ELECTROSONIC



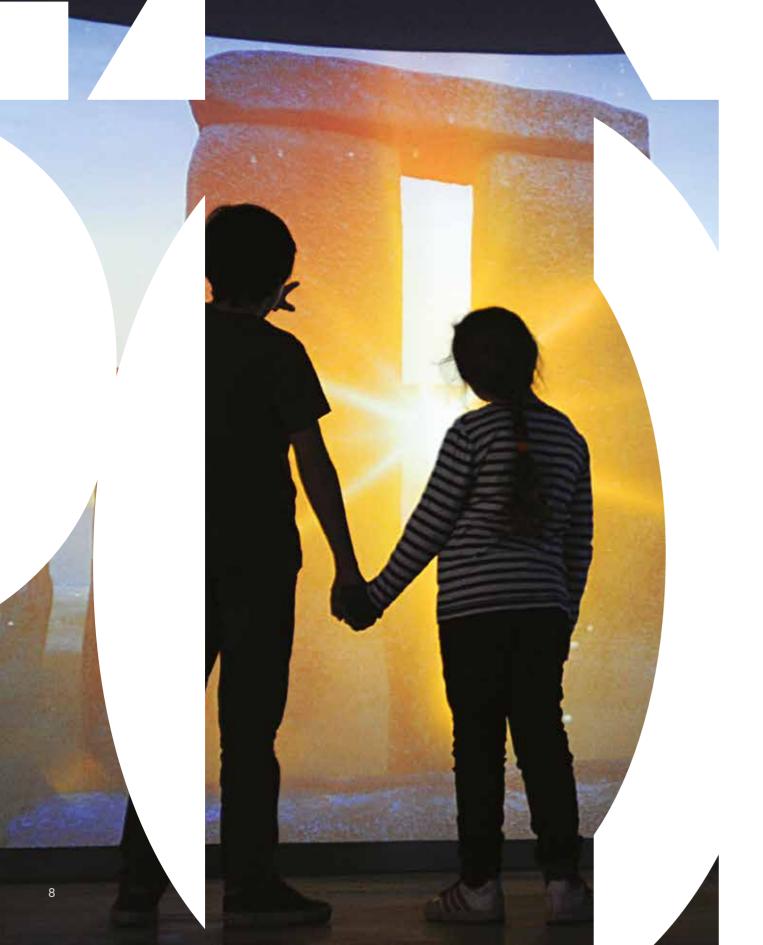
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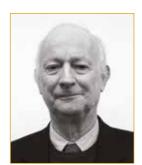
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FOREWORD



Prom my first ever attendance, standing in Le Corbusier's Philips Pavilion at the 1958 EXPO in Brussels, I've loved EXPOs. They present a fantastic opportunity to indulge the creative's ambition to realise experiences which command the attention of a broad spectrum of visitors.

Controversial, educational, stunning, provocative, utterly perplexing - I've seen pavilions be all these things, and rightly so. EXPOs are the time to showcase our boldest ideas, confront the issues facing us as a global society and stimulate debate for resolution. The tricky part is conveying these messages to a diverse audience in an entertaining and innovative way.

Over the last 50 years, Electrosonic has been involved in creating lasting memories for 15 EXPOs, in nine countries, providing AV solutions to over 80 pavilions. We have worked with some of the greatest pavilion teams to bring their aspirations to life, innovating to raise our capabilities in sound and visual experiences to deliver the designers' dreams, no matter how wild they might initially appear. As with our experience in the entertainment arena, we understand a pavilion's success is measured in its ability to engage the visitor and offer an experience they have never had before.

With technology now playing a central role in all our lives, to capture an audience's attention and provide an opportunity to demonstrate their role in achieving change requires an ability to rise above the ordinary and dare for something beyond. To achieve the dream, Electrosonic has designed products and solutions which not only brought the designer's ideas to life and captivated audiences, but paved the way for much of the AV technology we take for granted today.

No-one has more knowledge, experience and tenacity to support you in your vision for Dubai 2020 than Electrosonic, and with teams in our offices in the UAE, Europe, North America and Asia, we would love to show you how we can help to make your pavilion one of the great successes for 'Connecting Minds, Creating the Future'.

