ERCO

2010 Relighting of the Tokyo International Forum

Architect: Rafael Viñoly Architects, New York
Lighting designer: Claude R. Engle, Chevy Chase, Lighting Planners Associates, Tokyo
Photographer: Joshua Lieberman, Tokyo
Project location: Tokyo

The Tokyo International Forum marked 1997 with a top performance in technology and architecture. Now, new lighting releases enormous potential for energy savings, while maintaining the quality of the original lighting design.

In 1997, the lighting designers created the fascinating lighting of the spectacular atrium and many other areas of the building using the best lighting tools from ERCO that were then available - partly using regular spotlights and downlights for halogen lamps and partly also using special custom designs.

The aim of the complete renewal of the lighting system was to implement the original lighting concept at least as well as before - but with modern, future-proof, off-the-peg products. The investment was to pay for itself via the drastic reductions in energy consumption and maintenance costs. Using the concept of efficient visual comfort, ERCO was able to successfully fulfil this requirement. Intelligent, perception-orientated lighting design and efficient metal halide lamps in

luminaires with high-quality lighting technology now realise energy savings of up to 70%.

The illumination of vertical surfaces defines the architecture and determines the overall impression of brightness. This is why wallwashing is a central factor of efficient visual comfort. On the access ramps, wallwashers with 500W and 300W halogen lamps were replaced by models with 150W metal halide lamps, giving a 70% energy saving with improved lighting quality.

Illuminating the inclined walls in the atrium using recessed floor luminaires has also enabled an energy saving and a simultaneous improvement of the visual impression. Uplights with PAR lamps from another manufacturer were replaced by Nadir grazing light wallwashers with 20W metal halide lamps, giving an energy saving of 69%.

The gigantic, zeppelin-like, steel roof construction is now scenically illuminated by no less than 588 recessed spotlights with spot and flood reflectors, shining from the lower edge of the glazed side walls. It was possible here to replace the previously used Gimbal recessed spotlights for 75W MR111 low-voltage recessed spotlights by versions with 20W metal halide lamps. The lighting effect is most convincing and the energy saving is 73%. The high-pressure lamps have an

approximately six-times longer functional life of about 12,000 hours, giving a reduction in maintenance work, which was particularly notable given the large number of individual luminaires.

In the lobby of the large "Hall A", it was also evident that 15 years of progress in lighting technology have enabled the idea for the lighting concept to be re-implemented and even improved upon - with reduced energy consumption. Thus, for instance, the high-quality reflectors of the Gimbal recessed spotlights for metal halide lamps produce a more uniform light on the floor than the old spotlights for 150W halogen lamps. The new design uses different wattages - 35W or 70W - for the different mounting heights, giving an energy saving of 73%.

