinese developer currently based in New Zealand, the project's ultimate goal is to boost tourism to New Zealand by giving Chinese visitors a little taste of the country "closer to home".

The New Zealand tourism ministry is not formally backing the project, but is known to support it, as it could potentially boost long-haul tourism to the region from mainland China - already New Zealand's fourth biggest market for inbound visits.

The first phase of the theme park project is scheduled to open this summer and more than 1.5 million people are expected to visit the attraction during the first year alone.

Blackstone sells Merlin stake to CVC

Luxembourg-based CVC Capital Partners has acquired a 28 per cent share in UK-based visitor attractions operator Merlin Entertainments.

The stake was sold by Merlin's largest shareholder, private equity giant Blackstone Group, which had originally hoped to float the business. As markets remain volatile, Blackstone agreed to offload its share in Merlin, five years after it acquired the company from Hermes Private Equity, in a deal worth £102.5m (US\$187.2m, €154m).

Blackstone will continue to hold a significant interest in Merlin. KIRKBI, the privately-held, family-owned Danish investment and holding company that controls the LEGO Group, has kept its shareholding unchanged.

Parques Reunidos acquires Movie Park

Private equity group Palamon Capital Partners has confirmed that it has completed the sale of Movie Park Germany to operator Parques Reunidos for an undisclosed sum.

Movie Park Germany - one of the country's largest theme parks - is the last

remaining asset of the Star Parks Group, set up by Palamon in 2004 to acquire seven attractions from Six Flags.

Following the sale of six of the seven assets four years ago, a three-year programme to reposition and refocus Movie Park Germany has helped increase attendance by 40 per cent.

Palamon partner Jonathan Heathcote said: "Movie Park Germany is a business that has seen substantial profitable growth over the past three years driven by strong attendance levels."

Spain-based group Parques Reunidos currently owns or operates nearly 70 parks in a number of countries, including the US, France, Norway and the UK, and is one of the largest operators in the world.

First opened to the public 14 years ago, Movie Park Germany has more than 30 rides, including five rollercoasters.



Attractions at the park include stunt shows

Because time is valuable...



CAI will invest US\$30m in developing Luna Park over the next two years

Luna Park opens on Coney Island

The new Luna Park amusement park on Coney Island, New York, US has opened.

The 3.1 acre development by Central Amusement International (CAI) features 19 rides created by Italian designer Zamperla, one of which is making its world debut at Luna Park. Air Race is a fighter pilot simulation which sends riders upside down at a g-force of up to positive four.

For slightly less aerial excitement, also on offer are Balloon Expedition – a family ride offering aerial views of Coney Island from 40ft (12.2m) up in the air – and Beach

Shack, a ride simulating the feel of a beach hut caught in a hurricane.

Rides include The Tickler, a modern take on a classic coaster; and Wild River, a water ride with a 40ft (12.2m) tall chute.

The city of New York has provided funding of more than US\$6.6m (£4.5m, €5.5m) to support Luna Park's opening, while CAI will invest nearly US\$30m (£21m, €25m) over the next two years to open and operate both it and the Scream Zone, the second phase of development that will add an additional four rides.



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A whole new AtmosFear at Liseberg

The 146m (479ft) high Liseberg Tower at the eponymous Swedish theme park, is to be turned into a free fall attraction.

Called AtmosFear and to be constructed by Intamin, it will be the tallest free fall attraction in Europe in terms of both the fall height and the structure in which it is housed.

The ride starts underground in the basement of the tower and from there it takes around 100 seconds to reach the top of the ride.

The return journey is rather faster, with riders being in free fall for just over three seconds and reaching a speed of 110kph (68.35mph) – before being subjected to a g-force of positive four when the brakes are applied.

Liseberg Tower opened in 1990 and has served for 20 years as a lookout point. Its reincarnation as AtmosFear will see the

protective gondola being removed and replaced with seats and safety bars.

The new attraction is scheduled to open in the spring of 2011.



The new attraction will open next year

SCIENCE CENTRE NEWS



The project includes a new entrance building

£3m funding for Jodrell Bank scheme

The Northwest Regional Development Agency (NWDA) and the Northwest European Regional Development Fund (ERDF) are to provide funding of £3.1m (US\$4.6m, €3.8m) to kick-start the creation of a new Science Discovery Centre at Manchester's Jodrell Bank Observatory.

The announcement coincides with confirmation that the project has been granted planning permission by Cheshire East Council, indicating that work could start on site as soon as next month. An investment of £2.1m (US\$3.1m, €2.5m) will be made

by the NWDA and £1m (US\$1.5m, €1.2m) by ERDF in the Northwest. An additional £600,000 (€728,500, \$900,000) is coming from the University of Manchester, the telescope being part of the latter's School of Physics and Astronomy.

The project includes a Planet Pavilion entrance with an orientation centre and café offering views of the Lovell telescope, a Space Pavilion for exhibitions and events, an education space and a new Galaxy Maze and a Space Garden. The Planet Pavilion is set to open by the end of 2010.



Brigitte Coutant

Looking for global perspectives

On 1 January 2010, Cité des Sciences et de l'Industrie and Palais de la Découverte in Paris, merged their resources and decided to work in synergy to give birth to univscience, benefitting from their know how and network of scientific partners.

Univscience is a Public entity working under the ministries of Culture and Research. Its president, Claudie Haigrèné, is a former astronaut.

Univscience has the ambition to become a major science center of the 21st century operating at a national and international level. The strategic objectives gather science, society, art and innovation, always bearing in mind leisure and edutainment. Univscience's know-how and expertise have been recognised for years, particularly through cultural engineering consulting and project management activities for exhibitions or equipment with national and foreign partners. Thus, Univscience currently enjoys a broad spectrum of partners.

One of these, the partnership with the Majid Al-Futtaim group resulted in the "Citité des Enfants" concept at the Mirdiff shopping mall in Dubai.

Dedicated to children, the concept, spread over 1,300sq m (13,990sq ft), offers five thematic exhibit areas where children can explore and enjoy the worlds of science and technology.

**Brigitte Coutant is director of national and international development
La Cité des sciences et de l'industrie**

New wing for California Science Center

A new permanent exhibition wing - featuring more than 250 species of plants and animals - has opened at the California Science Center (CSC) in Los Angeles, US.

Ecosystems occupies a 45,000sq ft (4,181sq m) area - doubling the attraction's

existing exhibition space - and will form the centrepiece of phase two of the science centre's masterplan.

The experience boasts a series of "immersive environments" - such as the Island Zone and the River Zone - which will enable visitors to explore diverse habitats and ecosystems.

A 24ft (7.3m)-long tunnel through the 188,000 gallon (855,000-litre) Kelp Forest environment will examine the wildlife that can be found in sea forests, while the Rot Room will demonstrate the importance of rot and decomposition in the lifecycle.

CSC president and chief executive officer Jeffrey N Rudolph said: "Ecosystems will give our guests an appreciation for how the living world and physical world are interconnected, as well as how scientists use the key principles of ecology to explain ecosystem processes."



The wing has double the exhibition space

ZOO & AQUARIUM NEWS



The park should be completed by spring 2011

National Aquarium to build park

The National Aquarium in Baltimore, Maryland, US, is to build a US\$5.4m (£3.5m, €4.4m) waterfront park.

The aquarium, in conjunction with the Environmental Protection Agency (EPA), announced its plans for a publicly-accessible waterfront park on its property on the Patapsco River. When purchased in 2007, the 12.5-acre development site was a brownfield site, created by filling a shallow flit in the river with construction and demo-

lition debris from various projects around the city. The remediation work was the first of a phased development process.

"Just over two years ago, we stood in this same spot to present the National Aquarium with a US\$200,000 (£133,660, €162,300) EPA Brownfields cheque," said EPA regional administrator Shawn Garvin.

The park will be developed by the City of Baltimore, and is expected to be completed by Spring 2011.

New masterplan for Lake Superior

Lake Superior Zoo in Duluth, Minnesota, US, is preparing a "secret plan" to revamp the site.

The masterplan will be announced in two weeks and the zoo's marketing director, Anita Johnson, told *Attractions Management* that it will "lay out a process for a 20-year development of the zoo, the facilities and the programmes".

She said that over the last year, the city and the Zoological Society have spent US\$1m (£665,000, €819,000) on improvements, with another US\$800,000 (£535,000, €649,000) in projects planned for this year.

Johnson added that the zoo is planning to reapply for accreditation by the Association of Zoos and Aquariums in March next year, after an unsuccessful attempt in 2006.



The course adjacent to the chimp enclosure

High ropes course for Edinburgh Zoo

Edinburgh Zoo has added a large high ropes adventure as one of its main new attractions for the 2010 summer season.

Supplied by UK-based Innovative Leisure, the new Sky Trail has been designed to blend into the surrounding landscape with its jungle theming and outdoor wilderness-style colours.

The course has been installed adjacent to the £6m (US\$9m, €7.3m) chimpanzee enclosure, providing participants with a chimp's eye view of the enclosure.



Linda Cendes

Zoos mobilise to help Gulf wildlife

The Deepwater Horizon oil spill in the Gulf of Mexico is putting a multitude of wildlife, sensitive ecosystems, and 26 federally listed threatened and endangered species at risk. America's leading zoos and aquariums have mobilised to help save this wildlife alongside key Federal agencies, including the National Oceanic and Atmospheric Administration and the US Fish and Wildlife Service.

Accredited zoos and aquariums have a unique expertise with animals that can support the clean-up effort. More than 60 zoos and aquariums already have animal rescue and rehabilitation programs in place, and their trained personnel and existing infrastructure are being made available to help with the oil spill response.

At the time of writing, more than 1,300 birds, 400 sea turtles, and about 20 mammals have been collected since 20 April. While only a fraction of these are collected alive, cleaning a single animal takes several days and rehabilitation can take months. If an animal cannot be released, it will become an ambassador for its species and will help educate the public about the terrible impact oil spills have on wildlife.

While these efforts are taking place at selected Gulf Coast institutions, if the numbers of collected wildlife increase as expected, aquariums and zoos across the US are ready to send staff to assist in the Gulf.

Linda Cendes is programme assistant at Association of Zoos & Aquariums (AZA)

WATERPARK NEWS



The park is set to open to the public in 2012

Aldar to build waterpark on Yas Island

Abu Dhabi-based Aldar Properties is to open a 16.4-hectare waterpark on Yas Island, the company's major leisure and entertainment destination.

Set to open in 2012, the park will feature more than 40 rides and attractions, including four one-of-a-kind rides that Aldar said have never been seen before in a water park. The property giant has already received the conceptual planning approval from the Abu Dhabi Urban Planning

Council and has appointed the UK-based Atkins as lead designer for the project.

The prequalification process for main contractors for the project has now been launched and construction work is scheduled to begin in July 2010.

Aldar has also committed to making the attraction one of the most environmentally friendly and sustainable waterparks in the world. The park will be one of a wide range of leisure projects at Yas Island.



Aleatha Ezra

Waterparks - a stable industry

With the start of the waterpark season underway, operators all over the world are evaluating exactly what the 2010 season will mean for their business. The effects of the economic downturn of late 2008 and 2009 are still being felt throughout the family leisure industries in the US, Europe and beyond. Yet, there is positive news to be gleaned from one of the industry's barometers of health: the 2009 Global Attraction Attendance Report, compiled by TEA (Themed Entertainment Association) and economics practice AECOM. (See p24)

Statistically, the report reveals that 20.7 million people visited the top 20 worldwide waterparks in 2009, an increase of 2.1 per cent from 2008. In addition, 12.8 million people visited the top 15 waterparks in the US, a growth of three per cent from 2008 and 11.6 per cent from 2005. Beyond the statistics, the report concludes that the global leisure industry remains strong despite economic challenges. "Taken together, the numbers this year reflect an industry that is stable at its core and well equipped to survive, recover and continue its expansion into new markets as the world economy recovers."

The report credits the strategies employed by parks to make the best of a troubled situation by reinvesting in the guest experience, offering creative targeted marketing and building the relationship with the customer.

Aleatha Ezra is the membership manager of the World Waterpark Association

Wildebeest opens at Holiday World

The world's longest water coaster has opened at Holiday World's Splashin' Safari in Santa Claus, Indiana, US.

Situated in a wooded area north of Bahari wave pool, the 1,710ft (521m) Wildebeest experience begins with a conveyor ride up the coaster's lifthill. Following a 38ft (11.6m) drop, eight linear induction motors power the four-person boats up seven more hills, through two tunnels and round a helix. Wildebeest is 64ft (19.5m)-tall and its 14 cars with toboggan-style seating hit a top speed of 36ft/sec (11m/sec) during the ride, with the total ride time being 2.5 minutes.

The addition of the new ride marks the second largest single-ride investment in Holiday World's 64-year history. Costing US\$5.5m (£3.8m, €4.5m), it was designed by ProSlide Technology,



An artist's impression of the park plans

Cairns waterpark gets go ahead

A AU\$35m (£140m, €164m, US\$202m) waterpark in Smithfield, Cairns, Australia, has been given the green light.

The 7-hectare Adventure Waters park was originally given planning consent by Cairns Regional Council in October last year, but work was halted after an appeal by Mulgrave Central Mill.

Once completed, the park will boast a lazy river, a Tornado 45, a Mammoth River slide, a six-lane Octopus Racer, a simulated surfing area and Turbo Tunnel slides.

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Guy Drouin

Canada's largest waterpark, Calypso, opened in June. Andrea Jezovit asks owner Guy Drouin about the challenges of running a summer park in a wintery country



Drouin acknowledges that spending \$45m on a park which only opens three months a year is a risk

Ottawa, Canada, is known for being one of the world's coldest capital cities – at least in winter, when the average temperature hits -10 degrees Celsius. But 7 June saw the arrival of a tropical oasis on the city's doorstep. That's the day Calypso, a 100-acre, CA\$45m (£29.6m, €35.4m, US\$43.3m) waterpark – the largest in Canada – opened, with a design that goes all out to transport its visitors to the tropics.

Ironically, the park's creator, Guy Drouin, president and CEO of Villages Vacances Valcartier Group, got his start in 1971 managing a major winter attraction – Quebec's Valcartier Vacation Village, now the world's largest snow tubing attraction. But Drouin

isn't new to building sunny waterpark destinations either. He added his first waterslide to Valcartier in 1980 and expanded it to a 35-slide waterpark and campground. Today it's both a summer and winter destination, attracting 600,000 visitors annually.

A NEW JOURNEY

The new park was a natural extension of Valcartier. "At Valcartier, we can't enlarge much more because we've reached our potential, and to be able to go farther, we needed to go to another market," Drouin says. So he chose Ottawa, an hour and a half away from Quebec City and far enough away from the other parks that they don't compete with one another.

Work began four years ago.

Drouin spent a year finding and purchasing a tract of land and spent winter 2007 clearing the site of trees. Then came the big challenges – permits and weather. "It's a lot to do, there are a lot of permits affecting every stage of the project," he says. "In 2008, we had a bad summer, it was raining every day, and summer 2009 was even worse, so we delayed the opening by a year."

The park, funded through private investment and a CA\$2m (£1.3m, €1.58m, US\$1.9m) grant from the Ontario Ministry

of Agriculture, Food and Rural Affairs, was meant to be big from the start. "We didn't want to start small and then enlarge it. We're starting large from the first year of operation," Drouin says. The design was created by Quebec architect Therese Bouchard, and thirty-five waterslides have been supplied by WhiteWater West, including Canada's first Family Boomerango. The giant wave pool – Canada's largest, at 4,645sq m (50,000sq ft) – was supplied by Aquatic Development Group.

The design includes a number of themed areas. Overlooking the wave pool is Calypso Palace, a structure featuring a fresco of seashells and a statue of Calypso, Queen of the Waves, a Greek goddess-inspired character. The Jungle Run River has a green canopy and water speeds of 2m (6.5ft) per second; the Turbo Lab features four slides and a laboratory theme; the family-friendly Pirate's Aquaplay area boasts eight slides and 100 different water guns plus a series of extreme slides including Blackhole, Adrenaline and the multi-lane Fast Track.

There's also the Zoo Lagoon for children aged six and under, a sunbathing

ABOUT GUY DROUIN

Favourite food: Thai food and sushi

Favourite film: I don't go to the cinema very often, but I prefer adventure films. I saw *Avatar* – that was a good film

What drives you? I'm an entrepreneur, so I have to be doing something, I can't just sit in a Lazy Boy facing the TV – I have to move. That's why I like building things and having people around me who are working in the same direction and really want to make something happen

How would you describe yourself?

A guy who works a lot



area surrounding the wave pool, international calibre beach volleyball courts and a Hawaiian beach bar featuring a live tropical band, dance floor and tables on the sand.

UNIQUE FEATURES

What makes Calypso particularly special is its family-friendly atmosphere and design, Drouin says. "We allow visitors to bring food inside the attraction," he says. "Most parks in the US don't allow picnics so people have to eat them in the parking lot. Here we have 500 picnic tables in the park."

Another unique feature of the park is its Money At My Fingertip system, which Villages Vacances Valcartier Group developed with Softicket, spending two years on research and development. The system uses biometric technology to allow guests to pay for food, beverages and gift shop items without carrying cash, simply

Calypso's features include a Jungle Run River with water speeds of 2m per second and a Turbo Lab

by scanning their fingertip – particularly convenient for waterpark visitors spending the day in bathing suits. The system was first installed at Valcartier Vacation Village in 2009. "This is unique to our two waterparks," says Drouin. "We've received a lot of positive feedback from our clientele."

The park, located a 20 minute drive from Ottawa and a 75 minute drive from Montreal, is being marketed to both regions, with advertisements appearing in the local press. The park can handle 12,000 visitors per day and 300,000 are expected in the first year. Drouin expects this to increase as he grows the park. "We

have some other attractions to put in place. There's a lot of space – we bought 425 acres of land, and we're using 100 acres right now. In 2012, we're planning to open a campground right beside the park to attract people from farther than Ottawa and Montreal – people from the Toronto area. And we're planning to add new rides every two years."

STAFF STRATEGIES

Drouin hopes to apply what he's learned over his decades of managing staff at Valcartier, which has 500 new employees, including 120 lifeguards. Some of the staff at Valcartier have been there for 25 years. "I try to make my employees as happy as possible because if it's not fun to work somewhere you won't stay there for long. It's never easy, but it's key," he says. "I hope that the directors and main staff

The Pirate's Aquaplay area boasts eight slides and 100 different water guns plus a series of extreme slides

members at Calypso - who are the heart of the park - will stay with us for a long time."

In fact, retaining his best employees was Drouin's original reasoning for adding a waterpark to Valcartier to keep the attraction open year-round. "It's quite tough to keep your best employees with only winter activities. That's why I really worked to open summer activities and to be able to keep many employees year-round. Right now we have 50 year-round employees [at Valcartier] who really know what they're doing. At Calypso, we're only running the waterpark, but in the future we're looking to open for more than just three months of the year - to open in spring and late fall also." This will mean new additions to the park that Drouin can't yet reveal.

Expanding Valcartier from its humble beginnings meant a steep learning curve for Drouin. He had no industry experience when he took over the park in 1971 from his father, Adrien, who had been running it since 1963. At the time, it was a small winter slide centre offering tobogganing. "The early 70s were supposed to become the entertainment years, where people would only work four days a week and have three days off to have fun. That's why I was interested in the industry - the trends were going that way," Drouin says. "I've worked all my life to build something for people to enjoy when they're on vacation."

Drouin, who has a degree in engineering, studied the industry meticulously to make up for his lack of experience. "I read a lot and I was really interested in, and still am interested in, everything going on in the industry. I visited a lot of parks - my first trip was to California to visit Disneyland."

He grew the park, first expanding the winter activities with skating paths and



cross country ski trails. In 1978, he introduced inner tube slides on the park's hills - a new concept at the time. Today, Valcartier is the world's premier snow tubing destination, attracting visitors from around the world with 17 lifts and 42 different slides.

After adding the first waterslide in 1980, he expanded the waterpark rapidly, adding new slides every year or two, with a wave pool debuting in 1989. Challenges included a fire, which destroyed the park's main lodge in 1983, and marketing the park to summer visitors who still associated the Valcartier name with a winter wonderland rather than sun. "We had problems letting them know it was a summer place, but today we have more people coming during the summer than in winter," Drouin says - 350,000 summer visitors versus 250,000 in the winter months.

FUTURE GROWTH

Though Drouin's focus is now Calypso, he's open to building more parks in the future. He sees potential for more waterparks in Canada, particularly in the Toronto region and in the province of Alberta, where he thinks a location between Edmonton and Calgary could do



well. But waterpark investments are always a risk, particularly where the weather is concerned, he notes. "Competition is very tough, there are a lot of other activities everywhere. And the big issue is that the equipment is so expensive to buy and put in place. It's a big investment, \$45m (£30m, €36.5m) for only three months of operation. It's quite a risk, especially when you're facing the weather," he says. "You need people to come to the park, really enjoy it, then recommend it to everyone."

This is the key to Valcartier's success and what he hopes to achieve with Calypso, Drouin says. "We can create big advertisements, but if the experience isn't very good in the park, we won't last long. That's our goal, to make it as enjoyable as possible for our customers."

