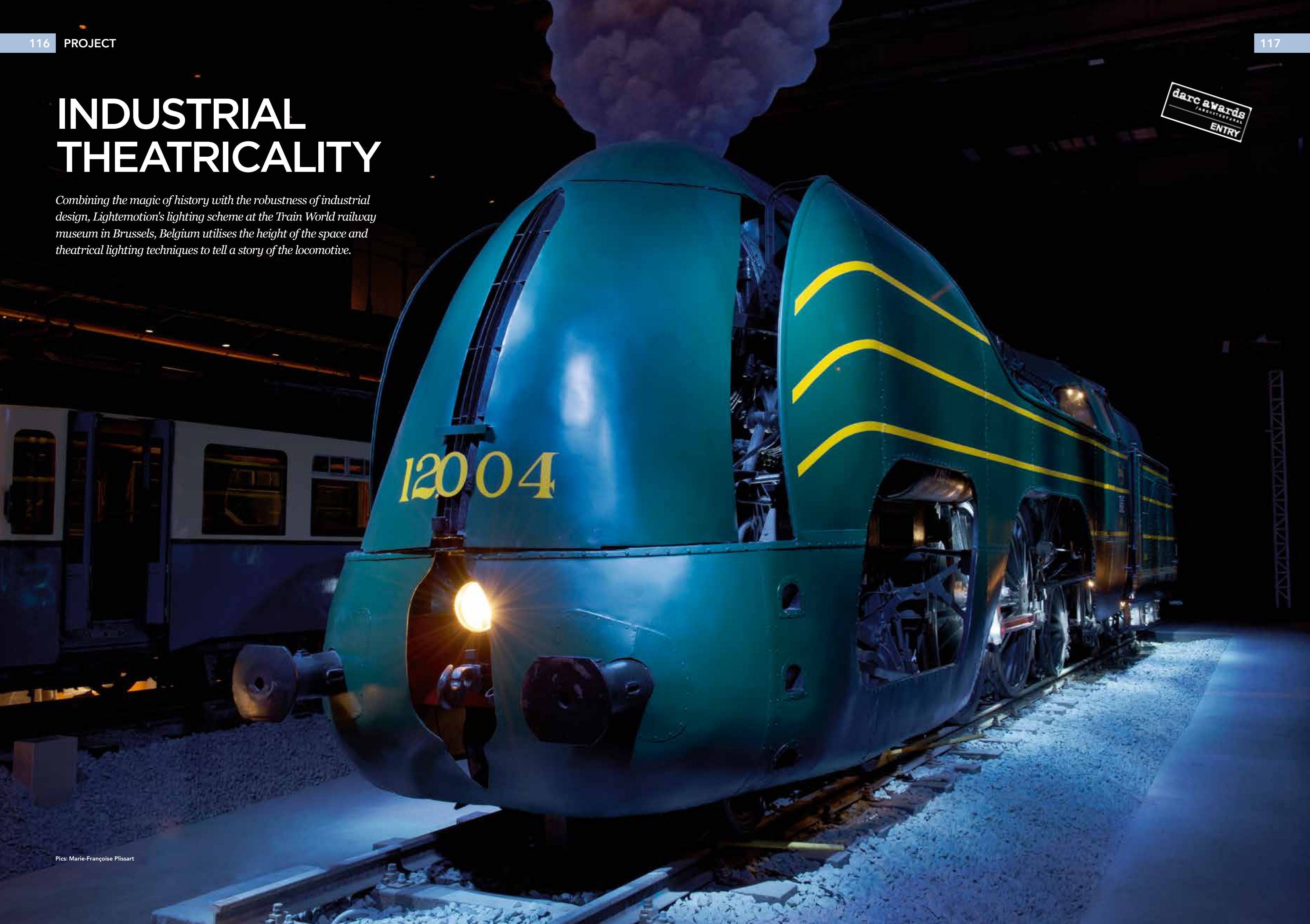


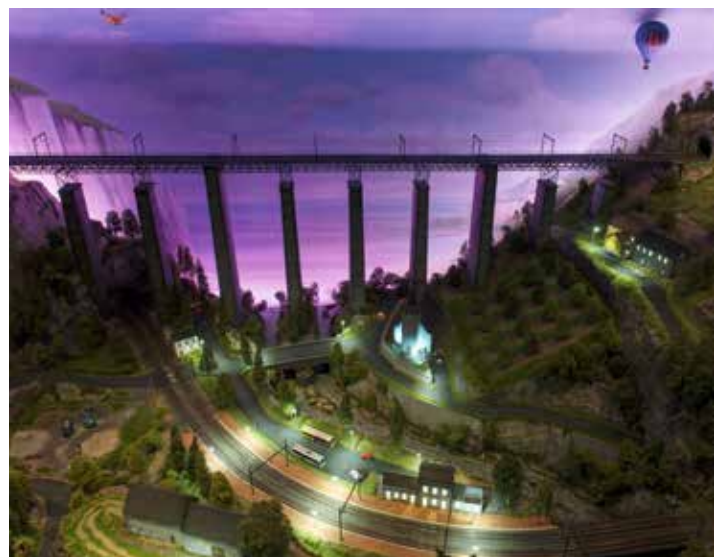
# INDUSTRIAL THEATRICALITY

*Combining the magic of history with the robustness of industrial design, Lightemotion's lighting scheme at the Train World railway museum in Brussels, Belgium utilises the height of the space and theatrical lighting techniques to tell a story of the locomotive.*

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Top Lumenpulse Lumenbeam Medium LED projectors illuminate the Schaerbeek Station - a Belgian railway architectural jewel in 3,000K. Above Left At 4°, iGuzzini Tecnica AR111 track mounted-spotlights highlight many of the museum's artefacts. Above Right Custom LEDs integrated in to the model provide lighting to the tiny train tracks and streets, while Philips Color Kinetics grazers backlight the cloudscape.

Train World, the new Belgian railway museum, opened on 25 September 2015 after ten years of work and an investment of €25m. Montreal-based independent lighting consultancy Lightemotion was tasked with the lighting of this past, present and future railway showcase, which exhibits the most beautiful original pieces of the country's historical collection. Scenography, designed by the Belgian artist François Schuiten and architect-designers Expoduo plunges visitors into a true multisensory and theatrical universe. The staging of spaces and objects had to be supported by an exclusive lighting layout.

