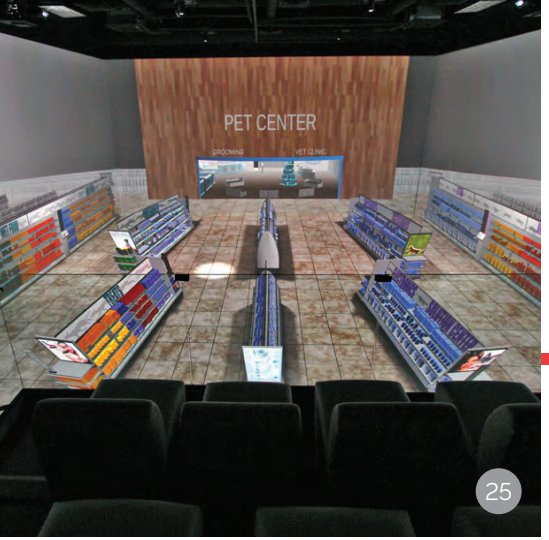
QUINCE IMAGING

Demystifying Projection Image Mapping

Fully Harness the Power of Immersive Technologies for Experiential Live Events

Professional Sports, University, Corporate and Retail Projection Mapping Case Studies Inside!



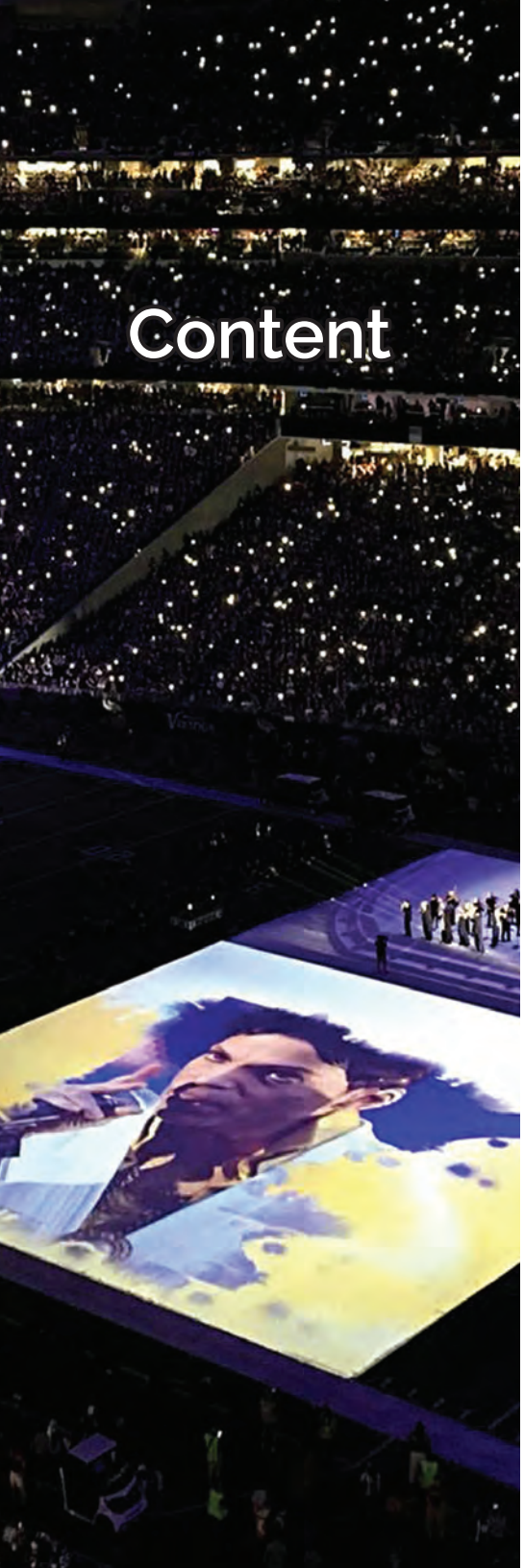
Quince Imaging is a forerunner in the field of projection image mapping engineering and has pioneered the use of immersive technologies in Retail, Sports and Corporate applications. Venues shown here: the Virtual Retail Store of the Future (Mars Petcare, page 25); Sports Arena Projection (University of Florida, Gators, page 27); and Corporate Entertainment (Market America, page 23).

Demystifying Projection Image Mapping

Fully Harness the Power of Immersive Technologies for Experiential Live Events

In this Ebook, you will Learn:

- Detailed History of Projection Image Mapping
- Optimal Technology and Infrastructure for Successful Live Event Activations
- How projection image mapping is creating an impact across diverse markets, including Sports, Corporate Entertainment, Retail and Special Events for live audiences, with specific case study examples



Content

Quince Imaging illuminated the Minnesota Vikings half-time show, projecting 3D imagery onto the field for U.S. Bank Stadium's Opening Night on September 18, 2017. The image mapping, which featured a tribute to hometown iconic pop star, Prince, required a unique installation to accommodate integration of projection mapping hardware including projectors, media servers, multi-channel audio playback and high-resolution graphics, all within a single day at an astounding stadium height of 200 feet! **Video: https://vimeo.com/205582095**

Summary

An Educated Consumer is Our Best Customer!

Outstanding projection image mapping projects result from a successful combination of powerful ideas, compelling structures, optimal technologies, and the creative work of experienced, skilled professionals that captivate and astonish live audiences! Projection image mapping is a unique and technology-reliant art form, that requires a thorough assessment of diverse technical components in order to derive maximum value from the highly sophisticated medium. We exist in a world where digital displays go beyond our fingertips; they surround us both at home and in the public space.

The idea of “pixels everywhere” is a tantalizing thought when we consider how we communicate and share experiences. Born from the desire to truly move people – in spirit and in action - we now have the tools and knowledge to virtually transform physical structures using extreme-scale visuals.

An educated consumer is our best customer!

Photo: United Center Arena, home of the Chicago Bulls and Blackhawks, made history as the first permanent, dual-arena installation by Quince Imaging. In addition to providing custom content creation, systems integration and installation services, Quince also designed a custom solution to maximize service-ability of projectors and cut maintenance costs.

Introduction

Originally known as "video mapping" or "spatial augmented reality," projection image mapping has become a widely requested communication experience, often used as a complement to big-room events and installations for brands, governments and entertainment. Supporting this movement is increased accessibility to tools, resources and the knowledge required to create these larger-than-life experiences.

Initially, it was the practical demands from corporate events that drove development of projection image mapping tools and technology. In parallel, advancements in defense-simulation technology helped define requirements for high-quality projection image mapping, such as creating a seamless visual experience, supporting higher frame rates, minimizing judder, improving image uniformity, and enhancing color reproduction.

Projection mapping, as we know it, is quickly becoming the catalyst for how we approach visual communcations. Giving us a new way to market ideas and products; to entertain large masses and simply tell stories on a much grander scale, it also transforms and enhances average-looking surfaces and makes them more aesthetically pleasing.

The big driver behind projection-mapping projects is the use of compelling visuals to blend stories, information, and even calls-to-action, to create profound experiences.

Photo: The United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of the United States, Canada (UA), collaborated with Kelly Press and Quince Imaging to create an immersive opening-day experience for their five-day convention on August 1, 2016. Using 20 large-venue projectors, Quince Imaging designed a unique image mapping solution to display high-resolution, 3D images onto a massive 270-foot by 31-foot screen surface. The expansive screen space was converged into a single pixel space, creating a crisp image, over 10,000 pixels wide. Harnessing the power of media-server technology, high-powered projection and 3D design, the production team was able to deliver a captivatingly immersive opening-day experience to over 3,000 attendees.

