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INSIDE THE STORY

Fairy tale-inspired museum offers an experiential journey through the life and works of H. C. Andersen



The timeless fairy tales of Hans Christian Andersen have had an unquestionable impact on countless childhoods, captivating the collective imagination of millions with a massive impact on global culture. Entertaining, and sometimes terrifying, the iconic stories tell tales that mix fantasy, moral messages and some darker themes, bringing enjoyment, laughter and tears in equal measure.

Now this Danish national treasure is remembered with a museum and garden in his birth town of Odense, Denmark that incorporates the author's preserved birthplace. But Andersen was no conventional author, and this certainly isn't a conventional museum.

The flowing, organic wooden forms of the H. C. Andersen House rise above and below wild gardens of meadow flowers, trees and shrubs. This is the work of architects Kengo Kuma and Associates, with gardens by MASU Planning, and effectively evokes

the mixture of fantasy and reality that underpins Andersen's works.

This theme continues through the interior of the building where exhibition designer, Event Communication from London, tells the story of Andersen's life and works with methods that stimulate visitors' imaginations, sometimes encouraging reflection, while at others asking them to engage with the artefacts, stories and topics actively and creatively.

There are no straight lines in the building and guests navigate winding corridors that open into areas conveying more about certain aspects of the author or his works.

AV technology is vital in this effort and the AV installation at the museum fell to consultancy and integrator Stouenborg who was contracted by one of the project's financiers, the A.P. Møller and Chastine Mc-Kinney Møller Foundation.

Stouenborg was tasked with bringing the ideas and plans of exhibition designers and artists to life with technology. The company worked within the

confines of the original design and artistic aims but was also able to suggest and make changes to the technical installation.

"We didn't have complete freedom, there was an existing technical design and all the cabling that dictated projector and loudspeaker placement was done by the time we entered the project," explains Kasper Stouenborg, director of Stouenborg. "However, we were able to make some changes and one of the key areas was in the loudspeakers that deliver soundscapes throughout the exhibition."

In an early adaptation to the original design, Stouenborg switched from passive speakers with amplifiers in a central rack, to IP based active speakers, installing 64 Genelec 4420A Smart IP installation speakers, with a backbone of Dante, throughout the building.

"This meant we had full freedom of controlling the sound through the entire space," says Stouenborg. "It also removed concerns we had about some very long loudspeaker cable runs that

TELLING TALES

An attraction commemorating the life and works of Hans Christian Andersen has transformed the museum experience into a world of wonder and discovery. **Anna Mitchell** finds out how sensitive use of technology is adding a little magic to the visitor journey.



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Kasper Stouenborg, Stouenborg

could have introduced unwanted noise.”

Sound design was handled by Lewis Gibson, a British sound designer, director and scriptwriter. Stouenborg worked with Gibson to deliver the soundscapes, including programming and placing loudspeakers so the sound was delivered at the right time and at the right level to create the desired effect.

The soundscapes are played from a Medialon MAS Pro Dante audio server that delivers more than 120 tracks across the site. Stouenborg says: “[The server] manages some quite complex demands, synchronising some tracks, while handling others individually. I think that’s quite unique from a multi-channel playback system.”

While the speakers deliver soundscapes, visitors are also furnished with an audio guide system from Nousedigital. Here again the museum curators didn’t simply want to provide instructional content. Instead, they drafted the services of professional script writers and actors. Renowned writers Kim Fupz Aakeson and Daniel Handler (aka Lemony Snicket) wrote the Danish and English scripts respectively.

Stouenborg wasn’t responsible for the delivery of the audio guide but, as the tracks are triggered by a visitors’ proximity to different exhibits and experiences, it had to ensure the guides were

integrated with the exhibition technology it had delivered. Each visual exhibit is locally controlled with 80 Brightsign XT244 players installed across the site. The players are synchronised and networked together so they can communicate across the network. There is also a Medialon Showmaster Pro show control system primarily used for sending power up/down commands to the technology installed on site.

Stouenborg explains: “For some exhibits, the audio guide triggers videos; if you stand in front of a screen, the audio guide will send a trigger to a Brightsign player and start a video. The player will send back a timecode to the audio guide system to sync the audio.”