He has no worries about the park's ability to attract crowds, as long as the weather cooperates. "Californian waterparks get 30, 35-degree weather more often than we do here. But in Canada, when it gets to 25 degrees, people really enjoy it and want to swim." He laughs: "We live in the north, so we go crazy in the summer." ●



Currently Calypso only covers 100 acres of the 425 acres available. Drouin plans to add new rides every two years



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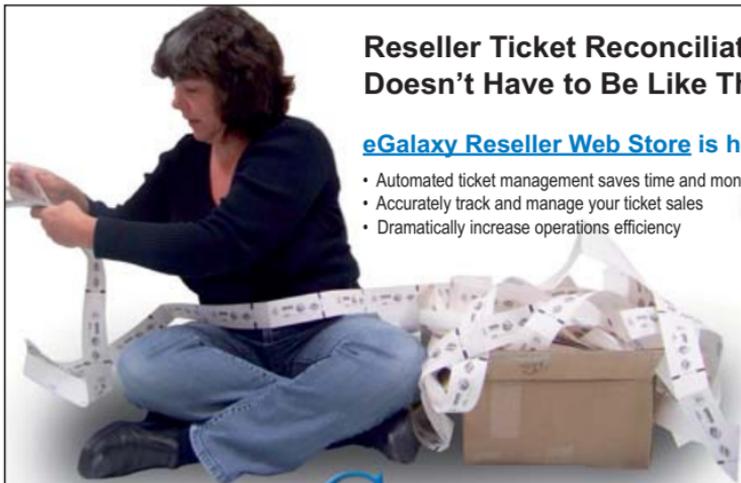
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The TEA/AECOM Global Parks Report

As many countries begin to emerge from troubled economic times, the theme park industry appears to have held its own through 2009. The latest TEA/AECOM Attraction Attendance Report reveals a relatively stable position among the world's most popular attractions in 2009, with the top 25 global parks attracting 185 million compared to 188 million in 2008.

As consumers cut back, many countries saw increases in domestic tourism, or 'staycations', at the expense of overseas trips. This benefited many large regional parks, particularly in Europe, but proved challenging for some destination parks.

THE MOST POPULAR PARKS

The most startling feature of the worldwide list is how dominant the Mouse remains. Almost 61 per cent of the visits to the top 25 parks were to a Disney park. And the original remains the most popular. The four that came top are all versions of Disneyland while Disney parks occupy nine out of the top ten positions.

It's been more challenging for Disney to hit the same heights with its second-gate attraction in Paris – Walt Disney Studios – or the relatively modest version in Hong Kong, but in terms of major parks operators, Disney remains dominant.



Islands of Adventure Universal Orlando

TOP 10 PARKS

PARK AND LOCATION	2009 ATTENDANCE	% CHANGE
North America	89,518,000	-0.1%
Asia	65,361,000	-3.6%
Europe	41,165,000	2.8%
Total	196,044,000	-0.7%

Note: attendance figures are estimates, based on company information, annual reports, published information and from reliable TEA/AECOM industry and tourism sources. Source: TEA and AECOM

The power of brands is evident in the list of these leading parks (see table below). Disney, Universal and Sea World control 17 of the top 25 parks, with a massive 80 per cent of total admissions.

Within the list, half of the top parks are in the US and a third are in Asia. Europe has only four parks in the top 25.

NORTH AMERICAN THEME PARKS

North America is still the dominant theme park market in the world. The total attendance at the top 20 North American parks in 2009 was 121 million, a stable figure compared to 2008 and a significant volume.

The market is dominated by the Florida and California parks. The top 13 parks are all located in these two states and these parks account for 84 per cent of admissions to the top attractions.

Despite 2009's economic climate, some operators increased their profits and had record numbers, as AECOM Economics' David Camp reveals

While 2009 was a flat year for North American parks overall, it was a mixed bag for the different operators. Disney led the way in attendance, with significant increases at its West Coast parks and slight gains in Orlando. However, Busch Gardens, Seaworld and most of the larger parks at Universal experienced declines.

ASIAN THEME PARKS

Attendances at the top 10-15 theme parks in Asia fell by an average of 3.5 per cent in 2009, due to the global financial slowdown, the recession, outbreaks of the H1N1 virus and poor weather in some markets.

However, a number of new parks are planned in the region, so the expectation is that Asia will rebound quickly from the slowdown and become the main growth engine for the industry, led by China.

Top 25 Amusement Parks/Theme Parks Worldwide (2009)

RANK	PARK AND LOCATION	2009 ATTENDANCE	% CHANGE
1	Magic Kingdom at Walt Disney World, Lake Buena Vista, Florida	17,233,000	1.0%
2	Disneyland, Anaheim, California, USA	15,900,000	8.0%
3	Tokyo Disneyland, Tokyo, Japan	13,646,000	-4.5%
4	Disneyland Park at Disneyland Paris, Marne-La-Vallée, France	12,740,000	0.4%
5	Tokyo DisneySea, Tokyo, Japan	12,004,000	-4.0%
6	Epcot at Walt Disney World, Lake Buena Vista, Florida, USA	10,990,000	0.5%
7	Disney's Hollywood Studios at Walt Disney World, Lake Buena Vista, Florida, USA	9,700,000	1.0%
8	Disney's Animal Kingdom at Walt Disney World, Lake Buena Vista, Florida, USA	9,590,000	0.5%
9	Universal Studios Japan, Osaka, Japan	8,000,000	-3.6%
10	Disney's California Adventure, Anaheim, California, USA	6,095,000	9.5%
11	Everland, Gyeonggi-Do, South Korea	6,050,000	-8.3%
12	Seaworld Florida, Orlando, Florida, USA	5,800,000	-6.8%
13	Universal Studios at Universal Orlando, Orlando, Florida, USA	5,402,000	-12.0%
14	Ocean Park, Hong Kong SAR	4,800,000	-4.6%
15	Nagashima Spa Land, Kuwana, Japan	4,700,000	1.1%
16	Hong Kong Disneyland, Hong Kong SAR	4,600,000	2.0%
17	Yokohama Hakkeijima Sea Paradise, Yokohama, Japan	4,500,000	-0.7%
18	Islands Of Adventure at Universal Orlando, Orlando, Florida, USA	4,499,000	-13.8%
19	Universal Studios Hollywood, Universal City, California, USA	4,308,000	-6.0%
20	Lotte World, Seoul, South Korea	4,261,000	0.6%
21	Europa-Park, Rust, Germany	4,250,000	6.3%
22	Seaworld California, San Diego, California, USA	4,200,000	-12.6%
23	Busch Gardens Tampa Bay, Tampa Bay, Florida, USA	4,100,000	-12.3%
24	De Efteling, Kaatsheuvel, Netherlands	4,000,000	25.0%
25	Tivoli Gardens, Copenhagen, Denmark	3,870,000	-2.6%
Total		185,238,000	-1.3%

Note: attendance figures are estimates, based on company information, annual reports, published information and from reliable TEA/AECOM industry and tourism sources. Percent changes for 2009 for certain parks are based on adjusted/updated figures for 2008, thus not directly comparable to published TEA/AECOM list for 2008/07. Source: TEA and AECOM

TOP 10 THEME PARK CHAINS WORLDWIDE (2009)

RANK	PARK AND LOCATION	2009 ATTENDANCE
1	Walt Disney Attractions	119.1m
2	Merlin Entertainments Group	38.5m
3	Parques Reunidos	24.8m
4	Six Flags Inc	23.8m
5	Busch Entertainment	23.5m
6	Universal Studios Recreation Group	23.4m
7	Cedar Fair Entertainment Company	21.1m
8	Oct Parks China ¹	15.8m
9	Compagnie Des Alpes (Grévin)	10.0m
10	Aspro Group	8.2m
Total		308.2m

Note: Attendance figures are estimates, based on company information, annual reports, published information and from reliable TEA/AECOM industry and tourism sources. Source: TEA and AECOM

The Japanese parks remain the strongest operations, although attendance at Disney's two Tokyo parks and at Universal Studios Japan were down this year due to the economy and also the fact that Tokyo Disney Resort had a record year in 2008 with its 25th anniversary celebrations.

In Hong Kong, attendance at Disneyland was up slightly and Ocean Park's attendance was only slightly below its record year in 2008. With further expansion underway, both parks look set for stronger growth. In China, OCT Group is expanding with new parks opened in Chengdu and Shanghai and expansion of attractions at OCT East destination resort in Shenzhen.



Hong Kong Disneyland enjoyed a slight increase in attendance in 2009 and expects more following expansions

EUROPEAN THEME PARKS

Although more modest in size than North America or Asia, the European market has shown continued like-for-like growth

in admissions over the past three years. The majority of European theme parks achieved either stable or increased attendances in 2009, with a number of parks in the UK and Germany reporting record years due to the staycation effect, often being combined with new ride investment.

Some of the tourist-orientated parks, such as Port Aventura in Spain, suffered and Tivoli was hit by the Climate Conference held in Copenhagen during the Christmas season. But overall 2009 was another good year for Europe's parks.

Total attendance for the top 20 European parks in 2009 grew by nearly three per cent compared to 2008, continuing a steady growth for the European market. Although far bigger in absolute terms, the US market stood still in 2009 and the size of the Asian market reduced slightly.

GLOBAL THEME PARK GROUPS

While the top individual parks list has remained pretty much the same for many years, there have been big changes in ownership. Disney's still out in front of the pack with more than a third of all visits being made to its parks, but top European operator, Merlin Entertainments, is continuing to move forward, with attendances growing by nine per cent in 2009. Attendance to other groups remained fairly constant in

TOP 20 NORTH AMERICAN AMUSEMENT PARKS/THEME PARKS (2009)

RANK	PARK AND LOCATION	2009 ATTENDANCE	% CHANGE
1	Magic Kingdom at Walt Disney World, Lake Buena Vista, Florida, USA	17,233,000	1.0%
2	Disneyland, Anaheim, California, USA	15,900,000	8.0%
3	Epcot at Walt Disney World, Lake Buena Vista, Florida, USA	10,990,000	0.5%
4	Disney's Hollywood Studios at Walt Disney World, Lake Buena Vista, Florida, USA	9,700,000	1.0%
5	Disney's Animal Kingdom at Walt Disney World, Lake Buena Vista, Florida, USA	9,590,000	0.5%
6	Disney's California Adventure, Anaheim, California, USA	6,095,000	9.5%
7	Seaworld Florida, Orlando, Florida, USA	5,800,000	-6.8%
8	Universal Studios at Universal Orlando, Florida, USA	5,402,000	-12.0%
9	Islands Of Adventure at Universal Orlando, Florida, USA	4,500,000	-13.8%
10	Universal Studios Hollywood, Universal City, California, USA	4,308,000	-6.0%
11	Seaworld California, San Diego, California, USA	4,200,000	-12.6%
12	Busch Gardens Tampa Bay, Tampa, Florida, USA	4,100,000	-12.3%
13	Knott's Berry Farm, Buena Park, California, USA	3,333,000	-6.5%
14	Canada's Wonderland, Maple, Ontario, Canada	3,160,000	-6.5%
15	Kings Island, Kings Island, Ohio, USA	3,001,000	-4.0%
16	Cedar Point, Sandusky, Ohio, USA	2,942,000	-8.0%
17	Busch Gardens Europe, Williamsburg, Virginia, USA	2,900,000	3.7%
18	Hershey Park, Hershey, Pennsylvania, USA	2,807,000	-1.2%
19	Six Flags Great Adventure, Jackson, New Jersey, USA	2,634,000	-4.6%
20-	Six Flags Magic Mountain, Valencia, California, USA	2,500,000	-2.5%
20-	Six Flags Great America, Gurnee, Illinois, USA	2,500,000	-6.3%
Total		123,595,000	-1.9%
Top 10		89,518,000	-0.1%

Note: '-' indicated a fall. Attendance figures are estimates, based on company information, annual reports, published information and from reliable TEA/AECOM industry and tourism sources. Percent changes for 2009 for certain parks are based on adjusted/updated figures for 2008, thus not directly comparable to published TEA-AECOM list for 2008/07. Source: TEA and AECOM

TOP 15 ASIAN/PACIFIC RIM AMUSEMENT/THEME PARKS (2009)		
RANK	PARK AND LOCATION	2009 ATTENDANCE % CHANGE
1	Tokyo Disneyland, Tokyo, Japan	13,646,000 -4.5%
2	Tokyo Disney Sea, Tokyo, Japan	12,004,000 -4.0%
3	Universal Studios Japan, Osaka, Japan	8,000,000 -3.6%
4	Everland, Gyeonggi-Do, South Korea ¹	6,050,000 -8.3%
5	Ocean Park, Hong Kong SAR	4,800,000 -4.6%
6	Nagashima Spa Land, Kuwana, Japan*	4,700,000 1.1%
7	Hong Kong Disneyland, Hong Kong SAR*	4,600,000 2.0%
8	Yokohama Hakkeijima Sea Paradise, Yokohama, Japan*	4,500,000 -0.7%
9	Lotte World, Seoul, South Korea ²	4,261,000 0.6%
10	Happy Valley, Shenzhen, China	2,800,000 -11.9%
11 =	Window Of The World, Shenzhen, China	2,500,000 -4.9%
11 =	Dunia Fantasi, Jakarta, Indonesia	2,500,000 -3.8%
13 =	Chimelong Paradise, Guangzhou, China	2,400,000 -7.7%
13 =	Happy Valley, Chengdu, China	2,400,000 new park
15	Happy Valley, Beijing, China	2,350,000 11.9%
Total		77,511,000 -3.4%
Top 10		65,361,000 -3.6%

Notes: 1 Everland attendance does not include Caribbean Bay waterpark visitation. 2 Lotte World attendance only includes theme park. 3 Calculation of % change excludes Happy Valley, Chengdu. Annual reports, published information and from reliable TEA/AECOM industry and tourism sources. NB: Per cent changes for 2009 for certain parks are based on adjusted/updated figures for 2008, thus not directly comparable to published TEA/AECOM list for 2008/07. Source: TEA and AECOM



Ocean Park in Hong Kong was the fifth most visited theme park in Asia in 2009

2009, following periods of growth through acquisition in previous years.

In October 2009, The Blackstone Group, which already owned Merlin Entertainments Group and 50 per cent of Universal Orlando, added Busch Entertainment Corp to its portfolio. In December, the corporation was renamed SeaWorld Parks and Entertainment.

In China, 2009 saw the continued expansion of OCT Parks as a major player from its base in Shenzhen, with new parks opening in Chengdu and Shanghai. With a number of new projects on the cards, OCT expects to be moving up the list rapidly over the next few years.

The strength of Merlin, Parques Reunidos, OCT and Compagnie des Alpes is in the breadth of their offers. Compared to the traditional powerhouses of Disney, Universal and Busch, these operators have a larger number of smaller parks and attractions. With the high capital cost of creating major theme parks, there are likely to be less new parks opening in the next few years. But the models being followed by these newer operators allows them to continue to open small attractions, leading to continued growth in visitor volumes for these groups. They have strong growth targets and we expect to see them consolidate and improve visitor volumes in 2010.

And what of the much-heralded Middle East market? Well, the global credit crisis put paid to many plans there. We'll still see schemes built in the UAE, but these are likely to be far more modest than originally planned, and it will be some time, if ever, before parks there feature on the TEA lists.

TOP 20 EUROPEAN AMUSEMENT/THEME PARKS (2009)		
RANK	PARK AND LOCATION	2009 ATTENDANCE % CHANGE
1	Disneyland Park at Disneyland Paris, Marne-La-Vallée, France	12,740,000 0.4%
2	Europa Park, Rust, Germany	4,250,000 6.3%
3	De Efteling, Kaatsheuvel, Netherlands	4,000,000 25.0%
4	Tivoli Gardens, Copenhagen, Denmark	3,870,000 -2.6%
5	Liseberg, Gothenburg, Sweden	3,150,000 3.3%
6	Port Aventura, Salou, Spain	3,000,000 -9.1%
7	Gardaland, Castelnuovo Del Garda, Italy	2,900,000 4.0%
8	Walt Disney Studios Park at Disneyland Paris, Marne-La-Vallée, France	2,655,000 1.6%
9	Alton Towers, Staffordshire, England	2,650,000 5.0%
10	Phantasialand, Germany	1,950,000 2.6%
11	Legoland Windsor, Windsor, England	1,900,000 5.0%
12	Thorpe Park, England	1,870,000 10.0%
13	Parc Asterix, France	1,820,000 1.1%
14	Futuroscope, France	1,700,000 6.3%
15	Legoland Billund, Billund, Denmark	1,650,000 Flat
16	Mirabilandia, Italy	1,624,000 1.5%
17	Parque De Atracciones, Madrid, Spain	1,500,000 Flat
18	Heide Park, Soltau, Germany	1,400,000 5.0%
19	Duinenrell/Attraktiepark, Holland	1,349,000 -0.5%
20	Chessington World Of Adventures, Chessington, England	1,300,000 n.a.
Total		57,278,000 2.9%
Top 10		41,165,000 2.8%

Notes: 1 Attendance for Tivoli and Liseberg includes Christmas market operations. 2 Attendance for Port Aventura is for theme park only (excl. waterpark - separate ticket). 3 Attendance for Gardaland is for theme park only (excludes waterpark and Sea Life Centre - separate tickets). 4 Bakken (#8 in the 2008 list) in Copenhagen, Denmark was not included this year as guest do not buy a ticket to enter the park (it is not gated). 5 Calculation of % Change excludes Chessington World of Adventures. Attendance figures are estimates, based on company information, annual reports, published information and reliable TEA/AECOM industry and tourism sources. Per cent changes for 2009 for certain parks are based on adjusted/updated figures for 2008, thus not directly comparable to published TEA/AECOM list for 2008/07. Source: TEA and AECOM

With concerns that admissions and per capita spend levels would drop in 2009, many park operators instigated cost reduction programmes early in the year to reduce staff levels, cut back on operating expenditure and limited capital investment. In a number of cases these savings were greater than any revenue loss, so a number of parks saw revenues rise in 2009 despite the economic climate.

The challenge facing these operators in 2010 is to build on the success of 2009 and continue to grow as the economy emerges from recession. ●

David Camp, director, economics, AECOM

Footnote: Figures are subject to change/revision and readers should refer to www.aecom.com for the updated report



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AZA

The Association of Zoos and Aquariums' top team talks to Kathleen Whyman about the oil spill in Mexico, the AZA's accreditation process and its 100-year plan for guaranteeing species' survival

STEVE FELDMAN, SENIOR VICE PRESIDENT EXTERNAL AFFAIRS

What is AZA?

The Association of Zoos and Aquariums is a charitable membership organisation founded 85 years ago. We have 221 institutional members in seven countries and 6,000 individual members.

To become a member, zoos and aquariums must go through a rigorous accreditation process which establishes high standards for every aspect of zoo and aquarium management.

For the individual members we function as a professional society. We offer training, awards and recognition and we operate conferences and meetings where papers are presented and we represent our members in public in government affairs.

What is the Species Survival Program?

This is our animal management programme, which we have in place for approximately 160 different species. It helps our members collectively manage and conserve wild animals.

Imagine if you had two rhinoceroses here, and six over there, and another four



STEVE FELDMAN

someplace else. If you managed them all separately, you wouldn't necessarily have the breeding and genetic diversity to maintain a healthy population. But, if you work together and say, "right, we have 63 altogether and know where they are and what their relationship to each other is", then you can move them around, breed them and protect them.

Most of these animals move around between zoos and aquariums without any money changing hands. They're donations and breeding loans – these animals are priceless and we're working hard to conserve them.

What's your role?

Part of my job is to make people realise what an important role we play in saving the planet. To do that we work with our zoo and aquarium members to ensure best practice and elaborate on projects for conservation, then they tell that story to their visitors. Our members collectively have 180 million visitors a year – that amounts to half the US population. There are other conservation organisations who do a lot of good work, but nobody else has a collection of institutions that have that kind of exposure to the public.

One of the most interesting things I do is act as spokesperson for AZA. Not a day goes by without me getting to talk about the amazing work our members are doing.

When do you act as spokesperson?

Local members often look for expertise and comments. Sometimes I talk about the situation, sometimes I pass them on to the relevant expert. I have access to a tremendous number of scientists, biologists, researchers and veterinarians.

I also speak if there's been an accident with an animal. Zoos and aquariums have a remarkable record of safety – there's more danger in crossing the street to get to the zoo than when you're at the zoo. That's probably why it's such a big deal when something happens.

The big question the press and public want to know is "is there an independent body that oversees what's going on?" or "is there going to be an appropriate review of whatever occurred?".

What's the main challenge?

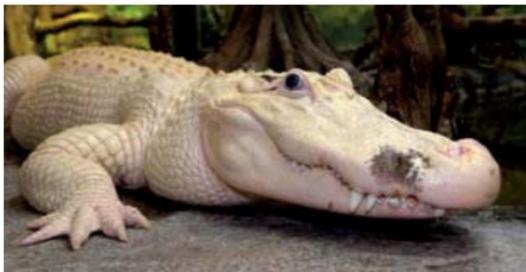
You can never communicate enough. There aren't enough hours in the day to reach everyone with your message, so I'm finding new ways to share information with people. We use the latest technology and media to help us – we're tweeting and Facebooking to spread the word.



Amphibians are one of the most threatened animal groups and are a large part of AZA's focus



Zoos and aquariums in North America had 180 million visitors this year



JIM MADDY, PRESIDENT AND CEO

What does your role involve?

My role involves leadership of the professional staff, the executive leadership function of the association and working with its board of directors to set policy and establish a vision that provides the best possible service to members.

There's an enormous amount of interaction with our members. I'm often in the zoos and aquariums or talking to the directors of these institutions about their concerns on government affairs, public affairs, scientific management of their collections plus cooperative management of our zoo and aquarium collections.

What are the concerns?

The top concern is always conservation. There are few places on the globe where the habitat for wildlife is getting better as opposed to getting worse, so zoos are more important than they've ever been. There's a clear threat to the sustainability of so many different wildlife species. That translates into a clear threat for the collections we're able to display for the public.

What are the main needs of members?

Zoos and aquariums are more popular than ever. They will receive 180 million visitors in North America this year. Taking care of them while providing the highest possible standards of animal care and welfare



JIM MADDY

in the exhibits and behind the scenes is a constant balancing act.