It's Math Physics and Geometry

The same math and geometry that defines immensely complex shapes, such as dodecahedrons, is being used to precisely define and map surfaces that are anything but flat, and then fully transform their appearance.

The same principles must be applied – driven increasingly by computer algorithms – to measure, map and develop a framework in the software. That framework can be used to build a digital creation, able to transform anything from the architecturally broken surfaces of an old castle to a Hollywood streetscape.

Pentagonal symmetry is all around us – applied over a period of centuries to both science and art. The rise of projection mapping reveals that it is being applied in remarkable new ways.

Photo Array: Yahoo Time Capsule event. A milestone in the evolution of widescreen image display and architectural projection, Quince Imaging first visualized and surveyed, then engineered a solution to provide the world's brightest lights to beautifully bring forth an amazing image mapping display projected against the uneven surface of Red Rock, in October of 2006, in Jemez Pueblo, New Mexico.

The Roots of Projection Image Mapping

Photo: One of Quince Imaging's earliest corporate projection image mapping events took place at the 2013 CABI sales conference. Quince extended traditional corporate widescreen projection by infusing the backdrop between each of the widescreens with video-mapped content, adding a seamless, immersive component to the presentation.

Projection mapping is now the most commonly applied term for transforming spaces and structures with projected, controllable light pixels. However, it's also referred to with terms, such as: video mapping, pixel mapping, monumental mapping, architectural mapping, scenic projection, environmental projection and large-scale projection.

The specific art form of transforming a large surface using projections traces back several decades, but the influences go back centuries. We find references to pinhole cameras, projecting images of their surroundings, dating back more than 2,000 years to ancient Greece and China. In 17th-century Europe, candles and oil lamps were used as light sources for "magic lanterns" that projected images painted on glass slides onto surfaces.

Going back some 80 years, people started using slide projectors to transform concert and theater stages. Productions on Broadway and in London's West End dabbled with projection between the 1920s and 1930s. By the 1950s, projectors were being used to blend theater, opera and dance productions with massive projected backdrops.

Also at the end of the 1960s, the "Imagineers" of the Walt Disney Company started applying projection technology to small, very focused surfaces. For the Haunted Mansion ride at Disneyland, Disney's creative engineers shot the faces of five actors singing the attraction's theme song, and then projected the 16mm film output onto busts. The ghostly, disembodied singing heads were what some technical observers say was the first commercial instance of projection mapping onto a complex curved surface. Visual artists began taking their work outside by the 1980s, using powerful, large-format projectors – the forerunners of today's architectural projection spectacles.

Roots of Projection Image Mapping

The light and sound show that took place on the iconic Grawemeyer Hall at the University of Louisville celebrated faculty, staff and students, exceeding their campaign goal of $1 Billion.
video: https://vimeo.com/107283106

While artists found ways to push limits of slide projectors, the introduction in the 1990s of bright, computer-driven commercial projectors was the shining moment of the art form.

Enhanced brightness led to greater possibilities, and ideas, once constrained by limited light, became a reality. Computer graphics sped production and made full-motion video and graphics possible without film.

Corporations started working with staging and event companies by the early 1990s, using projection as a powerful, over-scaled backdrop for presentations to investors, customers and the press. Staging companies began keeping projection technology in rental inventory, allowing fast turnarounds on events, while still controlling costs for event producers. Corporate presentations evolved over time and began to include product launches and splashy events, which allowed the general public to see these ambitious shows, projected onto flagship stores or public landmarks while still minimizing costs

As the equipment became portable, brighter and rugged, mapped outdoor structures evolved beyond simple projection onto large buildings used as screens. Intrigued artists began looking at the shape, contours and colors of a structure, and wondered how they could take this concept further.

Many of the best, most active imaging companies now have years of experience. The tools and technology are steadily improving, and more visual artists are finding their way to this medium; intrigued by all the possibilities. Great projects now have storylines and visuals that fully integrate with surfaces.

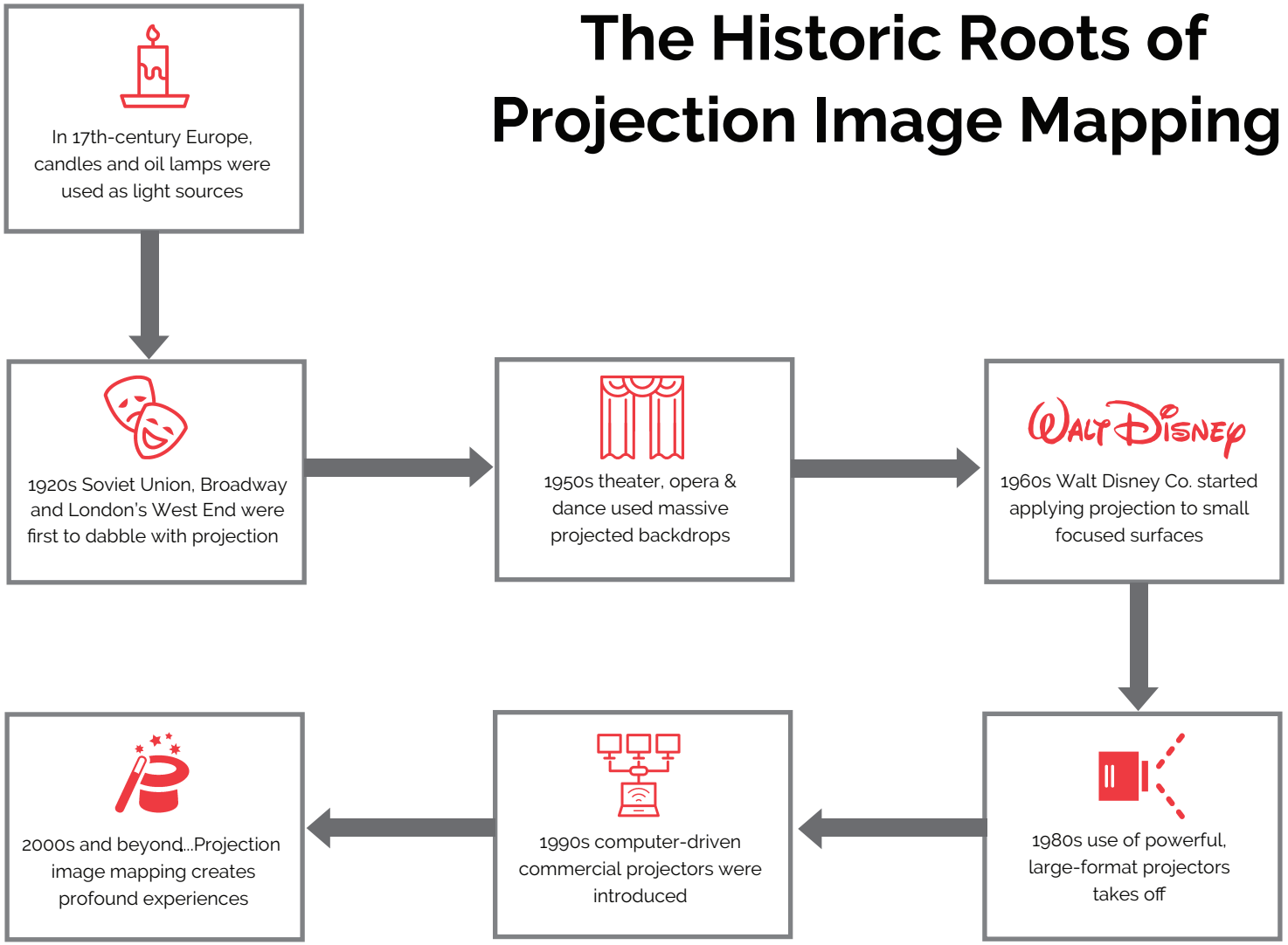
Beginning from roots of using elemental tools to put visuals on an unusual surface, new technology, tools and bright, creative minds are reinventing and transforming our surroundings.