Schuiten and Expoduo brought Lightemotion into the project early on, making the lighting design an integral part of the project from the beginning. This is why the lighting is at one with all the other parts of the museum.

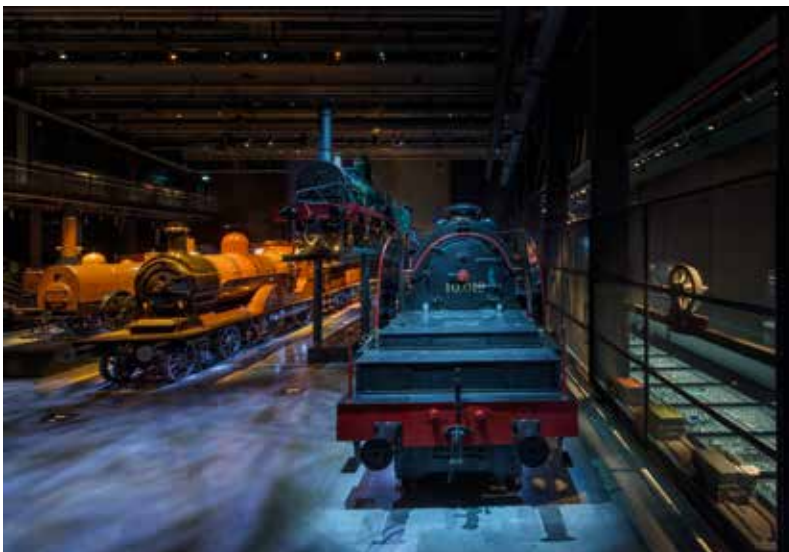
"Our introduction to the client, EuroStation, was made through Francois Schuiten, the artistic director / scenographer behind Trainworld," explained Francois Roupinian, President, Design Director at Lightemotion. "Schuiten had heard about us through our international museum work, particularly our designs for the Turin Automobile Museum and Barolo Wine Museum, both in Italy. I

think he saw something in our approach to those projects that he wanted to explore with Trainworld."

Lightemotion had to use architectural lighting equipment and integration techniques to create the effects that are typically expected in theatrical or museum settings. In addition, the team faced the challenge and opportunity to merge its experience in thematic environments and museums with its large scale architectural work.

