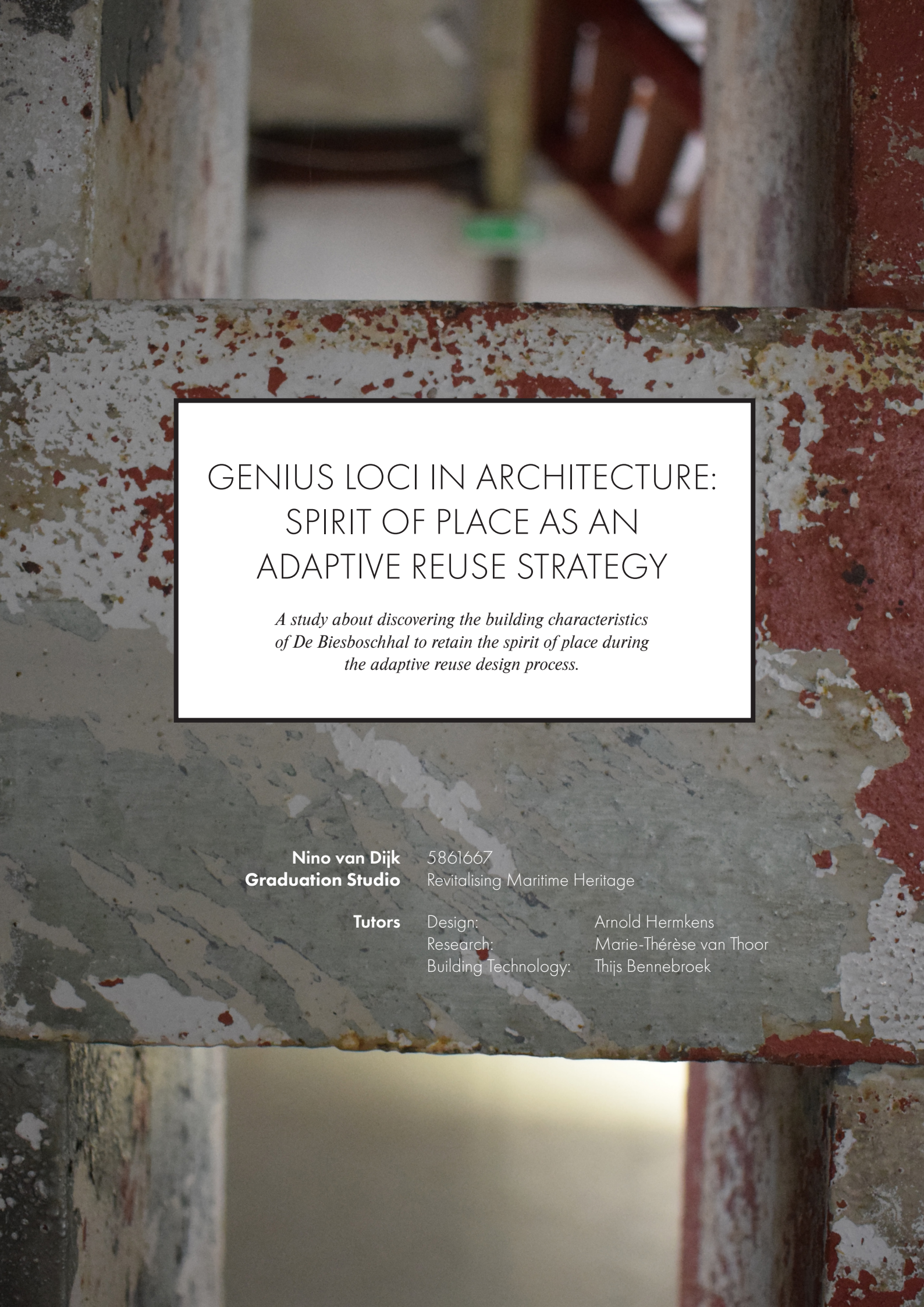

GENIUS LOCI IN ARCHITECTURE: SPIRIT OF PLACE AS AN ADAPTIVE REUSE STRATEGY

A study about discovering the building characteristics of De Biesboschhal to retain the spirit of place during the adaptive reuse design process.

