

Designing for Attention: Improving Visual Hierarchy and Accessibility in Museum Information Systems

ADAD9114 Assessment2

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Acknowledgement

I acknowledge the assistance provided by ChatGPT, which offered editorial suggestions to improve clarity and expression.

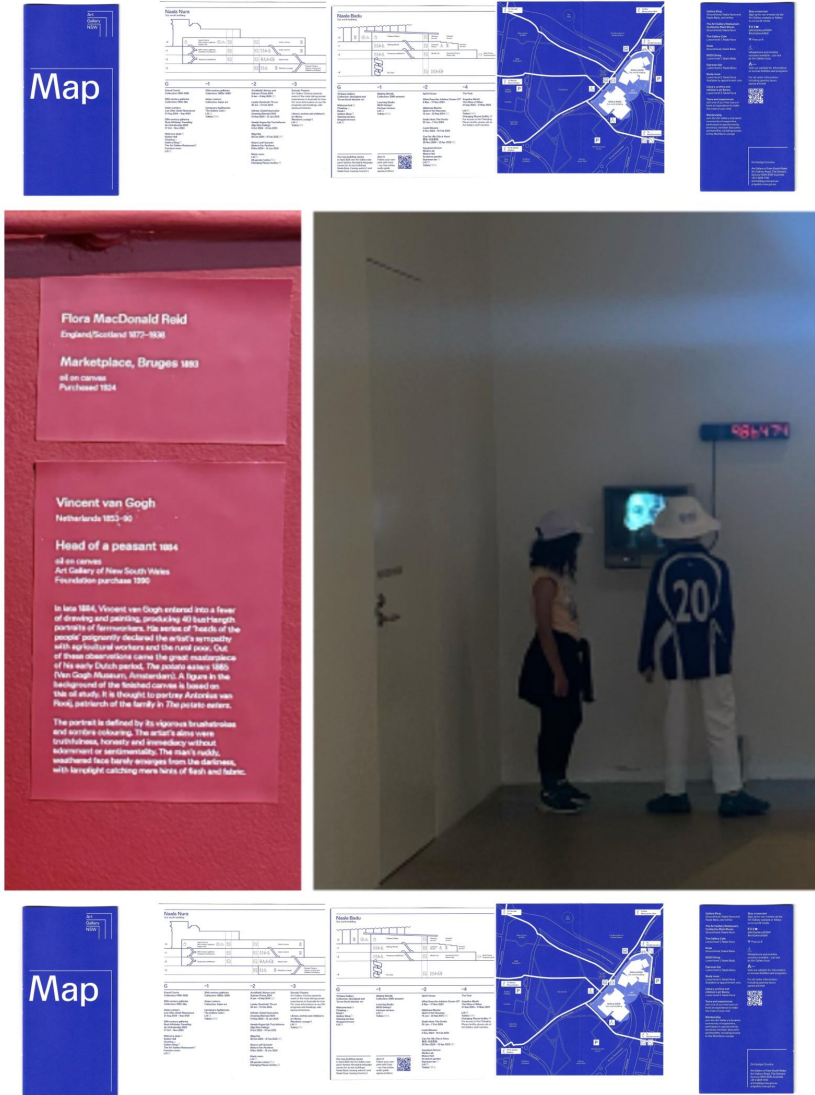
Examples of prompts used include: "shorten this paragraph," "improve coherence," and "check alignment with the assessment brief."

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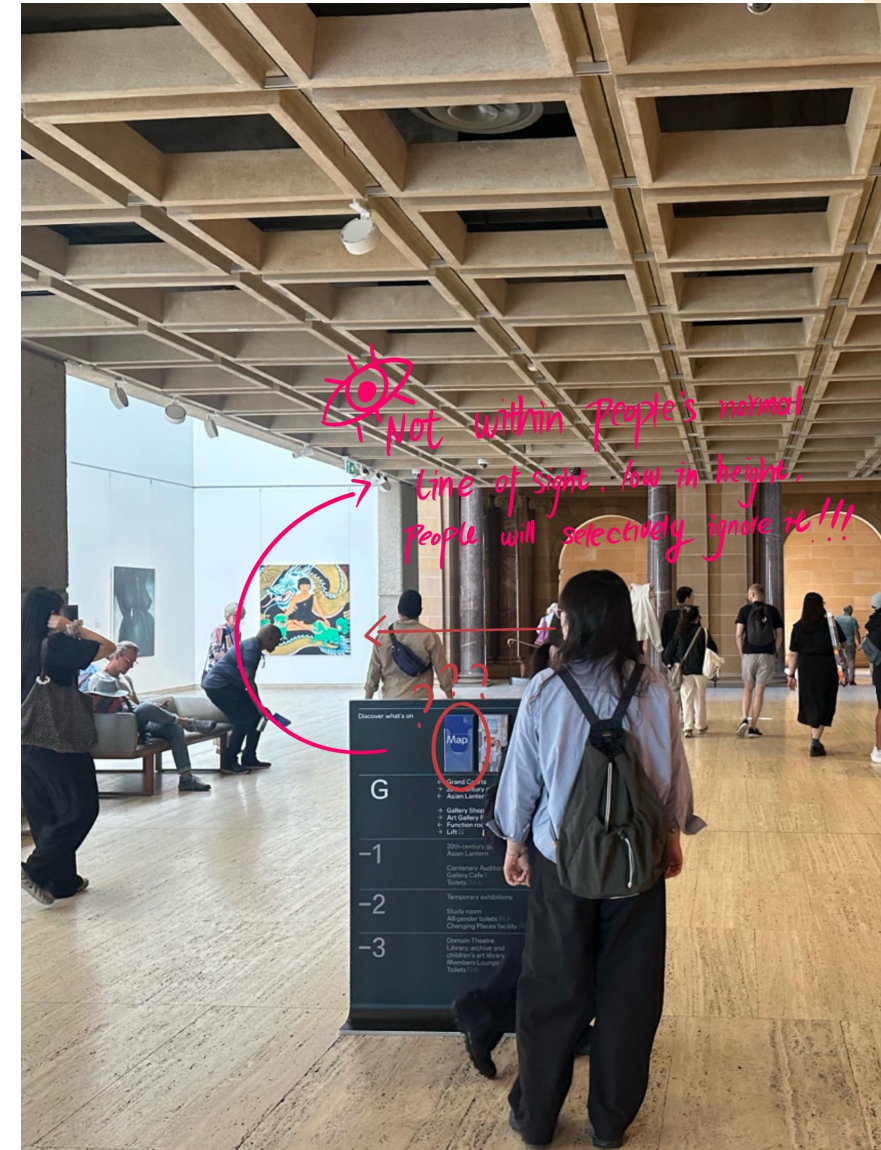
Background

