

#80 • volume 15, issue 5 • 2019
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**Looking back from 2019:
15 years of InPark**

**Martin Palicki,
IPM publisher**



In 2004, Universal Studios opened its Revenge of the Mummy attractions in California and Florida and Disney's Magic Kingdom park debuted Stitch's Great Escape. It was also 15 years ago that the first issue of InPark was published and unleashed on crowds of IAAPA Expo attendees. Indeed, the interceding 15 years seem to have passed by quickly, and a lot has happened, both in the world and at InPark.

We are not alone in celebrating a milestone. Painting with Light just turned 20. Entertainment Design Corporation is 25. Animax celebrates 30 years. Technifex and Miziker Entertainment both turn 35. Lagotronics honors their 40th anniversary and Christie earns the top award for being 90. This is only a sampling; there are many others celebrating their hard work and success.

The longevity of companies in our industry points to its health and maturity - and to theirs. A lot of knowledge and experience is carried by these institutions and people that have persevered through adverse conditions and recognized opportunities in good times and bad.

On the other end of the spectrum, the industry is now cultivating new talent and leadership, often by partnering with academia - a concept that was only in its early stages a scant 15 years ago. It's now accepted that know-how and skill are both learned and earned, from time spent both in the classroom and in the field.

Of course, your industry publications are a key part of that knowledge transfer and InPark has spent 15 years telling the stories of what works in the industry and how success is achieved. We chronicle technology, the people who develop it, and those who implement it in creative ways.

Towards that end, as we begin work on the next 15 years, we are always in search of great stories AND people who can write about them. Come visit us during the IAAPA Expo (and other industry events) or drop us an email to talk about your ideas and abilities.

We're inspired by the anniversaries around us to talk about our own, and pleased to have been here to support the industry for a decade and a half. Here's to the next 15!



Joe Kleiman is News Editor for the InPark website. He has 25+ years management experience: in tourism, museums and attractions, in the giant screen industries and as a zookeeper.

**Cross platforming and
cross pollination**

**Judith Rubin,
IPM editor**



We're in the age of seamlessness. Stories, characters and brand icons now jump blithely from platform to platform. From 2D to 4D. From theme park to museum to pop-up. From home screen to giant screen to dark ride. From the pages of a book to the FEC to the haunted maze to VR. From the hotel room to the escape room. From Broadway to cruise ship. From waterslide to nighttime spectacular to the casino. From your game console to the miniature golf course to your device and back again.

Technology, talent and teamwork combine to ensure that story, character and brand retain their integrity throughout the journey. Each incarnation has the potential to add something. Each medium or platform has inherent qualities that develop story and character, brand and IP. Each platform has an associated activity that influences storytelling and guest engagement, be it competition, exploration, cosplay, experimentation, adventure or conversation; whether active or passive interaction, whether earning points, credits or currency.

The engagement platforms and market sectors influence one another. They will do so more in the future as operators, creatives, storytellers and IP owners continue to seek and find innovative ways to attract and enchant guests while building new revenue sources.

COVER: The Aon Center in Chicago is in process of adding a new observation experience for visitors. The Hetteema Group [*Inset photo: Phil Hetteema & Jodi Roberdes*] is taking it beyond a mere observation deck to a meaningful exploration of Chicago, placing the visitor into the city.

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2019



CHUCK ON SET OF TROLLZ
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SEBASTIAN PUPPET 2004



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COVER
FEATURE

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Museum makeovers

Three museums embrace digital technology for educational exhibitions

by Bryan Boehme, Christie

Display technology is transforming the way people experience museums. From dynamic digital signage and exciting immersive exhibits to interactive activities and large-scale, one-of-a-kind experiences, innovative display and processing technologies are allowing museums to reinvent themselves in extraordinary ways.

Seeking to enhance their exhibits and create a truly unique experience for guests, three museums have recently embraced these technologies.

Montreal Museum of Fine Arts celebrates creative icon

Bringing haute couture to life in the exhibition “Thierry Mugler: Couturissime” was no small feat. The first retrospective on the iconic couturier, photographer, director and perfumer, “Thierry Mugler: Couturissime” drew more than 290,000 visitors to the Montreal Museum of Fine Arts (MMFA). The exhibition

brought together over 150 outfits, as well as accessories, theater costumes, videos, film clips, rare prints and unpublished sketches, with projection throughout the exhibit powered by Christie 1DLP® projectors.

Born in France, Mugler’s career began in 1973 with the launch of his first collection, followed shortly thereafter with the opening of his first store in Paris. He went on to outfit celebrities, including David Bowie, Lady Gaga and Diana Ross, and create costumes for Beyoncé, Cirque du Soleil and Comédie-Française. His legacy as one of the great haute couture and prêt-à-porter designers is well-established, but the challenge remained: how do you showcase such a prolific career?

An operatic display of fashion

Conceptual planning for “Thierry Mugler: Couturissime” started in spring 2018 with the museum team mapping out the flow of the exhibit and planning for the inclusion of projection



View of the exhibition Thierry Mugler: Couturissime. Montreal Museum of Fine Arts -Photo © Nicolas Ruel



View of the exhibition Thierry Mugler: Couturissime. Montreal Museum of Fine Arts -Photo © Nicolas Ruel

technology. The exhibition is laid out as an opera in six acts, moving from act one “Macbeth and the Scottish Lady,” through to the final act, “Futuristic and Fembot Couture.”

Says Sandra Gagné, Head of Exhibitions Production, MMFA, “The variety of themes and ideas presented in the show required versatile equipment that could lend itself to different atmospheres going from the dark and haunted ambience of ‘Macbeth,’ to the immersive fantastical jungle of ‘Metamorphosis.’ At this stage, the Christie team was of great help in guiding us to the ideal product, as well as helping us with the position of the projectors in the rooms.”

The projection is used in three acts. In “Macbeth,” guests enter the exhibit and are greeted by costumes designed by Mugler for *La Tragédie de Macbeth* and a hologram of Lady Macbeth created by the multidisciplinary artist Michel Lemieux for 4D Art, Montreal. Says Gagné, “The hologram projection opens the visitors’ route with an enveloping performance; the sleepwalking queen is haunted by the blood she imagines on her hand and she ultimately descends slowly into madness.” This performance is the introduction to over 70 costumes that Mugler designed for the 1985 performance of *Macbeth* by Comédie-Française at Festival d’Avignon, for which he was given the biggest budget in the troupe’s 200-plus year history.

In “Stars & Sparkles: Staging Fashion,” video clips of Mugler’s pioneering work designing runway shows is projected onto a large screen at the end of the room, complementing the dramatic fashions on display. Mugler used his runway shows as a theatrical stage, combining haute couture with lighting, music and celebrity.

Mugler’s fascination with the animal world is on show in “Metamorphosis,” which used materials including crystals, rhinestones, feathers and thousands of hours of work to create a fantastical costume akin to a mythical creature. Mugler also drew inspiration from reptiles, insects and butterflies, and complementing these themes required a captivatingly immersive AV experience, which was created by award winning Montreal’s special effects studio Rodeo FX (*Stranger Things*, *Game of Thrones*).

“The Metamorphosis section is composed on a scenic immersive environment,” says Gagné. “The projections transport the visitors into the jungle, the desert, and the ocean to discover the flamboyant costumes designed by Mugler. The composition of numerous projectors in the room allowed for a mesmerizing panoramic experience.”

The MMFA required projectors that were high-resolution, yet powerful, dependable and low-maintenance. Says Gagné, “The



The Panorama 6th October Museum in Cairo, Egypt -Photo courtesy Christie

weight of the projector was also crucial for transportation, as we needed a light yet reliable device, solid enough to withstand transport.” Christie GS Series projectors have performed admirably, with positive feedback from the public and the artist.

Thierry Mugler: Couturissime goes global

“Thierry Mugler: Couturissime” has been a resounding success for the MMFA, during its six-month tenure at the museum (March 2-September 8, 2019). “Projections and immersive visual work allow the visitors to discover the work of Thierry Mugler in a mesmerizing and captivating environment,” says Gagné. “Visual installations are a key feature of the exhibition, allowing a new public to discover the world of fashion design. People of all ages have been appreciating the exhibition since its opening!”

Chief curator of MMFA, Nathalie Bondil, says of the exhibit, “It includes not only thousands of works, pieces and accessories to be assembled, but also – because we opted for a spectacular dimension of installation and setting – immersive special effects and exceptional sets. Welcome to the theater of fashion. The curtain is rising!”

The MMFA’s exhibition is on display at Kunsthall Rotterdam from October 13, 2019 to March 8, 2020 followed by the Kunsthalle der Hypo-Kulturstiftung in Munich from April 3 to September 20, 2020.

History and Technology Combine at Panorama 6th October Museum

The Panorama 6th October Museum in Cairo, Egypt, was established to commemorate the 6th October War which took place in 1973. Having been inaugurated in 1989, the eye-catching museum frontage – home to an array of military tanks and aircraft – drew visitors in to witness a commemorative panoramic mural which depicts Egyptian soldiers rushing the Bar-Lev Line on the Suez Canal.

Thirty years later, and the museum – operated by the Military Authority of Museums – had become dated and lacked the cutting-edge technology that museum visitors have come to expect. Following an extensive renovation, the museum has blended audiovisual technology with existing exhibits to help continue its educational mission in the most effective and captivating way.

With the aim of improving and modernizing the visitor experience, Egyptian integrator Audio Technology S.A.E was asked to equip a trio of halls at the museum with the latest audiovisual technology to bring an array of historical exhibits to life. In Hall One, a 3D-capable Christie Mirage projector has been installed as part of a 150-seat 5D cinema. The venue is used for showings of an FHD resolution 3D stereoscopic movie, which transports guests to the front lines of the war by

highlighting a host of different battles, as well as lifting the lid on the Egyptian army's preparations before the 1973 war.

In a further exhibit, six Christie 1DLP projectors were installed to create a striking U-shaped display which is used to showcase a film that gives an additional overview of the war in a bright and seamless 10k resolution display. The unique shape allows for the audience to feel a part of the video, as it fills their visual field, further immersing them in the content.

In a cylindrical room, nine Christie laser projectors were installed to create an impressive 360-degree screen projection. The unique display shows footage captured during the 2011 and 2013 revolutions that reflect the political situation in Egypt at the time. The immersive display matches the unusual shape of the museum building and provides the platform for a captivating educational experience.

A key challenge that was faced during the installation process was the issue of spacing. The projectors had to be mounted in tight spaces without any obstructions to hinder the display. This was an issue in the U-shape and 360-degree mapping rooms; due to the complexity of the projector arrays, it was important to ensure that none of the light beams were obstructed by other

projectors. Thanks to the compact sizes of Christie's projectors the challenges were overcome using a special Christie mount that enabled the technology to fit into the spaces effectively, and by using the built-in warping and blending options in the projectors.

The museum has also been updated throughout, with 3D holograms of weaponry, digital signage displays, wireless tour guides, and even an exterior projection mapping display on the façade of the building.

"We couldn't be more thrilled with how the new additions have transformed the museum, and the response has exceeded all our expectations," explains Jacko Makram, Technical Design & Pre-Sales Manager, Audio Technology. "We've received great feedback from the operator, who has said that visitors have thoroughly enjoyed the experience, with much of the excitement stemming from the exclusivity of the project – this is the first time in Egypt that all of this technology has been combined together in one place. It's important for us to show people this important time in history in an effective and immersive way that provides not only knowledge, but entertainment too. The client aspired to achieve a full day entertainment program for all ages, and we feel that the museum now proudly sits among Cairo's other iconic locations."



MAAT (Museum of Art, Architecture and Technology) in Lisbon, Portugal -Photo courtesy Christie

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MAAT brings contemporary art to life

Situated on the banks of the river Tagus, in Belém – one of Lisbon’s most popular neighbourhoods for tourism, arts and culture – MAAT (Museum of Art, Architecture and Technology) is located in the city’s former power station with a total floor area of 38,000 square meters (409,000 square feet).

“We want the museum to be a beacon, not just for Portugal but for the whole world,” explained Rita Costa Gomes, Production Coordinator at MAAT. “With several exhibitions on the go at any one time, we need to be able to count on the right multimedia equipment for all our needs. And if we truly wish to be a benchmark, then we have to work with the highest quality brands. And as Christie offers the best professional projectors available in the market, the decision was easy for us.” Through the Christie partner Total AV, MAAT acquired 10 Christie 1DLP projectors, as well as 17 different lenses.

“We choose laser technology because it is the perfect solution for museums which are open seven days a week, given that they require virtually no maintenance and there are no lamp costs,” added Costa Gomes. “They have proven to be the best option to suit our needs. We have already used them in various exhibitions with different technical crews, and all the national and international artists involved have given them the thumbs-up. I have to say that we are more than delighted with the performance so far.”



The Panorama 6th October Museum -Photo courtesy Christie

Technology is enabling museums to tell compelling, engaging stories that draw in visitors. Whether it’s invisibly running in the background and letting the art shine, or used to create an interactive experience for guests, technology has become a de facto part of museums’ tool boxes. •••



Bryan Boehme is Executive Director of Global Sales & Business Development, Entertainment, Christie.

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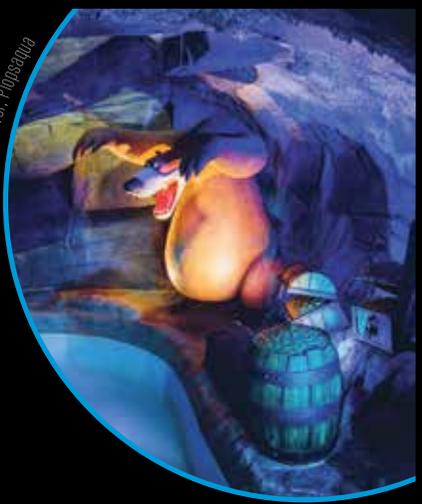
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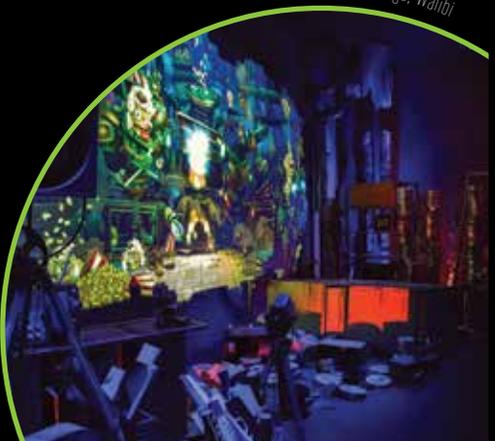
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Movers and shakers

Highlights from industry newsmakers

PSX, Inc announces expansion of executive leadership team with the addition of industry veterans Steven Fisher, Rob Pourciau and John March



Jeff Borne



Rob Pourciau



Steven Fisher



John March

“As PSX enters its 25th year in the audiovisual and technology industry, I am both excited and honored to expand our executive leadership team. Steven, Robert and John each bring decades of success and international business expertise to our organization. This team will position PSX for future growth and success, while providing us the ability to better serve our clients globally,” commented Jeff Borne, President and CEO of PSX, Inc.

Steven Fisher has been named Vice President of Business Operations. “I’m thrilled about the opportunity to work with Jeff and team to take this world-class business to the next level. We share the same passion for excellence as it relates to client relationships, project delivery, our team and our culture. Our goal for every project is to innovate within our client’s budget, meet our client’s schedule and exceed our client’s expectations,” says Fisher. A 30-year veteran of the technology industry, Fisher will lead the strategic growth and direction of the business globally. Prior to joining PSX, Fisher served as Vice President, Electrosonic Design Consulting.

With 25 years of experience in the technology industry, Robert Pourciau has been appointed Vice President of Operations for PSX. Pourciau will lead and be responsible for key global operations, including technology design consulting and project delivery efforts.

“It is with great pleasure that I take up this important role at PSX,” said Pourciau. “I’m excited to be part of an organization world-renowned for its technology design and integration of innovative audio, video and control systems.” Prior to joining PSX, Pourciau served as Director, Electrosonic Design Consulting.

John March, who has worked with PSX since 2017, has been named Vice President of Strategic Business Development. March will lead Client Relationship Management and Project Development for the company, focusing on the themed entertainment industry. March has project delivery experience ranging from The Lunar Orbiter and Voyager for NASA, to numerous World Expos and E.T.’s Adventure at Universal Studios Florida. He has successfully delivered many theme park attractions throughout the world and will continue his success through PSX. •••

Integrated Systems Europe returns to Amsterdam in February 2020

The Integrated Systems Europe (ISE) exhibition for AV and systems integration is a top trade gathering for the global attractions industry and it will return to the RAI Amsterdam venue February 11-14, 2020. The event runs over four days, occupying 15 halls, and is home to everything the professional audiovisual industry has to offer – including the latest developments and technologies that will influence almost every industry’s future. ISE 2020 is produced by Integration Systems Events on behalf of international trade associations and co-owners AVIXA and CEDIA.

ISE 2020 will be bigger than the 2019 event, as has been the trend. Visits are forecast to exceed the 81,000 received in 2019; there will be more floor space; and more conferences and learning opportunities on the agenda. Visitors will be ‘Making Deeper Connections’

with the newest technologies, the latest ideas – and the global AV industry.

Designed to help visitors more easily find what is most relevant to them among some 1,300 exhibitors are the six Technology Zones, spread across eight of the 15 halls: these comprise Audio and Live Events, Digital Signage, Education Technology, Residential, Smart Buildings and Unified Communications.

A new initiative for ISE 2020 is the Innovation Zone, a specially designed area for first-time ISE exhibitors to showcase their technology. Also in Hall 14, the ISE Main Stage theater relocates from Hall 8. The Main Stage will offer thought leadership and best practice sessions from ISE, AVIXA, CEDIA and AV Magazine. These sessions are free to attend, and no advance booking is required. Hall 14 will also be the location of an exciting technology feature, details of which will be announced in the near future.

Another show floor development sees an even bigger Hall 5; last year's temporary extension has been upgraded to a larger permanent one. This will help to accommodate the growing number of exhibitors and visitors looking to take advantage of the opportunity presented by ISE.

Something that has characterized the development of ISE over the years is that it has attracted a growing proportion of end-users anxious to see and hear the latest technologies and solutions for themselves. This evolution in demographics has seen ISE respond with a conference program that has been continually enhanced in both number of sessions and range of topics.

ISE 2020's conference and professional development program – which runs over five days – will once again be presented with the tagline “Learn, Discover, Be Inspired.” ISE 2020 will reprise the popular Digital Signage Summit ISE and feature more recent additions such as the Digital Cinema Summit ISE and Hospitality Technology Summit ISE by HTNG.

Many of the conferences will take place at the nearby Okura Hotel – a move that proved very popular with visitors when introduced last year. A free shuttle bus will run between the RAI and the conferences.

AVIXA will be hosting FlashTracks throughout ISE 2020 on a dedicated show floor stand. Designed for AV professionals of all experience levels, these are free 20-minute education sessions, focusing on hot industry topics.

There will be many other show features at ISE 2020. Organized and independently judged by EXHBITOR magazine, the Stand Design Awards recognize the most effective small, medium, large and extra-large stands at the show. The Innovation Awards return for the 14th time to recognise the best in global AV projects and technology, as well as outstanding distributors, project managers and consultants. A spectacular projection mapping showcase involving part of the RAI complex will catch the attention at ISE 2020.

ISE's Opening Address will be given by Duncan Wardle, former Head of Innovation and Creativity at Disney. It will take place the evening before the ISE 2020 exhibition opens and be followed by the Opening Reception.

ISE 2020 will be the final edition of the show to be held at the RAI Amsterdam; in 2021, ISE will relocate to the Fira de Barcelona. The Business Lounge, between Halls 7 and 8, will have a Barcelona theme. Here attendees can find information about how to get to ISE 2021 and what to expect once they are there.

