



# RENOVATIONS IN THE STAGED MUSEUM EXPERIENCE

*How spatial circulation has changed in Dutch museums after renovations.*

GEMEENTE LEIDEN  
O. BESTEK N<sup>o</sup> 10 DIENST 1952  
BLAD 1

VERBOUWING  
STEDELIJK MUSEUM  
"DE LAKENHAL"  
BESTAANDE TOESTAND  
SCHAAL 1 A 200

ARGHIEF  
110  
A16  
203

Joost de Wolf

Date: 17th of April 2025

Faculty of Architecture - TU Delft

Thesis supervisor: Ivan Nevzgodin

Cover images from Archieven.nl



## ABSTRACT

This thesis explores how visitor circulation in Dutch museums has been reshaped through architectural strategies during renovations over the past twenty years. Prompted by policy changes in the 1990s, many museums were required to become more self-sustaining, leading to significant transformations in both function and spatial design. While visitor experience has become increasingly central, there is limited research on how spatial circulation is addressed in renovation projects.

The main research question asks: In which manner have renovations, in the last twenty years, of museums in the Netherlands influenced the design of visitor circulation through architectural strategies?

Using plan analysis, archival sources, and theoretical literature, four case studies are examined: the Stedelijk Museum, Van Abbemuseum, Kunstmuseum, and Museum De Lakenhal. The findings reveal two main strategies: either preserving and integrating existing circulation patterns or introducing new strategies to enhance visitor autonomy. Across all cases, circulation is redesigned to promote autonomy and to stage a more dynamic, layered museum experience.

## INTRODUCTION

From the 1990's onward Dutch museums were subjected to huge changes due to different policies. This demanded a rethink in how the museums operate and their necessity to attract visitors, resulting in a large redesign of Dutch museums, which aimed to be more attractive for visitors (Roos et al., 2019). Çiçek et al. (2022) explain that museums are much more than containers for content and really are mechanisms of staging visits. In other words, museums have the function to circulate visitors, staging their experience as they look at art. There has been little research into the combination of this key circulation design and the need for renovation. Therefore, it is interesting to find out how visitor circulation is tackled when redesigning museums in the Netherlands, leading to the main research question:

*In which manner have renovations, in the last twenty years, of museums in the Netherlands influenced the design of visitor circulation through architectural strategies?*

Looking at existing literature this research question aims to bridge the gap between visitor circulation strategies and the design of renovated Dutch museums. When renovating the already existing circulation needs to be taken into account, the renovation can result in the circulation strategy being the same, adapted or redone entirely. Which of these do designers choose and why? Within the visitor circulation the entrance plays a pivotal role in the staging of the museum (Çiçek et al., 2022). Given that museums needed to be more attractive (Roos et al., 2019), the Dutch renovated museums often feature a new striking entrance such as the Stedelijk Museum in Amsterdam. This trend is in line with a worldwide shift towards making the buildings of museums themselves museum pieces, in order to be more appealing to visitors (Hoffmann, 2016).

This paper first will discuss the already existing literature, specifically the changes of the museum functions and the circulation strategies. Following, four case studies will be researched in order to gain an impression of how the renovations have influenced the visitor circulation, ending with the conclusion and discussion for further research.

## LITERATURE REVIEW:

### The change in museum functions

When talking about museums in a contemporary setting it is important to state that their function is layered. Also that it has changed a lot since 1990. Cerrah (2019) describes in the book, "Metamorphosis", five social shifts that museums have taken. Specifically for visitor experience, there is a shift from visitors being passive entities to becoming active participants in producing knowledge in museums. Changing the position that visitors take and ultimately asking them to actively engage with the contents of the museum.

However Desvallées and Mairesse (2010), state that, while there is some form of interactivity in museums, their primary role is focused on transmitting knowledge through unilateral communication. Their research is done on an international level and is older than Cerrah's research. This difference may highlight a change in the visitor participation over the last years.

Another change in the museum program is the opening up of the depots. Naturally the conservation and storage of art needs to be done in strictly climate-controlled rooms. (Laddo, 2019; Ankersmit, 2019). Nevertheless, in the twenty-first century, visiting the museums depots became a trend, both internationally and in the Netherlands. This often leads to a redesign of these spaces in order to make them suitable for the public (Laddo, 2019; Montanari and Postiglione, 2022).

On another note, Montanari and Postiglione (2022) describe a trend where museums want to spread their exhibition throughout the building. Making the path through the museum a homogeneous route through different visitor and service spaces. This means that circulation spaces become spaces for education and exhibition, a point which is also supported by Hoffmann (2016).

Finally different functions have changed dramatically since 1990 due to technological advancements. Security is improved and made to be almost invisible, climate control systems have become standard practice in museums and museum cases have become less obvious (Ankersmit, 2019). On top of this, both internationally and in the Netherlands, there has been more focus on the commercialisation of museums. Branding and offering a one-of-a-kind experience to the visitors is now more important, leading to an increase in museum shops, cafes and restaurants, in order to improve the experience of the museum visitor (Cerrah, 2019; Larkin, 2016; Desvallées & Mairesse, 2010).

## Museum circulation

Hoffmann (2016) presents in his book five different spatial sequences, see figure 1. He discusses different advantages and disadvantages with these spatial sequences as he links it to the visitor experience. Most importantly, while the author identifies these spatial sequences, he notes that in practice most often you will see combinations of different sequences. There are notably, no corridors within his layouts.

Liu et al. (2024) identify only three different spatial combinations based on their survey, see figure 2. Interestingly they compare the circulation more in relation to a corridor. This survey is only based to differentiate between these three main spatial combinations, serial, parallel and a combination. Therefore it is important to realise that they do not attempt to provide a complete list of the possible circulation strategies.

Filová et al. (2022) reviews and compares different authors and their spatial sequences. They eventually conclude that there are six different spatial sequences in museums, see figure 3. These are more focussed on the layout of the exhibition space than the spatial sequence of the layout spaces. Their collection is largely based on the works of Naredi-Rainer & Schnell (2004) combined with different authors.