- Recent museum communication research shows that elements such as visual hierarchy, font size and label placement can affect visitors' attention to information. Krukar (2020) pointed out that people tend to focus on visually prominent things, while McManus (2015) observed that many visitors only browse tags unless the text is clear and easy to identify. The Australian Museum (2018) also emphasizes the importance of readability and contrast to accessibility, Ricci et al. (2023) shows that even a small design adjustment can significantly change people's vision.
- Overall, these studies show that museum information does not always match the way visitors move naturally in space especially in transition areas where people walk quickly and rarely stop.
- Research gap: Despite continuous efforts to improve the design of the exhibition, there is still limited research on how visitors interact with wall labels, printing guides and digital screens in real gallery environments (such as AGNSA). The project aims to investigate this gap.



Background: problem situation

The problem mainly occurs at the entrance of the exhibition hall, the transition corridor and the intersection of the dynamic line. These "threstle spaces" have guiding functions, but they are often ignored. Many visitors will not stop reading even if they pass by the consultation point; printed manuals are usually not modified because they are not intuitive, or they are browsed and put back. Finally, the position and brightness of the digital screen will also affect the visibility.



Research Topic & Objectives

research topic

Discuss how visual hierarchy and accessibility affect how the audience pays attention to, reads or ignores the information system in the museum.=

Research objectives

1. Analyze how design factors such as font, visual level, contrast and position affect the audience's attention.
2. Compare the readability and attractiveness of wall text, paper brochures and digital screens.
3. Explore the reasons why information is easily ignored in the "threst space".
4. Evaluate the differences in the accessibility needs of audiences of different age groups.
5. Put forward design guidelines and suggestions for improvement to help improve the overall exhibition experience.



Research Questions



Research Statement

The project studies how visual hierarchy and barrier-free design affect the visibility, readability and user participation of the museum information system in the AGNSW limited gallery space.



1. How does the visual level affect the audience's attention distribution and the depth of understanding of information?
2. What design factors may cause visitors to inadvertently ignore the exhibition information during the visit?
3. Why do different media forms show different degrees of attractiveness, and how do these differences arise?
4. How to improve the inclusiveness and readability of the exhibition hall information system through design strategies to make it more acceptable to different audiences?

Rationale

- In addition to personal observations, existing literature shows that museum visitors often miss important contextual information because the visual hierarchy is not optimized (Krukar 2020; McManus 2015).
- The gap between expected communication and actual visitor behavior requires the following research:
- Visual communication analysis
- Behavior mapping
- Barrier-free framework
- Design intervention based on prototypes
- Therefore, the proposal solves both practical problems (low readability) and theoretical problems (how design shapes attention), so that research is related to visual communication design, museum research and accessibility research.



Significance

The value of the research lies in:

- Through the design principle, the exhibition experience can be improved from "passive browsing" to "active participation". This research is not only helpful for design practice, but also for theoretical dialogue around visual hierarchy, attention flow and barrier-free communication in cultural institutions. By generating a design framework that integrates readability and visitor behavior, the project has the potential to provide information for future museum guidelines and standardize inclusive information systems.

Museums improve
information clarity and
accessibility



Audiences of different
ages and abilities
understand art more
effectively



Designers understand
the balance between
"beautiful" and
"readable"



Future exhibition
design establishes
visual hierarchy and
accessibility standards



Intended Audience

Primary audience for the study:

1. As the planners of the information environment, museum curators and exhibition design teams can use the research results as a reference for optimizing circulation and information systems.
2. Visual communication and information designers can gain practical insights into layout, visual hierarchy and readability improvements.
3. Barrier-free researchers can use this to further explore the differences in reading and understanding of different audiences.
4. Art and museum educational institutions can incorporate research into the teaching content of courses or seminars.

Research results

It will be presented in the form of graphic reports, visual maps and design models.



Methodological Framework

Activities

Location: Art Gallery of New South Wales (AGNSW)

Overall Timeframe: 6 Months

STAGE 1: Literature and Precedent Review (14 Days)

I will first read important research on museum communication, visual hierarchy and readability, as well as research on wayfinding, labeling and digital display. This review will help to form the main idea, improve the research problem, and decide which design factors to study later.

