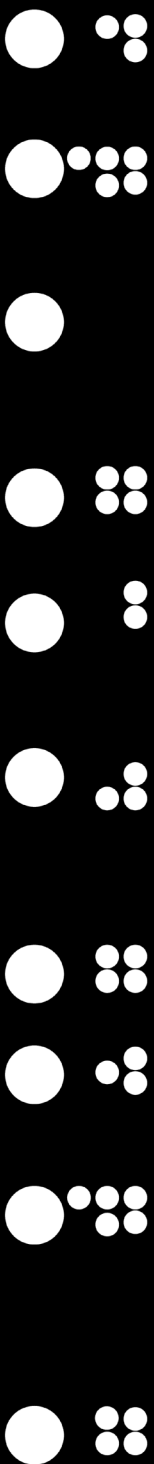


The Exhibited Space

Free Expired Space



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This research explores how the design and structuring of museum exhibitions shape narrative coherence and visitor experience in art and history museums. Focusing on the Art of the Islamic World Gallery at the Royal Museums of Art and History in Brussels, the study examines how spatial and multimodal information design affect the construction, accessibility, and understanding of the curatorial narrative. By mapping the gallery layout, analyzing visitor movement, and evaluating the distribution of graphic and multimodal information, the research identifies structural gaps and opportunities for narrative improvement. Building on these findings, the study develops a design method intended to guide the collaborative (re)design of exhibitions from an early stage, bringing together curatorial, architectural, graphic design and mediation perspectives to support coherent and accessible storytelling. This research positions information design as both an analytical and a curatorial tool, offering strategies to create more integrated and accessible exhibition experiences.

Introduction

Exhibition spaces are narrative environments that shape how objects and their meanings are presented and perceived.¹ Among the various forms an exhibition can take, such as galleries, showrooms or traveling exhibitions, museums represent a type that is content-driven, informative, and educational.² A museum operates within a social context, serving as a site of cultural dissemination that shapes and circulates meanings within the community.³ Its messages are therefore shaped by the institutional setting and broader socio-cultural narratives.⁴

Museums' roles have evolved in recent decades. They have been increasingly compelled to boost attendance under the pressures of democratization and commercialization.⁵ This shift has moved museums beyond a purely object-centered, conservation-driven approach, adopting a visitor-oriented perspective that recognizes museums as platforms for communication, education, and experience.⁶

This shift has given rise to two main approaches in exhibition design: one that focuses on conservation and curation, viewing

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- 1 Kossmann, H., Mulder, S., & den Oudsten, F. (2012). *Narrative spaces: On the art of exhibiting*. 010 Publishers; Montpetit, R. (1995). Making sense of space. *Museum International*, 47(1), 41; Dernie, D. (2006). *Exhibition design*. Laurence King Publishing, p. 6.
 - 2 Dernie, D. (2006). *Exhibition design*. Laurence King Publishing; Lorenc, J., Skolnick, L., & Berger, C. (2007). *What is exhibition design?* RotoVision.
 - 3 Montpetit, R. (1995). Making sense of space. *Museum International*, 47(1), p. 41; de Cossio, M. G. (2017). Exhibitions for learning. In P. A. Rodgers & J. Bremner (Eds.), *Information design* (pp. 607–622). Routledge.
 - 4 Piehl, J. (2021). *Graphic design in museum exhibitions: Display, identity and narrative*. Routledge, p. 13.
 - 5 Kossmann, H., Mulder, S., & den Oudsten, F. (2012). *Narrative spaces: On the art of exhibiting*. 010 Publishers, p. 150.
 - 6 Hidayat, J. (2018, November). Creating an inclusive museum with a narrative design approach. In *3rd International Conference on Creative Media, Design and Technology (REKA 2018)* (pp. 153–159). Atlantis Press, p. 153.

design as secondary, and another that sees the collection and design as inseparable, emphasizing storytelling.⁷ This forces museums to question their narrative, a challenge particularly difficult within encyclopedic museums⁸ where collections from diverse cultures and histories are displayed far from their original contexts.⁹

While most contemporary exhibitions aim to be engaging and audience-focused, encyclopedic museums often retain the character of a crowded library, leading to superficial engagement.¹⁰ Unlike other types of exhibitions, permanent museum exhibitions are designed to remain relevant for years, sometimes decades. This means both the storytelling and spatial design must be able to evolve with time, even if permanent, a challenge many exhibitions fail to meet.¹¹

However, as museums increasingly prioritize visitor engagement, a central challenge is ensuring accessibility, both physical and cognitive, as well as cultural.¹² Indeed, accessibility and non-discrimination are mandatory for EU-funded projects and members of ICOM (International Council of Museums). Non-

7 Kossmann, H., Mulder, S., & den Ouden, F. (2012). *Narrative spaces: On the art of exhibiting*. 010 Publishers, p. 140; de Cossio, M. G. (2017). Exhibitions for learning. In P. A. Rodgers & J. Bremner (Eds.), *Information design* (pp. 607–622). Routledge.

8 An encyclopedic museum is an institution that collects, preserves, and displays a wide range of cultural artifacts from across the globe, aiming to offer a comprehensive view of human history and artistic expression. These museums are designed to represent diverse cultures and time periods within a single space, promoting cross-cultural understanding and a cosmopolitan perspective. However, they also face criticism for removing objects from their original contexts, which can lead to misinterpretation and loss of meaning. Despite this, they remain central in discussions about the ethical and educational roles of museums in the 21st century (Grau, D. (Ed.). (2021). *Under discussion: The encyclopedic museum*. Getty Publications).

9 Grau, D. (2021). Introduction: The encyclopedic museum: A catchphrase, a concept, a history. In D. Grau (Ed.), *Under discussion: The encyclopedic museum* (pp. 1–15). Getty Publications.

10 Dernie, D. (2006). *Exhibition design*. Laurence King Publishing, p. 13.

11 Lorenc, J., Skolnick, L., & Berger, C. (2007). *What is exhibition design?* RotoVision, p. 48.

12 Eardley, A. F., & Jones, V. E. (2025). *The museum accessibility spectrum*: Recognising the multidimensional access needs of all museum audiences. In *The museum accessibility spectrum* (p. 3). Routledge.

compliance can result in exclusion from funding and recognition.¹³

Accessibility principles are related to the Universal Design framework¹⁴, which includes equitable use, flexible design options, intuitive layouts, multisensory communication, minimized discomforts, low physical effort, and accessible space for all, including those with mobility impairments.¹⁵ Achieving this accessibility within exhibition design is an integrative process that brings together architecture, spatial planning, environmental graphic design, print graphics, digital media, lighting, audio, and other design disciplines.¹⁶

In this sense, exhibition design is not merely about display but is about creating experiences that engage visitors through space, movement, and memory, facilitating multilayered communication.¹⁷ The task of exhibition designer is therefore to create a complex narrative in which every element, from storytelling, spatial arrangement, and object presentation to accessibility, is considered from the outset and throughout the entire design process.¹⁸

13 Filová, N., Rollová, L., & Čerešňová, Z. (2022). Universal design principles applied in museums' historic buildings. *Prostor: Znanstveni časopis za arhitekturu i urbanizam*, 30(1(63)), pp. 95–97; Eardley, A. F., & Jones, V. E. (2025). *The museum accessibility spectrum*: Recognising the multidimensional access needs of all museum audiences. In *The museum accessibility spectrum* (p. 3). Routledge.

14 Universal design (UD) was coined in 1985 by architect Ronald L. Mace. The principles of UD, first formulated by Mace et al. (1997), have been studied as a starting point and considered for the purposes of museum architecture. The universal design file: Designing for people of all ages and abilities by Story, Mueller, and Mace (1998) further elaborates these principles. "Universal design means the design of products, environments, programmes and services to be usable for all people, to the greatest extent possible, without the need for adaptation or specialized design. (Filová, N., Rollová, L., & Čerešňová, Z., 2022, p. 95).

15 Filová, N., Rollová, L., & Čerešňová, Z. (2022). Universal design principles applied in museums' historic buildings. *Prostor: Znanstveni časopis za arhitekturu i urbanizam*, 30(1(63)), p. 95.

16 Lorenc, J., Skolnick, L., & Berger, C. (2007). *What is exhibition design?* RotoVision, p. 8; Piehl, J. (2021). *Graphic design in museum exhibitions: Display, identity and narrative*. Routledge, p. 13.

17 Lorenc, J., Skolnick, L., & Berger, C. (2007). *What is exhibition design?* RotoVision, p. 42.

18 Dernie, D. (2006). *Exhibition design*. Laurence King Publishing, p. 6; Lorenc, J., Skolnick, L., & Berger, C. (2007). *What is exhibition design?* RotoVision, p. 6.

This influences not only how visitors understand the narrative but also how easily they can engage with it physically and cognitively.¹⁹ Curation, the content, and design, the form, are indeed inherently connected, yet they have traditionally been treated as separate domains, with curators and designers working in silos, resulting in an artificial division between content and its spatial and visual representation.²⁰

Curatorial intent has also received much research attention, while architectural and design intent has received less.²¹ Nonetheless, there is increasing realization, particularly through innovative architectural projects, that spatial design can significantly affect the museum experience.²² Designers have begun to reflect on the staging of exhibitions as part of the communicative process, and curators can no longer ignore the role of space, light, form, and color. Content and form are increasingly recognized as equally vital to exhibition communication.²³

This integrative design approach also plays a role in making museums accessible, visitor-oriented platforms for communication, education, and experience.²⁴ Both environmental elements, such as architecture, materials, light, sound or atmosphere, and strategic and curatorial decisions can

19 Timpson, C. (2025). Inclusive design and accessibility: A methodology of perpetual evolution and innovation. In *The museum accessibility spectrum* (p. 213). Routledge.

20 Kossmann, H., Mulder, S., & den Oudsten, F. (2012). *Narrative spaces: On the art of exhibiting*. 010 Publishers, pp. 8–11.

21 Hillier, B., & Tzortzi, K. (2006). Space syntax: the language of museum space. *A companion to museum studies*, p.282.

22 Hillier, B., & Tzortzi, K. (2006). Space syntax: the language of museum space. *A companion to museum studies*, p.282.

23 Kossmann, H., Mulder, S., & den Oudsten, F. (2012). *Narrative spaces: On the art of exhibiting*. 010 Publishers, p. 11.

24 Hidayat, J. (2018, November). Creating an inclusive museum with a narrative design approach. In *3rd International Conference on Creative Media, Design and Technology (REKA 2018)* (pp. 153–159). Atlantis Press, p. 153.

become barriers to the audience.²⁵ Accessibility should therefore be approached holistically, starting from conceptualization following each step of the process, instead of being addressed as an afterthought.²⁶

Within this process, one domain that bridges curatorial intent and the physical layout of an exhibition is information design. Information design focuses on the systematic organization of communication methods to help visitors understand a given message. Instead of starting with physical tools, the information designer begins by working with the underlying message to be conveyed.²⁷

In this context, information design is positioned between the curator's work, which provides meaning, and the design, which serves as its carrier. It becomes a strategic approach that integrates various disciplines to ensure the narrative is communicated effectively and inclusively.²⁸

Building on these insights, this research explores how structural and graphic design solutions can enhance exhibition accessibility and create a more inclusive narrative. This leads to the central research question: **How can information design contribute to accessible storytelling in museum exhibitions?**

25 Dicuonzo, F. (2023). The liminal museum: An investigation of the socio-educational processes starting from architecture. *MIDAS: Museus e estudos interdisciplinares*, p. 4; Schall, C. (2015). De l'espace public au musée: Le seuil comme espace de médiation. *Culture & Musées*, 25, [online], published June 19, 2018, consulted November 4, 2024. <http://journals.openedition.org/culturemusees/560>.

26 Timpson, C. (2025). Inclusive design and accessibility: A methodology of perpetual evolution and innovation. In *The museum accessibility spectrum* (pp. 214–215). Routledge; Dernie, D. (2006). *Exhibition design*. Laurence King Publishing; Kossmann, H., Mulder, S., & den Oudsten, F. (2012). *Narrative spaces: On the art of exhibiting*, pp. 77–79, 101; Lorenc, J., Skolnick, L., & Berger, C. (2007). *What is exhibition design?* RotoVision.

27 Wurman, R. S. (2000). *Information design*. MIT Press.

28 Timpson, C. (2025). Inclusive design and accessibility: A methodology of perpetual evolution and innovation. In *The museum accessibility spectrum* (p. 213). Routledge.

Background

This research builds on studies that frame exhibitions as multimodal systems of communication, where spatial, graphic, and narrative structures shape the visitor experience. Within this context, it examines how spatial planning, information architecture, and graphic design work together to support accessibility. Focusing on elements such as curatorial routes, wayfinding, labeling, wall texts, and signage, it analyzes how these components influence visitor navigation and interpretation, using the findings to inform the redesign of an existing gallery as a case study.

On the Role of Information Architecture

Space is a key theme in museum studies, with museums increasingly viewed as texts or maps where spatial design is integral to knowledge construction and meaning-making.²⁹ The design and structuring of exhibition spaces, both in terms of architecture and content, plays a crucial role in shaping how visitors are guided and engaged with content.³⁰

Research shows how configurations affect flow, orientation, and visitors' ability to navigate and interpret exhibits.³¹ Axiality, hierarchy, and spatial relationships can influence

29 Tzortzi, K. (2015, July). Spatial concepts in museum theory and practice. In *Proceedings of the 10th International Space Syntax Symposium* (Vol. 37, No. 1, pp. 1–14).

30 Tzortzi, K. (2015, July). Spatial concepts in museum theory and practice. In *Proceedings of the 10th International Space Syntax Symposium* (Vol. 37, No. 1, pp. 1–14).

31 Medaković, J., Atanacković Jeličić, J., Ecet, D., Nedučin, D., & Krklješ, M. (2024). The interplay between spatial layout and visitor paths in modern museum architecture. *Buildings*, 14(7), 2147; Filová, N., Rollová, L., & Čerešňová, Z. (2022). Route options in inclusive museums: Case studies from Central Europe. *Architecture Papers of the Faculty of Architecture and Design STU*, 27(1), 12–24.

visitor behavior, sometimes making them diverge from curatorial intentions.³² Open-plan layouts, such as in the gallery examined in this study, provide great spatial freedom but place high curatorial demands for guiding movement and shaping interpretation.³³

Without clear visual or spatial cues, these spaces risk disorientation and fragmented storytelling. While more structured layouts embed stronger narrative sequences, open plans require deliberate intervention to align spatial experience with curatorial goals. Elements such as spatial connectivity, cross-visibility, thematic grouping, and layout are critical in guiding visitor movement, supporting accessibility, and enhancing understanding, especially in open-plan settings.³⁴

Studies have explored the use of space syntax analysis³⁵ to reveal the impact of spatial configuration on the exploration and social interactions in museums.³⁶ This approach to layout reinforces a compositional reading of exhibition design as it becomes a spatial narrative that establishes the hierarchy

32 Bayer, H. (1961). Aspects of design of exhibitions and museums. *Curator: The Museum Journal*, 4(3), 257–258; Tzortzi, K. (2015, July). Spatial concepts in museum theory and practice. In *Proceedings of the 10th International Space Syntax Symposium* (Vol. 37, No. 1, pp. 1–14).

33 Neufert, E. (2019). *Architects' data*. John Wiley & Sons.

34 Peponis, J., Dalton, R. C., Wineman, J., & Dalton, N. (2004). Measuring the effects of layout upon visitors' spatial behaviors in open plan exhibition settings. *Environment and Planning B: Planning and Design*, 31(3), 453–473; Filová, N., Rollová, L., & Čerešňová, Z. (2022). Route options in inclusive museums: Case studies from Central Europe. *Architecture Papers of the Faculty of Architecture and Design STU*, 27(1), 12–24.

35 Space syntax is based on two philosophical ideas. The first is that space is not just the background to human activity and experience, but an intrinsic aspect of it. The second idea is that how space works for people is not simply about the properties of this or that space, but about the relations between all the spaces that make up a layout. For example, how people move will be affected by the configuration of spaces within a layout; that is, the way it offers sequences and choices in a more or less intelligible way (Hillier & Tzortzi, 2006, p. 283).

36 Choi, Y. K. (1999). The morphology of exploration and encounter in museum layouts. *Environment and Planning B: Planning and Design*, 26(2), 241–250; Hillier, B., & Tzortzi, K. (2006). Space syntax: The language of museum space. In S. Macdonald (Ed.), *A companion to museum studies* (pp. 282–301). Wiley-Blackwell.

of messages of the narrative space.³⁷ Some even integrated narratology, ethnographic methods and discourse analysis to examine exhibition storytelling.³⁸

This resonates with Hornecker's concept of data physicalization which emphasizes materiality and embodied interaction in the communication of complex information.³⁹ Though applied to data objects, this framework resonates with curatorial spatial design, where meaning is seen and physically navigated. Tzortzi similarly highlights this dimension, arguing that exhibitions function as an immersive, spatialized forms of knowledge.⁴⁰ These perspectives reinforce the idea that spatial configuration is not a neutral backdrop but a sensory and cognitive interface.⁴¹

On the Role of Spatial and Graphic Design

While curatorial structure and contextualization define the discourse of an exhibition, the way this structure is designed directly impacts how visitors experience it.⁴²

37 Kossmann, H., Mulder, S., & den Oudsten, F. (2012). *Narrative spaces: On the art of exhibiting*. 010 Publishers; Wineman, J. D., & Peponis, J. (2010). Constructing spatial meaning: Spatial affordances in museum design. *Environment and Behavior*, 42(1), 86–109; Tzortzi, K. (2015). Museum architecture and narrative. *Museum and Society*, 13(3), 296–313.

38 Vogel, F. (2014). Notes on exhibition history in curatorial discourse. On-curating.org, 21; Sitzia, E. (2023). Museology and its others: Analyzing exhibition storytelling through narratology, space analysis, discourse analysis, and ethnographic research. In A. Moseley & M. Dunn (Eds.), *Interdisciplinarity in the scholarly life cycle: Learning by example in humanities and social science research* (pp. 153–171). Springer International Publishing; Ravelli, L. J., & McMurtrie, R. J. (2015). *Multimodality in the built environment: Spatial discourse analysis*. Routledge; Tzortzi, K. (2015). Museum architecture and narrative. *Museum and Society*, 13(3), 296–313.

39 Hornecker, E., Hogan, T., Hinrichs, U., & Van Koningsbruggen, R. (2023). A design vocabulary for data physicalization. *ACM Transactions on Computer-Human Interaction*, 31(1), 1–62.

40 Tzortzi, K. (2015, July). Spatial concepts in museum theory and practice. In *Proceedings of the 10th International Space Syntax Symposium* (Vol. 37, No. 1, pp. 1–14).

41 Ravelli, L. J., & McMurtrie, R. J. (2015). *Multimodality in the built environment: Spatial discourse analysis*. Routledge.

42 Dernie, D. (2006). *Exhibition design*. Laurence King Publishing, p. 11.

Research in architecture shows that spatial design influences visitor behavior, choices, and emotions, shaping how environments are perceived and engaged with.⁴³ This connects with studies that highlight how spatial arrangements and material interfaces create situated forms of understanding.⁴⁴

This aspect of exhibition visual communication was emphasized by Bayer, who demonstrated how careful manipulation of lighting and sightlines can direct attention to key content, enhancing both comprehension and accessibility. His design philosophy aligns with contemporary principles of accessible exhibition design, integrating spatial and graphic strategies to create meaningful, inclusive visitor experiences.⁴⁵

Graphic design further shapes accessibility and legibility through elements like typography, scale, contrast, and color. According to Piehl, exhibition graphics do more than transmit information, they provide a visual system that structures thematic progression, guides interpretation, and situates the visitor within a coherent narrative.⁴⁶ In multilingual exhibitions, where typographic parity is crucial, graphic design also plays a role in maintaining equity.⁴⁷ From a post-museum perspective, exhibition graphics should support interpretative freedom and foster inclusion, helping visitors co-construct meaning.⁴⁸

43 de Paiva, A., & Jedon, R. (2019). Short- and long-term effects of architecture on the brain: Toward theoretical formalization. *Frontiers of Architectural Research*, 8(4), 564–571.

44 Hornecker, E., Hogan, T., Hinrichs, U., & Van Koningsbruggen, R. (2023). A design vocabulary for data physicalization. *ACM Transactions on Computer-Human Interaction*, 31(1), 1–62; Tzortzi, K. (2015, July). Spatial concepts in museum theory and practice. In *Proceedings of the 10th International Space Syntax Symposium* (Vol. 37, No. 1, pp. 1–14); Piehl, J. (2021). *Graphic design in museum exhibitions: Display, identity and narrative*. Routledge.

45 Bayer, H. (1961). Aspects of design of exhibitions and museums. *Curator: The Museum Journal*, 4(3), 257–258.

46 Piehl, J. (2021). *Graphic design in museum exhibitions: Display, identity and narrative*. Routledge, p. 40.

47 Piehl, J. (2021). *Graphic design in museum exhibitions: Display, identity and narrative*. Routledge, p. 59.

48 Piehl, J. (2021). *Graphic design in museum exhibitions: Display, identity and narrative*. Routledge, pp. 74–78.

Together, spatial and graphic design are not neutral containers of content but active contributors to accessibility, comprehension, and narrative coherence.⁴⁹ Their integration in both the assessment and design of exhibition spaces is therefore essential for developing inclusive practices that balance curatorial clarity with meaningful visitor experience.

On the Process of Co-Designing Accessibility

Exhibition design is an integrative practice requiring collaboration between curators, conservators, mediators, and designers across disciplines such as architecture, graphic design, lighting, digital media, and interactives, with the goal of creating experiences that utilize space, movement, and memory to facilitate multilayered communication.⁵⁰

The process of designing museum exhibitions is therefore increasingly guided by structured frameworks that emphasize collaboration and visitor-centered planning, highlighting how systematic organizational criteria and interdisciplinary cooperation can strengthen exhibition outcomes. Models such as the Discovery Center Work Stage (DCWS), which formalizes five stages from design brief to completion, emphasize how aligning curatorial objectives, design practices, and visitor engagement contributes to more coherent and effective exhibitions.⁵¹

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- 49 Tzortzi, K. (2015, July). Spatial concepts in museum theory and practice. In *Proceedings of the 10th International Space Syntax Symposium* (Vol. 37, No. 1, pp. 1–14).
- 50 Lorenc, J., Skolnick, L., & Berger, C. (2007). *What is exhibition design?* RotoVision, p. 8, 42.
- 51 Lin, C. (2008). Mapping the design criterion framework for museum exhibition design project. In D. Durling, C. Rust, L. Chen, P. Ashton, & K. Friedman (Eds.), *Undisciplined! Proceedings of the DRS International Conference 2008*, 16–19 July (pp. 21–42). Sheffield, United Kingdom: Design Research Society.

To achieve a holistic, integrated exhibition design, a co-design approach can help a design team. Co-design is defined as a creative process where designers and people not trained in design work together as equals throughout the design development process.⁵² In this context, this method is ideally suited for architects, graphic designers, public mediators, and curators/conservators to collaborate, ensuring the exhibition's spatial, visual, and interpretive elements are coherently interwoven.