Additionally, to mark this significant moment in ISE's story, the traditional Closing Keynote will be replaced by an invitation-only event on Friday. Here ISE will say thank you and goodbye to Amsterdam and the RAI, and look ahead to what Barcelona and the Fira have to offer. “The event will mark the end of an era,” said Mike Blackman, Managing Director of Integrated Systems Events, “and the beginning of an exciting new one.” •••



Projection mapping examples took place both inside the expo hall and outside, as evidenced in this image from ISE 2019. *Photo courtesy of ISE*

Daniels Wood Land constructs new headquarters, tripling size of current space

Known for their themed design and fabrication, shooting galleries, commercial playgrounds, animatronics and tree houses, Daniels Wood Land announces a new \$6 million corporate headquarters and shop in Paso Robles, California. The new building coincides with the company's launch of a new theming division, DWL Studios.

"We are excited to enter this next chapter of our business, which allows us to increase efficiency, capacity and future growth," says Daniels Wood Land EVP Business Development Andy Dauterman. "Furthermore, DWL Studios will be able to provide dedicated resources and services for our valued clients in the themed entertainment marketplace."

Company co-founders and twin brothers Ron and John Daniels began to realize their current shop, located five miles from the new facilities, was approaching its limits with larger projects and a broader range of clients becoming the norm. The team began to search for a new site, which was purchased in 2018; construction started mid-2019. The 4-acre property includes a 35,000 square foot building that includes a climate-controlled art department/studio as well as dedicated space for the company's theming, custom work, steel fabrication, shooting galleries and other departments.

"The new office allows us to provide a full suite of turnkey services to our clients and to turn around projects with greater speed than ever before," explains Dauterman. The new facility will include upgraded equipment such as the Kuka CNC Milling Robot, new 3D printers, and their recently acquired large format 2D printer.

The structure and space will also be a literal showcase for Daniels Wood Land's design capabilities. In addition to 1,500 square feet of showroom space, the entire facility façade and interior office environments will be themed. The team even bought and renovated a classic Arrow Development 36" gauge train that will carry visitors on tours around the site. The train was built in the 1960s and sat neglected for many years after having been used at a Seattle shopping mall and various fairs and carnivals. "Visitors to the new site will see immediately our capabilities and quality of work," says Dauterman.

The company, which has been regularly adding to its staff, anticipates hiring additional workers once the building is ready for occupancy, currently scheduled for January 2020. Visit danielswoodland.com. •••



Wavetek® celebrates 50 years of industry innovation and launches new logo

WaveTek®, a leading designer and manufacturer of wave generation equipment in the industry is celebrating 50 years of innovative products, pool designs and technology. WaveTek wave generation systems represent over 90% of all recreational wave systems in the U.S. and are installed in over 450 locations world-wide.

Pioneering the industry, ADG WaveTek wave generation has helped set the standard in wave performance and technology, introducing numerous innovative developments such as the US Pneumatic system, tsunami solitary wave technology, first 6 foot pneumatic parallel wave, lazy river waves, staggered caisson design, gutterless wave pool, double break wave pool floor, and the variable wave pattern programmer – their patented Varawave® technology.



Island H2O Live! wavepool

“We’ve combined creativity and technology to provide our clients with innovative wave pool shapes, technological advancements and creative applications that are not found anywhere else in the industry,” says Jim Dunn, President of ADG. “WaveTek is continually evolving to meet the growing demands of our clients, and we are always working towards what’s next. WaveTek waves are unmatched in the industry.”

A sample of some recent WaveTek wave installations showcase the variety of WaveTek’s applications:

- Island H2O Live!, Kissimmee, FL – Split Beach Wave pool
- Gaylord Opryland, Nashville, TN – Adventure Swim River and Split Beach Wave pool
- Canobie Lake, Salem, NH – Tidal Wave River
- Six Flags America, Baltimore, MD – Wave River
- H2OBX, Powell’s Point, NC – Dual Entry Wave Pool and Reverse Beach Wave Pool
- Holiday World, Santa Claus, IN – Kids Miniature Wave Pool
- Hyland Hills Water World, Federal Heights, CO – Boogie Boarding Surf Ride

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Meet Amanda Thompson

IAAPA's incoming chair has deep roots in the attractions industry

interview by Chris Lange

During IAAPA Expo, Nov 2019 in Orlando, Amanda Thompson will become IAAPA chair of the board of directors for 2020. She will be the third woman in over 100 years to lead the association and the first woman from Europe to hold that position. Her father, Geoffrey Thompson, was IAAPA chair in 1996. She will replace outgoing chair David Rosenberg of the Monterey Bay Aquarium.

Ms. Thompson started in the industry at a young age. Her family owns and operates Blackpool Pleasure Beach, which was started by her great-grandfather, William George Bean. Today she is the park's managing director; her brother, Nick Thompson, serves as deputy managing director. In addition, Thompson founded Stageworks Worldwide Productions, an entertainment production company with shows around the world.

InPark asked park and attraction designer Chris Lange to talk with Thompson about her involvement in the industry, IAAPA and her love for attractions.

What was your childhood like growing up connected to an amusement park?

My father was focused on operating the park so my siblings and I weren't at the park as often as you might think, when we were young. When we did go to the park, it was a wonderful treat.

As a child, I really wanted a pony, and when I was seven, my grandfather allowed me to work on the pony rides for several weeks. I cleaned them, I fed them, I did all the work required to care for a pony, so by the time I went back to school I knew how to look after one. On my next birthday, my grandfather said I could have a pony. My mother went mad when one appeared on the doorstep. Thankfully, there was a farmer's field nearby and the farmer let us keep it there.

What is your favorite attraction and show in your park (Blackpool Pleasure Beach)?

My favorite ride in the park is ICON, our new Mack Rides double-launching coaster. But the ones I like to ride the most often are our dark ride Alice in Wonderland and the Steeplechase coaster. I have had many favorite shows over the years including Eclipse, Mystique and Hot Ice, though I also enjoy our Christmas show in the Paradise Room in the winter.

How did you get involved in IAAPA?

I first got involved with IAAPA when I was about 18 years old, when I attended trade shows with my father. From the age of



22 I had a stand at the trade shows for Stageworks Worldwide Productions.

What goals have you set for yourself during your year as chairperson?

I have quite a few:

- To make a difference with sustainability and get the world to understand how relevant that is to our industry
- To keep everyone informed of the global aspirations of IAAPA
- To understand how relevant and important the manufacturers and suppliers are to our association
- To understand as well that members come first and that is the priority of the association

What role does diversity have within IAAPA and the industry?

I always have supported diversity in our industry. It is a very male-dominated field. Women in this industry sometimes have to be seen to be twice as good as a man and that is something that needs to be challenged.

We have a shared responsibility to make sure that everyone understands how important our industry is and how many

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different areas it covers in the world of business. You can work in catering, hospitality, engineering, as a creative person, as an accountant, and so on. You can work in any field that you would like to choose within our industry and there is something to suit everybody. The great thing about our industry is that it's always evolving, always changing, always developing.

What is the biggest difference between the European and American industry?

At a basic level there are no differences between European and American parks because they both provide visitors with rides, attractions, fun, shows. This is often the way I like to look at it. My impression from speaking to many people within the industry is that they encounter many similar challenges and experiences. I don't think Europe perceives itself to be any different to the American industry, nor to the Asian and South American part of the industry, for that matter. We are all part of one global industry.

Would you agree that in Europe we use less IP on our attractions and rather develop our own stories?

No. I think that it's just a trend at the moment to use IPs. I don't think that as a region we use more or less IPs, it just depends on the park. At Blackpool Pleasure Beach we use IP we own but we also license IP from others, such as Nickelodeon, Wallace and Gromit and Red Arrows.

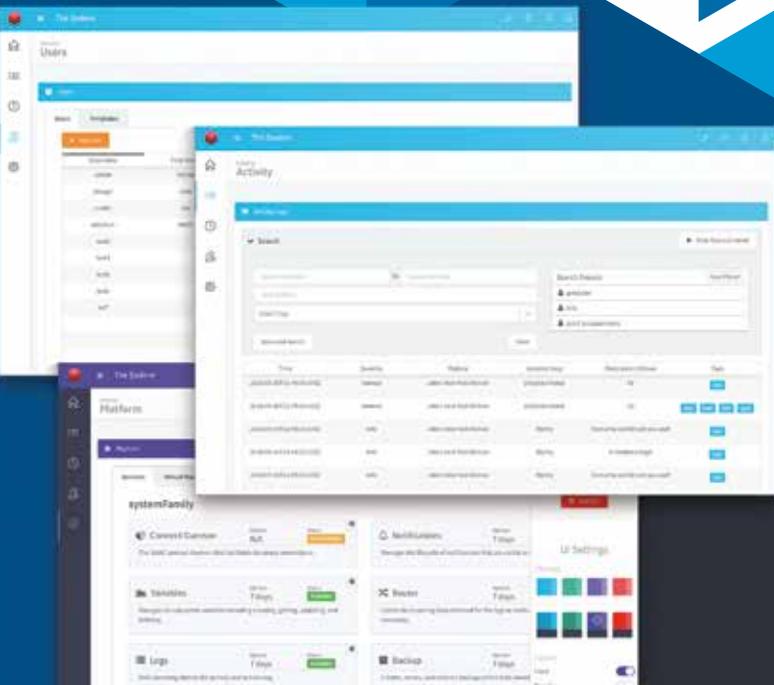
There are many different types of IPs and sponsorship deals available and they all add a different type of dimension to the park and industry. I really don't think it matters whether you have your own IPs or whether you license an IP. As more people consume media from various sources, that seems to influence parks to go the route of licensing as of late. But it might just be a passing phase.

How did the opening of your new Boulevard Hotel change your business? Are you planning more hospitality projects?

I am constantly planning hospitality projects because our industry is based around hospitality. Our new hotel has certainly raised the bar, not just in our company but also in the region. I think it's a beautiful hotel and it's an inspirational hotel and I hope everyone enjoys staying there. •••



Chris Lange is a passionate Creative Director working on various international LBE projects and is an active member of the Themed Entertainment Association EME Division Board. He previously worked for Merlin, Genting, Parques Reunidos and Europa-Park. Chris is proud of creating many unique and exciting visitor experiences for audiences of all ages around the world.



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Xavage Gardens

Riviera Maya's eco-tourism operator Xcaret attracts and expands with adventure

by Martin Palicki

Mexico's eastern Yucatan peninsula is a landscape of variety. Thick jungles yield to picture-perfect beaches looking out into the Gulf of Mexico. Beneath the landscape, underground rivers connect cenotes (giant sinkholes) to one another, creating caverns of crystal-clear water, surrounded by vine-encrusted rock walls. To the north, the party-centric resort town of Cancun attracts the all-inclusive crowd. Ninety miles south, Playa del Carmen offers a more urban tourist town, with the ancient ruins of Tulum nearby. Further inland, the Mayan pyramid at Chichén Itzá and other ancient sites draw visitors by the busload.

For nearly 30 years it has been this combination of natural beauty and Mexican heritage that has served as the inspiration for Grupo Xcaret's parks and resorts. In 1990 a partnership of architects and investors opened Xcaret, the company's first eco-tourism park that features underground river swimming, cenote exploration, animal habitats, and a nightly show chronicling hundreds of years of Mexican history [See "Getaway to Xcaret," InPark issue #52].

Grupo Xcaret's portfolio now includes several more parks: Xel-ha, Xenses and Xplor (and Xplor Fuego, a night-time version of the park) [See "Xenses and sensibilities," InPark issue #72]. Each park has a unique take on the natural landscape and most include some variations of river swimming, cenote exploration, ziplining and water sports. The company also operates several daily tours

to sites around the region as well as Xoximilco, a nighttime party/canal cruise modeled after Mexico City's Xochimilco.

In 2017 the company opened its first hotel, Hotel Xcaret Mexico. The All-Fun Inclusive® resort situated along the waterfront offers 900 suites, acres of activities, and a range of dining experiences from casual to Michelin-star rated. Guests also receive complimentary admission to all of Grupo Xcaret's parks and tours during their stay.

In 2019, the company debuted Xavage, an extreme thrill park whose activities amp up the adventure level offered to guests.

Geographically, Grupo Xcaret covers a wide area. The core parks (Xcaret, Xenses and Xplor) and hotel are a short 11 kilometers (seven miles) from downtown Playa del Carmen. Xel-ha is located 41km (25 miles) to the south, while Xavage and Xoximilco are 56km (35 miles) to the north. These northern parks are a mere 8km (five miles) from the Cancun airport, by far the region's largest and most popular entry point for tourists visiting the Yucatan. Regular bus transportation is provided between the locations.

Hotel Xcaret Mexico and Xavage mark a shift in Grupo Xcaret's strategy for serving the Riviera Maya market. The hotel was a natural extension for the company, offering wholly inclusive

vacations similar to what one would find at a Disney or Universal property. While there are ample amounts of luxury and relaxation to be found at the hotel, there is a distinct element of adventure present that separates it from similar properties, and also connects it to their Xavage expansion.

“After opening Hotel Xcaret Mexico in December 2017, we knew that the already remarkable All-Fun Inclusive perks had to grow and evolve to cater to repeat visitors and those searching for outdoor excitement unlike any other,” said Marcos Constandse, Vice President of Finance and Business Administration and Counselor of the Board at Grupo Xcaret.

A central feature of the hotel is a series of interconnected rivers, a sort of intracoastal waterway connected to the ocean. They wind around a group of land masses called “The Islands.” A jogging path on top of the islands wanders through forested sections and leads to various exercise stations. Staircases lead down to a series of tunnels beneath the islands for subterranean adventures. Several waterslides and steps lead from the islands down into the waterways below, where adventurous visitors can swim or kayak. Suspension bridges connect the islands as well as various other buildings and points across the resort. It is truly an explorer’s paradise, with secluded beaches, inlets and caves accessible only by swimming. Similar to all of Xcaret’s parks, automated cameras activated by RFID wristbands capture perfect selfies at various adventurous and scenic spots around the hotel.

It is this sense of adventure that is most directly linked to the new Xavage park. Built on the same site as the company’s Xoximilco park, Xavage takes advantage of many of the facilities that Xoximilco uses at night and turns them into daytime adventures. Xoximilco opened in 2013 as an evening activity appealing to nearby Cancun’s visitors. Guests board a boat and cruise through a series of canals while enjoying food, drink and cultural entertainment. Xoximilco was designed knowing that at some point a daytime experience would also be offered, though exact details had not been set initially.

“The Xavage project began in 2013 with thorough topography studies to determine the best way to use and enhance the land’s attractions while being respectful of its ecosystem, with park construction beginning in 2017. The park offers the only whitewater rapids in Cancun and Riviera Maya, bringing adventure excursions to a whole new level,” said David Quintana, Vice President of Strategy and Development for Grupo Xcaret.

The new park expands significantly on the Xoximilco footprint. The Xoximilco kitchens are used to provide Xavage guests with an all-you-can-eat buffet. The Xoximilco canals are used for a Xavage high-speed boating experience. Just about everything else is brand new to the park.

Guests choose from a series of activities, ranging in thrill level. Kayaks and a waterslide play structure provide tamer experiences.

OPPOSITE: Guests navigate white water rapids at Xavage.

BELOW: Monster trucks allow guests to drive through a series of intense obstacles. *All photos courtesy of Xavage.*



On the bolder end of the spectrum, a white-water rafting experience places several guests in an inflatable raft and sends them (along with a guide) down a class three, human-made rapids. Part of the experience includes training and practice for how to handle capsizing.

A tubular zip line allows guests in the prone “Superman” position to fly around a course that starts 65 feet in the air. A monster truck puts guests behind the wheel of an all-terrain vehicle to navigate an obstacle course complete with giant stone steps, crushed cars, and large muddy puddles. Finally, even the most adept high-wire walker will be challenged by four levels of ropes course. The lowest-level course sits 26 feet above the ground, while the highest-level rises to 118 feet.

Although the total number of experiences is limited, each adventure takes a good amount of time to complete and, combined, can easily fill an entire day. Adventurous kids will find plenty to do at the park, but the core demographic seems to be younger adults, perhaps on a honeymoon in Cancun, looking for a day of adventure to complement days of relaxation on the beach.

Xcaret’s move toward a thrill park concept follows a trend in the industry. In destinations such as Las Vegas, operators have in recent years installed adrenaline-pumping attractions like high-speed ziplines, in part to capture the 20- to 30-year-old demographic that

places high value on unique experiences. Similarly, observation towers and tall buildings have flourished by adding thrilling experiences such as Edge Walk at Toronto’s CN Tower or the soon-to-open Aon Center in Chicago [see page 30].

Appealing to adventurers is a path Xcaret has forged for some time, with each of the new parks inching up the thrill factor. In a sense, it’s a natural progression. As Xcaret’s reputation has grown and increased over time, guests are more willing to trust the safety and reliability of the experiences offered to them. Xavage, and to a certain extent Hotel Xcaret Mexico, take thrills to the next level in ways that are certainly game-changing in the Yucatan region, yet they still incorporate the same values and atmosphere upon which the brand is built.

Grupo Xcaret is continuing its growth plans, with new hotels and parks already under construction. An all-inclusive resort in Cancun (La Casa de La Playa) will open next year with another resort closer to Hotel Xcaret Mexico scheduled to open in 2021 (Hotel Xcaret Arte). The company expects to build a total of 10 hotels within the next decade, with additional parks opening roughly every other year, some in completely new destinations. Expected to open in 2020 is Xcaret Xibalbá, named after the Mayan word for “the underworld.” The new park will heavily feature cenotes and underground activities. The park will be located in Valladolid, about 150km west of Xcaret park. •••



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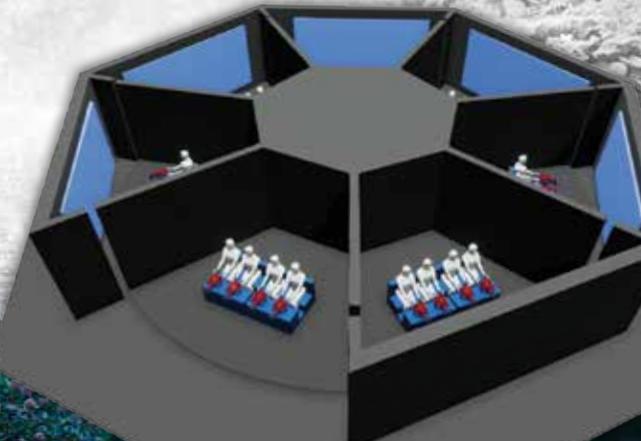


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IAAPA Expo Europe 2019

New partnerships and a focus on sustainability

by Martin Palicki

“Do not forget to visit our parks and attractions while you are here in Paris. France has so much to offer,” said Agnès Pannier-Runacher, State Secretary, French Ministry of Economy and Finance, during the opening ceremony of IAAPA Expo Europe 2019.

Also during the opening ceremony, current IAAPA chair David Rosenberg of the Monterey Bay Aquarium talked about IAAPA’s initiatives in the arena of sustainability. It was a topic he feels passionate about and to which the IAAPA board dedicated a task force earlier this year as part of its five-year strategic planning.

The focus of the task force was to figure out not only how to integrate sustainability best practices into the IAAPA organization, but also how to make it accessible for IAAPA member companies. Immediate past chair Andreas Anderson headed the task force along with a team of concerned members. IAAPA referenced sustainability guides issued by the UN as well as information from leaders in sustainability within the industry to help craft their plans.

As a result of the task force’s work, IAAPA’s board recently voted to create a standing committee dedicated to addressing sustainability.

“The industry is asking for some direction on the issue of sustainability, in part because their visitors are demanding it,” said Rosenberg. “Now is the time for IAAPA to lead by example.”

One of the key points Rosenberg brings up is how sustainability and profitability can be synonymous. Disney’s solar farms and Six Flags parks that are already off the grid provide examples. Rosenberg’s facility, the Monterey Bay Aquarium, provides another. The aquarium decided to eliminate plastic water bottles from their food service location but found that customers simply left the property, bought bottled water at a nearby store and brought it back to the aquarium. As a result, Monterey Bay searched for a vendor that provided water in aluminum cans with screw-top lids (one thing consumers value about bottled water is the ability to completely close the top). Their partnership with this vendor facilitated that vendor’s growth within the US, allowing the vendor to produce at a lower cost; as a result the aquarium’s margins on the water also improved.