STAGE 2: Prototype Analysis & Visual Mapping (1 Month)

I will draw the current AGNSW information system by reviewing the label layout, layout, contrast, hierarchy and digital screen use. I will use these maps to find attention gaps, dominant elements and accessibility problems.

STAGE 3: Structured Observation Without Intervention (1 Month)

At this stage, I will observe the visitors quietly in the selected room at different times of the day. The focus is only on observing people's natural behavior — whether they stop to read the label, interact with the screen, or walk through the guide without noticing. I will record short behavior coding notes instead of detailed descriptions, so that the observation can be kept simple and consistent. This stage helps me understand the current situation before introducing any design changes.

STAGE 4: Prototype Intervention with Adjusted Visual Hierarchy (1 Month)

The redesigned prototype has a clearer hierarchy and layout, and will be set as a temporary model. I will repeat these observations to compare changes in reading time, participation and navigation. Photos and brief behavior records will help show any differences from the third stage.

STAGE 5: Reflection, Testing, and Iteration (1.5 Months)

According to what I noticed during the intervention, the prototype will be improved — adjust the size, spacing, color or information density, etc. A quick second test can be carried out to check whether the modified design improves clarity and attention flow.

Methodological Framework

Activities

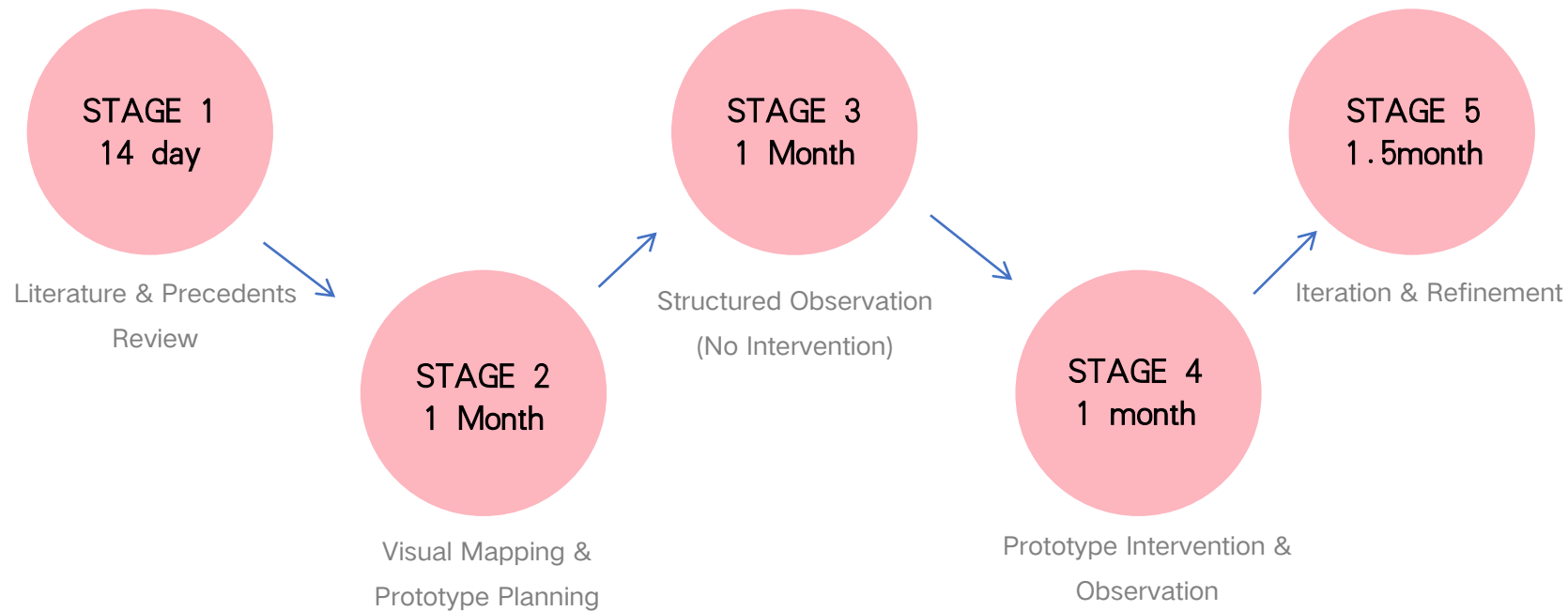
Location: Art Gallery of New South Wales (AGNSW)

Overall Timeframe: 6 Months

STAGE 6: Consolidation, Analysis, and Documentation (14 Days)

All observation records and visual diagrams will be combined to compare the results of "before" and "after". In the final stage, the main insights will be summarized and transformed into a design framework to improve the museum information system.

Timeframe



Methodological Considerations

Bias & Researcher Position

- As a visual communication designer, my interpretation of the readability of the exhibition may be influenced by my training in typesetting and layout.
- In order to manage this prejudice:
- Observation will be constructed using behavior coding categories instead of subjective impressions.
- No assumptions will be made about the visitor's intention unless there is support for the repeated mode.
- The prototype test will include multiple age groups to avoid designer-centered interpretation.

• **Strengths of the Methodology**

- Combine real-world behavioral observation with visual analysis to provide high ecological effectiveness.
- Prototype intervention allows before and after comparison to strengthen causal insight.
- Visual mapping provides spatial clarity and identifies attention hotspots.