Moreover, co-design facilitates design solutions that bridge curatorial, spatial, and graphic aspects, while also allowing exhibitions to reflect the cognitive and sensory experiences of diverse groups, addressing issues such as visual clarity, mobility, and interpretive strategies. It emphasizes the importance of designing not just for accessibility in terms of physical movement, but also for a richer, more inclusive visitor experience.

Typologies of museum visitors have been developed to better understand the diversity of behaviors, motivations, and engagement patterns; for example, Schrandt, Van Vliet, Hallema, and Kuijper propose categories that distinguish between systematic, overview-seeking, focused, and exploratory visitors.⁵³ Recognizing such patterns helps inform exhibition design strategies that accommodate diverse visitor needs and support both structured and flexible forms of engagement.⁵⁴

52 Sanders, E. B.-N., & Stappers, P. J. (2008). Co-creation and the new landscapes of design. *CoDesign*, 4(1), 5–18.

53 Schrandt, B., Van Vliet, H., Hallema, G., & Kuijper, A. (2019). *De tentoonstellingsmaker van de 21ste eeuw: Ontwerpen voor beleving* (pp. 42–43). Hogeschool van Amsterdam, Kenniscentrum Digitale Media en Creatieve Industrie (CREATE-IT).

54 Schrandt, B., van Vliet, H., Hallema, G., & Kuijper, A. (2019). *De tentoonstellingsmaker van de 21ste eeuw: Ontwerpen voor beleving*. Hogeschool van Amsterdam, Kenniscentrum Digitale Media en Creatieve Industrie (CREATE-IT).

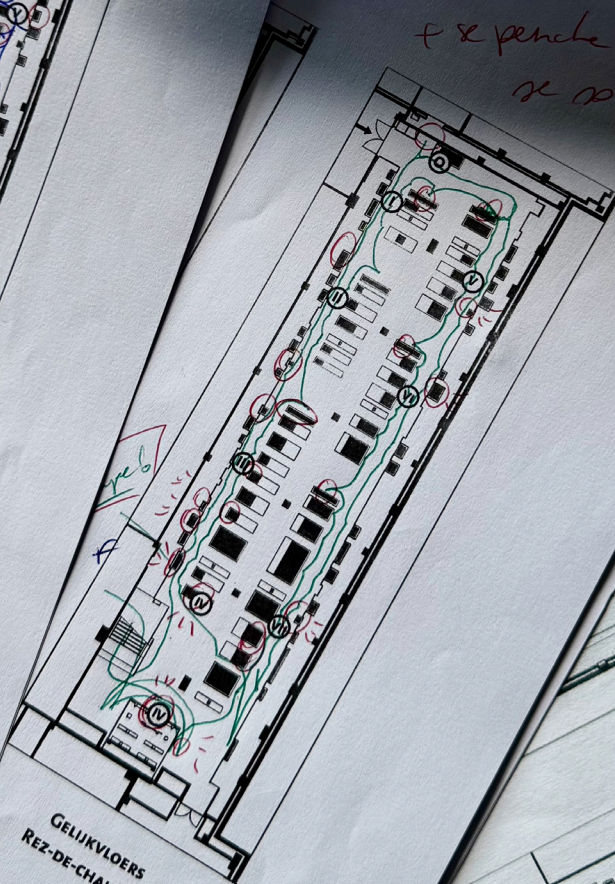
Building on this understanding, this research develops a method that applies co-design principles to the shaping of exhibition narratives, using information design as a tool to structure and analyze the curatorial concept and guide the integration of spatial, graphic, and interpretive elements, to respond to and consider the diversity of visitor needs and engagement patterns.

Visitor Experience Qu
Path Mapping

Houda Ben Azzouz



GELIJKVLOERS
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Methodology

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This research combines analytical and practice-based methodologies to assess the Art of the Islamic World Gallery at the Art & History Museum in Brussels. It analyzes the exhibition's narrative, spatial, and graphic design to identify barriers to accessibility and clarity.

Grounded in design research principles⁵⁵ and informed by theories of exhibition design, accessibility, and visitor engagement, this approach offers a transferable framework that guides both the development and realization of future projects while providing a critical evaluation of the current exhibition.

Based on these findings, the research develops a redesign strategy in which both the interventions and the process are conceived together, incorporating solutions to the challenges identified during the research and translating them into practical, actionable outcomes.

55 Frayling defines design research as encompassing research into, through, and for design. This project combines research into design, the study of exhibition spaces and curatorial strategies, with elements of research through design, where design practice informs methodological development.

Frayling, C. (1993). *Research in art and design*. Royal College of Art Research Papers, 1(1), 1–5

The Art of the Islamic World Gallery

The Art & History Museum⁵⁶ in Brussels is one of Belgium's few encyclopedic museums. As an institution dedicated to both preservation and interpretation of artifacts, it offers a valuable framework for studying and understanding the layers composing museum narrative spaces.

Located in the Cinquantenaire Park, the museum traces its origins to 1835.⁵⁷ Initially focused on decorative arts and craftsmanship, it expanded to include ethnographic and archaeological collections, emphasizing education and fostering connections between people, art and history. Over time, its collections evolved from material-based categorization to thematic and regional organization.⁵⁸

The Art of the Islamic World collection illustrates this shift. Initially valued solely for its aesthetics and exhibited without contextual differentiation, Islamic artifacts began to be shown as a cohesive group in 1949 and were finally given a permanent dedicated gallery in 2008.⁵⁹

This gallery presents an ideal case for studying how existing information architecture and design choices shape museum narratives. Developed collaboratively by a curator and an architect, who led both architectural and graphic decisions, it highlights how such processes impact design coherence and the accessibility of spatial, graphic, and textual elements within an exhibition narrative.

56 The Art & History Museum, part of the Royal Museums of Art and History, is a federal scientific institution managed by the Belgian Minister of Scientific Policy. These museums also include the Museum of Musical Instruments and the Porte de Hal (Royal Museums of Art and History, n.d.). BELSPO serves as one of the primary entities overseeing scientific research in Belgium (Belgian Science Policy Office, n.d.).

57 Royal Museums of Art and History. (n.d.). *About RMAH*. Retrieved May 12, 2024, from <https://www.kmkg-mrah.be/en/about-rmah>

58 Royal Museums of Art and History. (n.d.). *Collections*. Retrieved December 20, 2024, from <https://www.kmkg-mrah.be/en/collections>

59 Van Raemdonck, M. (Dir.). (2015). *En Harmonie: Art du monde islamique au Musée du Cinquantenaire*. Lannoo, pp. 9–11.

Data Collection and Site Documentation

The process began with gathering curatorial intent through documentation and interviews with conservators. Over eight visits across six months, data were collected by photographing every element of the space and annotating floorplans to indicate objects, graphic elements, including wayfinding, panels and digital screens, display measurements and any missing or defective elements (see Fig. 1).

To complement this, we reviewed inventory information sent by the museum team through a Word document created in 2004 that we restructured and completed into an Excel file. For missing entries, we consulted Carmentis, the museum's online catalogue. Because the data were not originally structured for spatial analysis, significant reorganization was necessary to create a comprehensive and usable overview.

In parallel, visitor trajectories were documented during observation sessions lasting between 30 minutes and two hours. In total, 33 routes were traced to identify recurring patterns of movement through the gallery.

Visitor Interviews and Data Structuring

To complement observations, 15 structured interviews were conducted after visits. The sample included 10 female and 5 male participants, primarily aged between 35 and 60, with two participants aged 25 and three aged 60 or above. Most held a master's degree, regularly attended museums, and were unfamiliar with the Islamic Arts Gallery specifically. A table with the full participant details is provided in Annex B.

Respondents completed either a written questionnaire (see Appendix A; 6 participants) or took part in oral interviews (9 participants). The oral interviews often yielded deeper reflections on narrative clarity and visitor experience. The interview approach was inspired by the methodological framework outlined by Sitzia, focusing on visitors' perceptions of narrative and the spatial impact on interpretation.⁶⁰

Additional questions covered demographics, museum habits, prior familiarity with the topic but also questions about participants' preferred styles of visiting exhibitions. These self-reported preferences provided insight into the diversity of visitor engagement styles within the sample. While the study did not aim to systematically categorize participants using existing typologies, the findings resonate with the distinction made between systematic, overview-seeking, focused, and exploratory visitor modes.⁶¹

These insights helped inform the redesign phase by highlighting the importance of layered interpretive strategies that accommodate a range of engagement patterns.

Mapping and Analysis of the Exhibition Layers

The following phase involved mapping and analyzing the spatial structure, exhibit placement, and design elements that affect accessibility and narrative clarity. We examined text design (language, format, legibility), wayfinding, multimedia elements (sound, video, infographics), and visitor movement patterns to understand navigation and interaction within the

60 Sitzia, E. (2023). Museology and its others: Analyzing exhibition storytelling through narratology, space analysis, discourse analysis, and ethnographic research. In A. Moseley & M. Dunn (Eds.), *Interdisciplinarity in the scholarly life cycle: Learning by example in humanities and social science research* (pp. 153–171). Springer International Publishing.

61 Schrandt, B., Van Vliet, H., Hallema, G., & Kuijper, A. (2019). *De tentoonstellingsmaker van de 21ste eeuw: Ontwerpen voor beleving* (pp. 42–43). Hogeschool van Amsterdam, Kenniscentrum Digitale Media en Creatieve Industrie (CREATE-IT).

space. Each object was also mapped according to its geographic origin and categorized by object type, allowing us to analyze the composition and thematic grouping of the exhibits in relation to the spatial design.

All collected data were integrated into a floorplan to visualize and interpret spatial relationships (Figs. 3). Visitor trajectories were traced and layered onto the same plan, enabling comparison between actual visitor movement and the intended curatorial route. To further analyze the spatial configuration, we conducted a space syntax analysis using *DepthmapX* software to interpret the gallery's structural logic and its influence on visitor behavior and narrative progression.

Additionally, a 3D floorplan was rendered through Sketchup to better understand the gallery's spatial structure and identify potential accessibility barriers (Fig. 2). These various visualizations formed the basis for our spatial discourse analysis, which examined how the physical layout supported or conflicted with the curatorial discourse and thematic sequencing.

A Method for an Integrated Exhibition (Re)Design

Rather than producing isolated redesign proposals, this project synthesizes analytical findings into a structured, transferable method for exhibition (re)design. The approach not only proposes specific spatial, curatorial, and interpretive interventions, but also designs the process by which these interventions can be developed, tested, and implemented.

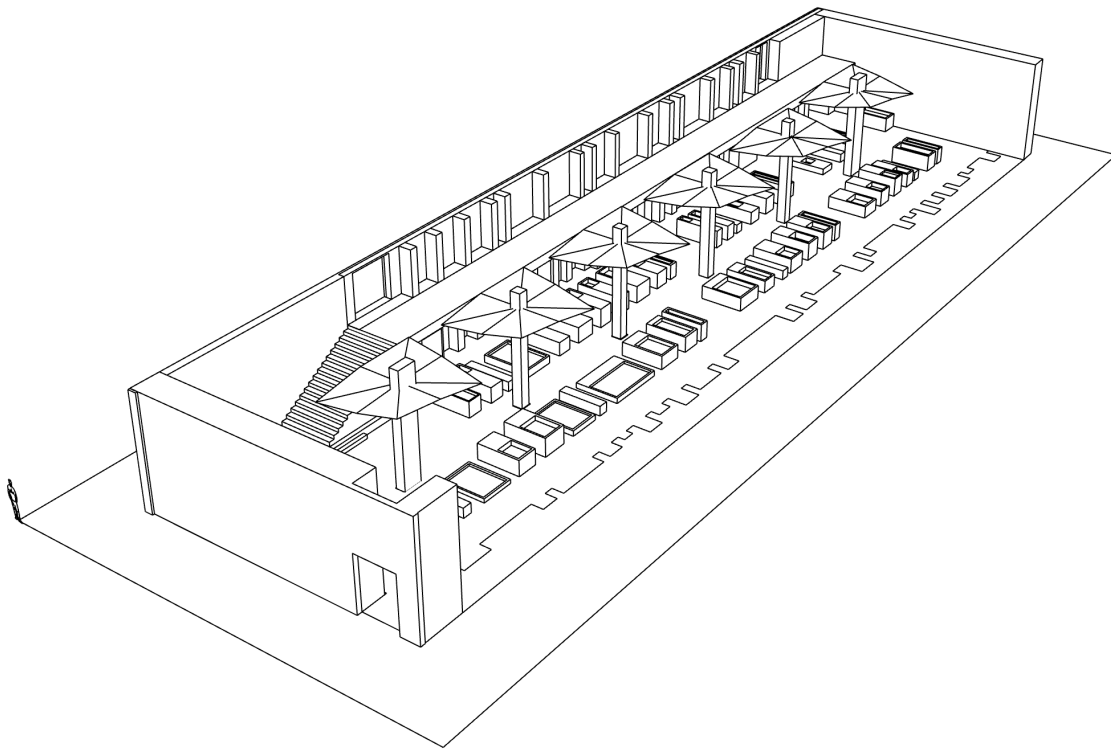


Figure 2. 3D rendering of the Art of the Islamic World Gallery.

The redesign is primarily conceptualized through a series of floorplans that illustrate both minimal and idealistic intervention scenarios. These visual tools highlight proposed changes in spatial layout, circulation paths, and thematic zoning, helping to demonstrate how narrative clarity, accessibility, and visitor engagement can be enhanced. Each floorplan integrates analytical insights from the research, including visitor movement patterns, curatorial gaps, and accessibility barriers, ensuring that proposed interventions are grounded in evidence.

Where relevant, additional mockups, annotated visualizations, or conceptual sketches are included to provide a closer examination of key interventions. Together, these visual materials not only communicate design intentions but also serve as a bridge between analytical findings and practical design solutions, offering a scalable and transferable model for exhibition (re)design.

The redesign process has also been deliberately designed to create an integrated approach to its development and realization. It is organized around three intersecting dimensions: narrative layers, design phases, and team roles. Drawing on the five-stage framework of the Discovery Center Work Stage (DCWS), which includes the design brief, concept design, detailed design, implementation, and completion,⁶² the process provides a clear, actionable sequence that supports interdisciplinary collaboration.

The detailed concept note and accompanying visual materials are provided in Appendix C.

62 Lin, C. (2008). Mapping the design criterion framework for museum exhibition design project. In D. Durling, C. Rust, L. Chen, P. Ashton, & K. Friedman (Eds.), *Undisciplined! Proceedings of the DRS International Conference 2008*, 16–19 July (pp. 21–42). Sheffield, United Kingdom: Design Research Society.

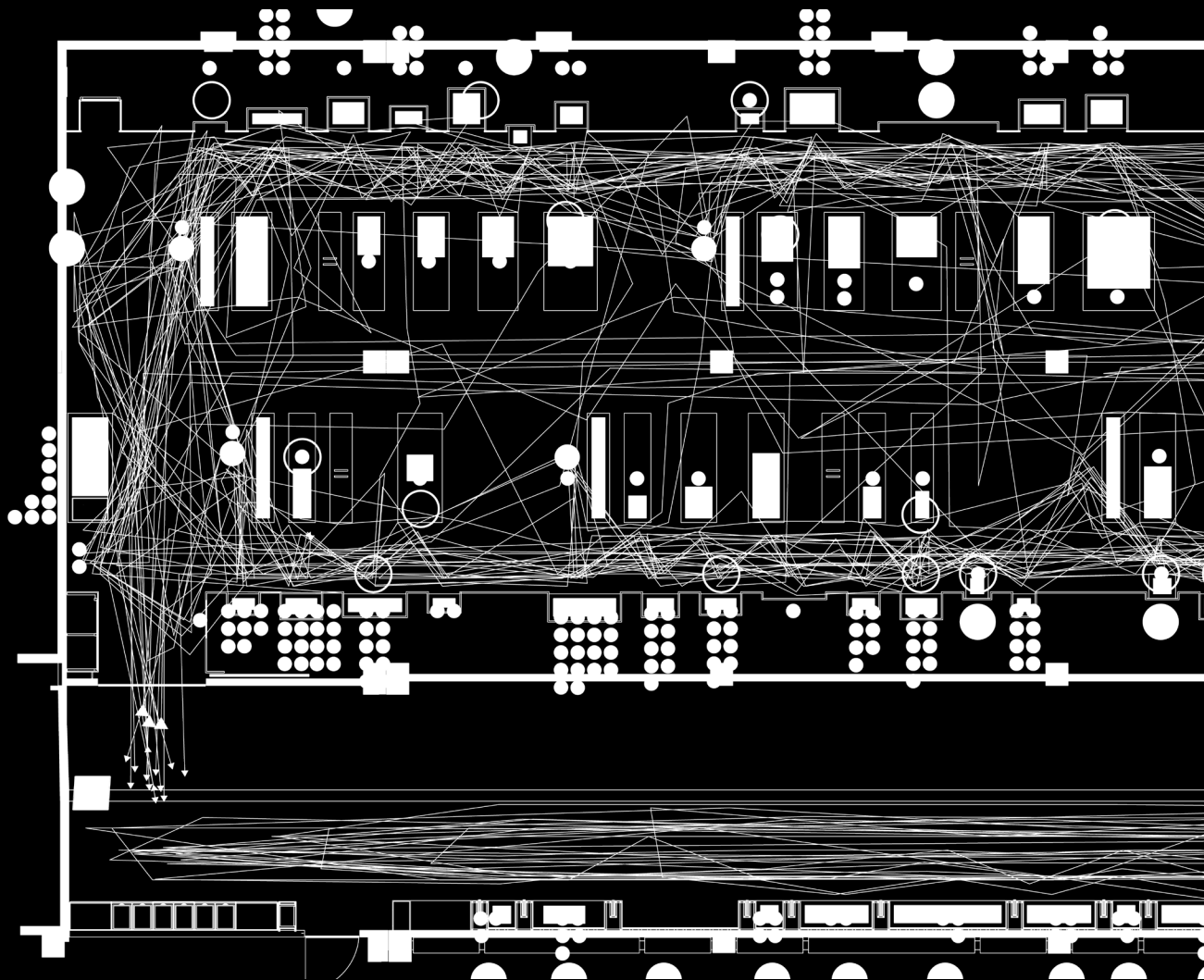
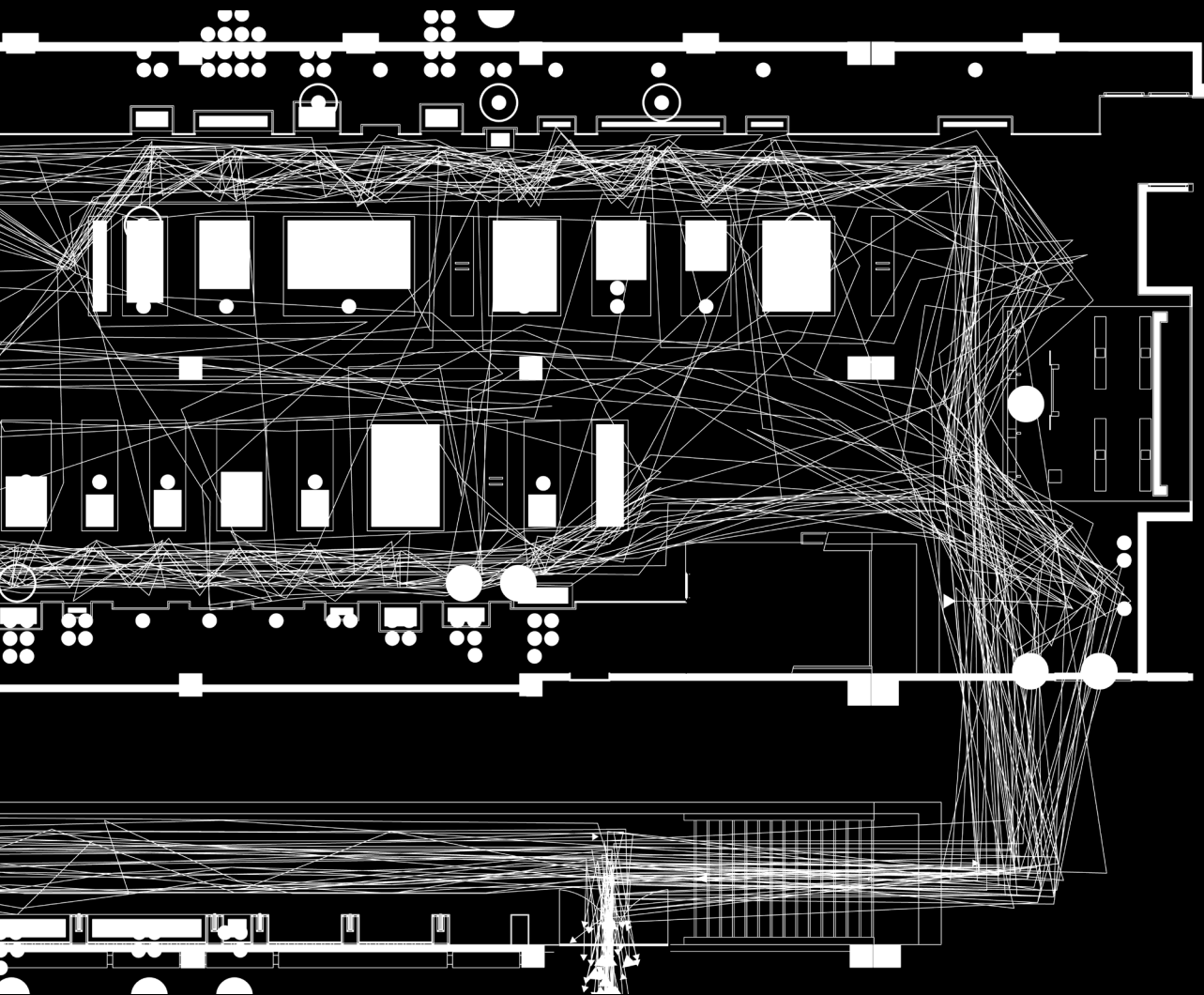


Figure 3. Integrated floorplan mapping curatorial layout, visitor trajectories, and spatial relationships. This visualization supports our spatial discourse analysis by comparing intended narrative flow with actual visitor movement and highlights areas where spatial design may conflict with curatorial intent or accessibility standards.





Results

The following section presents the main findings of this research. It first examines the curatorial, spatial, graphic, and sensory dimensions of the gallery to identify the key challenges impacting narrative clarity and accessibility. Building on these insights, the section then introduces an integrated redesign strategy that translates the findings into concrete, practice-based solutions.

Analysis of the Current Narrative Layers

We discuss the findings of this research across four interconnected layers: curatorial discourse, spatial configuration, graphic design, and multimodal interactivity. The analysis was supported by interviews, institutional materials, and visitor observations, as well as data analysis and visualization techniques. A detailed analysis is provided in Appendix B.

1. Curation

The Art of the Islamic World gallery houses over 350 works across eight sections composed of an introduction and seven chronological-regional “cells” ranging from the Umayyads to the Ottomans. The gallery follows a chronological and geographical structure, with contextual information largely limited to labels accompanying selected objects. Beyond the general introduction to Islamic art and brief chapter introductions, few broader cultural aspects are explored.