Robert Simpson, MBE Founding Director





HISTORY OF EXPOS

Beginning with the Great Exhibition in London in 1851, EXPOs have provided a channel for reaching millions of people with a lasting and empowering message of change and innovation. They inform and excite attendees from the host nation and across the world, and offer an entry and understanding to the global community that is as accessible to the public as it is to diplomats and commercial organisations.

EXPOs have been hosted by governments across the world, predominantly at sites in Europe, North America and Asia. Whilst the majority of the pavilions and structures are temporary, some elements such as the Eiffel Tower, The Atomium, The Space Needle and the Hanbit-Tap (Tower of Grand Light) made such a lasting impression that they have achieved permanent status on a city's cultural landscape.

A successful pavilion delivers the EXPO theme through unique architectural design, coupled with an exhibition or "show" element which both informs and entertains visitors. The "show" may well make imaginative use of a combination of sound and light, multi-media and interactive techniques, used to realise the design intent.



The EXPO Challenge

The challenge is in creating a show that is highly entertaining, so it attracts large numbers of visitors, but balanced with a design that results in a manageable flow of visitors around the attraction to ensure everyone's experience is of a similarly high standard.

How?

Interesting

and relevant storylines considered alongside impact

Using

the queues as part of the entertainment experience to build anticipation

Understanding

the cultural differences in technology uptake

Allowing

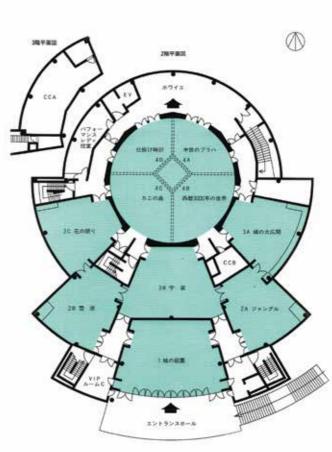
participants to interact with the story to make it memorable

Remote Monitoring

to ensure 100% uptime of exhibits

Designing

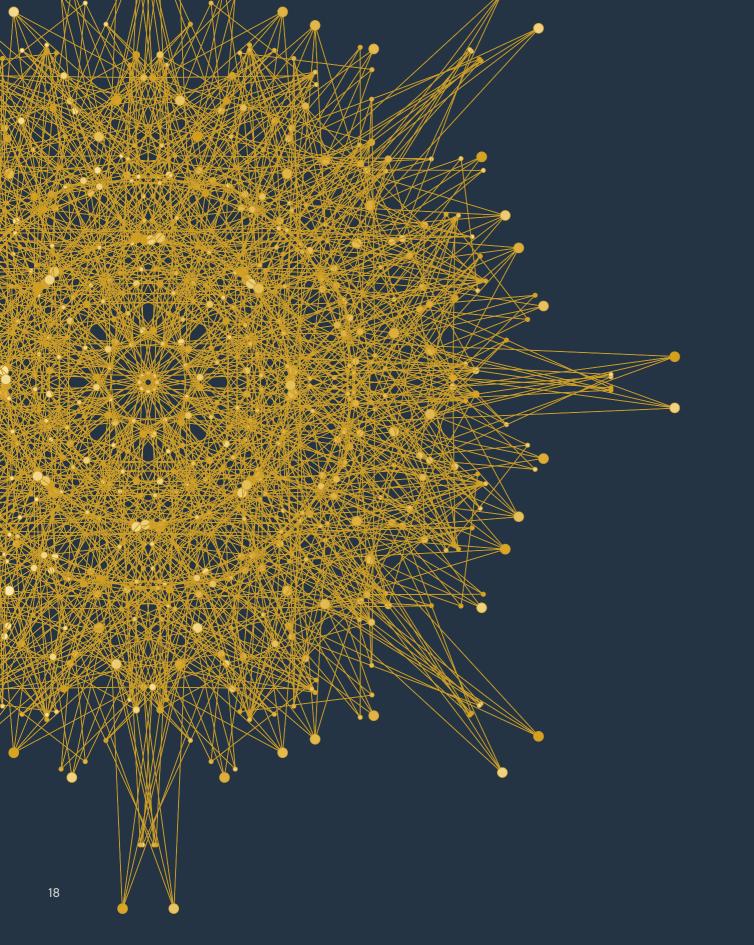
to cater for high audience capacity experiences



Gas Pavilion Layout

EXPO '90 - Oska, Japan

The Gas Pavilion included an incredible interactive show which was entirely automated. This was one of the first instances where large audiences became part of the story and voted with their feet to choose the next step. See page 29 for further details.