• **Limitations**

- Visitor behavior varies according to the level of the group, the time of day and personal preferences.
- AGNSW access restrictions may restrict the placement of prototypes.
- There is no need for interviews. Observation may only capture superficial behavior.
- The popularity of digital screens may be affected by external factors (such as dynamic graphics), not just the visual level.

Methodological Framework

Anticipated Outcomes

Based on this method, the redesigned exhibition information has a clearer hierarchy and better accessibility, which is expected to:

Increase the time to read the labels on the wall

Improve the understanding of young and older tourists

Reduce the confusion of dense or weak text

Encourage more interaction with digital displays

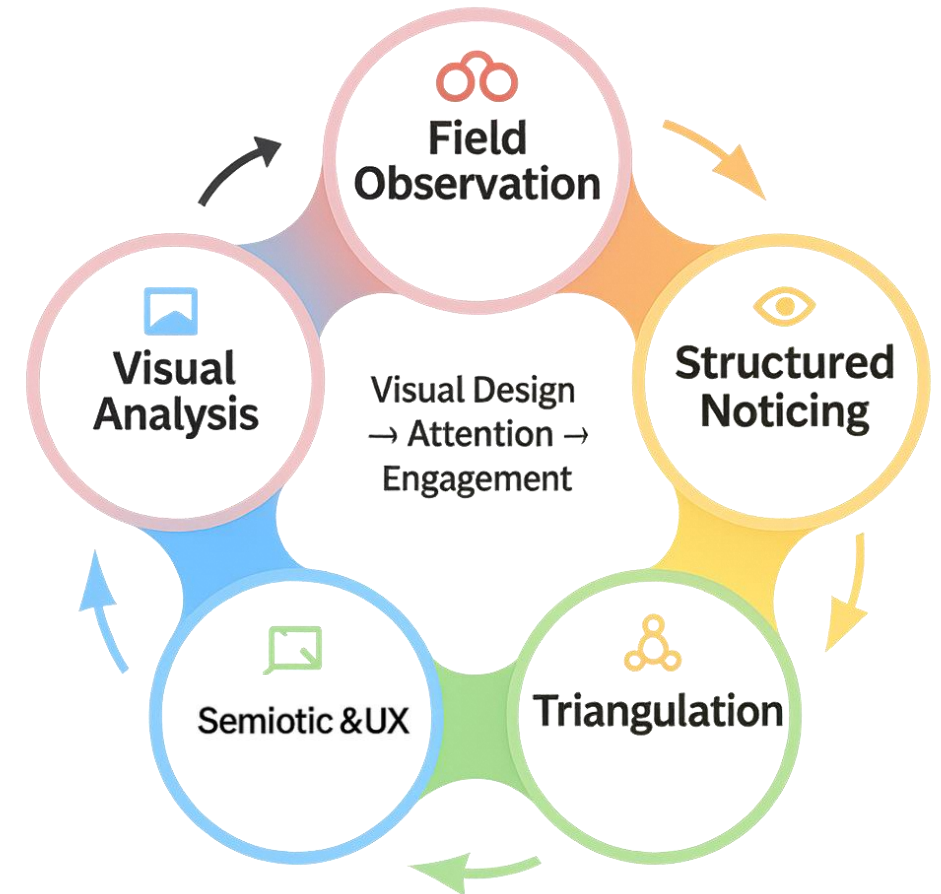
And support more inclusive communication across languages and age groups

Strengths

- Observe the real visitor behavior carefully
- Combine visual and qualitative analysis to gain more in-depth insights
- It is highly related to the design practice of visual communication in museums.

Limitations

- Visitor behavior will change with time, crowd level and personal habits.
- The access restrictions of AGNSW may limit the location of the prototype.



Methods in Detail

1. Field observation

Record reading behavior, stay time and interaction mode.

2. Visual analysis

Analyze font size, contrast, line spacing and information density.

3. Attention mapping

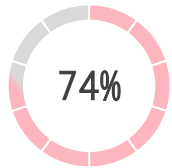
Draw the audience's movement path and visual stop.

4. Reachable diagnosis

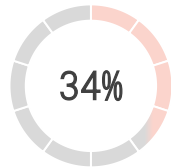
Use the WCAG standard (font size $\geq 16\text{pt}$, contrast $\geq 4.5:1$).

5. Cross-media comparison

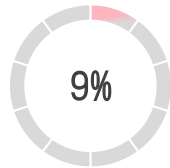
Compare the attractiveness of wall signs, brochures and screens.



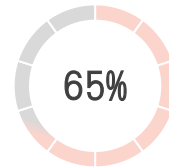
Digital Screens



Wall Labels



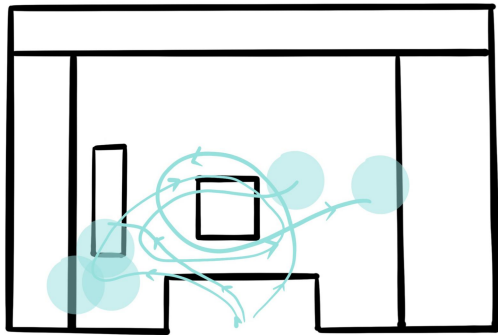
Printed Guides



Younger Users Digital
Interaction

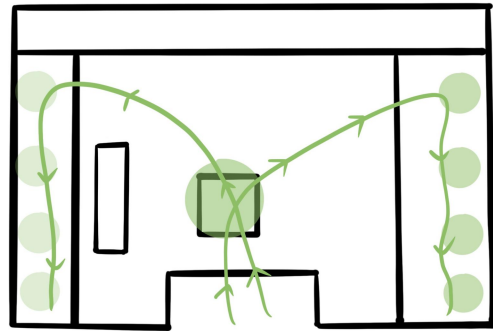
Visual Map 1: Attention Pathway Map

By observing the mobility mode of visitors in the gallery, four main types of visitors can be identified. Each type has a different degree of dependence on the information system, which leads to different access routes and stay modes.