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1 INTRODUCTION

BACKGROUND

Late 19th and 20th century industrialisation in the Netherlands caused a rapid growth of industrial buildings and marked its place on cities' appearance to this day (Chilingaryan, 2014). Due to a changing society to post-industrial, many industrial buildings become vacant (Bell, 2006). Industrial structures that once served as the backbone of a cities' economic growth now express a strong desire for renewal or transformation.

According to the The International Committee for the Conservation of the Industrial Heritage (TICCIH) its Nizhny Tagil Charter for the Industrial Heritage, industrial heritage remains include important aspects which are of historical, technological, social, architectural or scientific value (TICCIH, 2003). These values are expressed through various typologies including maritime heritage. Industrial heritage can be seen as artefacts of people and places, and its processes over time. It has the power to revitalise communities and revive cultural identities. (Bliek et al., 2006)

This power is exactly what this research aims to utilise. It is directly linked to a project design focused on De Biesboschhal, an industrial maritime structure located on De Staart in Dordrecht. The structure is one of the last remnents of the city its former shipwharf and recently became a municipal monument. It's rich industrial past is threatened by a changing urban environment and its needs. To revitalize De Biesboschhal while preserving the place its unique qualities, this thesis employs the often overlooked theory of genius loci as a foundational framework, recognizing the inherent values of a place.

THE NEED FOR IDENTITY AND HOW ADAPTIVE REUSE THROUGH GENIUS LOCI MIGHT ASSIST

The theoretical framework for the research consist of two fundamental theories: the genius loci of Christian Norberg-Schulz in his book *Genius Loci: Towards A Phenomenology Of Architecture* and Stuart Hall's theory on identity in his introductory chapter *Who Needs Identity* in the book *Cultural Identity*.

Stuart Hall (2000, pp. 1-17) defines the inherent instability of identity, arguing that identities are never unified and, especially in late modern times, become increasingly fragmented and constructed. He emphasizes that identities are not fixed but subject to continuous change and transformation, shaped by historical processes. Hall further explains that identities, while seemingly linked to a historical origin, are not about "who we are" or "where we came from", but rather about using history, language, and culture to shape what we might become and how we represent ourselves moving forward. Historical buildings contribute to ones process to identify himself, rather than being a stable or fixed identity of the past, this history is reflexive and thus buildings can contribute to ones identity differently according to its time.

With the underlying need for retaining certain buildings with their rich historic past explained, the genius loci theory can help identify these important historical aspects of a specific site and building. In the case of this research it will provide a theoretical framework for De Biesboschhal to retain its spirit of place. In Norberg-Schulz's (1980) Genius Loci a phenomenological approach to architecture is adopted. He states that the spirit of place, genius loci, belongs to the place and when this is identified it can be interpreted in "ever new ways". He identifies place as an integral part of existence because acts take place and are meaningless without

reference to a locality. In Norberg-Schulz' eyes architecture its main goal is to visualise the genius loci of a place and in this way design with meaning. If De Biesboschhal is transformed with this in mind, it could succeed in retaining the identity of the place.

PRIMARY CONCERN

The adaptive reuse of heritage for the sustainable regeneration of industrial sites must balance economic, environmental, social, and cultural objectives. However, in practice, the adaptation process is often predominantly guided by economic and environmental considerations, with social and cultural goals being subordinate.