October 2020 - April 2021

Connecting Minds, Creating the Future

In today's highly interconnected world, a renewed vision of progress and development based on shared purpose and commitment is key. While a married human mind, an individual country, or a specific community is both unique and remarkable, it is by working collaboratively

His Highness Sheikh Mohammed Bin Rashid Al Maktoum VICE PRESIDENT, PRIME MINISTER OF THE UAE & RULER OF DUBAI

that we truly advance.

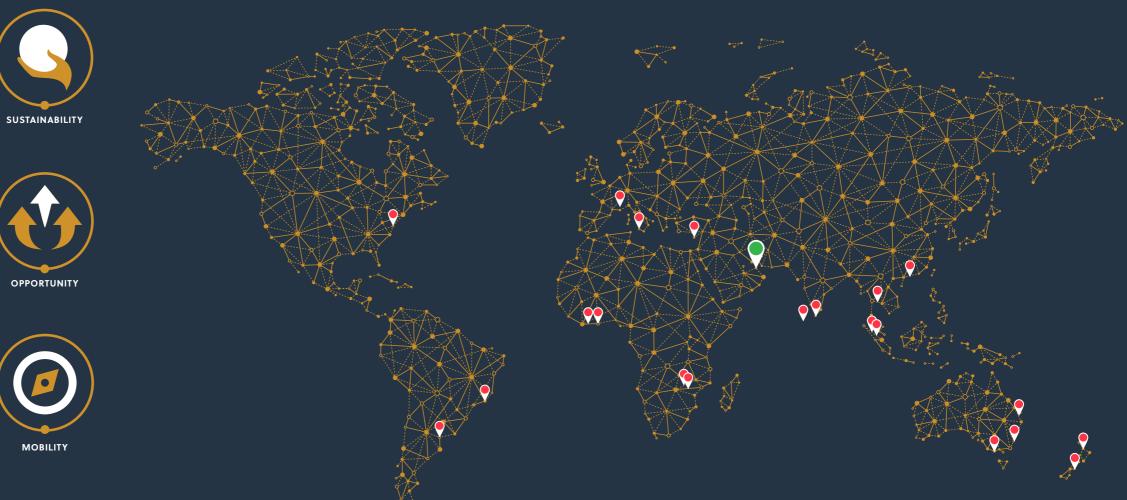


October 2020 - April 2021

The central theme for Dubai 2020 is around global partnerships and how this connectivity drives new ideas for long-term impact. This theme is underpinned by three issues that the organisers believe need to be addressed in order to bring about positive change for future generations:

ubai is a highly accessible location - no more than an eight-hour flight from two thirds of the world's population - and Dubai 2020 will be the first to be held in the Middle East, Africa and South Asia. With the bid alone reaching an estimated 850 million people through social media, it is fair to say that 20th October 2020 will be the date when all eyes turn to Dubai, expecting to see some incredible creative visions brought to life.

These factors will drive up visitor numbers but, given the extraordinary architecture and entertainment already seen in the region, competition for their attention will be fierce.





ELECTROSONIC AT EXPOS

EXPO 1967MONTREAL, CANADA

Besides some striking architecture, EXPO '67 is remembered for spectacular audio-visual shows presented by multi-screen movie and slide projection systems, drawing over 50 million visitors and having a lasting effect on EXPOs to follow.



JK Pavilion

For our first EXPO, we invented new lighting control systems, based on solid state electronics, and applied them to audio-visual presentations. We also engineered many automatic sound replay systems, provided audio-visual systems for the popular Great Britain Pavilion, and engineered the audio systems for the innovative "Gyrotron" dark ride in the La Ronde amusement park.