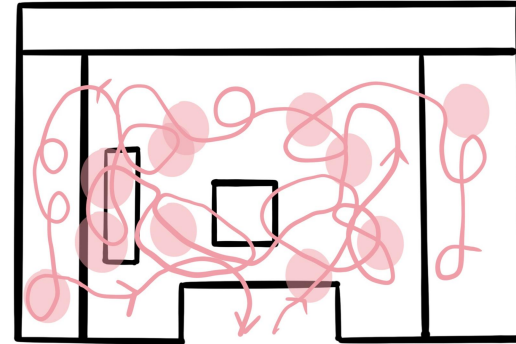
Digital-focused Visitors

These visitors focus on digital and interactive displays, and spend most of their time near these areas. Traditional labels and handouts can only be browsed quickly, or completely ignored.



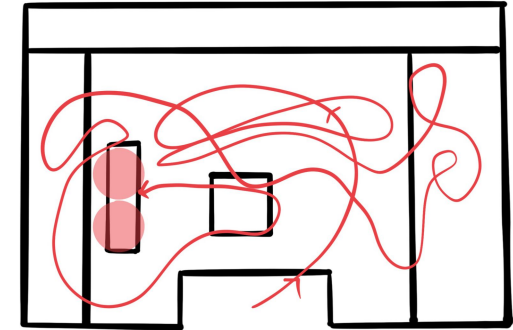
Label Readers

These visitors moved slowly along the wall and read each label one by one.



Wanderers

They spend most of their time close to the wall, and hotspots appear around the lower left area where the label is placed.



Assistance Seekers

These visitors often move back and forth between the entrance, the information desk, and the gallery maps. Their “back-and-forth” paths suggest they need to confirm directions, ask for help, or look for specific works.

Visual Map 2: Information System Map

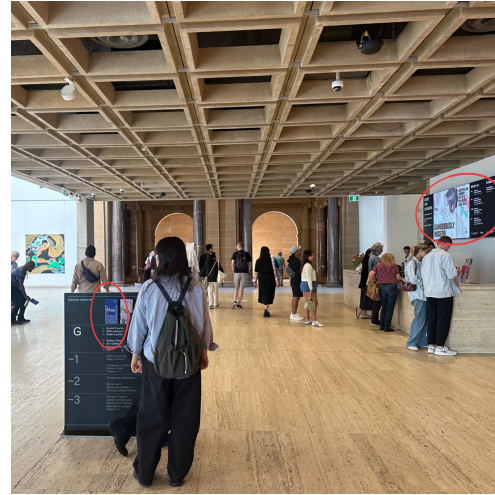


Wall Labels

These labels are located in the lower corners, which is difficult to read because the text is small, dense and tightly spaced. Many tourists just glance at it and continue to move forward, making these areas low-sight areas with a high skipping rate.

Information density: too high

Visual priority: very low



Printed Guides

or next to the information desk, but there are no obvious signs, and few tourists pick them up. Because they don't match the visual stream, many people don't notice them at all.

Participation: low

Visual priority: lowest



Lighting & Sightline Flow

The overhead lighting creates three eye-catching areas:

The brightest: the center of the artwork

Middle: The front building area

The darkest: side corner — the place where the wall label is often located, which is why they are easily ignored.



Digital Screens

These screens draw the most attention.

These screens are the most popular. Placed at the entrance or next to the artwork, the bright lights and dynamic content make them easy to notice, especially for young tourists. People spend much more time here than on the wall label.

Information density: balance

Visual priority: the highest

Precedents:

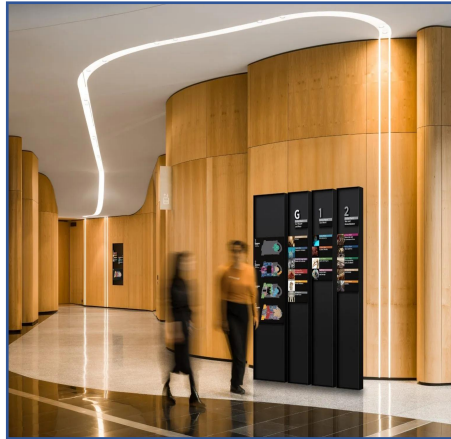


Cooper Hewitt Smithsonian Design Museum — Digital Pen System

Local Projects & Diller Scofidio + Renfro. (2014).

The Pen: Interactive visitor tool for collecting and exploring museum objects. Cooper Hewitt, Smithsonian Design Museum.

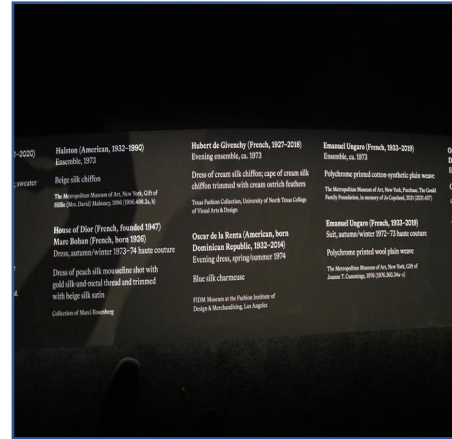
<https://www.cooperhewitt.org/digital/pen/>



Tate Modern — Wall Label Redesign

Cartlidge Levene. (2016). Tate Modern signage and label system redesign. Cartlidge Levene Case Studies.