It needs ever better data and management systems so the operators make the right budget decisions between capital investment and operating budget to provide the best possible visitor experience and translate all that into real support for conservation.

What are the current trends and issues in zoos and aquariums?

The elected officials, particularly the US senators and representatives of communities, appreciate how important zoos and aquariums are to education, wildlife conservation and habitat improvement in their communities. But somehow, when those same people come together on the floor of the senate, the understanding and value and support that officials express, isn't translating into the kind of support that

we need at a national level to sustain our collections and make an even greater contribution to wildlife conservation.

What are AZA's future plans?

Education and conservation is where we're headed. We know zoos and aquariums will be called on even more in the future to rescue species, to rescue individual stranded animals, such as marine mammals and to step in in emergencies such as the disastrous oil spill currently in the Gulf of Mexico.

The future of AZA's member institutions will be increasingly focused on captive breeding, preventing extinction and the reintroduction of captive bred species to re-establish otherwise extinct populations.

What about the BP oil spill?

BP is the fourth largest entity on earth and the US government is probably the single largest organisation, so we've got this giant corporation and an incredible federal establishment with so many resources. But it'll be zoo keepers from Omaha and curators from Chicago and veterinarians from LA who rescue and treat the wildlife that's been impacted by the oil spill. And they'll do that at our their expense – BP and the government don't pay for that work. The animal carers almost always wind up picking up the tab themselves because that's who they are, that's what they do and it speaks very highly of their values.

**PAUL BOYLE, SENIOR VICE PRESIDENT FOR CONSERVATION,
EDUCATION & PROFESSIONAL DEVELOPMENT**



PAUL BOYLE

What does your role involve?

We're looking at furthering practices and standards to ensure high quality animal care and welfare as well as the future of the populations of animals that are in zoos.

As wildlife becomes more threatened, the living collections at accredited zoos and aquariums are becoming more important, as they're the public's portal to understanding wildlife. We're planning their futures for the next 100 years to ensure zoos still have healthy, vibrant collections of animals into the long-term future.

How can you plan their futures?

One of the things we're developing is animal care manuals. These are essentially



AZA is developing 'animal care manuals' - handbooks for looking after species



AZA offers training for everything from husbandry technique to aquarium management

handbooks for looking after particular species - we have almost 300 so far.

They're updated constantly and pull together all the knowledge of nutrition, their space and housing requirements, husbandry, veterinary practices, breeding, every aspect of keeping an animal alive far into the future. It's a complex process.

A steering committee looks at breeding arrangements throughout AZA accredited zoos and aquariums. This is to ensure genetic diversity so that as many species as possible are carried on into the future.

Which animals are vulnerable?

We have a very strong focus right now on amphibians. Frogs, toads and salamanders are being threatened globally with 250 times the normal rate of extinction. Their skin is very moist and permeable. There's a fungus disease of the skin, Chytride, which has an effect on their heart and can rapidly take whole populations of amphibians out of existence. It's spread to many places of the world and is a terrible threat.

It's not the only threat to amphibians because climate change is affecting them. They're like the canary in the coal mine. They're very susceptible so we're in collaboration with many institutions around the world and those in the field to try and save our amphibians.

How can you educate the public?

We're working with our education departments in all our accredited zoos to develop common messages that speak in a unified tone about things like climate change. The

public is tremendously confused about climate change, partly because the way good-minded, hard working scientists, have talked about this complex subject, in complex ways to the public. We're distilling down rather than delivering messages that leave people feeling blamed.

Many conservation messages used to talk about the scale of problems and how huge they were and left people feeling blamed for the problems.

Some survey work I've been doing for the past 10 years has taught us that often people feel that the environmental problem is at the scale that's beyond their capacity to do anything meaningful and that's not true. We're communicating that individual people's actions can make a difference. We aim to engage people in taking ownership of solutions for climate change.

What training do you offer?

We're always looking to promote the next generation of zoological conservation-minded leaders in zoos and aquariums, so we run training programmes in different venues. Traditionally these have been week-long, face-to-face courses offered for college credits. They cover everything from husbandry techniques to zoo and aquarium management, the development of successful public exhibits of animals and specific courses on amphibian biology and reptiles and other wildlife.

In the next couple of years we'll be offering an online professional development programme with many courses and certificate programmes for people in the field.

KRIS VEHRS, EXECUTIVE DIRECTOR



KRIS VEHRS

What does your role involve?

I manage the association internally. I'm a wildlife lawyer, so my specific areas are government affairs, ethics and accreditation. I serve as legal counsel for both our ethics board as well as our accreditation commission.

Are there any legal issues outstanding at present?

A number. A big example is that the Animal Plant Health Inspection Service is working on the creation of regulation for birds. Birds have never been covered with regulation under the Animal Welfare Act.

How is AZA accreditation earned?

There are a series of criteria. Top of the list is excellence in animal care. We make sure there are appropriate facilities, trained staff at the appropriate level and appropriate veterinary care programmes. There must be an education and a conservation pro-



Member institutions must go through AZA's tough accreditation process every five years

gramme. We also look at financial stability and governance.

How do institutions apply?

An application is completed initially. We then send a team, including a veterinarians, a husbandry person and an operations person. If it's an aquarium, someone who's familiar with the wet side of things will visit.

That inspection team spends two to four days at the institution. They talk to the staff and check out every exhibit, front of house and behind the scenes.

They also take a look at policy, check sample stock and records and also talk to governing authorities.

At the end of that time they leave the institutions with a list of achievements and things they need to work on. The institution has between three weeks and three months to submit a report and documentation showing what they've done. At the end of a hearing the committee votes on whether to accredit or deny or accredit for a year and then send the team back in.

How often do you review?

Every five years. It averages out that we deny accreditation to about two institutions a year. In a 10-year period we denied accreditation to 26 institutions and tabled accreditation of 64 institutions.

JILL NICOLL, SENIOR VICE PRESIDENT, MARKETING AND CORPORATE RELATIONS

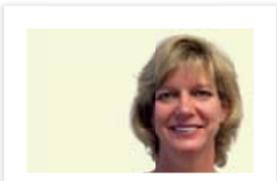
What does your role involve?

I oversee the revenue generation aspect of the association including memberships, conferences, advertising, corporate sponsors and new business development.

What's the For Profits subsidiary?

We've formed a Delaware-based corporation called Animals Inc. AZA is currently the sole shareholder and is looking for ways to use the great animal-based digital content generated from our zoos and aquariums and monetarise that.

It's looking at online ventures, digital signage ventures, iPhone application ventures. It would be funded through investor funding, generate a profit then generate the portion that AZA maintains in the company to AZA to fuel its work.



KRIS VEHRS

We're finalising a business plan right now, it's very new. We'll be approaching private investors to help fund the company.

Who are your sponsors?

We have a top tier programme called Proud Partner programme. Currently,

Animal Planet and the insurance company Geico and are in that programme.

How has the recession affected AZA?

We hold two conferences a year so we had all the challenges inherent in running an event when the economy's down. We've managed to weather that very well and have a profitable conference.

Many associations cut marketing, but we increased it and reached out to our members fairly strongly. We gave a compelling argument as to why, if they only go to two conferences this year, ours should be one of them. Also, we're in a unique industry - our members rely on each other for breeding animals and they get a lot of that work done at our conference. ●

ECSITE 2010

This June's Ecsite conference boasted 800 delegates, 75 sessions and 43 exhibitors. BRC's Mark Hayward talks about his session on spatial media and how dialog is a better information tool than presentation



Perhaps it's an ironic twist that the theme for this year's Ecsite conference, Exploring Risk, was held at the German Occupational Safety and Health Exhibition or DASA. DASA's mission is to examine our relationship with work and the workplace with a focus on health, physical and mental, as well as spiritual well-being. As technology is transforming traditional safe mediums such as advertising, newspapers, television, magazines and books, what risks will institutions such as science centres and museums have to take to remain relevant to the rapidly growing generation of digital natives?

My focus for the conference was emerging digital trends in museums and I hosted a session dealing with this topic. Instead of presenting information, I facilitated a dialogue between the presenters and the audience. Rather than saving questions for the end of the session, we made questions from the audience the entire session.

In the session we discussed three areas. First was how digital technologies are reshaping the physical museum experience. Second was to examine virtual museum spaces and the use of technology to create overlay experiences using mobile devices and augmented reality. Thirdly we looked at the social dimension of these trends through social networking, user-generated content and blogging.

SPATIAL MEDIA

We also talked about 'spatial media'. This is the idea of linking specific media to spe-



Sessions were selected to cover all the main trends in the science centre industry



In keeping with the risk theme, delegates were encouraged to abandon their comfort zones

cific spaces or architecture. It can take the form of large-scale projected media that replaces traditional printed exhibit graphics or the use of location triggered media on mobile devices. The use of spatial media opens up a world of possibilities for updating content and incorporating user-generated media into exhibit experience. However, the creation and management of this type of media requires rethinking of staffing, budgeting and content ownership.

Digital technology was a topic discussed in other sessions as well. A session entitled From Audioguides to Smartphones looked at current trends and projects utilising mobile content. One key idea discussed was the use of simpler technologies such as texting or simply posting phone numbers in exhibitions that link to recorded audio content.

OVERVIEW

Overall the conference seemed quite successful. As is usually the case, the best exchanges of ideas and information came

not from the sessions, but from the small conversations with attendees over coffee, lunch or excellent German beer.

I wonder how the powerful transformations occurring in communications, publishing, education and entertainment will impact the format of conferences. Gathering hundreds of attendees globally to present information feels outdated. I hope in future more emphasis is placed on dialogue and exchanging information before, during and after conferences. ●

Mark Hayward, creative director, educational experiences, BRC Imagination Arts

ECSITE 2011

Next year's conference will be held at the Copernicus science centre in Warsaw, Poland May 26-28 2011. The topic will be free-dom. www.ecsite.eu

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VISITORS WISH THEY WERE FAR FAR AWAY? JENNIFER HARBOTTLE INVESTIGATES

THE BACKGROUND

Universal Studios Singapore is the newest major attraction to open on Singapore's island resort of Sentosa. Built on 500 hectares, Sentosa is situated on the fringe of Singapore's business district and is home to a number of visitor attractions, hotels, spas, as well as man-made beaches.

Resorts World Sentosa is Singapore's first integrated resort. Developed by Genting, the Asian gaming and leisure company, the resort comprises four luxury hotels, 26 function rooms, a ballroom, theatre, casino and Universal Studios Singapore. It opened in January 2010.

The 20-hectare Universal Studios Singapore – Sentosa's largest attraction – opened slightly later on 5 March this year and is owned and managed by Resorts World Sentosa, which paid US\$1bn (£665m, €818m) for the management contract with Universal Parks and Resorts.

THE OFFER

Universal Studios Singapore is built in a round and is made up of seven themed

zones: The Lost World, Far Far Away, Madagascar, Ancient Egypt, Sci-Fi City, New York and Hollywood. It features 24 rides and attractions – 18 of them original or adapted for Singapore. Universal Studios Singapore has the world's biggest single collection of DreamWorks Animation attractions as well as the world's first *Madagascar* ride. The Far Far Away castle from the world of *Shrek* is a world's first, as is the Sci-Fi zone, which doesn't exist in any other Universal park.

Key attractions are the Lights! Camera! Action! special effects stage in New York, the Revenge of the Mummy attraction in Ancient Egypt, Waterworld in The Lost World and *Shrek 4D* in Far Far Away.

The super-exhilarating hard rides aimed at the teenage and particularly brave market include Sci-Fi City's Battlestar Galactica (a duelling coaster which is the tallest of its kind in the world), Jurassic Park Rapids Adventure raft ride and Accelerator.

For children and non-thrill-ride lovers there are a selection of gentler rides, such as a ferris wheel called the Magic Potion

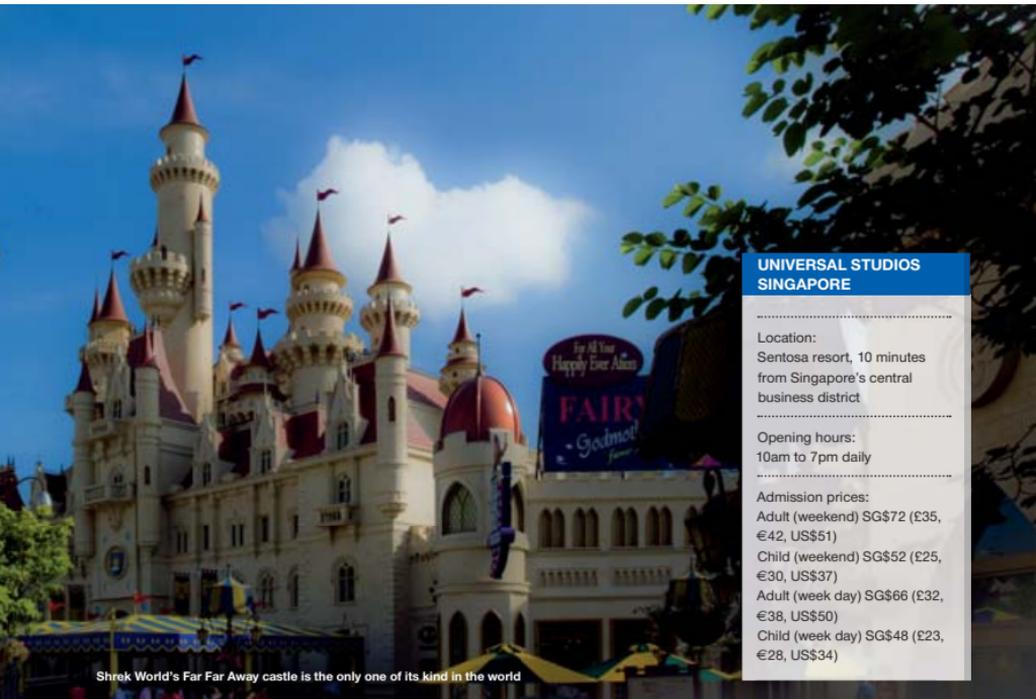
Spin in Far Far Away and the Pantages Hollywood Theater in the Hollywood zone, where you can watch the Universal monsters in a rock-n-roll musical.

MARKETING

It's hard to miss advertisements for Universal Studios Singapore. When you first arrive in the country at Changi airport, you're greeted by lots of large, colourful posters inviting you to visit the park, and on Singapore's main shopping strip, Universal has several large billboard ads.

My hotel concierge spoke enthusiastically about Sentosa and Universal Studios when I asked him for recommendations of where to go during my visit, although he seemed confused about the park's opening times (join the club!).

There were several large trade groups visiting the park on the day I was there, which suggests that some pre-opening trade marketing has been done. Considering the park is still in soft opening mode and trade channels have typically long lead sales, I was very impressed.



Shrek World's Far Far Away castle is the only one of its kind in the world

UNIVERSAL STUDIOS SINGAPORE

Location:
Sentosa resort, 10 minutes from Singapore's central business district

Opening hours:
10am to 7pm daily

Admission prices:
Adult (weekend) SG\$72 (£35, €42, US\$51)
Child (weekend) SG\$52 (£25, €30, US\$37)
Adult (week day) SG\$66 (£32, €38, US\$50)
Child (week day) SG\$48 (£23, €28, US\$34)

Less impressive is the park's website where I could find no admission prices or opening times. I also think it should be themed as Universal Studios Singapore rather than Resorts World Sentosa.

ACCESS AND SIGNAGE

It's estimated that Sentosa's annual visitor numbers will double in the next few years. To prepare for this, Sentosa Development Corporation is spending SG\$300m (£142m, US\$214m, €175.6m) to bolster infrastructure, widen roads and put new express trains on its monorail tracks to take guests into Resort World Sentosa. By the end of 2010, a sheltered boardwalk from the mainland onto the island will also be completed.

There is ample parking for the theme park - Resorts World Sentosa has 3,500 underground spaces and although these are shared with other attractions, it's hard to imagine that parking will ever be a serious problem.

It's also possible to access Sentosa by bus, cable car (which is re-opening mid-2010) and monorail.

Once inside Universal Studios Singapore, signage is very clear. The LED variable message boards at key intersections throughout the theme park is a tactic more parks should employ - these, combined with the circular park layout, makes it almost impossible to get lost.

TICKETING

The front gate ticketing setup has more than 24 individual ticketing stations, so even in the busiest periods guests won't have to wait long to gain entry. LED signage above the ticket booths communicates ticket prices and package options.

The ticketing staff were pleasant and friendly. I arrived at 2pm and was (politely) cautioned that the park would close at 6pm. I was also informed that the Battlestar rollercoaster wasn't operating that day. When I asked why, I was told "for maintenance and repairs". Confused, I asked how long the park had been open, as surely a brand new attraction did not require maintenance just yet. I was then told that the coaster wasn't currently working.

At this point I asked the attendant for a brochure containing the park's prices and package options. After some momentary language difficulties, a swift-acting attendant highly proficient in English informed me that they weren't available yet.

I was invited to upgrade my ticket to a VIP package, which includes express entrance on all major attractions and a guarantee that I would complete the Universal Studios Singapore experience in less than four hours. I declined, but the approach was swift and professional.

DISABLED ACCESS

Access for people with disabilities at Universal Studios Singapore is very good. The park is built on one level throughout and the streetscapes provide adequate wheelchair access onto sidewalks.

Restroom facilities for disabled guests are generous and there are plenty of them.

DESIGN AND LAYOUT

This park follows the typical Universal Studios design format and execution. The

Children will love the Fairy Godmother's Potion Shop (right) and there are many retail offers to suit all

scale of the themed elements is huge, so it makes for a very immersive experience because it's impossible to see anything past the artificially built environment.

The number of mature landscape features particularly impressed me. No seedlings and immature trees for this park – just glorious flora and fauna that gives the park a “lived in” feel – well worth the investment in the landscaping, which must have been considerable. Shade “superstructures” have been built spanning across entire sections of the park so there's no need to worry about sun exposure here.

Additionally, the park has several outdoor air conditioners co-located with undercover outdoor food and beverage patios, which are a welcome addition.

On the downside, the park's compact layout didn't always allow time for transition between themes – something Disney Parks do incredibly well. For instance, the transition between The Lost World and Sci-Fi City and then again between Sci-Fi City and New York was so rapid that I was left feeling a little startled by the quick shift in experiences.

FOOD AND BEVERAGE

With 30 individual outlets and kiosks, the F&B offer at Universal Studios Singapore is comprehensive, affordable and you never have to walk too far to get it.

Each themed area has a selection of anchor outlets built indoors, with plenty of air-conditioned seating areas.

Far Far Away, for instance, has the Fairy Godmother's Juice Bar where you can mix your own colourful elixirs. In Ancient Egypt, the Oasis Spice Café features an Egyptian-themed buffetaria and if you fancy trying a local dish, Discovery Food Court in The Lost World has a selection of Singapore's national dishes.

Meal options are pleasingly affordable, with most combo meals – which include a main meal and drink – costing the customer less than SG\$13 (£6.20, US\$9.30, €7.60). Some combo meals are even available for less than SG\$10 (£4.77, US\$7.15, €5.85)



STAFF

All staff members were exceptionally friendly and attentive during my visit. I found making eye contact with them easy and they all responded with a wide and genuine smile.

Aside from my brief language barrier at the ticketing booth, the staff I encountered were highly articulate and well informed and I was particularly impressed with the way in which they interacted with younger guests. A two-year-old's tantrum was narrowly avoided when a staff member who told him he wasn't old enough to ride a rollercoaster, performed a little dance for him, which made him laugh. Meanwhile, I witnessed a lovely act of kindness when a staff member helped an elderly person into and out of a chair.

CLEANLINESS

It would be easy to conclude that the park's faultless cleanliness was due to its infancy and the fact that it was quiet on the day of my visit.

But in a country known for its impeccable cleanliness, it didn't surprise me to see staff members bending down to pick up litter as they walked through the park. This attention to detail is in part inherent in Singaporeans and just as equally a measure of the cleanliness culture of Universal.

VALUE FOR MONEY

There's no denying that taking a family to Universal Studios Singapore is an expensive day out. Day entry tickets for a family

(two adults, two children) will set you back SG\$248 (£118, US\$177, €144) at the weekend. With an average of SG\$13 per person for food and beverage (taking your own food into the park isn't allowed) plus the cost of getting to and from the park, a day at Universal can nudge towards SG\$300 (£143, US\$215, €175). The park does not offer a family ticket price.

Having said this, the Universal Singapore Studios experience is world class, and considering the broad mix of attractions and quality of entertainment and overall presentation, I rate the park's value-for-money as “reasonably good”.

RETAIL

I defy any little girl to be able to walk past Fairy Godmother's Potion Shop and not tug their mum's skirt for a fantasy candle or one of the gorgeous outfits from the world of Shrek. Likewise, try taking your son through Galactica PX without dipping into your wallet for a piece of the future from Galaxies Beyond. For adults, Hollywood has the greatest number of shopping opportunities, with everything from camera accessories to DreamWorks Animation characters and silver screen collectibles. Of the 20 shops, my favourite was The Brown Derby, selling crazy, silly hats. Credit card extension anyone?!

SUMMARY

The attention to detail at Universal Studios Singapore is enough to impress even the most hardened theme park critic. The use



of mature plants in the landscaped areas and the sheer height of each zone contributed to a very immersive experience and apart from the major rollercoaster being out of action, I didn't feel as though I was visiting a brand new park.

The mix of attractions is well balanced and I was particularly impressed with the way in which heavily themed flat and kids' rides co-exist with the thrill rides. A family of broad ages could easily enjoy this park without too many arguments, because each age group can enjoy something within a small radius rather than walking from one end of the park to the other.