“People, particularly from younger generations, are expecting sustainability from locations they visit and they are willing to pay more for it,” says Rosenberg.

In terms of solutions, IAAPA has already created a sustainability self-assessment tool for attractions to use to determine areas of



IAAPA's 2019 board chair David Rosenberg welcomes IAAPA Expo Europe attendees to Paris.

improvement. The association is also working with the exposition services company Freeman on sustainable practices for the IAAPA Expo. “Finding partners like Freeman that already have aggressive plans in place around this issue is one way to make a difference quickly,” says Rosenberg. At the new IAAPA global headquarters in Orlando the campus includes a solar farm that provides partial power generation for the building. Car charging stations are also available to encourage IAAPA staff to use electric vehicles.

One area in which the industry has opportunity for growth is waste generation. Rosenberg looks to eco-tourism parks for potential solutions. He recalls one park in Guatemala that is located far from the central city and prides itself on being self-sustaining. Waste is composted on site in giant bins and used as fertilizer.

“Collectively, the attractions industry is in a great position to effect change on a daily basis and impact our guest experience with an eye towards sustainability,” says Rosenberg.

During IAAPA Expo 2019, Rosenberg will become IAAPA's immediate past chairman as Amanda Thompson assumes the leadership position. You can read more about Amanda and her own commitment to conservation on page 18.

Europa-Park

Updates were provided on Europa-Park's new indoor waterpark, Rulantica in Rust, Germany. Scheduled to open November 28, 2019, construction is nearing completion and slide testing is taking place. Europa-Park President Michael Mack gave credit to the communities around Rust for their help and involvement in helping to create Rulantica.

Developments property-wide include the opening of Snorri Touren, a new dark ride being built in the Scandinavia portion of Europa-Park that helps tell the story of Rulantica's mascot, Snorri (named after 12th century adventurer Snorri Stursson).

Jora Vision helped design the attraction, which will take guests on a Snorri-guided tour of Rulantica artifacts in giant rubber boats. One innovative element to the attraction that Mack Rides developed is a track turntable that will rotate cars and send them into one of two small curved screen theaters. This will allow for an extended media scene without sacrificing throughput. The tracked ride will include 11 cars and have an expected capacity of 500 guests per hour. The ride soft-opened in October.

A book about Snorri was released in Germany in October of this year, with English and French versions debuting in 2020.

Attendance at the park's newest hotel, Kronosar, which is connected to Rulantica, is meeting expectations for its first summer, even without the waterpark being open. Mack said they are looking into options to better connect Kronosar to Europa-Park. Currently buses shuttle guests back and forth but Mack indicated a monorail was the likely solution.

Finally, Europa-Park's beloved Pirates of Batavia dark ride that was lost in a major fire in 2018 is being rebuilt. The new ride will maintain the feeling and concepts from the original but will be updated with the latest technology, including new animatronics manufactured in the United States.

For more information on Europa-Park and Rulantica, read “Hard Hat Tour of Rulantica and Kronosar,” InPark issue #79.

Triotech and CL Corp

Triotech's strong presence in North America and Asia is complementary to CL Corp's track record in Europe, according to Triotech founder Ernest Yale. That's why the two have decided to engage in a long-term cooperation. Yale highlighted how Triotech's core business is individual or small group attractions, while CL Corp specializes in larger simulators. Together they hope to develop new products and expand both companies' footprints around the world.

Sally Dark Rides and Aardman

“Our job is to explore new opportunities and partnerships, and we are especially happy to do it within the industry,” said Lauren Wood Weaver, marketing director at Sally Dark Rides. She was referring to Sally's new partnership with animation studio Aardman. The two companies have launched two new dark ride concepts available for development.

The 25th anniversary of “Shaun the Sheep” naturally led to the creation of an eponymously named attraction. The new concept also ties into the December 2019 release of “A Shaun the Sheep Movie: Farmageddon.”

A new IP called “Adventure Through Time” serves as the basis for the second dark ride concept. In the story, a young girl becomes fascinated by an ancient statue in a museum. She notices a finger trap artifact that, when triggered, sends her (and riders) back in time visiting various times and places throughout history.

WhiteWater

Una de Boer, Marketing Director of WhiteWater West, spoke enthusiastically about their expanded gamification line of waterslides. After the company's success with Slideboarding, they are launching a new group-play version that de Boer likens to "Guitar Hero in a waterslide." Up to six people in a single raft work together to hit colored buttons to match lights within the waterslide tube. In the first installation in China there is added incentive because if the team scores high enough jets push the 'winning' rafts over a modified 'Manta' wing and into a different more exciting path to the exit.

de Boer says the market will start to see more of these types of experiences on waterslides. "We are looking at more choose-your-own-adventure style rides, changing the paradigm from a passive sliding experience to one where the rider becomes the protagonist."

Painting with Light

Belgium-based Painting with Light celebrated their 20th anniversary during the Expo. The lighting design firm is well known for their architectural and attractions lighting [See "Kernels of Truth," InPark issue #79], but also is expanding more into the museum and cultural attractions market.

Painting with Light also showcased their new REALITES system designed for theatrical applications that utilize both theatrical



Guests celebrate Painting with Light's 20th anniversary in their booth during IAAPA Expo Europe 2019.

lighting and LED walls or projected backdrops. REALITES is a real-time lighting design tool that automatically balances brightness and matches lighting between theatrical lights and LED wall backgrounds/projections, in order to create more natural-looking scenes. Although designed to create a better experience for the viewer, it also makes the lighting designer's job easier and simplifies workflow.

IAAPA Expo Europe heads to London in 2020. The show will take place September 22-24, 2020. For more information, visit iaapa.org/iaapa-expos. •••



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Elevator Pitch

An aerial photograph of the Chicago skyline during the day. The Aon Center, a tall, white, rectangular skyscraper with vertical lines, is the central focus. To its left is the Willis Tower, recognizable by its pointed top. To the right are several other modern glass skyscrapers. In the foreground, the Millennium Park area is visible, including the Cloud Gate sculpture (The Bean) and the Adler Planetarium's geodesic dome. The sky is clear and blue.

Hettema's sky-high vision for the Aon Center Observatory in Chicago

by Freddy Martin

There will be a new view from the 82nd floor when Chicago's third-tallest building - the 1,166-foot high Aon Center skyscraper in downtown's East Loop - welcomes its first visitors to experience a new, 360-degree observation deck. When it opens in about 18 months, the Aon Center Observatory will have a lot to offer, including proximity to scenic Millennium Park and a skyline sweep that takes in Lake Michigan and iconic Chicago architecture. But it will go beyond view and location. Giving the view context and the visitors more to engage with will be 35,000 square feet devoted to a unique, educational and entertaining visitor experience - featuring multimedia show spaces, a sky-high thrill ride and the chance to fly (virtually) like a superhero through the city on a path of your choosing. The Hettema Group (THG), a top experiential design firm with two world-class observation attractions already in its portfolio, is designing and programming these spaces.

"Aon Center is literally at the center of the bullseye of life in the city of Chicago," said Phil Hettema, President and Creative Executive, The Hettema Group (THG). "The location is amazing. No matter which direction you look, there's a different personality right at your doorstep. So the challenge was to make something memorable out of that."

THG's celebrated success designing other observation experiences, such as One World Observatory in New York City (honored with a TEA Thea Award in 2016) and the High Roller, the world's tallest observation wheel in Las Vegas, led the owners of the Aon Center to engage the firm.

The Aon Center is currently owned by The 601W Companies (601W), a private real estate investment firm, and managed by Jones Lang LaSalle (JLL). Solomon Cordwell Buenz (SCB), a Chicago-based architecture design and planning firm is design architect and architect of record, and Power Bear Construction Company and Power Construction Company are general contractor and construction manager. The observatory will be operated by Legends, which also operates One World Observatory in New York, The View from the Shard in London, and OUE Skyspace in Los Angeles.

The Aon Center Observatory is expected to attract two million visits annually. "Millennium Park is a massively popular destination for the city," said Martin F. Wolf, FAIA, Design

Principal at SCB. "Some estimates suggest that between 20 and 25 million of Chicago's total 55 million visitors per year visit the park. With Aon Center, the idea is to heighten that sense of critical mass in our urban centers and reinforce over and over again that this is an exciting, dynamic place to be."

Story in the skyline

For Phil Hettema and the THG design team, the motivation is to create an observatory experience compelling in nature but also differentiated from two other, well-known observatories in the downtown area: "Skydeck Chicago" in the Willis Tower and "360 Chicago" in the John Hancock Building. It is also a goal that the Aon Center Observatory distinguish itself among great observation experiences worldwide.

"The average dwell time at the Empire State Building is 20 minutes or so. It's very quick," said Hettema. "People go to the top to see the spectacular views, but then they turn around and leave. How do you increase dwell time and guest takeaways? It's not really about making the view more interesting; it's about contextualizing the view. And that's the opportunity we have - to take those moments before the reveal and show them what this view really represents. It's the people. It's the energy. That's the context that reveals the true story of the skyline."

"We're telling the story of Chicago through the personal experience of everyday people like those who come to visit the Aon Center," said Jodi Roberdes, Director of Facility Design for THG. "We want to integrate our visitors into the story, to help them see themselves as vital elements in Chicago's makeup. They should leave inspired to explore the city they have made."

Accordingly, in developing the story that would set this observatory apart and guide the design and messaging, Hettema and his team chose to focus on the skyline as a symbol of Chicago's residents and visitors, developing a quartet of signature attractions [see sidebar]. "There are plenty of perfunctory stories you can use to educate people about the buildings and identify them in the skyline," said Hettema. "But we recognized that Chicago's energy and spirit radiates from the people living, working, and playing within the skyline right there in front of your eyes." The resulting visual narrative will follow the growth and development of Chicago's skyline through the experiences of the people whose contributions have made it what it is.



Jodi Roberdes



Phil Hettema



Jared Peter

OPPOSITE: The Aon Center in Chicago (tallest building in photo) enjoys a prominent location overlooking Millennium Park. Guests will soon be able to take in the view through an all new observation experience crafted by The Hettema Group. All images courtesy of The Hettema Group.



Visitors to the Aon Center Observatory will be greeted with unobstructed views of the city and multimedia installations to put everything into perspective.

Creative Space, Dynamic Place

The Aon Center building is a familiar tower set over the north end of Millennium Park. Originally The Standard Oil Building, it was completed in 1974 through a partnership with architecture firms Edward Durell Stone and Perkins & Will. When it opened, it was the tallest building in Chicago (today it is in third place) and the fourth tallest in the world.

As part of its commitment to the preservation and restoration of Chicago landmarks, and recognizing the architectural and cultural significance of the Aon Center, owners 601W sought to redefine the building's place in the iconography of the city by inviting visitors up to its top floors. "Seeing the architecture of Chicago, not from the ground, but from the 82nd floor and looking closely at some of the greatest buildings in the world gives you a whole different perspective on this city," said Matt Amato, General Manager of JLL. "I marvel at the view from up there because what you see is different every time you look – to see a storm blow in or to see a sunset or a sunrise is a really great experience. People are going to be in for a real treat."

Sharing the remarkable view with Chicago residents and visitors became the vision for 601W's planned property improvements. Serendipitously, the 82nd and 83rd floors of the building, which had once housed the site's massive cooling systems (since updated), were now unused. This created the opportunity to reclaim and redeem more than 20,000 square feet of space to devote to the new attraction. "All of this unbelievable real estate at the top of the building was suddenly freed up," said Hetteema. "They had the vision to do something really compelling with a static space, which set in motion an ideation process and conceptual exploration for what that space could become."

Multiple interests

A project of this magnitude brings natural complexities. The historical and architectural interest of the building, the safety and security of a top-floor attraction, and the myriad concerns of a highly populated city all combine as interests that need to be addressed.

"Even in the best of circumstances, what experience designers do is always a little bit crazy," said Hetteema. "I mean it almost has to be audacious to be successful. And there's always a hundred reasons why a project shouldn't happen: nobody's ever done that before; it's too complicated; it causes traffic – all reasonable objections. But you have to listen and work through each one of those things, making sure that original vision stays strong enough through that. Not just for the sake of the vision, but that when all is done, everybody will win."

In the city of Chicago, the process is to review such projects with the Alderman of the precinct, the Department of Transportation, fire officials, and the City Planning Commission. To allow input from neighbors and other stakeholders within the area, the development group also held a public hearing in May 2019 co-hosted by 42nd Ward Alderman Brendan Reilly. "The purists would like to see the skin of the building left alone without applying an external elevator," Reilly told Sarah Schulte of ABC7 News before the hearings, "...others don't have an issue, so we will have to work through the input and make choices."

As noted above, a particular challenge arose concerning the location of the dedicated elevator that would propel visitors to the building's top floors. Initial designs called for an external

The Aon Center Observatory guest experience

Plaza Pavilion and preshow

From the street level, visitors are drawn into the Plaza Pavilion beneath a sleek, wedge-shaped roofline that recalls the Aon Center's stone columns. They are guided down escalators to the lower levels of the building where the preshow begins. A floor-to-ceiling multimedia gallery lines the walls at varying distances from the viewer, creating corridors of interactive light. Content captured and generated in real time will combine video and photo images of the guests along with historic and modern footage to help them imagine themselves as characters within the story of Chicago.

Elevator experience

Guests will journey to the top in an exterior glass elevator anchored to the Northwest corner of the building. The lift will speed guests 82 stories skyward in about a minute, which is expected to establish it as North America's fastest and tallest glass elevator. The elevator's position presents unique views of the Northwest areas of downtown including the Magnificent Mile and River North. The ride and the view will be complemented by some special moments being designed into the experience by THG. "As visitors glide to the top of the tower, we believe this will open their eyes to a whole new perspective," said Amato.

West Gallery

When they reach the 82nd floor, guests will enter the West Gallery, where they will experience a grand reveal of the panoramic views. The space will open upon a vast gallery of two-story-high windows looking out onto the Chicago skyline. Design motifs on the ceiling will refer to rivers and wind. Tiered walkways will invite guests to move freely through the space and find their own perfect view. Some of the architectural elements are being redesigned to help maximize the viewing area. Interior columns will be clad in floor-to-ceiling, video touchscreens that help visitors identify and learn about sites visible from the deck.

"It's amazing how beautifully the space has worked to our advantage," said Hettema. "These are big-volume spaces with a clear span, so we were able to maximize the sensation of wide-open space expanding in all directions."

The West Gallery will also include interactive, multimedia experiences meant to engage visitors as vital participants in the story of Chicago. Along the

interior walls, a 140-foot long, digital mural will have interactive qualities and reinforce the sense of place and one's presence within the city of Chicago.

Sky Summit

The attraction liable to garner the most attention will be the one-of-a-kind, top-floor thrill ride dubbed "Sky Summit." The original ride system, designed by THG, is an enclosed glass tube that will be lifted up and over the edge of the building, suspending 22 passengers high above Millennium Park. Using smart glass technology, the bottom of the vehicle will appear opaque when passengers climb aboard. When it reaches its position suspended over the parapet, the glass will become crystal clear, giving riders a thrilling view of the city far below.

"The distinguishing factor of the Aon Center Observatory will be the thrill ride, Sky Summit," said Peter. "There are other observation decks in the city that offer interesting, top-floor perspectives, but we believe this one will be far more thrilling and enticing for visitors." When operating, the ride will be visible from anywhere in Millennium Park, creating a kinetic marquee for drawing residents and tourists alike. "We are creating an elegant experience," said Peter. "The ride is designed to carry visitors smoothly and silently over the city in a way that is as transformative as it is exciting."

Ultra-Flight

Ultra-Flight is a simulation experience that will allow visitors to pilot themselves among the skyscrapers and iconic sites of downtown Chicago. They will virtually fly right off the top of the Aon Center and have the power to fly through the city at their own speed and flight path wherever they want to go. "You can fly right down Michigan Avenue or over to Wrigley Field," said Hettema. "You can control wherever you want to go in the city. It's up to you. And the cool thing about it is that the simulator will match the time of day and weather conditions of the day you're visiting. Depending on the time of year, you might even get to encounter some 'easter eggs' (surprises) as you soar."

83rd floor

On the second level of the observatory, the 83rd floor, will be a restaurant and cocktail lounge, along with a special events space.●



“It’s not really about making the view more interesting; it’s about contextualizing the view...It’s the people. It’s the energy. That’s the context that reveals the true story of the skyline.” - Phil Hetteema

glass elevator to be anchored to the Southeast corner of the building, making it visible from anywhere in Millennium Park. Visitors would enter a ground-level entry pavilion, also facing the park, and board the elevators from there. “There was a concern that the elevator’s location would change the building’s facade and be too intrusive to the Chicago skyline,” said Jared Peter, Senior Producer for THG. “So we listened to that concern and reconsidered. The decision was made to move the elevator to the opposite corner, away from the park, where it would be less visible and preserve the skyline’s integrity.”

While the design relocated the elevator to the Northwest corner of the building, it retained the entry facing the park. With the elevator on the opposite corner of the entrance, guests would need to be re-routed beneath the building and traverse from one corner to the other. The unexpected benefit/challenge: more show space. THG embraced the situation. “The elevator change added an additional 20,000 square feet of show space downstairs,” said Roberdes. “We now needed to create new story beats and address the existing facility constraints Power and Bear surveyed to make it work.”

Experience, opportunity and humanity

The project is anticipated to secure the Aon Center’s financial health as well as its status as desirable real estate. According to a 2018 report published by the 601W Companies on aoncenterobservatory.com, it is expected that the city will realize a return of \$218 million in tax revenue in the first few years of the attraction’s operation, while generating \$900 million in direct economic impact over the following two decades.

The city of Chicago is no stranger to lofty attractions and audacious innovations. At the 1893 World’s Columbian Exposition, the first Ferris wheel lifted riders high into the

sky and the “L” train began shuttling commuters on elevated, electric rails. At Chicago’s 1933-34 Century of Progress expo, giant aluminum gondolas carried passengers from one side of the fairgrounds to the other. The developers see the Aon Center Observatory in the same tradition.

The Aon Center Observatory is part of an emergent trend in observation deck experiences in operation or being constructed in tower developments around the world today. For cities and developers, it activates a static space with dynamic attractions that generate revenue and tourism and (literally) a refreshing new perspective on the metropolis. For the attractions industry, the trend represents professional opportunity.

“What is it about an elevated view that becomes so seductive to all of us?” asked Hetteema. “Certainly, having the upper position gives you a lot of advantages of both being able to see a distance and defend yourself. But I also think it is innately human to want to understand ourselves as part of the larger cultural picture. And when you can see that kind of vista, it allows you to imagine yourself as part of it in a way you can’t do other places. That’s why we are striving to make this experience more resonant for people as they come to see the view.” •••



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Growing the legend

Calico finds new territory at Knott's Berry Farm

by Bill Butler, Garner Holt Productions

Calico Ghost Town is the original heart of Knott's Berry Farm theme park in Buena Park, California. Comprised largely of a collection of authentic, 19th-century buildings brought to the park by founder Walter Knott beginning in the 1940s from the real ghost town of Calico in Southern California's High Desert, Ghost Town is one of themed entertainment's earliest and most successful immersive "lands" - it feels real because, in a major sense, it is real. When Knott connected with amusement ride impresario Wendell "Bud" Hurlbut, the attractions that would emerge from the relationship would grow the reach and legend of Ghost Town further than its narrow streets and charmingly crumbling buildings.

In 1960, the commercial heart of Ghost Town was established with the opening of Hurlbut's Calico Mine Ride, a thematic and historic tie to the larger Calico story. At the end of the decade, the story was expanded with the opening of Hurlbut's masterpiece, the Calico Log Ride (now called the Timber Mountain Log Ride). Now, the residential and industrial centers of the Ghost Town legend make it one of the best immersive locations in any park.

When Garner Holt Productions, Inc. (GHP) was approached to help breathe new life into the Timber Mountain Log Ride in 2012, a major objective was to include references to Ghost Town to further tie the district together. "We wanted to make the characters on the Log Ride seem like they were part of a bigger community," said Garner Holt, GHP's founder and president. "It was important when we were adding new animatronics and scenes to populate them with characters that looked like they came right out of Ghost Town." To that end, certain figures were sculpted to look like, among others, Marilyn and Cecelia, a pair of fiberglass saloon girls used as a photo op in the park. Signage in the attraction added nods to Ghost Town and its denizens, and even to other locations in the park (sharp-eyed guests may have seen a poster advertising an auction at Jeffries Barn, former home of Knott's beloved Mott's Miniatures display).