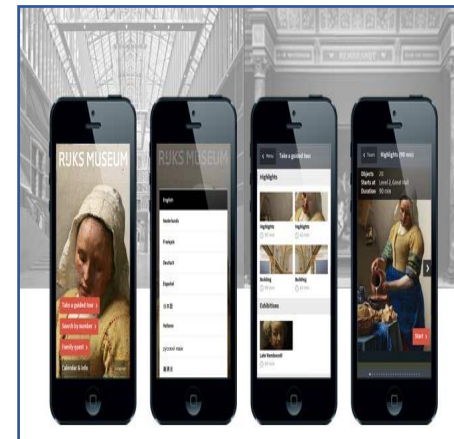
<https://cartlidgelevene.co.uk/projects/tate-modern/>



The Metropolitan Museum of Art — Accessible Label Guidelines

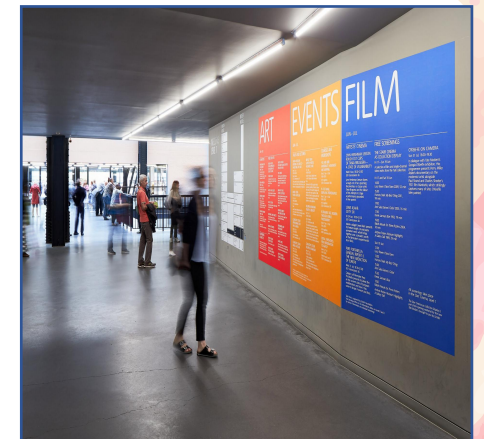
The Metropolitan Museum of Art. (2020). Accessible Label Guidelines: Typography, contrast, and inclusive communication standards.

<https://www.metmuseum.org/about-the-met/accessibility>



Rijksmuseum — Rijksstudio Digital Guide

Fabrique & Q42. (2013). Rijksstudio: Digital collection platform and QR-based gallery guide. Rijksmuseum. <https://www.rijksmuseum.nl/en/rijksstudio>



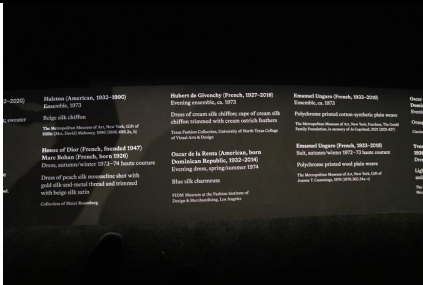
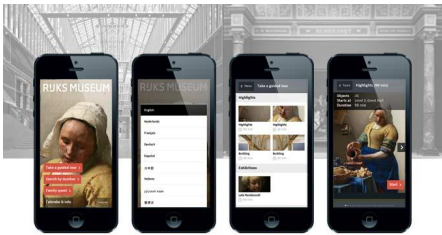
Auckland War Memorial Museum — Wayfinding & Information System

Diadem. (2019). Auckland War Memorial Museum Wayfinding Project: Integrated signage and visual hierarchy system. <https://diadem.co/projects/auckland-war-memorial-museum/>

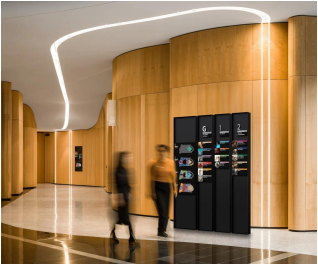
Precedents:

Precedent	What is it	Relevance to my practice	Inspiration
 Cooper Hewitt "Digital Pen" System Local Projects & Diller Scofidio + Renfro (2014)	This is an interactive setup that allows visitors to click on labels, save artwork, read deeper information, and browse related digital content on the gallery's touchscreen. Basically, it integrates physical displays with digital layers, so that people can explore as much (or as little) as they want.	It demonstrates how interactive systems can engage visitors for longer periods and help them better concentrate than traditional wall labels. The use of clear visual hierarchy and screen-friendly layout also highlights how well-thought-out design can make information easier to read and access.	It gave me the idea of using "layered" information — simple bullet points on the wall, and deeper content on the screen — to make things clearer and encourage people to dig deeper if they are interested.
 Tate Modern Label & Signage Redesign Cartlidge Levene (2016)	Significant updates have been made to the gallery wall labels, with a focus on layout, spacing, contrast, and hierarchy, all aimed at making the text easier to read in different gallery settings.	It is directly related to the issues I noticed at AGNSW: the font size is too small, the contrast is low, and the text feels overly crowded. It demonstrates how clearer typography can make information easier to absorb and help reduce visual fatigue.	It provides me with a reliable reference point to understand the appearance of well-designed labels, especially in terms of type and layout. I can draw on this when developing and refining label prototypes for my research.