The street theatre and live interactive shows were my personal favourite. In Far Far Away (my favourite zone), Donkey Live kicked off with a sing along show featuring Shrek's sidekick Donkey. This was an animated show using a host to play the "straight man" to the Donkey's comic routine and to begin with I feared the worst.

Could Universal Studios Singapore successfully transfer what is essentially a Western product, Western script and

humour to an International audience using local performers? Yes, absolutely.

The show was light, funny and considerate (guests provide the "material" for Donkey's gentle ridicule) and superbly well acted by the host. It didn't matter that the guests gave Donkey nothing to work with; the actors were as well rehearsed and innovative with their delivery as an impromptu comedy team.

The design and execution of each zone are of a world-class standard and if you go to Singapore wanting to experience the American brand that is Universal Studios, you won't be disappointed.

For me however, I was hoping for a little more of Singapore (or Asia) in the park. Having been blown away by the way in which Disney has successfully created a Hong Kong Disneyland rather than Disneyland in Hong Kong, I was left wanting more Asian influences and design elements and a greater nod to my geographical location than I got.

Like all attractions, the success of Universal Studios Singapore will be deter-

Street theatre and live interactive shows ensure guests are entertained in-between rides and activities

mined by its visitor numbers. A world-class attraction is expensive to build and maintain and therefore it comes with a world class ticket price. While overseas visitors may be prepared to pay the entrance fee, only time will tell whether the park can build enough repeat business from its relatively small local market. ●

SCORE OUT OF 10

Score out of 10	
Toilets	10
Staff	8.5
Cleanliness	10
Experience	8
Value for money	7
Overall experience -	8.5

RIGHT TO REPLY **A SPOKESPERSON FROM UNIVERSAL STUDIOS SINGAPORE**

"During our daily pre-opening tests conducted on 25 March 2010, we found a technical problem on the Battlestar Galactica attraction. In keeping with our commitment to employee and guest safety, the ride was immediately closed by Universal Studios Singapore.

We are still investigating the cause and solution to the problem and presently cannot speculate as to when the Battlestar Galactica attraction will reopen. The safety of our guests and employees

remain our top priority. Every ride meets or exceeds industry guidelines and goes through a series of detailed inspections and testing to ensure that all the ride's safety systems are functioning properly.

No ride will be operated at any time unless it has passed all daily inspections and tests. The opening of Battlestar Galactica will only take place when Universal Studios Singapore is thoroughly satisfied that the ride will deliver the best experience for all guests."



eastern promise

With an anticipated 4.5 million visitors in its first year, expectations for Universal Studios Singapore's success are high. Christian Aaen at AECOM Economics explains how his feasibility study helped reach this figure

WHO OWNS THE PARK?

Universal Studios Singapore is owned and managed by Resorts World Sentosa (RWS), which is owned by the Genting Group – one of the largest gaming companies in Asia. Genting has a long-term licensing

agreement with Universal Studios for the theme park. I worked on the feasibility study for Universal Studios and two other attractions for Genting Group.

HOW MUCH DID THE PARK COST TO DEVELOP?

The estimated development cost of the theme park is US\$1bn (£687m, €831m). The park is part of the \$4.4bn (£3bn, €3.65bn) Resorts World at Sentosa, which has a casino and six hotels and plans to attract 60 per cent of its visitors from Southeast Asia, China and India.

The Singapore government expects visitor arrivals to the city-state to rise by as much as 25 to 30 per cent to 12.5 million this year, helped by an economic recovery in Asia and the lure of two new multi-billion

The park has different zones, or lands, including New York (above left) and Sci-Fi City (above right)

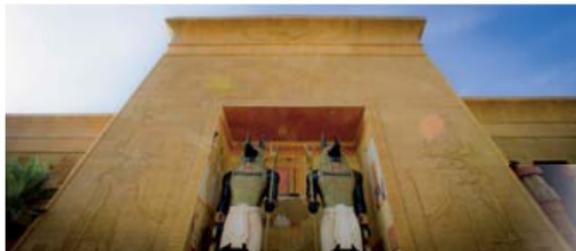
dollar integrated casino resorts with hotels, retail, shows and visitor attractions.

WHY WAS SINGAPORE CHOSEN?

At AECOM Economics, we've studied attractions in Singapore for more than 20 years. One of the major development challenges has always been scarcity of land and the expensive cost of land.

Sentosa Island has historically been a popular tourism island in Singapore. With the Integrated Resorts (IR) bids for Sentosa and Marina Bay, the Sentosa Island location was best for a major theme park in terms of land availability, setting and fit with overall plans for Sentosa Island as a major destination in Southeast Asia.

With the announcement of the Singapore government's plans for IR in 2005/06 and the economic engine of a major casino, the potential realisation of a major branded theme park increased



In Ancient Egypt, visitors travel to a time when Pharaohs tombs were being discovered and curses unleashed



significantly. Universal Studios represents a strong fit with Singapore Tourism Board's 2015 tourism vision.

We consider Singapore and Southern Malaysia (Iskander Malaysia) as an up-and-coming theme park attraction destination hub with Singapore as the gateway for international tourism.

Singapore already has a significant international tourism market (10 million plus), which is growing, and excellent tourism infrastructure with top international airport, hotels and shopping. This is in addition to several key natural, historic, cultural and themed attractions.

WHAT IS INTEGRATED RESORTS' DEVELOPMENT CRITERIA?

With relation to Marina Bay and Sentosa Island, capitalising on a casino component would allow for significant recreation, entertainment, and MICE facility development and investment without subsidies from the government.

The evaluation criteria for Marina Bay breaks down to: tourism appeal and contribution (40 per cent); architectural concept and design (30 per cent); amount of development investment (20 per cent); and strength of the consortium and partners (10 per cent).

Sentosa's evaluation criteria has a greater emphasis on tourism because the

about universal studios singapore

Size: 20 hectares (49 acres)

Expected initial attendance: 4.5 million visitors during first year (target by RWS management)

The content: Seven themed lands – Hollywood, New York, Sci Fi City, Ancient Egypt, The Lost World, Far Far Away and Madagascar

Signature attractions: *Battlestar Galactica*, *Jurassic Park Rapids Adventure*, *Canopy Flyer*, *Donkey Live*, *Lights Camera Action*, *Journey to Madagascar* and *Monster Rock Developments*: Future rides and shows include a lagoon show, a parade and a new *Transformers* attraction. The park will bring in more rides over the next three years

government would like to attract more leisure visitors and repeat customers to the island. This resulted in: tourism appeal and contribution (45 per cent); architectural concept and design (25 per cent); amount of development investment (20 per cent); and strength of the consortium and partners (10 per cent).

Genting made a key strategic decision in pursuing Universal Studios as part of its bid for Sentosa Island to meet and exceed the Singapore government's requirements for tourism market growth and major attrac-

The Lost World land boasts the Jurassic Park Rapids Adventure ride, as well as other attractions

tion drivers. This turned out to be the winning strategy and successful bid for the Sentosa Integrated Resort.

HOW WILL THE PARK BENEFIT THE REGION?

The development of major new parks in the global theme park industry over the years, such as Walt Disney World (Orlando, Florida), Tokyo Disneyland (Japan) and Disneyland Paris (France) have had significant impacts on the nature and dynamics of the US, Japanese (Asian) and European theme park industries.

It's likely Universal Studios Singapore could have similar effects. For example: industry expansion (adding visits to the market and expanding the overall industry); market education (park product, quality of experience, the value of pay-one-price); price and product leadership (a pricing umbrella leading to increased prices based on improved product); market awareness (established brands, marketing expertise/techniques); product positioning (niche marketing and positioning strategies); consumer expectations (increasing standards at other parks/industry); and development

THE MASTER PLANNERS

Gordon Dorrett president, Forrec

"Our masterplan had to take into consideration components like access, parking, back of house, in-park and external sightlines, existing site features, circulation and relationship to adjacent uses while always thinking about the guest experience.

The primary constraint was the overall size of the property and, particularly, the area limited to Universal Studios. We had a clear brief from Genting Resorts that the park had to be large enough to handle the required annual attendance and capacity, provide room for future expansion and ensure that it would be regarded as a true Universal Studios park experience. To overcome the park's size, we maximised the in-park guest experience. This meant transitions between lands had to be fast but effectively designed, sightlines had to ensure containment within lands or be carefully directed to key visual icons and back of house areas had to be minimised and, in some cases, relocated off site.

Singapore's tropical climate with high humidity and rainy seasons meant that we had to provide

more weather protection than other Universal parks. From a masterplanning standpoint, this meant ensuring there was ample room to locate shade and rain shelter as well as create heavily landscaped rest areas and cooling zones for the guests.

The original site was heavily planted, which provided both opportunity and constraint for the masterplan. While fortunate to be able to work on a site with mature landscape, the local government wisely insisted that we maintain a number of stands of mature trees and a few specimen historic trees. We therefore had to work within these heavily-treed areas and limit construction in these zones.

The limited site area also meant that parking and service had to be located below ground, so at least half of the park was built on top of the parking structure. We had to ensure that the largest, heaviest and most dynamic attractions were located off the parking structure so that they could be built economically and not cause undue stress and extra cost to the parking structure."

environment (the heightened interest/peripheral development).

RWS has announced a preliminary attendance target of 4.5-plus million visitors for the park during 2010.

There are no major branded theme parks in the Singapore/Southern Malaysia regional market currently. We expect Universal Studios Singapore to help grow the overall market, leading to increased theme park visits per capita for the region.

HOW WILL IT IMPACT OTHER PARKS?

The development of Universal Studios does not preclude the development of other theme parks and major attractions in the Singapore/Southern Malaysia regional market area. On the contrary, we believe the region has enough market strength combining tourism and regional population to potentially become a destination hub.

There are several examples of multi-theme park destination hubs in other parts of the world, including Southern California; Orlando, Florida; Tokyo, Japan; Paris, France; and the hub in Hong Kong/Shenzhen with similarities to Singapore. Universal Studios will act as a catalyst for

other attractions and leisure and tourism development in Singapore and Southern Malaysia, which will benefit the region as a whole by expanding the market.

HOW IS A MULTI-THEME PARK CREATED?

Creation of a multi-theme park hub requires several circumstances. The first is combined resident and tourist market strength, another is interested developers. Additional factors can greatly assist in this process, such as governmental policies which enhance the opportunity. The notion of a multi-theme park hub in Southern Malaysia/Singapore is highly compatible with Singapore Tourism Board's T2015 tourism plan and the Malaysian government's plans for Iskandar Malaysia. It's the goal of Iskandar Malaysia to create an economic zone in Southern Malaysia which is directly related to Singapore and benefits both countries.

Part of this strategy is already underway with the new Legoland Malaysia Resort under construction, with expected opening in April 2012. This includes a Legoland theme park, themed family hotel and water park. Other proposed parks, attractions



The limited park size meant that special care had to be taken to maximise the in-park guest experience

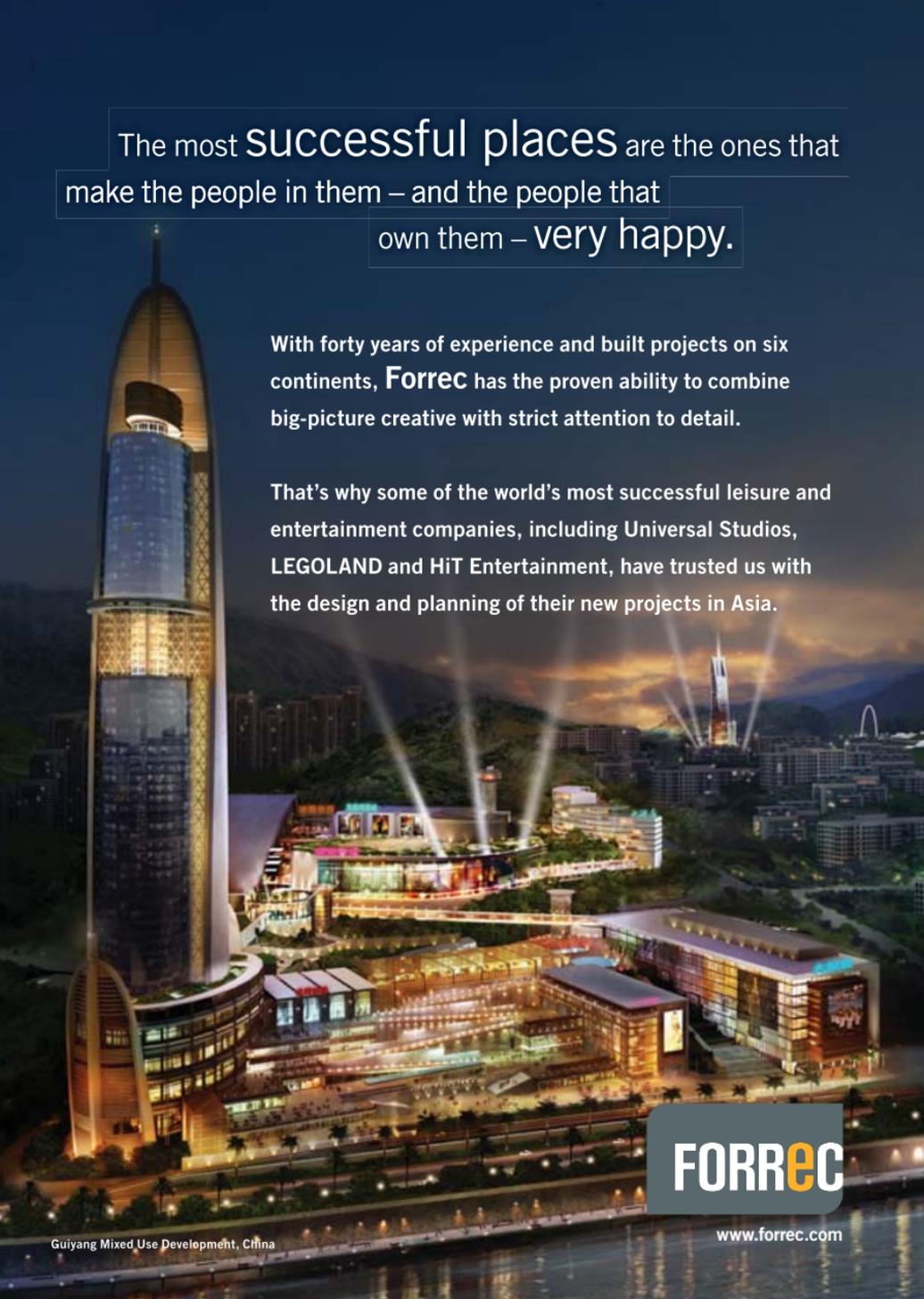
and resorts are planned in Nusajaya and Desaru, Iskandar Malaysia.

WHY WILL IT WORK?

The industry is moving to Asia. We consider Asia as the major growth region now and in the future, with key fundamentals in place and new development potential.

We believe the development of the multi-park destination theme park hub can be realised over time, with its success tied closely to the implementation of T2015 in Singapore and the Iskandar Malaysia strategy. This will be possible by the merging of economic interests of Singapore and Southern Malaysia, potential co-marketing of the region as a multi-attraction and diverse tourism destination hub, the easing of border procedures and improved transportation access and links. ●

Christian Aaen is regional director, entertainment and leisure for Asia at AECOM Economics based in Hong Kong



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MONTEREY BAY AQUARIUM

The fifth great white shark to be released by Monterey Bay Aquarium was recently killed by a fishing net. John O'Sullivan, curator of field operations, tells Kathleen Whyman about the aquarium's work and how these sharks can be protected

What happened?

As with all of our previous exhibit sharks, it got to a point where we determined for the animal's health it needed to be released, which was last November when the shark was 1.7m-long. With the release we applied two types of satellite tags to track its health after its release. One of those tags had a data recording method of 180 days that transmits at the end of that time. The other satellite tag says 'I'm here' when the dorsal fin breaks the surface, so the two tools together really complement each other. She did very well on release, travelling from Monterey Bay to Baja California, a distance of more than 500 miles.

Our first indication that something might be wrong was when the data tag started to report early – after 25 days – though this isn't uncommon because of malfunctions. There was nothing conclusive in the data that was transmitted, so we attempted to recover the tag because if you get it back you get all the data and there's more to

evaluate the potential outcome. We sent a recovery team to a sandpit in central Baha. The day they got there the tag stopped talking. We didn't have any conclusion to draw until the second tag started reporting again and it was on land, which is not a good sign because that tag doesn't float.

Using the satellite latitude and longitude, we sent colleagues to recover the tag and talk to the fisherman. It's a story we hear all the time – it was a bycatch animal. [The term bycatch is used for fish caught unintentionally while intending to catch other fish.] It was an unfortunate incident. The fisherman had moved his nets further offshore because of a problem he had with giant squid eating catches that go into the net. Due to bad weather he didn't get to his nets for several days.

White sharks are protected both in California and Mexico so if commercial fisherman get to sharks that are alive in the net, they release them and most survive. It happens several times a year.

The Monterey Bay Aquarium's White Shark Project, started in 2002, is helping research and exhibit white sharks caught off the California coast. This project is promoting study, awareness and conservation of these animals. By tagging and exhibiting white sharks they aim to promote public understanding and protection of this ecologically important and threatened species.

It's an unfortunate event – it's the first of our exhibit sharks that we know has met this fate. At this size they're at their most vulnerable to these fisheries. As they get larger they face less and less challenges because of their sheer size.

What impact did this news have on the staff at the aquarium?

After human safety, animal welfare is our biggest concern. Having that happen is sobering. For many, it makes us want to refocus and energise ourselves into the programme because of the importance of it. The reward you get when the shark's on exhibit and you see the public looking at it and appreciating it, that's a great feeling. When an animal's lost, it's sobering.

Have you now reviewed your policy on releasing sharks into the wild?

This animal was at liberty for more than 130 days. That was the longest we could have exhibited that animal for because of the size. Our exhibit is only so big and you have to be concerned with the animal's welfare. You can't help but think if maybe we'd released it a day later would it have swum another way? But we can't not release things into the wild because we're concerned that they might have an unfortunate event in the future.

It's hard to separate the 'huggy feeling' that's sometimes associated with the caring for animals. These are not pets, they're



The Monterey Bay Aquarium aims to promote conservation awareness of the threatened great white sharks

© MONTEREY BAY AQUARIUM/FRANK WILHELM



© MONTELEONE/PAUL AQUARUM/DANIEL WILDER

The sharks are only 'borrowed' from their environment to inspire people, but then they must be returned

WHEN RELEASING AN ANIMAL BACK INTO THE WILD, DEPENDING ON THE ANIMAL, AND IF IT'S DEEMED APPROPRIATE, THE TRACKING OF THEM AND THE FOLLOW UP IS CRITICAL

wild animals – their instinct is to feed. We borrow them from the environment to help inspire people and aid conservation and then we need to return them. That's why we don't name the sharks. I don't want to sound cold, but that's the reality.

How can bycatches be prevented?

Bycatch is something that can't be stopped. Some fisheries do target the bycatch when it has a very high value but, this is not one of those cases. The challenge is that we don't have a real good understanding of how common these incidents are. We have a very good rapport with what the fishers are seeing and doing, but there are isolated camps of fishers in Mexico and in both countries fishermen work out at sea – there's no observer programme, we're relying on their honesty.

How do the sharks change public attitudes?

Seeing the white sharks live takes away the fierce, television stereotype of a very large,

teethy animal gorging itself on a small seal or a large whale. Instead people see how majestic the animal is moving through the water. We replace the fear and hype with beauty and a sense of placement for the animal in the environment. It's become one of our greatest ambassadors for conservation of the oceans.

Do you currently exhibit any great whites?

No. Our outer bay water exhibit, where we have our tunas and where the great white would usually reside, is coming down in August for nine months' repair. We'll continue the research, then when the exhibit comes back next June we'll be in the right position to display another white shark.

What are the planned renovations?

We're improving the life support, filtration, lighting and the overall feel of the exhibit. Technology has advanced in the last 15 years – this exhibit was constructed 18 years ago. The improvements are partly to

enhance the public's experience, but the higher costs are to improve animal care and wellbeing.

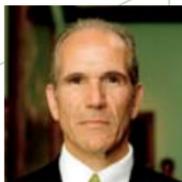
What advice do you have for other operators?

When releasing an animal back into the wild, depending on the animal, and if it's deemed appropriate, the tracking of them and the follow up is critical. You have a responsibility and it doesn't end with exhibit. You have to be practical, you can't do it with everything, but we have a responsibility beyond the exhibit of animals. But we're also in a position to support that from our memberships, management and board. Not all aquariums have that.

What have you learned?

It was an unfortunate event, but it's the truth and you have to communicate that and learn from it. I've learned that the wild is still a dangerous place for animals growing up, fending for themselves and with the potential for human interaction. ●

CULTURE CLUB



© EMONN MCCABE

Saving Britain from recession and sharing its culture with the world is the aim of the Cultural Capital manifesto. The National Portrait Gallery's Sandy Nairne tells Kathleen Whyman how the cultural leaders aim to achieve this

► What is the Cultural Capital manifesto?

Cultural Capital: A Manifesto for the Future is a document we produced from the National Museum Directors' Conference. It represents all the UK's national museums and brings together all the arguments and ideas as to why we think the work of the national museums should be invested in and considered very seriously. We believe culture should be at the heart of plans to plot Britain's recovery from recession.

All 16 British national museums are involved from National Museums Liverpool, through to the Natural History Museum, the Tate and the National Portrait Gallery.

► What are the objectives?

The central objective is to get the government to take seriously the contribution we've made to the economy in both the fiscal sense and to the wider learning economy. Education and learning work outside the classroom in museums as much as they work inside.

We also want to reinforce our contribution to the creative industries. We have a huge input into helping designers, musicians and writers in developing their creativity. We're a fantastic resource and we always want to get that message across to government.