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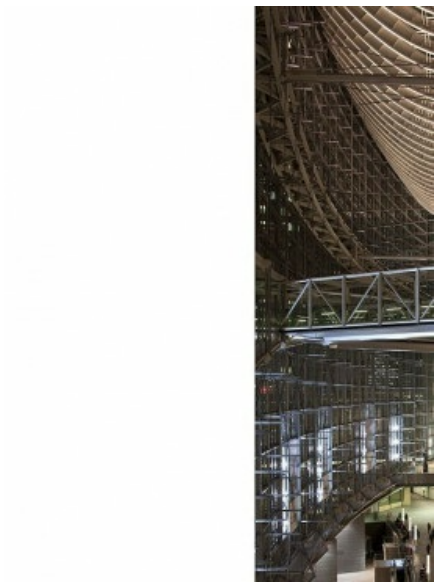
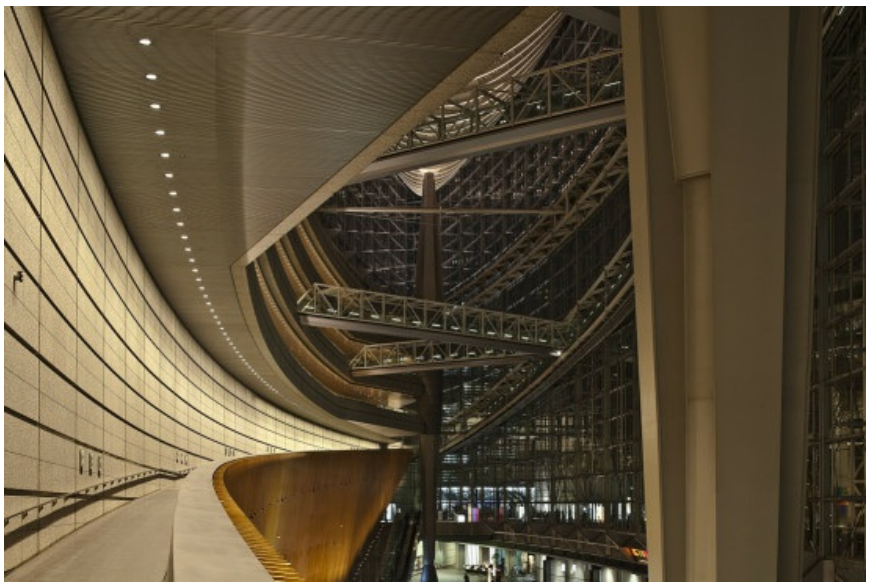
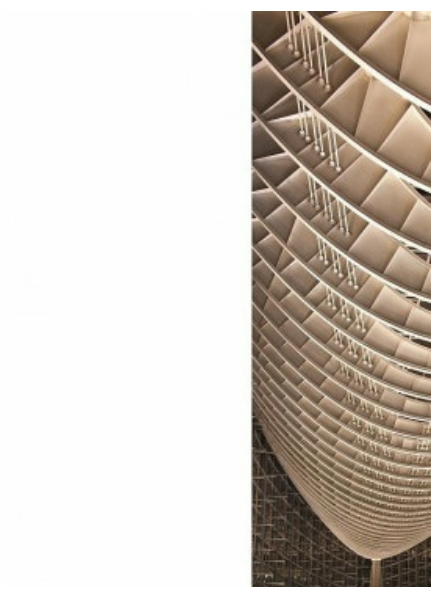
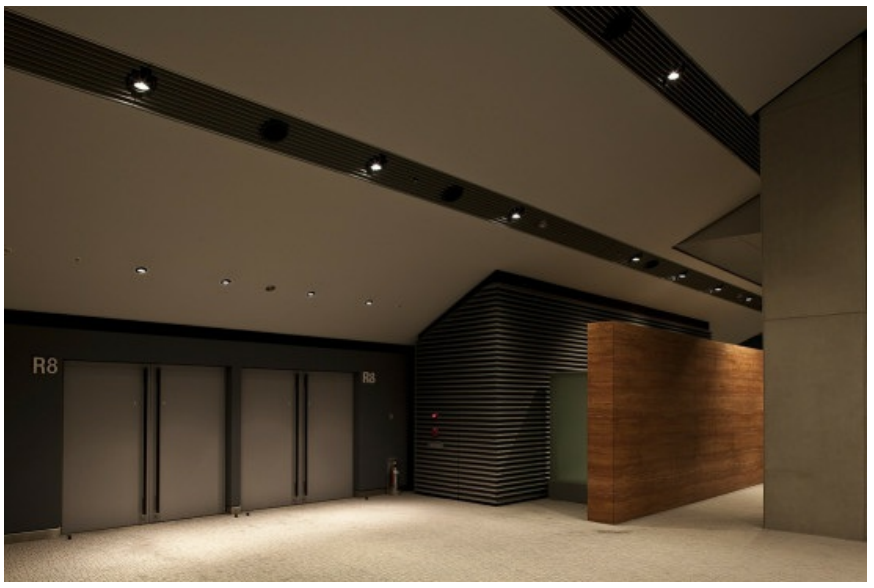
Design phase: March 2009 - April 2010
Construction phase: December 2009 - April 2010

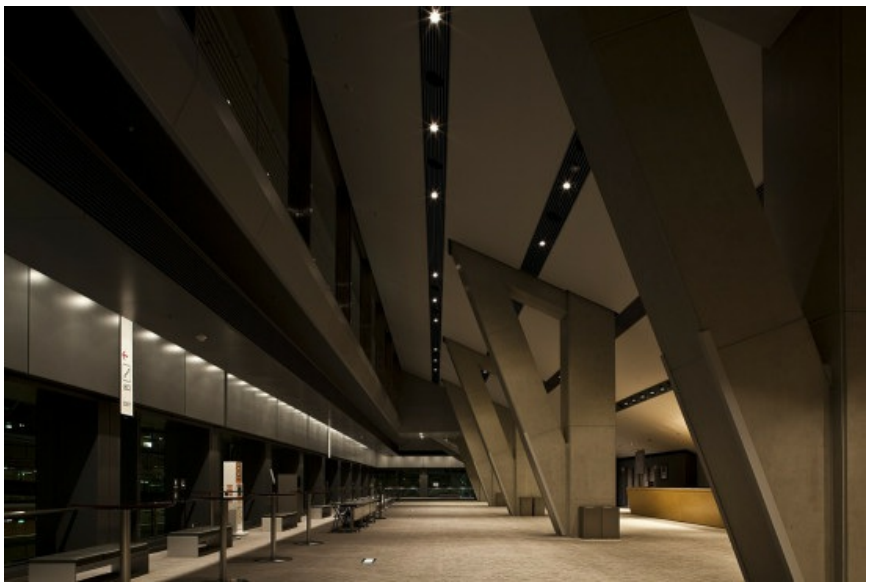
Costs: approx. ¥84m (approx. 650,000 Euros)











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