When comparing the different strategies, it becomes clear that there is overlap between the different circulation types, but also differences in how they are developed. This supports Hoffmann (2016) point that the circulation strategies are often

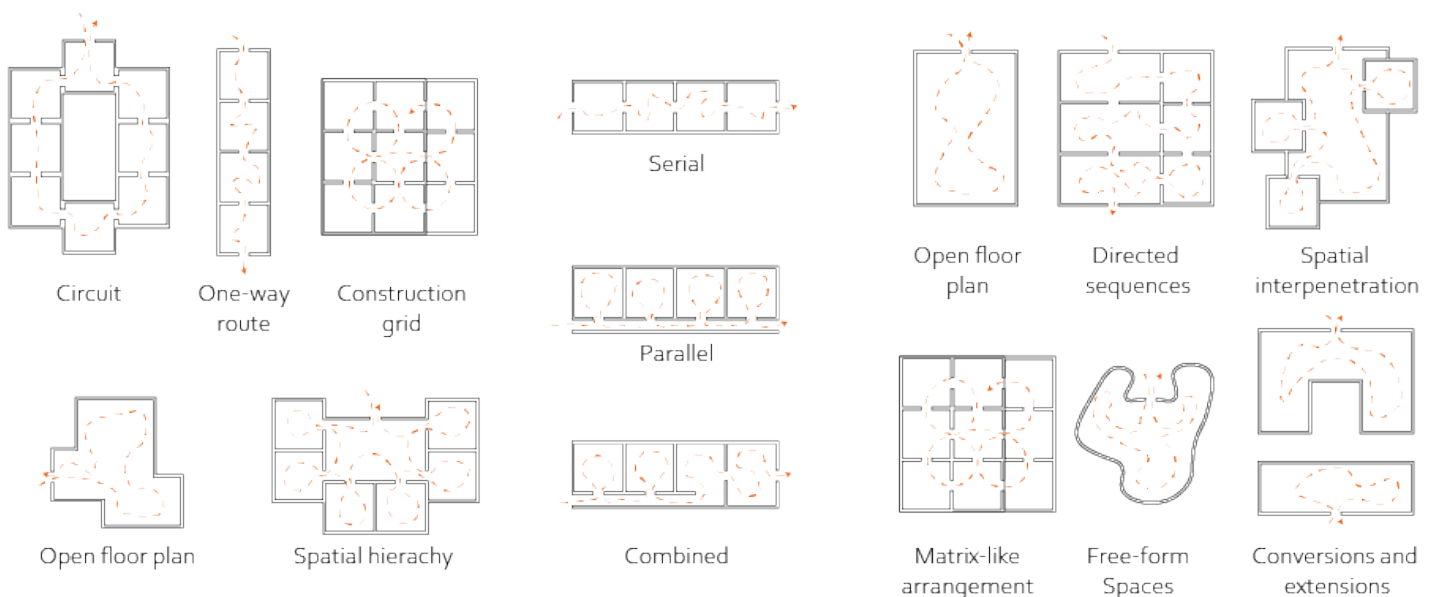


Figure 1-3 (left to right). Figure 1: Own image, (2025). Circulation spaces based on Hoffmann (2016); Figure 2: Own image, (2025). Circulation spaces based on Liu et al. (2024); Figure 3: Own image, (2025). Circulation spaces based on Filová et al. (2022).

a combination of different types seems ever more true when looking at these images side to side. For instance, spatial interpenetration is a form of spatial hierarchy. Ultimately for this research the circulation types have been compared and tried to be brought back to a fundamental typology. These then most closely match the spatial sequences of Hoffmann (2016).

As mentioned above, there has been an increase in restaurants, shops and cafes. Therefore when analysing circulation, researching how these functions have been integrated into the experience of the museum visitor may provide additional insight. Hoebink (2019), describes in the book *“Metamorphosis”*, the museum visit as a performance. Within this comparison she describes warm-up and cooldown spaces. These important spaces is where the visitor can transition from everyday life to the museum experience. Wang & Huang (2024) mention the importance of stay behaviour, especially rest spots. While their research delves into which design strategies influence the stay behaviour, it is clear that it is an integral part of the museum visit.

## METHODS

To research how the visitor circulation changed after contemporary renovation, different case studies in the Netherlands will be analysed. This method is chosen because this subject is relatively new and through studying four case studies the aim is to see if there is a generalised trend that the renovated museums follow. Choosing case studies with different spatial designs will help establish the relation between the renewed and original circulation.

The cases selected will be Dutch museums renovated in the last twenty years. This is done to ascertain contemporary design trends. While twenty years is not as contemporary as ten, the scarcity and complexity of renovating a museum justifies extending the time period. Furthermore, the cases will be of large museums so that enough facilities, funding or space, were available to enable different spatial circulations.

The research of the case studies will be done through journal articles, archival research, plan analysis and general research. The plan analysis will be done by highlighting the different rooms and annotating different circulations visitors might take. Those are

then reflected to the research done by Hoffman (2016). Through these measures the effects of the renovation on the circulation strategy will be analysed.

# STEDELIJK MUSEUM - AMSTERDAM



Figure 4 (left), Stadsarchief Amsterdam (1925) Front and side view of the Stedelijk Museum [photo]. Figure 5 (right), J. Linders (2012), New front view of the Stedelijk Museum [photo] <https://www.benthemcrouwel.com/projects/stedelijk-museum>.

Opening museum,  
designed by A.W. Weismann

Extension by Willem Sand-  
berg

Renovation by Benthem Crou-  
wel Architects

1895

1954

2012

## History of Stedelijk museum

The original Stedelijk museum was built in 1895. Through funding by private investors it was possible to build the new hub for modern art in Amsterdam (Stedelijk Museum Amsterdam, n.d.).

When Willem Sandberg became curator and later director, the museum underwent major changes. He repainted the museum walls white, revolutionary at the time, to give more attention to the art and built the Sandberg-Wing. A glass-walled structure where art could be displayed. Through this wing he wanted to democratise art as people could also view it from the street (Kempers & Brinkman, 2010).

This wing was not loved by everybody and in 2006 it was torn down with a famous photo of the deputy mayor of culture in Amsterdam threw a brick through the window, see figure 6. Marking the start of the new renovation for the museum.

After delays the new building was finished in 2012, designed by Benthem Crouwel Architects. The new renovation moved the entrance from the Paulus Potterstraat to the Museumplein. It also included an extension both above and underneath the new entrance (Stedelijk Museum & Mdash; Arcam, 2023).

## Evolution of the spatial circulation

In the redesign done by Benthem and Crouwel they wanted to keep the inside as similar as possible (Stedelijk Museum Amsterdam & Benthem Crouwel Architects, 2012). This is also visible in the floor plan analysis shown in figure 7 and 8.