► What do you hope to achieve?

We want to play our part in taking the UK forward. We're well aware that there are financial challenges and we're interested in funding

obviously, but also in the bigger picture – the future of this country. We want the museums to be contributing to a better Britain.

► Who's coordinating the manifesto?

The coordinator is Kate Bellamy, the executive secretary for the National Museum Directors Conference. We have a team of three people who coordinate between all the national museums and helps us think how we make the public demonstrations of our work and how we work in advocacy and government.

► How do you work together?

We've all recalled good case studies of a situation where we had a particular impact in making change with working with communities or in a new area of education or opening up new audiences. We pool that information to demonstrate the importance of our work.

Examples include the new Darwin Centre at the Natural History Museum. It's not just about display, it's about research and learning, about schools being able to bring more groups in to view those collections in new and innovative ways. National Museums Liverpool has developed some excellent initiatives working with different communities, which think about the issues concerning Liverpool with cultural change and diversity in Liverpool.

► Does the change in government affect anything?

We know we'll be dealing with slightly lower levels of public support. But what we argue, and have argued for years, is that the longer term aim of the tourism and cultural economy and the learning economy need the national museums as a really effective, powerful part of that.

► What's it been like to be on the inside of the process?

I'm always interested in how any museum, not just national museums, can work with others. I'm keen to make sure the wider life around the gallery and the ways in which we can contribute is in a community of cultural institutions. We're much stronger in this country by trying to work together.

► What are you working on?

We'll be talking closely with the new ministers and discussing with them what's happening and about public financial issues. We're also looking toward the Cultural Olympiad and 2012 and looking beyond that to restore investment and development in the sector.

► How does culture currently benefit Britain?

Culture is a vital part of this country's future. Not just because culture is always there, but because we've become a really good creative country in the way of recognising that creativity runs from



National Museums Liverpool has developed initiatives working with different communities.



The Darwin Centre at the Natural History Museum is about research and learning as opposed to being just about display

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Henry Moore, Reclining Figure 1939 on display at Tate Britain



kids making music after school right through to seniors taking apart in all kinds of local activities. And in between, having the chance to write some of the best cultural events happening anywhere in the world – theatre, museums or a musical performance.

► **How can the sector help Britain's recovery from recession?**

A large amount of tourists cite cultural attractions and museums and heritage sites as a big part of why they decided to come to this country. But they don't do that just because they're here, they choose to come here because they're lively and interesting places to visit and they're going to enjoy what happens here.

Culture is also very positive in terms of export – we send exhibitions out around the world and have great partnerships with museums internationally.

► **Should admission charges be reintroduced?**

No. Free admission is crucial. These are the nation's collections so the basic entry to entry should remain free. We only charge for special collections.

► **Is there a particular goal?**

The Olympics and beyond the Olympics is very much in our minds. Many museums are contributing to the cultural Olympiad and cul-



HRH Prince William and HRH Prince Harry at the National Portrait Gallery

tural festival. This is a great celebration of Britain's role in the world and the world in Britain – the diversity in Britain.

It's great to be doing it for 2012, but we want to continue to do great initiatives beyond 2012 that everyone can enjoy.

► **Any other issues in the sector?**

We're always thinking how to broaden our audiences. How can we make what we do attractive to anybody who could be interested? We don't want the old style, old view of museums as old-fashioned institutions applied because it's no longer true. We now have lively, attractive museums and we need to get that across. ●

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GUIDELINES



Audioguide technology is constantly evolving and so are the ways guides are being used. Andrea Jezovit rounds up some of the latest projects

TOURING EXHIBITIONS

Touring Exhibitions, creator of Abbaworld, has built a new audioguide from scratch to facilitate the highly interactive touring exhibition, which has already been in London, UK and is currently showing in Melbourne, Australia. The Touring Exhibitions Player (TXP) is an essential part of the exhibition, allowing visitors to point at an object and have information play automatically.

Touring Exhibitions decided to design its own guide when, after some research, the company couldn't find a guide on the market to suit its purposes. "The entire point of Abbaworld was to get people to interact. It's more like going to *Mamma Mia* the musical than a traditional exhibition," says Touring Exhibitions president Magnus Danielsson. "People are singing and dancing throughout the exhibitions, so

we wanted to have a very easy system, easy for children and uncomplicated. With a lot of other systems on the market, it's like a big remote control in your hand and you feel like you're missing

out on parts of the exhibition because you don't have time to learn all its functions."

As this was Touring Exhibitions' first time creating a guide, there were challenges, Danielsson notes, but a team consisting of in-house staff and partners on the technical side were able to successfully create the product, which Danielsson describes as more like a game controller than an audioguide. "I would more compare it to a Wii game controller or an iPod gadget. It's more of a cool gadget than it is a traditional square audioguide." It works through RFID (radio frequency identification) technology, allowing visitors to interact with different objects through radio transmitters.

Touring Exhibitions is marketing the guide to other attractions, and it will launch in at least one, possibly two museums this summer, Danielsson says. "That was not

Antenna Audio's guide for War Museum Duxford won a Jodi Award

the intention when we developed it, but there's been a lot of interest, so we've decided to make it available."

ANTENNA AUDIO

Antenna has won a prestigious award for an audioguide for the visually impaired, which was created for the AirSpace Gallery at the Imperial War Museum Duxford, UK. The Jodi Award, which celebrates best practice in digital technology allowing access to culture for people with disabilities, was awarded in December.

The guide, which launched at the museum in October 2008, was created through consultation with visually impaired visitors. "The museum invited local visually impaired people to join a focus group to assist with the audio guide project. They informed and reviewed the tenders and Antenna Audio was their unanimous choice," says Kay Cooper, the museum's interpretation administration assistant. "Antenna had a focus group of its own, and

both groups fed into the process of testing and honing the script."

The design includes a telephone-style keypad with a raised dot on the five key, which can be used with headphones or like a mobile phone, allowing a choice of keeping hands or ears free. Commentaries

are linked, and the visitor presses the play button to navigate through the exhibits in a logical sequence. "Visitors with less severe visual impairment are able to negotiate the space without relying on a companion, in a way they probably couldn't do with a random access tour," Cooper says.

The guide highlights opportunities for sensory engagement – for example, exploring aircraft models by touch, holding differently shaped solids in an air current to investigate 'lift', and recording and playing back Morse code. In the aircraft hall, where the size of exhibits makes discovery by touch difficult, colourful descriptions are used, often drawing on animal and marine terminology to convey the essence of an exhibit, Cooper says.

"Although there are similarities in approach to earlier audioguides, what's innovative is the engagement with visually impaired people at all stages of production, from concept to delivery," she says.

OOKL

OOKL has already been providing venues with a unique guide device aimed at school groups, using Nokia smartphones – the service allows venues to easily create and upload their own content to the devices, which students can also use to take photos and make notes throughout their visit. Now, the company has launched a service allowing attractions to create their own iPhone apps for all visitors to download.

The service, which is free to join, allows venues to upload images and descriptions of the objects in their collection, and set a retail price for the app. Visitors who download the app can access the content on their device for 30 days, and the venue earns 60 per cent of the net retail price. The system allows venues to have their app immediately while avoiding Apple's

application submission process, and allows venues with limited resources to create downloadable guides for low costs.

Though the product has only just launched, OOKL director Dan Medicoff says he's already received lots of enquiries and met with 10 venues. "Small venues are really interested because of the low entry price, as they would never have the resources to create their own app," he says. "Large venues are really interested because they have huge numbers of visitors and can have a hard time coping with the logistics of audioguides and changing content, so having visitors use their own device is a real plus." Many venues have also expressed interest in when the service will be available for other devices, such as Android and Blackberry phones, he says.

The Catalyst Science Centre in Cheshire, UK, is one attraction that will be using OOKL's iPhone app service. Head of visitor services Paul Meara feels seeing iPhone apps will be beneficial, as the popularity of purchasing apps is on the increase with visitors. "We also see an OOKL iPhone app possibly supplanting audioguides as a way of providing additional information to general visitors," he adds.

DATATON

Dataton's Pickup audioguide offer has been put to interesting use in two current exhibitions – Dronning Margrethe og Arkæologien at the Moesgård Museum in Denmark, and And There Was Light, a touring exhibition which opened in Gothenburg, Sweden in March 2010.

Dronning Margrethe og Arkæologien is an exhibition about Danish Queen Margrethe's love of archeology, in honour of her 70th birthday this year.



OOKL's new service allows attractions to create their own iPhone apps

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BarZ's GPS-based multimedia walking tour guide for Dollywood includes a 90-minute tour experience narrated by Dolly Parton

The Queen herself narrates the audio tour, so stringent requirements on sound quality were a must. "The royal voice is very well-known in Denmark and it was important for the museum to reproduce it at the very best quality, with no distortion," says curator Martin Brandt Djuprædt. The museum had considered using directed loudspeakers, but couldn't find a solution to suit the rooms containing the exhibition, so an audioguide system was chosen for optimum sound, and Pickup selected based on its sound reproduction and user interface. "The system works really well. The public find it easy to use and are very pleased to hear the Queen's narrative."

Pickup also plays an integral role in *And There Was Light*, an exhibition showcasing work from Da Vinci, Michelangelo and Raphael that will tour internationally for eight years following its stint in Gothenburg. It's the first time that the three Renaissance painters have been shown together in this way outside Italy. The insurance value of the original works is around €100m. (£82.4m, US\$123m).

The exhibition is totally dependent on visitors using the guides, which are included in the admission price, in conjunction with Dataton Watchout technology. They provide synchronised sound to video elements throughout the exhibition, a key part of the visitor experience.

BARZ ADVENTURES

A theme park might not seem like the usual type of attraction to invest in guides, but Dollywood in Tennessee, US has. The park's new multimedia tour guide, created by BarZ, has a strong selling point – park co-owner and country music legend Dolly Parton narrates the 90-minute self-guided tour experience, appearing on video to tell stories, share memories and point out attractions including a replica of her Tennessee mountain home and tour bus.

BarZ has also recently created GPS-based multimedia walking tour guides for Santa Catalina Island, US and Las Palmas de Gran Canaria, Spain. Both contain maps, information on history and culture, and multimedia triggered automatically by GPS at points of interest; the Las Palmas guide, operated by Smartour and aimed at cruise passengers, also contains information about local restaurants and tourist offices, and helps guide visitors through the city using public transit.

ESPRO ACOUSTIGUIDE/ PHONAK

For the first time, Espro Acoustiguide and Phonak are bringing interactivity to group tour guide systems. They've launched the next generation version of the Guide-U wireless tour guide system, Guide-U Interactive. Manufactured by Phonak and



And There was Light has a guide incorporating Dataton's Pickup

distributed by Espro Acoustiguide, the new device allows not only tour guides but group members to broadcast their speech, a first for wireless tour guide systems.

Powered by Phonak's MultiTalker Network technology, a visitor-friendly pass-around microphone allows group members beyond the guide to clearly broadcast their comments to the entire group without changing transmitter settings, allowing for group discussions. Up to nine additional microphones can be added. To listen in, visitors wear headphones and around-the-neck receivers.

Phonak's Dynamic Speech Extractor technology, another new feature, was designed to improve sound quality in noisy environments like visitor attractions.

The original Guide-U system launched in 2006 and is currently used at attractions including the US Capitol Visitor Center, the Roman Baths in Bath, UK, Musée d'Orsay in Paris, France and the Guinness Brewery in Dublin, Ireland. ●



COLIN DAWSON and MARTIN BARRATT

In the past decade BALPPA has become the voice of the UK attractions industry. Retiring chief executive Colin Dawson and his successor Martin Barratt talk to Kathleen Whyman about the association's transformation and the challenges for the industry

When Colin Dawson was appointed as chief executive at BALPPA (the British Association of Leisure Parks, Piers and Attractions) in 2001, the organisation was mainly a communications channel. It gathered information and redistributed it where appropriate and while networking and events were encouraged, many viewed it as a bit of a club. Dawson changed this.

BALPPA is now the industry's chief lobbyist in the UK, fighting for legislation on issues such as safety, Daylight Saving and a VAT reduction. Other member benefits include seminars and training. "We've become much more focused," says Dawson. "We've developed an organisation that has a value as a brand and is respected. We're more widely-known both



The incoming BALPPA chief executive Martin Barratt and his predecessor Colin Dawson

within tourism and beyond in political circles. I never find it necessary to explain what BALPPA is anymore – we're the park people. We've received some distinction."

Dawson has also cemented a close relationship with IAAPA (the International Association of Amusement Parks and Attractions), which allows BALPPA to be more influential and have select input, particularly since the set up of IAAPA Europe.

With such a successful reign, which includes being awarded an Outstanding Service Award at IAAPA last year, how does his successor, Martin Barratt, feel about taking over responsibility?

"I'm delighted," he says. "It's a chance to give something back to an industry I've been working in for a long time."

Barratt's grown up in the industry – he was working at attractions in the school holidays from the age of 12 (he's now 50). Since then he's worked in theme parks, museums, castles, zoos, factory tours and walk throughs. In 2004, he set up on his own as a consultant and worked with oper-

ators all over the UK, until he heard about this role. "It's a fantastic opportunity and I didn't want to miss it," he says. "I think I can contribute. Having worked in so many parts of the industry on so many levels – I've been everything from litter picker to chief executive – I understand what it feels like to be an operator.

"A large part of my career has been in the commercial sector. Working in attractions when so many millennium projects were launched helped us learn to operate effectively. I hope my experience will help members do the same through conferences, seminars and training sessions."

IN THE THICK OF IT

Dawson is staying on one day a week to help with political lobbying. Barratt admits to finding this aspect of the role challenging. "I have no experience of working in politics," he says. "But already I'm enjoying it and Colin is bringing me up to speed."

"The challenge is getting the attention of the right politicians and maintaining that level of interest," adds Dawson. "I saw the issue of Daylight Saving as something I thought we could deliver, and hopefully



Members include Drayton Manor, which has rides including Pandemonium (left)



One of the main initiatives BALPPA is pushing is a reduction in VAT for attraction admission, which increase tourism earnings by up to £2bn

it will be this year, but I had to maintain a strong push to ensure it retained the profile it needed." Another initiative Dawson's promoting is to achieve a reduction in VAT paid on attraction admission. His aim is to get on par with the rest of Europe although this may clash with the new government's short-term financial plans. Undeterred, Dawson is embracing the government's recognition of the importance of tourism and its wish to assist UK tourism to become more competitive. "That sits very comfortably with the VAT issue," Dawson

explains. "A reduction in VAT would be tax positive to the Exchequer, would create jobs and could increase tourism earnings by up to £2bn (US\$2.96bn, €2.4bn). That's a huge thing for the government to ignore."

Dawson has also made some progress in getting relief from uniform business rates for piers, many of which are listed or very old and under private ownership, which means they're not eligible for Heritage Lottery funding.

"We fail to see the difference between the public and private sector when it

comes to supporting a project," he says. "It doesn't make any sense – it should be what the project is and what its value is to the public is, not whether it privately or publicly owned."

This is clearly an issue Barratt feels strongly about. "I was in the commercial attractions sector when the millennium was happening and it was hard work," he says. "New attractions were opening where no commercial operator would invest in development – because they knew the site wouldn't work. Operators who had such

The ash cloud caused many tourists to be concerned about air travel

unfair competition foisted on them had to learn to work smarter and harder and we've got a strong commercial attractions industry in the UK as a result. The commercial attractions that survived had to learn the hard way and maybe that's one of the reasons why companies like Merlin are doing really well now."

MEMBERS ONLY

One of Barratt's aims is increasing the size of the membership to give the association more influence – there are currently 307 operators and 224 trade members.

"There are too many representative groups at the moment; as a result the voice of attractions gets lost," he says. "I want to unify the industry by getting everyone to join BALPPA." To achieve this Barratt will be identifying sectors where BALPPA doesn't currently have members and who in the past haven't been viewed as natural constituents, such as museums and heritage attractions. "But they are necessarily commercial," Barratt points out. "Most charge for entry and they all have shops and restaurants. All the benefits we give to our members, we can give to them too."

Museum admission charging is an issue that Dawson has given much thought to. "If the government wants to make savings, it should look to the free museum admission policy," he says. "Yes, it's increased visitor numbers, but it hasn't introduced new markets – it's the repeat business of people who were always museum goers and tourists, who are very pleased to find that they can get into our museums for nothing. If they restricted free admissions to school children, senior citizens, the disabled and unemployed, but insisted the rest of us paid, they'd be a huge chunk of money available that could be used in the industry."

"It's my perception that museums are concerned about the level of secondary spend they enjoy through the current level of attendances," he continues. "The percentage spent is nothing like as strong as it was when people paid for entry. We learnt that in the park industry a long time ago – the people with free tickets don't spend anything, they bring picnics."

"Increasing visitor numbers increases footfall so also increases damage and therefore maintenance costs," Barratt adds.



TOURISM TROUBLES

At the time of our interview, the ash cloud was causing havoc with the airlines, which Barratt is very concerned about. "Many of our members rely on inbound tourists," he says. "And now people are dubious about travelling by plane. The low exchange rate is in our favour, but there's an issue of people not coming here for their holiday."

But won't this help extend the staycation trend, I ask? "I hesitate to use the phrase 'swings and roundabouts' in an interview about attractions," Barratt laughs. "If the staycation we enjoyed last year continues, it'll be no bad thing for domestic tourism," confirms Dawson. "Some London attractions which receive a healthy percentage of overseas visitors will suffer, but the industry as a whole will probably benefit."

INDUSTRY CHANGES

During his time with BALPPA, Dawson has seen the industry develop into a more professional business where customer focus is a necessity due to the increase in choices consumers now have in ways to spend their leisure time.

Corporate ownership has also become much larger. "Unlike some of my peers, I consider that to be progress," he says. "It was bound to happen – we're a market driven sector and the forces have led us into that direction. I see that as good, not bad." Safety has also improved, a factor Dawson is particularly proud of. "We've worked very hard and the members have adapted well to proposals we've put to them. Structuring the Amusement Safety Council, a body that has teeth and can influence safety in its own industry, has

been one of the highlights of my time with BALPPA," he says. The success of this is proved by the continual decline in incident rates since 2001, year on year.

The compensation issue is still an ongoing factor, but Dawson feels the new UK government may progress this. "I quite like its tone of using the headline of responsibility," he says. "If that translates into the kind of legislation we proposed when the compensation act was brought out four years ago, we'll be seeing something along the lines of the Rider Uniform Safety Act that says you have a legal responsibility to behave in accordance with the safety instructions on this ride. They do it in the US and Australia; we must do it in the UK."

PEOPLE PERSON

The main thing Dawson will miss in his retirement is the people. "They're the great bunch to work with, they're willing to listen to you and act with you." He turns to Barratt. "Remember, BALPPA is a customer-based association. Keep focused on your members and you can't go wrong."

Having worked alongside Dawson for the first three months of his appointment, Barratt will be sad to see him go. "But the great thing is that Colin isn't just walking away from it all. He'll be available one day a week and helping me learn about the political side of the job."

Dawson reacts with raised eyebrows and a typically humorous comment: "Subject to my golf schedule," he laughs. "Martin will make his own mark in BALPPA in the same way that I have. Things will be different, but change is all part of moving forward and I'm sure that's what will happen." ●

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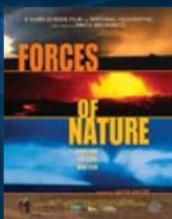


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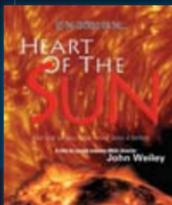


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reach for the

So you want to build a planetarium, but where do you start and what do you need to know? Andrea Jezovitz talks to industry experts for their tips and recommendations

STARS

Planetariums have a lot to offer visitors. But, constructing a theatre housing a dome and lots of high end show technology can be a complicated engineering feat, and it's a big investment; costs vary greatly, even among theatres that are the same size. "If you look at the projection system, our entry level is just under US\$100,000 (£68,600, €82,000)," says Sky-Skan marketing director Marcus Weddle, noting that the highest end systems can cost upwards of US\$1m (£686,500, €820,000) to US\$2m, depending on the resolution. "And you've got to look at seating and domes as well."

Blast Off

So where to start? When Sky-Skan's theatre designer, Kurt Berna, sits down with a new client, the first thing he asks is why they want to build a planetarium. "Clients have trouble answering that sometimes," he says. "You also try to ask what sepa-

rates a planetarium experience from a cinema or an IMAX experience."

The space available for the planetarium is a major factor. "The first question we always ask, which is not obvious to architects or museums, is, do you have a room already?" says Scott Huggins, marketing director for planetarium theatre specialists Spitz, a subsidiary of Evans & Sutherland. "Somebody has to build a large space that's totally black inside for a planetarium to get constructed into."

The next question, he says, is whether the attraction's architect has enough planetarium experience — Spitz is often called on for help by architects without any. Elements such as where to put electrical and projection equipment need to be considered, as well as the construction of a control room; HVAC is a particularly complex concern in planetariums, Huggins notes, as domes contain perforations that air must pass through. Dome acoustics are

also important, and sometimes Spitz will perform an acoustic study for a customer.

Stuart Hetherington, managing director of digital display specialists HoloVis, agrees that a knowledgeable planetarium consultant is invaluable. "Be realistic in expectations and timescales," he adds.

Size is another major factor to consider. "One of the traps some communities find themselves in is that they'll automatically believe bigger is better. And sometimes this is the opposite — a bigger theatre can hurt presentation," Huggins says. If a small community builds a 15m (50ft)-diameter dome with 200 seats, only to see attendance drop to eight or 10 people two months in, those audiences are experiencing something that feels unpopular, he notes. Meanwhile, a 9m (30ft) dome catering to expected audiences of 50 to 60 per programme can provide a better experience even if it's only half full, Huggins says.