The Gyrotron with its main pyramid structure and accompanying 'Volcano'



A 16 screen (32 projector) multi image show on arts, produced by John Hedgecoe, in the Great Britain Pavilion at EXPO '70

EXPO 1970 OSAKA, JAPAN

With an average of 350,000 visitors every day, the issue for the exhibitors was to decide how to make an impact on the visitors.

Electrosonic created a novel method of programming the activities of multiple slide projectors by recording multiplexed signals on the same magnetic tape that carried the sound track, this method was used in the Great Britain Pavilion to showcase the work of British artists.

The largest installation for Electrosonic at EXPO '70 was the 80-projector show in the Scandinavian Pavilion. Electrosonic also delivered "multi image" systems to 13 other pavilions, including the Ireland Pavilion which housed a particularly attractive show. The producer, Peter Paul, commissioned Electrosonic to develop a new kind of projector controller which gave individual control to each projector. While more complex to programme, it allowed for more optical effects, and the principle eventually became an industry standard.

PROJECTION SECTION OF EEC PAVILION AT LOUISIANA WORLD EXPOSITION 360 PROJECTOR SYSTEM BLACK CEILING AND WALL FINISH ABOVE SCREEN MIRROR DIVERTOR MIRROR AND SLIDE IMAGE 24 x SLIDE CASPET WALL TO BOTTOM OF SCREEN BENCH SEATING 14.6M 48'

Section through the EEC Pavilion at EXPO '84 showing the Rondovision principle

EXPO 1974 SPOKANE, USA

At EXPO '74, Electrosonic supported two significant exhibitors. First was the very popular Australia Pavilion, which featured a rotating floor that treated visitors to a multi-image show on 36 screens as they completed a revolution.

The second, was for the highly successful "Taiwan Experience" in the Taiwan Pavilion. This saw an important Electrosonic innovation - the development of "digital dissolve units" - which ensured that the lamp fade times on multiple projectors were accurately matched to the microsecond.

EXPO 1982 KNOXVILLE, USA

Electrosonic was quick to take advantage of personal computers for show programming and adopted computer industry standard protocols and communications. The multimedia systems installed in the UK and American Electrical Energy Pavilions were based on this change.

EXPO 1984 NEW ORLEANS, USA

Electrosonic's most innovative project was the development and installation of a pioneering projection system in the EEC Pavilion which enabled a 360-degree image projection, from one single projector. This was totally ground-breaking at the time (see above diagram).

Despite advances in other areas, it was however still not practical to use video technology for large moving picture projection. Instead, Electrosonic used their considerable expertise in continuous running 35mm movie projection systems, often in conjunction with multi-image systems, to install show systems in six other pavilions.

ELECTROSONIC AT EXPOS

The Taiwan Experience Show at EXPO '74.





Laserdisc videowall in the Bulgaria Pavilion at EXPO '85

EXPO 1985 TSUKUBA, JAPAN

This EXPO saw many corporate pavilions still using large format movie projection, but it was also an EXPO when more video displays appeared. This was partly due to the introduction of the laser videodisc, which at last made it possible to have reliable continuous, or "one shot", video playback without the complications of tape. Electrosonic was quick to develop special controllers for single and multiple laserdisc players for the exhibition market.

Electrosonic engineered the AV systems for several pavilions at EXPO '85, including the UK Pavilion, which made good use of the new video possibilities by having video screens neatly integrated into the exhibition.

Laserdisc technology also made it possible to provide high quality "videowall" displays based on the use of multiple laserdisc players running in sync, and this technique was used by Electrosonic in a videowall display for the Bulgaria Pavilion.



The "Medicine" exhibit in the UK Pavilion at EXPO '85 featured suspended overhead screens and a circular screen directly above the exhibit

EXPO 1986 VANCOUVER, CANADA

"The World EXPO Vancouver" was a happy reminder of the glory days of EXPO '67, with many corporate pavilions creating intelligent, entertaining shows with excellent staging. A continuous flow of some 14,000 visitors a day were entertained in the Washington State Pavilion, where visitors boarded a 40-metre long 'travellator', which took seven minutes to traverse. The novel and highly ambitious synchronising arrangement created by Electrosonic saw the use of three 35mm movie projectors and 69 slide projectors to ensure that every individual enjoyed a complete show, irrespective of the start time.