Projection is used heavily throughout the museum’s winding labyrinth of corridors and rooms with 40 units of Panasonic and Epson kit installed across the site. However, the importance of the natural landscaping, woven into the meandering building made extensive use of glass. Stouenborg says: “We had the challenge of dealing with a lot of daylight in certain areas. We had to balance that with the need to create magical and mysterious atmospheres where we could play with darkness and light.” Through slight changes to some of the areas where light was flooding the rooms, as well as dimming of

artificial light, the perfect balance has been achieved.

The exhibition starts by looking at Andersen’s life and travel. Through six areas visitors discover more about his experiences, his romantic relationships and his influences.

The first room tells the story of Andersen’s childhood. Six Epson 3LCD projectors animate parts of blocky, simple depictions of Andersen’s boyhood and where he grew up, outlining the influences that started to shape author’s creative mind.

In another, ten wall-mounted NEC displays outline Andersen’s travels. Content runs on a loop with a timecode that triggers audio in the room as well as the audio guide. In the centre of the room two model houses are built around Lenovo ThinkVision S28u monitors. Looking through the frosted flexi-glass of the house structures reveals figures moving within, supported by the audio guide to explain Andersen’s adventures abroad.

A lighter space filled with metal plant-inspired sculptures explores Andersen’s letters and documents. Epson projectors firing onto a gauze curtain are used here to create delicate butterflies fluttering in space.

The museum has a huge collection of Andersen’s paper cuts, many of which are available to view. Two projectors are also used to beam some of these intricate and beautiful works, as



well as animations, in a room that covers this part of Andersen's creative output. In a simple but very effective installation this room also includes strings of fibre optics running just below the ceiling that show up as coloured beams with light shone through them.

In this room a touchtable facilitates a game where visitors can try and match certain themes with Andersen's papercuts or fairy tales. Stouenborg explains: "The museum designers wanted a round touch table so we had to devise a solution using two Epson projectors shooting upwards, each of which creates half of the table. Infrared light and an infrared camera are used to detect people's fingers on the surface to trigger the computer that runs the game."

The exhibition finally opens into the fairy tale room. Here 12 of Andersen's stories are revealed through a series of art installations, which are interactive, immersive and often fun.

The individual installations are dotted throughout the large area that evokes feelings of fantasy with an underlying soundscape and sculptural metal plants contributing to the atmosphere. To enhance the feeling of wonder, some areas are concealed from first sight with the use of curtains made from silicon tubes that Stouenborg projected onto using Panasonic projectors to create abstract images and natural scenes such as forests or water. In some areas, natural light enters

the room via portal like windows in the ceiling. "As soon as we realised the level of natural light coming into this space, we had to change the specification to brighter projectors," notes Stouenborg.

Tiny K-array Lyzard-KZ14 loudspeakers are concealed on the black metal stems of the beautiful metal plants and flowers, while compact Truffle-KTR25 subwoofers sit below the sculptures. "[The Lyzard loudspeakers] were so small they could fit on to the middle structure of the plant and totally disappear, but they still play really loudly," says Stouenborg.

Content projected on to one of the areas almost circled by the silicon curtain evokes an underwater scene to tell the story of the Little Mermaid. The unusual projection screen works at its best here as an almost fluid surface perfect for delivering the feeling of moving water and waves. Small LG 32-in displays integrated into spherical shapes are dotted through the area. Visitors can look into the shapes to watch animations that also trigger the audio guide.

There are several interactive installations created by ISO, a Glasgow-based digital media and software studio that specialises in interactive and immersive media projects, in the fairy tale room. The company delivered and mounted all the hardware for Kinect-based interactive systems



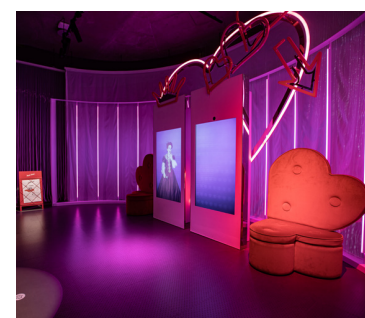
and handled programming.

One of these installations tells the story of the Emperor's New Clothes. Here, Stouenborg installed two NEC screens back-to-back. On one side a Kinect camera captures the viewer who then sees themselves on the display with digital clothes overlaid on their body. While the visitor admires and laughs at themselves in the extravagant augmented outfits, viewers on the screen on the other side will simply see the guest without the clothes.

In another, to tell the story of The Shadow, a visitor can stand on a specific point where they will be seen by a Kinect camera that creates their 'shadow' on the facing wall using two Panasonic projectors. The projected shadow will mimic the visitor's movements for a while before it develops a mind of its own and starts acting independently, jumping around, doing crazy things and changing form.