In 2013, when GHP joined Knott's again to reimagine the Calico Mine Ride, the same philosophy prevailed. "Our sculpts, faces, costumes, colors all had to look like they belonged in that space and time," said Holt. One new animatronic figure in the revamped ride is Seldom Seen Slim, the same character depicted in the iconic prospector and mule statue that once graced the entrance to Ghost Town (a modern version is the first thing most park visitors see when approaching Knott's, on the corner of Beach Boulevard and Crescent).

So when Knott's approached GHP in July 2018 with plans to reimagine yet another classic attraction, it seemed natural to make



An animatronic character from Garner Holt Productions on the Calico River Rapids. Photos courtesy Knott's Berry Farm

it part of the larger Ghost Town story, too. The aging Bigfoot Rapids attraction in the park's southwest corner (known as White Water Wilderness) needed some polishing. Knott's new creative lead, Ken Parks (creator of the definitive Calico-story expansion, the immersive "Ghost Town Alive" experience), developed a storyline centered around the adventures of Potts and Coulter, two real-life contemporaries of exploration icons Lewis and Clark. The theme would put guests at the center of a rollicking raft ride down uncharted rivers, meeting wildlife and fellow pioneers along the way. "We thought it was a natural fit and perfect expansion of the Calico story," continued Holt. "It was a prequel to the rest of the area."

"Calico River Rapids tells the story of the expansion of the Western territories, which can be found just outside of Calico," said Ken Parks. "The territories are wild, untamed and largely untouched by settlers and civilization. Calico and the area surrounding it exist in the same world. Riders will see that the Calico Mine Company is at work within the wilderness as well as the Timber Mountain Logging Company."

The redeveloped area was dubbed Calico River Territory, and its star attraction renamed Calico River Rapids. Both the area and ride opened in May 2019. Where the Mine Ride and Log Ride are filled with dozens of animatronic humans and relatively few animals, the Rapids upgrade would echo the wild nature of the region by turning that concept upside down. Of the nearly two dozen new animatronic figures in the attraction, only one is human—a wild old backwoodsman who fires at passing rafts with an oversized blunderbuss. GHP collaborated once again with Knott's to develop new scenes and characters for the attraction, filling it with a variety of friendly and fearsome critters around every turn. Outside the attraction, guests are invited to use a trio of TNT plungers to soak riders with massive geysers of water—but every once in a while, guests will themselves be hit with a hidden jet of water, a first for the non-riders-as-tormentors trend in water rides.

To give an impression of man's first incursions into the wild region, GHP constructed two cabins as scenery (they also house control and audio equipment). Aside from these signs of encroaching civilization, Calico River Rapids is populated by new animatronics in the form of woodpeckers, rattlesnakes, wolves, raccoons, bears, foxes, chickens (so many chickens), mountain lions, and, at long last, a "Bigfoot"-type creature in the darkened

tunnel of the ride's finale. "I always thought that was sort of strange," said Holt. "You'd get on 'Bigfoot Rapids' and never see a Bigfoot!" Now a larger-than-life animatronic version of the hairy beast roars at guests in a newly stalactite and stalagmite festooned cave at the end of the river.

Knott's invested heavily in the total reimagining of Calico River Rapids including new paint schemes for the six-person rafts, hundreds of new plants and trees, a spectacular new audio and lighting package, plus themed sets and the various animatronics that greet guests along the way. Even the enclosed queue and lots area were given the wilderness treatment, clad with nearly a mile of half-peeled timber native to Southern California, and filled with loving detail that helps make a formerly quasi-themed river ride into a truly immersive family thrill ride experience.

It proves, once again, that the rich vein of stories in Calico Ghost Town is very much alive. •••



Bill Butler is Vice President of Creative Development at Garner Holt Productions, Inc.

Visit garnerholt.com.



Riders on the Calico River Rapids ride encounter a variety of animatronic animals created by Garner Holt Productions.



Visitors to the FRIENDS New York City Pop-Up can pose in front of the television show's iconic opening credits fountain and couch. Photo by Colin Kerrigan

“The One with the Pop-Up”

JRA co-designs experience around iconic FRIENDS TV Show

by Joe Kleiman

Commemorating the 25th anniversary of the iconic TV show FRIENDS, a pop-up FRIENDS attraction in New York City enjoyed huge success, selling out its September 7-October 6, 2019 run in an exhibition space at 76 Mercer Street in the Soho neighborhood of New York City. The FRIENDS New York City Pop-Up was developed through a collaboration between Warner Bros. and branding agency Superfly, which recruited JRA to help master plan, design and project manage the attraction.

“The One with the Viewers”

Superfly is a New York and San Francisco-based branding agency best known for producing music and culture festivals such as Bonnaroo and Outside Lands – festivals that have featured experiences based on hit television shows such as The Office, Seinfeld, and Arrested Development.

“We worked with Warner Bros. Consumer Products and Warner Bros. TV to celebrate the 25th Anniversary of FRIENDS,” says Stacy Moscatelli, Superfly’s EVP of Marketing and Brand Creative. “With our partnership, we were able to leverage the

Warner Bros. archives to feature one-of-a-kind items such as Ross’s leather pants and the letter Rachel wrote to Ross in Season 4.”

Between 1994 and 2004, an average of 23.6 million viewers within the United States (plus millions more worldwide) came to know and love the six young adult characters of FRIENDS: Rachel Green, Phoebe Buffay, Joey Tribbiani, Chandler Bing, and siblings Monica and Ross Geller. The show was a trendsetter, with actress Jennifer Aniston’s hairstyle, known after her character as “The Rachel,” becoming one of the most sought-after looks of the 1990s. The catchphrase of Matt LeBlanc’s character Joey, “How you doin’?” became an endearing greeting among the show’s avid Generation X viewers.

“The One Where JRA Pops Up”

To help design and implement the FRIENDS New York City Pop-Up, Superfly enlisted Cincinnati-based design firm, JRA. Moscatelli says, “When we kicked off the project, we met with a number of master planners and found that JRA were the most

suiting to our needs. We were impressed by the caliber of their previous work. The creative approach was a highly collaborative process, with two, full-day creative working sessions followed by weekly creative meetings. It was an incredibly quick timeline, with creative being locked in February 2019, and installed in August.” JRA Vice President Shawn McCoy said, “Superfly set the vision for the overall guest experience and partnered with JRA to conceptualize specific exhibits and displays. They also corresponded with Warner Bros. on all creative and approvals, assisted with media production, and served as the executive producer responsible for bringing these projects to reality. JRA provided planning, design, a majority of the graphic design, and project management. Working directly with Superfly, Warner Bros. has been a great partner in providing assets for us to use, collaborating on the creative, and providing approvals.” Additional creative team members included Chicago Scenic Studios, acting as the main scenic fabricator; and Dynamic Productions, who provided audiovisual integration.

Skilled at conveying theme and branding in attractions, JRA’s significant expertise with museums, theme parks, and corporate attractions was successfully applied to the temporary nature of the FRIENDS New York City Pop-Up attraction. “When looking at the master plan of a pop-up experience, we use many of the same techniques and standards we would use on a more permanent experience, with a few wrinkles,” says Colin Cronin, JRA’s Senior Designer on the project. “For example, due to the limited number of tickets available, the experience would be operating at effectively 100% capacity for its entire run – there wasn’t a ‘Design Day’ as we would usually use for a permanent experience.”

The pop-up aspect also meant that materials and fabrication methods had to be taken under serious consideration. “We couldn’t use all the techniques we use in a traditional museum,” says Cronin, “In the FRIENDS New York City Pop-Up, nothing could be permanently affixed to the floor or walls, since the space was a temporary rental. Everything had to be free-standing, and it needed to come into the building and be installed very quickly. It’s basically like a more traditional theater set, in a way. But this did provide us with some opportunities – the temporary walls to create our galleries were able to have custom graphics on every surface, which saves additional expense.”

“The One Where Fans Come First”

Working with an exhibit space of 8,500 square feet, the team was tasked with determining what scenes, sets, and props from the archives would be portrayed, representing a long-running series and story equaling 4,500 hours of television. “With such a rich IP, there were a number of elements that we weren’t able to physically fit into this footprint,” says Moscatelli. “For example, we did not fully build out Monica and Rachel’s apartment, as we felt that Chandler and Joey’s apartment was a less explored build and would be more impactful for fans.”

Cronin adds, “With iconic shows like this, as with any well-known brand, nearly everyone has a unique connection to and perspective on these shows. Every member of the design team and the client team had their personal favorite moments and scenes, and this variety of favorites allowed us to start with a collection of concepts that could then be whittled down and focused based on feedback from Warner Bros. The fact is, Warner Bros. has been the herald of these brands for multiple decades – they know very well which scenes and episodes resonate with the fans.”



The show’s fictitious cafe, Central Perk, is recreated in the attraction as a real coffeehouse. Photo by Ryan Muir



Fans can recreate a memorable scene from FRIENDS by posing with a couch in mid-pivot. Photo by Ryan Muir

The attraction is designed first and foremost for the show's fans. Superfly attractions are consistently designed with the fans in mind, a strategy that also resonates in JRA's portfolio. "There are expectations that every fan has when walking into one of these experiences, and we have to meet those expectations," says Cronin. And within both companies, it was easy to connect with the material. "At JRA, we have an office full of FRIENDS fans. Superfly's studio is also made up of fans of the show, so everyone can come at this topic from a fan perspective. At the same time, we look at it from a designer perspective. What we do then is take all of those picks from Warner Bros., the show's creators, the client, and our team and distill them down to the pure essence of the show. What makes that show special? What makes people return to it time and again? What are the most important moments that stick with you? If you develop these core tenets first, they can act as a collective road map towards the development of the concept, ensuring that the experience stays perfectly true to the IP?"

"The One with the Pivot"

What differentiates this pop-up from a traditional exhibit is the level of interactivity. Guests were encouraged to reenact beloved scenes from the show, each optimally designed for capturing on camera. They could sit on the iconic sofa in front of a fountain

from the title credits while holding an umbrella, sip on coffee at Central Perk (an operating coffeehouse within the attraction), stick their heads through the doorway of Monica and Rachel's apartment, and sit in the lounge chairs in front of the world's longest home entertainment center in Chandler and Joey's place. One of the most popular interactives let fans relive Ross' attempt to move a sofa up an all-too-narrow, curved stairway, infuriating his helpers by yelling "PIVOT!" At the FRIENDS New York City Pop-Up, a replica of the sofa was locked in a stationary position at a turn in the stairway. Guests could stand on either side or behind the sofa and get into the act.

A central theme of the show was communication (or miscommunication) among friends. This theme carried over in the pop-up to the modern era of mobile communications with its emphasis on social media. "Each room was filled with opportunities to share the experience on Instagram, Snapchat, or any other platform, and in many ways, that was the core guest interaction," said Cronin. "For the FRIENDS experience, guests actually received photos as part of their ticket that can be shared on those platforms." •••

The FRIENDS pop-up experience is headed to Boston November 21 - January 5. Tickets at friends25popup.com.

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Concept art for Farbound's Phantom Bridge experience aboard Princess Cruises. All images courtesy of Farbound

Game masters

Startup Farbound delivers immersive, gamified experiences “beyond VR” - Princess Cruises and Discovery Destinations are early adopters

by Philip Hernandez, Martin Palicki & Judith Rubin

Today's consumers are demanding ever more meaningful, personalized entertainment experiences. It is now crucial for brands and operators to provide consumers with truly engaging, immersive experiences to develop a lasting connection. How can this level of experience be achieved on the location-based entertainment (LBE) scale for smaller operators? Some have turned to virtual reality (VR), but VR itself has several, oft-cited challenges, such as restrictive gear, limited story lines and solitary experiences.

Two theme park industry veterans, Tim Rheault and Steve Trowbridge, wanted to find a better way to enable operators in LBE markets by providing a social experience on state-of-the-art interactive platforms. They created their new company, Farbound, to do just that.

The Farbound product combines innovative, thematic sets with gaming technologies and mixed reality to create immersive experiences through interactive gameplay, placing guests in the center of their favorite stories. As Rheault describes it, “to turn the guest into a player in a video game or a character in a movie, but in real three-dimensional space, without the need for headsets.” They designed the platform to address certain issues

that have arisen with VR while still meeting the consumer's need to feel engaged and in control of their experience.

To achieve this experience, superior gaming technology is critical; fortunately, recent advances have been closing the gap in terms of cost and sophistication. Modern gaming engines provide a way to track, adapt, and render an entire environment based on guest actions, faster than ever before. Farbound's product is a game engine and show control system that “removes the goggles” to blend real-time media and environmental effects into a social entertainment experience. Princess Cruises and Discovery Inc. are among Farbound's early adopters, partnering together to produce these initial experiences.

“Today, people need technology innovation to be entertained,” says Christine Wacker, Vice President, Global Location Based Entertainment for Discovery Destinations. “People who are taking part in a story have a deeper connection to that content and want to consume it at a higher rate than ever before.”

Denise Saviss, Vice President, Princess Cruises says, “We view our ships as themed entertainment spaces. For us, success is achieved by delivering unique, memorable experiences that can only happen on a Princess Cruise.”

Rheault and Trowbridge position Farbound as a good fit for budget-conscious LBE operators for many reasons, including low barriers to entry, inexpensive operations, and a storytelling format that is customizable, IP-friendly and encourages repeat visits for a wide array of consumers. The platform also comes in three unique size variants; Farbound Room, the smallest of the offerings; Farbound Zone, a multi-room, pulsed experience; and Farbound Park, an outdoor “choose-your-own-adventure” of sorts.

The duo describe Farbound as part escape room, part video game, and part 4D theater. In practice, Farbound combines thematic sets, projected and screen-based interactive media, a gaming engine, show control and environmental effects to immerse guests into stories that have hundreds of possible outcomes. They’ve engaged several industry leaders to develop the software platform from the ground up.

Meanwhile, as Farbound focuses on bringing “in-real-life” gamified experiences to LBE markets, RHETROACTIVE - Trowbridge and Rheault’s first company - is undergoing a transformation to better serve what they see as their ever-important Brand/IP partners and clients. The company is also being relaunched as RHETRO & Co to encompass the brain trust they’ve established over the past 10 years within the firm.

Phantom Bridge and Expedition: Terra

“Phantom Bridge,” the first Farbound Room experience is opening on the Princess Cruises’ Sky Princess in December

2019 with the Enchanted Princess following in summer 2020, with several units to follow. Both are part of the Discovery at SEA onboard programming partnership between Princess and Discovery. For its own part, Discovery is also utilizing Farbound for “Expedition: Terra,” set to debut in Q2 2020. The experience will occur on land as a permanent and mobile installation.

Phantom Bridge takes place in a single room on the cruise ship; the players require no headsets nor other specialized equipment. The layout of the room is designed to replicate a ship’s bridge, complete with steering wheel, themed interactives and props on a fully-gamified set. Even the “windows” are screens displaying media that responds immediately to players’ actions.

First, the players are briefed on the storyline and gaming concept. As the plot goes, massive ships traveling the oceans have displaced water, affecting the Earth’s rotation, which has in turn disrupted the time continuum! A secret organization, the “Society for Timekeeping Enigmas and Entropic Relativity” (“S.T.E.E.R.”) has been operating on ships around the world, unbeknownst to cruisers, to help maintain accurate time. The players’ mission: to visit various historical periods to stitch time together and restore the time continuum. Throughout the experience they are presented with a series of interactive challenges that fall into categories that are mental, physical, and skill-based, constantly affecting the storyline and upcoming challenges.

Farbound generates each game in-real-time, and no two games are the same; other than the initial pre-show briefing, there’s no



During an early mock-up of Phantom Bridge, Farbound team members play test the concept and work through the final art direction process.



Expedition: Terra welcomes guests to a Discovery adventure comprised of a multi-room Farbound experience (above). Once inside the experience, guests will work together to advance through the story (below).



pre-rendered media. As Rheault says, “It’s virtual reality through the media or windows, not in the goggles.” The Farbound platform tracks, scores, and adjusts for all guest actions to alter the overall outcome.

The gameplay is cumulative. While the setting and basic story arc are the same, different game levels are generated in random order, and the puzzles vary for each level. “If guests crack the code and get through the discovery phase in 30 minutes, they can come back and do it again; it will be a different challenge, and there are hundreds of different outcomes,” explains Saviss. This repeatability is key in encouraging the player to return to experience a new adventure.

Parallel experiences

Phantom Bridge tailors the experience to players of all ages, heights, and physical abilities so parents, kids, or grandparents, at any ability, can all play together at their own comfort level.

The experience can be further customized to support a wide demographic. According to Trowbridge, “If kids are playing, we can make it easier; if adults are playing, we can dial it up to be much more difficult.” Trowbridge further states, “The software can even adjust for endurance levels. If it’s a physical, adventure-type activity, we can make it accessible to people with varying degrees of ability, and we can also make it so people of different ages can play at different levels, but everyone’s having a parallel experience.”

Princess Cruises strives to deliver experiences that complement the adventures awaiting passengers at each port of call. Onboard entertainment focuses on live, interactive family-oriented activities. “While some brands offer a more passive experience, we want our guests to get up and dance with us, learn to play a musical instrument, play some pickleball, or practice their golf

chipping by the pool,” says Saviss. Or perhaps, in the case of Phantom Bridge, guests might even restore the time continuum and save the world while sailing to the next destination.

Phantom Bridge is designed to fulfill Princess Cruises’ mission for their guests, and as a nautically themed game adds a level of adventure suited to the overall cruise experience. It also meets the company’s success criteria by ensuring that families and friends spend quality time together in an inclusive experience they can only have on Princess Cruises.

“It is important to us to build connections with guests through entertainment experiences and delivering on our unique destination differentiation. It is also important to make sure guests can come back to an experience multiple times with different outcomes,” says Saviss.

Same configuration, new experience

Even though Farbound is built primarily on a gaming engine, the application does not have to be focused necessarily on gameplay. Discovery Inc.’s first “Expedition: Terra” will open in early 2020 in a yet-to-be-announced location in the Middle East. “Expedition: Terra is more of a technology-enhanced storytelling and learning experience,” explains Trowbridge. “We surround guests in the environment of the story but give them a role in the story and the ability to make choices as a group.”

Discovery Inc. chose Farbound to be implemented as a permanent, yet mobile experience focused on their television channel Animal Planet, allowing fans to engage with Discovery’s IP in new ways. “Our number-one priority is to bring our fans closer to the storytelling-content world we’ve created over 35 years at Discovery,” says Wacker. “We also hope to ignite curiosity and inspire change activism in our fans.”



Steve Trowbridge



Tim Rheault

Wacker continues, “Expedition: Terra brings guests into our world but allows them to control the experience. The Farbound platform is easily accessible, can exist in multiple markets, doesn’t take much of a time commitment, and isn’t expensive to participate in. We look at it this way: for around \$20 and 90 minutes of the guest’s time, it’s about the same investment as seeing a movie. For us, this allows the greatest number of people to have a personal experience with our brand, and in a much more meaningful way.”

While Animal Planet is the initial focus of Expedition: Terra, Discovery hopes to bring more of its IPs to the Farbound platform. “We want to localize wherever possible. Each one of our experiences will have a different tie to our brand and our different brand attributes.”

Small, medium or large?

While Phantom Bridge and Expedition: Terra are both single room installations, Trowbridge and Rheault emphasize that Farbound is a scalable platform, capable of supporting multiple configurations, from connected rooms within a complex zone to a fully developed park experience. Players complete challenges and experience narrative segments that will progress them through the various rooms or challenge areas. Farbound can also function in a single, large space where multiple groups of players can wander through the environment and interact with various touchpoints simultaneously.