Visitor feedback highlighted this gap repeatedly: participants found the narrative disjointed and the interpretive content insufficient to connect objects to their cultural and historical contexts. Out of the 15 respondents, 11 requested more contextual materials, whether through expanded text or multimedia tools. Nine described the narrative as unclear, and 10 reported difficulties navigating the space. These recurring comments point to a persistent gap between curatorial intent and visitor interpretation.

Additionally, the curatorial tension between secular framing and cultural context became particularly evident during the discourse analysis. Although the gallery is titled Art of the Islamic World, its narrative relies on a predominantly secular, 'scientific' perspective that presents religious and non-religious artifacts within a unified historical framework.

This approach places strong emphasis on the objects themselves, especially in the limited contextual information provided through labels, while offering little exploration of broader themes, cultural histories, or socio-political dynamics. This object-focused strategy risks echoing 19th-century museological practices, where artifacts were valued more for their aesthetic or material qualities than for their cultural and historical significance.

As a result, the exhibition flattens the richness of meaning embedded in the works, creating a narrative gap that contrasts with its stated goal of offering a holistic view of Islamic art. This highlights a broader challenge: how to present culturally and spiritually embedded objects in a way that meaningfully connects them to their wider historical and cultural contexts.



Figure 5. The mashrabiyya-inspired screen of the gallery.



Figure 6. View from the top of the mezzanine stairs overlooking the mosque architectural elements.



Figure 7. View of the gallery's different types of displays.

2. Space

The Art of the Islamic World gallery occupies a 54×14 m hall with a 6 m ceiling, located in the Classical Antiquity wing of the Royal Museum of Art and History. Architecturally, it offers a refined contrast to its surroundings, with a *mashrabiyya*⁶³-inspired screen that filters natural light and creates a contemplative

63 *Mashrabiyya* is a decorative lattice screen originally placed in a niche to keep drinks cool. Over time, the latticework expanded to provide cooling for the entire dwelling. Devroe, A. (2008, February). Nieuw licht op de Islam: Koninklijke Musea voor Kunst en Geschiedenis openen nieuwe zaal. OKV. Retrieved November 22, 2024, from <https://www.okv.be/artikel/nieuw-licht-op-de-islam-koninklijke-musea-voor-kunst-en-geschiedenis-openen-nieuwe-zaal>

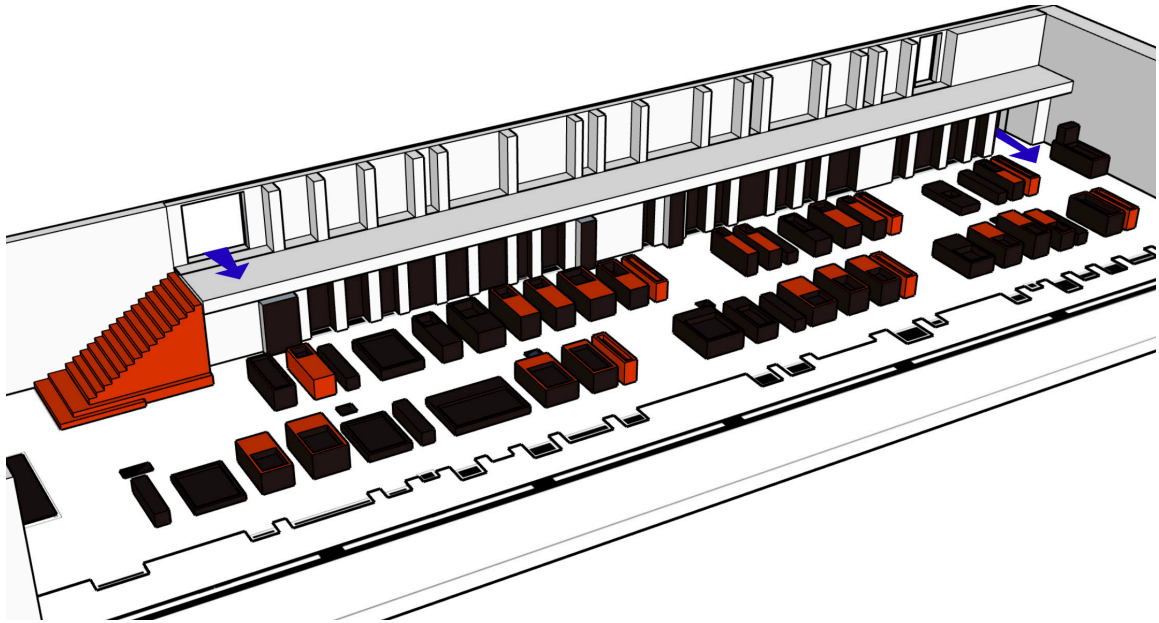


Figure 8. 3D architectural accessibility analysis of the gallery, with stairs and inaccessible display cases highlighted in red and entrances access in blue.

atmosphere (Fig. 5). A mezzanine provides a striking view of the space, drawing attention especially to the mosque architectural elements (Fig. 6).

However, the design also creates challenges. The two central rows of 47 horizontal stone display cases and benches, intended to evoke desert dunes but often associated with sarcophagi by both visitors and staff members, dominate the space and force circulation along the edges. Their fixed structure restricts spatial flexibility, constrains movement, and impedes accessibility; for example, some displays are difficult or impossible to view from a seated or wheelchair position.

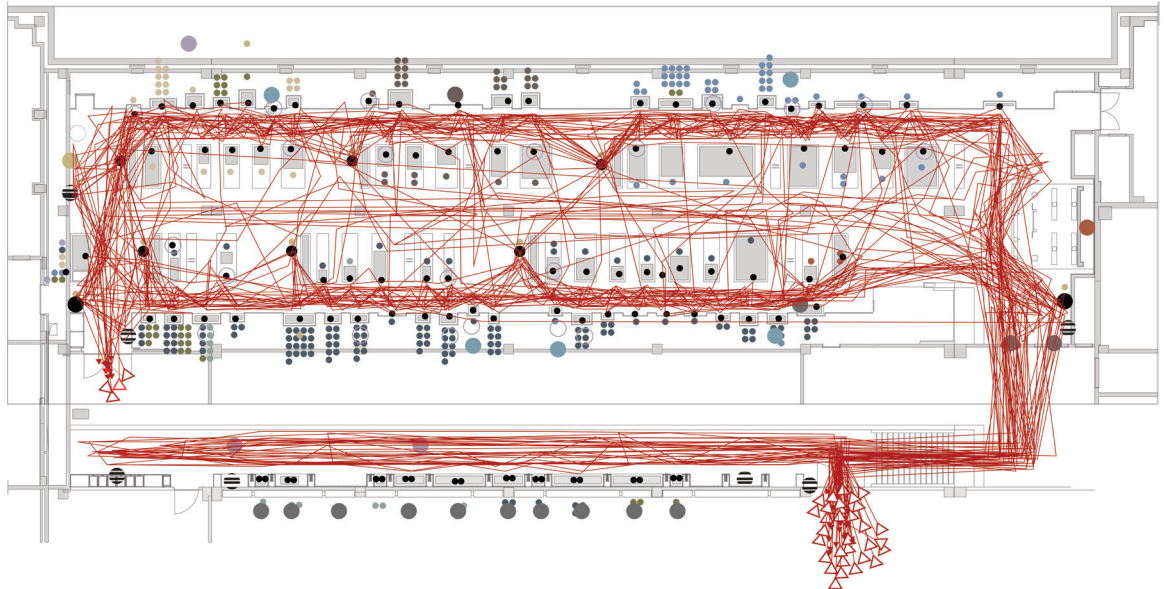


Figure 9. Floorplan integrating object provenance, media locations, and visitor trajectories, used as part of the spatial discourse analysis.

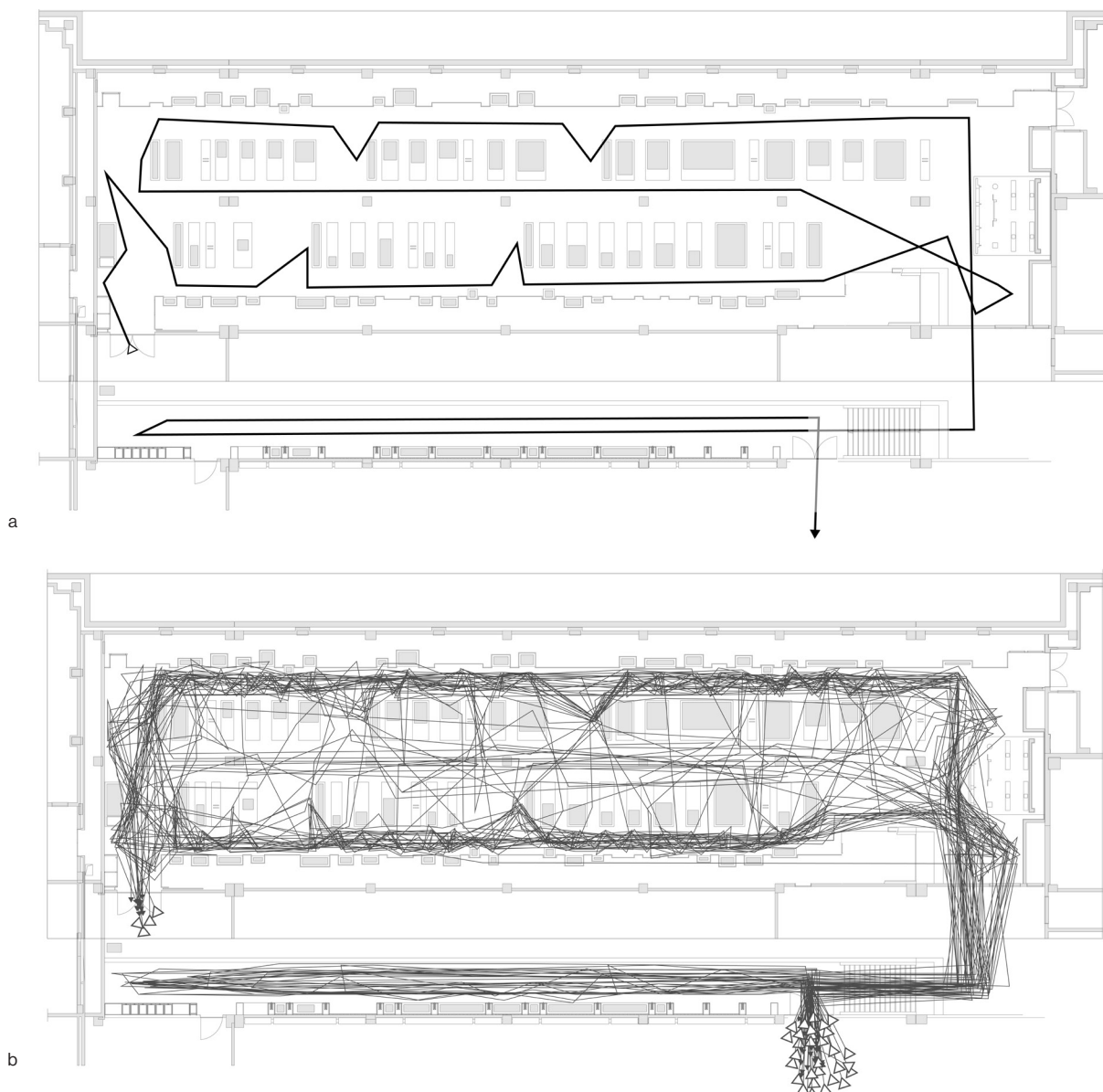


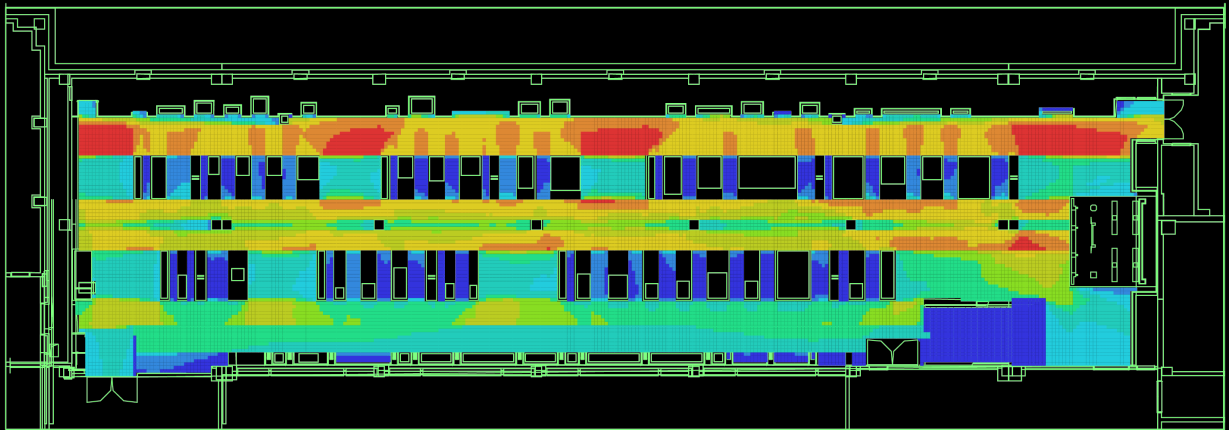
Figure 10. Floor plan illustrating the intended curatorial route (a) compared with actual visitor tracking data (b).

These elements reflect a rigid curatorial framework that limits adaptability and hinders both exhibition renewal and universal access (Fig. 7-8).

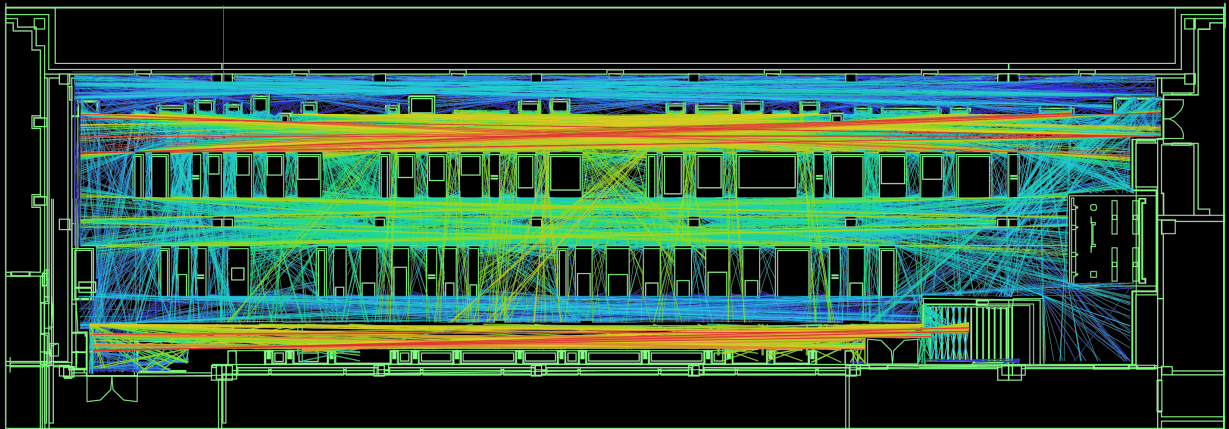
Visitor tracking showed a consistent misalignment between the intended curatorial route (chronological and thematic) and actual visitor paths (Fig. 9-10). Out of 33 observed trajectories (Fig. 10b), 29 entered via the mezzanine (intended as an exit), often experiencing the exhibition in reverse or fragmented sequences. This entrance is also inaccessible to wheelchair users, with the only alternative entry requiring navigation through multiple other galleries. The lack of directional cues only reinforces this misaligned route.

The space syntax analysis (Fig. 11) of the gallery floorplan confirmed the existing imbalance and spatial challenges. The longitudinal layout generates a strong axis of high spatial integration along the *mashrabiyya* screen as well as through the central corridor, as indicated by the orange-yellow band. However, the analysis also revealed peripheral zones of low integration (blue areas), highlighting visually and spatially disconnected sections that tend to receive less visitor attention. These areas are often bypassed, especially by those descending from the mezzanine, who typically gravitate toward the zone near the *mashrabiyya*.

Notably, the presence of the horizontal display cases disrupts the central flow and weakens the connection between the three primary axes, fragmenting movement patterns. This underscores the need for a more open and organic circulation system that strengthens connectivity and improves the overall visitor experience. The visibility graph analysis further confirmed these patterns, highlighting the lack of cross-visibility between peripheral zones and the central axis (Fig. 11b).



a



b

Figure 11. Space Syntax Analysis of the Art of the Islamic World Gallery. (a) Spatial integration, with high values (red/orange) along the central axis and low values (blue) at the periphery; (b) visual connectivity, highlighting strong sightlines in the center and fragmented, less visible side zones. Together, they reveal how the current layout concentrates movement and attention while marginalizing peripheral areas.

While some visitors appreciated the calm and atmospheric setting, these aesthetic qualities often came at the expense of narrative clarity and navigational ease, underscoring a broader tension between architectural refinement and the need for effective communication and visitor orientation within the exhibition.

3. Graphic Design

The gallery's graphic design presents challenges in both wayfinding and interpretive communication. External wayfinding is sparse and often confusing; screen-based wayfinding floorplans do not mention the gallery specifically, and signage leading to the gallery behind the Rome section is outdated (e.g., referencing "Islam" under "non-Western civilizations") (Fig. 12). Two interviewees noted the problematic nature of this terminology.

Inside the gallery, no clear wayfinding or graphic markers assist visitors in identifying different sections. While the horizontal display cases provide some spatial separation, as well as each historical contextualizing display case, but no visual cues guide the visitor through the narrative sequence, contributing to the perception of a fragmented experience.

When asked about their preferred visiting styles or typology, participants reported a range of approaches: four visitors favored a structured, linear exploration of the gallery, while four preferred a freer, more self-directed experience, and seven indicated that their approach depended on the context.

These differences in visiting styles are reflected in how visitors interacted with the exhibition texts. Those seeking an overarching narrative (overview-seekers) relied primarily on well-structured room and thematic texts to orient themselves,

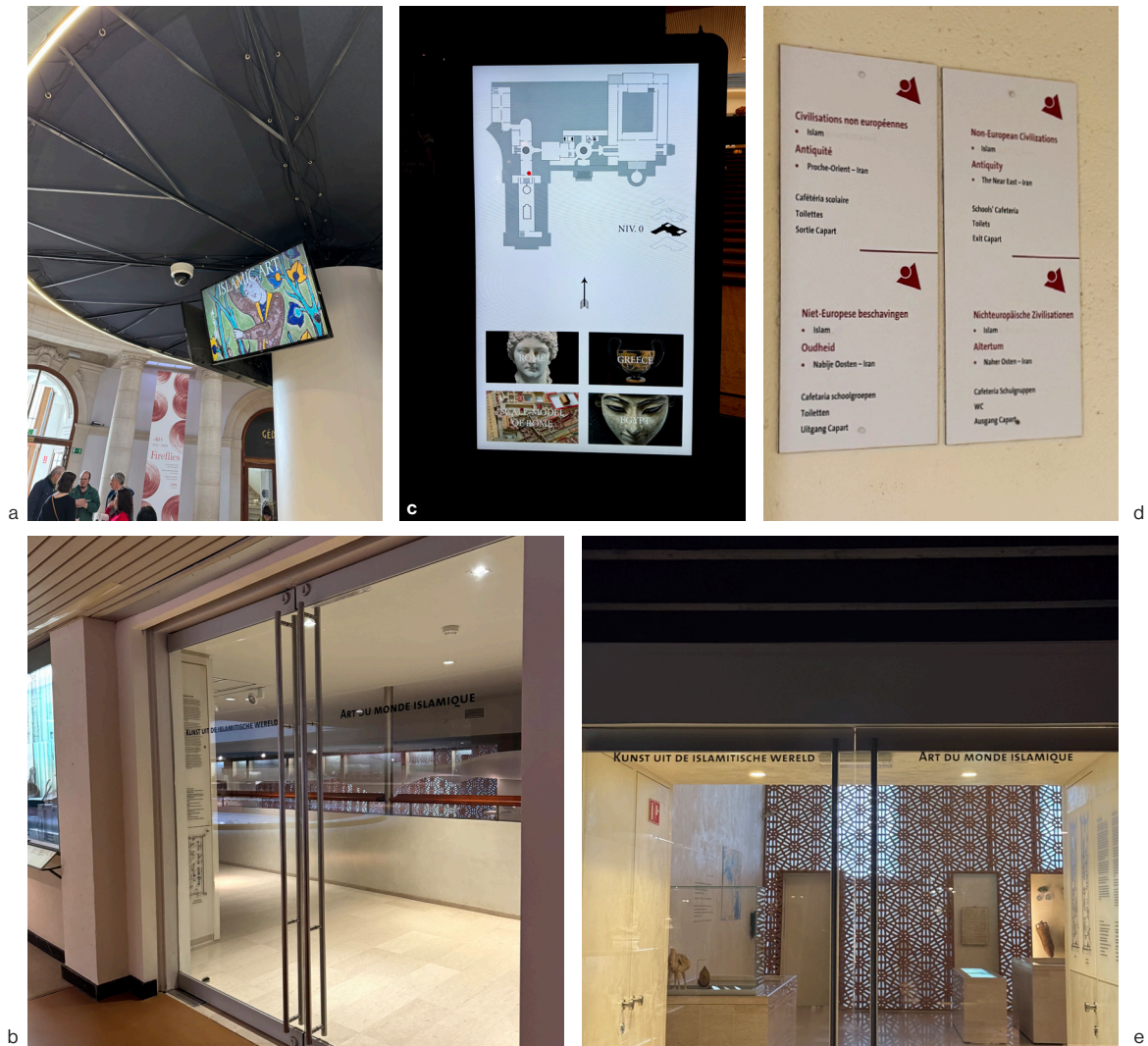


Figure 12. Museum wayfinding leading to the gallery (a-c-d) and its two entrances (b-e).

while detail-oriented visitors (focused explorers) depended on clear, legible object labels to deepen their understanding.⁶⁴ This alignment between movement patterns and interpretive needs highlights the importance of a narrative and graphic structure that can flexibly support both guided and exploratory engagement. Without a coherent visual system, visitors across these groups struggle to access the narrative at their preferred depth, underscoring the need for layered graphic strategies that accommodate diverse reading and engagement patterns.