Precedents:

Precedent	What is it	Relevance to my practice	Inspiration
 The Met Accessible Label Guidelines The Metropolitan Museum of Art (2020)	An accessibility guideline that details the minimum font size (17 pt or larger), required contrast, use of simple language, and clear hierarchy for all museum text. Essentially, it establishes a baseline for an "accessible" appearance.	It provides me with specific and measurable criteria to support inclusivity — precisely the goal I pursue as I strive to enhance the readability for visitors of various ages and abilities.	It provides simple rules that I can incorporate into my prototypes to ensure they meet accessibility expectations and are truly suitable for a wide range of visitors.
 Rijksstudio QR-based Digital Platform Fabrique & Q42 (2013)	A mobile system allows visitors to scan QR codes on labels to access high-resolution images, view object histories, and create their own personalized collections on their phones.	It demonstrates how digital add-ons can provide richer information without cramming too much information onto physical labels. This also aligns with what I have observed in my research — younger visitors tend to gravitate towards screens and often stay longer when there is interactive content available.	It supports a hybrid information approach: keeping labels clean and simple, while providing deeper information digitally. This way, visitors can choose the level of exploration they want based on their reading habits.

Precedents:

Precedent	What is it	Relevance to my practice	Inspiration
 Auckland Museum Wayfinding System Diadem (2019)	Conduct a comprehensive overhaul of the museum's signage and wayfinding system, focusing on clear visual hierarchy, effective spatial organization, and intuitive cues, to assist visitors in navigating without requiring extensive thought.	It demonstrates how the placement and visibility of information, as well as the order in which people encounter information, influence the movement patterns and attention directions of visitors. This is directly related to the visitor paths and attention hotspots that I have been observing.	It helps shape the spatial aspect of my information system redesign, especially in guiding visitors' attention through clearer paths and using consistent visual cues to make the experience feel more intuitive.

Case summary reflection:

Overall, these five cases show that clearer visual hierarchy, improved readability, and thoughtful digital integration can greatly strengthen how visitors notice, understand, and engage with museum information systems.

Reading:

1. Rice, W. L., Shellhorn, J., Bloomgren, V., Booth, L., Duncan, S., Elias, J. et al. (2023). The impact of graphic design on attention capture and behavior among outdoor recreationists: Results from an exploratory persuasive signage experiment. *Journal of Outdoor Recreation and Tourism*, 42, 100606. <https://doi.org/10.1016/j.jort.2023.100606>
2. Krukar, J. (2020). How the Visitors' Cognitive Engagement Is Driven (but Not ...)
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7062705/>
3. Ceccarelli, S. (2024). Evaluating visitors' experience in museum: Comparing ... ScienceDirect.
<https://www.sciencedirect.com/article/pii/S2212054824000250>
4. Shi, W. (2025). Cognitive Style and Visual Attention in Multimodal Museum ... MDPI Buildings, 15(16). <https://www.mdpi.com/2075-5309/15/16/2968>
5. Guo, R. (2024). Empirical Insights into Eye-Tracking for Design Evaluation. PMC. <https://www.ncbi.nlm.nih.gov/articles/PMC11673074/>
6. "Typography as image" gets results on trailside signs (2023). University of Kansas / Newswise.
<https://www.newswise.com/articles/typography-boosts-trailside-sign-visibility>
7. McManus, P. (2015). Oh, Yes, They Do: How Museum Visitors Read Labels and Interact with Exhibit Texts.
8. Australian Museum. Writing Text and Labels. <https://australian.museum/learn/teachers/learning/writing-text-and-labels/>
9. "Designing Signage that Captures Attention: Unveiling Key Best ..." (2024). LinkedIn article. <https://www.linkedin.com/pulse/designing-signage-captures-attention-unveiling-key-best-cooper>
10. Diamantopoulou, S. & Insulander, E. (2014). Labels, the Audience Experience and Curatorial Strategy in Art Museum Exhibitions. Academia.edu.

References:

Title, Date and Genre	Author's background	Author's project	Location	Focus	Core Concepts	Nub/Main Argument	Report	Evaluation	Relevance to my practice
The impact of graphic design on attention capture and behavior among outdoor recreationists (Rice et al., 2023), Journal article	Interdisciplinary team in outdoor recreation, environmental communication and behavior change	Test persuasive signage with varied graphic design to see how hikers respond	Outdoor recreation sites / trails in the US	How graphic design choices affect attention capture and compliance with messages	Attention capture, persuasive signage, visual salience, behavior change	Well-designed, visually salient signs can measurably influence on-site behavior	Field experiment comparing different sign designs and tracking visitor responses	Strong ecological validity but limited to specific outdoor contexts	Shows how visual variables can change real behavior, supporting my focus on attention and action in museum signage
How the Visitors' Cognitive Engagement Is Driven (Krukar, 2020), Journal article	Researcher in environmental psychology and museum visitor studies	Study how spatial layouts and displays influence visitors' cognitive engagement	Art museum / gallery settings in Europe Art museum / gallery settings in Europe	Link between spatial configuration, viewing patterns and mental engagement	Spatial layout, cognitive engagement, movement patterns, attention distribution	Museum space subtly guides what visitors attend to and how deeply they process it	Combines behavioural tracking with self-report measures of engagement	Provides nuanced insight but less detail on micro typography or label design	Supports analysing visitor routes and shows why information placement matters in my project

Reading :