Even though a single experience can have hundreds of outcomes, Farbound is growing its media asset library to support swapping out experiences quickly. “There’s the physical Farbound product that can be purchased: the room, the equipment, the computer, and everything that runs the room. We are also developing a library of content we can use to change up that room. And with our innovative 3D/UV printed scenic, we can quite literally reskin the experience,” says Rheault.

The promise Farbound provides allows for user-based personalization in the attractions space making it much more approachable, and as more audiences experience it and demand more, Rheault and Trowbridge pledge to continue raising the bar.

“Farbound represents a significant step forward in the game of audience engagement within the LBE market,” says Trowbridge, “But I think it’s only the beginning and Farbound’s technologies will keep evolving to meet consumers’ enhanced expectations.”

• • •

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Unwrapping the new Hersheypark

Reese's Cupfusion helps launch a sweet new world of brand storytelling

by Philip Hernandez and Joe Kleiman

On May 25, 2019, Hersheypark opened “Reese’s Cupfusion®,” an interactive, candy-centric, media-rich dark ride that signals a new direction and vision for the popular, historic, 112-year-old park as it transitions and expands with original, new regions and attractions themed to the chocolate products of its namesake company.

Cupfusion has proven quite popular since opening. “We set a record for Memorial Day weekend attendance during the ‘Grand Unwrapping’ of Reese’s Cupfusion,” said Quinn Bryner, Director of Public Relations & Social Strategy for Hersheypark. “Since then, the feedback has been overwhelmingly positive with guests complimenting the new technology, the multi-level game play and the unique elements of the story.”

Reese’s Cupfusion at Hersheypark joins the ranks of immersive dark rides appearing at regional parks around the world that are setting a new standard for interactive attractions, providing unique, custom experiences that help parks to compete,

differentiate themselves and grow their markets. This evolving, global trend has been an opportunity for creative and technical specialists to distinguish themselves and continue to break new ground (such as the unique feature of cooperative gameplay in Cupfusion, described in this article).

The external creative team that produced Cupfusion for Hersheypark, led by Raven Sun Creative, is a veritable who’s who of modern dark ride innovation. To execute the planning, IP development, and technical design on the rapid schedule, Raven Sun expanded their team to include AJA Architecture (architecture) and Famous Frames (creative talent across a number of disciplines). The park turned to Sally Dark Rides to execute Raven Sun’s design and build the attraction. Sally’s role included project management, on-site show direction, and identifying other trusted partners to help see the project through. Key members include Alterface (interactive game detection system), Artistic Contractors (scenic fabrication and installation), Commerce Color (vinyl wall treatment, print and installation),

Pure Imagination (real-time CG animation and game elements), and Techni-Lux (show lighting supplier and installer).

Reese's Cupfusion marks the beginning of a major expansion and transformation to the park: Hershey's ChocolateTown, opening in 2020 [see sidebar].

Brand storytelling

Raven Sun and Hersheypark had worked together before - in 2015 they designed Hersheypark's Laff Trakk, a unique, indoor, spinning coaster that pays homage to the historic park's funhouses of the past. Cupfusion replaced an earlier Hersheypark ride, Reese's Xtreme Cup Challenge, which opened in 2006 and was built by Sally Dark Rides.

Louis Alfieri, Principal and Chief Creative Officer of Raven Sun Creative, which handled the overall concept and design of Cupfusion, talked about the design intent. "We wanted to create a four-season attraction to help the park expand its demographic reach to multiple generations - to be fun and engaging for all ages. We wanted to push the technology as far as possible to give the attraction as long a life as possible within the park. An overarching goal was to expand the brand connection with the guests and the park, using humor and playful interaction, the way Hersheypark wanted to communicate with guests."

"In conceiving this ride, we wanted to create original IP, story, characters, environment and a series of technical innovations from scratch - no easy task and we wanted to get the story right," said Hersheypark's Bryner.

Standing guard for some of the world's favorite flavors is the mission of Reese's Cupfusion. Guests are enlisted to protect the legendary Crystal Cup that collects and amplifies the love of chocolate and peanut butter to power the factory. Led by a strong female character - Commander Cup - guests become Reese's Agent Trainees at the factory. They support the Commander in looking out for intruders and employing their amplifying devices against them. They are helping protect the world supply of Reese's Peanut Butter Cups from the nefarious actions of Mint the Merciless and The League of Misfit Candy.

"There was a lot of exploration along the way about how to create this brand's IP," said Alfieri. "Once Hersheypark decided to focus on something that's uniquely Hershey, we knew we wanted to incorporate the manufacture of Reese's Peanut Butter Cups into the storyline. The power of brand storytelling is how we translate the brand into a range of spectrums, emotions and interactions with guests - building an experience into a series of emotional connections and touchpoints."

Raven Sun is a leading provider of immersive experiences, themed attractions and branded experiences, with a team skillset spanning multiple disciplines. In addition to Hersheypark, the Raven Sun client list includes Ubisoft, Dalian Wanda, Evergrande Group and Lamborghini.

Alfieri's dark ride portfolio includes Transformers: The Ride at the Universal Studios parks in Singapore and Hollywood and the seven attractions that opened the Wanda Wuhan Movie Park, including one of China's first flying theaters and a live stunt show



Cars travel in pairs throughout the attraction, placing riders in different built and animated scenes. All photos courtesy Hersheypark

OPPOSITE: Character development was a critical element in the design work done by Raven Sun Creative. Commander Cup instructs guests on their mission to defeat Mint the Merciless and The League of Misfit Candy.

integrated with 8K projection, and several patents including the Ultra Tower ride system.

Story-driven gaming

The production of Cupfusion utilized the original vehicles (given a ground-up makeover) and 80% of the original track from Reese's Xtreme Cup Challenge. "That choice enabled us to maximize the gaming functions, the quality of the media, and the quality of the targeting system," explained Alfieri.

The environment and world of the attraction were designed and built to keep the experience seamless in the perception of the guest, whether the elements exist on screen or 3D physical objects. (It was not desirable to rely solely on screens as these would have limited the depth or connection to characters that the creative team wanted.) To help achieve that consistency, every element in the attraction was built as a 3D environment in Maya and then composited and rendered as 1:1 stills (like screenshots) at 22' tall x over 800' in length. Alfieri said, "We went through a lot of testing and development to find a way - in 2D media - to render the characters in the foreground with a level of quality and resolution that works in both a physical and a media environment." Show lighting helps balance and bring it all together.

The new, story-driven gaming experience highlights replay-ability and proprietary IP. The five-minute, linear dark ride averages 540

guests per hour and includes a preshow before the gameplay. It integrates more than 150 show-action elements, 4K real-time media rendering across 10 screens, "easter eggs" (hidden targets), score tracking, score reporting, and 4D effects to stimulate any rider's appetite (such as chocolate, cinnamon, and bubble gum smells) – and the introduction of "cooperative play" mode.

To incentivize multiple playthroughs, the ride uses a gaming engine that produces real-time animation. "Many attractions involve either shooting at targets or having only one way to function within the game," noted Alfieri. "We wanted this attraction to have layers of opportunity that allow guests to make many discoveries and come back for more the next time."

Along with the new attraction, Hersheypark introduced another transformative feature, HPGO, the park's free-of-charge RFID wristbands. The wristbands can communicate with the Hersheypark app, allowing Cupfusion riders to keep tabs on their scores year-round and download photos from their ride experience to their smartphones. For an additional fee, guests can add Fast Track, the park's "skip the regular line" system, to their HPGO wristbands.

Cooperative gameplay

"Interactivity and competition are huge in Hersheypark. What makes this ride so special is that the entire family can ride and re-ride repeatedly. There are many gaming components that are

The road to Chocolatetown

Located 15 miles north of the Pennsylvania state capital of Harrisburg, in the town of Hershey, Hersheypark opened in 1906 as a leisure park for employees of the Hershey Chocolate Company. In 1927, the park was placed under the umbrella of what is now known as Hershey Entertainment & Resorts, which also owns resorts and an AZA-accredited zoo as well as a stadium and two arenas that host professional sporting events and concerts.

Over a century-plus of operation, Hersheypark has grown into one of the largest and most popular theme parks in the US. The TEA/AECOM Theme Index estimated 3.37 million visits for Hersheypark in 2018 and ranked it as the 19th most-visited theme park in North America. The park's close ties to its namesake chocolate manufacturer have provided it with unique IP not found in any other park – characters based on popular confections such as Hershey Bars, Hershey's Kisses, Kit-Kat and Reese's Peanut Butter Cups, among many others.

As the next step in its evolution, Hersheypark is unlocking an all-new chapter where fun meets chocolate in more ways than ever before - Hershey's Chocolatetown. Opening in summer 2020, Hershey's Chocolatetown is a new region at Hersheypark where guests can eat, play, shop and gather year round.

The \$150 million transformational expansion is the largest in park's history and a 23-acre development. Marquee elements include its 15th coaster - Candyonium, "the tallest, fastest, longest and sweetest" coaster at Hersheypark, a KISSES fountain, a new arrival experience, and five culinary additions, including a large new restaurant, an ice cream shop, a scratch confectionery kitchen and a Starbucks.

Chocolatetown will thematically link the existing Hershey's Chocolate World attraction located just outside the park entrance with chocolate themed rides like Reese's Cupfusion and architecturally complement historic buildings. •



Mint and the League of Misfit Candy invade the factory in gameplay media sequence.

part of this attraction that you will not catch the first time. In fact, you might not even catch it the second or third time and the entire family has to play together to get some of the more spectacular pieces of the game to come to life,” added Laura Woodburn Krolczyk, Assistant General Manager at Hersheypark.

The breakthrough development of cooperative gameplay was not only critical for Cupfusion, but also represents a leap forward for dark rides. Cooperative play allows families or new acquaintances to work together, adding more to the experience.

Within the Cupfusion story, guests have three main action paths to choose from: power the factory, try to stop the candy criminals, or get bonus points during cooperative play and release other characters. From a scoring perspective, guests can choose the format in which they want to engage each of these paths. “Guests can play one path, all three paths, or a combination thereof. It’s up to the guest when they’re in each of these areas to engage the game differently based on their taste or desire to play,” explained Alfieri.

Because there are two vehicles traveling together in Cupfusion, the screens are large - 22 feet tall and 22-60 feet wide in most

cases. The screen in the finale scene is over 160 feet wide. “The cooperative play function we orchestrated for Cupfusion requires at least two of the four people in a vehicle - or two people in two different vehicles - to be in front of the same screen at the same time and jointly participate in activating certain components,” said Alfieri. “For example, guests might activate the cooperative action in the seasonal factory, triggering a sequence of purple lightning in the lab and bringing a peanut butter pumpkin to life; the pumpkin sits up and releases special bonus elements. Crazy Corn is one character released through that activity. We believe this new cooperative play function is a world’s first.”

The release of characters, bonus content, and future elements as hidden easter eggs and intermittently available targets was intentionally designed into the attraction from its inception to ensure a very large range of opportunities for discovery, re-rideability, competition, and drive social interaction to share these discoveries.

Developing chocolate characters and IP

“A challenge that we had here at Hersheypark was how can we take something like chocolate and create a story from it,” said Brewer Lister, Managing Director of Marketing at Hersheypark.

Reese's Cupfusion is how Hersheypark answered its own challenge and it also models the park's pending expansion in its overall buildout adding up to a multifaceted, themed realm in and of itself. Outside the ride building, two classic children's rides have been given a thematic makeover, appearing as if they have been taken over by the villains of the ride. The theming continues to food and beverage offerings as well. "We have King Size Shakes: Slither, Squirm, and Mint the Merciless. We have BBLz™ drinks that are associated with the IP and funnel cakes too! It's also the first time that we have done a fully themed exit retail that brings in all the IP," added Vikki Hultquist, Hersheypark General Manager of Attractions & Entertainment.

Cupfusion focuses on connecting humor with the characters to make them relatable to guests. "The opportunity for Hershey was to turn their candy into characters, and the key to believable characters is the emotions behind them," said Alfieri. "With Cupfusion, we wanted to capture the nostalgia of the brand but also make it fresh and new."

As Bryner explains, "As we head into the expansion of Hershey's ChocolateTown in 2020, Reese's Cupfusion is an example of how Hersheypark can celebrate the public's love of Hershey's iconic brands and our shared roots with The Hershey Company." •••



Passing through the Easter Seasonal Foundry at Reese's Cupfusion

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TEA 2020

A chat with Michael Blau - incoming TEA International Board President

interview by Judith Rubin

Michael Blau, Principal, VP Business Development at Adirondack Studios, LLC will be officially installed as Themed Entertainment Association (TEA) International Board President in November 2019 during the annual TEA Members Meeting at IAAPA Expo Orlando. He will succeed Michael Mercadante of Main Street Design, who steps into the role of TEA Immediate Past President. Adirondack Studios is a scenic design and fabrication house doing business for some 45 years. The company is globally active, headquartered in Upstate, NY, with offices in Orlando, Los Angeles, Shanghai, Singapore, Osaka and Dubai.

Tell us about your involvement, and your company's involvement with TEA over the years.

I first got involved in the TEA as an avenue to network in the industry for Adirondack Studios. My colleague Louis Allen [VP Adirondack Studios] had already been volunteering with TEA for many years prior to my jumping in. I was active in the TEA Eastern North America Division, and served for three years as VP of the Eastern Division Board. One of the contributions I'm proud of from my time there was having helped to bring more events to the New York region and helping attract more members in that area as well. I was subsequently elected to the TEA International Board where I have served three years, most recently as Vice President.

For its part, Adirondack Studios has increased its participation and support of the TEA, not only as a sponsor but also as a company that has supported many of our company employees being involved in serving and attending TEA events.

Tell us about your transition to business development.

At first, I was tentative about taking on the role of business development after being a Creative Director and Designer. But I enjoy solving problems. Business development is being able to discover needs, listen to what people really want and then seeing if you can help. If you can, then conversations move forward. If you can't, help them to find the person or company that can. Learning and then teaching. People, including myself, learn with every interaction.

What do you see as some of TEA's landmark achievements in its 30-year history?

The founding members of TEA really set the association in motion toward fostering and recognizing excellence in the



Michael Blau

entertainment industry. The TEA Thea Awards, the TEA Masters program and the TEA SATE conferences on Experience Design are excellent examples. As the association has grown, its members have become more sophisticated. I believe without the TEA, the world would not have created the terrific experiences that exist today.

Many of our industry's creatives and creative leaders have theater backgrounds, as you have. How does that help prepare you for this business?

There is such a long list of benefits of coming from a theater background. Here are a few:

- Collaboration: it takes many areas of expertise to put on a show. Everyone needs to work together toward the common goal.
- Opening night: You promised a great show; you had better deliver it!
- Listen: To be able to explain, you need to listen to what others are telling you - not just the words, but what they are really telling you. This is true of every interaction in this industry whether you are designing a waterpark, creating a new story or solving an installation issue on site.
- Create emotional journeys: Audiences (Guests) want to experience different perspectives in safe environments. Theater allows audiences to make these leaps for a short period of time and then go back to their daily lives, hopefully better for the experience.

How do you view the role of TEA within the industry? What are its strengths?

TEA is the place to go when you want to learn, grow, meet interesting people and experience the world. We offer access to world class professionals through formal presentations and informal events. We foster opportunities for our members educate our members. As such, we recognize that the stronger our members get, the better the industry gets. Our job is to help that happen. •••

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The Legend of Pangu show takes place in a custom-built theater that is visually intriguing and appealing. All photos courtesy of ECA2

Showtime in Lanzhou

ECA2's Legend of Pangu shines on the desert's edge

by Michael Switow

On the banks of the Yellow River, about an hour northwest of Lanzhou in China's landlocked Gansu Province, an iconic structure, unlike any ever built, rises from the dusty desert soil. Picture an egg, sliced in half, with a heart-shaped opening splitting the rooftop in two. A second hole resembling a huge eye is centered along one side, providing a view of the steep mountainside behind.

The gray-blue tiles on its exterior are reminiscent of the roofs of nearby village homes that have survived hundreds of years since the Ming and Qing dynasties, yet they also resemble a bird's feathers and its folded wings.

Christened on a chilly evening in late autumn, the building is a testament to yin-yang duality. It is simultaneously an outdoor amphitheater and indoor cinema; the steel, concrete and aluminium shell is both the site and screen for a new multimedia spectacular.

Universal creation with Chinese characteristics

Thirty months in the making, 'The Legend of Pangu' is the latest venture of French showmaker ECA2, which has teamed up

with a state-owned development company called Gansu Xirong Cultural Tourism to produce a 26-minute sensory extravaganza that recounts a traditional Chinese tale about the creation of the universe.

The venture is, without question, ECA2's biggest project, at least in physical terms. Thirty Christie projectors broadcast animated video onto a 2,800 square meter projection screen curved in two dimensions. A 960-sqm cascade screen - touted as the "world's largest projection surface on a permanent and single waterscreen" - is more than twice the size of the inaugural version introduced at The Big O seven years ago in Yeosu Korea as centerpiece of the world expo.

"It was a great challenge. In terms of planning and coordination, it was a huge work to achieve," says ECA2 chairman Jean-Christophe Canizares. "This is certainly our most complex project. We put our heart and our energy in it, and seeing it now makes us very, very proud."

Throughout the tale, ECA2 seamlessly weaves two- and three-dimensional projection with light, laser, smoke and water effects.

When the god Pangu's animated axe hits the water in the theater's main pool, for example, robotic focus jets and pressurized geysers create the impression that the axe has split the water in two.

Challenges beget solutions

The scope of the project and shape of the building presented ECA2 with several unique challenges. Top of the list was how to deploy a classic ECA2 device, the waterscreen, in a structure with no flat surfaces.

Water cascade

Challenge: How to project high-definition video onto a flat, 40-meter-high waterscreen, when every part of the building is curved. "The water should fall vertically, but the equipment is on a double-curved line," explains the show's chief architect and stage designer Chengcheng Chi.

Solution: The waterscreen has 11 segments, each with a unique joint. "The angle is never the same," Chi explains. "If there's even minor construction error, the water cascade will not work. Every plate to fix the waterscreen must be in exactly the right place in 3-D space."

Acoustics

Challenge: Ensure that the sound quality is 'as good as concert hall' without any sound reflection, in a curved theater. Curves famously produce echoes, though; just ask a visitor to the US Capitol Rotunda or Beijing's Temple of Heaven. Plus, every surface in the ECA2 theater would need to be fireproofed and weatherproofed to withstand the show's pyrotechnics and water effects.

Solution: A multi-layered inner ceiling with perforated metallic panels, which are made for sound to pass through. Working with the acoustic engineers at Holland's Peutz Group, ECA2 also identified a thin, tough, patented fabric called Soundmesh G8 that absorbs sound by "breaking the soundwave down to smaller components. It then traps and dissipates the soundwave within the spacer behind it."

"We had to discover, with the acoustic engineers at Holland's Peutz Group a way to avoid any sound reflection anywhere," explains the show's technical director Clément Rabréaud. "For a venue with such a shape, the sound is really, really incredible. It's super creative."

Magic screen

Challenge: The roof has a large oval opening that represents the sun and moon, and also provides a view of the mountainside behind the theater. As the show was being developed, artistic director Olivier Ferracci asked the design team if they could "close the hole" at key points during the storytelling. "How to close the hole?" Chi replied. "I told him we need some magic to do it."

Solution: A "robotic magic screen." Chi's solution was to hang a 30-meter waterscreen from the roof. An attached motor enables the screen to rotate 55 degrees. "The waterscreen closes the form of the eye perfectly," Chi explains. When video is projected on it, the hole disappears, becoming part of the projection screen.

Show control

Challenge: Ensure the show is never down and video projection over 3,760 square meters is crystal-clear, while minimizing the time required to calibrate 20 30k Christie Boxer projectors.



Projection during The Legend of Pangu occurs on multiple surfaces, including several water screens.



Pyrotechnics provide a counterpoint to all the water used during The Legend of Pangu shows.

Solution: An automatic calibration device, deployed for the first time. The device, developed for the Lanzhou show in collaboration with Modulo Pi, maps one projector on top of another and tests the sequence. “This is totally revolutionary technology,” says Rabréaud. It takes just 13 minutes to run, which means that if a projector ever needs to be replaced, the whole system is back in focus quickly.