Getting started requires an understanding of the stakeholders, technologies and operating

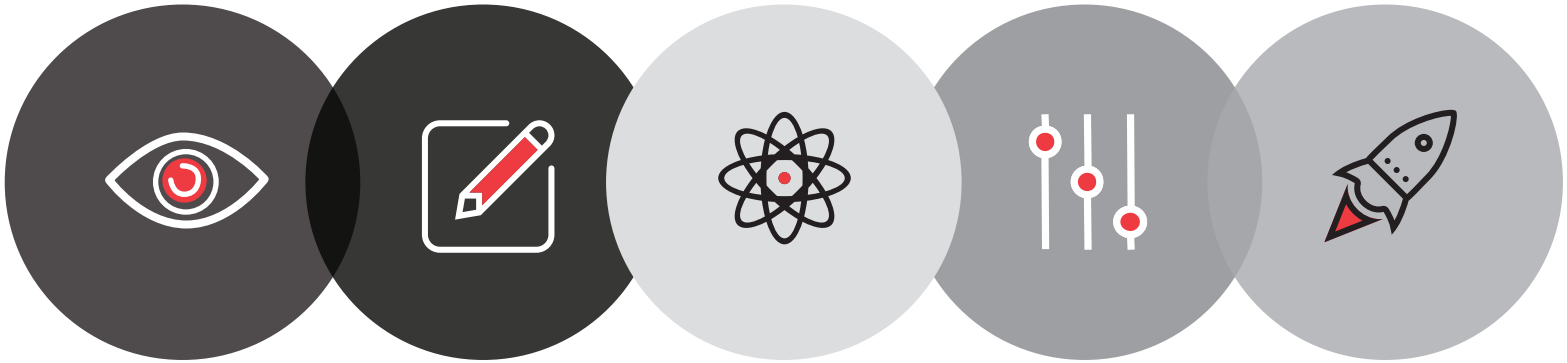
methods. Equally important is the ability to think beyond the use of a structure or object as a screen and to develop a big idea with a plan that has lasting impact.

Projection mapping as we know it is quickly becoming a catalyst for the way we approach visual communications, giving us a new way to market ideas and products, entertain in large masses; to simply tell stories on a much grander scale, while transforming and enhancing ordinary surfaces to make them more aesthetically pleasing.

The Historic Roots of Projection Image Mapping



Our Process



1	2	3	4	5
VISUALIZE	PLAN	CREATE	TEST	LAUNCH

Putting a Project Together

OBJECTIVES

The best technical and creative work invariably traces back to a well-considered, fully defined set of communications objectives. The client should be clearly able to express an idea and a desired outcome.

That outcome could be a goal to generate excitement and viral buzz about the public launch of a new consumer product or brand. Alternatively, it could easily be an effort to help make an audience aware of a milestone – such as a centennial – and to reflect the event in visuals that make people both appreciate and understand its significance.

On June 16, 2014, Arlington National Cemetery commemorated its 150th anniversary with a first-ever evening performance in the Memorial Amphitheater. Honored to participate in this major historical milestone, and pay tribute to the hundreds of thousands of active-duty military members, veterans and their families, Quince Imaging prepared a spectacular feast of storytelling images, including a host of historical American leaders and artifacts, then mapped the entire production across the intricate, concave surface of the Amphitheater.
Video: https://vimeo.com/98583624

The objective may be a monumental statement or used only to help create or complement an environment – like ambient visuals for a party. In those cases, the visual displays are intended as accents that energize the space and set a tone, but are not intended as focal points.

Putting a Project Together

AUDIENCE

Many questions need to be asked and explored regarding the audience of a projection mapping project.

These include:

- How large is the crowd?
- Are they seated or standing?
- How far back will they be?
- How wide is the viewing zone? Will those at the sides see the visuals properly?
- Does the performance include audio, and if so, what's the audio delivery technology?
- Is this a scheduled performance that people come to watch with a hard start and finish, or is it intended as continuous ambient material?
- Do the content plans and objectives make sense for the composition of the expected audience and the tone of the event? (For example: Is the planned program appropriate?)
- Are there any aspirations to make the event interactive with audience participation through gestures, sounds or any other means?

CHARACTERISTICS

What are the characteristics of the structure or object that will be mapped, and how will its contours, shades and physical properties affect the ability to deliver a compelling visual spectacle?

Traditional projection works with flat, planar surfaces that offer uniformity and a surface optimized for visuals. Projection mapping is almost invariably applied to surfaces that are not flat or uniform, or in some cases, not even solid. Projections have been done successfully, for example, on vapor screens created by water jets.

If the surfaces are outside, the color may change when it rains and make a light surface dark and thus, the projection muted. Ultramodern structures, like the sails of Sydney's iconic opera house or the cylindrical curves of New York's Guggenheim Museum, present a uniform color palette, yet they are anything but flat, requiring precision scaling, warping and custom blending.

Even tall, rectangular, modern office towers present challenges. They're usually flat and uniform, but the glass of the office windows – or the full tower façade – can't reflect light. Projections pass through, unless the glass gets a layer of reflective film or scrim. Finally, the sheer scale of the targeted surface will dictate how many projectors; and what kind of lighting power, will be needed.

Due to the historic architecture of the Memorial Amphitheater, Quince Imaging faced and overcame many complex barriers, including exposure to the elements, power limitations and building access constraints such as lack of ADA compliance, including proper ramp access to transport heavy equipment.

Putting a Project Together

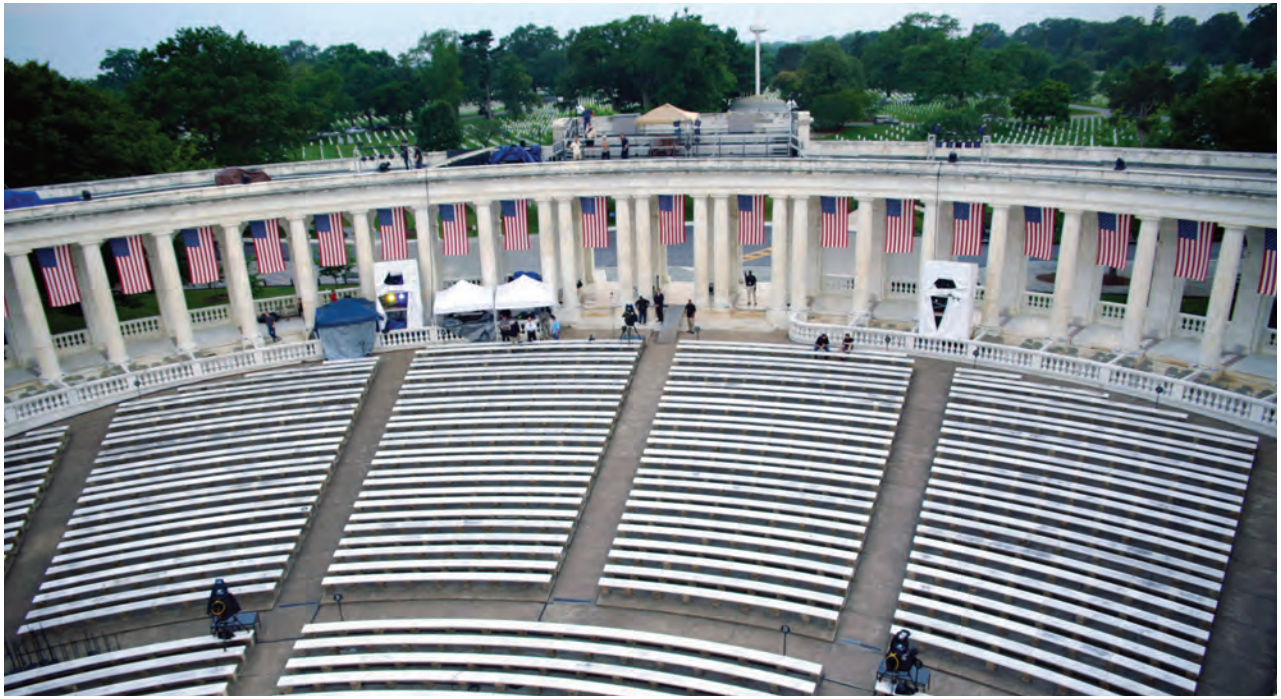
SITE CONDITIONS

Technology and creativity can overcome the characteristics of most structures or objects targeted for projection image mapping projects, but a thorough site inspection at the start of any project is essential.