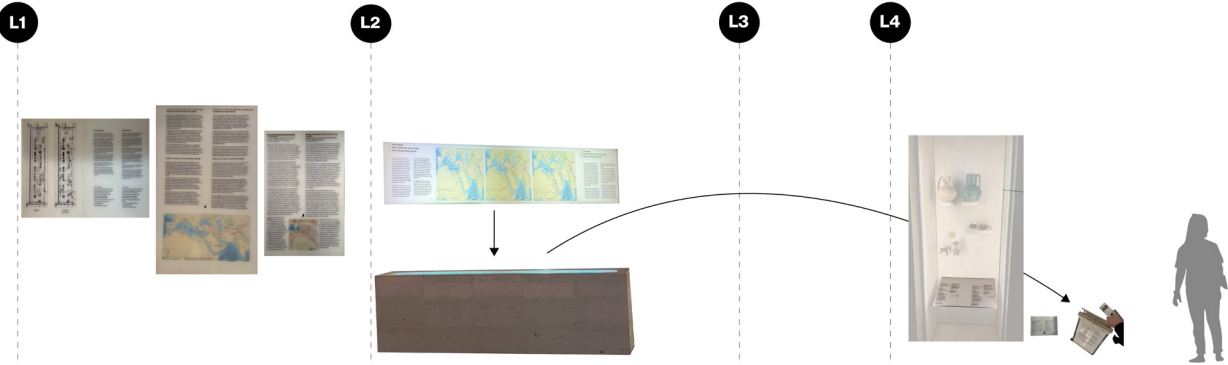
While the gallery nominally follows a hierarchy from room texts (L1) to thematic texts (L2) to object labels (L3),⁶⁵ in practice the graphic system lacks clarity and consistency (Fig. 13). The main introductory panel design is dense, elevated too high, and unlit. Confusingly, a panel adjacent to the mosque elements, encountered at the base of the stairs coming from the Mezzanine (at the entrance for the many visitors coming from there), uses a same graphic style, causing further misinterpretation about the exhibition's starting point (Fig. 14). This lack of clarity and typographic structure limits the exhibition's ability to cater to different visitor engagement styles.

Object labels, custom-designed individually for each artifact, are difficult to modify and often feature fonts that are too small, with poor contrast and excessive line length (Fig. 15). Lighting conditions worsen their legibility, particularly for labels printed directly on glass surfaces on the mezzanine. Similarly, panels identifying “+100Masters” or “Must” are displayed without any contextual explanation, making the concept unclear and difficult to engage (Fig. 16a).

64 Schrandt, B., Van Vliet, H., Hallema, G., & Kuijper, A. (2019). *De tentoonstellingsmaker van de 21ste eeuw: Ontwerpen voor beleving*. Hogeschool van Amsterdam, Kenniscentrum Digitale Media en Creatieve Industrie (CREATE-IT), pp. 42–43; Piehl, J. (2021). *Graphic design in museum exhibitions: Display, identity and narrative*. Routledge, p. 48.

65 Piehl, J. (2021). *Graphic design in museum exhibitions: Display, identity and narrative*. Routledge, p. 48.

Visual Hierarchy



Content Hierarchy

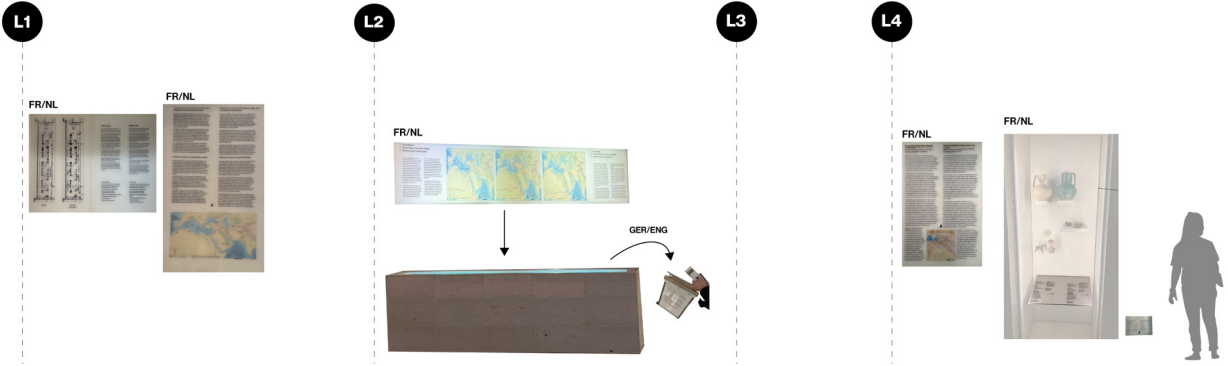


Figure 13. Overview of the current graphic design hierarchy.

The language mediation of the exhibition is equally inconsistent. While Dutch and French texts are systematically presented, English and German translations are offered only on sliding panels incorporated into the stone benches (Fig. 17b).

These panels are physically separated from the main displays, weakening their connection to the narrative and reducing accessibility for non-Dutch/French speakers. The lack of parity across languages and the physical separation of translations undermines the goal of providing an inclusive visitor experience.

As for multimedia elements, those are quite limited and inconsistently integrated. Only six objects feature supplementary videos or images, which visitors appreciated for providing additional context or design details, making the concept unclear and difficult to engage (Fig. 16d). Large sepia-toned photographs intended to evoke nomadic settings contribute visual depth and atmosphere to the gallery; however, they offer minimal interpretive support, as they are not directly connected to the displayed objects and function more as a backdrop, weakening their narrative effectiveness (Fig. 15a-b).

Additionally, interpretive labels, which should provide this contextual support and establish connections with the objects, are positioned high up and partially hidden, making them difficult to read and further limiting their narrative effectiveness (Fig. 15a).

Overall, the graphic design fails to provide a cohesive interpretive system, with weak typographic hierarchy, inconsistent visual cues, and minimal integration of multimedia, undermining both accessibility and narrative clarity.



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Figure 15. Object labeling: (a–b) mezzanine displays with large-scale background photographs and labels on glass; (c) horizontal display case label; (d) wall display case with custom-printed labels and paper placeholders.



Figure 16. Exhibition graphics: (a) Label indicating a work selected as a “+100 Master” piece; (b) sepia photographs and quotes on walls; (c) chapter display introduction case; (d) video accompanying an object.

4. Multimodal Interactivity

In addition to visual and spatial elements, the gallery's narrative was originally designed to incorporate multimodal experiences, combining sound, text, and materiality (through its architectural elements) to enrich visitor engagement. However, in practice, several of these dimensions have been significantly diminished.

Sound now plays only a minimal role. A soundscape from the Museum of Musical Instruments occasionally filters down from the mezzanine, but it is often masked by ventilation noise. The original audio guide, once innovatively framed through the narration of Ibn Khaldun, is no longer operational, although signage referencing it remains. This absence further weakens the intended multimodal experience and reduces the gallery's interpretive richness.

Bodily engagement is also limited. Visitors often lean on display cases, adding an informal tactile element to their experience, and frequently use the benches, underscoring the importance of resting spots in the visitor journey (Fig. 17a). Sliding panels with English and German extended introductions require specific movement (Fig. 17b), introducing a physical interaction; however, they are hidden and primarily intended for English- and German-speaking visitors, further limiting their narrative value.

Interactive components originally envisioned, such as the interactive map (Fig. 17c) and the dedicated children's section (Fig. 17d), were non-functional during the study. Notably, sensory dimensions such as touch (beyond incidental contact) and smell were never fully incorporated, leaving significant untapped potential for enriching the gallery's multimodal experience.



Figure 17. Interactivity: (a) Visitors interacting with display cases (leaning, sitting on them); (b) sliding panel in benches with English and German text; (c) nonfunctional interactive map; (d) non-active children's section.

5. Summary of Findings

In summary, the analysis of the curatorial, spatial, and sensory layers of the Art of the Islamic World gallery reveals systemic fragmentation across narrative, structural, and communicative elements. Despite a strong foundational concept, the lack of coordinated development across these layers results in an exhibition experience that is often disjointed, inaccessible, and visually imbalanced.

While the architectural ambition and curatorial effort to present a geographically and chronologically coherent narrative are evident, the exhibition does not adequately respond to contemporary accessibility standards, visitor engagement needs, or the challenges of presenting a culturally and spiritually complex heritage to diverse audiences.

As a result, the gallery risks reducing Islamic art to a collection of isolated objects rather than offering visitors an introduction to a living, multifaceted cultural world. These findings highlight the necessity of adopting an integrated design approach to exhibition-making, one that treats curatorial, spatial, graphic, and sensory dimensions as interdependent from the earliest stages of development.

An Integrated Approach to Exhibition (Re)Design

The analysis revealed that curatorial intent, spatial design, graphic mediation, and sensory engagement were not effectively aligned, compromising narrative clarity, accessibility, and visitor orientation. To address these challenges, the redesign approach translates the research findings into practical, actionable outcomes by combining analytical insights and design strategies into a coherent exhibition concept.

A new integrated framework was developed to structure a collaborative process across all narrative layers from the earliest stages of exhibition development. This framework not only defines the interventions but also outlines the process through which they are conceived and implemented, offering a unified strategy to address the systemic misalignments identified in the Art of the Islamic World Gallery.

1. Redesign Approach

Our exhibition (re)design concept not only addresses immediate challenges but also lays the groundwork for long-term transformation, ensuring the gallery can evolve with changing audience needs and curatorial priorities. It presents two levels of intervention, each building on the integrated method.

The first is a targeted approach, focusing on low-impact, achievable improvements to enhance clarity and accessibility. The second is a transformative approach that envisions a more substantial reconfiguration, opening circulation, enriching multimodal engagement, and reorganizing key spatial elements. Both approaches aim to work in harmony with the gallery's existing architectural identity.

Level 1: Targeted Redesign Approach

This scenario emphasizes (Fig. 18b) minimal architectural changes, retaining existing structures (columns, *mashrabiyya*, wall vitrines) while improving narrative flow and accessibility. Key features include:

- Reorganized visitor flow with two clear entry points—a map and a timeline, designed to situate visitors in both geographic and historical context.
- Seven thematic chapters with color-coded sections and a four-tiered textual hierarchy.
- Improved wayfinding and signage.
- A textile-focused mezzanine for temporary exhibitions.

Level 2: Transformative Redesign Approach

This level (Fig. 19) proposes more extensive interventions to fully realize the integrated method's potential:

- Architectural restructuring: partial or complete removal of the current central display cases; creation of sections to allow organic circulation and thematic zones (kids, rest, tactile).
- Enhanced multimodal interaction: Interactive touchscreens detailing selected objects, tactile zones (e.g., material samples) and scent diffusion.
- A dedicated children's interactive island, integrating playful learning directly into the gallery main route.

A central feature of this transformative scenario is the introduction of a modular display system designed to respond flexibly to the gallery's architectural conditions. By using the columns as anchors for sculptural glass-and-steel display units in varied forms (circular, square, horizontal), the design disrupts the linear flow and encourages lateral movement. The modular

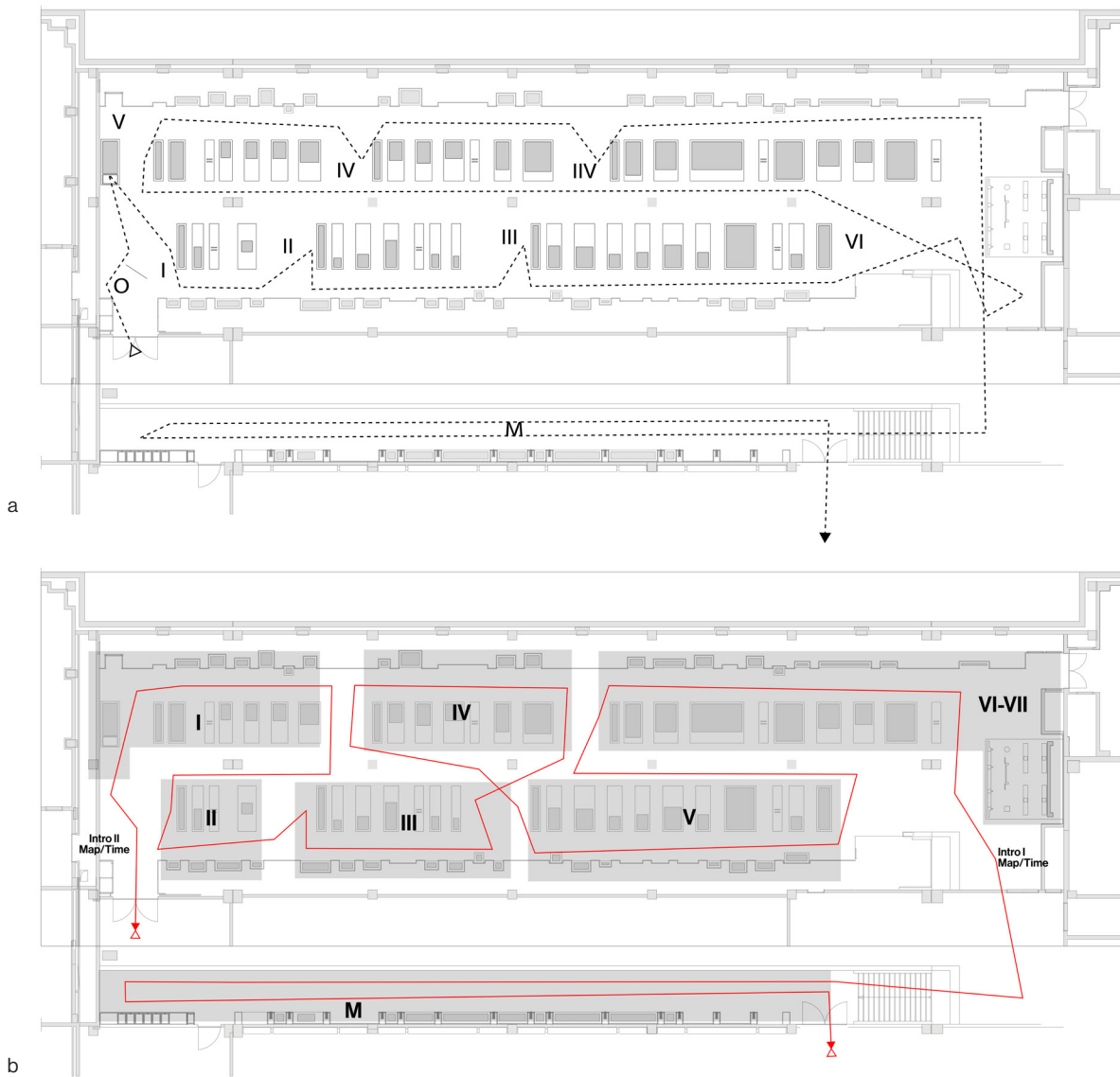


Figure 18a-b. Floorplan of the current gallery configuration (a) and the targeted redesign proposal (b), showing minimal spatial interventions to improve circulation and narrative clarity.

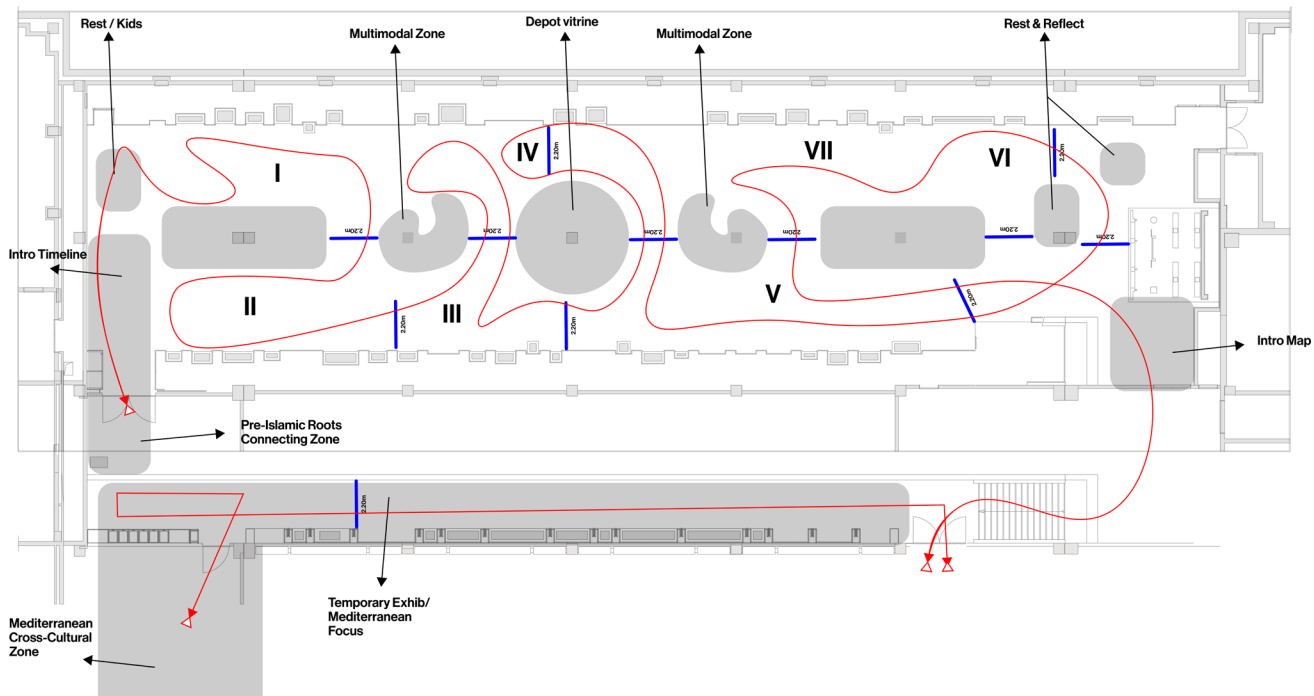


Figure 19. Floorplan of the transformative redesign proposal, illustrating major structural changes to enhance accessibility, thematic zoning, and visitor flow.

system, built from interchangeable components, allows the gallery to adapt to changing curatorial needs over time while maintaining visual coherence.

Accessibility is prioritized through wide pathways, continuous floor levels, and inclusive seating, while the material palette balances transparency, reflectivity, and warmth to create a refined, welcoming atmosphere.

This two-tiered approach demonstrates how adaptable, scalable solutions can address immediate needs while setting the stage for ambitious long-term improvements.

2. Collaborative Process

Building on the analysis findings, identified redesign needs, and established approaches in exhibition design, we developed an integrated method to guide the redesign process. This method organizes the exhibition-making process across three intersecting axes:

- **Narrative Layers:**
Curatorial, spatial, graphic, and multimodal interactivity.
- **Development Phases:**
Interpretive Planning, Concept Development, Design Development, Implementation, Evaluation (Fig. 20).
- **Team Responsibilities:**
Curator, Exhibition Designer, Graphic Designer, Multimedia Designer, Architect, Accessibility Coordinator.

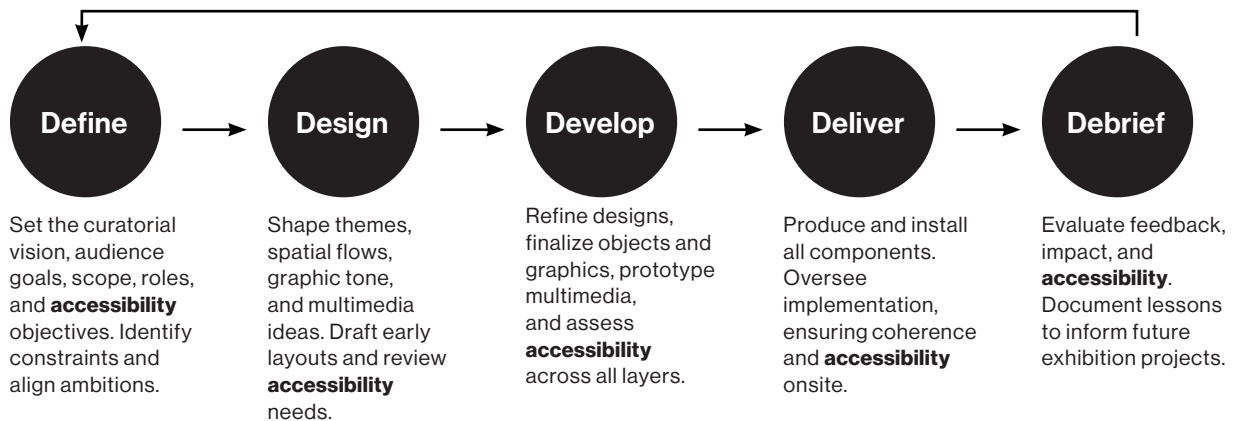


Figure 20. Five stages of exhibition development.

The redesign process applies interventions across all narrative layers and was developed to foster collaborative work, with team roles aligned to specific tasks and responsibilities at each phase. This integrated, interdisciplinary approach addresses systemic exhibition challenges, offering both immediate improvements and a foundation for long-term transformation.

A detailed concept note outlining the vision for a renewed gallery design, structured around the narrative layers and situated within the project phases, is provided in Appendix C, along with an accompanying table (Table C2) summarizing the key phases, main tasks, and associated roles in the design process.

Discussion



To understand how information design can contribute to accessible storytelling in museum exhibitions, this study suggests that information design can offer useful analytical and practical tools to identify structural issues and inform the development of more accessible and coherent museum narratives. While creating a fully dynamic design system was beyond the scope of this study, it opened the discussion and highlighted the potential for information design to bridge the gap between curatorial vision, spatial organization, and visitor experience more seamlessly.

This chapter reflects on the results of the research in two ways. First, it discusses the findings that emerged from the analysis of the Art of the Islamic World Gallery at the Royal Museum of Art and History. Then, it reflects on the method developed through this analysis and its application in the conceptualization of a redesign for the exhibition space.

Reflection on the Findings and Insights

Through the structuring and visualization of curatorial, spatial, and graphic data, information design made it possible to identify systemic issues in the Art of the Islamic World gallery of the Art and History Museum in Brussels, where architectural and object-based approaches overpower the narrative, creating an imbalance in the visitor experience. The findings reveal a disconnect between the architectural, graphic, and curatorial elements of the gallery, directly impacting the spatial and narrative experience of its visitors.

A primary issue was the illogical exhibition route, with visitors often starting at the end of the exhibition. This problem was reinforced by the lack of visual framing, as graphic design was insufficiently used to structure the space and guide visitor movement. Furthermore, the architectural design and the placement of oversized displays in an open-plan configuration overshadowed the exhibits themselves and disrupted the intended flow. The current layout failed to account for deeper cultural connections between the chronologically classified objects/ sections, further fragmenting the narrative.

In addition, the institution's curatorial approach attempts a secular framework that neglects the inherent religious background of the collection. This approach attempts to present both religious and non-religious artifacts in a unified manner but does so at the expense of addressing the objects' spiritual functions, ritual uses, and religious significance. By omitting these critical contextual layers, the exhibition risks flattening the richness of meaning embedded in many works.

The underrepresentation of religious and spiritual contexts creates a narrative gap that stands in contrast to the stated intent of presenting a holistic view of Islamic art. This contradiction highlights a broader challenge within museological practices: how to effectively present culturally and spiritually embedded artworks to contemporary audiences, many of whom may be unfamiliar with these complex contexts.

The shortcomings found through our analysis point to a broader issue: the absence of a holistic design strategy that accounts for a diverse audience and their different modes of perception. The exhibition was not conceptualized with accessibility in mind, and as a result, many visitors are either partially or completely excluded from engaging with the narrative.

Finally, while this research focused specifically on the design and narrative construction within the Islamic Arts Gallery, exhibitions do not exist in isolation. Curatorial narratives are shaped not only by spatial, graphic, and sensory choices but also by broader institutional policies, societal discourses, and cultural politics.

This study did not extend its scope to critically assess those external factors, but acknowledging them is essential for a holistic understanding of how exhibitions communicate meaning. Future research could expand on this by examining how museum-wide narratives, governance structures, and socio-political contexts shape both curatorial vision and visitor interpretation.