"We began with the idea that we would paint with light - illuminating and revealing the spirit of the massive steel railway cars



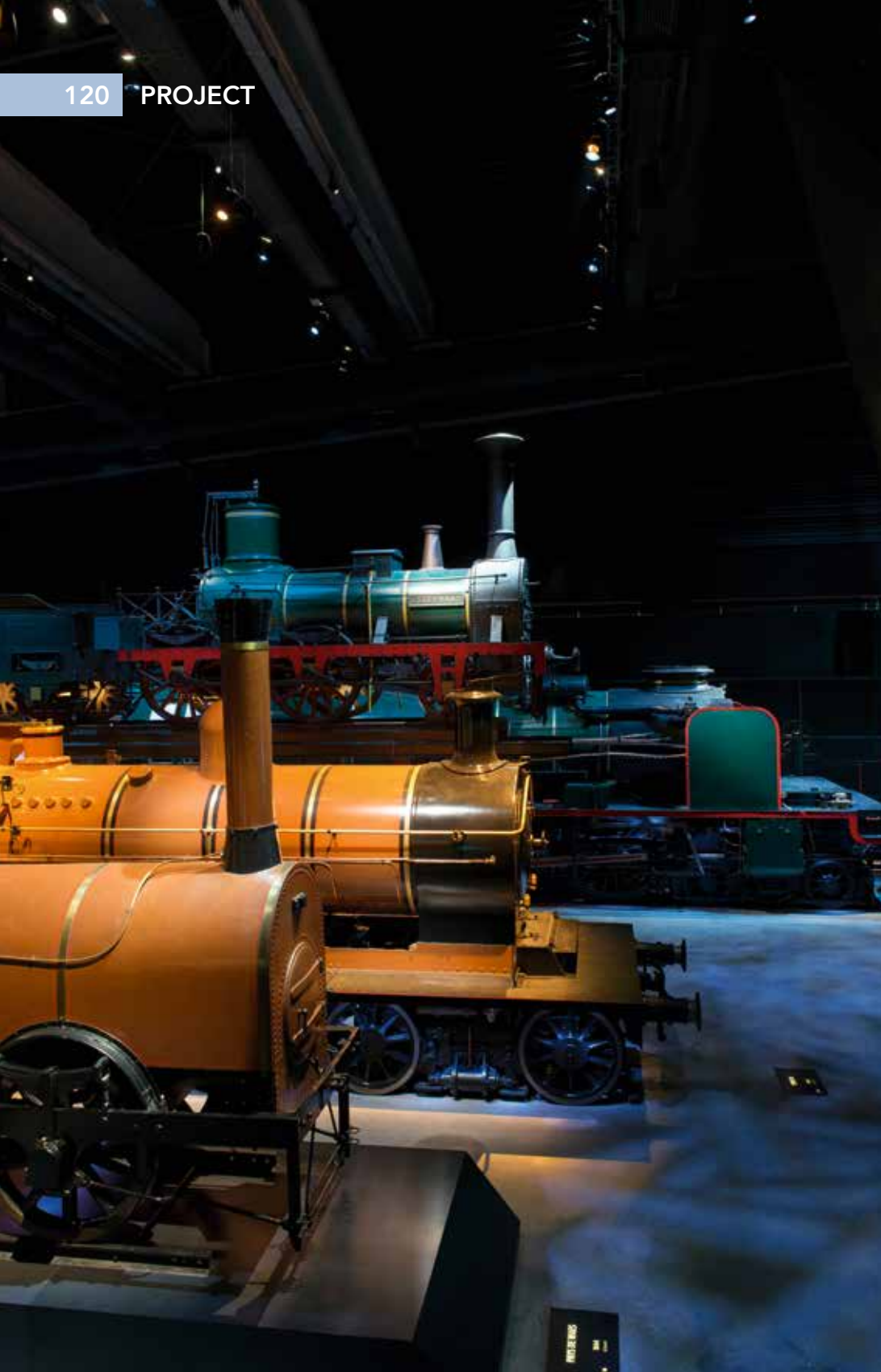


Top ETC Source Four HID profiles equipped with Rosco dichroic filters and Lumenpulse Lumenbeam Large LED projectors at 3,500K are mounted from the museum's 20-metre high ceiling, highlighting the Pays de Waes with both theatrical and architectural lighting effects. Above Left The same effects achieved by the Rosco dichroic filters are combined with gobo stencils, adding drama to the space. Above Right More artefacts highlighted by iGuzzini's Tecnica AR111 track-mounted spotlights.