EXPO 1988BRISBANE, AUSTRALIA

Electrosonic worked on the EXPO's most popular pavilion, the New Zealand Pavilion, which attracted two million visitors. Here water screens were used as a projection surface and it was through the creation of this exhibit that Electrosonic discovered that water droplet size was critical if a clear image was to be presented.



Exterior of the New Zealand Pavilion at EXPO '88. At night, the spaces between the blue pillars became rear projection screens for a 64 projector multi-image show

EXPO 1990 OSAKA, JAPAN

The Gas Pavilion, with project management by Dentsu, featured an outstanding interactive show "CineLabyrinth" which was designed and produced by the SCARS team from Prague. It was one of the first instances where large audiences were able to "vote" with their feet and choose for themselves the next step of the story. However, continuing a partnership which went back to 1974, the entire automatic show presentation system (video projectors, audio systems, laserdisc players, slide projectors, programmed lighting, computer control etc) was engineered by Electrosonic.

The beautiful sets used a combination of video projection, slide projection and theatrical light effects. Electrosonic engineered the entire automatic show system

and used their own control equipment. For this show to work effectively, all the shows had to run in synchronization to avoid one audience group clashing with the next. Electrosonic delivered a master console which controlled the show computers and CCTV monitors for every show space to ensure flawless delivery.



One of the ten elaborate show spaces in the Gas Pavilion at EXPO '90



Here the audience are being invited to chose a story direction at the Gas Pavilion at EXPO '90



The control console for the Gas Pavilion at EXPO '90



The "Global Village" videowall in the Telecomunications Pavilion. The photo clearly shows the architect's "pixel" concept.

EXPO 1992 SEVILLE, SPAIN

A very busy 'Universal EXPO', attracting 42 million visitors. Electrosonic provided engineering and electronic equipment to 35 pavilions in total and, with the arrival of video, managed 2,000 video screens and 500 slide projectors.

The most entertaining show engineered by Electrosonic was "Britain Communicating with the World", a mixed media show in the UK Pavilion, which used a combination of live actors, 35mm movie, stage lighting effects, 32 video projectors and video monitors in a show that generated enthusiastic audience participation. Besides the UK Pavilion show, Electrosonic's outstanding video achievement at EXPO '92 was the videowall in the Telecommunications Pavilion (above), which consisted of 850 video monitors, weighed 35 tons and was 16-metres wide and 10-metres high.

Another highlight, voted best multiimage show at the EXPO by "Audio Visual" magazine was the show in the Siemens Pavilion "The Evolution of Networks." This was in a circular auditorium with a rotating floor that was synchronized to the imagery, 63 slide projectors and many lighting effects were controlled by an Electrosonic system.



The rotating auditorium of the Siemens Pavilion show



One of the six giant water screens in the evening lake show

Seville's evening lake show EXPO NOCHE helped keep visitors on site into the evening as well as drawing in new visitors. The show was produced by Resorte Communicacion, but delivered by a consortium of companies. Holding everything together was Electrosonic, responsible for the central playback system and the means of synchronising everything together – largely dependent on the reliable distribution of timecode over distances of several kilometres.

EXPO 1993

TAEJON, KOREA

Electrosonic had systems in the UK Pavilion and others, with the greatest emphasis being on the provision of 70mm film systems (at this time, it was still the case that video systems could not compete in respect of image size and brightness).

Most exciting was the Samsung Pavilion, with show production and design by Landmark Entertainment Group, featuring a "Starquest" adventure ride presented in a 20-metre diameter dome where 60 passengers could 'ride' on a giant motion simulator base. The huge picture required for this was presented by a 70mm eight perforations per frame, 30 frames per second projection system engineered by Electrosonic.