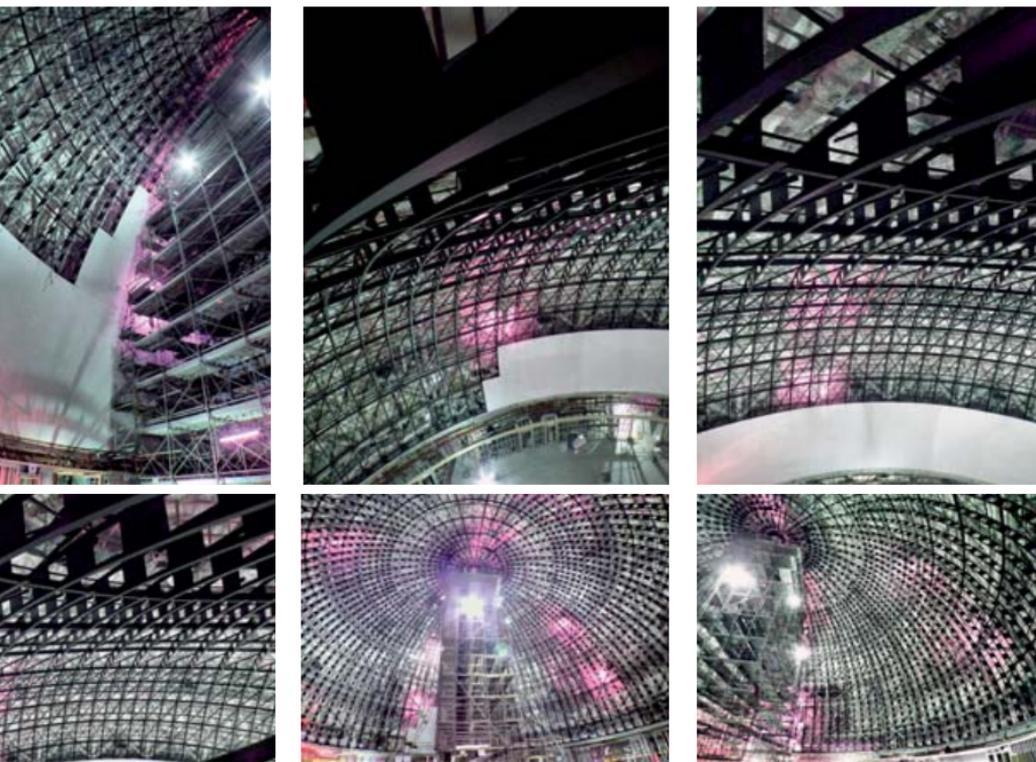
Planetariums at major tourist attractions, where thousands or tens of thousands of visitors are expected daily, can go large with 50ft (15m) to 70ft (21m) domes and seating for 200 to 500 per show; planetariums catering mostly to school groups may want to calculate seat numbers based on how many children fit on a school bus, Spitz's director of design engineering, Chris Wright, notes.

With today's full-dome show technology, even smaller domes can be made to feel immersive and theatrical, says Huggins, as larger domes will also mean higher costs in terms of lighting, audio systems and projection expenses.

Another important consideration are fire safety codes — the completely black space required for a planetarium isn't conducive to meeting these, which can lead to problems with local authorities. "Get them involved early on so that you can make a compromise," Berna says.



Planetariums can often be iconic shapes, such as the Glasgow Science Centre



Astro-Tec is working on the world's largest planetarium dome, at the Nagoya City Science Museum in Japan

Rocket Science

If the planetarium will be in a new building, another consideration is whether to create an iconic piece of architecture. "The theatre could be in a square box, or another dome, or a cylinder, or an iconic shape," Wright says. "The choice of enclosure can play a big part in theming the building or conveying an idea to customers. It can reflect what's on the inside, or hide what's on the inside."

Among Wright's favourite designs is the Glasgow Science Centre planetarium, which was completed in 2000 and features a 58ft (18m) outer dome enclosure shaped like a truncated sphere, with a 50ft projection screen dome inside. Another is the dome theatre created for the Volkswagen Autostadt attraction in Germany. Opened in 1999, the 120-seat theatre was built inside

a full 18m (59ft) diameter sphere, housed inside a glass cube.

Spitz acted as a consultant on both projects. "In Glasgow, the client had designed support for the dome before we came in, so we had to adapt the mounting of the dome to fit with their structures," Wright says. With Autostadt, the client wanted a completely smooth look for the outer sphere, without showing any equipment or door handles. "They wanted it to look like a pearl floating," Wright says, so invisible magnetically-activated latches were developed to allow service staff to access equipment.

When it comes to projection domes themselves, quality has improved over the years. Domes are constructed from panels; originally, these were bolted together in a way that caused noticeable seams. New

techniques beginning in the late 1960s minimized these by overlapping plates, and these 'lap seam' domes are still widely used in the industry. However, machining techniques for cutting these plates have become precise to within 1/1000 of an inch, allowing plates to butt up against each other with no need for overlapping – Spitz has used this technology to develop its NanoSeam dome, which was introduced in 2006. "There are no overlaps or folds anywhere," Huggins says.

The NanoSeam, which costs about 20 per cent more than a lap seam dome and was installed recently at the Morrison Planetarium at the California Academy of Sciences, still makes up only around 20 per cent of the domes Spitz sells. But it's an investment that can make a difference in image quality, especially since today's

content is brighter. "The more brightness you have on there, the more the seams are visible, so it makes sense from the standpoint of not having something polluting the image or distracting the audience," says Evans and Sutherland director of show production and marketing Michael Daut.

Astro-tec, which currently offers standard lap seam domes as well as ultimate seam domes without horizontal seams, is working on another innovation — the world's largest planetarium dome, at the Nagoya City Science Museum in Japan.

The standard dome is 35m (114ft) in diameter, with 696 panels, 96 ribs, and a total area of around 20,000sq ft (1,860sq m). "That size of dome has never been done before," says Astro-tec sales manager Dale Lewis.

Astro-tec has installed large domes in the past, including a 24m (79ft)-diameter dome at New York's Hayden Planetarium, and is getting ready to install another 23m (75ft) dome at Italy's Rainbow Magic Land this summer. Lewis says large domes are definitely becoming a trend. "Domes can fall anywhere from 7m (23ft) in diameter to 35m at this point. The bigger science centres and museums, it just seems like everybody wants to go as large as they can. Now that we've done Nagoya, we've gotten a couple of requests for 35m," he says. "You have 3D coming into play now, so I think you're also going to see this trend continue as they start investing more money into these projects."



“Domes can fall anywhere from 7m (23ft) in diameter to 35m at this point. The bigger science centres and museums, it just seems like everybody wants to go as large as they can” – Astro-tec’s Dale Lewis

Sightlines

Dome placement is a huge factor affecting the visitor experience. When Sky-Skan consults on planetariums, it tries to improve this by bringing down the spring line — the base of the dome.

"It's almost like a silo effect when the dome is so high, you lose the scale and the immersive feeling of being in that space," says Berna. "We try to keep the spring line at eye level when you're seated."

Having a tilted dome can be another way of improving the visitor experience. Traditionally, planetariums have been laid out with a starball projector in the centre, and seats in a circular pattern around it, leaving viewers to look up towards the centre. With digital fulldome content the standard today, however, a tilted dome allowing everyone to look towards the front rather than up makes more sense.

"When you develop fulldome content [for circular seating], Saturn, for example, comes up on just one part of the dome, and it may be in front of you, or it may be behind you," says Alan Caskey, Global Immersion's US director.

"What we see with our clients is very much stadium seating, unidirectional, tilted dome, and then you can bring an object

into the prime viewing area so that everybody can have the same view."

Sightlines should also be considered. Daut says a common problem is planetariums deciding on the size of dome they want, then trying to cram in as many seats as possible, leaving undesirable seats on the edges where the picture will be most distorted. "My advice is to overbuild the size of the dome in terms of diameter, based on the number of seats you want, so that you have seats in better positions and you're not putting seats in places where nobody would want to sit."

Flexible space

Increasingly, planetariums and domed theatres are being laid out with an eye towards multipurpose use. "Sometimes people are concerned because [a planetarium] is really just a one trick pony, limited to whatever content you can put on there," says Spitz CEO Jon Shaw. "What you might do is not have a tilted dome, and you might even have chairs that are removable. So now you have this big open space and you can do whatever you want." He's seen planetariums hold jazz concerts, dining, lectures and even weddings under the stars. "There are all kinds of creative ways to use the space."

Caskey is seeing some creative requests from clients who want a more flexible facility. "A current client wants stadium seating where the first several rows can be removed, so they can have sleepovers for the kids," he says. There's a downside to removable seats though, he says — they're more uncomfortable than permanent seats.

Even domes are becoming moveable; The Queen Mary, a ship attraction in California, features a theatre used as a theatrical space, with a retractable dome lowered from the ceiling for some shows. "We're doing a similar thing at the Sir Edmund Hillary Alpine Centre in New Zealand, where the dome comes down over the audience during planetarium

Our Dynamic Earth's 4D film was developed by the National Space Centre in Leicester



presentations, and back up to turn it into a lecture-style theatre," says Berna. It's a trend he's seeing more and more. "People are tilting domes from horizontal to vertical in multiple presentations and creating different environments using the same dome."

When it comes to seating trends, tiltable seats are common – even in a tilted dome theatre, some of the action still happens above the heads of the audience, especially in the front row, so seats need to be tilted in advance to different degrees to improve sightlines. "Tilting of seats works well to ensure the viewers are looking comfortably into the dome centre and being completely immersed within the degree projection environment, with peripheral vision covered," says Hetherington.

"Some theatre companies have now begun specialising in planetarium seats, and they offer seats with different tiltabilities," Huggins adds.

Other innovations include seats with speakers built into the headrest allowing each audience member to have personal audio in their own language, and interactive responder systems on seats allowing the audience to participate in increasingly sophisticated interactive activities. "[Interactivity] was around in the olden days, and is kind of coming back up in popularity," says Weddle.

Some planetariums now also feature seating with "seat-kickers" providing sub-



The Our Dynamic Earth planetarium in Edinburgh, which launched in April, utilises 4D technology

tle movement, but some in the industry believe 4D seating won't catch on: with the immersive experience offered by full-dome, 4D can be a distraction. As Weddle points out: "At our theatres, you're so overwhelmed by the images and the sound that you could probably make people sick with too much extra stuff."

But for some domed theatres, 4D is just the thing. Global Immersion recently worked with Our Dynamic Earth in Edinburgh on a new planetarium; it launched at the science-based attraction in April. The attraction wanted an experience allowing visitors to fly through different biospheres; a film created by the National

Space Centre in Leicester provides the visuals, while seat kickers provide motion, and 4D effects add an extra element – viewers feel rain mist while "visiting" the Amazon, hot air and wind while in the Sahara, and snow while in Antarctica. "It's an experience where they can get their message across and give people an experience that they'll absolutely remember and talk about for a long time," Caskey says.

While the latest 4D technology can enhance shows, it's not the most important element for would-be planetarium operators to consider, Caskey cautions. "Don't look for technology to be the draw," he says. "It's content that brings people in." ●

REFRESH & RENEW

Revamping an old exhibition can change the look of an attraction and provide a great selling point to kick off the season. Kath Hudson looks at some recent launches

This year it's all about using the space available to best effect: exhibition space is being created from back-of-house areas and redundant spaces are being brought into use. Flexible exhibition space is a must, with room for temporary exhibitions, and interactivity is essential. A number of ambitious refurbishments have just been unveiled, with design being the key to propelling the attraction into another league.



The Museum of Chinese in America in New York City has had a US\$3.25m redesign

The Florence Nightingale Museum, UK

One such example is The Florence Nightingale Museum in London, UK. The centenary of the death of the legendary nurse kick-started the museum to undertake the major overhaul. The 21-year-old site was much in need of a face-lift, with tired exhibits and a route which didn't flow well. The £1.4m (US\$2m, €1.6m) refurbishment has seen everything replaced with a free flowing space, with the content arranged in three pavilions, and an area for temporary exhibitions.

After an international design competition, Dutch company Kossmann de Jong was chosen to design the museum – its first such project in the UK. The content has been changed to show the relevance of what Nightingale was campaigning for and many interactive features have been added.

"There's a touchscreen showing the register of nurses sent to the Crimean War, so visitors can turn the pages to find out their stories. Children can also see if they could be Florence Nightingale and work out what treatment the soldiers need," says museum director, Caroline Worthington. "We've used stethoscopes for the audio tour, where people can hear her story in her own words. For kids we use peepholes, to allow them to follow a trail of cartoons."

As this is an independent museum, which completely relies on admissions and sales from the shop and web shop, Worthington is hoping this will massively boost visitor numbers, capturing more of the passing tourist trade on the city's South Bank and also appealing to GCSE-age students (14- to 16-year olds).



The Florence Nightingale Museum in London has had a £1.4m refurbishment



Museum of Chinese in America, US

The Museum of Chinese in America in New York has benefited from a dramatic US\$3.25m (£2.26m, €2.6m) redesign at the hands of Maya Lin Studios. Established in the 1960s to keep alive the oral histories and experiences of the older generation of Chinese immigrants to America, it's hoped the redesign will transform the museum into a world class facility with more exhibitions.

The previous site is now an archive and research centre, and the new 14,000sq ft (1,300sq m) site, in a converted industrial machine repair shop, offers six times as much floor space. Lin avoided the commonly-used Chinese pagoda and used a minimalist design, with Shaker influences.

The core exhibit revolves around the museum's historic courtyard, evocative of a Chinese courtyard house. Every year a prominent Chinese American artist will be invited to install a work here. Short, biographical films of Chinese Americans are projected onto the windows facing the courtyard. Visitors will be invited to tell their stories online, via interactive kiosks, and become part of the digital archive of Chinese Americans. Sustainable design elements and strategies have been used throughout and it is expected to receive a Silver LEED rating.



The Museum of London's exhibits include Lyons tearoom from 1922, period costumes (left) and the Lord Mayor's coach from 1857 (below)

Canadian Museum of Nature, Canada

In Ottawa, The Canadian Museum of Nature reopened in May, after a brief closure at the end of an eight-year, CA\$215m (£142.2m, US\$204m, €165m) refurbishment of the historic building. The renovations have transformed the site into a 21st century museum of natural sciences. The operators are hoping visitor numbers will now rise from 250,000 to 350,000 a year.

Now the building work is complete, parts of the museum that have been closed for decades because of the crumbling architecture are open. An interior buffer zone wall in the gallery spaces ensures the temperature and humidity control, so exhibits which have been too fragile to be on display previously, are now part of the museum. The most exciting addition is the 19m (62ft) blue whale skeleton, which forms the centrepiece of the RBC Blue Water Gallery.

"The vibrant new signature exhibitions present the museum's own research findings and those of our colleagues across the country," says chief operating officer, Joanne DiCosimo. "As a result of this comprehensive renewal project, we can now engage visitors and people across Canada in important topics about natural history and the environment."

Museum of London, UK

Inspired by the 2012 Olympics, which will put London on the world stage, The Museum of London has invested £20m (US\$28.7m, €23.2m) in the Galleries of Modern London, to make the museum a centrepiece of the city.

Three years in the making, these galleries reflect how London has evolved from 1666 to the present day. Starting with the city being rebuilt after the Great Fire of 1666, it goes on to show the creativity and manufacturing of the 19th century, charts the wars, the swinging 60s and the various fashions up to the present day.

Director of the Museum of London, Professor Jack Lohman, says: "The Galleries of Modern London will breathe new life into the museum, with extraordinary elevations flooding spaces with

light and remarkable new galleries bringing our story of the greatest city in the world right up to date."

Interactive exhibits include a flowing River Thames, floating with concerns for Londoners, past and present, and touch objects of iconic London landmarks. The story can be updated with a flexible exhibition space called Inspiring London.





Museum of Wigan Life, UK

In Wigan, UK, a museum was created earlier this year from a research and archive centre. The Museum of Wigan Life is a centre to reflect Wigan's identity and heritage.

The project received a £1.9m (US\$2.7m, €2.2m) restoration grant from the Heritage Lottery Fund, which was largely used for restorative works on the listed building and adapting the internal space efficiently to accommodate the exhibition area and a temporary exhibition space for community use. With an actual exhibition budget of £900,000 (US\$1.3m, €1m), creativity and teamwork were the key to developing a centre which met the team's aspirations.

Sarah Oswald, director of exhibition designer PLB, says: "We aimed to create a space where local people and visitors alike can engage with collections and also to challenge preconceptions about Wigan. We've explored everything which makes Wigan special: the food, drink, traditions, sport and music, from Northern Soul up to the current day.

"The feedback has been extremely positive, with visitors stating it makes them feel proud to be a Wigganer."



The Museum of Wigan Life reflects the British town's identity and heritage



The new space at Haus Ruhrnatur, designed by Hüttinger Exhibition Engineering, explores biomimetics, climate change and energy



Haus Ruhrnatur, Germany

In Germany, on the River Ruhr, 200sq m (2,100sq ft) of extra exhibition space has been added to eco-attraction Haus Ruhrnatur by re-using an old classroom and some office space. The €250,000 (£216,000, US\$310,000) exhibition, designed by Hüttinger Exhibition Engineering, explores biomimetics – which is the examination of nature, its models, systems, processes, and elements to emulate or take inspiration from in order to solve human problems – climate change and renewable energy. The exhibition is presented in a way that allows visitors to learn about it in a playful and personal way.

"The success of the museum has always been based on fabulous science programmes, where students could do real research on living species and micro-organisms taken out of the Ruhr river," says Axel Hüttinger, director of Hüttinger Exhibition Engineering.

"Based on this exploratory approach," he continues, "we tried to design the exhibition with real things and real processes as much as we could."

After a brief history of the climate, biomimetics is explained as a scientific method. Then the visitors see the workshops, which feature working exhibits, demonstrating the technologies that are making use of renewable energies.

"The exhibition ends with a reflection zone, which shows an emotionally moving video about water. The aim is that after having been acquainted with demanding topics, visitors then settle down and reflect on what they have experienced," says Hüttinger.

With varying scales and budgets, each of these projects is focused on the same end result – using the budget and space as efficiently as possible to add a new dimension to the attraction and become more relevant for visitors.

W5@the Odyssey, Northern Ireland

Biodiversity is the theme explored in a new £300,000 (US\$431,000, €347,000) exhibition at W5@the Odyssey in Belfast. Capturing some of the key aspects of biodiversity in a relatable way and making nature fun was the brief given to designers, AIVAF, and Qualia Creative Ltd, who provided the 3D exhibit design.

"There are 20 new exhibits, from simple hands-on games, through to large-scale audiovisual installations and

exhibits which give a real sense of theatre," says AIVAF's director, Julie France. "Experiences include sneaking up on a butterfly, exploring a virtual pond and designing an insect."

The 400sq m (4,300sq ft) project was completed in seven months, which meant fast-track content development. Natural materials were also used in the construction process, with timber coming from sustainable sources. ●

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SHINING EXAMPLES



The British Music Experience at the O2 by DALD won an award

Lighting has always been an essential ingredient in creating visitor experiences, but recently the bar's been raised for lighting design in attractions. Both from a sustainability and a financial point of view, energy efficiency is now a must and there are an array of energy efficient lighting solutions currently available, with manufacturers moving further away from fluorescent-based lights.

LED solutions are increasingly popular for general illumination, due to their extremely long lifetime and low power consumption. Sheffield's Crucible Theatre in the UK, recently used LED to update its lighting in a large scale renovation project. The original lighting for the auditorium's starry sky used over 1000, 45W R50 lamps, which was energy-hungry and combined with the 15m (49ft) high ceilings, caused a maintenance headache. Replacing these with Osram LEDs eliminates the need for changing lamps on a regular basis, provides great light output and saves 17 tonnes of carbon each year.

For more interactive attractions, adding colour to LEDs gives an edge, allowing the colour to be tailored to suit the event.

Clever use of lighting can really add to the immersive quality of an attraction. Kath Hudson looks at some of the latest projects

IMMERSIVE EXPERIENCE

RGB LEDs were used at the Whitechapel experience, Centre of the Cell, and helped DALD win the Low Carbon Category award at the 2010 Lighting Design Awards.

Energy conservation and sustainability was part of the brief here, with the lighting design also being the glue to tie the interactivity and audiovisual elements together. Centre of the Cell is the world's first attraction based in a working medical school laboratory, offering children and teenagers an insight into what scientists do and how their work influences real life.

RGB LED wash lights are used to saturate the cell with colour and custom-designed RGB LED spotters animate the

nucleus structure. Suspended above the space are four circular projection screens, backlit with flexible RGB strips.

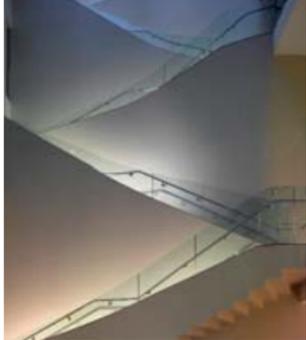
DALD also picked up a second award at the Lighting Design Awards, for the Lighting for Leisure Category at London's British Music Experience at the O2 Arena.

"The brief was to have a theatrical quality, to enhance the spaces and add a sense of dynamism," says DALD director, David Atkinson. "Since the exhibition has a lot of interactive and conservation items, the lighting needed to be carefully controlled."

A different approach was used for each zone. For the pre-show, the automated lighting allowed for hues of deep colour to be carefully controlled. The Jam Studio uses internally lit polycarbonate spheres, suspended above the space and fitted with dimmable compact fluorescent lamps. In the dramatic main core space, Metal Halide units are used to give the exhibits an immersive floating quality.