Reflection on the Method and Its Implications for Information Design

This research introduces an information design perspective as both an analytical and practical tool for exhibition (re)design. It demonstrates how information design can be used not only to analyze the narrative, spatial, graphic, and sensory layers of an exhibition, but also to develop integrated, actionable redesign strategies. Rather than treating these layers in isolation, the approach emphasizes their interdependence and the need to align curatorial intent, spatial planning, graphic communication, and accessibility from the earliest stages of the design process.

The study culminated in the development of an integrated redesign strategy in which both the proposed interventions and the process for implementing them were conceived as a unified whole. This approach allowed the research to translate analytical findings into a comprehensive exhibition concept, offering targeted improvements across curatorial, spatial, graphic, and multimodal dimensions while remaining adaptable to evolving audience needs.

At the same time, the project faced certain limitations. Time constraints, limited access to museum staff, and the absence of a budget restricted deeper engagement with the curatorial restructuring and a real-life testing the concept, steps that would have been crucial to assess its effectiveness in practice. Nonetheless, the research demonstrates the value of an integrated, information design-driven approach. The resulting framework offers a transferable tool that can support both critical analysis and future exhibition-making practices, and it lays the groundwork for potential future projects where its effectiveness could be further tested and refined.

The Need for Dynamic, Narrative-Driven Exhibition Management Systems

While the method was not implemented in a real-world exhibition, its initial application in the redesign process showed potential for addressing some of the systemic challenges observed in exhibition design. By approaching curatorial, spatial, graphic, and sensory dimensions in parallel, the process supported more coherent and inclusive strategies that better align visitor experience with curatorial objectives.

However, the study also highlighted a deeper structural limitation: museum exhibition information is often managed through fragmented and static systems. To build on this kind of integrated design process, museums may need to explore more dynamic, digitally connected management systems. These systems should directly link object data, spatial layouts, narrative development, and accessibility considerations within a unified platform, enabling curators, designers, and educators to collaborate more effectively and sustain cohesive, visitor-centered exhibitions.

Ideally, such a system would combine a digital floorplan or spatial rendering with the object and content catalogue, allowing curators, designers, and mediators to collaboratively manage and adapt displays and exhibition content through a unified, visual interface. Selecting a display on the floorplan could reveal the associated objects, enabling curators to adjust selections, mediators to annotate interpretive needs, and designers to prepare graphic and multisensory elements. Embedding narrative and spatial information at the collection management level would not only improve internal workflows but also foster more coherent, accessible, and narratively rich exhibitions.

Information design would play a crucial role in structuring such a system, ensuring clear visualization, intuitive navigation, and efficient communication between different museum stakeholders. By integrating data visualization, spatial mapping, and narrative structuring, information design could help museums move beyond static inventories toward dynamic, collaborative exhibition planning environments.

Although creating such a system was outside the scope of this study, it points to a possible direction for future research and development, which could help better connect curatorial vision, spatial design, and visitor experience over time.

Conclusion

This research explored how information design can contribute to more accessible and coherent storytelling in museum exhibitions, focusing on the Art of the Islamic World gallery as a case study. The analysis highlighted structural, narrative, and sensory challenges that affect both the clarity of the curatorial message and the accessibility of the space. The current exhibition layout, heavily shaped by architectural decisions and visually dominant displays, disrupts the intended narrative and can limit audience engagement, especially for visitors with mobility challenges.

In response, the research explored how information design could act not only as an analytical tool but also as a basis for developing a more integrated design process. By considering the interplay between architectural, graphic, and curatorial elements, the study proposed a practical approach for analyzing and rethinking exhibition spaces. This approach emphasizes the need to coordinate these layers in ways that support clearer narratives and more accessible visitor experiences, helping to improve both spatial flow and interpretive clarity.

Importantly, the project moved beyond analysis to develop a concrete redesign strategy, integrating process and intervention into a unified framework. In this context, information design provides a valuable set of tools for connecting form and content, space and story, audience and message. While the research was exploratory and limited in scope, the findings suggest that embedding information design principles into both the conceptual and practical stages of exhibition planning may help foster more coherent and accessible visitor experiences, reducing fragmentation and strengthening the narrative.

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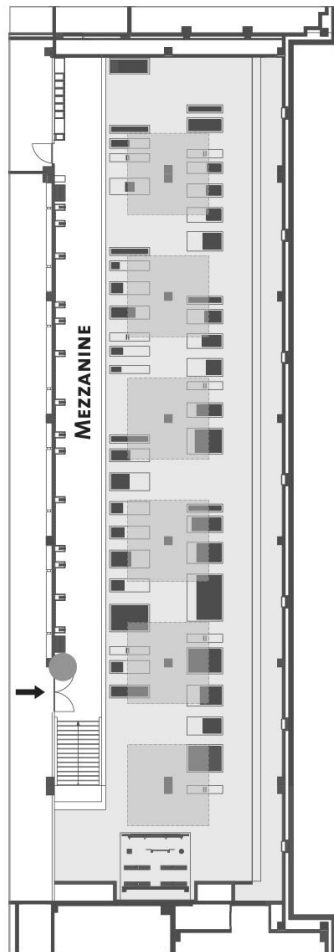
Appendices

A. Visitor Experience Questionnaire

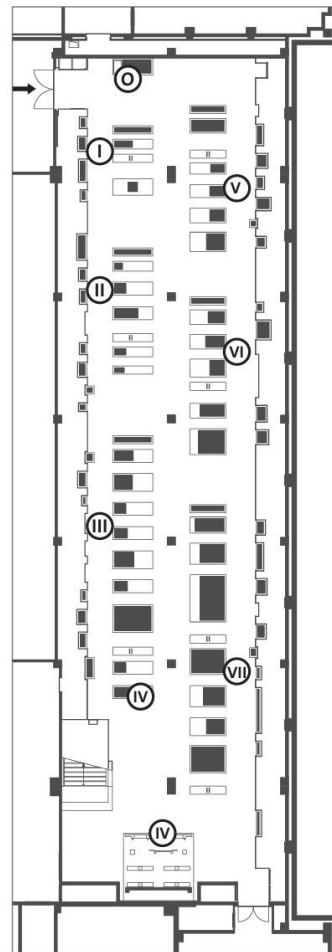
EN: Please draw on the map the path you followed and circle the objects or places that caught your attention.

FR: Veuillez tracer sur la carte le chemin que vous avez suivi et entourer les objets ou lieux qui ont attiré votre attention.

NL: Gelieve op de kaart het pad dat u gevolgd hebt te tekenen en de objecten of plaatsen te omcirkelen die uw aandacht trokken.



MEZZANINE



GELIJKVLOERS
DES DE CHAUSSEE

EN: What was the main message or story you took away from this exhibition?

FR: Quel était le principal message ou l'histoire que vous avez retenu(e) de cette exposition ?

NL: Wat was het belangrijkste verhaal of de boodschap die u uit deze tentoonstelling heeft gehaald?

EN: Did the space help you understand the story of the exhibition? Why or why not?

FR: L'espace vous a-t-il aidé à comprendre l'histoire de l'exposition ? Pourquoi ou pourquoi pas ?

NL: Heeft de ruimte u geholpen om het verhaal van de tentoonstelling te begrijpen? Waarom wel of niet?

EN: Did you feel that the space and design guided you to key information, or did you have to search for it yourself?

FR: Avez-vous eu l'impression que l'espace et le design vous ont guidé vers les informations clés, ou avez-vous dû les chercher vous-même ?

NL: Had u het gevoel dat de ruimte en het ontwerp u naar de belangrijkste informatie leidden, of moest u er zelf naar zoeken?

EN: Was there a specific type of information (e.g., audio, video, context, etc.) that you felt was missing or absent?

FR: Y a-t-il un type d'information spécifique (par exemple, audio, vidéo, contexte, etc.) qui vous a semblé manquant ou absent ?

NL: Was er een specifiek type informatie (bijvoorbeeld audio, video, context, enz.) die u miste of die afwezig leek?

Background

Age Group / Tranche d'âge / Leeftijdsgroep:

- ☐ 18-25
- ☐ 25-35
- ☐ 35-59
- ☐ 60+

Gender / Genre / Geslacht :

- ☐ Masculine / Masculin / Man
- ☐ Feminine / Féminin / Vrouw
- ☐ Non-binary / Non-binaire / Non-binair
- ☐ Prefer not to say / Préfère ne pas dire / Liever niet zeggen

Level of Education / Niveau d'éducation / Opleidingsniveau:

- ☐ No formal education / Pas d'éducation formelle / Geen formele opleiding
- ☐ High school / École secondaire / Middelbare school
- ☐ Bachelor's degree / Diplôme de bachelier / Bachelordiploma
- ☐ Master's degree / Diplôme de master / Masterdiploma
- ☐ PhD or higher / Doctorat ou plus / PhD of hoger
- ☐ Other: _____ / Autre : _____ / Andere: _____

EN: Do you often visit museums/exhibitions?

FR: Visitez-vous souvent des musées/expositions ?

NL: Bezoekt u vaak musea/tentoonstellingen?

- ☐ Yes / Oui / Ja
- ☐ No / Non / Nee

EN: Have you visited this museum before?

FR: Avez-vous déjà visité ce musée ?

NL: Heeft u dit museum al eerder bezocht?

- ☐ Yes / Oui / Ja
- ☐ No / Non / Nee

EN: Have you visited this gallery before?

FR: Avez-vous déjà visité cette galerie ?

NL: Heeft u deze galerij al eerder bezocht?

- ☐ Yes / Oui / Ja
- ☐ No / Non / Nee

EN: Do you have background knowledge about the subject of this exhibition?

FR: Avez-vous des connaissances sur le sujet de cette exposition ?

NL: Heeft u achtergrondkennis over het onderwerp van deze tentoonstelling?

- ☐ Oui / Ja
- ☐ Non / Nee
- ☐ Un peu / Een beetje

EN: How would you describe your usual approach to exhibitions?

FR: Comment décririez-vous votre approche habituelle des expositions ?

NL: Hoe zou u uw gebruikelijke benadering van tentoonstellingen beschrijven?

- ☐ J'aime explorer librement / Ik verken graag vrij
- ☐ Je suis un parcours structuré / Ik volg een gestructureerd pad
- ☐ Cela dépend de l'exposition / Het hangt af van de tentoonstelling

B. Extended Analysis of the Art of the Islamic World Gallery

This appendix provides a detailed analysis of the Art of the Islamic World Gallery across four interconnected narrative layers: curatorial discourse, spatial configuration, graphic design, and multimodal interactivity. The findings presented here are based on institutional materials, curatorial interviews, visitor observations and interviews, spatial tracking, and data visualization techniques. Each layer is examined to assess how it supports the intended curatorial narrative and meets standards of accessibility, clarity, and engagement.

The analysis identifies barriers that compromise the gallery's narrative coherence, accessibility, and interpretive depth. These insights informed the redesign proposals developed through the integrated method, which are detailed separately in Appendix C.

Curation

The curatorial development of the Islamic Arts collection illustrates the museum's ongoing goal of evolving from material-based categorization to thematic and regional organization.¹ Initially valued for aesthetics and excellence, Islamic artifacts were first exhibited as a cohesive group in 1949, highlighting their historical and cultural significance.²

1 Royal Museums of Art and History. (n.d.). *Collections*. Retrieved December 20, 2024, from <https://www.kmkg-mrah.be/en/collections>

2 Van Raemdonck, M. (Dir.). (2015). *En Harmonie: Art du monde islamique au Musée du Cinquantenaire*. Lannoo, p. 9.

Although the collection had been presented in temporary exhibitions on numerous occasions, a permanent Islamic Arts gallery was only established in 2008. The exhibition displays 350 works across seven “chapters”, arranged chronologically and geographically, exploring the diversity and unity of Islamic art and culture.³

The overall structure is as follows:

0. Sources and Exchanges
- I. The Early Centuries: Umayyads (661–750) and Abbasids (750–1258)
- II. Turks and Mongols: Seljuks (1038–1236 in Iran, 1077–1307 in Anatolia), Ilkhanids (1256–1336), and Timurids (1387–1502)
- III. Iran: From the Safavids (1502–1732) to the Qajars (1779–1924)
- IV. Empire of the Great Mughals in India (1526–1857) & Architectural elements from Northwest Pakistan
- V. Egypt and Syria: From the Fatimids (969–1171) to the Mamluks (1250–1517)
- VI. Al-Andalus (713–1492) and the Maghreb (670–present)
- VII. Ottoman Empire (1281–1924)
- M. The mezzanine, which was intended to house temporary exhibitions, has not been adapted since 2008 and focusses now on the Bedouin culture.

The chapters follow a chronological order that zigzags through the elongated architectural layout, encouraging visitors to draw connections across regions through shared artistic and cultural themes (see Fig. B1).⁴

3 Art & History Museum, Royal Museums of Art and History. (n.d.). *Concept van de zaal / concept de la salle* [Exhibition text panel]. Islamic Arts Gallery, Art & History Museum, Royal Museums of Art and History, Brussels, Belgium.

4 Van Raemdonck, M. (Dir.). (2015). *En Harmonie: Art du monde islamique au Musée du Cinquantenaire*. Lannoo, p. 11.

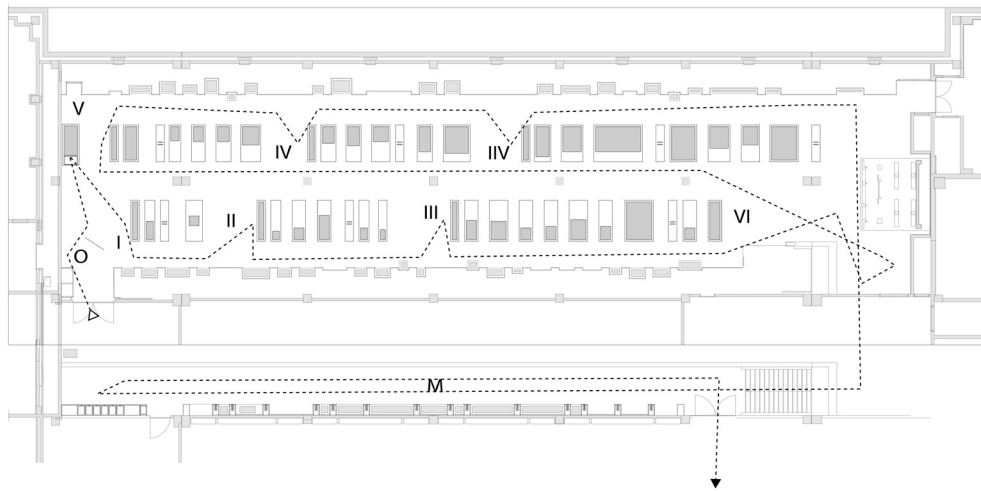


Figure B1. Curatorial Structure of the gallery

Upon entrance, the visitor is greeted not by an introduction to the objects but rather by a concept note (Fig. B2a). The introductory texts, presented in both Dutch and French, frame the evolution of Islamic civilization and its integral connection to international trade. These texts emphasize the unification of a vast region, from the Atlantic to the Indian Ocean, under a central authority, noting that religion played a significant role in shaping all aspects of life. The texts continue with a discussion of the specific formal language of Islamic art, particularly through calligraphy and illuminated manuscripts, and mention the importance of Islamic culture as a ‘class society’.

However, once visitors move beyond the introductory concept, each chapter/ cell introduction presents the dynasties of a specific period, but the contextualization of these periods is minimal (Fig. B2b). While the chapters occasionally introduce themes of dynastic influence on art and culture, much of the information provided is restricted to the material characteristics of the objects

themselves: their date, provenance, and material composition. In some cases, additional context is offered through videos or drawings, but these are the exceptions rather than the rule.

After the gallery's opening, the museum team conducted a survey among visitors, students, and guides. The results revealed that the geographical and regional distinctions were appreciated, especially by individuals with personal or cultural ties to the regions represented. However, some respondents mentioned that they would have preferred a thematic approach, with some noting a lack of architectural elements and an overrepresentation of dynasties.⁵

A thematic approach had indeed been considered by the team during the planning phase but was ultimately set aside due to the limited size of the collection. The curatorial team also feared that such an approach might imply a degree of cultural and historical homogeneity across the Islamic world, which would not accurately reflect its diversity and development over the centuries.⁶

The curatorial team thus opted to maintain a geographic division, layered within a chronological structure. While the objects represent a vast territory between the south of Spain and the north of India and cover a wide time frame from the 7th to the 20th century, the vast majority came from an urban context. This aspect therefore became one of the key curatorial focuses of the team alongside the unity and beauty of the artistic elements across Islamic traditions.⁷

5 Puyvelde, A. V. (2018). The museological presentation of religious art objects from the Islamic world in the Royal Museums of Art and History in Brussels: The 'Art of the Islamic World' collection in the Royal Museums of Art and History and its history. *Religiöse Erfahrungsräume*, p. 202.

6 Puyvelde, A. V. (2018). The museological presentation of religious art objects from the Islamic world in the Royal Museums of Art and History in Brussels: The 'Art of the Islamic World' collection in the Royal Museums of Art and History and its history. *Religiöse Erfahrungsräume*, p. 203.

7 Van Raemdonck, M. (Dir.). (2015). *En Harmonie: Art du monde islamique au Musée du Cinquantenaire*. Lannoo, p. 11.

The response to this curatorial decision did not consistently align with its intended effect. Indeed, feedback gathered from the visitor interviews conducted for this research indicates that the curatorial narrative was not always clearly perceived or understood. Many participants expressed a sense of confusion or fragmentation, both in the spatial organization of the gallery, which will be further examined in the second section of this analysis, and in the interpretative framing of the exhibition.

The responses, collected through a series of semi-structured interviews conducted on-site, reveal recurring concerns regarding the lack of cultural, historical, or spiritual contextualization. These reflections point to a disconnect between curatorial intentions and visitors' interpretive experiences, raising broader questions about narrative clarity and accessibility in the museological presentation of Islamic art.

Four visitors noted that the exhibition felt like a “superficial illustration” of Islamic history⁸, lacking a deeper connection between the objects and their cultural or spiritual significance. Another participant mentioned that the objects seemed disconnected from their historical roles, feeling more like “artifacts in a display case” than elements of a living tradition.

Such feedback underscores the tension between the exhibition's aesthetic focus and the deeper layers of meaning that are essential to understanding these works within their original context. Without sufficient contextualization, the objects risk being reduced to mere decorative pieces, disconnected from their original purposes and the cultural values they represent.

8 Anonymous interview no. 5, personal communication, January 28, 2025; Anonymous interview no. 6, personal communication, February 1, 2025; Anonymous interview no. 7, personal communication, February 25, 2025; Anonymous interview no. 15, personal communication, April 9, 2025

Theme	Count	Respondent N°
Lack of context or weak link between text and objects	11	1, 2, 4, 5, 6, 7, 9, 11, 13, 14, 15
Architectural layout / parcours confusing or non-intuitive	10	1, 2, 3, 5, 6, 7, 10, 11, 14, 15
Text legibility / too much text / text too small / bad reading conditions	7	1, 2, 5, 8, 10, 12, 15
Lack of accessibility in spatial design (mobility/disability-focused)	2	3, 6
Unclear or absent curatorial narrative / no storyline / disjointed	9	2, 4, 5, 7, 9, 10, 13, 14, 15
Desire for more historical / cultural / political depth or interpretation	8	1, 4, 7, 9, 11, 14, 15
Lighting and visual ambiance problematic	4	1, 2, 8, 15
Sound / acoustic discomfort	3	2, 8, 15
Display design (showcases felt cold, closed, aesthetic but uninviting, inaccessible)	5	1, 5, 9, 13, 15
Missed or underrepresented themes (e.g. daily life, leaders, clothing, religion)	5	1, 4, 7, 14, 15

Table B1. Frequency of themes among 15 unique respondents

Two participants voiced the need for more detailed textual explanations, while three others requested supplementary materials, such as booklets, interactive maps, or digital guides, that could offer a richer understanding of the objects' backgrounds, cultural contexts, and spiritual significance (Table B1).

This feedback suggests a clear demand for a more comprehensive approach to interpretation, one that goes beyond surface-level descriptions of technique and materiality. One visitor shared that the lack of explanation made the

N°	Age	Gender	Education	Familiar w/ Museums	Familiar w/ KMKKG	Familiar w/ Gallery	Familiar w/ Topic	Visits
1	35-59	Female	BA	Yes	Yes	No	No	Freely
2	60	Male	PhD	Yes	Yes	No	Yes	Structured
3	35-59	Female	MA	Yes	Yes	Yes	Yes	Structured
4	35-59	Female	PhD	Yes	Yes	No	No	Structured
5	35-59	Male	MA	Yes	Yes	Yes	No	Depends
6	25	Female	MA	Yes	Yes	Yes	Yes	Freely
7	35-59	Female	MA	Yes	Yes	No	No	Depends
8	35-59	Female	BA	Yes	Yes	Yes	No	Depends
9	60	Male	MA	Yes	No	No	Yes	Depends
10	60	Female	BA	Yes	Yes	Yes	No	Depends
11	35-59	Female	MA	Yes	Yes	No	A little	Depends
12	60	Female	BA	Yes	Yes	No	A little	Structured
13	35-59	Male	BA	Yes	No	No	A little	Freely
14	25	Female	MA	Yes	Yes	Yes	A little	Depends
15	35-59	Male	MA	Yes	No	No	Yes	Freely

Table B2. with the demographic and background response for each respondent

experience feel disjointed, like visiting a gallery of “random objects” without a coherent story or framework. This reflects a broader challenge in museum curation: the risk of presenting objects without the narratives or contexts that ground them in their cultural and historical milieu.

In addition to comments on narrative clarity, visitors shared their preferred exhibition visiting styles (Table B2). Out of 15 participants, 4 expressed a preference for a structured,

linear exploration of the gallery, 4 favored a freer, self-directed experience, and 7 reported that their approach depended on the context. This diversity in engagement styles reinforces the need for an interpretive framework that supports both guided and exploratory modes of engagement, aligning with the broader goal of layered narrative accessibility.



Figure B3. Longitudinal view along one of the main axes between the central display cases and the wall vitrines under the mezzanine, highlighting the gallery's spatial rhythm and depth.



Figure B4. View from the mezzanine overlooking the main gallery.

While visitor comments spanned topics such as spatial layout, text readability, and accessibility, these aspects are explored in depth in the following sections. The curatorial focus here is on narrative clarity and contextual depth, which were consistently highlighted as lacking. Visitors expressed a need for deeper explanation and clearer narrative framing to connect the objects to their broader historical and cultural contexts (see Section 3 for detailed analysis of textual design).

Space

The Art of the Islamic World Gallery at the Royal Museum of Art and History in Brussels occupies a space measuring 54 meters in length by 14 meters in width, with a ceiling height of 6 meters. It is located on the ground floor of the Classical Antiquity wing, adjacent to the Ancient Near East section.

Inside, the gallery itself is a striking contrast with the surrounding spaces. Its design, inspired by Islamic architecture, creates a serene atmosphere with thoughtful use of materials and lighting. The gallery features thirteen large windows facing the park, allowing natural light to enter. This light is diffused and softened to protect sensitive materials such as silk and paper by means of a slightly inclined lattice screen that runs the entire length of the hall. Inspired by the traditional *mashrabiyya*, the screen features a geometric pattern derived from motifs present in the wooden mosque elements displayed in the gallery.