and engines as well as the details of the smallest, most delicate artefacts - just like you would illuminate an actor on a stage," explained Roupinian. In the end, all of the museum artefacts are lit like actors, and their stage is the scenography and architectural backdrop of the museum. Schuiten requested a very theatrical and immersive lighting design approach, to help tell the story throughout all the different galleries, creating a distinct feeling or environment in each, while being coherent as a whole. At the same time, the project needed to be very rigorous, as it had to

function as a permanent architectural lighting installation. To link the galleries and reinforce its understanding as a whole, Lightemotion created a dynamic program that allows the light to evolve along a timeline. The ambiance of each gallery is always subtly moving, slowly changing like time passing. Given that the trains are such strong, industrial objects of steel, the movement of light brings them to life in ways that complement the artistic direction of the exhibit. "From a dramatic beam of light to the play of light and shadow, the lighting environment guides visitors through the

story," added Roupinian, "or, as François Schuiten would say, through "un opéra ferroviare". The first act of this 'opera of the train' starts in Schaerbeek Station - a Belgian railway architectural jewel and one of the oldest stations in the country, located in the heart of Europe, constructed on the first rail track of the continent linking Brussels and Mechelen. It is now connected to a new industrial hangar via the railway garden. This 86,000sqft hangar contains four exhibition halls where guests can admire several locomotives, including the Pays de Waes - the oldest preserved steam



To address the ceiling height, metal halide ETC profiles were used. However, because they're not dimmable, Lightemotion had to do a lot of mockups to find the ideal filters to tint and reduce the light levels on the trains, in order to create the theatricality required. Therefore the team equipped ETC's Source Four HID theatrical spotlights with Rosco dichroic filters and placed them alongside Lumenpulse Lumenbeam Large LED projectors at 3,500K to create the desired effect.

locomotive in Europe - as well as a thousand objects related to the railway world, drawings and models.

Diversity and difference in scale of the exhibits brought the creators of Lightemotion to use lighting systems, architectural technology and unusual applications.

"We had to think outside the box. We used, for example, lighting systems designed for outdoor use to obtain the power and durability required for locomotives highlighting," said Roupinian.

The project required more than 2,000 LED lamps and metal halide, known as Metalarc, widely used in film projectors and theatre. Every detail is carefully embraced by the

light through a thorough study of exposed volumes. Each light source was custom tailored to the scenography needs and context. Simulations using 3D software has achieved a considerable level of precision in highlighting the project.

With the hangar space's 20-metre high ceilings, the primary challenge was creating and controlling theatrical lighting with very few lighting positions and difficult maintenance access. To address the access issues, Lightemotion used equipment that was low maintenance and controllable, so it could create the immersive environments demanded by the design brief. "But, we also knew from the beginning that we wouldn't have the budget for a full LED

system - this meant we had to use a mix of lighting sources," explained Roupinian.

To address the ceiling height, metal halide ETC profiles were used. However, because they're not dimmable, Lightemotion had to carry out mockups to find the ideal filters to tint and reduce the light levels on the trains, in order to create the theatricality required. It was also a challenge to produce tight beams of light in order to stage small objects from those high ceilings; again, a lot of research and testing was done, to select the ideal lamps and fixtures for the desired result.

"Using multiple types of lighting sources in one gallery was a tour de force," said Roupinian. "We didn't want the ambiance



*Top and Middle* More angles and more trains showing the effect created by combining ETC Source Four HID theatrical spotlights and Rosco dichroic filters. *Bottom* LSI LN36 dynamic AR111 4° fixtures highlight past objects relating to the world of railway and its fruitful history.

or the overall visual environment to be messy, from halogen to LED to arc lamps. Again it was the careful selection of filters that was critical to achieving the effects we wanted, and ensuring the quality of the end result.”

Aside from not having the budget to use an LED system throughout the museum, having to mix sources and use arc lamps complements the industrial nature of the trains and their materials. Without them, the exhibit ambiance may not have been the same.

The lighting is at times dramatic, vibrant and animated. Each exhibition hall is unique and presents a variety of environments to be experienced by its visitors. “Trainworld differed from our previous museum projects due to the scale of the display space. But it shows that lighting can be theatrical and sensitive in its tonalities and intensity levels, and still tell a story in a large scale setting,” concluded Roupinian.

The space, objects, light, image and sound combine to create a multisensory experience to carry visitors into the Belgian railway world.

[www.lightemotion.ca](http://www.lightemotion.ca)



## PROJECT DETAILS

### Train World railway museum, Brussels, Belgium

Client: SNCB, Eurostation  
Architects: ExpoDuo  
Scenography: François Schuiten  
Lighting Design: Lightemotion

## LIGHTING SPECIFIED

ETC Source Four HID theatrical spotlights  
iGuzzini Tecnica AR111 track-mounted spotlights  
LSI LN36 PAR36 Series spotlights  
Lumenpulse Lumenbeam Medium LED projectors  
Lumenpulse Lumenbeam Large LED projectors  
Luminergie LED PLA system  
Philips Color Kinetics Dynamic White grazers  
Rosco dichroic filters and gobos

