



project: syntropy (Germany / KSA / Sweden / Singapore) creates audiovisual technologies and solutions for professional simulation and training environments, immersive XR environments, CAVEs, media based attractions such as flying theaters, dark rides and more.

Project

Shanghai Urban Planning Exhibition Center, China: Immersive interactive 5D Urban Model

Customer

Shanghai Urban Planning Exhibition Center (SUPEC), on behalf of Space M GmbH, Munich/Germany.

Project

Turnkey immersive interactive 5D Mixed-Reality Environment, comprising a 20m wide & 10m high fibre glass projection screen having the shape of a toroid on the top and bottom combined with a cylindrical shape in the middle and a floor projection, 12+11-channel 4k 3D-stereo projection, 24-channel IG-rendercluster, several tracking systems, domeprojection. com ProjectionTools auto-alignment, 22-channel surround sound and show control.

Project Details

In the course of modernizing the Shanghai Urban Planning Exhibition Center (SUPEC) SBA Staedtebau Architekten (Stuttgart/D) - who were commissioned with not only modernizing the building but also upgrading the exhibition concept (with Molitor) - came into contact with the „Elbe-Dome 2.0“, whose unique projection system we had upgraded shortly before. The „Elbe-Dome 2.0“ is operated by the Fraunhofer Institute IFF in Magdeburg/Germany. While in search of state-of-the-art exhibition technologies to transform the central exhibit of SUPEC - the physical city model of Shanghai's city center with a scale of 1:500 - the immersive Elbe-Dome 2.0 appeared to SBA as the ideal technological blueprint for the implementation of their 5D digital city model of Shanghai called „Digital Twin“. After a visit and demonstration in Magdeburg, the chinese customer was also convinced of the enormous possibilities of the technology and the concept.

The immersive interactive digital 5D city model - christened „Digital Sandtable“ by the customer - makes use of many technologies known from Virtual and Mixed Reality to implement and present a walk- and experienceable, fully dynamic and thus future-proof digital city model.

Leading Provider of Next Generation immersive XR-Environments

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A 20m wide and 10m high multi-curved screen completely encloses visitors in the immersion: it extends over two floors, its upper and lower thirds are toroidal in design, its middle segment has the shape of a cylindrical screen and thus altogether resembles a wave and finally, it has an additional floor projection. A VIP area on the upper floor allows for special presentations and working meetings.

The high-resolution 12 + 11-channel 4k projection system also supports 3D-stereo projection. By integrating multiple hi-end tracking systems, different dynamic eye points are selectable, allowing switching between visitor experience, interactive VIP mode, analytical expert mode, as well as between different scales of the 5D city model.

The 24-channel high-performance IG rendering cluster runs the dynamic real-time 3D city model of the Shanghai metropolis, which is based on 3D data provided from the city of Shanghai and prepared especially for the museum exhibit, which can be expanded and modified at any time. Additional content such as GIS data, simulations of e.g. development and mobility planning as well as implementation measures based on urban planning can be overlaid and added accordingly.

Our work for the 5D MR attraction included the creative-technical concept, system design, delivery, installation, integration and commissioning of the complete visual system including screen, IG render cluster, surround sound audio system, media control as well as the initial calibration and the final training of the operating staff.

Maintenance is provided by our local staff.

About Shanghai Urban Planning Exhibition Center

The Shanghai Urban Planning Exhibition Center is centrally located at People's Square in Shanghai. The modernized museum and the new exhibition are designed to provide an interactive experience of the current mission statement and master plan „Shanghai 2035“, which defines action plans, development concepts and guidelines for a competitive, innovative, but also livable and healthy city, using state-of-the-art presentation and communication methods.

The barrier-free, inclusive and family-friendly museum is targeting broad interest groups: from school classes, the broader public to professional visitors. It provides the opportunity to learn about global research results on the topic by using big data and smart technologies, as well as to take part in participation processes and public discussions.

The centerpiece of the exhibition is now the multi-level immersive „Digital Sandtable“.

Turnkey Display Solutions for Simulation, Training, Immersive XR-Spaces, XR-CAVES, Media Based Attractions

project: syntropy offers turnkey projection / dvLED-based display solutions, tailor-made AV systems and full-service throughout the entire project:

- PROJECTION- OR dvLED-BASED SYSTEMS
 - DEVELOPMENT
 - ENGINEERING
 - CONSTRUCTION AND INSTALLATION
 - AFTER SALES SERVICE
 - Training
 - Maintenance and Support
 - tailored Service-Level-Agreements (SLA)
 - Spare Parts Supply
- VISUAL SOLUTIONS FOR SIMULATION & TRAINING
 - FMS FULL-MISSION-SIMULATORS - FFS FULL-FLIGHT-SIMULATORS - CT COCKPIT SIMULATORS - HELICOPTER SIMULATORS - COMBAT SIMULATION - JFST ACTION TRAINERS - JTAC TRAINERS - ATM TOWER SIMULATORS - DRIVING SIMULATORS - SHIPS BRIDGE SIMULATORS - INDUSTRIAL SIMULATORS - RESEARCH SIMULATORS
- MEDIA BASED ATTRACTIONS
 - XD FLYING THEATRES - XD 360° & 720° ATTRACTION DOMES, CINEMAS & GLOBES - INTERACTIVE VISITOR ATTRACTIONS - MOTION THEATRES - DARK RIDES - MEDIA FACADES - IMMERSIVE TUNNELS & IMMERSIVE ENVIRONMENTS - PLANETARIUMS - PROJECTION MAPPING
- DIGITAL TWIN XR-SPACES (e.g. UDT Urban Digital Twins)
- XR-CAVE - XR VOLUMES
- SYNTOUCH MULTIUSER RADAR TOUCH
- MIXED REALITY ENVIRONMENTS & TRACKING TECHNOLOGY DEVELOPMENT

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