The old plans have a distinct different strategy on the ground and first floor. The ground floor featuring a distinct circuit layout where the rooms very much lead from one into the other with little freedom to choose your own path, and the first floor being more akin to a grid layout with in some parts a more circuit



Figure 6, J. van den Broek (2006), Start of the demolition of the Sandberg-wing [Photo].

principle such as the rooms at the entrance side of the museum.

In the redesign, as seen in figure 8, the first floor features much of the same layout as before with the extension adding to the already existing construction grid principle. On the ground floor more rooms have been opened up, transforming this very clear circuit layout to a more grid-like layout on one side and a circuit-layout on the other. While the rooms have largely been opened up to increase the amount of exhibition space the result is also a more democratised museum experience as the museum visitor gets more freedom to choose their own path, seeing only what they find to be important.

This principle is further enhanced in the basement, there the plethora of rooms is contrasted with a large open floor exhibition space of 1100 m<sup>2</sup>. Here the visitor again can choose their own path through this room and are not bound by predetermined paths. Even through the placement of the stairs this freedom is further enhanced. With visitors being able to choose to enter the exhibition space on the basement, ground floor or first floor.

### Staged experience

Like mentioned before by creating more paths there is more freedom for the visitor to curate their own museum experience. This also reflects the earlier described trends. When looking at those trends the addition of cafes and restaurants is expected as part of the redesign. In the case of the Stedelijk museum the architects placed these across the building, one on the ground-floor next to the entrance, serving as part of the warm-up or cool-down space. While the other is on the first floor in the middle of the exhibition. This one clearly serving as a rest point in the museum experience.

Overall through the renovation the architects managed to give more autonomy to the visitors by creating a more diverse routing strategy. While respecting the old circulation strategy on the first floor the ground floor spatial sequence has been almost entirely redone and the basement features a completely new spatial sequence not seen in the rest of the museum.

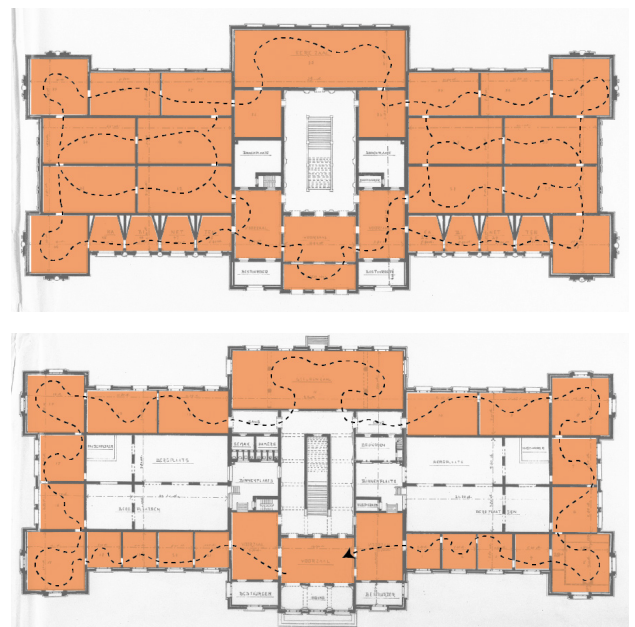


Figure 7, Own image (2025) Annotation of the old plans of Stedelijk museum, based on the plans found in the Gemeente Archief.

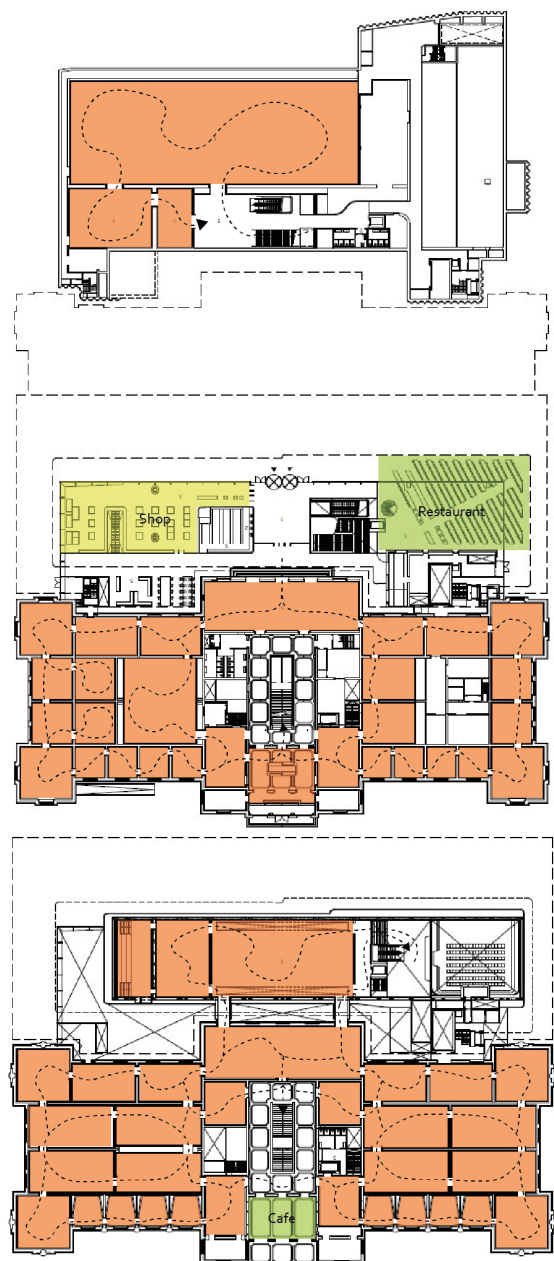


Figure 8, Own image (2025) Annotation of the new plans of Stedelijk museum, based on the plans found on ArchDaily.com.

# VAN ABBE MUSEUM - EINDHOVEN



Figure 7 (left), P. van Galen (1997) View of the Van Abbemuseum. Rijksdienst Cultureel erfgoed, CC-BY-SA-3.0-NL [photo] <https://rijksmonumenten.nl/monument/507030/van-abbemuseum/eindhoven/#&gid=1&pid=2>. Figure 8 (right), P. Cox (n.d.), View of the Van Abbemuseum with the extension visible behind. [photo] <https://www.visitbrabant.com/nl/locaties/3565764443/van-abbemuseum>.