As is stated in International Council on Monuments and Sites (ICOMOS) and TICCIH's Joint ICOMOS – TICCIH Principles for the Conservation of Industrial Heritage Sites, Structures, Areas and Landscapes "The Dublin Principles" The industrial heritage is highly vulnerable and often at risk, predominantly lost for lack of awareness, documentation, recognition or protection but also because of changing economic trends, negative perceptions, environmental issues or its sheer size and complexity (ICOMOS-TICCIH, 2011). This vulnerability is further stressed by Cristian Wicke, who claims that "since the mid-20th century, however, energy transitions and increasing economic globalization have left urbanized regions in highly industrialised countries extremely vulnerable." (Wicke,

GENIUS LOCI AS A NEW ADAPTIVE REUSE STRATEGY

The crucial task at hand is to regenerate these threatened historic sites in such a way that it does not lose its identity or spirit. There has been ongoing debate on what is the best strategy to approach such a complex task. Genius Loci and its goal to include site and building specific characteristics might construct a relatively new design strategy for the reuse of vacant industrial heritage building stock that has not gotten the attention in the academic world that it deserves (Plevoets et al., 2019, p. 91).

"*To understand the* **genius loci** *of a place does not mean to copy old models. It means to determine the identity of the place and to interpret it in ever new ways.*"

(Norberg-Schulz, 1979)

RESEARCH QUESTIONS

The research questions that are formulated respond to the problem statement. The main question, together with the sub questions, forms the groundwork of the research. The main question of the research is as follows:

> *"How is the spirit of place preserved in Twentieth-Century industrial heritage after adaptive reuse?"*

The question explores the delicate balance between maintaining the unique character and atmosphere of historic industrial sites while adapting them for new, modern purposes. It delves into how adaptive reuse strategies can ensure that these sites, with their rich historical, social, and architectural significance, retain their essence or genius loci—the "spirit of place"—even as they are transformed to meet contemporary needs.

To help answer the main question three sub questions are composed:

> *"What is genius loci?"*
>
> *"What adaptive reuse strategies already exist and how do they include genius loci?"*
>
> *"How is the spirit of place preserved in transformed case studies?"*

RELEVANCE

The significance of this research lies in the growing number of adaptive reuse projects and the pressing need to preserve existings tructures with minimal loss of cultural values. By integrating a theoretical framework grounded in key concepts and evaluating whether these principles are reflected in contemporary adaptive reuse strategies, the study aims to contribute to the ongoing discourse on how best to preserve the cultural significance tied to industrial heritage.

Figure 1 methodology overview (author's own work)

2 METHODOLOGY

To be able to answer the composed questions of the research a combination of research methods is needed.

LITERATURE REVIEW

In order to define the necessity of preserving the spirit of place and to form valuable starting points a literature review will be carried out. This review includes critical perspectives about the genius loci in Norberg-Schulz's book which are considered as a theoretical basis for the rest of the review.

To place the findings in the correct context, heritage can be understood as a cultural process that shapes identities of individuals, groups and nations. The process of determining which elements hold value is a sort of 'identity work' where architects play a pivotal role (Smith, 2006, p. 48). This highlights the architect's powerful position in heritage discourse, affecting both societal memory and preserved material passed to future generations. The theory of Norberg-Schulz could prove to be a valuable tool for treating buildings that shape our society's identity in the same manner as Smith describes, which has been underexposed and overshadowed by the prevailing strategies of the conservation sector.

ADAPTIVE REUSE STRATEGIES

To address the need for the profession of architecture to implement the theory of genius loci, a selection of different adaptive reuse strategies is selected to look into:

> M. Kuipers and W. de Jonge their strategies in the book *Designing from Heritage*.
>
> Office Winhov its book *Architecture Repurposed*
>
> B. Plevoets and K. Van Cleempoel their *Adaptive Reuse of the Built Heritage*

The books will be analysed on how they treat genius loci and in what way it is translated to adaptive reuse strategies.

In *Designing from Heritage* the Brand/ Riegl matrix is composed to construct a systematic way to value certain prescribed building aspects. This matrix will be tested against the genius loci theory. *Architecture Repurposed* provides an important drawing design tool that makes design interventions and the original building easily identifiable.

THEORY INTO PRACTICE: CASE STUDY RESEARCH

The case study research aims to bridge theory and practice by examining how various projects adapting industrial heritage address the concept of genius loci. By exploring these different approaches, the research provides a clearer understanding of the state of the art in preserving the spirit of place of industrial sites.