More innovations

Most ECA2 productions are in outdoor theaters. The presence of a roof at the Lanzhou show encouraged the company to develop and deploy new effects, such as the “jet fog” that is created by 54 low pressure nozzles. “It’s a very thin water element that falls from the roof,” explains ECA2’s Julien Causeret. “You can’t even see it. It enables us to create atmospheric 3D effects with a laser, which is quite useful for the depth of the effects.”

For the first time, ECA2 is also deploying high-end color laser projectors and blue laser diodes, the latter of which are situated around the main pool. Laser projection technology has recently become more affordable. While they are still more expensive than a standard projector, they consume about 30% less power and can generate savings over the lifespan of a project. The laser projectors “bring a sharpness in the image and more brightness,” says Canizares, who adds that their quality is assured for at least 10 years, possibly longer.

All of ECA2’s special effects are developed in-house and tested practically at scale. Many of the innovations, such as the new 3D robotic fountain jets, are produced in collaboration with ECA2 sister company, Crystal Fountain.

Produced for a local Chinese audience

The Legend of Pangu cost 14 million euros to produce, not counting construction of the 1500-seat theater or related

infrastructure, and is part of a 60 million euro cultural tourism project that sits on Chinese president Xi Jinping’s One Belt, One Road initiative. The theater is located next to the recently renovated town of Hekou, which welcomes thousands of domestic tourists to taste its wood-fired spicy hot pots and tour the ancient residences. Hotels and a theme park are in the works as well.

The storyline features an old man telling his grandson about the Chinese god Pangu, who created the sky and separated it from the Earth, over tens of thousands of years. He also tells the boy about the origins of the Silk Road, which passes through Lanzhou. Every detail, from the shape of his pipe to the design of palaces along the ancient trade routes, was researched to reflect local traditions.

The Legend of Pangu’s inaugural run, which debuted just in time for the People’s Republic of China’s 70th anniversary celebrations, was less than one month. The show is closed for the winter months and is expected to reopen in March. •••



Michael Switow (michael@switowmedia.com) is the co-author of *Taming the Mouse*, which explores how Ocean Park Hong Kong fought for survival - and thrived - in the face of competition from Hong Kong Disneyland. A Singapore-based writer and broadcaster, Michael has been shaping top business stories across Asia-Pacific for more than 20 years. He is also the founder of WOW Asia (wow-asia.com), which provides insights about the Asian attractions industry and conversations with the leaders that drive them.

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Lesson plan

How to create a win-win collaboration between academia and the themed entertainment industry

by Peter Weishar

It is no secret that there is a great divide between the worlds of academia and industry. Although there are many exceptions to the rule, the fundamental differences between the scholars in academia and practitioners in industry are far greater than just their approaches to problem solving. There are tenets entrenched in the respective cultures that result in different ways of thinking as well as different goals.

This paradigm holds true in the burgeoning academic field of themed experience and the established themed entertainment industry. But communication and realistic expectations are leading us to fruitful collaboration.

Engagement

Many years ago, when I first started developing the concept of a dedicated degree program for themed experience, I knew engagement - and eventual collaboration - with industry would be key components for success. I would define “engagement” as encompassing such things as professionals speaking to a class, class visits and tours of studios, portfolio reviews, and hiring interns. “Collaboration,” on the other hand, refers to an equal partnership that utilizes unique and complementary skillsets and expertise.

Academic mindset and channels of recognition

In a research university, faculty strive to become tenured professors. Tenure is a multi-year process in which faculty are tasked with creating new knowledge, adding to the body of work in their field, gaining a national (and eventually international) reputation through recognition from established peers. The process and documented methodology are, in most cases, more important than the outcome or popularity of the work.

Themed experience being new to academia, there are relatively few traditional channels for recognition within the university system. As with more established disciplines, to become recognized in the field of themed experience and earn tenure (to keep one’s job and move one’s career forward), professors must present at conferences, publish in journals and obtain the recognition of established academics in their discipline. To address this need and help foster quality higher education, my colleagues and I have formed the Themed Experience and Attractions Academic Society that “exists to enhance communication between themed experience and attractions researchers and educators in order to create new knowledge, add to the body of work in the field and facilitate teaching and learning.” Our peer-reviewed publication is the *Journal of Themed Experience and Attractions Studies* (<https://stars.library.ucf.edu/jteas/>) and our symposium, the Themed Experience and

Attraction Academic Symposium, takes place during the annual IAAPA Expo in Orlando.

Academic priorities vs industry objectives

Students also have some priorities that run contrary to most industry objectives. Universities and colleges prioritize the student learning experience over the end product. Therefore, work showing creative growth and understanding of context is more valued than producing a commercially viable design. This emphasis on process, methodology, and intellectual exploration is even more evident in graduate level programs. In business, the end product of exploration must be commercially viable, but for students, exploration is the goal.

Furthermore, the structure and schedule of an academic institution are rather rigid. Coursework must be completed in a fixed semester or trimester schedule. Classes must be scheduled months in advance and course goals and outcomes must be consistent with objectives of the degree program in order to meet accreditation requirements. Therefore, a great idea for a collaborative project may not fit the schedule or requirements for a program. So, prior communication and planning are necessary if a collaboration is to take place with the fast-paced themed entertainment industry.

Cross-disciplinary endeavors

Most universities and colleges do not have themed experience or entertainment programs yet. Since the creation of themed experiences requires coordination with individuals that possess many different skillsets, collaboration with a university that does not have a dedicated program may require a cross-disciplinary effort. This is a challenge that may call for time and logistical coordination.

For example, in a collaboration with both architecture and scenic design students, the departments would need to make sure classes meet at the same time, credits for the class would count for both degree programs, that classroom space accommodates both classes, and the timing of assignments is synchronized. These issues are compounded by the fact that many students in the class see themed experience as a curiosity, not a career aspiration. Such issues are not a factor in a degree program dedicated to the themed entertainment industry.

Creating a collaboration

Most collaborations between universities and industry are initiated by faculty. Informal engagements such as a portfolio review or speaking in a class are simple arrangements handled directly with the faculty member. However, if there is an NDA



Zsolt Hormay and Colleen Meyers from Walt Disney Imagineering work with university students in a collaborative character plaster class.

involved or a specific project targeted, the collaboration should also involve a development or research office at the university.

From the industry side, when seeking to structure a collaboration with a university, start with a short, written goal of about a page or so. The goal should lay out the company's objective regarding the intended creative project or research. If your company is approached by the university, expect the same from them. Clearly define scope of work and expected timeframe from start to completion. Dates and times almost always should coincide with the academic calendar, with work spanning the length of a semester.

Contractual details

Most universities will collaborate with outside partners through their foundation or development office. A university development officer can work with legal to ensure a proper written agreement and appropriation of funds. They will also often act as liaison for financial and logistical transactions. Usually there is some percentage taken from funding for the collaboration for overhead. It can be as low as 1.5% or as high as 50%.

Before commencing the collaboration, an industry member should have an agreement that is signed by university administration (not just the faculty member). You should also see a syllabus, especially if this is a "special topics" class developed for your collaboration. The syllabus should have a specific class-by-class outline of the project in question with the dates you are expected to interact with students. The syllabus is an academic contract between the student and the professor. The professor can't change the course description, grading, goals or outcomes once the class has started.

Collaborating successfully

In collaboration with academia, industry professionals should be mindful of not treating the academic institution as if it were a production studio. Students are not junior employees and most faculty are not production supervisors.

Some of my most successful collaborations with industry have been full-semester class projects devoted to a conceptual expansion of a retail experience adjacent to a theme park, a concept themed food service area and a concept for a live/work space on the property of a major theme park company. In all instances, some of the ideas and concepts were utilized in the final project. For the food service project, the company built the design submitted by the student - and that student is now one of the company's star employees.

Now that you have the basics for arranging and structuring a collaboration, here are some tips for making it successful:

Do not center the collaboration around a short turnaround, concrete project. If you are looking for a professionally-designed piece with accurate production specs ready for construction, you are not playing to the strengths of academia. Instead, think of a more conceptual project that does not have an immediate deadline. This allows students to think, grow and learn while also giving you interesting ideas that may come to fruition.

Expect to provide financial and creative support for your collaboration. Institutions need to pay for faculty, travel, facilities and materials for the collaboration. The amount of financial support should be proportional to the engagement and commitment from the institution.

Plan very far ahead. Students start registering for classes four to five months ahead. The academic calendar and schedule are often set a year in advance and the addition of a collaborative class must go through an approval process that can take a few months. Work with faculty to create assignments and a schedule that fits within the curriculum while also providing you with the opportunity to add your insight and professional expertise to the project.

Provide appropriate feedback. Speak from the perspective of an industry professional and yet understand you are still working

with students. In an academic setting, we offer critiques and drill into areas that need improvement. I have seen many external reviewers be either too polite to provide constructive feedback, or too harsh and treat the student like an employee who has not lived up to professional expectations. Communicate with faculty before going into a critique to understand the level of the students and the parameters of constructive feedback.

Understand the limits of confidentiality. If you have a strict NDA with a client and a project must be kept under strict wraps, it will most probably not be appropriate for academic collaboration. Students need to develop portfolios. If you are working with upperclassmen, they will be graduating and seeking employment in a few months. Students may not be interested in working on your project if they cannot show their work. The university itself is founded upon an open exchange of ideas and academia is just terrible at keeping secrets.

Understand where your needs and the needs of your academic partner intersect. When you engage with a university you will benefit from exploring new ideas and producing interesting work. Your academic partner benefits from engagement with industry that will help students gain practical experience in production and creative development. However, the primary benefit for you will be the recruitment of new talent. The primary benefit for the academic institution will be to place

its students in prominent industry-leading firms. And the primary benefit for students is finding viable employment opportunities in their field of study. Here, all parties share the same goal. Collaboration with academia provides an industry firm with exposure and communication with potential hires. The students gain exposure to the company, its culture and its expectations.

I have found industry collaborations to be some of the most exciting and rewarding experiences of my academic career. As programs in Themed Experience and entertainment proliferate at institutions such as the University of Central Florida, we can look forward to increased, meaningful and productive partnerships that bridge the great divide. •••



Peter Weishar (peter.weishar@ucf.edu) is a Professor of Themed Experience and Program Director of the Themed Experience Graduate track at the University of Central Florida (<https://www.ucf.edu/degree/theatre-mfa/themed-experience/>). He also serves as an Associate Member of the TEA Eastern North America Division Board, and chairs the TEA Academic Network. Previously, Weishar was Dean of Fine Arts at FSU and Director of the Themed Experience Institute. He also served as Dean of Entertainment Arts at SCAD where he founded the first MFA in Themed Entertainment Design. Weishar has authored three books, *Digital Space: Designing Virtual Environments*; *Blue Sky: The Art of Computer Animation*; and *CGI: The Art of the Computer Generated Image*.

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FauxFire® and real people

Technifex powers up for the next 35 years

by Gene Jeffers

“Technifex people are problem solvers - we offer creative solutions that keep our clients coming back to us,” explains Rock Hall who, with Monty Lunde, founded the production and special effects firm 35 years ago. Together they have passionately orchestrated engineering, technology and relationships into an experienced production and special effects team focused on design challenges and the fabrication of a broad range of technical show systems. The company they built - Technifex - is a recognized leader in effects and specialized products and process for the attractions industry and related sectors, and Monty and Rock are industry leaders in their own right.

“We’ve succeeded because Monty and I built a company based on honest, transparent integrity in all of our relationships,” says Hall. “That’s why Technifex has lasted. We’ve taken a number of steps to ensure the company is well positioned to go on, to continue to be successful after I retire at the end of 2019.”

Hall and Lunde acknowledge shared core values that have made their partnership durable: building relationships and treating people well, listening to clients, learning from every experience, testing and retesting their processes and work product.

“Our relationship has been and is very strong,” Lunde says of his business partner. “Like any, it has had its ups and downs; mostly ups. I’m harder and more focused, Rock’s softer and more caring. Between the two of us we cover a lot of ground and though we have different personalities, we are both keenly focused on providing our clients the best service and technical systems possible.”

“We complement each other in so many different ways. We don’t always agree,” says Hall. “We often take opposing viewpoints to prove a point, our process of vetting the challenges before us. Monty came from a different educational background, more



Technifex helped create several show/art installations at the Galaxy Macau resort. All photos courtesy of Technifex



Six Flags Baltimore Power Plant - Technifex's first theme park project

design and business, I came from a more theatrical/technical one. I'm a bit older, so have a bit more life experience." He laughs.

Ever since Epcot

The two have known each other since working at Disney's Tujunga facility in 1981. Although never assigned to the same project, each had a passion for finding ways to make incredible effects and they soon became friends. "Rock and I just got along," says Lunde. "He was great at teaching me about the technical equipment since I had absolutely no theater background, but I was a pretty quick study."

Hall and Lunde considered their next move after they completed the redo of Fantasyland at Disneyland and the opening of the Horizons pavilion at Epcot, respectively, a year after Epcot opened. In 1982-83 Disney reduced its creative staff dramatically – an event that paved the way for the founding of numerous new companies, many still active in the industry today, including Technifex. As with so many, both Hall and Lunde were released in late 1983. Hoping to apply some of the skills they had learned at Disney, the pair started Designers' Guild, a short-lived special effects company focused on fiber optic signage. "We landed one job, a local bar," says Lunde. "One job, then nothing. Not the best start for two entrepreneurial dreamers."

In early 1984, Hall landed a position with Gary Goddard Productions, which at the time was producing the Baltimore Power Plant, an indoor attraction for Six Flags. Hall enlisted Lunde to apply and once again they were in the same company. With their years of building effects for Disney, Lunde and Hall were asked to help critique firms that were competing for the design and fabrication of the special effects that would enhance the guest experience within the Power Plant "theme park."

Building a business

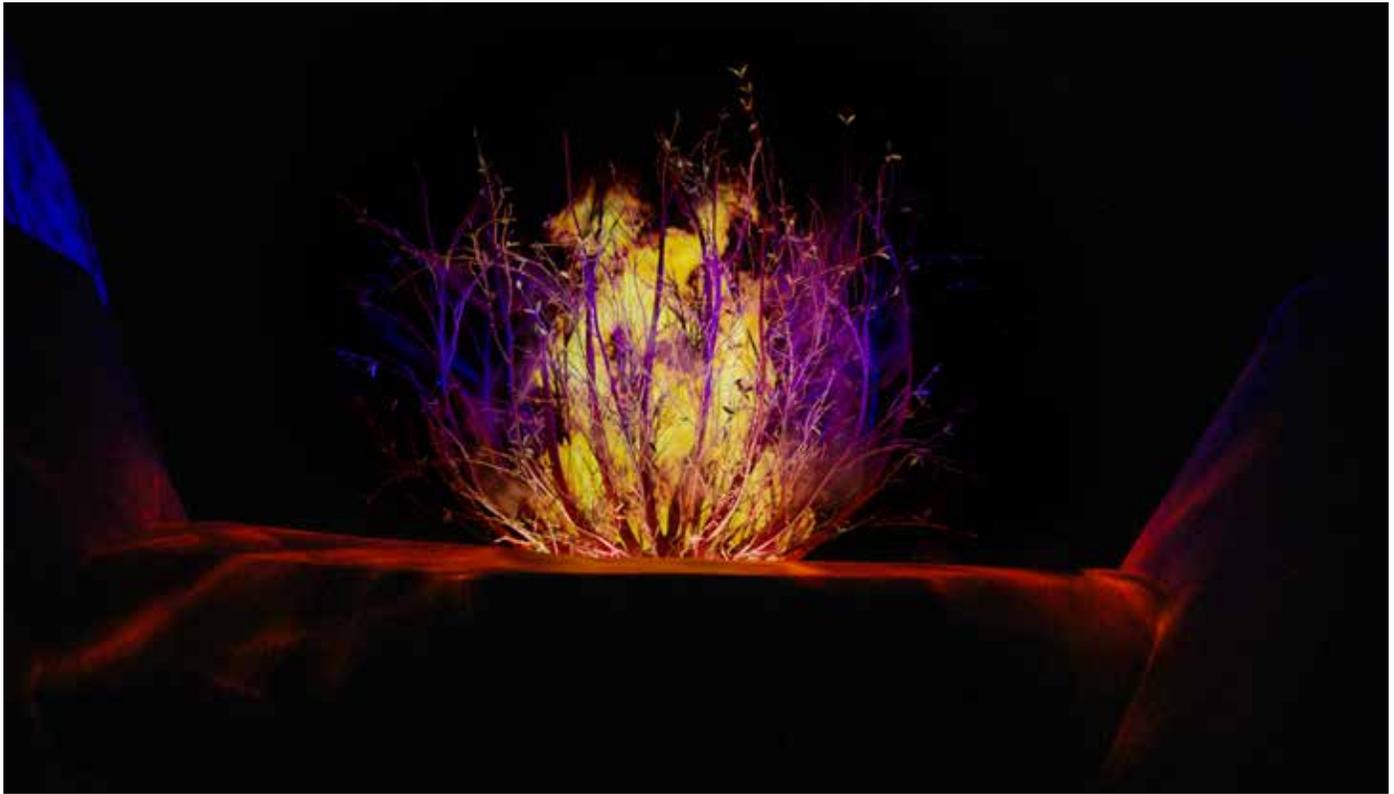
"Rock and I talked about the various companies vying for the effects work and thought we could do the work," says Lunde. "So we went to Gary and offered to start a company and build a team that could develop the effects." The two put a proposal together and Goddard took it to Six Flags, which agreed to cover the costs of setting up a facility for producing the effects. As part of the agreement with Six Flags, the two would forgo any profit but could keep the production equipment when the project was completed.

"The hardest part of establishing Technifex was learning how to run a company," Lunde admits. "We had no experience in that regard. We had to find a facility, buy equipment, hire staff, all within a few weeks. It was truly a case of hitting the ground running and never looking back." They worked 14- to 16-hour days, six to seven days a week for over a year to create the special effects for the Six Flags project. And thus the foundation for Technifex was laid.

"When the Six Flags project was nearing completion, we had no idea what to do next," Hall remembers. "We had to figure out how to get new work, a bigger challenge than getting the company started. The marketing and sales side was something we had to learn, so it set us back a little bit and it got a little scary. We knew how to design and build, but in the early years the biggest challenge was 'How do we find more work?'"

Building a portfolio

Thanks to a lot of hard work and help from many different people, Lunde and Hall figured things out and built a successful company. Technifex has credits for hundreds of ground-breaking shows and innovative special effects on projects ranging from



Working for BRC Imagination Arts, Technifex created a Burning Bush effect for the Stories of the Bible exhibit at the Museum of the Bible in Washington DC.

the Apollo/Saturn V Center at Kennedy Space Center Visitor Complex, to SpaceQuest Casino; Star Trek: The Experience to Titanic: The Experience; Cerritos Library to Revenge of the Mummy Ride; Terminator 2: 3D to the 2002 Salt Lake Winter Olympics Opening Ceremony; the Abraham Lincoln Presidential Library and Museum to the Polynesian Cultural Center's 4D Theater. Clients include aerospace firms, science centers and museums, casinos, zoos, theme parks, hotels, retail facilities, consumer product manufacturers, film studios, trade show exhibitors and government life-saving training facilities.

"It is hard to point to any one project as a favorite," Lunde says. "It's really more about the relationships and the type of work that makes projects memorable. Most of our projects are challenging and that is what we enjoy. When personal friendships also develop through the course of projects, the experience is that much more rewarding."

Relationships

A year after starting Technifex, new opportunities were proving hard to find. A mutual friend invited Technifex to share a booth at TS2, a show for trade show suppliers. Lunde and Hall decided to explore the market and built a kiosk that showcased their patented Pepper's Ghost effect. Monty attended the event in Louisville where he met Nancy Forester, Head of Marketing for AT&T Consumer Products.

"She was an amazing person looking for new and innovative ways to demonstrate AT&T's products at the Consumer Electronics Show," recalls Lunde. "She loved our technology and shortly after

the TS2 show, she contracted us to produce a unique Pepper's Ghost show for their booth at the CES show. We designed and built a cutaway of a full-size, two-story house, and incorporated a 10-inch tall video character who popped in and out of different areas of the house and talked about AT&T's in-home automation systems. People couldn't get enough of it; crowds would gather every time the show started, blocking all the aisles around their booth."