Opening museum, designed by A.J. Kropholler

Covering courtyard, unknown designer.

Renovation designed by A. Cohen

Additional rear entrance designed by J. Körmeling

1936

1978

2003

2006

## History of Van Abbemuseum

Designed by A.J. Kropholler this typical brick building features a traditionalist style. Built upon a hill Kropholler curated an atmosphere where the art was showcased in an almost holy position. The visitor was focused on the art without any distractions.

The building was designed with completeness in which form and material combine to create a powerful image for an overall appearance, thereby involved in Kropholler's best work. The building stayed the same for a while but the courtyards were covered in 1978 to gain more exhibition space.

After 1990 discussions started to renovate the museum, however wanting to preserve the historic building the design was delayed. In 2003 the new design from A. Cohen was realised, there he created a new addition that stood separated from the old building. Both in form and material Cohen aimed to juxtapose Kropholler as much as possible.

Later on this juxtaposition was added onto through the design of a rear entrance, contrasting the monumental entrance designed by Kropholler. This rear entrance featured bright colours and none of the material authenticity, as featured by Cohen, was persevered, see figure 9 (Monumenten.nl, 2023; Van Abbemuseum, n.d.)

## Evolution of spatial circulation

The original museum building featured a very symmetrical layout. The rooms on the left were the same dimensions as the rooms on the right. Because of this it is easily determined as a circuit layout. It is possible to go clockwise as anti-clockwise, however other than that the visitor has very little autonomy. It is directed past the exhibition in a very monotonous way. The only true exception from this is the middle chamber which connects the back and front. This way of interacting with the art was very much an idealisation of Kropholler (Monumenten.nl, 2023).



Figure 9, J. Jacobs (2021) Rear entrance of the museum, the new building is clad black while the old brick building is also visible. Upfront is the aluminium house. ED [Photo] <https://www.ed.nl/eindhoven/nieuwe-ingang-van-abbemuseum-tijdelijke-ingreep-om-publiekstroom-te-reguleren-af71089a/?referrer=https%3A%2F%2Fwww.google.com%2F>.

The new design of the building is, both in the spatial sequence as in the exterior, very much an antithesis compared to the old building. Where the old building is clear and symmetrical the new buildings circulation consists of corridors different sized rooms, different dead ends and no clear route. This was also stipulated as a feature from Cohen (Archined, 2022).

In the redesign the spatial circulation of the old building is left the same. The new buildings spatial pattern is difficult to discern. With the dead-end rooms it might look like a spatial hierarchy but there is not one main room through which the spaces are all connected. Also giving this label would not effectively describe the linked rooms. Those feature a more circuit approach, especially on the first floor, see figure 11. While on the ground floor the it may be more based on a grid principle due to the interconnections.

### Staged Experience

The museum entrances are well defined. The steps leading up to the museum's front entrance or the steps going down across the water for the back entrance serve as a warm-up space for the visitors. At the back entrance, a concept in itself note worthy for the staged experience, a restaurant is introduced. This restaurant does not serve as a intermediate rest point. Due to it being far out from the actual exhibition. This also highlights the idea of people getting lost in the museum not needing to be distracted by a cafe. However this cafe then only serves as a cooling down space.

In the renovation multiple partial views of exhibitions are introduced. These engage the visitor to explore the museum on their own. Interacting with the art in their own manner and thereby shaping their own museum experience. This also falls into the more modern trend where museums dictate less of what the visitor can see and instead want to empower the visitor.

To conclude, the new building juxtaposes the old building both in architecture and spatial sequence. This leads to very different experiences when visiting the museum as the new part is very exploratory while the old part has a more guiding aspect for the visitors.

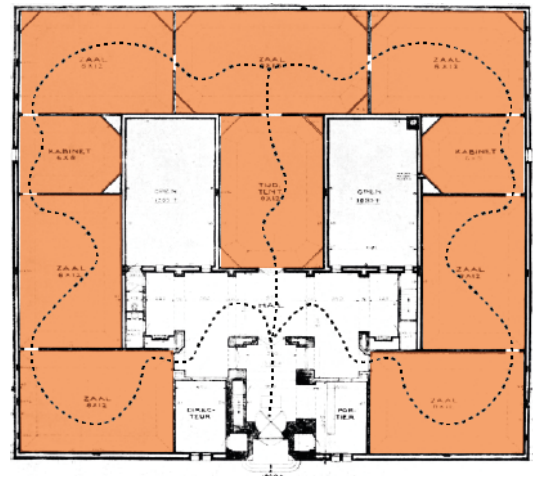


Figure 10, Own image (2025) Annotation of the old plans of Van Abbemuseum, based on the plans found on Archief.nl.



Figure 11, Own image (2025) Annotation of the new plans (ground and first floor only) of Van Abbemuseum, based on the plans found on vanabbemuseum.nl.

# KUNSTMUSEUM - THE HAGUE

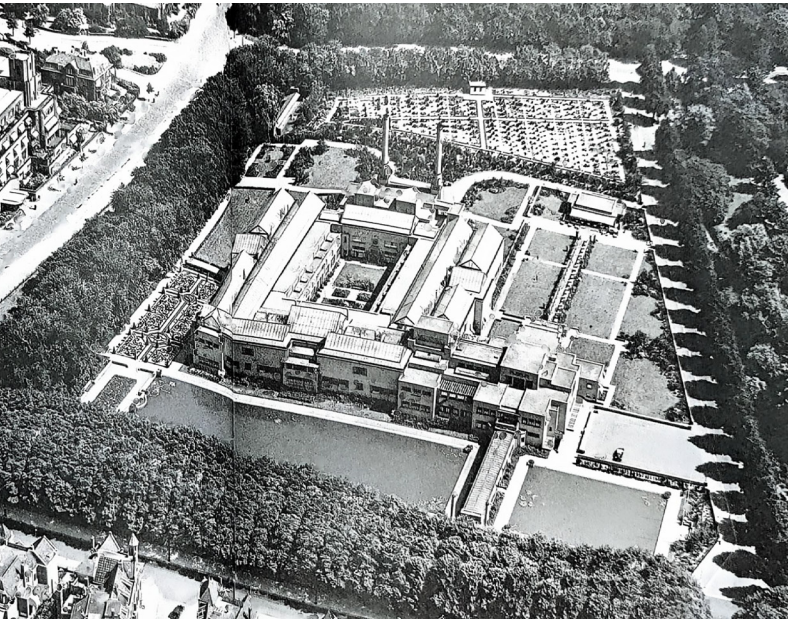


Figure 12 (left), Luchtvaart Museum Aviodrome (1935) aerial photo of kunstmuseum [photo]. Figure 13 (right), Google Maps (2024), Aerial image of the covered courtyard and extension (bottom left) [photo] <https://www.google.com/maps>.