LIVING FACADE

Lighting has provided an essential component of the Danish Pavilion at Expo 2010, in Shanghai. Danish company, Martin



(Clockwise from bottom left) The Danish Pavilion at Expo 2010; Sheffield's Crucible Theatre; Da Vinci – the Genius



Professional, designed and composed an LED lighting system which gives the pavilion an interactive façade.

More than 3,500 full-colour LED lamps were installed in holes in the pavilion's perforated external walls. The lamps are controlled by day lighting and temperature sensors which, combined with specially developed software, give an animated appearance, described by Martin Professional as "a living façade".

The light settings automatically change, from daylight through dusk, to evening. Actual lighting conditions influence the system in real-time via the light sensors installed around the pavilion. For example, a blue sky produces a different setting from a cloudy day, so the pavilion is always perfectly adjusted to the surroundings.

Crealy family theme park in Devon, UK, is using special light effects in its new pink-knuckle family watercoaster, Vortex. "The idea of special effects was developed while researching other watercoasters. Crealy needed something unique to make the ride stand out against other watercoasters and so the special effects concept was born," says Angela Wright, founder of Crealy

Great Adventure Parks. Designed by Dutch ride manufacturers, Van Egdome, in association with the park, the £1m (US\$1.45m, €1.2m) ride harnesses natural light to create magical effects in the tube.

In Manchester, UK, DBN Lighting completed the lighting design, supply and installation for the Da Vinci – the Genius exhibition, at the Museum of Science and Industry. According to designer, Nigel Walker, this job was "lighting heaven" which required much lateral thinking. The lighting rig consists of 260 MR16 "Birdies", of varying wattages and beam angles, which are fitted with frost and diffusion filters to add, depth, mood and perspective to the exhibits.

At Norway's National Opera House, a 7m (23ft) crystal chandelier is the dramatic centrepiece of the Great Hall, created from 17,000 pieces of glass. Osram designed 1200 modules, using state-of-the-art thin film LED technology to power it.

Since the demands on the light sources were very high, thermal simulations were carried out to create an optimised passive cooling concept to achieve the required lifespan of 50,000 hours.

THE WAY FORWARD

"I'm extremely excited about the way manufacturers are now finding efficient light sources, which aren't just fluorescent based," says Atkinson. "At the Light & Building exhibition in Frankfurt, there's no question that LED has suddenly accelerated at a real pace. High output sources, with good colour rendering, are now serious contenders for conventional lighting."

"Manufacturers such as Toshiba & LG have stepped into the ring, with exciting LED lighting products. Although there are big players in the LED market, such as Philips and Osram, new companies, such as Xicato are producing some amazing LED sources for various manufacturers."

For the future, Atkinson predicts that OLED technology – organic light emitting diode – is one to watch. The emissive electroluminescent layer is composed of a film of organic compounds. This layer of organic semiconductor material is formed between two electrodes, where at least one of the electrodes is transparent. Although this is prohibitively expensive and still in development, Atkinson predicts flat panel technology will be here soon. ●

FOR THOSE INVOLVED IN SPECIFYING THE AUDIO, LIGHTING AND VIDEO TECHNOLOGY IN VISITOR ATTRACTIONS, THE CHOICE HAS NEVER BEEN SO VAST AND IMAGINATIVE – NOR SO GREEN, AS VISITORS TO PLASA 2010 WILL DISCOVER

PLASA 2010



PLASA is the UK showcase for entertainment and installation technology and attracts around 13,000 visitors annually. This year's show takes place at Earls Court One and Two in London from 12-15 September and will enable designers and specifiers from all branches of the entertainment, presentation and installation worlds to get their hands on the latest innovations.

The show will be attended by sound and lighting designers, nightclub lighting specialists, the technical heads of departments at leading theme parks (Disney engineers among them) and cruise liner systems designers.

Visitors will have the opportunity to see how the combined impact of powerful computers, video technology and low-energy, high-efficiency light sources such as LED have merged with conventional lighting to allow innovative visual effects to be applied to almost every building, structure or visitor interactive.

The technology, for example, which helped make the band Radiohead's last stadium world tour a global award-winner for its environmentally-friendly approach by using only LED light sources, was launched at the PLASA Show.

The show – whose organisers, PLASA Events, are offering free admission to *Attractions Management* readers – has built its reputation on being an annual

launchpad for new products. Show director Nicola Rowland estimates that, on average, 500 new products are unveiled every year across the event's four days.

"These will typically cover the wide range of applications that reflects the show's visitor profile of designers and engineers working in both installed and touring environments," Rowland says. "PLASA is reaching out to professional designers from the visitor attractions world. The convergence of visual and audio technologies through the digital revolution means that members and exhibitors have exciting products to offer to visitor attractions and theme parks of every size and scope."

PRODUCTS

Disciplines and products on offer include sound systems from ultra-compact to stadium-capacity; professional lighting products of every shape and size; video in all its variety, from modular LED outdoor screens to lightweight 'mesh' type screens; staging systems including decking and support systems; and stage automation systems from winches to advanced systems that can fly objects as large as a car with millimetre precision.

The PLASA show is also complemented by a large and growing seminar programme. These offer a wide range of insights into contemporary entertainment technology applications from some of the

The PLASA Show, to be held at Earls Court One and Two in London, attracts around 13,000 visitors each year

industry's best-known practitioners and lead trade bodies.

Entrance to most sessions is free to pre-registered show visitors, but Rowland warns that many seminars become fully subscribed well ahead, so advance booking is strongly advised. All sessions will be listed on the PLASA Show website at www.plasashow.com.

Another popular feature is the show's Innovation Gallery, housed in a spacious, dedicated area at the front of Earls Court Two, where products entered for the annual PLASA Awards for Innovation are put on display. The awards are announced in a public ceremony after the exhibits close at 6pm on Monday 13 September. ●

PLASA Events is offering *Attractions Management* readers free admission – a saving of £20 on the door price. Email jen.barratt@plasa.org to receive a free registration link and invitations to all the PLASA events including the Awards for Innovation

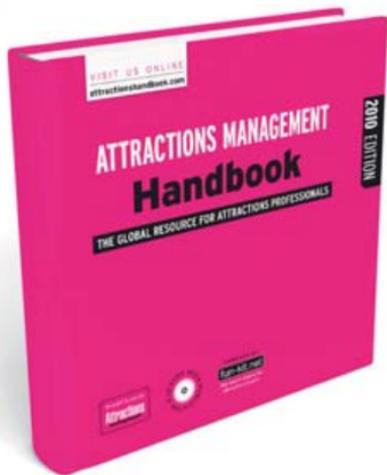
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CREATURECOMFORTS

Creating an authentic environment for animals and fish is vital in zoo and aquarium design.

Vicky Kiernander examines how some of the latest projects are tackling this

THE LIVING WORLD AT SEOUL GRAND PARK

With an existing zoo and amusement park, the 560-hectare Seoul Grand Park in South Korea has been an important source of entertainment and recreation for the community for 30 years. However, in a bid to improve the public space and better position the site as a regional and international tourist destination, Seoul Metropolitan Government sponsored an international design competition for a concept design and feasibility study of the park.

The competition was won by a team led by architectural design firm AECOM



The Winter Garden will boast lush vegetation and waterfalls

and comprising Ga-One Landscape Design, Group Han Associates, Thinkwell Design & Production, and Bernard Harrison & Friends. Its winning entry, Gaia: The Living World, envisions an integrated entertainment and educational experience that revitalises the urban realm and showcases Korean heritage.

The proposal would open the lakefront for community use, reconnecting the city to the waterfront and breaking down conventionally separate experiences in a design that combines the existing amusement park, zoo and botanical garden with new attractions. The plan also proposes several new attractions including the Winter Garden, characterised by lush vegetation, giant waterfalls, flying birds and animal exhibits; Seoul Walk and Lakeside Park, an urban entertainment retail centre and park and the Australasia bio pavilion. This will be the



The Gaia: Living World attraction is due to open by 2020

largest bio pavilion in the park and home to flora and fauna of Australia, New Guinea, New Zealand and Islands in South Pacific.

Joe Brown, chief executive of planning, design and development at AECOM says the new vision for the park reinforces its commitment to entertainment and the living environment. "The Living World aspires to be a place of excitement, reflection and education, where the lines between zoo and theme park disappear in a celebration of ecosystems, culture and history."

The team started work on the masterplan in May and is due to complete at the end of the year. The city plans to get bids from private developers early next year with the project due to complete in 2020.

BACHELOR PAD FOR THE BOYS AT WERRIBEE

Werribee Open Range Zoo in Victoria, Australia, is developing a new exhibit to house three male gorillas, which are being moved from Melbourne Zoo following the success of its breeding programme.

Launched as a simple safari bus experience 26 years ago, Werribee has expanded to include walking trails, new African species and multi-award-winning experiences such as Kubu River Hippos, Lions on the Edge and African Wild Dogs. The zoo, which has 225 hectares of wide, open savannah, is managed by Zoos Victoria, which also incorporates

Melbourne Zoo and Healesville Sanctuary, and is involved in breeding and recovery programmes not just in Australia but around the world.

A number of conservation and education themes will be incorporated into the new gorilla exhibit, which is currently being designed by Green & Dale Associates. The conservation messages will act as the guiding principal of the exhibit design, from landscaping and layout to the interpretation and theming elements.

The zoo-based conservation organisation wants the exhibit and its messages to encourage advocacy and engage visitors to help the plight of gorillas. Conservation themes that may be explored by the exhibit include the bush meat trade; poaching

with snares and guns; mining; deforestation; increased levels of disease; biological threats through eco tourism and increased human/animal contact; the pet trade and climate change.

Located on an island close to the entrance of the zoo, the exhibit will also feature a presentation area for a range of educational activities such as keeper talks.

The AU\$2.95m (£1.68m, US\$2.45m, €2m) project is being part-funded by the Brumby Labor Government, which is donating AU\$1.5m (£856,000, US\$1.24m, €1m) to the development.

The area will initially house three bachelor gorillas, but more will join from the family group at Melbourne Zoo when they are old enough.



MEMPHIS ZOO GIVES HIPPOS A NEW HOME

Hippopotamus at the Memphis Zoo in the US will be treated to a new home next year when the US\$16m (£11m, €13.1m) Zambezi Hippo River Camp opens.

In addition to hippopotamus, the exhibit will also provide a natural habitat for Nile crocodiles, flamingos and, appearing for the first time at the zoo, okapi.

The exhibit will celebrate the life and culture of native Africans through the recreation a fishing village commonly found along the banks of the Zambezi River.

The hippo enclosure will feature a large grass area surrounded by a pool, which will allow visitors to view the animals as they swim underwater. The crocodiles will have a similar habitat, while an upland forest habitat will be home to the okapi. The flamingo area will feature a pool with small islands for the animals to rest on.

The new exhibit will be a vast improvement on the hippopotamus' current home; an enclosed concrete area with a pool that has been in existence since the 1950s.

Education and conservation issues will be addressed through signage, keeper talks, animal adoption schemes and a range of other programmes.

The city of Memphis is contributing US\$5m (£3.4m, €4m) to the project with the Memphis Zoological Society funding the US\$11m (£7.5m, €9m) balance. The exhibit is scheduled to open in mid-2011.

REACHING NEW HEIGHTS AT TWYXCROSS ZOO

Twycross Zoo, UK's new visitor centre, Himalaya, officially opened in May 2010 following an investment of £3m (€3.6m, US\$4.4m).

Constructed by Kier Marriott, the centre has been designed to be a central feature of the zoo. The single storey, grass-roofed building blends with the natural local surroundings and the new entrance will speed up access to the zoo for visitors.

ITALY'S BIGGEST AQUARIUM GETS EVEN BIGGER

Genoa Aquarium is being extended to house a major new dolphin exhibit. It has been created to strengthen the organisation's mission to raise awareness of the issues of conservation, management and responsible use of marine environments.

Designed by Renzo Piano Building Workshop, who designed the rest of the aquarium, the €28m (£23.4m, US\$34.1m) development is being funded by public investment, Porto Antico di Genova (owner of the aquarium) and Costa Edutainment, which manages the site. The aquarium has 70 tanks that recreate marine,

A 300-seat, all-day restaurant with views overlooking a Himalayan landscape themed snow leopard enclosure is incorporated into the building. Other facilities include Windows on the Wild, a corporate event and private function room available for hire encompassing a New England themed wetland wader bird enclosure.

The centre also features the Bazaar and Gallery, a 4,000sq ft (372sq m) themed zoo shopping experience and a tourist information centre highlighting attractions in Leicestershire and the surrounding counties. Also due to open this year is Uda Walawe, an Asian themed trail.

lake and land habitats and is home to around 600 species with more than 12,000 fish, reptiles, amphibians, mammals, birds and invertebrates. With more than 1.3 million visitors a year, the aquarium is one of the most visited tourist destinations in Italy. The exhibit is due to open in 2012.



Genoa Aquarium is home to 600 species



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ZOO AND AQUARIUMS



The Amazon tank is set to be one of the highlights of the Attica Park Zoo aquarium

ATTICA PARK ZOO GETS AQUARIUM FOR ATHENS

Construction of a major new public aquarium at Attica Park Zoo near Athens, Greece, is to get underway later this year.

Owned and managed privately by Attica Thematic Park SA, the 6,000sq m (65,000sq ft) indoor and outdoor project is being planned by the co-architect of the new Acropolis Museum, Michael Photiadis, with Lazenby Design Associates. It will form part of a development that includes a museum of evolution designed by Lazenby, which is currently under construction.

The aquarium, named Okeanopolis, will feature exhibits from several contrast-

ing aquatic biomes including temperate, tropical, fresh and saltwater environments from Africa, North and South America, Caribbean, Indo-Pacific and the Mediterranean. As well as numerous smaller exhibits, other highlights will include a large flooded Amazon tank with a 360° acrylic tunnel leading through massive rainforest trees and a one million-litre tropical reef exhibit representing the Palau Islands of Micronesia.

Some exhibits will utilise multimedia technology, while a substantial interactive educational zone will raise awareness of the plight of the world's oceans, rivers and lakes in the face of climate change, pollution and habitat destruction. Okeanopolis is due to open in early 2012.

HAGENBECK ENTERS ICY WATERS

Lazenby has also completed the design phase of the new polar exhibit Eismeer (The Ice Sea) for Hagenbeck Tierpark in Hamburg. The €20m (£16.7m, US\$24.4m) project is the second exhibit that Lazenby has collaborated on with the German zoo.

Launched in 1907 by Carl Hagenbeck, the family-run facility is home to 1,850 animals from all over the world. Creative director of Lazenby Design Associates, David Lazenby says: "Hagenbeck is historically important as it was the first zoo in the world to construct naturalistic exhibits. It's a privilege to be carrying that legacy into the 21st century with an exhibit that truly recreates areas from our polar regions."

Eismeer will replace the zoo's 100-year-old polar Panorama, which was in a poor state of repair due to the ravages of time, including bomb damage from WW2. Its demolition became an opportunity to enlarge the habitats and create more interesting spaces for the inhabitants.

The new exhibit will feature environments from the Arctic, Antarctic and

Patagonia. Massive cliffs, rock pinnacles, coves, sea caves and a refrigerated ice exhibit will cover a footprint of more than 10,000sq m (108,000sq ft) and will require more than 13,000sq m (140,000sq ft) of artificial rock work.

A winding walkway over a kilometre long will lead through several levels of educational exhibits, underwater views and panoramic overlooks. The spacious habitats will be home to polar bears, walrus, seals, and several species of penguins.

Lazenby took a voyage to Antarctica to document the various ecosystems as research for the project. Geology, landforms, lichens, ice formations and the types of boulders and gravel on beaches will be replicated within the landscapes.

The key conservation messages will be led with the effect of climate change on the polar regions, how it is damaging the delicate balance of the ecosystems and the resulting effect on the wildlife.

Construction of Eismeer began in April 2010 and Lazenby Design Associates will remain on the team as art directors until the exhibit opens in 2011. The project is being funded privately by the zoo with support from the city of Hamburg. ●



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SCREEN/VISION

With 3D coming to cinemas and the home, what does this mean for the attractions industry? Kath Hudson reports



Red Star's *Dracula 4D* is designed to work in 3D, 4D and 5D theatres

Mainstream 3D films, such as *Alice in Wonderland* and *Avatar*, have drawn record audiences this year. Now 3D is being promoted by TV broadcasters as the next big thing, with major manufacturers predicting 3D television sales to account for more than 50 per cent of their turnover by 2012. So, does 3D coming into the mainstream represent a threat for the attractions industry?

Most of those working in the industry agree this could benefit the industry, by providing more awareness of the concept. Terry Monkton, managing director of Simworx, says: "I firmly believe 3D becoming more commonplace is a good thing for our industry and increases awareness of 3D. But what we're providing attraction operators with is far more advanced than a 3D experience obtained at the cinema. We supply a five- to 15-minute experience, with enhanced 3D, combined with dramatic

effects, giving visitors a quick blast in keeping with the theme park experience."

The advance in mainstream also means the industry can't be complacent – content has to be excellent and recognisable brands and intellectual property are being used more. The latest installations would suggest the industry is leaving 3D behind in favour of 4D. It's also likely there will now be a greater push towards 5D, where the audience can interact with the show.

NEW ATTRACTIONS

At both ends of the UK, attractions have decided to use 4D for this season's update. Heritage Attractions' Land's End in Cornwall has replaced its 22-year-old *Last Labyrinth* experience with a 100-seat 4D effects theatre from Simworx.

Red Star's *Curse of Skull Rock*, shown in HD 3D projection, was chosen for its family appeal and because the pirate

theme is perfect for this coastal location, which is steeped in pirate heritage.

Land's End's new general manager David Bryans, who has been enlisted to leverage the 115-acre site, says the company decided to invest in a 4D experience because of the longevity and the flexibility of the many films on offer. "Our main market is families, so we needed a family-orientated attraction, and the reaction has been magical," he says. "In the first two months we've already seen visitor numbers rise 10 per cent and we know that visits to *The Curse of Skull Rock* are 10 per cent more than to the *Last Labyrinth*."

This has represented a hefty investment: the 100 seats cost £200,000 (US\$290,000, €230,000), the film was £40,000 (\$60,000, €50,000), the building work and theming cost around £25,000 (\$36,000, €30,000) and investment in other hardware and technology brought the total investment up

4D & BEYOND



Image courtesy of Our Dynamic Earth

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The Curse of Skull Rock
was chosen for Land's End
because of its pirate theme



Madame Tussauds is showing
a waxwork/4D film based on
Marvel superheroes

to £525,000 (\$765,000, €615,000). "It's a serious investment," says Bryans. "But the appeal to families and what it brings to the site makes it worthwhile."

Meanwhile, in Scotland, 4Dventure at Edinburgh's Our Dynamic Earth is a £700,000 (\$1m, €820,000) 4D attraction, provided by Global Immersion and part funded by the Scottish Government. The hardware, including glasses, seats, projectors and 4D effects came to £300,000 (\$430,000, €352,000). Theming the pre-show area as an Arctic exploration base cost £75,000 (\$107,000, €88,000). The services were £115,000 (\$165,000, €194,000). The film was £180,000 (\$258,000, €211,000) and the balance was made up of contingencies. As its remit was to drive home an educational message in an entertaining format, NSC Creative was commissioned to produce a bespoke eight-minute film to show the earth's diversity. The experience takes visitors on a journey from the Arctic to the Tropical Rainforest, meeting a shark and a rhino head-on and escaping the sting of a scorpion's tail.

Marketing director Catriona Cardie says this is their most exciting investment to date: "3D film is very topical right now, but we've taken that a stage further by produc-

ing a completely immersive experience, which is even more lifelike and has some startling moments. We hope people will leave feeling as though they've had a real-life adventure as well as having had a taste of earth's diversity on the way."

FURTHER INTERACTION

Madame Tussauds in London, UK, and Marvel Entertainment joined forces this year for a new exhibition, *Marvel Super Heroes 4D*. This uses 4D with interactive themed areas and waxwork models to allow visitors to feel as though they've had a close-up encounter with superheroes – they can even walk on the ceiling with Spider-Man and step onto Iron Man's chest shield. Spanning 9,000sq ft (900sq m) over three floors, the climax is Threshold Animation Studio's 4D film, shown in a 4D dome theatre produced and installed by Kraftwerk, which unites a crack team of superheroes against one of Marvel's most villainous baddies.

"The marriage of action-packed 4D animation, atmospheric sets and Madame Tussauds waxwork figures will give fans a totally different way to interact with their favourite Marvel heroes. We know it will be a huge hit with our guests," says

general manager of Madame Tussauds London, Edward Fuller. This marks the start of a five-year deal between the two entertainment giants and a significant, forward-thinking investment by Madame Tussauds, which will allow the experience to evolve over time, adding new elements and additional figures.

CREATING ANOTHER WORLD

The way in which the attractions industry can create a whole other world for its visitors gives it an immediate edge over cinema and certainly the home, which don't offer the same degree of escapism.

French theme park Futuroscope has used futuristic theming to enhance its latest 4D experience, making visitors feel as though they've entered the world of *Arthur and the Revenge of Maltazard*. While waiting in the queue, visitors can play interactive games and learn to write their names in Minimoy (the language spoken in Arthur's world) and measure their weight in the Minimoy way. Jan Maarten de Raad, CEO of Jora Vision, which completed the theming, says the immersive environment adds a great deal to the experience. "Parks are increasingly looking for attractions with a built-in experience to let their visitors

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believe, if only for a few hours, that they have entered another world," he says. The experience is enhanced by Kraftwerk's 4D seats, which were specially designed for the film. Features include a spider-web launched onto visitors' faces which is pulled back as they try to grab it.