Title, Date and Genre	Author's background	Author's project	Location	Focus	Core Concepts	Nub/Main Argument	Report	Evaluation	Relevance to my practice
Evaluating visitors' experience in museum: Comparing ... (Ceccarelli, 2024), Journal article	Scholar in museum studies and visitor experience evaluation	Compare different exhibition formats to see how they affect visitor experience	Museums / exhibitions in Italy or wider Europe	Differences in satisfaction, learning and engagement under various display strategies	Visitor experience, evaluation methods, exhibition format comparison	Exhibition design choices directly influence perceived quality and learning outcomes	Uses surveys, observation and possibly interviews to evaluate visitor responses	Good comparative data but less focused on fine-grained visual hierarchy	Helps me think about how my interventions could be evaluated across different visitor groups
Cognitive Style and Visual Attention in Multimodal Museum ... (Shi, 2025), Journal article	Researcher in cognitive psychology and multimodal learning	Investigate how different cognitive styles attend to multimodal museum displays	Multimedia museum exhibitions (likely in China)	Individual differences in visual attention when text, images and media coexist	Cognitive styles, multimodality, visual attention, personalised experience	Visitors with different cognitive styles follow different attention paths in the same space	Eye-tracking and behavioural measures used to map attention patterns	Reveals diversity in visitor behaviour though setting may be culturally specific	Reminds me to design flexible information layers that can work for different cognitive styles

Reading :

Title, Date and Genre	Author's background	Author's project	Location	Focus	Core Concepts	Nub/Main Argument	Report	Evaluation	Relevance to my practice
Empirical Insights into Eye-Tracking for Design Evaluation (Guo, 2024), Journal article	Design researcher specialising in human - computer interaction and eye-tracking	Use eye-tracking to evaluate how people visually interact with design artefacts	Lab and semi-realistic design evaluation environments	How gaze data can inform design quality and attention distribution	Eye-tracking metrics, fixations, heatmaps, design evaluation	Eye-tracking provides objective evidence of where designs succeed or fail in grabbing attention	Summarises empirical studies and methods for interpreting gaze data	Methodologically rich but requires equipment I may not have access to	Inspires my use of attention maps and behaviour tracing as lower-tech analogues to eye-tracking
"Typography as image" gets results on trailside signs (2023), News article	University communication team reporting on design researchers at the University of Kansas	Experiment with expressive typography on trailside signs to test visibility and impact	Nature trails / outdoor education sites in the US	How treating type as image changes sign visibility and recall	Expressive typography, legibility vs. attention graphic emphasis	Typographic form can boost attention without adding more words	Reports on a small experimental study comparing different typographic treatments	Popular-science style overview, limited methodological detail	Gives concrete ideas for using hierarchy and typographic emphasis in my wall-label redesign

Reading :

Title, Date and Genre	Author's background	Author's project	Location	Focus	Core Concepts	Nub/Main Argument	Report	Evaluation	Relevance to my practice
Oh, Yes, They Do: How Museum Visitors Read Labels and Interact with Exhibit Texts (McManus, 2015), Book chapter / article	Experienced museum researcher focused on visitor behaviour and education	Observe and analyse how visitors actually read and use exhibit texts	Various museum exhibitions in the UK	Real reading behaviours rather than assumed 'non-reading'	Reading patterns, stop times, selective attention, social reading	Visitors do read labels but in selective, fragmented ways shaped by context	Combines timing, observation and qualitative notes on interaction with text	Rich descriptive insight, less about detailed design guidelines	Supports my decision to closely observe reading styles and not assume 'nobody reads labels'
Writing Text and Labels (Australian Museum, n.d.), Online guideline	Institutional team with expertise in education, exhibition, and communication	Provide practical rules for writing clear, inclusive museum labels	Australian Museum, Sydney, Australia	How to write concise, audience-friendly text for exhibitions	Plain language, audience focus, clarity tone, inclusivity	Good writing is as important as graphic style for accessible labels	Step-by-step advice with examples of better and worse label text	Practical but focused more on wording than on detailed visual layout	Acts as a checklist for editing my label text during prototype development

Reading :

Title, Date and Genre	Author's background	Author's project	Location	Focus	Core Concepts	Nub/Main Argument	Report	Evaluation	Relevance to my practice
Designing Signage that Captures Attention: Unveiling Key Best ... (Cooper, 2024), LinkedIn article	Design practitioner specialising in signage and wayfinding	Summarise best practices for attention-catching signage in public spaces	Commercial and public environments (not limited to museums)	What makes signage visually effective and easy to follow	Visual hierarchy, contrast, placement, user-centred design	Attention is driven by clear hierarchy, strong contrast and strategic positioning	Practice-based reflection with illustrated examples rather than formal study	Applied, experience-based; lacks rigorous empirical evidence	Provides quick heuristics I can adapt when prioritising elements in my information system
Labels, the Audience Experience and Curatorial Strategy in Art Museum Exhibitions (Diamantopoulou & Insulander, 2014), Journal article	Researchers in literacy and museum education	Examine how labels shape audience experience and reflect curatorial strategies	Art museums, mainly in Europe	Role of labels in mediating meaning between curators and visitors	Multimodal texts, curatorial voice, audience interpretation	Labels are not neutral; they frame how visitors understand and value artworks	Uses discourse and multimodal analysis of label examples and visitor interactions	Theoretically rich but less prescriptive for visual layout details	Helps me consider curatorial voice and interpretive goals alongside visual hierarchy

References:

1. Australian Museum. (2018). Writing text and labels. <https://australian.museum/learn/teachers/learning/writing-text-and-labels/>
2. Beckers, R., Van der Voordt, T., & Dewulf, G. (2016). Learning space preferences of higher education students. *Building and Environment*, 104, 243 – 252. <https://doi.org/10.1016/j.buildenv.2016.05.013>
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Thank you

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