Opening current building,  
designed by H.P. Berlage

Extension designed by S.  
Schamhart & J. Heijligers

Courtyard covered, designed  
by Braaksma & Roos

1935

1962

2014

## History of the kunstmuseum

The Kunstmuseum is the final building designed by Berlage. The building's exterior was not well-loved by the public, but the interior left everyone impressed. Some journalists even called it Berlage's best work. The building featured revolutionary concepts for its time, as Berlage aimed for the museum to be a cultural temple for the common people, steering away from elitism. This is achieved through incorporating a restaurant inside the museum to provide amenities, or giving the visitors more autonomy than was the norm.



Figure 14, unknown (1977) aerial photo of the kunstmuseum showing the extension with the connecting bridge. [Photo] <https://wanderboat.ai/attractions/netherlands/the-hague/kunstmuseum-den-haag/zbYAOcsiTvCofIkTbQfXg>.

However, since the exhibition and the design were closely intertwined, the expansion of the collection was not very well facilitated. Therefore, in 1962, Schamhart and Heijligers designed an extension to the Kunstmuseum. This separate volume was "clumsily" connected to the existing building by a walkway (see figure 14). Through this extension, they departed from Berlage's original vision of how the museum could be extended.

Later on, the surrounding area became more populated with different buildings, and the extension by Schamhart and Heijligers was torn apart to form a different museum. In 2014, the courtyard was covered by Braaksma & Roos. Within the courtyard, the museum restaurant was placed or extended and served as an event space when needed (De Bruin & Harman, 2021; Museum Building, 2022).

## Evolution of spatial circulation

Looking at the original plans (see figure 15) and the new plans (figure 16), it is clear that the current layout has not changed much since 1935. This might be due to the fact that extensions were always added to the building volume through connecting bridges, distancing the new parts from Berlage's original structure. Thus, upon removal the impact on the existing building might have been minimal.

Of course, the intervention by Braaksma & Roos directly changed the heart of the building. However, De Bruin and Harman (2021) also mention that the courtyard had already been temporarily covered before for previous exhibitions. Therefore, the design by Braaksma & Roos is not as altering of the spatial circulation as one might expect.

When analysing the spatial circulation, it is important to note the corridor surrounding the courtyard. Looking at the rest of the layout, it becomes clear that the larger and smaller rooms resemble a hierarchical pattern, where the smaller rooms are clustered around one or two large rooms. These large rooms are often interconnected.

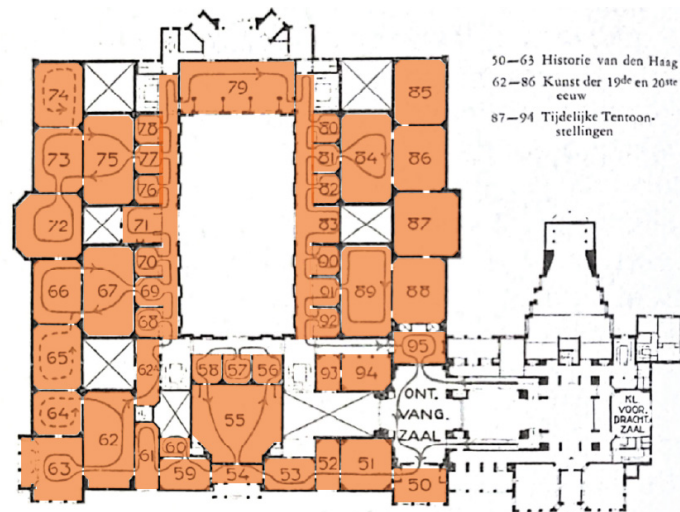


Figure 15, ?, (1935) Route drawn on the old first floor of the kunstmuseum. [Drawing] Kunstmuseum Den Haag.

### Staged Experience

The differences in room sizes allow for the showcasing of particular styles in the larger rooms, while the smaller rooms feature individual masterpieces. This difference in scale makes the routing feel dynamic, preventing the well-known museum fatigue, which was also Berlage's hope when he designed the museum (De Bruin & Harman, 2021). Analyzing the "warm-up" and "cool-down" spaces, the theatrical entrance is important. Crossing the serene water across the bridge offers a way to disconnect oneself from daily troubles and transition into the museum experience. The impressive double-height entrance then enhances the special feeling.

As mentioned before, part of Berlage's design was to offer a "total museum experience," which included a café (De Bruin & Harman, 2021). This café was strategically placed between the courtyard and the outside gardens to offer people space to rest and enjoy the outside views before immersing themselves in the enclosed exhibition spaces. This café remains in the same spot, likely due to its effective placement. It features many of the success factors outlined by Wang and Huang (2024). The restaurant, now placed in the covered courtyard makes it more accessible during the journey.

In summary, Berlage's Kunstmuseum is considered one of his best works. The routing was designed to be dynamic to prevent museum fatigue and remains largely the same, explaining its success. Berlage originally designed rest points along the route, which were later expanded upon in Braaksma & Roos's design.