Both the technical and creative leads need to inspect the site and the environmental and physical conditions that can affect the presentation and technical operations.

Those considerations include:

- The amount of ambient, surrounding light
- Obstructions on the projection path, such as trees, streetlights and power poles
- For live performances, the movement of people potentially in the projection path
- The distance, location and height of projector positions, which inform decisions on the brightness and number of projectors needed, as well as the lenses and media devices required
- Power availability
- Weather conditions, not just temperatures and moisture, but wind as well
- Rooftop access or possible line-of-sight window access



Architectural projection image mapping, especially on complex, textured surfaces requires extraordinary attention to detail, specifically where the placement of projectors is concerned. The Memorial Amphitheater required 8 projectors, in two locations, stacked within 20-foot towers. Tents for production staff and media servers were also a necessity for seamless delivery of the presentation.

LOCAL APPROVALS

Projects in public spaces will almost invariably be subject to the rules and regulations of local governments, and those can vary considerably even within the same metropolitan area.

Bylaws dictating advertising, lighting, noise, temporary structures, public offerings, traffic and parking may not only affect the scale of a project, but also determine whether it will even be allowed. It may take multiple approvals – due to jurisdictional rules and coverage – to get approval for one event.

Local approvals can also stretch timelines because of paperwork, process and even public hearings. Involving someone on the project team, familiar with the local government and its regulations, is often critical to executing a project, particularly within the planned timeline.

Putting a Project Together

TIMELINES

Every project is unique, but more time for planning, development and execution tends to have direct ties to the final degree of excellence. Projection-mapping projects have been pulled off in as short as one week, but industry experts prefer to have much more time to fully deliver on objectives, as well as control costs and minimize chaos. The most ambitious projects can take a year or longer from the idea stage to the event launch.

Integrators and staging companies can often respond on relatively short notice, but what truly takes time is the creative effort. Minutes of motion graphics and video can require weeks or months of significant work to move through the idea stage, storyboard concepts, drafts, revisions, rendering and testing.

In some cases, creative work is available that readily translates to the targeted projection surface. Projection mapping done well, however, is so much more than finding a massive surface to display broadcast or online creative content. The best projects use structures as more than merely screens.

BUDGET

Brighter projectors and advanced software are steadily reducing costs on projects by illuminating a broader surface with fewer projectors, by either automating or greatly simplifying many of the planning and set-up tasks – such as alignment – that historically have required many man hours. Some of the features – such as design or content costs – cannot be as easily resolved through technology.

The good news is that — unless the installations are designed to be permanent — producers of most projects can limit capital costs by renting projectors, related technology, structures and other gear required to execute a given event.

Once a site survey is done, an experienced producer will have the knowledge and tools to estimate how many projectors are needed and what supporting, on-site infrastructure is required. The producer, creative director and client will then collaborate and reach decisions on the breadth and complexity of the creative content, which will help determine an estimate on those costs.

Due to the complexity of projection-mapping projects, and the fact that no two projects are alike, each installation requires careful budgeting to keep costs contained while achieving spectacular results. Depending upon the requirements, an installation may also entail the same level of coordination and equipment as a major public concert in an urban area.

Working with an accurate 3D scan and model of the facility in advance, enabled Quince's engineering and design teams to optimally place the projectors precisely enough to fill in the entire 180-degree ratio of the amphitheater's upper archway.

PROJECT TEAM

Typical projection-mapping projects include these key roles, along with the teams who support them

CLIENT

PRODUCER

Overall project lead – requires strong background in both engineering and design. The producer serves as a bridge between creative and technical team members. Serves as liaison between client and project team.

PROJECT MANAGER

While the producer handles the project at a macro level, the project manager plays a critical role in assessing and navigating every detail of the project from the ground up.

Design Team

CREATIVE DIRECTOR

Responsible for leading the creative process of the project

CREATIVE SPECIALISTS

Team in charge of executing creative processes, including graphic design and animation

LOBBYIST

Team member responsible for gaining approvals from cities, municipalities, etc., for use of logos in public spaces and/or allowing projection on buildings, etc.

Engineering Team

PROJECTION ENGINEER

Team member experienced with both design and media; in charge of implementation of successful image projection on various surface types

ENGINEERING SPECIALISTS

Unique team of individuals that specialize in properly installing equipment, cabling, ensuring connectivity and other event site operations; then performing the precision work necessary to optimize the presentation

MEDIA PRODUCTION MANAGER

Team member in charge of final production of all media assets for the event, including imaging, graphics, animation and sound

Sample Project Timeline

Six Months Out

-- Initial project partner meetings and selection

-- Concept development

Five Months Out

Initial site visits --

Project and creative content proposals --

Project cost quotes --

Partner selection and commission --

Four Months Out

-- Formal site survey

-- Start local government submissions and approvals

-- Creative and technical partners selected and engaged

-- Surface mapped/scanned and photographed: virtual model created, then brought into design software

Three Months Out

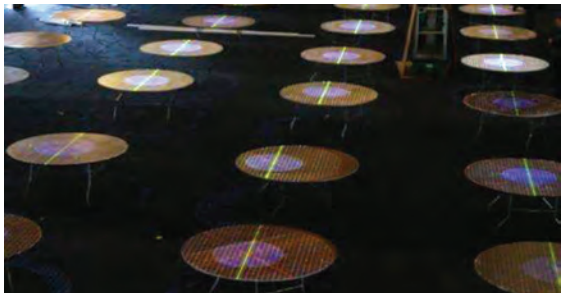
First proofs of content available to review --

Creative content revisions and additions --

Sample Project Timeline

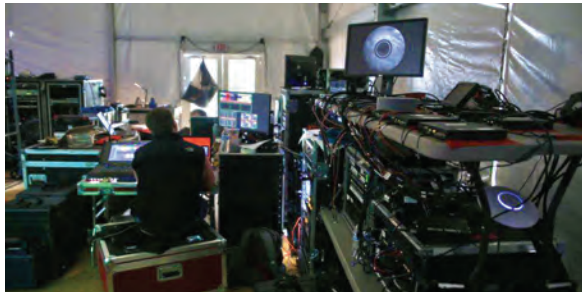
Two Months Out

-- Site planning completed
-- Approvals/permits completed
-- Technology reserved
-- Site infrastructure booked



One Month Out

Final versions of content -- being completed



Two Weeks Out

-- Client sign-off on content
-- Content rendered

One Week Out

Equipment arrives on-site --
Final set-up --
On-site testing --
Rehearsals --

Event Date

Launch!

Projection Mapping Display Components

Projection mapping is a unique and technology-reliant art form, requiring an assortment of specialized display mechanisms to derive maximum results from the medium.