Elsewhere, the story of Clumsy Hans is told with two NEC screens. One shows a princess who instructs the visitor to do a series of tasks and, if successful, wins the princess and half the kingdom. An integrated camera captures the successful visitor and shows them in the second display.

In another area, six large format NEC displays, overlaid with cut-out structures to deliver a feeling of depth, were deployed to tell the story of The Ugly





Projecting onto this surface, which was essentially mirrored, was really tricky.

Kasper Stouenborg, Stouenborg

Duckling. Between the layers of the cut out, lighting adds to the visual effect.

To evoke the story of the Snow Queen, a shattered glass effect was created with a mix of Epson and Panasonic projectors used to fire onto the angular constructions that look like shards of glass. The fragments are spread around the room, some suspended from the ceiling, while three appear like they've fallen, burying themselves into the floor. For the ones in the floor, Stouenborg built projectors into the floor, that fire up onto the shards from a concealed position. "We applied projection film to the shapes," explains Stouenborg. "If you step close to it with the headset on it triggers the video playing on the fragment."

The last part of the Snow Queen story is told in a full glass structure, or snow palace, formed of multiple shards that visitors can walk into. Subtle projections light up the different angles of the fragmented glass and shows figures that walk away indicating the happy conclusion to the tale. "Projecting onto this surface, which was essentially mirrored, was really tricky," says Stouenborg. "We've had to experiment with what works best, applying surfaces to try and make the glass a little more matt. It's getting the right balance because the shards still must look like hard, reflective glass. We also had to do a lot of projection mapping

to make sure everything worked on the different angles of glass, mapping out every triangle in the structure."

The Little Match Girl is told with animations that are projected onto a house-shaped structure. The content is controlled by a button. With each press of the button the girl lights a match to warm herself, and a scene plays out from the story supported with audio.

Projection is also used to tell the story of The Steadfast Tin Soldier. Visitors enter a box that looks like a toy box of tin soldiers. Projection beamed on to three interior walls of the box takes visitors on a journey with the Tin Soldier before the box is engulfed in projected flames.

In another areas the museum tells the story of The Nightingale, with a beautiful mechanical bird. Visitors turn a handle which triggers the audio guide to play a mechanical bird song and it's surrounded by a silicon curtain with content projected on to make a blue, shimmering background.

Elsewhere a kaleidoscope was created for visitors to look in and see illustrations of the story of the Thumbelina brought to life, while a huge stack of mattresses is piled on a bed, alluding to The Princess and the Pea.

Outside the fairy tale room, Stouenborg also integrated a small auditorium with a projector and two Meyer Sound Ultra-X20

loudspeakers that can be used for lectures.

Finally, there is a children's room called Ville Vau. It's a separate area that encourages children to access the world of Andersen and his fairy tales through play. The space is filled with wooden structures such as castles, houses and boats, as well as dressing-up clothes and props. The AV requirements here were minimal but projection is incorporated to add fairy tale animations to the space.

As guests exit, they walk through a corridor where projected videos show celebrities, including many prominent literary names, explaining the impact that Andersen's works have had on them and their creative output. The audio guide plays the interviews synchronised with the video projections to the visitors.

It's a fitting end to a museum journey that does so much to inspire; visitors are left reflecting on the influence Andersen has had on them while learning about his impact on others. From art to architecture, the creative team behind the H. C. Andersen House have used every tool available to deliver an experience where Andersen's life story and works are not told to the visitor, but gently reveal themselves. When it comes to the interplay between dark and light, immersion and interactivity, AV technology is a vital part of that toolbox. 🌐

Tech-Spec

Audio

Genelec 4420A loudspeakers

K-Array Lyzard-KZ14 loudspeakers and Truffle KTR25 subwoofers

Meyer Sound Ultra-X20 loudspeakers

Video

Beetronics 12TS7M touchscreens and 8VG7M monitors

Epson EB-L1070, EB-L1075 and EB-805F projectors

Lenovo ThinkVision S28u monitors

LG 32SE3KE displays

NEC C651Q, C751Q, C861Q and C981Q MultiSync displays

Panasonic PT-RCQ10 and PT-VMZ60BEJ projectors

Playback and control

BrightSign XT244 players

Medialon MAS Pro Dante audio server and Showmaster Pro show controller