Opposite the screen, a mezzanine provides access to the first floor (Fig. B4), which was intended as a space for temporary exhibitions, educational activities, and interactive displays. Its view surrounds the whole gallery space, especially the bigger architectural elements such as the mosque elements and the door, which attracts the eye and the curiosity of the visitors. Six large pillars support suspended polyester panels that both



Fig. B5a-b. Carved wooden elements from a Pakistani mosque (a) and a 20th-century Moroccan door (b).

dampen sound and conceal the climate control system, while providing indirect lighting.

Two architectural artefacts, displayed outside of vitrines, are particularly prominent due to their considerable scale. At one end of the hall, original carved wooden elements from a mosque in northwestern Pakistan are mounted on a metal framework (Fig. B5a). Integrated into the center of the *mashrabiyya* is a wooden door from Morocco, dating to the early 20th century (Fig. B5b).

The flooring consists of natural Bourgogne stone with a marble-like appearance, extending seamlessly to the two rows of in total 40 horizontal vitrines (and 7 benches), varying in size and designed for the presentation of textiles, miniatures, and carpets. According to the curator, the architect was inspired by the undulating forms of the desert when conceptualizing the space, which led to the vitrines' varying heights, intended to evoke sand dunes.⁹

The large horizontal vitrines, arranged in two parallel rows along the gallery floor, dominate the space visually and structurally. Their imposing presence evokes a funerary atmosphere that several visitors found off-putting. One visitor remarked, "Right from the start, I was facing sarcophagi. The impression is of being in a tomb, under a monument (...), a bit like Indiana Jones and you have sarcophagi to open."¹⁰

Rather than drawing attention to the objects, these vitrines often obscure them, dividing the space and pushing visitors to the periphery. Additional vertical vitrines line the side walls, but the central layout restricts cross-movement and limits curatorial flexibility. While visually striking, the configuration prioritizes

9 Personal interview with Alexandra Van Puyvelde, March 25, 2025.

10 Anonymous interview no. 15, personal communication, April 9, 2025.

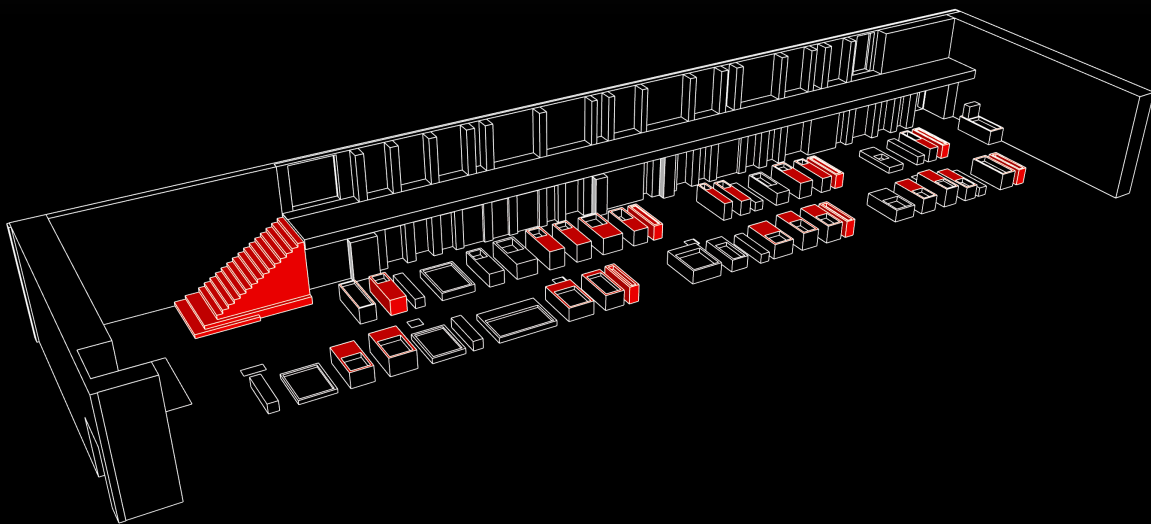


Figure B6. 3D architectural accessibility analysis of the gallery, with stairs and inaccessible display cases highlighted in red.

formal design over adaptability, reducing the exhibition's potential to evolve and remain engaging over time, which is of great importance when conceiving a permanent exhibition.¹¹

In addition to these spatial challenges, many of the vitrines are positioned at heights that make them inaccessible to visitors using wheelchairs. The elevation of the display cases prevents some visitors from comfortably seeing the objects inside, creating barriers to equitable engagement with the collection. Alongside other architectural features, such as the stairs, which will be addressed further below, these design choices limit the gallery's overall accessibility and inclusivity (Fig. B6).

The Art of the Islamic World gallery is accessible through two public entrances: one near the Scale Model of Rome, and another connected to the Ancient Near East collection. A third door, located at the far end of the mezzanine, is not publicly accessible but is used by personnel.

The current configuration presents notable accessibility issues. Most visitors (29 out of 33) enter through the mezzanine, originally intended for temporary exhibitions, which is only reachable via a staircase. This entrance is inaccessible to visitors with reduced mobility and does not comply with contemporary standards of universal design. Wheelchair users must instead use an alternative entrance via the Ancient Near East section, accessible through an elevator located at the back of the Rome section on the first floor (Fig. B9b).

The entrance at the end of the Ancient Near East collection is located at what was once the museum's main entrance. This history is still felt, as the entrance is officially closed, the space

11 Rosenberg, P. (1995). A question of time and space. *Museum International*, 47(1), p.7.

now appears neglected, and the staircases and hallways are worn. Upon arriving at this point, visitors encounter a dimly lit area with empty vitrines and a barely visible name tag printed above the glass doors (Fig. B9a).

Despite these shortcomings, this threshold is still considered the curatorial entry point, as it follows the Ancient Near East collection, which historically precedes the Islamic period. Curatorially, this sequencing makes sense; however, the transition between the two sections remains unclear and uninviting.

The intended curatorial narrative of the Art of the Islamic World gallery follows a chronological progression, culminating in the mezzanine's "temporary" exhibition space. However, visitor movement patterns do not align with this sequence. Instead, most visitors enter from the mezzanine (29 out of 33), where they often navigate through sections in a non-chronological order (e.g., starting from the Empire of the Great Mughals, moving to the Ottomans, and then proceeding backward through earlier periods) (Fig. B6).

This disjointed flow disrupts the intended narrative structure, as visitors tend to start at arbitrary points rather than following the story's historical timeline. The lack of clear directional signage and visual cues exacerbates the problem, making it difficult for visitors to orient themselves and fully engage with the chronological context. This results in a fragmented understanding of the collection, diminishing the gallery's ability to communicate its historical narrative cohesively.

Cross-movement between the two sides of the gallery is limited (5 out of 33), which is caused by the architectural design that pushes for a linear movement. The central vitrines act as both physical and visual barriers, obstructing movement and

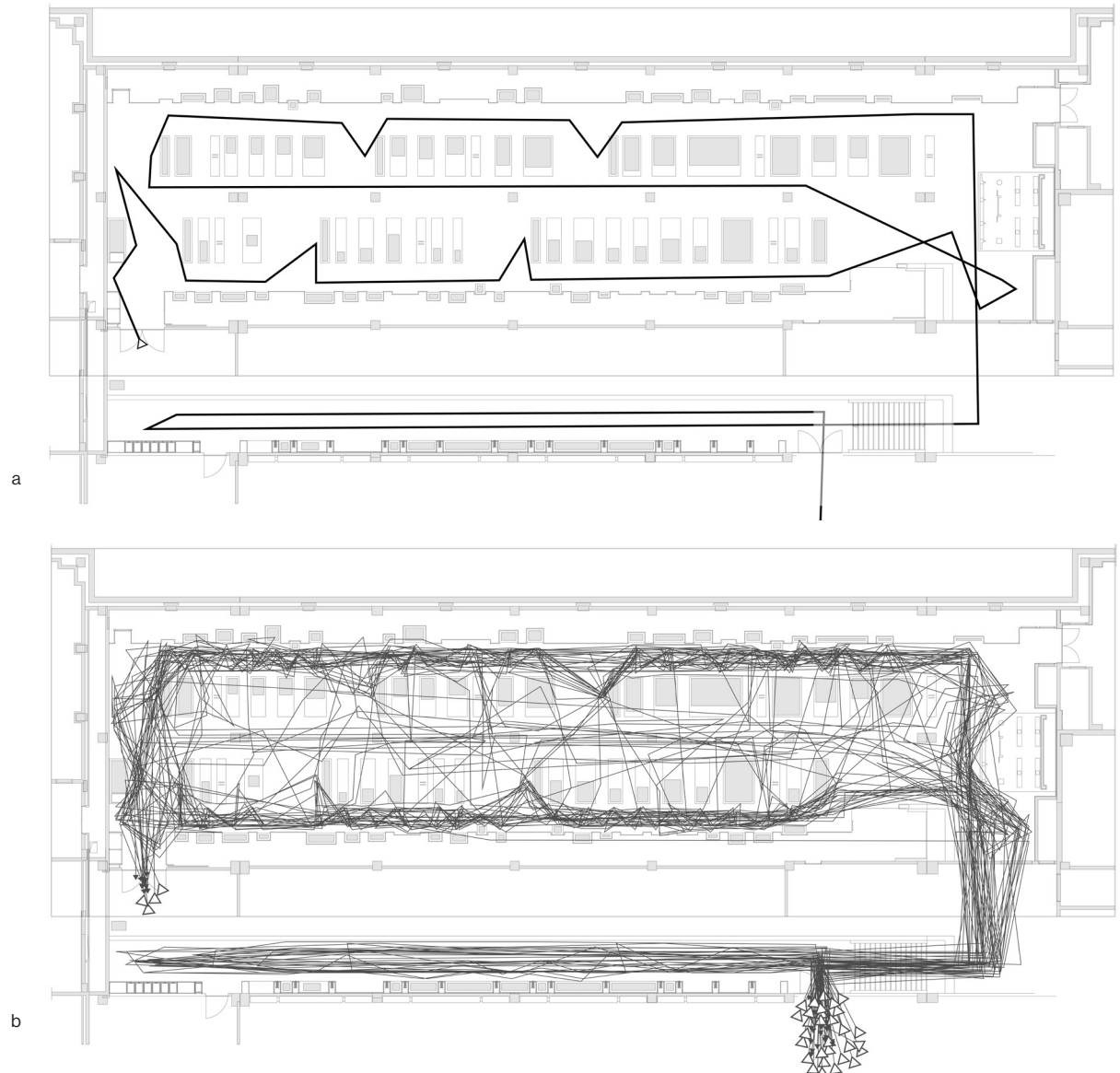


Figure B6. Floor plan illustrating the intended curatorial route (a) compared with actual visitor tracking data (b).

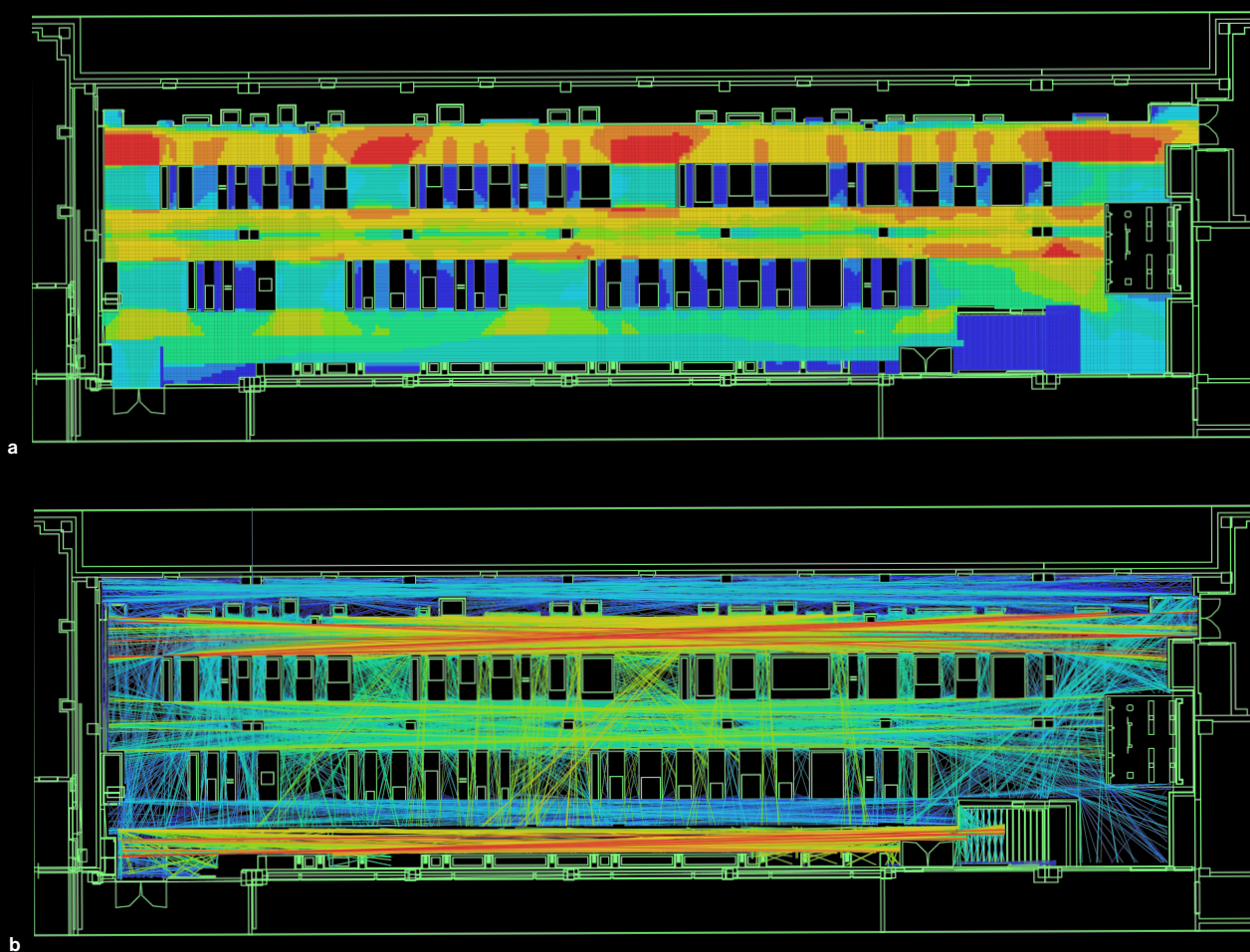


Figure B7. Space Syntax Analysis of the Art of the Islamic World Gallery. (a) Spatial integration, with high values (red/orange) along the central axis and low values (blue) at the periphery; (b) visual connectivity, highlighting strong sightlines in the center and fragmented, less visible side zones. Together, they reveal how the current layout concentrates movement and attention while marginalizing peripheral areas.

preventing interaction across the space. While some children navigated more freely, perhaps due to their size or exploratory behavior, this movement was neither facilitated nor encouraged by the gallery's design.

The space syntax analysis (Fig. B7) of the gallery floorplan confirmed the existing imbalance and spatial challenges. The longitudinal layout generates a strong axis of high spatial integration along the *mashrabiyya* screen as well as through the central corridor, as indicated by the orange-yellow band. However, the analysis also revealed peripheral zones of low integration (blue areas), highlighting visually and spatially disconnected sections that tend to receive less visitor attention. These areas are often bypassed, especially by those descending from the mezzanine, who typically gravitate toward the zone near the *mashrabiyya*.

Notably, the presence of the horizontal display cases disrupts the central flow and weakens the connection between the three primary axes, fragmenting movement patterns. This underscores the need for a more open and organic circulation system that strengthens connectivity and improves the overall visitor experience. The visibility graph analysis further confirmed these patterns, highlighting the lack of cross-visibility between peripheral zones and the central axis (Fig. B7b).

In addition to the disjointed visitor movement and lack of clear directional cues, the representation of certain regions and types of objects within the gallery also disrupts the intended curatorial narrative. Indeed, there is a significant emphasis on textiles and a disproportionate number of objects from Iran. This imbalance was noted by visitors, with six participants mentioning that textiles were overly represented, and five pointing out the prominence of Iranian objects.

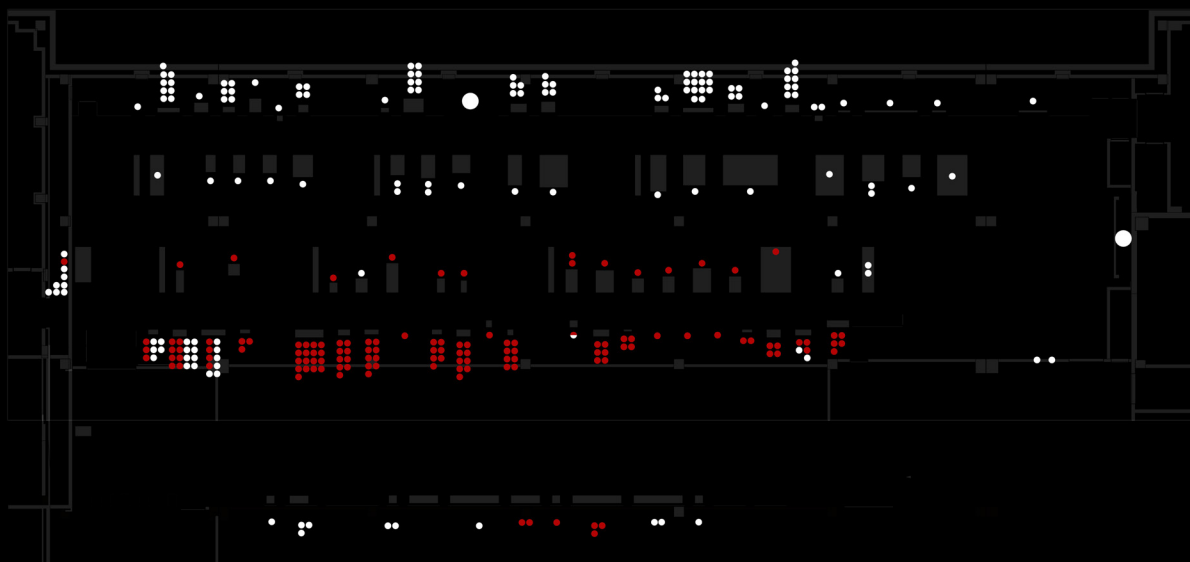


Figure B8. Mapping of exhibited objects across the gallery floorplan, with objects from Iran highlighted in red to illustrate their prominent representation within the collection.

While this may be due to the limitations of the collection, such as the influence of donations, it raises questions about the pertinence of the gallery's chronological and regional curatorial line. Visitors may feel an imbalance in the story being told, as the overrepresentation of certain periods and regions, especially textiles from Iran (Fig. B8), does not fully reflect the diversity of the Islamic world throughout history. This imbalance further complicates the intended chronological and geographical flow, leading to a fragmented understanding of the collection and its broader historical context.

While the gallery succeeds in generating a coherent and serene visual atmosphere, praised by five visitors, this cohesion comes at the cost of narrative clarity. The presence of the architect is strongly felt, sometimes overshadowing the collection itself. In its current form, the gallery prioritizes atmosphere and formal unity over clarity of interpretation, accessibility of content, and structural legibility. This imbalance illustrates a broader issue in exhibition design, wherein aesthetic harmony, often driven by architectural or formalist ambitions, overrides interpretive clarity and curatorial voice.

Graphic Design

To analyze the graphic design of the Art of the Islamic World Gallery, we drew on Jona Piehl's framework, which distinguishes between graphic elements that guide visitors through the physical and social space of the exhibition (wayfinding) and those that contribute directly to the exhibition's narrative content. Both are considered integral to the spatial narrative.¹²

12 Piehl, J. (2021). *Graphic design in museum exhibitions: Display, identity and narrative*. Routledge, p. 39.



Figure B9. Accessibility and interpretive elements of the gallery: (a) Near East section leading to the gallery entrance; (b) only elevator access located at the back of the Roman section; (c) Ibn Khaldun quotes integrated into the gallery walls; (d) sliding panels with extended labels inside the bench.

1. Wayfinding

When examining the overall wayfinding leading to the gallery, it is largely nonexistent and, when present, relies primarily on screen-based systems. Various touchscreens display the museum layout and indicate each section, which seems useful in theory; however, as they are not tactile and do not highlight nor indicate the gallery under analysis, they ultimately fall short.

While following the route starting from the old entrance, however, we did find an older text-based wayfinding panel indicating a way to “non-western civilization” without specific mention of the Art of the Islamic World Gallery. Once we went up the stairs, we did find a mention of “Islam” as a subsection of that “non-western civilization” part, but those two panels were the only indications found. This aspect was mentioned by three interviewees who happened to enter through the correct entrance, with two of them specifically mentioning the problematic use of the word “civilization” in those panels.

Leading to the gallery, no signage or graphic element indicates the location or entry points of each section. There is also no clear indication of where each section starts and finishes. At the entrance of the gallery itself, no graphic intervention signals the start of the gallery or a thematic change. The glass doors do mention the name of the gallery printed in black on the transparent glass, but the version printed on the entrance door is barely visible, as it is located at the top of the door.

2. Graphic Narrative Content

In open-plan exhibition areas like the Art of the Islamic World Gallery, graphic design elements such as color, typography, and layout create a sense of structure and are crucial in guiding visitors through the exhibition's narrative, helping them make sense of the objects and their connections.¹³

Four main visitor types have been described: ants (systematic visitors), fish (overview-seeking visitors), grasshoppers (focused visitors), and butterflies (exploratory visitors), each engaging with exhibition content in distinct ways.¹⁴ The observed inconsistencies and legibility challenges across all textual levels in the gallery hinder all these engagement styles. Without a clear and coherent hierarchy, supported by consistent graphic design and accessible presentation, the exhibition struggles to serve both overview-seeking visitors and detail-oriented explorers, limiting the interpretive flexibility required for an inclusive museum experience.

A multilayered textual system is important in addressing the varied needs of museum visitors, offering multiple levels of interpretation to support different engagement styles.¹⁵ Research highlights that visitors engage with exhibitions at different interpretive depths: some prioritize overarching narratives and rely on higher-level texts to situate their experience, while others focus closely on object-level details.

Indeed, besides exhibited objects, exhibition texts are the primary way in which an exhibition's story is told. These texts

13 Wineman, J. D. & Peponis, J. (2010). Constructing spatial meaning: Spatial affordances in museum design. *Environment and Behavior*, 42(1), 86–109; Piehl, J. (2021). *Graphic design in museum exhibitions: Display, identity and narrative*. Routledge, p. 40.

14 Schrandt, B., Van Vliet, H., Hallema, G., & Kuijper, A. (2019). *De tentoonstellingsmaker van de 21ste eeuw: Ontwerpen voor beleving* (pp. 42–43). Hogeschool van Amsterdam, Kenniscentrum Digitale Media en Creatieve Industrie (CREATE-IT).