SCALING, WARPING & BLENDING SYSTEMS

Production and playback systems organize and choreograph motion graphics, video, stills, sound and live camera feeds across a broad canvas, illuminated by multiple projectors and sources.

Often, one visual is too large to be driven by one projector, so edge-blending, and related tools stitch multiple displays together to create one image with no perceptible seams. In other cases, technology does the work to create a mosaic of visuals. This scaling, warping and blending is achieved with software; or with hardware management and switching devices supported by software that can layer, mix, define, shape and blend.

Photo: Capital One Arena, home of Washington D.C.'s Wizards and Capitals, received a custom playoff projection-system installed by Quince Imaging in the spring of 2018. The cutting-edge system, and immersive 3D animated content, engaged fans at home games throughout each teams' playoff runs, including the Washington Capitals' Stanley Cup victory.

PLAYBACK DEVICES

Any PC or video source can send a display signal to a projector or management & control device but several companies have developed PC-based playback systems specifically tuned to the high-performance demands of projection image mapping projects. These devices are capable of sending out resource-intensive, uncompressed video and doing real-time video processing. Playback devices have no limit for high resolution imagery.

SOFTWARE

Specialty companies offer tools that manage soft-edge blending and image warping to make the potentially long, painstaking process of aligning projections and stacked projectors relatively fast and easy. Other software applications are designed to make real-time projection for users, such as live performance vee-jays and live theater designers, both flexible and simple to use.

Projection Mapping Display Components

Rigging is a critical component to successful projection system installation. This Barco HDF w30 projector, installed at optimal trim height, ensures operational excellence and seamless in-game display.

DISPLAYS

Many display manufacturers offer consumer and office-grade projectors, but very few have the engineering, experience, installed footprint, and qualified support to drive super-bright visuals for mapped surfaces of any size.

The same technology foundation that drives the most advanced, digital cinemas around the globe is also used for a variety of powerful, commercial projectors applied to mapping. Projector choices are primarily selected based on the amount of lighting power needed.

VISION SYSTEMS

A handful of companies have developed solutions that take much of the complexity out of managing and unifying multiple displays.

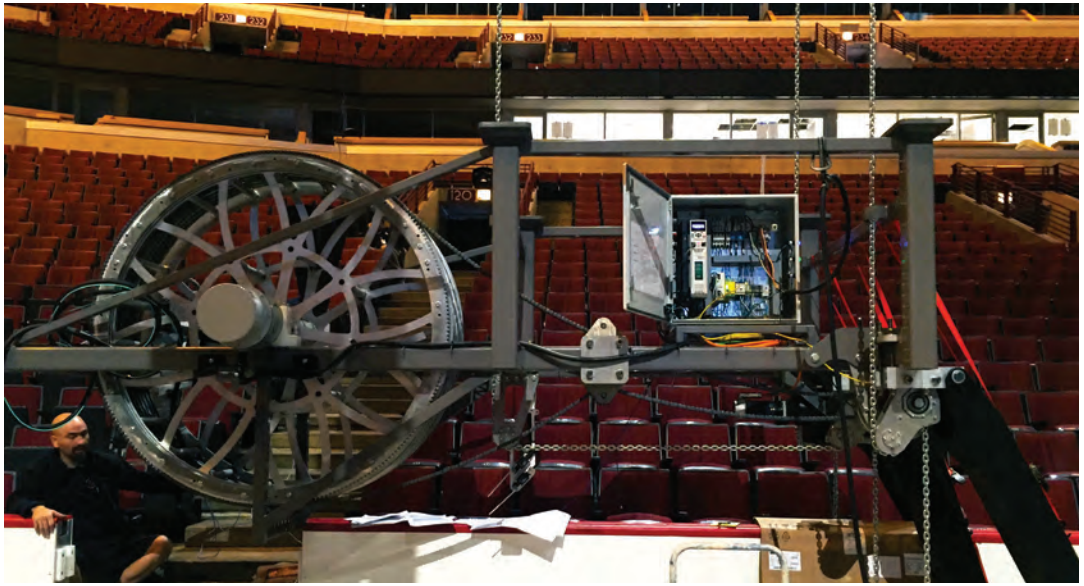
These systems can blend outputs of multiple projectors, including commodity, non-professional projectors, to deliver unified, malleable displays.

ENCLOSURES

Specialty manufacturers design and fabricate enclosures, specifically for sensitive projection systems, that offer protection from damaging effects of heat, cold and condensation – both for temporary and permanent installations.

ADDITIONAL SENSORY FEATURES

Audio considerations are a key factor in supporting and enhancing successful multisensory projection-mapping events. Multi-channel audio and surround sound, in particular, are just two enhancements that can go a long way to create a fully-immersive experience.



The custom winch system is a uniquely automated enhancement, designed to optimally raise and lower projectors with pre-programmed, precise, positioning data and cable management.

The Big Idea

The true wonder of projection mapping derives from the illusion that occurs when a once familiar structure transforms in plain view into a new and unexpected visualization, and the audience cannot distinguish between actual reality and virtual reality.

STORYTELLING POWER

Projection mapping has enormous storytelling power and offers an equally huge, creative outlet to digital artists.

Conceiving and then executing the big idea for a projection-mapping project requires a blend of vision, ingenuity, technical knowledge and considerable experience. Increasingly more tools have been introduced that make execution easier. However, it is important to keep in mind that the technical ability to "create" doesn't always guarantee a satisfactory result.

STARTING WITH A CONCEPT

First, the big idea needs a concept and visual narrative built around it. On ancient or landmark edifices, the storyline may come relatively easily, since the visuals are often tied to the historical context of the structure and its surroundings. In other cases, massive surfaces can tell entirely different stories, tied to events or brands, working with the surface primarily for its visual interest and sheer scale.

Photo: The 2012 Grand Opening of Cleveland's Horseshoe Casino included an unveiling of the iconic, newly renovated building, located in the heart of the city's capital. The highlight of the evening included a seven-minute, massive, video-mapped architectural projection, paying hometown tribute to the history of Cleveland with myriad images of historical landmarks, citizens and artifacts.

Video: youtube.com/watch?v=laQAhJUBxKo

FUNDAMENTALLY, PROJECTS NEED A PURPOSE AND GOALS

The biggest challenge is the structure – a building, famous landmark or even an object such as the dish of a giant radio telescope, used to mark the 50th anniversary of the Space Age. What are the limiting characteristics of the structure's shapes, dimensions and base colors?

Production teams have different implementation styles and workflows to tackle these challenges. Some will work around the most visually demanding elements, avoiding them or building them into the narrative. Vibrant colors and intriguing motion visuals can draw the eye from problematic surfaces or may simply overpower them with colored light.

USING TOOLS AND EXPERIENCE

Other producers apply tools and experience to incorporate challenging shapes and textures into a presentation. Sheer scale of a projection event can, in and of itself, become part of the big idea, using dozens of projectors to fully, cohesively illuminate a massive structure. Still, the experts say "big" can't be the only characteristic to truly captivate an audience.

Photos: Properly protecting and securing projectors is vital to event success. Outdoor projection image mapping projects specifically require additional measures to keep equipment safe from the elements. Stowing projectors in tents, tailored to the size and scale of the hardware needed for the event, ensures optimal performance throughout the duration of the show, and also minimizes distracting a captive audience from the live event itself.

CNU's Campaign Finale

Ultra-high-resolution imaging, synchronized to live Virginia Symphony Orchestra performance

Overview

CUSTOMER
Christopher Newport University

LOCATION
Newport News, VA

MARKET
Live Events
Creative Design Services

PARTNER
Christie

SUMMARY
Christopher Newport University contacted Quince Imaging to design an immersive, ultra-high resolution imaging solution synchronized to accompany the Virginia Symphony Orchestra's live event campaign finale.