The Samsung Pavilion at EXPO '93

The Kia Motors Pavilion was another major feature and had six simulators showing what driving a car in 2050 might be like (anticipating 400 kph in cities). These were based on flight simulator motion bases, with a 70mm 30 frame per second film system with endless loop film handler and "wrap round" screen.

EXPO 1998 LISBON, PORTUGAL

EXPO 2000

HANOVER, GERMANY

In 1998 and 2000, video walls and video projection dominated, and Electrosonic provided video systems to the UK Pavilion at both EXPOs. A stained-glass window effect in the Algeria Pavilion at EXPO '98 (below) was achieved using 84 of Electrosonic's CRT monitors.



The stained glass window effect in the Algerian Pavilion at EXPO '98



The Kia Motors Pavilion at EXPO '93

EXPO 2005 AICHI, JAPAN

EXPO '05 saw an important change as design teams started to recognise the need to take the whole visitor experience into consideration, entertaining visitors from beginning to end. This led the way in recognising that a good storyline which incorporated innovative technology was key to delivering a successful show.



The pre show in the USA Pavilion introduced Benjamin Franklin



The main show in a larger theatre showed audiences the technical, social and agricultural advances that had taken place since the 18th Century



The NASA exhibit in the post show had "live" images from Mars shown on a screen above a model lander

Working with BRC Imagination Arts, Electrosonic's main contribution was to the USA Pavilion and the 'The Spirit of Franklin' show which featured a pre-show, main show and post show. Audiences were held spellbound, as President Benjamin Franklin appeared, disappeared and conjured up lightning bolts. BRC incorporated the queuing time into the show's storyline, extending the experience for the visitor and preventing queue frustration.

EXPO 2010 SHANGHAI, CHINA

Electrosonic contributed to the technical design of several pavilions, and provided the AV engineering for three important pavilions, the USA Pavilion (working with BRC Imagination Arts), The Information and Communication Pavilion (again with BRC), and the Shipbuilding Pavilion (with Ralph Appelbaum Associates).

All three of these pavilions pushed AV technology to its limits, and required both large on-site crews for installation, and maintenance staff for the EXPO duration. The innovative AV designs and installations that helped to make these three pavilions so successful included 4D special effects such as mist, lighting, vibrating seats, and music to engage all the visitor's senses. Gesture and interactive exhibits put the visitor in charge of their experience, and social media integration enabled visitors to continue their experience at home.

USA Pavilion -Winner of Pro AV Spotlight Judges Award

The excellent show sequence balanced the need to give visitors an enjoyable experience that did not feel rushed with the ability to handle a throughput of 40,000 visitors a day.



A scene from "The Garden" where 30-ft tall screens, 4D effects, lighting and music enhanced the show - USA Pavilion

The Shipbuilding Pavilion

The Shipbuilding Pavilion used large scale exhibits to entertain audiences. A project of this size typically has a build time of 18 months, however, Electrosonic took just seven months to complete the work from beginning to end to meet the deadline.



When a visitor pointed at a fish, Gesturetek systems detected this action and produced an appropriate caption bubble on the aquarium glass, so the fish could tell visitors what he was thinking - Shipbuilding Pavilion

Information and Communications Pavilion

The Information & Communications Pavilion provided an interactive and customised visitor journey from the outset. The designers were keen that the show did not end once people exited the Pavilion, so the show experience continued after they left, with visitors collecting virtual prizes on the Pavilion's social network website.



The first show set on a wide screen at The Information & Communications Pavilion

EXPO 2015 MILAN, ITALY

EXPO 2015 represented a new direction for Electrosonic, working with experimental design and production agency BRC Imagination Arts and local AV integrator Dorier and MCI, to design and deliver a pavilion requiring world class audio-visual treatment. Electrosonic's responsibility included detailed technical AV design and co-ordination for the European Union Pavilion.

BRC believes a good EXPO pavilion design includes effective visitor flow and a universal mode of communication. The pavilion, made up of 1,900 M² across three floors, had numerous areas requiring different network solutions, from control rooms, queue systems, pre-show and main shows - and outside displays.

The pavilion used a variety of presentation techniques to give visitors a memorable experience. The pre-show used projection mapping, LCD media screens set in picture frames and dynamic audio to allow guests to step into the environment and the characters.