15 Piehl, J. (2021). *Graphic design in museum exhibitions: Display, identity and narrative*. Routledge, p. 48.

are typically categorized based on their content and purpose and are designed to follow a clear hierarchy. Room texts, usually the first level of information, provide general overviews about the space or theme of the exhibition; theme texts (second level) focus on the overarching narrative or concept; and object texts (third level) offer specific details about individual artefacts, including descriptions, histories, or contextual information. Additional contextual layers, such as area texts, section texts, or artefact group texts, may also be used depending on the complexity of the exhibition. The visibility and clarity of these levels, supported by visual coding, depend on the scope and structure of the content.¹⁶

Within the gallery, we seem to find these three categories of texts. The official entrance is followed by an introductory wall text that situates and introduces visitors to Islamic arts. This bilingual text is dense, with quite small typography and short leading, placed rather high and not specifically lit, which can cause difficulty in terms of legibility. The illustrative map, while important, doesn't receive the space and clarity needed to link it with both the exhibition and the related text. Regarding this level of textual information, the design of another panel looks like the introductory wall text.

Indeed, the panel next to the mosque structure is similar in design. As it is placed right at the bottom of the stairs at the exit, it is what many visitors encounter immediately after entering through the wrong entrance, which seems confusing as it explains the mosque structure and not the exhibition itself. This sort of commentary is done in another format for other displayed artefacts, which shows a lack of consistency in terms of graphic design.

16 Piehl, J. (2021). *Graphic design in museum exhibitions: Display, identity and narrative*. Routledge, p. 48.

The second textual layer consists of introductory displays for each ‘cell,’ which provide a short text introducing the historical and political context of the period and an illustrative map. These introductions, rather than offering interpretive context for specific aspects of the collection, only provide a general and historically focused overview. They are not spatially or graphically linked to the surrounding objects. This disconnect limits their capacity to anchor the objects within a broader historical or cultural narrative. While important and informative, the maps included with these texts lack consistency in graphic language and again do not relate to the objects shown.

The object labeling across the gallery, representing the lowest textual layer, also reflects challenges in both usability and clarity. The labels are printed in small type, with wide line lengths and insufficient contrast, often making them difficult to read. On the mezzanine level, some labels are printed directly on glass surfaces, rendering them nearly invisible, especially under natural light.¹⁷

While aesthetically refined, the fact that the current label system was custom-designed and integrated into the display structures offers little flexibility for reconfiguration or updates; in some cases, parts had to be covered with paper labels for newly added or rotated exhibits. This rigidity limits the museum’s ability to adapt displays, introduce new interpretive content, or respond to curatorial developments.

An additional inconsistency was noted in the gallery’s language mediation strategy. While the core labels and wall texts are systematically presented in Dutch and French, sliding panels

17 Schrandt, B., Van Vliet, H., Hallema, G., & Kuijper, A. (2019). *De tentoonstellingsmaker van de 21ste eeuw: Ontwerpen voor beleving* (pp. 42–43). Hogeschool van Amsterdam, Kenniscentrum Digitale Media en Creatieve Industrie (CREATE-IT); Piehl, J. (2021). *Graphic design in museum exhibitions: Display, identity and narrative* (p. 48). Routledge.

incorporated into some benches offer occasional extended chapter introductions in English and German (Fig. B9c). However, these panels are positioned away from the main displays and are not placed alongside the Dutch and French texts, further separating them from the core content. Considering Belgium's federal linguistic context (with Dutch, French, and German as official languages) and the museum's role as a tourist attraction, language inclusion could be more effectively integrated across all textual elements to ensure a more cohesive visitor experience.

Some quotes by Ibn Khaldun are printed on the walls at the entrance, mezzanine, and rear, offering poetic reflections that, though not directly tied to specific sections or objects, enrich the atmosphere and invite contemplation (Fig. B9d). Originally linked to the now-inactive audio guide (see section on sound), these quotes likely served a more integrated interpretive role and would benefit from being more deliberately woven into the exhibition's thematic structure. Although often treated as decorative graphic elements, they contribute valuable emotional depth and resonance to the overall narrative.

While five objects are accompanied by contextual illustrations or videos, which provide helpful visual cues for understanding fragmented or partial artefacts, such additions are rare. Photographic images are used more prominently in the mezzanine level, where large-scale sepia or black-and-white photographs of deserts and Bedouin contexts form the backdrop of the displays.

These images, according to curatorial interviews, are intended to signal a shift away from urban settings to more nomadic and rural contexts. However, interpretive labels are positioned high up and partially hidden, making them difficult to read and

limiting their accessibility and impact. Their function remains unclear to the average visitor; without explicit interpretation, they serve more as atmospheric elements than informative ones, further contributing to the ambiguity of the visual language used throughout the space.

Certain objects are accompanied by panels that identify them as “masterpieces”. However, there is no available map or list to help locate these objects as part of a broader tour. Inquiries at the museum revealed that no one seemed to know how to access this information. The continued presence of these markings, despite the absence of supporting material, contributes to confusion and further underlines the lack of coherence in the graphic system.

Throughout the gallery, all graphic elements are treated with similar visual weight: the same color palette is used across displays, chapter texts, and object labels; typographic hierarchy is minimal or absent; and all elements are arranged horizontally, offering no vertical cues that could otherwise differentiate or structure the space. This uniformity weakens any potential distinctions between sections or themes, making it difficult to identify a clear curatorial progression or even the boundaries between different dynasties and historical periods.

Rather than offering guidance or enhancing narrative continuity, the graphic system remains largely invisible, and at times, inaccessible, raising questions about the role of design in curatorial practice. If exhibitions are to serve both educational and experiential purposes, then graphic design must be recognized as an integral tool of interpretation and orientation, capable of shaping how knowledge is encountered and understood.

However, the intention behind the graphic choices of this exhibition could not be fully confirmed, as the architect and

graphic designer were unavailable for comment, and the curator did not elaborate on this aspect. If the goal was to minimize graphic presence to foreground architecture and objects, the design achieves this, but at the cost of interpretive coherence, legibility, and accessibility.

The result is a gallery in which visual design does little to support visitor orientation, comprehension, or engagement. Graphic design in this context functions less as a mediating layer between content and audience, and more as an aesthetic afterthought shaped by architectural priorities. This approach reflects a broader issue within exhibition design, where graphic and informational clarity are sometimes subordinated to formal unity or spatial elegance.

Multimodal Interactivity

Spatial and material arrangements shape situated forms of understanding and embodied interaction.¹⁸ Building on literature about multimodality in exhibition design, this section analyzes how the gallery incorporates sensory engagement, particularly sight, sound, and touch, as well as interactive elements into its narrative structure.

1. Sight

Sight is the dominant sensory mode through which the gallery communicates. Visual information is conveyed through the objects on display, their accompanying labels, and a limited number of introductory texts. However, the visual layer lacks richness and variety, and several design decisions compromise the clarity and legibility of the exhibition.

¹⁸ Hornecker, E., Hogan, T., Hinrichs, U., & Van Koningsbruggen, R. (2023). A design vocabulary for data physicalization. *ACM Transactions on Computer-Human Interaction*, 31(1), 1–62.

The color palette of the gallery, dominated by beige stone, creates a lack of visual contrast. This monochromatic setting often overpowers the artifacts themselves, making even colorful or textured objects visually recede into the background. Lighting further adds to the visual challenges. In many areas, it is too dim, making it difficult to appreciate details in the displays.

In contrast, the chapter text panels are neon backlit, creating an uncomfortable contrast when viewed from above. In the display cases, particularly those housing paper or textile objects, the lighting often makes the object panels hard to read or leaves objects partially or unevenly lit. These inconsistencies disrupt the visual rhythm of the exhibition and strain visitor comprehension.

2. Sound

Auditory elements in the gallery are limited. There is a background soundtrack that was recorded by the Museum of Musical Instruments, which is intended to provide a subtle atmosphere for the exhibition. However, the music is not continuously played, and its volume is often too low to be heard clearly as it is transmitted from the mezzanine speakers.

The effectiveness of the sound is further diminished by competing noises, such as the air conditioning system, which masks the music. Several visitors reported not hearing the music at all, indicating that its presence is not impactful.

An audio guide was originally implemented to provide a narrative overlay, with the historical figure Ibn Khaldun guiding visitors through the collection. However, the audio guide is no longer in use, even though the numbered indications referencing it are still present on the displays. This absence of auditory narrative removes a potentially meaningful layer of interpretation.

3. Touch

The sense of touch is mostly indirectly engaged through the display structures. Many visitors were observed leaning on or touching the display surfaces to get a closer look at the objects, suggesting a form of casual, physical interaction that facilitates viewing.

The availability of seating throughout the gallery, primarily in the form of stone benches, shapes the bodily experience of visitors. These seats are frequently used by individuals and groups to rest or wait, but the experience is passive and offers little engagement. Visitors typically sit facing another display case, with nothing stimulating to read, see, or do, making the pause feel uneventful and disconnected from the exhibition. The benches incorporate sliding panels designed to provide additional content while seated, featuring extended chapter introductions in English and German, the only textual access available for these language groups.

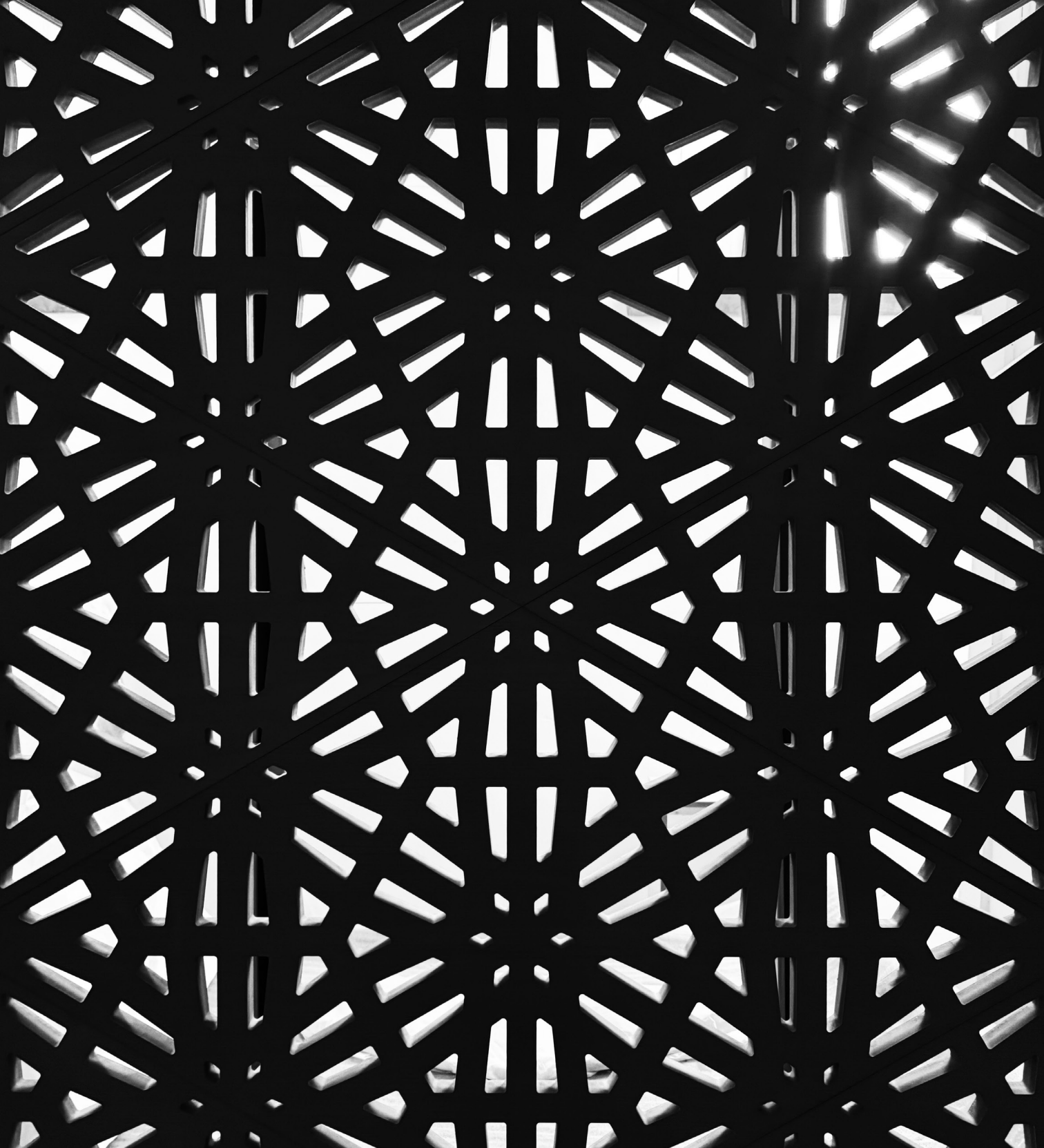
However, the panels' effectiveness is limited: they are physically heavy, not ergonomically designed, and lack clear contextual framing. Some have also deteriorated over time with use. Relying on these panels to deliver essential curatorial information compromises accessibility, as many visitors may overlook or struggle to engage with them. A more effective strategy would reserve such physical interactions for optional, supplementary material, such as anecdotes or illustrations, while ensuring that key interpretive information remains clearly visible and easily accessible to all.

Other interactive elements are notably underdeveloped in the gallery. The only interactive feature identified is a small children's section located on the mezzanine floor. It includes a game designed around Islamic geometric patterns, but the

installation was not functioning at the time of observation, represents a missed opportunity for engaging a younger audience and enriching the overall multisensory experience.

Overall, the gallery's lack of multimodal elements results in a somewhat monotonous and static experience. The visual dominance of objects and labels is not complemented by robust auditory or tactile dimensions, and interactive features are either minimal, nonfunctional, or absent altogether. Yet many of these elements were originally part of the curatorial vision, such as the audio guide, the children's section, and the background music, pointing to an initial intent to create a more immersive and engaging environment.

However, a lack of funding, maintenance, and long-term follow-up has caused these features to deteriorate or become obsolete. This degradation highlights how difficult it is to sustain multimodal strategies over time, especially in contrast to the more stable formats of text and object display. Lighting inconsistencies and lack of contrast further reduce visual clarity, compounding the sensory flatness of the space. As a result, visitors are left to navigate a fragmented curatorial narrative, relying primarily on isolated visual cues for meaning-making.



C. Concept Note for the Redesign of the Art of the Islamic World Gallery

The proposed redesign of the Art of the Islamic World Gallery addresses systemic challenges identified through this research by restructuring the gallery's narrative, spatial, and sensory dimensions. The exhibition is reimagined to unfold through thematic layers, fluid spatial flows, and multimodal storytelling, fostering inclusivity, accessibility, and deeper cultural understanding.

A central principle is to build upon the original architectural vision. The *mashrabiyya*-screen remains essential for its role in filtering light and anchoring the gallery's aesthetic identity, with its geometric pattern inspiring key graphic elements in the redesign. At the same time, the project corrects prior limitations by aligning architecture, curatorial content, and interpretive tools into a cohesive whole.

The curatorial framework moves beyond a strictly chronological-dynastic model toward a thematic structure that allows connections across time and geography. Seven universal themes, selected through an object-centered analysis, were defined to engage a wide range of visitor types, from structured explorers to deep divers, through layered interpretation and multimodal engagement.

The vision also anticipates future modifications, including the potential reorientation of the entrance to improve accessibility, the expansion of mezzanine exhibitions connected to the

permanent collection, and possible links with adjacent rooms (such as the Roman gallery) to enrich narratives centered on the Mediterranean region. These ambitions are embedded within the broader redesign concept and remain adaptable to evolving institutional and societal needs.

Two-Level Approach: Phased Redesign Strategy

To address systemic challenges with both realism and ambition, the redesign is conceptualized along a two-level approach, offering phased intervention strategies adaptable to institutional priorities and available resources.

- **Level 1:** Targeted Redesign (Minimal Intervention) focuses on achievable adjustments within the current architectural framework (Fig. C1b). This phase prioritizes immediate improvements to narrative clarity, spatial circulation, graphic coherence, accessibility, and multimodal engagement, without requiring significant structural changes.
- **Level 2:** Transformative Redesign (High-Impact Intervention) envisions a deeper reconfiguration of the gallery's spatial, curatorial, and sensory systems (Fig. C2). This phase proposes a holistic redesign that reimagines the physical layout, interpretive strategies, and visitor experience at a foundational level, ensuring full integration of accessibility, inclusivity, and engagement goals.

This phased strategy allows the museum to adopt either an incremental pathway, prioritizing low-impact enhancements, or a comprehensive transformation aligned with long-term institutional development. The approach is designed for flexibility, enabling adaptations based on budgetary constraints, architectural feasibility, and evolving curatorial visions.

These two levels of intervention are integrated across the redesign proposals and are accompanied by a visual overview that illustrates how the integrated framework is applied in practice. A comparative infographic or table will highlight the specific applications of each scenario, distinguishing between minimal and high-impact measures across the curatorial, spatial, graphic, and multimodal layers.

Redesign Proposals

The following design proposals present an integrated vision that incorporates both the targeted (Level 1) and transformative (Level 2) strategies. They are divided following four narrative layers which consist of curatorial, spatial, graphic and multimodal interactivity. While discussed separately, these layers are understood as fully interdependent and will require a holistic and integrated design and implementation approach, which is outlined in the next section describing the process.

1. Curatorial Layer: Redefining the Narrative

A new thematic structuring of the exhibition narrative was developed, moving away from a strictly chronological-dynastic organization toward a thematic chapter-based visitor journey. This restructuring aims to offer two entry points into the Islamic world's artistic and cultural diversity without sacrificing historical depth:

- **Entry A** (Near East): Spatial anchoring: A large-scale map visualizing the geographic expanse of the Islamic world at its cultural height.
- **Entry B** (Mezzanine): Chronological anchoring: A timeline charting dynastic developments and major cultural influences across centuries.

These orientation zones serve to contextualize the exhibition rather than structuring it sequentially. Visitors may encounter them before, after, or between thematic chapters without disrupting their understanding of the journey.

This flexible design allows visitors to select their own point of entry into the narrative while ensuring that contextual grounding remains accessible throughout the experience.

Thematic Chapter Structure

Seven major thematic chapters were conceptualized:

1. *Aesthetics and the Pursuit of Beauty*

This theme explores the central role of beauty in Islamic art, where artistic refinement is seen as an expression of divine harmony and human creativity. It highlights the use of geometry, symmetry, and ornamentation across media, from architecture and textiles to ceramics and metalwork, showing how the pursuit of beauty transcends mere decoration to reflect philosophical and spiritual values.

2. *The Symbolism of Nature*

This theme focuses on representations of plants and animals, which appear not just as decorative motifs but as carriers of symbolic meaning. Floral arabesques, birds, lions, and gazelles often evoke ideas of paradise, power, renewal, or protection. This section invites visitors to decode nature's layered symbolism in Islamic visual culture.

3. *The Significance of Writing*

Calligraphy holds a privileged place in Islamic art as both a visual and spiritual practice. This theme explores the development of calligraphy into a key artistic medium and its adaptation to decorative, architectural, and everyday objects.

4. *Material Culture and Economic Networks:*

This section focuses on the objects of daily life and luxury, ceramics, textiles, glass, metalwork, and the economic systems that shaped their production and circulation. It explores how craftsmanship, resource availability, and patronage intersected, and how these objects reflect both local identities and shared economic practices across the Islamic world

5. *Trade Routes and Cross-Cultural Exchanges:*

This theme examines the movement of goods, ideas, and artistic styles across geographic, religious, and cultural boundaries. It traces networks like the Silk Road, Mediterranean routes, and Indian Ocean trade, showing how Islamic art was shaped through contact with Byzantine, Chinese, European, and African cultures, resulting in hybrid forms and innovations.

6. *Spiritual Practices and Religious Diversity:*

This section explores the diversity of spiritual expression in the Islamic world, from religious rituals and spaces (mosques, shrines, Sufi lodges) to the objects that supported them (prayer rugs, lamps, manuscripts). It emphasizes not only Islam but also the coexistence and dialogue with other faiths, reflecting the plural religious landscapes of many Islamic societies.

7. *The Stages of Life: Birth, Marriage and Death*

This theme follows the human life cycle, focusing on the objects, customs, and artistic expressions associated with key life transitions. From amulets for protection at birth, to wedding textiles and jewelry, to funerary monuments and calligraphy, this section reveals how art accompanied people through the joys, trials, and rituals of life.

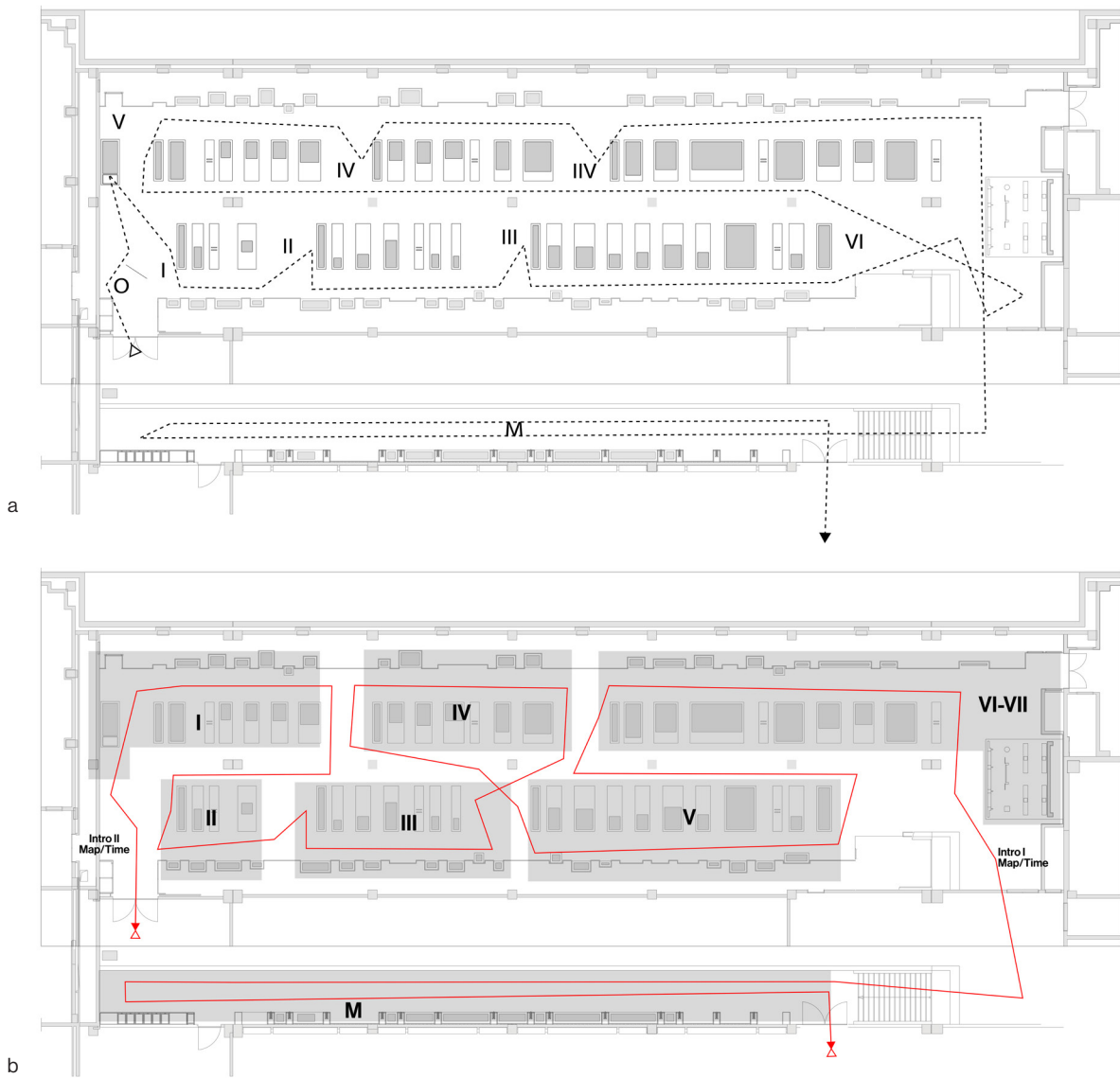


Figure C1. Floorplan of the current gallery configuration (a) and the targeted redesign proposal (b), showing minimal spatial interventions to improve circulation and narrative clarity.