QUINCE IMAGING

SCENARIO

On Sunday, September 16, 2017, Christopher Newport University concluded their groundbreaking, "Defining Significance" campaign with a live celebration featuring the Virginia Symphony Orchestra and a magnificent multimedia light show, produced by Quince Imaging. The campaign, which launched in 2014 with a fundraising goal of $42 million, exceeded expectations by a landslide, grossing a total of $66.2 million. The proceeds of all fundraising efforts will empower CNU students and staff by providing financial assistance, funding the newest research efforts, and recruiting and sustaining the most talented instructors and students.

VIDEO

Christie 4k30 boxers, Pandoras Box media servers, and 16 total projectors resulted in 360k lumens of light, brilliantly illuminating the university beneath the night sky. Columns were transformed into functional video space with custom screens, constructed by Quince Imaging partner, Legacy Scenic.

CNU's Campaign Finale

SOLUTION

CNU was looking for a qualified vendor to design an immersive, ultra-high resolution imaging solution synchronized to accompany the Virginia Symphony Orchestra's live campaign finale performance.

SERVICES

Quince Imaging was pleased to provide media production services including 3D image mapping, architectural projection, creative design services, imaging content, projection mapping services and all hardware for CNU's campaign finale event. Quince utilized Christie 4k30 boxers, Pandoras Box media servers, and 16 total projectors to produce the show, resulting in 360k lumens of light for maximum brightness.

Christie 4k30 boxers, Pandoras Box media servers, and 16 total projectors resulted in 360k lumens of light, brilliantly illuminating the university beneath the night sky. Columns were transformed into functional video space using custom screens, constructed by Quince Imaging partner, Legacy Scenic.

RESULT

The seamless, 12-minute piece, "Defining Significance", concluded the landmark celebration in sync with stunning visual displays, announcing the tremendous $66.2 million fundraising milestone to an awe-inspired audience.

WHY QUINCE

Ultimately, the goal of the "Defining Significance" campaign finale event was to thank all donors and fundraising participants for their tremendous outpouring of community support by honoring them with an exceptional and memorable experience. To do so, CNU enlisted the support of top industry talent, from the Virginia Symphony to Quince Imaging, to delight, entertain and engage CNU's captive audience.

The Daily Press reported that Benjamin Rous, resident Virginia Symphony conductor, was thrilled to learn that the orchestra would be teaming up with Quince Imaging, a well-known imaging solution provider for professional sports, including several NBA teams. He went on the record with The Daily Press, stating that, "They [Quince Imaging] can make a whole arena look like something else, or make it look like the floor is caving in and up comes this 3-D object. […] Their work is big-time, and CNU managed to get them for this. That's what is so exciting."

QUINCE IMAGING

22601 Davis Drive | Sterling VA 20164 703.742.7520 | 888.252.4960

QuinceImaging.com

Market America | SHOP.COM

Massive 4,500 square foot projection array elevates conference production design

Overview

CUSTOMER
Market America | SHOP.COM

LOCATION
Miami, FL

MARKET
Corporate
Live Events

PARTNER
Christie, Ventuz

SUMMARY
Event producer, Ashley Events, collaborated with Quince Imaging to construct a custom solution, capable of deploying a complex systems integration strategy and a seamless display design.

QUINCE IMAGING

SCENARIO

The 24th annual Market America | SHOP.COM World Conference took place at the American Airlines Arena in Miami, Florida, February 9-11, 2017. The semi-annual event hosted more than 25,000 entrepreneurs spanning technology and product-related business industries. The company's "Shopping Annuity" is becoming a revolution in the modern eCommerce landscape, empowering entrepreneurs and consumers to increase revenue streams by converting everyone's spending into earning. In keeping with this game-changing movement, the event's production design was elevated to unprecedented new heights.

VIDEO

The imaging display design consisted of a massive array of seven large format projection screens, two LED walls, and over sixty monitors, totaling an impressive 4,500 square feet of screen space.

SETTING THE STAGE

The imaging display design would consist of a massive array of seven large format projection screens, two LED walls, and over sixty monitors, totaling an impressive 4,500 square feet of screen space. Event producer, Ashley Events, collaborated with award winning display design and engineering firm, Quince Imaging, to construct a custom solution capable of deploying a complex systems integration strategy and seamless display design.

CHALLENGES

Display Challenge: Constructing a seamless display solution to span 4,500 square feet of screen space. Technical Challenge: Engineering a custom solution to seamlessly integrate and cue high-resolution content graphics for hundreds of presenter introductions and presentations.

DISPLAY SOLUTION

While the sheer size of the video screens was daunting, the real display challenge was manipulating the mixed sources into a single array. A mix of over nineteen 4k and HD Christie projectors, producing over 380,000 lumens of light, powered the projection screens. In order to create the illusion of a single canvas, Quince Imaging constructed the control system around two Barco e2 screen management systems to direct the imagery. Each e2 processed 53 million pixels from the media server system alone, then distributed signal to the various video feeds.

TECHNICAL SOLUTION

Quince Imaging utilized distinctive capabilities of robust media server system, Ventuz Designer V5 to generate content graphics precisely scaled to merge every stage screen into a single, rasterized workspace. Once configured, the Ventuz system generated all background graphics, titles, social media and full-screen video playback. Using a combination of data integration, the powerful Ventuz template engine and Ventuz Director, the graphics team was able to cue a non-linear show without having to devote countless hours to programming myriad social media handles associated with each stage presentation.

A custom solution seamlessly integrated and cued high-resolution content graphics for hundreds of speaker intros and presentations.

LASTING IMPACT

Dubbed by Market America | SHOP.COM as a "resounding success" and "our best conference ever," it is safe to say the hosts were thrilled by the reaction of their 25,000+ attendee turnout. "Market America | SHOP.COM has produced over 300 large-scale conferences in support of our 180,000+ entrepreneurs around the world. This year's conference was, without a doubt, the perfect marriage of production, technology, design, execution and content. To date, I know of no other team that could have succeeded with this level of graphic & imaging complexity than Quince Imaging led by the premier event producer Ashley Events. Well done, team," said Market America | SHOP. COM vice president of communications, Anthony Akers.

QUINCE IMAGING

22601 Davis Drive | Sterling VA 20164
703.742.7520 888.252.4960

QuinceImaging.com

MARS Petcare

MARS Petcare Retail Store of the Future....

Overview

CUSTOMER
MARS Petcare

LOCATION
Franklin, TN

MARKET
Retail

PARTNER
Barco

SUMMARY
MARS Petcare envisioned a virtual environment that would have the capability to seamlessly transform a presentation surface into a true-to-life-scale retail store, illustrating the application of their research in 3D. When MARS viewed Quince Imaging's NBA court-projection videos, they knew that Quince would have the tools and expertise to bring their concept to life.

QUINCE IMAGING

SCENARIO

Quince Imaging helps MARS Petcare to actualize their virtual "Retail Store of the Future." The futuristic store activates consumer retail experience against primary issues that are driving change over the next several years for pet owners; that retailers must solve in order to grow their pet businesses. The concept orchestrates new shopper behavior across diverse pet-owner demographics.

VIDEO

MARS Petcare envisioned a virtual environment that could seamlessly transform a presentation surface into a true-to-life-scale retail store, illustrating the application of their research in 3D. When MARS viewed Quince Imaging's NBA court-projection videos, they knew that Quince would have the tools and expertise to bring their concept to life.