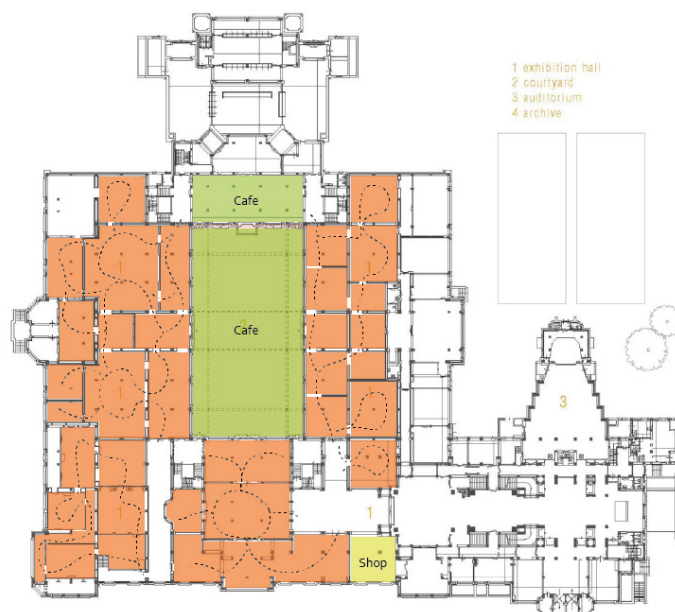
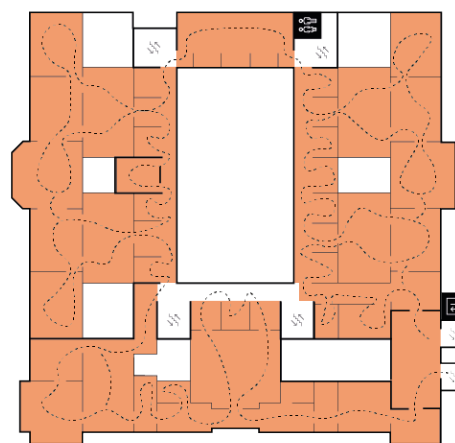


Figure 16, Own image (2025) Annotation of the new plans of the kunstmuseum, based on the plans found on kunstmuseum.nl (top) and www.braaksma-roos.nl (bottom).

## LAKENHAL - LEIDEN



Figure 17 (left), S. van Steenwijck-Gaspoel, collection Museum De Lakenhal (1642) Looking at the Lakenhal [painting]. Figure 18 (right), K. Borghouts (2019) rearview of the renovated Lakenhal, [photo] <https://hcva.nl/werk/museum-de-lakenhal-2>.

Lakenhal was built as a textile colouring hall, designed by A. van 's Gravesande

Transformation to museum by J.W. Schaap

Numerous extensions

Doubling of size through Pape-wing

Renovation designed by Julian Harrap Architects and Happel Cornelisse Verhoeven Architects

1640

1869

1872-1890

1922

2019

### History of the Lakenhal

While first built as a textile colouring hall, the building was transformed into a museum in 1869. The original structure was already designed as a prestigious building reflecting Leiden prominence in the textile trade. The museum officially opened year-round in 1874, when it simultaneously occupied the entirety of the old Lakenhal building. Later, in 1890, a gift from Hartevelt led to the building of the Hartevelt room. In 1922 Pape's donation dubbed the area of the museum with the addition of the Pape-wing (Museum de lakenhal Leiden, n.d.).

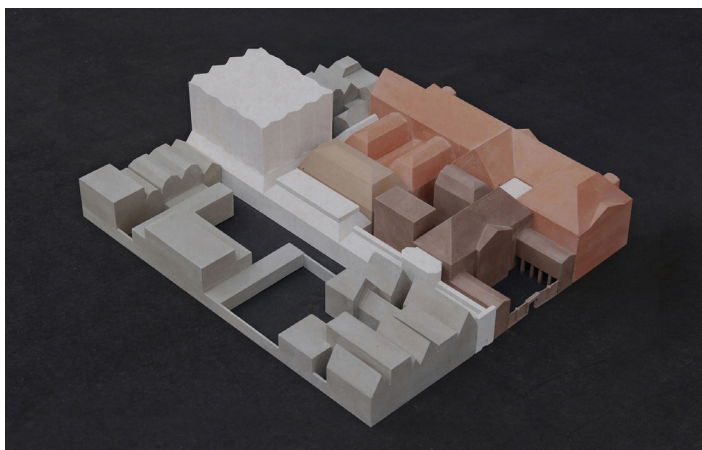


Figure 19, HCVA (2019) Model of the Lakenhal, with different colours representing different time layers; dark brown - original; light brown - Hartevelt; orange - Pape-wing and white new. [Photo] <https://hcva.nl/werk/museum-de-lakenhal-2>.

The Lakenhal transformation is the only museum project which J.W. Schaap undertook (Kallenberg, 2021). Due to its uniqueness and lack of supporting literature, it is difficult to discern if he had a particular philosophy about the spatial circulation of the museum.

In 2019, Julian Harrap Architects, in charge of the renovation, and Happel Cornelisse Verhoeven Architects (HCVA), in charge of the extension, were tasked with an overhaul of the entire museum. After which HCVA won the numerous prizes for their design (Museum de lakenhal Leiden, n.d.).

The organic growth of the museum meant that before the final renovation there was no clear language or balance between the different volumes. The floor plan was a chaotic sequence of volumes which the architects brought into balance with a harmonic extensions (Giele, 2019).

Compared to the other case studies, this museum has the richest history. Although it was not originally built as a museum, it had been functioned as one for a long time. Thereby justifying its inclusion in the case study comparison.

## Evolution of spatial circulation

As a result of its organic development the museum lacks a clear circulation principle. However when examining figure 20 and considering the different time layers, the Hartevelt extension can be seen as an open floor plan, while the adjacent Pape's wing has a more sequential, circuit-like layout. Especially taking into account the second floor. However with the stairs leading up in the centre, the circuit is broken up, leading to a mixed classification. In its totality the rooms next to and including the Hartevelt room form a grid like layout. The museum was a collection of rooms without a standard mandatory route to follow, making it deviate from its norm where visitors had little autonomy in their routing.

The new route builds on the old design. The rear courtyard now serves as a wayfinding hub, from which different rooms can be accessed. The two newly added rooms are dimensioned similarly to the Hartevelt room, creating a comparable semi open plan. The interconnectedness of these spaces strengthens the grid-like layout, with even the Pape corridor now being used as exhibition space.

The architects were spatially restricted due to the surround buildings. Nevertheless, their decision to maintain original the spatial layout of the museum aligns with their vision for the museum. Giele (2019) notes that the architects envisioned the museum as a collection of rooms with some corridors and intentionally aimed to restore this original character

## Staged Experience

The front courtyard has been opened up again, transforming the approach to the main entrance. It is now a ceremonial moment that prepares visitors for the museum experience. At the lower end of the plans, new functions such as an auditorium and an artist studio transforms the museum into more of an educational hub. Opposite is the cafe and the shop, positioned next to each other. These form a cool down area for visitors.

Although there are no explicit rest areas during the tour, corridors break up the museum rooms. Ensuring a harmonic visitor experience, while also helping orientation and pacing.