Three adaptive reuse industrial heritage projects have been selected to assess if and how they treat the concept of genius loci based on the findings of the previous research steps:

> *LocHal*, Tilburg (2017)
> Architect: Braaksma & Roos
>
> *RDM Onderzeebootloods*, Rotterdam (2004)
> Architect: Marge Architecten
>
> *Mastenloods Willemsoord*, Den Helder (2023)
> Architect: Office Winhov

By analysing these projects, it becomes possible to determine the design approaches employed and how these approaches addressed the preservation of values linked to genius loci. This analysis reveals the strategies used to balance adaptation with the conservation of the site's heritage spirit of place.

Figure 2 LocHal
source: www.braaksma-roos.nl

Figure 3 RDM Onderzeebootloods
source: www.rotterdam.info

Figure 4 Mastenloods Willemsoord
source: www.winhov.nl

3 RESULTS

Genius loci as identified by Norberg-Schulz is a character bound to a specific place, the spirit of place. This character consists of a place its specific history, identity and meaning. Architecture comes in to articulate this character and bring the genius loci close to the user.

GENIUS LOCI DESIGN PRINCIPLES

With Genius Loci as the guiding theoretical framework design principles have been developed (see figure 5). These principles give a designer practical tools to elaborate or test a design from this otherwise abstract concept. In his book Norberg-Schulz seeks to identify concrete, tangible aspects of buildings and their sites to make the genius loci more accessible and applicable in architecture and more specific heritage practice.

Norberg-Schulz distinguishes between *natural place* and *man-made place* aspects that define the genius loci of a location. He describes natural place as a place's aspects shaped by natural elements and forces. He emphasizes that natural places are defined by their topography, climate, light, and other environmental features, which create a distinct atmosphere and character. These elements shape how people perceive and experience a place.

Although *natural place* in modern urban dwelling is identified as fragmented (Norberg-Schulz, 1980, p. 21), he defines two main aspects of the natural environment that helps identify the genius loci:

- localities in which gathered meanings are rooted;
- correspondence between natural conditions and settlement morphology;

These aspects enable architects to address characteristic values linked to a buildings context. During the adaptive reuse process, these values can be reinterpreted to both preserve and strengthen the building's rootedness within its environment.

The *man-made place* is described as a place that 'visualizes, complements and symbolizes' a designers understanding of his context. (Norberg-Schulz, 1980, p. 56) Man-made places that embody their context specific identity are made through building. Other than vernacular architecture, where genius loci primarily aligns with the natural place, urban architecture encompasses a more complex and multifaceted interpretation. Therefore the remaining design principles focus on building aspects which influence this urban architecture genius loci.

The characteristics that influence how a space its phenomena are experienced make these experienced phenomena somewhat tangible by addressing how they evoke genius loci. These characteristics are:

- the presencing of boundaries;
- the degree of standing and/or rising of a building
- the silhouette of a buildings against its surroundings, ground and sky;
- horizontal elements versus vertical elements;
- the degree of a building solidity and transparency;
- how light transmits into the building;
- a building's inside-outside concretisation;
- the presence of primary structural elements;
- the relation between site, settlement and architectural detail.

Incorporating these characteristics as guiding design principles allows designers

GENIUS LOCI DESIGN PRINCIPLES

SPIRIT OF PLACE

LOCATION (NATURAL PLACE)

localities in which project is rooted

correspondence between natural conditions and settlement morphology

SPATIAL CONFIGURATION (MAN-MADE PLACE)

presencing of boundaries

standing and/or rising of a building

silhouette against surroundings, ground and sky

horizontal elements vs. vertical elements

CHARACTERIZING ARTICULATION

solidity vs. transparency

light transmittance

inside/outside concretisation

structural clearity

primary structural elements retain atmosphere

relation between site, settlement and architectural detail

Figure 5 Genius Loci Design Principles (author's own work)