MARS PET CARE

BACKGROUND

MARS Petcare, a leading pet care provider specializes in developing premium-quality pet products to extend the health and well-being of pets, while also providing their families with valuable pet-owner guidance and resources. MARS Petcare's products are sold to pet stores and retailers around the globe. As part of ongoing research initiatives, MARS constructed a 'retail store of the future' concept, that endows retailers to customize and adapt shopping experiences to today's market of pet owners. Incorporating the latest developments in projection image mapping, MARS Petcare developed a virtual, retail model that incorporates modern-day needs and expectations of pet owners in a variety of demographics, including families, millennials and baby boomers.

BEHIND THE SCENES

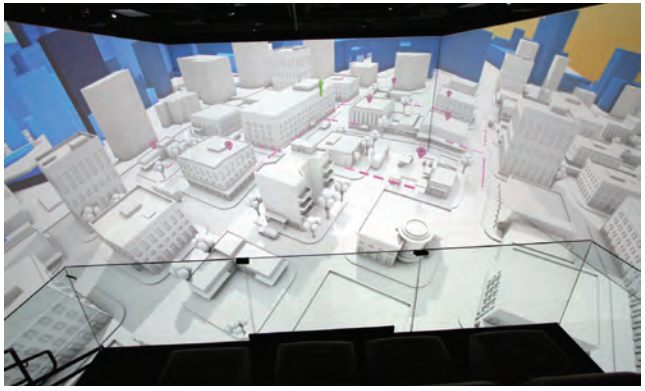
Utilizing data collected by MARS Petcare's team of expert researchers, Quince Imaging got to work developing creative and interactive visuals to produce an 18-minute, three-dimensional model of their "Retail Store of the Future." Enlisting a combination of 3D animation and virtual reality, the store was designed to illustrate MARS Petcare's concepts of modern shopper behavior via the three main shopping pillars: immersive shopping, intelligent shelving and premiumization.

SOLUTION

Employing a blend of state-of-the-art 3D image-mapping technology, 3D animation and immersive reality, Quince brought MARS Petcare's vision of the retail store of the future to life. The virtual, futuristic retail store was actualized by synchronizing a multiple-projector array, including nine Barco HDX 4K projectors and five custom-built Ventuz media servers. The displays consisted of over 40 million pixels of real-time-generated content, rendered in forced perspective to create an immersive, 3D viewing experience.

RESULT

The 18-minute video serves as a valuable research and development platform for MARS Petcare to deliver modern, futuristic concepts to their retail partners. Working together, MARS and exclusive, worldwide partners are on track to deploy the most innovative retail technology in pet stores today. The value-add for pet owners is a personalized experience that will empower shoppers to make the wisest and safest buying decisions, ensuring long-term health and vitality over the lifespan of their pets.



MARS constructed a 'retail store of the future' concept, which endows retailers to customize and adapt the shopping experience to today's market of pet owners. Incorporating the latest developments in projection image mapping, MARS Petcare developed a virtual, retail model that incorporates modern-day needs and expectations of pet owners in a variety of demographics, including families, millennials and baby boomers.

WHY QUINCE?

Mars Petcare found Quince Imaging via search engine. Their vision was to create a virtual environment that could seamlessly transform a presentation surface into a true-to-life-scale retail store, illustrating the application of their research in 3D. The concept was to share the perspective of simulated "store managers" overlooking the retail space from the second floor window. When MARS saw Quince Imaging's court-projection videos, they knew that Quince would have the tools and expertise to bring their concept to life.

QUINCE IMAGING

22601 Davis Drive | Sterling VA 20164
703.742.7520 888.252.4960

QuinceImaging.com

University of Florida

Multiple Sport Array install for four University of Florida Gators Teams is the first-ever permanent system of it's kind in College Sports

Overview

CUSTOMER
University of Florida

LOCATION
Gainesville, FL

MARKET
Sports
University Athletics

SUMMARY
The University of Florida Gators sought Quince Imaging expertise to bring the very first permanent college-arena installation of 3D image mapping projection technology to Exactech Arena at the Stephen C. O'Connell Center.

QUINCE IMAGING

SCENARIO

On the heels of extensive renovations to the fondly dubbed "O'Dome", UF has again enlisted Quince Imaging to install permanent projection technology in Exactech Arena at the Stephen C. O'Connell Center. The new 3D image-mapping projection is similar to systems previously engineered by Quince on a rental basis, including the one in early 2017, used during the UF Gator basketball victory over Kentucky, which drew rave reviews from social media and fans alike.

The first-ever, permanent, 3D sports imaging installation in a college venue will enhance multiple Gator team events and greatly magnify fan experience. The new 4-Array projection system, able to multi-task and handle variances in sporting events, will especially benefit select Gator men's and women's basketball games, volleyball matches and gymnastics meets.

The new 3D projection system was activated for the first time in September of 2017, bringing the innovative technology first to the Gator's women's Volleyball team.

VIDEO

The University of Florida Gators sought Quince Imaging expertise to bring the very first permanent college-arena installation of 3D image mapping projection technology to Exactech Arena at the Stephen C. O'Connell Center.

University of Florida

BACKGROUND

Quince began working with UF, originally enthralling sports event attendees with the first college-venue, eidophor projections on the field of the 1986 Gator Growl. The annual event, known as the world's largest student-run pep rally, continued to shine as Quince's services evolved, with 2010's state-of-the art video and imaging projection directly on the football field. Fans were treated to premier full-motion video field projection – ahead of similar services provided for professional, world-class sporting events. UF's Gator Growl became recognized, nationwide, for remarkable, cutting-edge sports entertainment

Quince engineered the premiere, college-specific, 4-sport-array, 3D projection system to maintain clear, bright image mapping, despite ambient sports arena lighting to remain within university budget constraints.

CHALLENGES

University of Florida's sports projection system was to be a standalone solution, focused mainly on improving fan experience. Quince engineers understood that most professional arenas enable a flexible projection design due to vast space and rigging flexibility, but university arenas are usually designed with lower steel height and center-hung placement, which often present unique challenges regarding projection positioning and integration.

Additionally, brightness requirements tend to be more conservative for universities. Ambient lighting would also compete with the effectiveness of the system, as college arenas are never darkened to the degree of professional stadiums. The focus was to have enough brightness and versatility in the system, while keeping costs affordable for a University-friendly budget.

Finally, to finish the task, university personnel needed training to operate and maintain the equipment once it was installed.

SOLUTION

Quince Imaging addressed each of these considerations by providing several secondary, projection-array design options for the unique "University System" developed especially for the UF install.

Drawings were made to facilitate the approval process. Media server array and control room equipment, including Coolux Pandoras Box playback server, widget designer and rack equipment; all projection equipment, lenses, I/O cards, cabling, initial parts rigging hardware, steel and brackets were provided. Quince engineers planned for rigging to attach to the existing lighting truss to ensure that projection would not require movement for third party events.

Quince installed the projection systems in the center of the existing lighting truss on both left and right courts. Each side included installation of Christie Boxer projectors with a native resolution of 4096 x 2160 to cover and illuminate the 95-foot by 50-foot area. Media server racks were installed in the GatorVision control room, and Quince provided rack elevations signal flow and projection location drawings at that time.

The performance versus cost of various available projection systems was analyzed between initial cost and hourly operating cost. The mercury-lamp-based Christie Boxer Projectors that Quince specified yield the optimum value and performance, given the expected hours of operation.

In addition to a high-quality display, Quince Imaging determined optimal camera viewpoints for creating 3D effects using forced perspective techniques.