All in all is the new plan still in respect to the heritage while adding the new features that commonly adorn a museum.

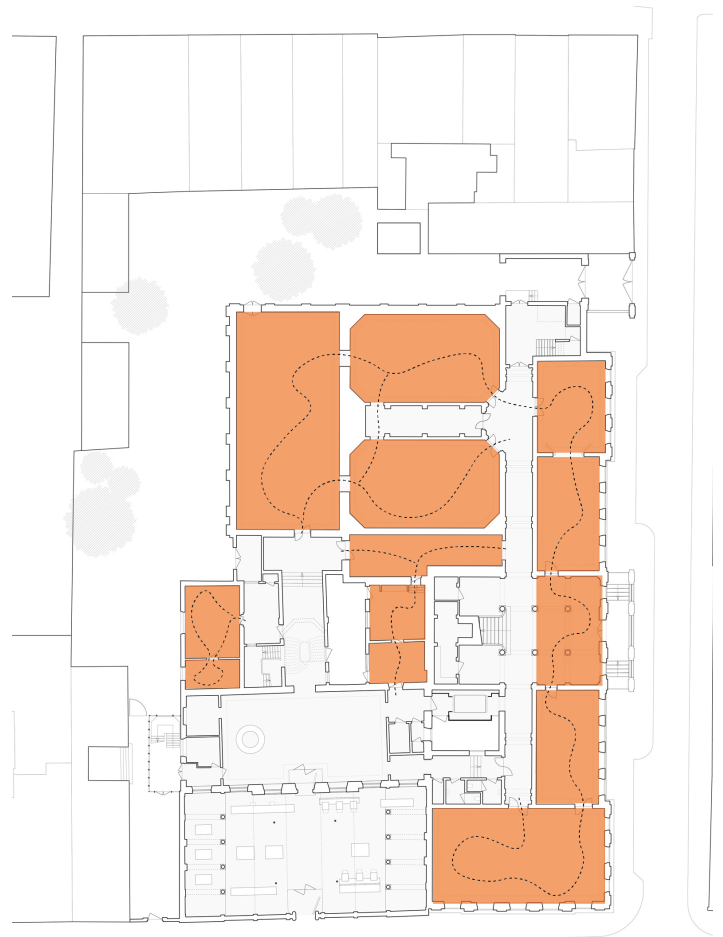


Figure 20, Own image (2025) Annotation of the old plans of Van Abbemuseum , based on the plans found on Archief.nl.



Figure 21, Own image (2025) Annotation of the new plans (ground and first floor only) of Van Abbemuseum , based on the plans found on vanabbemuseum.nl.

## CONCLUSION

In summary the spatial circulation of a museum is crucial to the overall museum experience. Due to policy changes in 1990, many Dutch museums were required to transform and renovate in order to become more self-sustaining. Since that time, the social position, technological context and the functions of museums have changed dramatically. Museums are now more commercial institutions, housing museum shops and cafés. They approach the visitor as an active participant, encouraging them to create their own route, discover what they find important, and give their personal meaning to the art.

In line with this, the museum experience has become more important. This experience includes a “warm-up” space, preparing the visitor for the museum; different rest points, preventing the visitor’s fatigue; and finally a “cool-down” space, where the visitor can reflect on what they have seen.

To study the coming together of these aspects, the need for renovations in Dutch museums and the changes of the museum as an institution, this research analysed the circulation strategy. Both before and after renovation, given that it is a key architectural design strategy to influence the staged experience. By adjusting the layout architects can influence the visitor’s autonomy, either guiding them through an exposition, as was common in 1930, or encouraging the visitor to explore the museum on independently, a trend aligned with the contemporary museum.

These changes in spatial strategies have been analysed in four different case studies. Two main approaches were identified. The first approach is a renovation strategy that preserves the existing spatial circulation, integrating the new volumes in harmony with the old. The second approach maintains, part of, the original structure but introduces a more contemporary layout. The first approach can be seen in the Kunstmuseum and Lakenhal. In the Kunstmuseum the original routing remains relevant and effective, while in the Lakenhal the issue was not spatial circulation per se, but wayfinding. The second approach can be found in the Stedelijk museum and Van Abbemuseum. The spatial circulation of the new extensions differ greatly from the existing layout. Through placing the new design the old spatial sequence is weakened, providing the visitor with more autonomy.

This level of autonomy is significant. It was already relatively high in the Lakenhal and Kunstmuseum, perhaps explaining their restrained renovations. In contrast, the other museums probably wished to adapt their layout to the current trend, as described by Cerrah (2019).

The commercialisation of museums is clearly seen across all renovations. In every case, a shop and a café or restaurant was added. Reflecting what is described in the literature by Cerrah (2019), Larkin (2016), and Desvallées & Mairesse (2010). These additions enriched the staged experience.

Answering the main research question:

*In which manner have renovations, in the last twenty years, of museums in the Netherlands influenced the design of visitor circulation through architectural strategies?*

It is clear that visitor circulation is adjusted when necessary during renovation. A trend towards greater visitor autonomy is observable, particularly when earlier circulation was more guided. In nearly all cases, renovations also enhance the visitor experience through the inclusion of cafés, shops, and restaurants, creating a more diverse and layered museum visit.

## DISCUSSION

A particularly interesting topic is entrance design. In the Kunstmuseum, the entrance remained unchanged, while at the Lakenhal it was restored to its historical form. In contrast, the Van Abbemuseum retained its the original entrance, while the new back entrance form a complete juxtaposition to the traditionalist entrance. The Stedelijk museum introduced a complete new entrance, switching the front facing side from the Paulus Potterstraat to the Museumplein. This is understandable, considering the Museumplein was little more than a pasture in 1895.

The fact that these same entrances developed differently, suggests that the entrance directly influences the visitor autonomy. While some decisions may stem from heritage protection, others such as the added back entrance at the Van Abbemuseum, give visitors the option of curating their experience from the outset. In the Stedelijk Museum, the shift of entrance, enabled visitors to choose the floor

from which to begin their visit. Do they want to enter using the bright yellow cascade, drop down to the basement or enter through the rear entrance of the original building. The transparent glass entrance blurs the inside and outside, giving the illusion of not stepping into the museum yet.