The main show featured 4K resolution, animated film and a variety of dynamic effects including a standing platform with vibratiing floor speakers, special visual effects, lighting and in-theatre climate effects, to help the story unfold.

One of the challenges presented at EXPO 2015 was the pavilion plots were smaller, longer and narrower, especially compared to Shanghai EXPO 2010. The EU Pavilion was quite small, the design needed to move a lot of people through the space in a timely manner. Electrosonic's vast experience at realising designer's creative visions in almost any environment, ensured, despite the limited space, visitors were told a great story in an entertaining and engaging way.





Above: Scenes from the European Union Pavilion

Photo credit: Visitor experience created, developed and produced by BRC Imagination Arts, www.brcweb.com

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BRC has created, designed and produced awardwinning world EXPO pavilions since 1986, and we have collaborated numerous times with Electrosonic over this period because we share a mutual desire to create something exceptional and transformative.

Whilst the storytelling technique and technical delivery is different in each of the pavilions we have worked on, they always have the same goal of moving audiences emotionally. Electrosonic understand that this is best achieved when the technology supports the story.

CHRISTIAN LACHEL
EXECUTIVE CREATIVE DIRECTOR AND VICE PRESIDENT
BRC IMAGINATION ARTS

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BRC Imagination Arts



Lasting Memories

Create something that changes someone & encourages new thinking

Bringing

fun to detailed information delivery

Delivering

individual experiences for each visitor

Bringing

exhibits to life whilst inspiring and educating visitors

Reducing

'dead' space within your attraction

Creating

experiences worth sharing on social media

Increasing

repeat visits and attracting more diverse audiences

Prolonging

the visitor experience long after the show has finished

The Siemens Crystal, London, UK Scenes from the 'Forces of Change' show (right).













Depth & breadth of knowledge to deliver visually outstanding exhibits

This installation shows what you can achieve when an AV systems integrator like Electrosonic is brought on board early during the design process and then executes the work.

TIM VENTIMIGLIA DIRECTOR BERLIN OPERATIONS RALPH APPELBAUM ASSOCIATES

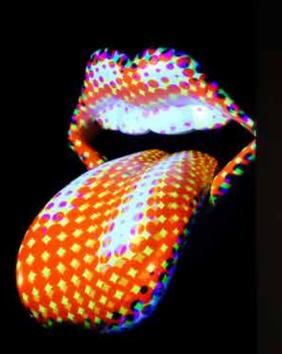


EATON EXPERIENCE CENTER, OHIO, USA

Electrosonic worked with power management company, Eaton, to use AV technology to communicate its strengths to employees, customers, suppliers, business marketers and government leaders. Eletrosonic served as a consultant to designers Ralph Applebaum Associates during the design phase, and were ultimately contracted to Eaton to design the AV systems. The centre piece of the Eaton atrium is a five-storey LED Chandelier, 53-feet tall, and an 80-foot LED Curtain, using a very unique LED mesh that was two years in the making. Electrosonic carried out extensive testing of the racks and the LED mesh to ensure that the solution would be hardy enough to survive in the target environment.

When it has Got to be Right

No matter the complexity or timescale





Electrosonic showed great commitment and dedication to meet the challenge of the three-week installation period. We were very happy with the skillset and the efficiency of the whole team.

KI MCGINTY, PROJECT MANAGER IEC (INTERNATIONAL ENTERTAINMENT CONSULTING) PRODUCERS OF EXHIBITIONSM



EXHIBITIONISM THE ROLLING STONES TOURING EXHIBITION TOURING GLOBALLY

There was only a three-week installation window to deliver the first showing of Exhibitionism - The Rolling Stones Touring Exhibition in London, including a complex 50 LCD screen display and the three-dimensional, 2.5-metre wide, iconic tongue and lips logo. Extensive use of audiovisual effects showcases the archive materials, such as the sensational designer clothes, and enhances the displays, including a kaleidoscopic 50 screen show highlighting 50 years of Rolling Stones history.









