SPATIAL DESIGN SURVEY: 2025 WORLD EXPO

Insights & Future Outlook

Aerial view of the 2025 Osaka World Expo

Introduction

What are Spatial Experiences?

When digital content is not just shown on a flat screen but fills the entire space around you—walls, floors, ceilings, or even objects in the room, in order to immersive an audience in a story or information.

The Osaka World Expo 2025 marked a significant moment in spatial experience design. Over six months, nations transformed architecture, technology, and narrative into immersive storytelling environments — each attempting to make their culture tangible.

As the Expo concludes and preparations begin for the upcoming Expos in Belgrade (2027) and Riyadh (2030), this report reflects on the **state of spatial experience design**: how it was implemented, how it was received, and what it signals for the future of immersive environments.

This survey is not statistical, but **an anecdotal snapshot** of creative and operational realities gathered from **10 Pavilion Directors** who generously shared their observations. Despite the small sample, the results offer meaningful insights for architects, creative directors, investors, and policy makers shaping future Expos — and for any organization exploring spatial storytelling.

Highlights

Here are key highlights from the survey that provide a quick glimpse into the pavilion operations at the World Expo.

80%
Employed Spatial Experiences

75%
Used LED Screens & Walls

85%
Featured Multiple Immersive Rooms (2-5)

62%
Relied on a Mixture of Looped Videos & Scenic Environments

Top-3 Desired Improvements
(wished for respondents' pavilions)

1. Higher-fidelity visuals
2. More interactivity
3. Bigger spatial experiences

Inside the Pavilions

*90% of respondents represented **Type-A self-built pavilions**, underscoring the financial and creative autonomy of national projects.*

Primary Themes:

Learning about the environment (60%)

Learning about history and culture (50%)

This aligns with the Expo's dual role — not just diplomacy and trade, but public education and cultural dialogue.

Trend Insight: The Return of Shared Space

LED installations decisively overtook both HMD-based and projection-mapped experiences. This reflects a strategic preference for **collective, shareable engagement** over isolated, headset-based encounters.

While LED remains a higher upfront cost than projection, its **resilience to ambient light, modular scalability, and reusability** now make it a more cost-efficient long-term investment. As panel prices drop and pixel pitch tightens, we expect this to remain the industry standard for public immersive environments.

The Expo's Grand Ring and Electric Power pavilion

Interfaces & Interactions

When asked what interfaces were used:

40%
Used Motion/ Optical Sensors

40%
Used Connected Physical Objects

20%
Used Touchscreens or Tablets

The data indicates a decisive **shift from flat to spatial interfaces**. Post-pandemic sensibilities and advances in computer vision have normalized "hands-free" interaction — systems that read movement, recognize proximity, and respond to collective presence.

Design Implication: The Environment Is the Interface

This trend reinforces a paradigm shift: the **interface disappears**, and the **experience becomes the medium**. Environments now act as sensing, responsive systems — a philosophy shared by emerging platforms, that aim to transform real physical spaces into interactive, real-time worlds.

Programming & Maintenance

*62.5% of pavilions ran **locked-in programming** for the entire Expo duration, with no scheduled updates.*

*37.5% employed **modular or refreshable content**.*

Inside the U.S. pavilion

Strategic Insight

Most Expos operate on fixed government budgets that prioritize capital expenditure (construction and installation) over operational budgets (maintenance and updates). This explains why most pavilions front-load investment and rarely iterate post-opening.

However, modular pavilions demonstrated **longer visitor engagement** and stronger alignment with rotating Expo themes. This validates the value of **living content ecosystems** — experiences designed for periodic updates, whether seasonal or thematic.

Future Opportunity

Real-time systems like game-engine-driven content pipelines (Unreal Engine, Unity) make it technically and financially feasible to evolve a pavilion's story over time without rebuilding infrastructure. These systems support adaptive storytelling and dynamic asset swaps, extending both relevance and ROI.

Visitor Experience & Operational Learnings

*Average visitor engagement: **10–15 minutes per pavilion**, across 2–5 immersive rooms.*

Observations

High Engagement

great levels reported overall.

Moderate Guidance

50% of visitors required guidance to understand interactions.

High Usability

only 12.5% reported usability challenges requiring staff assistance.

Low Discomfort

complaints were negligible, evidence of improved best practices (stationary experiences, reduced acceleration, and clear visual anchors.)

Design Implications

Accessibility and intuitive interaction remain critical. Every second of confusion adds operational cost. Future spatial systems should emphasize learn-by-doing design logic — natural gesture response, simplified affordances, and adaptive multilingual UX cues.

Creative & Technical Challenges

Inside the Live Earth Journey pavilion

Respondents frequently cited:

1. Heavy reliance on **AI-generated animations** (as cost/time workaround).
2. **Architectural constraints** limiting flow or immersion.
3. **Content quality variance** due to compressed timelines and uneven budgets.

Interpretation

AI-generated visuals filled production gaps but lacked narrative and emotional coherence — a growing concern for authenticity in national representation. The takeaway is not rejection of AI, but integration: **AI for asset generation, human designers for narrative cohesion.**

Budget constraints remain the most systemic limitation. Static pre-rendered video content is expensive to update, which disincentivizes mid-cycle iteration. Real-time pipelines can help here, lowering the cost per update and encouraging long-term adaptability.

Best-in-Class Examples

Pavilions most frequently cited for excellence by other Pavilion Directors:

Saudi Arabia

South Korea

Luxembourg

Indonesia

Pasona

Common success factors included **scale, interactivity, and storytelling cohesion.** These pavilions treated the visitor journey as cinematic — balancing immersion with clarity and flow. Unsurprisingly, they also benefited from larger budgets and dedicated technical teams.

Broader Takeaways

Spatial experiences have transitioned from “entertainment spectacle” to **core storytelling infrastructure**. They now serve as cultural diplomacy tools, retail experience engines, and educational platforms.

However, the survey reveals that the next frontier is **sustainability and adaptability** — experiences that can evolve, scale, and be repurposed beyond a six-month Expo cycle.

The Expo’s lessons extend to **airports, museums, universities, and branded environments** — any space where people engage with stories through motion and light rather than screens.

Front wall of the Malta pavilion

About MRSV*SPACE

For over two years, Hello xLAB has been developing MRSV*SPACE, a publishing and deployment platform for real-time immersive display.

Think of it as VR without the headset: transforming physical rooms into dynamic, responsive spaces powered by Unreal Engine.

The platform is designed for organizations seeking to **build living environments** — adaptable, engaging, and easily maintained over long operational periods.

*MRSV*SPACE enables:*

Real-time updates to content.

Integration with sensors, cameras, and web interfaces.

Scalable deployment from single screens to multi-wall environments.

Rapid prototyping for exhibitions and permanent installations.

MRSV*SPACE

Top of the Netherlands pavilion

Final Thoughts

The Osaka Expo offered a rare living laboratory for the future of spatial design. It revealed both ambition and limitation — the hunger for immersion, and the challenge of sustaining it.

The findings reaffirm that **spatial storytelling is no longer experimental** — it is the new normal for cultural communication. The opportunity ahead lies in developing **flexible, real-time systems** that democratize access to immersive technologies, regardless of a nation's size or budget.

At Hello xLAB, we believe the future of spatial experience will be **real-time, adaptive, and human-centered**.

MRSV*SPACE is our step toward that future — a bridge between creative vision and operational reality.

Want to learn more about MRSV*SPACE?
Visit our website: mrsv.space

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