"We ended up doing a ton of work with Nancy over more than 10 years," says Hall. "More important, she taught us how to work in the trade show and corporate worlds. She taught us how to treat each other, treat other people and clients. She was a big part of our survival in those early years."

Microsoft, Nokia, Motorola and Northern Telecom all wanted Technifex effect systems for their booths. Then aerospace companies such as Lockheed, Raytheon, Ford Aerospace and Loral wanted in on the action. "The trade show work was steady, regular and it made Technifex stable at a time when theme park work was very intermittent," Lunde says. "We learned so much from Nancy about diversifying our client base and building relationships. She is far and away one of the most significant individuals Technifex has had the pleasure of working with."

The emphasis on relationships remains intrinsic to Technifex company culture and is visible in the Technifex approach to hiring. "We want to be seen as supportive, intelligent and thoughtful people on a project," Lunde explains. They vet people's skills and expertise, but then, regardless of the position,

put them through two or three interviews to see if they will fit into the group. “We want to know if applicants are passionate professionals and if they will also have the kindness and empathy we want reflected in our staff. Will they fit in with our team of professionals, many of which have worked with us for decades?” The formula works, as Technifex has many long-term employees, some who have worked for decades with the company.

TEA and collaboration

Building relationships with a wide array of vendors and suppliers who work on similar types of projects has also been an important priority for Technifex, says Hall. “Monty’s efforts to connect with other companies and establish the Themed Entertainment Association (TEA) were important to our success.”

“I invited 35 or 40 company owners to come to a meeting at the IAAPA Expo in 1991, with the plan to establish the TEA as a trade association,” says Lunde. “At the meeting, I made a point of seating competitors next to each other because I knew most did not know their competitors personally. Needless to say, the meeting started out very quiet as people began to realize who they were sitting next to. Most knew one another’s names but had never met before. I explained that no one knows your business challenges better than your competitors since they struggle with the same types of challenges that you do.”

The group talked about how creating relationships and working with each other could help everyone. They discovered they were all dealing with similar challenges and client issues. At this pivotal meeting, the group formally decided to join together and the TEA was born. The association effectively established a collective voice for the industry’s international creative and supplier community, and improved dialog with the worldwide client and operator community. As a result of TEA’s activities and outreach, operators began to see the benefits of participating in



Monty Lunde and Rock Hall at the Technifex 35th anniversary party.

and supporting the association and becoming more engaged with the vendors.

A Rock-solid future

Technifex is positioned for the future. “As a company, we are established, have processes, systems and management all in place,” notes Lunde. “But one lesson we’ve learned well over the past 35 years is that companies need to continually evolve to remain relevant, and that’s very much the case in the fast-growing, global attractions industry. Our big challenges today include keeping costs as reasonable as possible, diversifying our client base and finding resources, both suppliers and quality staff.”

Lunde continues, “Industry fluctuations and external events such as tariffs mean we have to support multiple industry verticals to keep the work flow that we need to survive and grow. Codes are more stringent today, technologies are more advanced, and often oversight and regulations on our projects are one step shy of aerospace standards. We believe working to these more exacting standards pushes us to achieve a higher level of professionalism and makes us a better company.”



Technifex’s Faux Fire effect replicates the look of real fire.



Rock Hall in front of his retirement gift from Monty Lunde, a 1964 Buick Riviera. It had 17,000 original miles on it and took two years to restore.

“Adapting is our strong suit,” says Hall. “There are a lot of smaller projects today, for museums and others working with limited budgets.” To better meet that potential market, Lunde and Hall formed Technifex Products LLC in 1999 to make their patented technologies available to a wider market that is hungry for the company’s special effects. Technifex Products rents and sells a range of variations of one of their most successful products, FauxFire®, as well as their Flowscreen®, Water Web™ Water Maze, Dragon’s Breath Heat Blaster, 4D Theater Systems, Tunnel Vision™ and other effects unique to Technifex. The products can be manufactured and stockpiled when staff are less busy with major custom projects, providing stability to the overall operation.

“The whole industry is busy today,” says Hall. “We’re all looking to find and recruit quality people and help grow the next generation.” He notes that as his retirement approaches Technifex has hired two new key executives, John Polk as VP and Senior Project Director, and Howard Smith as VP of Production, to add depth to their in-house expertise and expand leadership at a time of rapid growth. “I want to be sure when I leave that Monty has the people, resources and tools he needs to carry on and be successful.”

Hall will continue to be involved with the firm on a consultant basis after he retires. Lunde says, “While we are building a brain

trust to cover what Technifex needs when Rock steps away, I know we can call on Rock should help be needed for specific clients or projects.”

“Themed entertainment is undergoing a renaissance,” says Lunde. “Everyone is busier than ever. Compared to 30 years ago, the benefits our industry bring to making guest experiences more compelling are better understood among a broad range of markets. Here at Technifex, we will always work to engineer and build leading edge technical systems to meet industry demands because it keeps us relevant. We want to be around for the next 35 years!” • • •



Following his retirement several years ago as TEA Executive Director, Gene Jeffers is currently serving as Board chair for the San Gabriel Pomona Valley Chapter of the American Red Cross and is a Board Member of the Historical Novel Society. He was recently invited to and attended the Tucson Literary Festival’s Master Class; is writing an historical novel and a series of short memoirs about growing up in the Congo; and is drafting a research article based on a survey he conducted about perceived success factor differences between theme park designers/builders and theme park operators worldwide. Gene and his wife, Carol (also a writer) travel often, and enjoy their two daughters and three grandchildren. More at www.OurWriteHouse.com.



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This concept art, developed very early in the creative process, helped establish the overall aesthetic, color palette and character qualities that would drive the rest of the experience design. *All images courtesy of Super 78.*

Geppetto Grows

Moody Gardens and Super 78 team up again on a new interactive adventure

by Robert Coker, Super 78

“We are on the cutting edge of a revolution in real-time attraction production,” says Brent Young, Creative Director of Super 78, a creative studio based in Hollywood serving the attractions industry with concept design, media, technology and more. In 2008, the studio began developing Geppetto,[™] the company’s proprietary live animation and show control system. Geppetto was created as part of the development for “Donkey Live!” - an interactive character experience that Super 78 produced for Universal Studios Singapore.

Super 78’s Geppetto attractions invite guests to become an integral part of the show, having one-on-one, unscripted conversations with animated characters. Controlled by state-of-the-art technology, such interactive character experiences create moments of spontaneous, organic magic that delight guests of all ages and origins.

The prototype configuration of “Donkey Live!” proved to be rock-solid, running continuously since the attraction opened. However, due to the technology limitations of the time, it required multiple racks of servers, computers, monitors and operators to manage a single performance.

Geppetto Evolves

In the decade that followed, Super 78 continued to upgrade Geppetto, streamlining the hardware and software, adding more features and boosting its media horsepower. By 2014, Geppetto was able to handle live 3D animation, and synchronize media across multiple screens. The system’s enhanced back-end architecture allowed for branching, non-linear storytelling, empowering guests to choose where their adventure went next. And one performer now controlled everything.

At the time, Moody Gardens in Galveston, TX was looking to add an immersive, guest-participatory experience. Moody Gardens is an AZA-accredited, nonprofit, educational destination with the feel of an amusement park, offering a mix that includes entertaining, media-based attractions to share its mission of nature and conservation. Annual attendance is about 2 million. SimEx-Iwerks, one of Super 78’s longtime collaborators and the provider of Moody Gardens’ 4D theater and AV systems, brought Super 78 on board to develop the show. As a result of the collaboration, in 2015, Moody Gardens debuted the “SpongeBob SubPants Adventure.”

During its multi-year run, “SpongeBob SubPants” took guests on a wacky submarine trip to Bikini Bottom where they had live, personal conversations with Patrick Star and helped navigate the voyage; no two shows were ever alike. Both the attraction and Geppetto were honored with 2016 Thea Awards (Outstanding Achievement: Attraction and Outstanding Achievement: Breakthrough Technology, respectively).

Surpassing SpongeBob

With a three-year licensing deal in place, we knew at Super 78 that the time would come to rework the show without the star power of Patrick Star. By late 2018, the time to bid farewell to “SubPants” was approaching.

Although one of Geppetto’s built-in virtues is the ability to easily update and add new content to an existing facility, following up “SpongeBob SubPants” came with several challenges. First, for that attraction we were blessed to work with the brilliant characters created by the late Stephen Hillenburg (who is sorely missed) and the wonderful team at Nickelodeon; this time, we’d be starting from scratch.

Second, the goal was to repurpose the existing site facilities and maintain efficiencies as best we could, to keep the scenic budget from ballooning.

Third, Moody Gardens – an educational destination first and foremost – hoped to include more didactic, real science content in the main show than was presented in the SpongeBob attraction. This meant that we would be animating photo-real animals against photo-real undersea environments, an appreciably more difficult task than reproducing SpongeBob’s cartoon characters and locations in three dimensions.

The first step was locking in the big idea, and that came from Super 78 Creative Director Brent Young. “Given that we were still going to be taking some kind of submarine voyage, my mind immediately went to the most famous submarine of all: Captain Nemo’s Nautilus. And the book they came from, ‘20,000 Leagues Under The Sea’ is just about the perfect IP: internationally-renowned for many generations and in the public domain,” said Young.

The Super 78 team also quickly landed on a kind of Western steampunk aesthetic for the attraction, which would distinguish



SpongeBob, Patrick and friends brought their inimitable magic to the Thea Award-honored SpongeBob SubPants Adventure. The challenge of replacing this beloved IP was part of what drove the new creative direction for this refresh.



Moody Gardens Quick Facts

- Based in Galveston, TX, Moody Gardens is a public, non-profit, educational destination utilizing nature in the advancement of rehabilitation, conservation, recreation, and research.
- Moody Gardens features three iconic triangular architectural structures: The Rainforest Pyramid®, The Discovery Pyramid® and The Aquarium Pyramid®.
- 20,000 Leagues Under The Sea will be housed inside The Discovery Pyramid, in the “Audience Recognition Theater.”
- The interactive attraction is powered by Geppetto, Super 78’s Thea-Award honored proprietary real-time animation and show control technology.
- After volunteering to become Nautilus crewmembers, guests go on an exploratory voyage to several undersea locations including a Caribbean coral reef, the Marianas Trench, an Antarctic ice cave, a submerged ancient city, a shipwreck reef, and an undersea volcanic plain.
- During the adventure, guests will interact with Deep the pufferfish and the marine creatures they encounter, including a manta ray, an anglerfish, an orca, a leatherback sea turtle, and a colossal squid.
- The attraction includes two opportunities for guests to choose which destination The Nautilus will next visit, further ensuring that no two shows are ever exactly alike.
- The duration of the entire guest experience is approximately 22-25 minutes.
- The attraction opened November 16th, 2019.

it from the more whimsical mid-century visual language of the SpongeBob universe.

The basic story came together very quickly as well: after years of solitude at sea, Nemo has resurfaced in Galveston at the turn of the last century to establish a new base of operations. The new mission of Nautilus is to study our oceans for the betterment of all life on Earth. And the guests are volunteers for these exploratory voyages.

The interactive star of the show is Deep, a pufferfish from the Indian Ocean who is the “dive lead” for the adventure. Deep, outfitted with several robotic enhancements (including the ability to speak English, of course) introduces us to real sea creatures as we travel to a Caribbean reef, an ancient lost city, Antarctic ice caves, the Mariana Trench, a trove of shipwrecks and an undersea volcanic plain. Guests will learn how killer whales speak through “songs,” how rays communicate with electricity, and how anglerfish use their bioluminescent esca light to lure prey.

As the design and animation process for the show media began, the Super 78 team also started considering how to update the queue, preshow and main show theater spaces. The previous attraction was created with a small interior queue area and two preshow rooms, all of which were designed to look like a seaside wharf and submarine dock. The essential layout and structure of these spaces would remain.

Super 78 was entrusted to redevelop all of the scenic elements and queue/preshow graphics. Almost nothing was left untouched. The rich visual language of steampunk (with a Texas frontier twist) gave us free reign to redress every surface with engaging period detail and intriguing curios. The former pineapple-yellow “Le Plunger” submarine was transformed into

the riveted and copper-clad Nautilus. Custom nautical maps and blueprints, filled with narrative details, were developed to reward those guests who take a deep dive, so to speak, into the world of the experience.

We were able to introduce more educational storytelling devices, such as a Morse Code interactive at the “Frontier Telegraph” office, and a semaphore flag display in the preshow areas.

With the benefit of over three years of performances to review, we at Super 78 were able to work hand-in-hand with the Moody Gardens team to improve every operational component: how guests are physically directed through the preshow spaces; when safety instructions are communicated; what 4D effects get the best reactions.

And the studio brought in accomplished screenwriter Bennett Yellin (“Dumb and Dumber,” “Stuck on You”) - now working in themed entertainment - to make the new script’s comedic aspects as strong as possible.

More compact, more powerful

Since the “SpongeBob SubPants” premiere, the Geppetto system itself has made still more evolutionary — and revolutionary — leaps forward. In 2018, the company debuted Geppetto v.5 which packages all the technology into the Microsoft Surface Studio Pro. And debuting with this new attraction will be “Geppetto 2020,” which includes even more powerful rendering capabilities and a more emoji-based performer interface, to make the system even faster and easier to master. These upgrades have made the system as compact, as powerful, and as mobile as it has ever been; a single performer can control an entire attraction using just the Surface’s massive touchscreen interface and a standard, hand-held Xbox game controller. And we can place a Geppetto



As part of the attraction redevelopment, we were able to redress the queue and preshow spaces with a “western steampunk” look. This allowed us to bring a wealth of rich, engaging detail into every environment, encouraging guests to explore and discover something new every time they visit.



Some of the production team discusses character details for Deep, the interactive star of the show.

interactive character experience into almost any location. (The system was recently field-tested with two live animation performances for the Television Academy, including the 2019 Interactive Emmy Awards presentation.)

These “under the hood” enhancements have allowed our team to push the level of animation detail further than we ever have before. The various sea creatures guests encounter on the adventure – a manta ray, a leatherback sea turtle, an orca – are “feature-quality” realistic. (We did make two exceptions to the “real animals” rule, however, at Moody Gardens’ request. When we meet a seadevil anglerfish and a colossal squid, those creatures – rather terrifying in their natural state – were designed to be more child-friendly.)

Modular storytelling

To incorporate the branching storytelling capabilities of the experience, the show is divided into modules. This structure builds in the capacity to plan ahead for a refresh of the experience, removing one “mission destination” and replacing it with another. Animation pre-production for two new scenes has already begun and Super 78 can continue to update the show for Moody Gardens with new sequences for years to come.

This modularity has also facilitated creating a version of the show specifically to serve visiting school groups and other primarily educational audiences. In that version, the Nautilus ventures to the sea floor and “drops anchor” so an educator can discuss the various types of marine life in the environment.

Moody Gardens has been an incredible creative partner to Super 78 for many years. Along with this new attraction, the destination is also currently hosting “Reef Rescue,” a multi-player High-

Capacity Virtual Reality (HCVR) experience created by Super 78 and introduced earlier this year. “Reef Rescue” takes up to 15 guests at a time on a virtual dive to an ailing coral reef, where they clean the waters, plant new coral branches, and feed the fish to restore and preserve it.

Microsoft has been an amazing technology partner as well, supporting Geppetto’s integration into the Surface Studio Pro and working with Super 78 to begin developing the next generation of hardware for the system.

“Geppetto is a perfect example of Super 78’s in-house motto: ‘How hard can it be?’” said Dina Benadon, Super 78 CEO. “When we need a new tool that doesn’t exist, we make it ourselves. And we don’t just stop with version one; we keep adding, improving and pushing the envelope because that’s what makes groundbreaking experiences.”

“Animation is an art form and the separation of the creator and their art by time and distance are challenges to the creative intent,” added Young. “The masters described animation as the ‘illusion of life.’ We strive to attain this goal, to bring your spark of inspiration, your moment of brilliance, closer to the moment of creation. This is what the Geppetto system is all about: your idea and its manifestation at the speed of light...bringing characters to life.” •••



Robert Coker marked his sixth anniversary as Super 78’s Senior Show Writer | Creative Development this past October. His most recent projects include “20,000 Leagues,” “Dino Tour,” “Reef Rescue,” and “Alpha Flight.” www.super78.com



At FlyOver Iceland guests soar over Iceland's varied landscape. The attraction uses ISAAC as a platform for show control. *Photo courtesy of FlyOver Iceland*

Visualization vectors

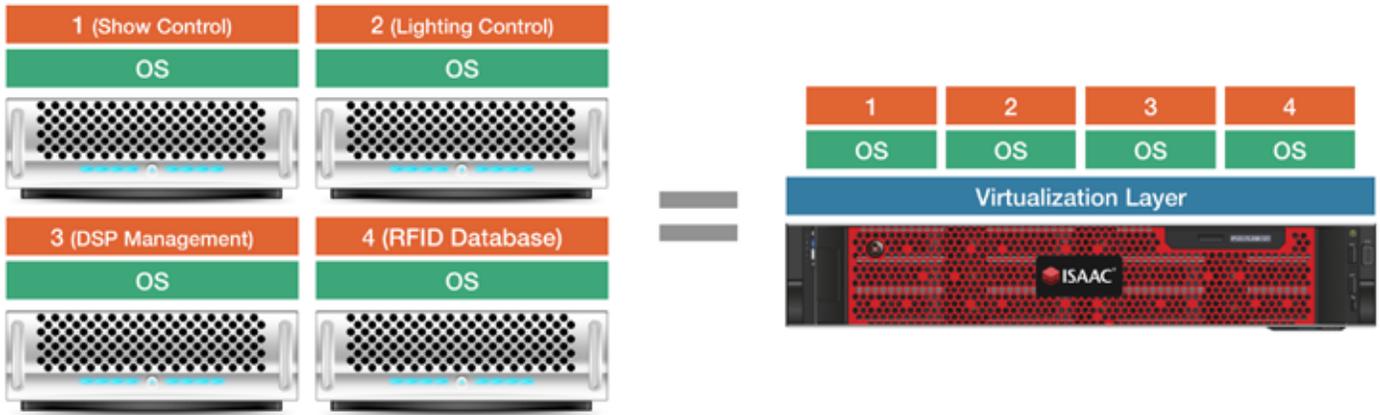
The value of Smart Monkeys' ISAAC for smaller scale projects and standalone attractions

by Judith Rubin

Within the themed entertainment industry, when integrators, manufacturers and designers spec project systems, increasingly they turn to something called ISAAC.

ISAAC is a product from Smart Monkeys Inc. that brings state-of-the-art, IT-style, network technology to parks and attractions. Smart Monkeys and ISAAC were recently in the news when Electrosonic was honored at the AV Awards for its work on Warner Bros. World™, a new theme park in Abu Dhabi using a network-based, parkwide control system that depends on ISAAC.

ISAAC started to gain real traction in the attractions sector a few years ago, when the Tom Bradley International Terminal at LAX received a TEA Thea Award in 2016. It has since been adopted in large-scale, one-off projects such as those mentioned above, where the design includes multiple units and extensive custom programming. But ISAAC also has a place in smaller and standalone attractions, where operators have been reaping its benefits in smaller, off-the-shelf, plug-and-play form factors. Recent installations include 28 Liberty - a high-end residential development in New York City; and FlyOver Iceland - a new flying theater from destination attraction developer Pursuit.



By providing hardware consolidation, ISAAC requires less space, less power, less cabling infrastructure, and together these lead to cost reduction.

OPPOSITE: At FlyOver Iceland guests soar over Iceland’s varied landscape. The attraction uses ISAAC as a platform for show control. *Photo courtesy of FlyOver Iceland*

Other, enthusiastic ISAAC collaborators include leading manufacturers such as show control provider Medialon; and RealMotion, a real-time media server company. Both have partnered with Smart Monkeys to customize their own, proprietary products to be compatible with ISAAC.