When Immersion Matters

STONEHENGE VISITOR CENTRE, SAILSBURY, UK

Electrosonic was able to build a full-scale mock-up of Stonehenge Visitor Centre's 'Standing in the Stones' exhibit at its head office in Kent, helping the producers check the content at full size, thus ensuring English Heritage could be confident of the outcome and reduce the likelihood of any potential audience circulation issues.

Using large in-house testing and workshop facility to ensure faster delivery to your site





RÉNE WALKENHORST PROJECT MANAGER ATELIER BRÜCKNER

Inclusive **Design** For Everyone

EU-DURCHSCHNITT 40.9%

PARLAMENTARIUM EUROPEAN PARLIAMENT VISITOR'S CENTRE, BRUSSELS

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Electrosonic was chosen by Atelier Brückner, designers of the European Parliament Visitors Centre in Brussels, to be part of the team responsible for transforming a building initially designed as a car park into a well thought-out, highly interactive environment. We helped to deliver the first permanent exhibition to be fully accessible in 23 languages, whilst conveying complex information in fun and engaging format for all ages. Our work was recognised with an AV Award for Consumer Installation of the Year, 2012.

Delivering Competitive Advantage to Global **Enterprise**

Our clients comprise FTSE 100, global financial enterprises and large legal firms who are seeking to use innovative technologies to increase their competitive advantage and communicate their brand in a unique and memorable way. Corporate organisations understand customers and employees now expect a certain level of technology within a corporate environment. We help organisations meet these rising expectations by using innovative and user friendly technologies, whilst meeting an organisations requirements to increase productivity and keep on-going running costs to a minimum.

Eversheds Sutherland ensure their clients receive innovative solutions to their most pressing challenges, so it was only natural that they would want an audio-visual partner who takes the same approach to projects.





First class meeting experience

For the auditorium, high resolution displays provide optimal viewing, enhancing communication and promoting understanding, whilst ambient lighting adds a dynamic vibrancy to the room creating a memorable conference experience.

Meanwhile new collaboration technology for the boardroom facilitates 'in person' meetings, in real time, which enhances business relationships, productivity and efficiency regardless of participants' device choice, location or network.

Electrosonic understood our vision and gave professional advice and direction with regards to our audio-visual. We are extremely happy with the end result!

NICHOLA ANDERSON WORKPLACE STRATEGY MANAGER EVERSHEDS SUTHERLAND

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Electrosonic has previously helped deliver

Sustainability, Opportunity & Mobility

The 3 sub-themes of EXPO 2020



guides how we grow opportunity by doing more with less, while protecting and preserving our environment for future generations



at the heart of development, ensuring that new horizons are opened to individuals and communities to help them meet their current needs and their future aspirations



the bridge to opportunity by connecting people, goods and ideas and providing easier access to markets, knowledge and innovation The Crystal is a sustainable cities initiative by Siemens (pictured top right), home to their Centre of Competence as well as a 21,500 square foot interactive exhibition that guides visitors through the urban infrastructure of the future. Designed and produced by Event Communications, Electrosonic's AV design supports the ambition to examine the possibilities for sustainable mobility, building technologies, power and water supplies and healthcare, while enhancing the building's green energy credentials.

The New Canadian Museum for Human Rights (pictured right) explores the universal concept of human rights. From custom Universal Key Pads to gesture recognition games, Electrosonic developed an audio-visual design to ensure that all the museum's exhibits are accessible to all ages and abilities so that they can benefit from the messages around the evolution, celebration and future of human rights.

Moving images are now a universal way for people to find and develop connections, whether that be for entertainment, education or innovation. The Museum of the Moving Image, Astoria, New York (pictured bottom right) aims to advance the appreciation and understanding of moving image production and the future of film and video art through insights provided by the unique collections, interactive exhibitions and versatile viewing rooms for which Electrosonic's AV design enabled multiple, cross functional connections to take place between almost every space in the museum.







ELECTROSONIC



Foundation















ISO standards: Environmental Management System BS EN ISO14001, Quality Management System & Occupational BS EN ISO9001, Health and Safety Management System OHSAS18001, Information Security Management ISO27001





electrosonic.com