At the Lakenhal museum, the front courtyard is opened up. This moves the entrance to the old building and main the wayfinding space to the back courtyard. Now the visitors start their journey at the heart of the building instead of at the edge, giving them more freedom.

Another discussion point concerns heritage value of these spatial renovations. In the case of the Stedelijk museum, does the need for autonomy and visitor experience warrant a dramatic shift in the spatial experience? Might some intangible heritage be lost, once an indication how art was to be viewed. Alternatively, is adapting to evolving expectations not simply a necessity for museums.

A hybrid approach can be seen at the Van Abbemuseum. Through retaining its old spatial circulation exactly as is, while adding a new circulation independently could offer a balance. Yet such solutions may not always be possible.

The combination of plan analysis, archival research, and literature review proved to be a suitable method for understanding how spatial circulation changed after renovation. By closely examining pre- and post-renovation floor plans, this research was able to identify shifts in circulation strategies and how these related to broader architectural intentions. Site-based documentation and secondary sources offered context for the historical development and user experience. However, the study's qualitative nature limits the ability to measure how visitors actually navigate or experience these changes in practice. More empirical data, such as visitor tracking or behavioral surveys, could provide a better understanding of how circulation and autonomy is perceived and used. Nonetheless, the chosen approach has made it possible to compare theoretical frameworks with architectural outcomes and to identify trends across a diverse set of museum renovations.

A different study into architectural nudging could deepen the understanding of the balance between autonomy and guidance. Nudging can be done

through architectural strategies, working with light and colour steers people in a direction. Thereby through nudging you could create a route while visitors still have the feeling of autonomy while guiding them.

Nonetheless, this study suggests that renovations in Dutch museums move the spatial circulation towards a layout where that supports visitor experience through more autonomy. The design and position of the entrance also play a key part forming the starting point for the journey. From there strategic placement of cafés and rest areas further shapes the journey. Together, these elements form the architectural tools that can make a museum not only functional, but truly inspiring.

- Archined. (2022, 18 juli). Van Abbemuseum: vernieuwd en uitgebreid – Archined. Retrieval date march 20 2025, van <https://www.archined.nl/2003/01/van-abbemuseum-vernieuwd-en-uitgebreid/>
- Çiçek, A., Liefoghe, M., & Engels, J. (2022). Museum scènes. *OASE Staging the Museum*, (111), 1-6.
- De Bruin, J., & Harman, D. (2021). *Kunstmuseum Den Haag*. Naio10 Uitgevers/Publishers.
- Desvallées, A & Mairesse, F. (2010). *Key Concepts of Museology*.
- 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. <https://doi.org/10.2478/alfa-2022-0003>
- Giele, M. (2019). Scenografie van ruimte, tijd en kunst: Museum De Lakenhal in Leiden door Happel Cornelisse Verhoeven en Julian Harrap Architects. *De Architect*, 50, 44–63. <https://www-dearchitect-nl.tudelft.idm.oclc.org/230278/de-architect-september-2019>
- Hoffmann, H. W. (2016). *Museum buildings: Construction and Design Manual*. DOM publisher.
- Kallenberg, L. (2021, February). Jan Willem Schaap (1813-1887), zandgraf 537, vak D: Stadsarchitect. *begraafplaatsgroenesteeg.nl*. Retrieved April 9, 2025, from [https://www.begraafplaatsgroenesteeg.nl/N\\_B\\_personen/Artikel%20Schaap.pdf](https://www.begraafplaatsgroenesteeg.nl/N_B_personen/Artikel%20Schaap.pdf)
- Kempers, P., & Brinkman, E. (2010). *De Sandbergvleugel Amsterdam : binnen was buiten*. Valiz.
- Montanari, E. & Postiglione, G. (2022). Pervasive Exhibitions. *OASE Staging the Museum*, (111), 54-65.
- Monumenten.nl. (2023, 13 december). *Van Abbemuseum*. Retrieval date march 19 2025, from <https://www.monumenten.nl/monument/507030>
- Museum building*. (2022, 26 juli). Kunstmuseum Den Haag. Retrieval date march 20 2025, from <https://www.kunstmuseum.nl/en/museum/about-us/museum-building>
- Museum de lakenhal Leiden. (n.d.). *Gebouw en geschiedenis: Van Museum De Lakenhal. Museum De Lakenhal*. Retrieved April 15, 2025, from [www.lakenhal.nl/nl/verhaal/het-gebouw](https://www.lakenhal.nl/nl/verhaal/het-gebouw)
- Naredi-Rainer, P., Schnell, A. (ed.) (2004) "Museum Buildings: A Design Manual", Birkhäuser, Berlin, Germany.
- Larkin, J. (2016). 'All Museums Will Become Department Stores': The Development and Implications of Retailing at Museums and Heritage Sites. *Archaeology International*, 19(1). <https://doi.org/10.5334/ai.1917>
- Liu, Y., Chen, L., Xu, Y., & Yang, J. (2024). Exhibition Space Circulation in Museums from the Perspective of Pedestrian Simulation. *Buildings*, 14(3), 847. <https://doi.org/10.3390/buildings14030847>
- Roos, J., Hoebink, D., & Kok, A. (2019). *Metamorphosis: The Transformation of Dutch Museums*. Delft.
- Stedelijk Museum — Arcam*. (2023, 17 april). Arcam. <https://arcam.nl/architectuur-gids/stedelijk-museum/>
- Stedelijk Museum Amsterdam. (n.d.). *GESCHIEDENIS*. Stedelijk.nl. Retrieval date march 10 2025, from <https://www.stedelijk.nl/nl/museum/gebouw-geschiedenis/geschiedenis>
- Stedelijk Museum Amsterdam & Benthem Crouwel Architects. (2012, september). *Mels Crouwel about the new design* [Video]. stedelijk.nl. Retrieval date march 18 2025, from <https://www.stedelijk.nl/nl/museum/gebouw-geschiedenis/gebouw>
- Van Abbemuseum. (z.d.). *Het gebouw - Architectuur*. vanAbbemuseum.nl. Retrieval date march 19 2025, from <https://vanabbemuseum.nl/nl/museum/over-het-museum/architectuur>
- Wang, L., & Huang, W. (2024). Visitors' consistent stay behavior patterns within free-roaming scenic architectural complexes: Considering impacts of temporal, spatial, and environmental factors. *Frontiers Of Architectural Research*. <https://doi.org/10.1016/j.foar.2024.02.005>