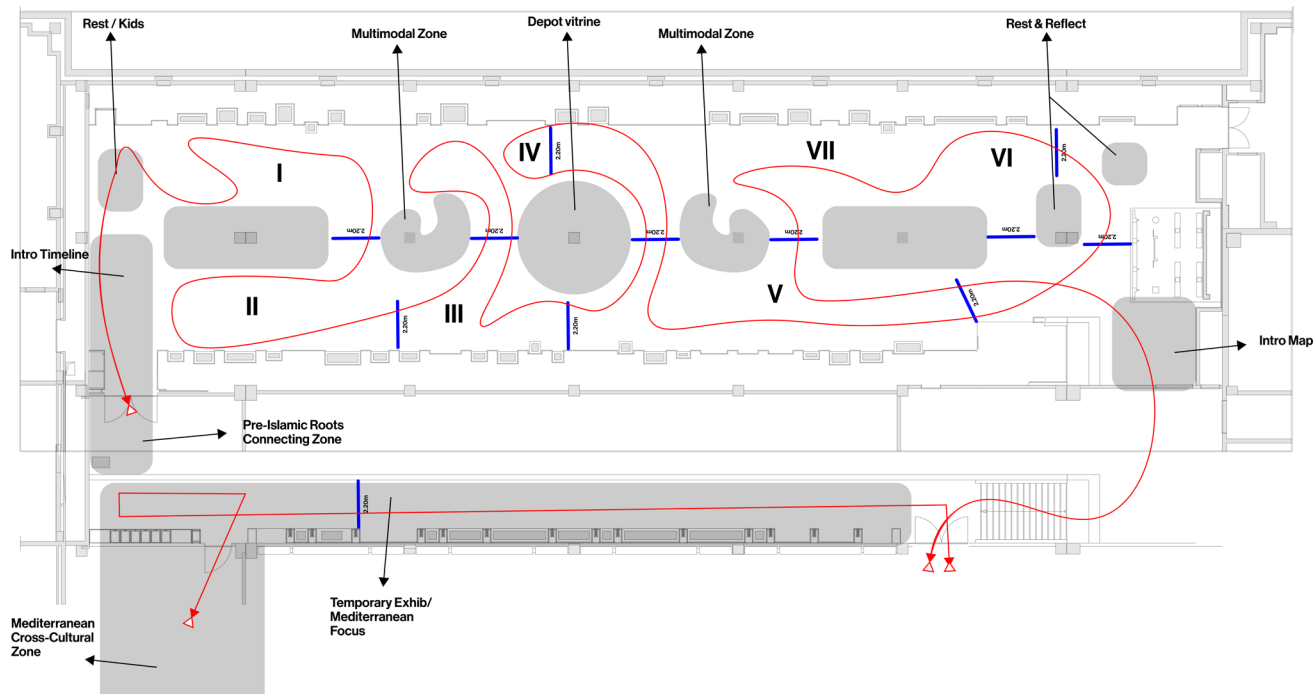


Figure C2. Floorplan of the transformative redesign proposal, illustrating major structural changes to enhance accessibility, thematic zoning, and visitor flow.

While the thematic chapters are conceptually ordered to create a coherent narrative progression, they are designed to be discovered independently and in any sequence. Each thematic section would also be highlighted through design and graphic codes, creating recognizable anchors throughout the visitor journey.

Mezzanine Redefinition

The mezzanine would be repurposed into a flexible, textile-focused temporary exhibition space, reinforcing thematic diversity and enabling dynamic curatorial interventions without disrupting the main thematic route. This approach could also be extended through dedicated display cases on the main floor, creating clear, integrated zones for temporary content that complements the mezzanine displays.

Notably, the mezzanine includes a currently closed secondary entry at its far end. Reopening this passage could offer a valuable opportunity to establish a spatial and conceptual link with the adjacent Roman gallery, forming a Mediterranean cross-cultural zone that highlights historical connections and artistic exchanges across civilizations.

2. Spatial Reconfiguration

The redesign maintains the gallery's longitudinal architectural form but reworks the spatial logic to improve narrative clarity, accessibility, and flexibility. Key structural anchors, such as the *mashrabiyya* screen and the columns, are preserved for their role in filtering light and sound. They are also used as graphic elements to reinforce the gallery's aesthetic identity.

Within the targeted redesign (Level 1), the existing display cases that previously housed historical introductions are repurposed to present thematic chapter introductions, with selected key objects strategically displayed to embody each chapter's focus (Fig. C1b).

Adjacent displays and vitrines are linked to the new chapters, with the graphic design creating clearer visual distinctions to help visitors differentiate between sections.

A major intervention within the transformative design (Level 2) involves the removal or reconfiguration of the dominant vitrines to open the space and enable organic circulation and modular exhibition design (Fig. C2). Transparent, modular display islands replace the former central vitrines, allowing for flexible, non-linear visitor movement between thematic zones. While this spatial configuration still requires refinement to enhance connectivity between the two sides of the gallery, it achieves a more balanced distribution of visibility, as demonstrated by the space syntax analysis (Fig. C3). Both sides become more visually accessible and support improved circulation throughout the space.

An essential feature of this level is the modular display system, which uses the columns as anchors for sculptural glass-and-steel units in varied forms (circular, square, horizontal). These elements break up the linear corridor effect, create spatial variety, and encourage lateral movement across the space. Built from interchangeable components, the modular system enables flexible reconfiguration to meet evolving curatorial needs, while maintaining visual coherence. The material palette of transparent glass, brushed steel, and occasional soft elements balances openness, refinement, and warmth.

The transformative redesign also reorganizes the space more extensively through the implementation of:

- Two primary resting zones are introduced: around the mosque structures (purely contemplative) and on the opposite side, stocked with books, articles, and multimedia content to supporting informal talks and guided discussions.

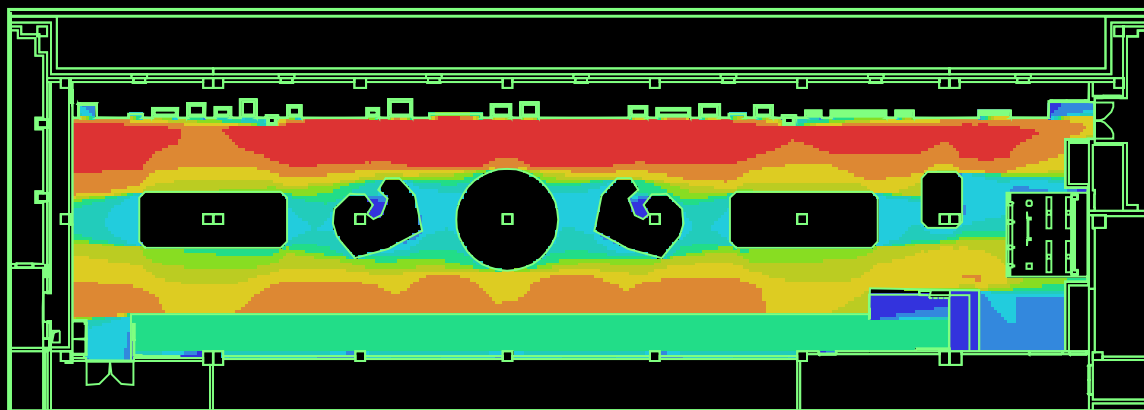


Figure C3. Space Syntax Analysis of the Transformative Layout.

- Children’s activities are integrated within the main gallery space, ensuring parents can participate fully while keeping children engaged and visible.

Accessibility is a central focus of the proposed transformations: circulation paths are widened to a minimum of 2.2 meters to ensure comfortable navigation for all visitors, label heights are adjusted for optimal readability from seated and standing positions, and all interactive elements are designed to be fully wheelchair accessible.

Additional research is recommended to explore further mobility improvements, such as lifts or ramps to facilitate access to and from the mezzanine, while recognizing that architectural feasibility studies will determine what adaptations are realistically achievable.

3. Graphic Design

The graphic system is fully reimagined to meet the diverse needs of visitors through a clear, inclusive, and visually cohesive approach. Informed by visitor typologies the interpretive structure is organized into four layers to support varying engagement styles (Table 3),

Wayfinding and Orientation

Entry and exit doors will feature clear signage displaying the gallery name (“Art of the Islamic World”), enhanced with optional *mashrabiyya*-inspired pattern applications that reinforce the architectural identity. The signage will also be designed to align with the broader museum system, serving as a recognizable wayfinding element to help guide visitors through the various galleries.

Chapter titles and clear visual cues will be installed above each thematic section, helping to signal transitions and improve

visitor orientation. Both external and internal wayfinding will be redesigned to minimize disorientation and ensure intuitive navigation throughout the gallery.

Narrative Communication

The graphic system will maximize readability by applying heightened contrast, adaptable font sizes, and a clear typographic hierarchy. This ensures that narrative clarity is maintained across all levels of interpretation, from general introductions to detailed object labels (Table 3; Fig. C5).

Visual Identity

A unified visual identity will draw inspiration from both the collection's current catalogue and the gallery's architectural features, particularly the *mashrabiyya* pattern, extending it across panels, wayfinding elements, and environmental graphics.

The typography will center on *Modern Era* and *Portrait* typefaces, aligning with the museum's current graphic identity while providing flexibility across large-scale headings and detailed labels. Particular care will be taken to ensure optimal legibility through well-considered font sizes, spacing, and contrast.



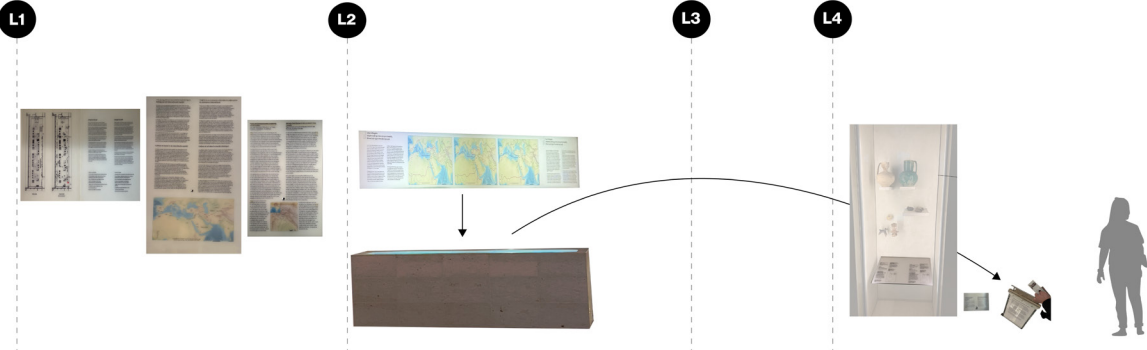
Figure C4. Color Palette

The color palette will use an eight-color system to differentiate thematic chapters, with matching hues applied to background panels and key displays. These colors, inspired by the gallery's architectural tones of stone, wood, turquoise, muted greens, and browns, will ensure visual consistency and support thematic

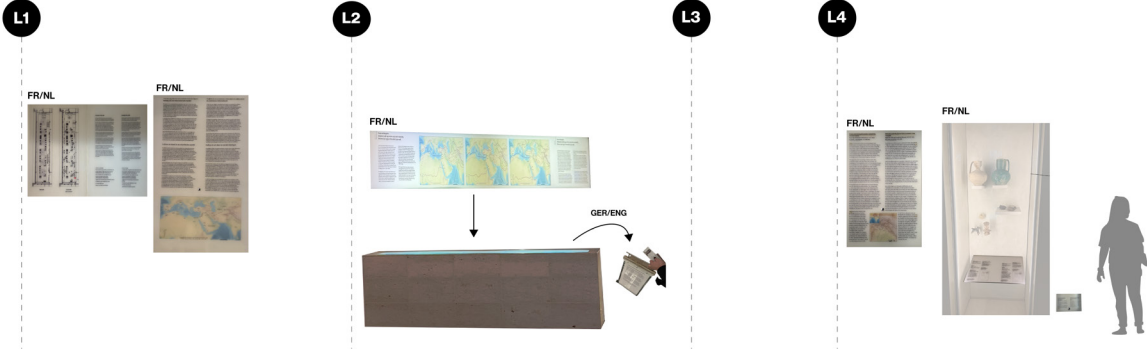
Visitor Type	Engagement Mode	Interpretive Levels	Language Strategy
Structured Visitors	Navigate primarily via titles, section markers, and visual cues (e.g., color coding) that highlight the exhibition's overarching structure.	L1 (General exhibition introduction)	Available in Dutch/French/English/German.
Thematic Explorers	Engage with thematic chapter introductions and overarching texts, seeking contextual understanding without deep exploration.	L2 (Chapter texts and contextual framing)	Available in Dutch/French/English/German.
Focused Visitors	Focus on detailed object labels and interpretive texts at close range.	L3 (Thematic highlights and sub-sections); L4 (Object labels)	Primarily Dutch/French; extended translations (English/German) provided digitally for clarity and practicality.
Deep Divers	Access to extended information through digital and printed layers (app or catalogue accessible in the gallery and outside), offering in-depth explorations.	Digital extension of L1–L4 (full spectrum)	Priority on Dutch/French; English available digitally via app/web; German planned for long-term implementation.

Table C1. Visitor types mapped to engagement modes, interpretive levels, and language strategies.

Visual Hierarchy



Content Hierarchy



Proposed Hierarchy



Figure C5. Structure of the graphic system.

clarity. While the previous catalogue relied on Univers and Kepler, the redesigned system integrates more seamlessly with the museum's current brand guidelines.

4. Multimodal Interactivity

The redesign emphasizes inclusive, immersive sensory engagement that supports a wide range of visitor needs and learning styles. Visitors who are visually impaired can access audio descriptions, while those with hearing impairments benefit from clear visual supports and tactile signage.

Each thematic chapter includes at least one tactile element, such as stone carvings, textile swatches, or material samples, allowing visitors to engage physically with the textures and techniques of Islamic art. Ambient soundscapes and subtle scents further enhance immersion in thematic zones, botanical sections, for instance, feature ambient nature sounds and gentle fragrance infusions like spices or henna. These sensory strategies are designed to maintain narrative clarity, emotional resonance, but also to actively stimulate engagement and curiosity throughout the space.

Digital integration extends throughout the gallery:

- Interactive displays and kiosks allow visitors to explore highlighted objects in detail, offering deep dives into craftsmanship, context, and meaning.
- A digital wall interface provides access to a curated archive of objects with layered multimedia content, enriching understanding through images, videos, and contextual data.
- QR codes or NFC chips at entrances connect visitors to downloadable online interactive catalogues and audio guides. A dedicated webpage (linked to the museum's main site) serves as this online companion experience.

Implementation Process

To implement the proposed redesign, this proposal outlines an integrated framework that systematizes internal collaboration across all narrative and sensory layers from the earliest stages of exhibition development. This framework is designed to guide both the redesign of the Islamic Arts Gallery and serve as a transferable method for future exhibition projects.

Building on Lin's structured approaches to exhibition design and proposed frameworks from professional practice,¹⁹ the method organizes the exhibition-making process around three intersecting axes: narrative layers, development phases, and team responsibilities.

The **first axis** defines the main experiential narrative layers through which visitors perceive and construct the exhibition's story. These layers must be developed in parallel to ensure a coherent and inclusive visitor experience. Based on the analysis of the Islamic Arts Gallery, four narrative layers were identified:

- Curatorial discourse: the content and interpretation conveyed through objects and themes.
- Spatial discourse: the physical environment, circulation, and architectural structure.
- Graphic design: the visual communication system of panels, labels, and wayfinding.
- Multimodal interaction: the sensory and material engagement through sound, light, and tactile elements.

19 Lin, C. (2008). Mapping the design criterion framework for museum exhibition design projects. In D. Durling, C. Rust, L. Chen, P. Ashton, & K. Friedman (Eds.), *Undisciplined! Proceedings of the DRS International Conference 2008* (pp. 21–42). Design Research Society; Dernie, D. (2006). *Exhibition design*. Laurence King Publishing; Kossmann, H., Mulder, S., & den Oudsten, F. (2012). *Narrative spaces: On the art of exhibiting*. 010 Publishers..

The **second axis** The second axis outlines the overall process of exhibition development, structured into five sequential phases that guide the project from initial vision to final evaluation: define, design, develop, deliver and debrief.

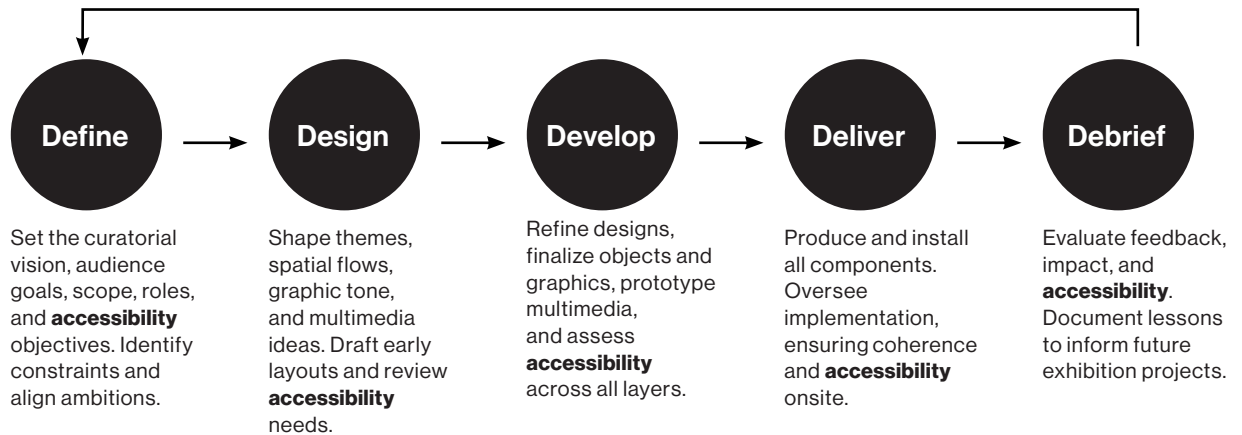


Figure C5. Five stages of exhibition development.

While the phases generally follow a sequence, the process is cyclical, particularly for permanent exhibitions, where evaluation (Debrief) should lead to ongoing adjustments. Throughout all phases, the needs of the public are considered by incorporating accessibility goals from the beginning, assessing them during development and revisiting them after installation.

The **third axis** defines the distribution of responsibilities within the project team. Key roles include:

- Curator (C):
content, themes, object selection
- Public programs and accessibility coordinator (P):
audience needs, accessibility features, educational and inclusive strategies

- Architect (A):
spatial layout, structural feasibility, architectural integration
- Exhibition designer (E):
holistic integration of spatial, curatorial, graphic, and sensory elements; coordination of the overall visitor experience
- Graphic designer (G):
visual communication, labels, panels, wayfinding
- Multimedia designer (M):
digital, audiovisual, and interactive components

Each role contributes across all narrative layers throughout every phase of the project, fostering interdisciplinary dialogue and sustained alignment. These roles do not necessarily represent distinct individuals; depending on the project's scale, resources, and institutional context, a single person may fulfill multiple roles.

While a Project Manager or Exhibition Coordinator typically oversees timeline management, budget control, team communication, and administrative logistics, this function is not detailed in the intervention matrix, as it operates as a holistic coordination role rather than directly engaging in the execution or design of specific tasks.

To support this integrated approach, a matrix was developed to map the interventions required to realize the concept across the four core narrative layers, along with the roles involved in their implementation. This tool helps teams visualize the broader scope of an exhibition redesign, clarify responsibilities, and adapt the method to their specific institutional context, ultimately fostering a more collaborative and strategically aligned design process.

Layer	Redesign Intervention	Approach	C	E	P	A	G	M
Curatorial	Reorganization of the narrative structure	1	●		●			
	Create two non-linear entry points (map + timeline)	1	●	●		●	●	
	Develop 7 thematic chapters with cross-cultural perspectives	1	●	●	●		●	
Spatial	Repurpose existing cases to introduce thematic zones	1				●	●	
	Remove/reconfigure central vitrines for open circulation	2		●		●	●	
	Introduce modular display systems anchored on columns	2		●		●		
	Add rest zones and children's areas for inclusion	1	●	●	●	●	●	●
Graphic	Implement multilingual labels and clear visual hierarchies to support diverse (language) users.	1		●	●		●	
	Introduce color-coded chapters using 8-color palette	1			●		●	
	Redesign wayfinding and signage	1			●		●	
	Optimize typography and contrast for readability	1			●		●	●
Multimodal	Reintegrate and adapt existing audio guide into new narrative structure	1	●		●			●
	Integrate tactile samples in each thematic zone	2		●	●		●	
	Add ambient sounds and scent cues to thematic sections	2		●	●		●	●
	Introduce timeline/map (physical or digital)	1	●	●	●		●	●
	Develop online catalogue with layered media access (images, audio, text)	2						
	Provide multilingual content (English, German) for on-site L3 interpretation	2			●		●	●

Table C2. Concept Development Process: Key Phases, Main Tasks, and Roles

Conclusive Remarks and Future Planning

The overarching goal of this proposal is to create a flexible, inclusive, and evolving exhibition that reflects the richness and diversity of Islamic art. It aims to foster meaningful engagement across all narrative layers for a wide range of visitor types while remaining adaptable to future institutional developments. Emphasizing universal accessibility, the redesign proposes improvements to external wayfinding, high-contrast labels at wheelchair-accessible heights, and fully inclusive interactive stations.

While the proposal acknowledges that it does not fully account for the museum's budgetary constraints, operational capacity, or the complete scope of its collections inventory, it offers a practical framework to inspire meaningful improvements. Building on the institution's strengths and future plans, it integrates the transformation of the mezzanine into a textile-focused zone (particularly highlighting Tunisian textiles) and envisions thematic connections with adjoining spaces, for example, linking the Islamic galleries with the Roman section to create a Mediterranean focus or connecting to the Ancient Near East galleries for a cohesive journey through time and space.

Rather than idealizing the existing architecture, the redesign builds on its strongest elements, such as the *mashrabiyya*, material palette, and visual identity, while addressing its limitations through thoughtful spatial reorganization, layered graphic and sensory interpretation, and an integrated accessibility strategy. Ultimately, it seeks not only to improve the current exhibition but also to establish a sustainable and adaptable model for future curatorial and design practice, positioning the Art of the Islamic World Gallery as an evolving space of encounter, reflection, and learning for all audiences.