Quince supplied informational and technical documents, detailing standard operation procedures and basic troubleshooting scenarios. The QuinceCares Support Program will continue to provide additional training to select and qualified UF personnel, familiar with the operation of specialized projection and media server operation. QuinceCares also includes a support plan for the first year, including scheduled maintenance, routine care and system updates that virtually insure trouble-free operation and protection from the unexpected.

Quince installed Christie Boxer projectors in the center of the existing lighting truss on both left and right courts.

RESULT

The most up-to-date Quince install parameters, including the Christie boxer 30,000 lumen 2k projectors; Pandoras Box Quad Player Version 6; and Widget Designer Version 6 has propelled UF to the forefront, as the first university ever to have a permanent installation like those provided for professional athletic teams. Unique displays and engaging content is now an exciting option available at select Gator Team events. Student athletes can enjoy the benefits of modern technological enhancements adding an edge to their tournaments and increasing the value of audience experience. As the very first university ready and able to transport fans into a world of immersive, 3D content, UF is now on the precipice of a new era in college sports entertainment.

WHY QUINCE?

The Gators have maintained a trusted, long-term partnership with Quince Imaging who were first in the industry to design 3D imaging solutions for sports arenas of the NBA, NHL, NFL, MLB and NCAA. Quince has installed more permanent sports imaging systems in North America than any other vendor, including venues such as Philips Arena, Prudential Center, Quicken Loans Arena, Wells Fargo Center and the dual sports projection system for the Blackhawks and the Bulls at Chicago's United Center.

Enjoying their successful, decades-long partnership with UF, Quince was pleased to design and implement their first permanent university installation for the Gators.

QUINCE IMAGING

22601 Davis Drive | Sterling VA 20164 703.742.7520 | 888.252.4960

QuinceImaging.com

Capital One Arena

Special-event 3D Sports projection system install becomes permanent, after extreme, fan-entertainment success in NHL & NBA playoff seasons

Overview

CUSTOMER
Monumental Sports

LOCATION
Washington, D.C.

MARKET
Sports
Creative Design Services

PARTNER
Christie

MEDIA
Washington Capitals
Playoff Game Opener

Washington Wizards
Playoff Game Opener

Capital One Arena
Installation Video

SUMMARY
Monumental Sports was looking for a way to upgrade their fan-engagement experience, ahead of the 2018 playoff seasons and beyond, for both the Washington Capitals (NHL) and Washington Wizards (NBA).

QUINCE IMAGING

SCENARIO

Monumental Sports, the joint-venture firm that owns and operates the Washington D.C. Capitals (NHL) and Wizards (NBA) teams, collaborated with Quince Imaging to design and install a custom, 3D projection system and create dynamic graphic content for court and rink projection. Their partnership dates back to the early 2010s, when Monumental called upon Quince to create the first-ever, 3D court projection, proof of concept for the Washington Wizards in 2011.

The 2018 special-event projection system, scheduled to remain installed in Capital One Arena throughout the duration of both teams' playoff runs, featured exclusive 3D animated content, designed and produced by Quince Imaging's very own creative team. The early April inception of this state-of-the-art system is known to be the most sophisticated installation in the history of professional athletics and includes what the Quince team has coined the "trifecta" of modern sports display technology and systems integration.

Capitals
VIDEO

Capital One Arena lit up in red as the Caps surged steadfastly toward the Stanley Cup Finals. The highest-resolution projection system in professional sports boasts an impressive 4K-native workflow from media servers to projectors, capable of a fully-immersive, interactive experience.

SOLUTION

The Quince solution included integration of Christie Digital's product suite, including Pandoras Box media servers, the brand-new Christie Terra 4K signal transmitter, and the Christie Mystique, which provides an integrative solution to calibrating complex, multiprojector display systems. Together, these systems enhanced the playoff fan-engagement experience, during player intros and halftime shows, by amplifying the effects of 3D video-mapped content and interactive special effects on the court and rink.

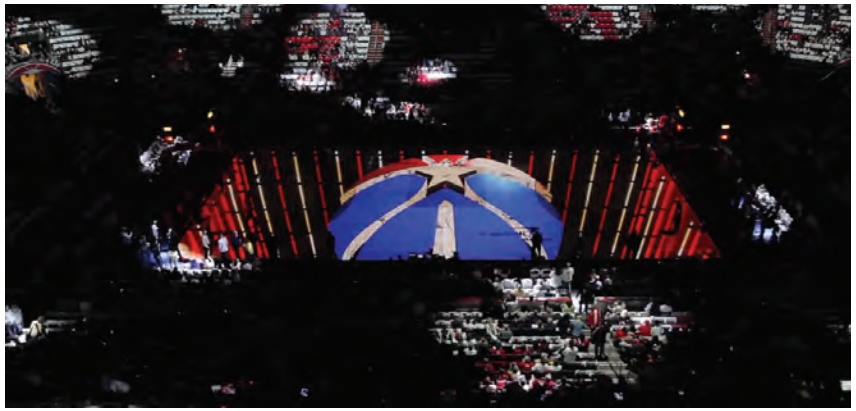
SERVICES

Services included system design and installation, systems integration and 3D-animated graphics and content creation.

RESULT

Capital One Arena's 3D projection system, originally installed for the Washington Wizards' and Capitals' playoff seasons, was a fan favorite throughout every home playoff game. Fan engagement during player introductions and pre-game and halftime shows, soared in the arena and media outlets — both broadcast and streamed — that continue to dazzle on social platforms and feeds.

Wizards VIDEO



The Washington, D.C. Wizards made record-breaking plays, vying for the NBA Title in their exciting, post-season playoff run. The Quince Imaging creative team's edgy content production designs added to the incredible display from the state-of-the-art 3D projection system.

After an extraordinary NHL playoff finale, and Stanley Cup win for the Washington Capitals, Monumental Sports announced that the special-event projection system, slated for removal at the conclusion of the teams' 2017–2018 playoff seasons, will return ahead of next season, as a permanent fixture at Capital One Arena. Monumental Sports and Quince Imaging also plan to collaborate on content for both teams' 2018–2019 season openers.

WHY QUINCE

When asked about choosing Quince, out of all possible firms, Monumental Sports' Senior VP of Marketing and Brand Strategy, Hunter Lochmann proclaimed, "We are excited to partner with locally-headquartered Quince Imaging to bring Capitals' and Wizards' fans first-class, in-game entertainment when they attend home games at Capital One arena. We've watched their work with various NBA and NHL teams – always shared as best practices across both leagues – and look forward to taking our presentations to the next level. Playoff season has been fun, but we are even more excited to partner with Quince throughout the 2018-19 seasons and beyond."

QUINCE IMAGING

22601 Davis Drive | Sterling VA 20164 703.742.7520 | 888.252.4960

QuinceImaging.com

WHO WE ARE

Quince Imaging is an innovative experiential display and design firm located in the suburbs of Washington, D.C. Fusing a unique combination of creativity, technical process management, and unmatched expertise in the area of high-resolution graphic development, Quince is known for continuously raising the bar when it comes to providing awe-inspiring. immersive experiences on the world stage. Quince's loyal client base spans a diverse spectrum of markets, ranging from corporate entities, to non-profit associations, professional sports teams and venues, and global outreach organizations. Quince specializes in live-event video production, creative content development, and permanent display system design and installation.

CONTACT US

QUINCE IMAGING

22601 Davis Drive | Sterling VA 20164
703.742.7520 888.252.4960

QuinceImaging.com

Resources

The Book Of Transformations
Publisher: Christie Digital, August 19, 2014

Projection Image Mapping Project Videos
View online here:

-- Quince Imaging Website:
http://quinceimaging.com/xpsl

-- Vimeo Channel :
https://vimeo.com/quinceimaging

-- YouTube Channel:
https://www.youtube.com/user/Quinceimaging1