ISAAC in Pursuit

Destination attraction operator Pursuit, part of Viad Corp., opted to modernize the technology package for its newest flying theater, using ISAAC in the system of FlyOver Iceland, which launched on August 28, 2019 in Reykjavik. It is the third in a series of standalone “FlyOver” flying theaters that began with FlyOver Canada (Vancouver, 2013) followed by FlyOver America (Minneapolis, 2015). The Vancouver location reports 3 million attendance since opening. Pursuit operates the Vancouver and Reykjavik theaters with others soon to come in Las Vegas (2021) and Toronto (2022).

The FlyOver theaters combine dome projection, a six-DOF motion platform and special effects. The seat bank moves passengers into the dome, feet dangling, to immerse them in a scenic aerial journey through the region. Creative partners on FlyOver Iceland include such distinguished names as Rick Rothschild, Dave Mossop and Moment Factory. The ride system came from Brogent while Kraftwerk provided the ride AV system. The ISAAC show control and house AV systems were provided by Electrosonic. Local installation support was from Exton ehf.

“I was introduced to ISAAC at the Smart Monkeys booth at a past InfoComm show, and I was instantly intrigued,” said Eric Sambell, Global Director, Construction and Entertainment Technology, FlyOver Attractions. “Smart Monkeys was the only company providing a virtualization system for show control, specifically focused on Medialon, which is the core of our show control strategy. Over the couple of years leading up to the FlyOver Iceland project, we worked through the requirements to ensure all the key systems could be virtualized, which allowed us to move forward.”

Describing the role ISAAC plays in the operation of FlyOver Iceland, Sambell said, “ISAAC provides a redundant, virtualized platform for our Medialon show control, GrandMA lighting control and various secondary applications. It coordinates the operation of the ride, preshow spaces and the overall building. Uptime is absolutely critical for a standalone attraction; if we’re not operating there’s no revenue, so redundancy is key. By using ISAAC we were able to eliminate the need to carry multiple spare machines and reduce the need for our staff to know detailed configuration steps to set them up in case of a failure.”

Unpacking redundancy, failover & virtualization

Sambell pointed to virtualization, redundancy and failover as features of ISAAC that made it most appealing for FlyOver attractions. Stephan Villet, Managing Partner, Smart Monkeys, explained that ISAAC, being “redundant by definition,” does away with steps and physical equipment that have traditionally been part of backing up a complex attraction system.

A select list of attractions using the ISAAC platform

- 28 Liberty, New York, NY
- FlyOver Iceland, Reykjavik
- The Shed, New York, NY
- The dynamic guitar-shaped tower at the new Hard Rock Guitar hotel in Hollywood, FL
- Easton Town Center, Columbus, OH
- Liberty Center, Liberty Township, OH
- St. Louis Aquarium, St. Louis, MO
- Exelon HQ, Philadelphia, PA
- Comcast Experience, Philadelphia, PA
- Stories of the Bible at the Museum of the Bible, Washington DC



Stephan Villet



Eric Sambell



Geoffrey Platt

Redundancy and virtualization work hand in hand. “A redundant ISAAC system eliminates the need for special programming as well as separate backup files and equipment,” said Villet. “The user checks a box in the interface to direct the platform to create the backup; everything is hosted internally in virtual form.

If something breaks down, ISAAC detects it and implements the redundancy, according to Villet. “Should there be a hardware failure, the failover response is automatic and immediate on the part of ISAAC. Most of the time - in the few cases we have seen it happen - the owner wasn’t even aware the failure had occurred until we showed them the log.”

How does virtualization work? A typical model for running an attraction is a series of networked PCs loaded with specific software. ISAAC duplicates this model but virtualizes the machines and their content, meaning they don’t exist as physical machines, but rather as software configurations on the ISAAC platform, which lives on a server in an equipment room. The amount of physical equipment and black boxes is reduced and the equipment room itself becomes more like an IT data center. Authorized users access ISAAC through a secure web interface, from any location. Though ISAAC is relatively new in attractions, the base concept is not new. Similar platforms have long been adopted in other sectors.

The shift to using ISAAC has shifted Sambell’s approach to attraction technology. “The biggest change is the focus on networked interfaces, which is required in a virtualized environment. It’s meant changing our mindset on how we deal with things like timecode, contract closures, and RS-232. We now avoid them whenever possible, but otherwise the wide selection of reasonably priced interfaces available allow us to use them where necessary.” He reports that ISAAC will soon be part of FlyOver Canada as well. “We’re running our original hardware from when we opened in 2013, so when it came time to upgrade we decided to change to ISAAC, in a phased implementation,” he said.

RealMotion and 28 Liberty

RealMotion servers + ISAAC is a technology combination customized within the IEMS (Integrated Environmental Media System) at the Tom Bradley International Terminal cited above - notably for the update of the iconic Clock Tower display - but is also available in a plug-and-play version for smaller attractions. As mentioned earlier, RealMotion has collaborated with Smart Monkeys to configure its product to ensure compatibility with ISAAC, providing its clients with a full array of tools for managing and scheduling media - and supporting creative - in corporate and public spaces such as those found at 28 Liberty.

28 Liberty is the multi-million-dollar transformation of a 60-story, former bank headquarters in lower Manhattan into a high-end residential tower, owned by Sun Glory, Ltd. The project team included Gensler (architecture), Pentagram (graphic design) and Technomedia (design, engineering and installation of the LED system).

Digital content creation studio Float4 was tasked to create, produce and manage content for a 34-foot by 25-foot LED lobby display and LED ribbons in the retail area that showcase eye-catching visuals. Both of these enhancements are powered by a customizable content management system developed on the ISAAC platform, housed on a pair of RealMotion servers.

“The integration of RealMotion into the ISAAC platform allows us to easily offer a customer friendly front end for operation and scheduling of content and control through ISAAC’s content management system,” said Geoffrey Platt, Director of RealMotion. “From the video and content creation viewpoint, we are working in a real time rendering environment which allows quick access and changes to any scene or generative content piece. This also allows us the ability to easily integrate other third-party software and hardware to create interactive experiences.”

“By combining data driven content, refined visuals and a turnkey technological solution, the building is equipped with a 24/7

platform that informs, entertains and engages building occupants and guests,” said Float4 Founder and Creative Director Alexandre Simionescu. “We produced an attraction in the building’s common areas, indirectly driving crowds and revenue to the owners and tenants. One of my favorite capsules is data-driven and displays visuals depicting lower Manhattan and weather conditions that are sourced in real-time. It’s a great way to convey information elegantly,” said Simionescu. “Interstitials, which we use as transitions between content capsules, were also created to echo the property’s iconic art pieces.”

A leading feature of the current version of ISAAC is what Villet termed its “new integratory content media management capability.” A drag-and-drop interface enables it to ingest new content – then distribute, manage and archive it, and make it available for editing – without the user needing to load it onto the server. “Using templates, it can be incorporated and part of the display within seconds,” said Villet. Benefits include protecting IP and brand consistency.

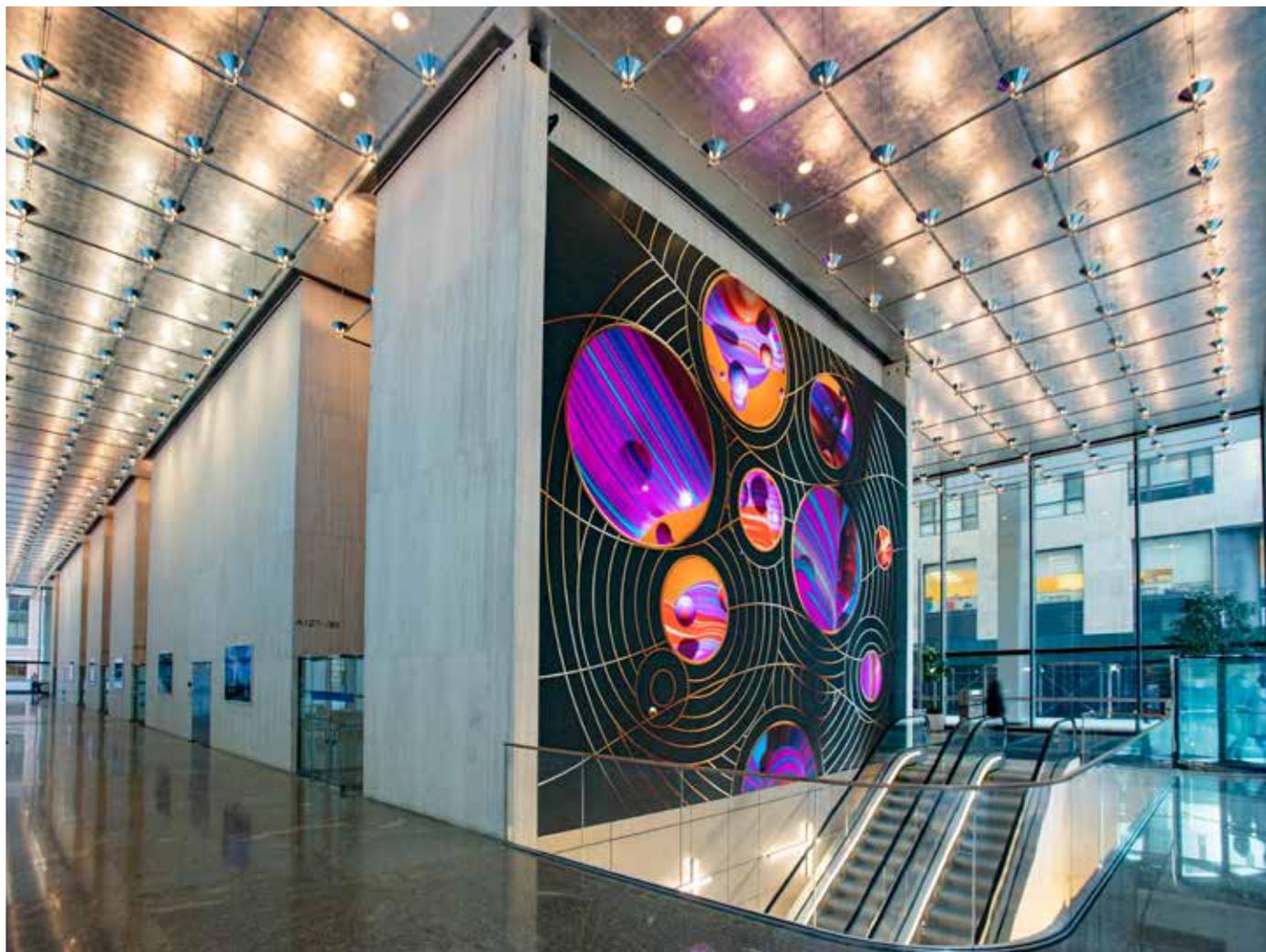
“We primarily work with various departments that specialize in interactivity, visual effects, live event design and general video

design,” said Platt. “From our end we have implemented Smart Monkeys’ API into our RealMotion software to ensure full compatibility with ISAAC. We love our partnership with Smart Monkeys. They share the same values we do with creativity, innovation and being on the leading edge of technology. ISAAC has absolutely changed the way we approach a project. Project teams should be considering it in the conceptual phase.”

Shopping for ISAAC

Smart Monkeys offers ISAAC in two off-the-shelf configurations with smaller attractions in mind: Prelude and Nemesis. Prelude is the smallest, a one-server version with no redundancy. Nemesis is a multi-server, scalable cluster solution with redundancy. Both Prelude and Nemesis have been on the market for some four years and will soon appear on a new, ISAAC-dedicated website.

Smart Monkeys will have an exhibit booth at IAAPA Expo Orlando 2019 demonstrating the workflow of ISAAC and RealMotion. For more information or to set up an appointment, contact Stephan Villet, steph@smart-monkeys.com. •••



In lower Manhattan, 28 Liberty uses ISAAC to provide real-time information and captivating artwork for residents. Photo courtesy of 28 Liberty

Telling tales with tech

Jora Vision helps bring theme park design skills to cultural attractions

by Simeon van Tellingen, Jora Vision

Dutch company Jora Vision, known for creating immersive experiences for theme parks and museums, has recently been applying its expertise for the benefit of cultural and corporate attractions. Seeking new ways to bring their stories to their audiences and enhance their status as tourist destinations, more and more visitor centers and museums are exploring and embracing immersive, theme park storytelling techniques as an alternative to traditional exhibit design. Having designed and built several such immersive experiences, Jora Vision has established itself as a leader in this market.

“We are very proud to pave new ways for cultural attractions to bring their stories to life,” explains Jan Maarten de Raad, CEO at Jora Vision. As an example of this approach, he cited the Young Rembrandt Experience in Leiden. “We were asked by the city of Leiden to create a new immersive experience about Rembrandt, in the house where he actually received his first painting lessons,” says de Raad. “We used a combination of decor and projection mapping, and the story is told from the perspective of Jacob van Swanenburg, Rembrandt’s teacher. “The combination of video, audio, music and decor is working very well; most people leave the experience touched - and some even with goosebumps!”

Creating storytelling environments

A distinguishing element of Jora Vision’s approach, compared to traditional museum design methodology, is the concept of placing the guest in a particular space, within a specific time



Jan Maarten de Raad

period and for a specific reason. This is a concept which has been applied to theme parks for a long time, but less so in cultural attractions. “We used this approach for ‘Mon Beaujolais’ in Hameau Duboeuf,” explains de Raad. “Visitors enter a replica wine cellar and sit on one of the benches because a storm is brewing and they need shelter. Meanwhile, the vineyard owner enters the room and tells the story and history of the Beaujolais region. These stories come to life all around the room, thanks to the combination of large projection screens integrated within the show sets and video projection mapping on top of these show sets.”

Many projection mapped experiences are outdoor, non-story-based shows with images that appear on the exterior of big buildings. Sometimes mapping is used as an indoor effect on



Jora Vision’s concept drawing for the Los Piratas de Bacalar cultural tourist attraction in Mexico. All images courtesy of Jora Vision



TOP & BOTTOM LEFT: Mon Beaujolais in Hameau Duboeuf places visitors in the vineyard house in the midst of a storm.
 BOTTOM RIGHT: The Young Rembrandt Experience in Leiden places visitors in Rembrandt's painting school in Leiden, Netherlands

shapes or screens. In this attraction the projection mapping is used on a themed show set specifically designed for this purpose and used subtly to magically bring to life what is being explained.

New projects in Mexico and China

Another cultural tourist attraction Jora Vision recently developed on a larger scale is “Los Pirates de Bacalar in Mexico.” This 5,000-square-meter stand-alone attraction has been designed to be part of the retail, dining and entertainment district of the Amikoo theme park complex in Cancun, Mexico. Los Piratas de Bacalar will feature a 50-minute walk-through and ride experience, a fully-themed buffet restaurant and a merchandise shop, all based on the rich pirating history of the Mexican Riviera Maya. The real fortress of Bacalar, Fuerte de San Felipe, built by the Spanish Navy in 18th Century, served as the inspiration for the multi-million-dollar attraction.

“This attraction is one of the most spectacular we ever designed,” explains de Raad. “It not only includes theming, video mapping and animatronics, but also a complete ride system and actors that play different roles throughout the walkthrough experience.”

Additionally, the Jora Vision team is currently working on a new project, still in development: the Panda Museum in Chengdu, China. The project is an initiative of the Chengdu Giant Panda Breeding Research Base, the most renowned and biggest institution for Panda research and protection. The jury of experts praised and therefore selected Jora Vision’s proposal, out of a series of other competitive international designs, as winning company to design the new museum experience.

“We are proud that not only theme parks but also tourist attractions and local entrepreneurs are looking to us to help create immersive experiences,” concludes de Raad. “We love unique and meaningful stories and are thrilled to combine our skills with the knowledge of local organizations and companies regarding the creation of tourist attractions. We look forward to creating many more attractions in the future.” •••

Simoen van Tellinggen is creative director for Jora Vision. Visit joravision.com.

Picture perfection

The secret to in-park photo profitability?
Deliver prints that guests can't get anywhere else

by Cliff Reeves, DNP

The attractions industry, with theme and amusement parks, waterparks, zoos, aquariums, and so much more, is based on delivering an amazing guest experience. Families and groups turn to parks as a way to have shared experiences and create memories that they can build upon and cherish for a lifetime.

Park operators face an array of challenges to ensure continued profitability. Offering park-wide photography services that include printed images has proven to be both effective and very popular with customers.

Technologies such as green screens and augmented reality provide a tangible product that can't be produced on a smartphone or standard point-and-shoot camera. These photos are vastly superior to the quality of a smartphone image – and guests are willing to pay more for high-quality printed photos.

In order to assure in-park photography profitability, parks need to capture photos that are hard or impossible for people to take on their own, and then provide a level of print speed, quality, sizes, and finishes that cannot be duplicated by an at-home inkjet printer.

Capture the Experience

Photos capture the emotion of the moment, and park photo souvenirs serve as a reminder of the positive experiences and feelings. Within parks, it's critical to have areas pre-scouted and designated to help park visitors get great shots – whether in front of a popular ride or landmark or a uniquely staged photo opportunity. Then, photographers with professional equipment can be stationed in these areas to help guests step out from behind their own devices and all get into the picture.

Areas where guests can stand in front of iconic backgrounds or interact with props or mascots are excellent on-spec photo opportunities. From entry-gate photos to on-ride action shots to green screens, the key is to take the shot that guests simply cannot capture on their own.

The stand-alone professional photo and the complete souvenir package reinforces the kind of emotional bond that can lead to repeat visits and prints with a park logo or custom borders are among the most popular items sold at attractions around the world.



Search for iconic or fun backdrops when situating photo personnel to capture groups having fun. Photo courtesy DNP.

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Capturing unique and special moments is one way to ensure guests will want to purchase a print photo. *Photo courtesy DNP*

Deliver the Experience

The technology behind producing on-the-spot photo prints is just as important as the capture device in protecting the quality, guest satisfaction, and profit margins. The two most widely used photo printing methods available are inkjet and dye-sublimation. Inkjet printers spray droplets of ink onto specially coated papers. Dye-sub printers use a dry technique that diffuses dye onto paper. Dye-sublimation printing offers several advantages, including higher profit margins, lower maintenance, and very fast printing speed – in addition to producing amazing-looking, durable photo prints.

High-quality dye-sublimation systems can turn out prints in a wide range of sizes, and compact enough to readily fit photo booths and concessions. Operators need to be able to produce prints quickly while the guests' interest level is high. Dye-sublimation printers can print full-bleed customized images in a matter of seconds.

And unlike ink technologies, there is no smudging, running, or blotching because prints are dry and ready to touch as soon as they leave the printer. Dye-sublimation prints are resistant to fingerprints, dust, and fading, and typically are available in glossy, matte, fine matte, and luster finishes. Implementing a high-quality dye-sublimation solution also minimizes downtime, ensuring photo operations are running and producing prints without delay.

Enhance the Experience

Perfect for creating spectacular action and fine-art-type prints, the availability of new specialty dye-sublimation media delivers amazing photo print output quality that will please customers and

keep them coming back. Luxury dye-sublimation paper media enables photographers to greatly enhance customer print options – and deliver unique, high-quality prints that customers won't find anywhere else.

Specific products like DNP's Metallic and Silver Pearl media provide the most vibrant and unique dye-sublimation prints the industry has ever seen, allowing park professionals to set their images apart with quality and creativity.

Metallic media accentuates eye-popping color for vibrant images – bringing out the bright energy, color, and detail of photos, a perfect media for exciting, high-color action photos. Silver Pearl media provides incredibly natural-looking skin tones while softening edges to deliver a fine-art look and is ideal for exclusive in-park portraits including birthday, graduation, seasonal, or wedding and engagement photos.

Park-goers routinely make – and indeed want to make – spontaneous, unplanned purchases in theme and amusement parks. Dye-sublimation printers with specialty media can print high-quality, full-bleed, eye-popping, customized images in a matter of seconds, ensuring every print is ready and available for purchase – even before the experience is over. And guests will need to re-visit your park again to recreate and build upon the experience because they can't get it anywhere else. •••



Cliff Reeves is US and International Sales Manager; DNP Imagingcomm America Corporation. Visit dnpphoto.com.

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