CONTENT IS KING

SimEx-Iwerks has gone for recognisable brands with its latest releases, which are all the types of films that have huge popularity among the family audience. *Dora and Diego's 4-D Adventure* is new for this season at the Bronx Zoo in New York. *Happy Feet 4-D Experience* is the latest attraction for both Drayton Manor theme park in the UK and Chimelong Paradise in Guangzhou. Madame Tussauds New York has gone for *The Wizard of Oz 4-D Experience*.

"Many of our clients are already reporting significant increases in guest satisfaction and box office returns," says senior vice president film distribution Mike Freuh.

All the film makers agree that it's the content which will drive this industry forward and keep it ahead of competition from the mainstream. "After you get used to the new effects, you're back onto the content, so content is always king. After all, the new technology is just a new way of re-hashing existing, good content," says director of Animalive, Ali Kord.

Ben Smith, creative director at Red Star, says brands and intellectual property (IP) are the way forward, and also that attractions are asking for seasonal films. This is why the company's chosen to use *Dracula* for its latest film - a Halloween adventure where the infamous Count is accidentally



Animalive's *Sea Life* film. Director Ali Kord says that despite new technology, content is king

awoken by a grumpy teenager and his bumbling dad on holiday in Transylvania.

"While 3D film is breaking out of attractions and into cinemas and home video, 3D and 4D attractions are still hugely popular if they can offer a high quality entertainment experience, combined with a popular IP," says Smith. "However, venues can't afford to be lazy about their film selection - it's no longer enough to just offer a 3D film, you need really good films which people want to watch. *Dracula 4D* brings the internationally recognised *Dracula* brand to 3D visitor attractions for the first time. It's designed to work in 3D, 4D and 5D theatres with moving seats, as well as motion simulators. Although it's a spooky adventure, we made sure there's nothing too scary in there for young children and that the film's funny and full of action." Now Red Star is working on *Sleigh Ride*, ready for the Christmas season.

MONEY MATTERS

"There's enormous pressure for operators to stay ahead of the game now. Most of the quotes we're asked for include options for some sort of stereoscopic element," says Kord. "Fortunately there's a whole slew of new technologies which offer 3D solutions in different ways, and most of them are very affordable. For operators with a big 4D experience, it's expensive to upgrade, but for other attractions, it can cost as little as £20,000 (\$30,000, €24,000)."

Monkton agrees that it doesn't have to be expensive for a 4D effects theatre: "Operators can keep the attraction fresh each year by offering new film content. We're able to retro-fit our theatres with additional special effects. The great thing about showing a new film at the start of the season is that it effectively means they're offering a new attraction without a major new attraction capital outlay. For example, Drayton Manor showed *The Curse of Skull Rock* in 2009 and for 2010 they're showing *Happy Feet 4D*."

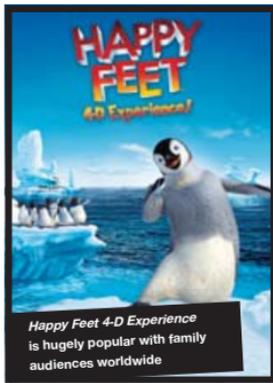
SCALING DOWN

Proving 3D cinemas don't have to be huge and costly to be effective is Spanish museum, The Honey Interpretation Centre, in Arnes. Explaining the process of producing honey and the life of bees, the council-owned interpretation centre was created for €310,000 (£264,000, \$385,000). Local company Urano Films made the five-minute film and Charmex supplied the equipment. As the museum is relatively small, passive 3D glasses were used, which is cheaper than installing an active system. Museum director Monica Almestoy says the 3D short makes a big impact among visitors, who are always impressed by the effects.

For a more compact 4D experience, Sega Amusements Europe offers an eight-seater (more seats can be added if desired), 4D motion theatre, with a library of 3D films, which can be installed into existing buildings within a couple of days. The patented technology in the seats offers up to 2Gs of acceleration and 100 movements per second. According to Justin Burke, general manager sales for Sega Amusements Europe, running with three movies, which is the standard for start up operations, means that repeat visits are high and films can easily be swapped to keep the attraction fresh.

3D may be coming to the home, but attractions still have the edge, as Bryans points out: "You probably won't get water splashed in your face while you're sitting in your armchair!"

I took my four-year-old daughter to see *The Curse of Skull Rock* at Land's End. Although she hid her face at a few points, and wasn't happy about being doused with water, for the most part she was mesmerised, particularly by the bubbles falling from the ceiling, which made her feel as though she was underwater. Afterwards she said: "I had the best day ever," which proves these attractions are delivering exactly what they set out to do. ●



Happy Feet 4-D Experience is hugely popular with family audiences worldwide

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Sea Life, Brighton, UK



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LEISURE INDUSTRY WEEK 2010

A new Innovation Zone and Outdoor Demonstration Area are among the features at LIW's Play & Attractions sector in September, which aims to bring together senior buyers from the visitor attractions industry

Leisure Industry Week (LIW) celebrated its 21st year in 2009 and attracted more than 12,500 visitors. The show's organisers are hoping this year's programme and wider range of exhibits will encourage even more owners, operators and key decision makers.

The Play & Attractions sector will include the new Innovation Zone, which is in partnership with the Play Providers Association, who represent indoor play centres across the UK. The sector will provide selected exhibitors with the chance to showcase their brand new products and innovations. It will also host the Ideas Village where



Last year's event attracted 12,500 visitors. The organisers hope even more attend LIW 2010

architects, consultants, marketers, designers and theming companies discuss new designs, developments and solutions.

Event manager Chris Brown says: "The features we've developed for the Play & Attractions sector will really benefit visitors and exhibitors and offer people an opportunity to do business and network. Just like the operators we host, our aim, year-on-year, is to improve the visitor experience."

EXHIBITORS

Exhibitors include suppliers of turnstiles, rides and simulators, theming and special effects, climbing walls, ropes courses and outdoor activity equipment. There will also be exhibitors who design and create indoor play frames and accessories, bowling, laser tag and paintball equipment, coin-operated amusements and suppliers to the museum and heritage sector.

LIW will host an extensive programme of seminars during the three days of the event. The Attractions Industry Keynote will

address how the visitor attractions sector should work closer with national agencies to ensure the highly valued "staycationer boom" continues, as the UK strives for economic recovery. The keynote will be chaired by BALPPA's Martin Barratt.

The organisation will also have a lounge on the show floor where they will provide a space for those in the attractions industry to do business and network.

The Attractions Industry Party will run on the Wednesday evening and will provide further opportunities for sponsors and exhibitors to network with decision makers from the UK visitor attractions industry. ●

LEISURE INDUSTRY WEEK

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BIODIVERSITY IS LIFE, BIODIVERSITY IS OUR LIFE

2010 is the International Year of Biodiversity and aims to encourage people to take responsibility of the planet.

David Ainsworth explains how attractions are helping



The International Year of Biodiversity aims to raise awareness all over the world

What is the International Year of Biodiversity?

The United Nations General Assembly declared that 2010 will be the International Year of Biodiversity (IYB) and will help raise awareness of the importance of biodiversity all over the world. It's an opportunity to stress the importance of biodiversity for our wellbeing, reflect on our achievements to safeguard biodiversity so far and encourage a redoubling of our efforts to reduce the rate of biodiversity loss. Governments around the world are being asked to create a new global strategy to combat biodiversity loss and the United Nations General Assembly will have a high level segment to address the issue of a more sustainable future for biodiversity loss.

What are its aims?

Through the IYB 2010 we hope to give a platform to all the organisations working all over the world to safeguard biodiversity. The objectives are to enhance public awareness of the importance of safeguarding biodiversity and of the underlying

DAVID WITHOUT BORDERS

This multinational expedition is being broadcast to a web series to inform the audience about the importance of biodiversity for our planet. During 12 months, the explorers will travel around the world with a high definition camera to gather the most current information from local entrepreneurs, scientists, and communities on biodiversity inspired projects. These projects will have a great impact on both regional and national regions. www.davidwithoutborders.com

threats to biodiversity, raise awareness of the accomplishments to save biodiversity that have already been realised by communities and governments, encourage individuals, organisations and governments to take the immediate steps needed to halt the loss of biodiversity, promote innovative solutions to reduce the threats to biodiversity and start dialogue between stakeholders for the steps to be taken in the post-2010 period.

What's the message?

'Biodiversity is life, Biodiversity is our life'. Because biodiversity is a very scientific concept, the challenge is to encourage people to understand what it means for their daily lives.

A number of information products have been developed with partners, including web, print and other materials in support of press, radio and television. The Secretariat has created a core set with the aim of making them available to a number of organisations for further targeting and dissemination. People are extremely responsive – they're finding creative ways to get the message out, from putting the slogan on bottles of wine, to handing out packets of flower seeds around the country, to creating postage stamps.

How was the year organised?

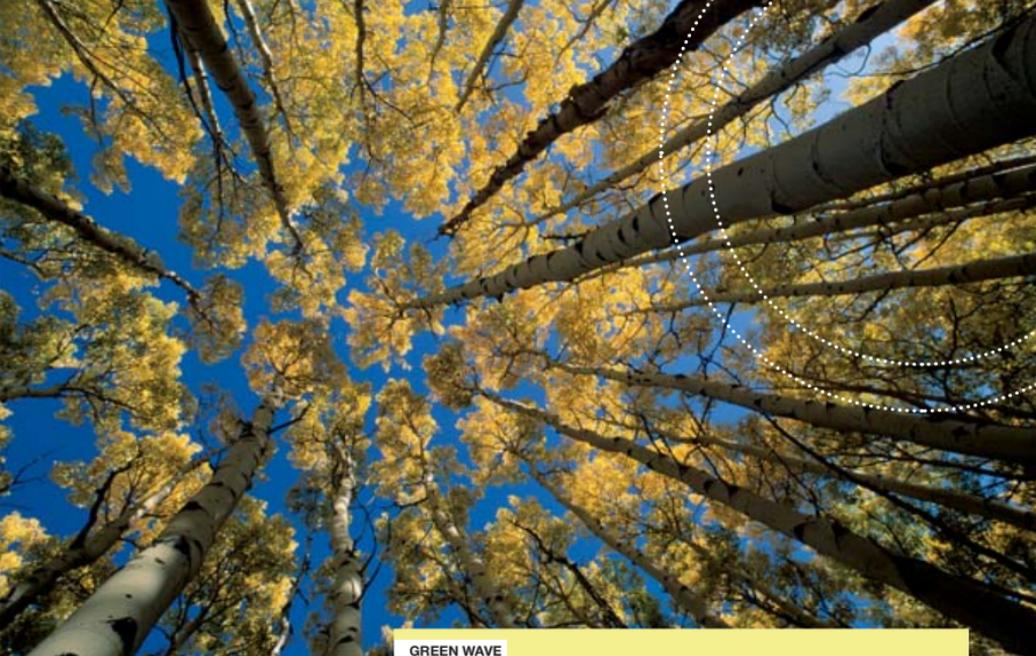
It was proclaimed by a United Nations resolution, and then the mandate to organise it was given to the Secretariat of the Convention on Biological Diversity. The

ROYAL BOTANICAL GARDENS, KEW, UK

In a fitting success story to celebrate IYB, Carlos Magdalena, a horticulturist at Kew, has discovered the secret of growing a rare species of African water lily – bringing it back from the brink of extinction. The thermal lily (*Nymphaea thermarum*) is believed to be the smallest waterlily in the world, with pads that can be as little as 1cm in diameter.

Kew is also hosting daily biodiversity tours around the gardens in which visitors learn about biodiversity hot spots, the importance of the rainforest, plant and animal interdependence and Kew's conservation work around the world.





GREEN WAVE

Green Wave is a multi-year global campaign that enables children and youths to make a difference – one school, one tree, one step at a time. Green Wave brings together children and youths from around the world to raise awareness about biodiversity, and the need to reduce its loss. The Green Wave contributes to the Plant for the Planet Billion Tree Campaign.

The 2010 Green Wave events started on the International Date Line that runs through the Pacific, and moves westwards every hour. Beginning at 20:10 local time in the GMT+12 time zone, every hour new trees appear on the map. The map fills up with trees in Asia and the Pacific, across Europe and Africa, over the ocean to the America, then finally reaches back to the Pacific. <http://greenwave.cbd.int>



secretariat worked to create the branding and logotype and created a website to communicate the information. We work through national committees around the world and through partners. The national committees are self-organised and their structure really varies. In the UK, for example, the Natural History Museum in London is the main organiser, while in the Netherlands it's a coalition of people. The United Nations Environment Programme has been very active, and has worked with Puma to promote the year.

What events are taking place?

There are events all around the world – so far, we have more than 100 countries where celebrations have been reported, with more reporting each day. There are no limits for what people can do to help

NATURAL HISTORY MUSEUM, UK

The Natural History Museum (NHM), London, UK, is hosting the national secretariat and working with 400 partners across the UK. It's informing people of events happening in the UK through Twitter, which has been listed as the top 50 wildlife and conservation twitters in UK newspaper *The Guardian*. Its aim is for attraction operators to get across to the public why biodiversity is critical and why we need to preserve it. "It's imperative people begin to pay attention," says coordinator Marie Clements. "Attractions can generate awareness by getting people involved in different, fun ways." The museum is also hosting a range of activities to mark the year including The Deep, an exhibition exploring 11,000m down in the ocean, an Amazonian art exhibition and Nature Live in the Darwin Centre.

www.biodiversityislife.net



generate excitement. Concerts are being held, school painting competitions are being run. Communities are organising tours and activities where people can discover the biodiversity that surrounds them. The government of Germany worked with 37 different other governments to organise biodiversity action days around the world.

At the FIFA World Cup, Puma has a number of events to mark the year. Norway has a major music festival that will reflect the year. In September there will be a one-day, high-level session of the United Nations General Assembly on the International Year of Biodiversity where heads of state will discuss biodiversity, climate change and the Millennium Development Goals. In October the conference of the parties for the Convention on Biological Diversity will meet in Japan, where they will celebrate the International Year of Biodiversity and will also set the new strategic plan for the convention.

How can an attraction get involved?

Attractions can be a platform to encourage people to think about the natural world and our connection to it. If thematically suitable, they can include an environmental message – a message of reducing our impact on the planet would be good.

Also, attractions should find the most efficient ways of working to ensure they use sustainably sourced materials wherever possible – and let people know that you're making the effort and that they can too. Any activities the attraction hosts can be linked in to the IYB.

EAZA CONSERVATION FORUM 2010

WORKING FOR BIODIVERSITY

29 June – 2 July

Hosted by the **Papiliorama Foundation, Switzerland**

Coinciding with the International Year of Biodiversity, the EAZA Conservation Forum 2010, hosted by the Papiliorama Foundation in Switzerland, will take place at the Loewenberg Centre.

Key themes for discussion will include the extinction crisis in Southeast Asia, European endangered species and a focus on apes.

An emphasis will be placed on the involvement of local communities in biodiversity conservation and on how conservation success can be measured. www.eaza.net



A range of activities can be linked into the IYB

What's happened so far?

We had the launch of the year at a celebration in Berlin with the Chancellor of Germany and then a conference at UNESCO in Paris. At the latter, the film *Oceans* was previewed to great acclaim.

Our Facebook page was launched and we have more than 35,000 participants now. Countries all over the world have created commemorative stamps reflecting the year. Communities all over the world have held celebrations as well.

Have you seen any difference yet?

We have more visibility for the year and for the term biodiversity. It's a very scientific term and not many people know about it. With the IYB, the logo is being placed everywhere – this is sometimes just enough to get people asking questions, which is what we want to happen.

Seeing the logo in the subways of the world and at the FIFA World Cup has been great. I was in the Washington Airport and saw a broadcast on CNN where the logo for the year was displayed behind a soccer player who was being interviewed and I was so impressed.

What have been the challenges?

The IYB 2010 is a global campaign designed to encourage worldwide action to safeguard biodiversity. This is a significant challenge. To be successful, we need to inspire action from all sectors, all over the world. To do this, we need to work together to communicate consistent, compelling messages to our shared audience targets. We'll provide the communications tools to help as many organisations as we can..



One of the challenges is teaching people what biodiversity means to them

What will happen after the IYB?

There's talk about creating a United Nations Decade for Biodiversity and linking it with concrete targets to stop the loss of biodiversity. This means we'll track the progress of our struggle to live sustainably each year and governments will have the commitment to do this. Also, we'll work with our partners at the United Nations Forum on Forests to promote the International Year of Forests in 2011. ●

GET INVOLVED

For more information on the International Year of Biodiversity visit www.cbd.int/2010
To link an activity to the International Year of Biodiversity, contact the secretariat by email at IYB2010@cbd.int

David Ainsworth, Focal Point for the International Year of Biodiversity, Secretariat of the Convention on Biological Diversity



Vendor's continuous towel cabinet unveiled

Vendor's new IQ continuous towel cabinet uses patented technology which allows scrim reinforced paper towel to be topped up at any time. For added hygiene, used towel is rolled up in the towel cabinet, completely separate from the new towel, so no bin is required. Similar to a tower dispenser, the IQ produces a loop of paper towel using a portion control mechanism. But instead of a single roll of towel, the cabinet takes 'cassettes' of folded paper.

fun-kit.net keyword
vendor



HSL lights up Verdi's Nabucco

More than 100 Robe moving lights were utilised by HSL for the Israeli Opera's recent production of Verdi's *Nabucco*. The work was staged in a purpose-built open-air arena at the foot of Masada Mountain at the Dead Sea in Israel. UK-based company HSL worked for the Tel Aviv and Jerusalem based Stage Design, the event's overall technical provider. HSL supplied kit including 84 ColorSpot 2500E ATs and 24 REDWash 3192s.

fun-kit.net keyword
hsl

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Imaginative clay sets from National Geographic™

Inspired Gifts and Toys (IGT) has unveiled a range of new National Geographic™ 3-D Creative Clay Sets. Suitable for children of four-years-old and above, the net proceeds from the sale of each clay set – which contains air-drying clay – will go towards supporting exploration, conservation, research and educational programmes. Sets available include dinosaurs, creepy-crawlies, bird of prey and jeep safari. The dealer price for each piece is £5.10 with a recommended retail price of £9.99. The minimum order quantity is six units.



fun-kit.net keywords
inspired gifts



fun-kit.net keyword
bodyflight

Leap into the blue with Bodyflight

The Bodyflight extreme leisure centre in Bedford, UK, has unveiled a new activity called Vertigo. Marketed as 'a bungee jump without the bounce', Vertigo is one of the tallest POWERFAN™ jumps in the UK and enables customers to free fall for two thirds of a 125ft drop before a cable gradually slows them down. From beginning the climb to the roof of the tower to landing on the ground again, participants are securely fastened the entire time to handrails via a body harness.

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FlowRider® and Plastic Extruders

Heronrib matting from Plastic Extruders has been installed around the new FlowRider® surf simulator at the Retallack Resort and Spa in Cornwall, UK. Providing a slip-resistant surface for surfers, instructors and spectators, the matting is a comprehensive safety solution for a variety of wet areas. Featuring an embossed surface which helps to keep the product dry, Heronrib matting is said to be very hardwearing yet comfortable to stand on while also featuring hygienic anti-bacterial and anti-fungal additives. The matting is supplied in 10m (32.8ft) roll, reducing the number of seams



fun-kit.net keywords
plastic extruders

and minimising the potential for tripping. It is available in several colours and in three choices of width – 50cm, 1m and 1.22m.

WhiteWater expands MEGAtube™ series

Waterpark designer, manufacturer and engineer WhiteWater West has extended its range of MEGAtube™ waterslides with the Anaconda. Said to



fun-kit.net keywords
whitewater west

be the largest family raft ride ever designed, the high-capacity slide joins the Viper and Python. With a 30ft (9m) diameter fully-enclosed flume, the Anaconda carries six riders and climbs as high as 15ft (4.5m). The technology allows for flume-in-flume capabilities, so another waterslide can pass through the MEGAtube™.

A powerful solution for LEGOLAND® Windsor



A new series of SP high frequency (HF) chargers have been installed by Exide Technologies on the self-drive boats at LEGOLAND® Windsor, UK. Exide has provided the monobloc batteries – which are also commonly found in cars, golf caddies and cleaning machines – for the 30 popular boats for more than 14 years. The new high frequency chargers will ensure that charging costs are reduced and that the batteries use is fully optimised. Steve Hainge, ride

maintenance manager at LEGOLAND® Windsor said: "It's not just children that ride in the boats; we often have two adults and a child in a boat, which can be in use for 10 hours a day – so we have to be sure that the batteries can cope. In addition, HF chargers can also provide considerable financial savings due to improved power conversion and lower energy costs – a positive step in reducing carbon emissions."

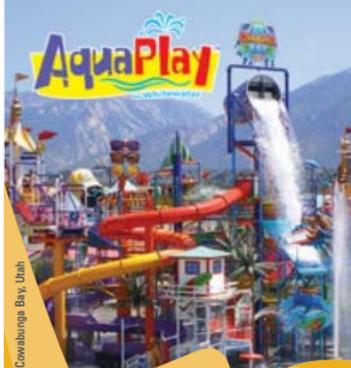
fun-kit.net keywords
exide technologies



fun-kit.net keyword
hanovia

Hanovia's new disinfection technology

UK-based theme park Alton Towers has recently replaced its ozone water treatment system with two Hanovia UV disinfection solutions. The medium pressure PSP units installed dramatically reduced the combined chlorines in the large indoor swimming pool and whirlpool – in the swimming pool alone, the parts per million (ppm) were lowered from 0.9ppm to 0.3ppm. The system for the main pool treats up to 1,018 metres cubed per hour, based on a UV dose of 60 mJ/cm².



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