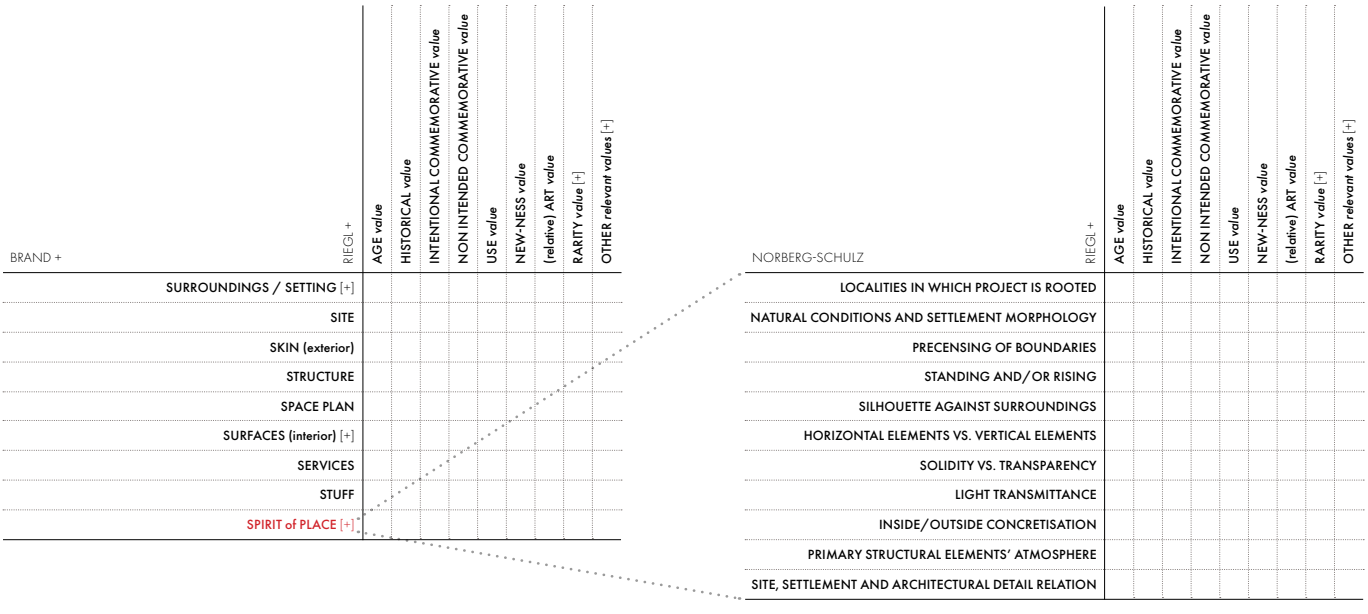

Figure 6 Brand/Riegl matrix from *Designing From Heritage (Kuipers, 2017)* (left) and proposed matrix based on the Genius Loci Design Principles (right) (author's own work)

to preserve the spirit of place in a more concrete and practical manner. Rather than relying solely on the subjective experience of phenomena within a space, these tangible aspects, which influence the degree of genius loci, offer a clearer and more structured phenomenology framework for design.

PROPOSING A VALUE ASSESSMENT MATRIX

Kuipers (2017, p. 86) proposes to use Brand his shearing layers combined with Riegl his historical value theory. Kuipers added three categories to Brand's layers, one of which is 'Spirit of Place'. However, the spirit of place gets here interpreted as merely social value by later shown student use of the matrix.

Additionally, the spirit of place, according to the above stated genius loci design principles, has a considerable amount of overlap with the rest of the shearing layer categories. Spirit of place is here implemented as a single value, while it should be subdivided into several sub categories for one to grasp this phenomenon. While the Brand/Riegl matrix may be based on objective value giving (Kuipers, 2017), a Norberg-Schulz/Riegl matrix (see figure 6) could add the more subjective phenomenology based values of a historic building or site. The matrix can be seen as an extension of the Brand/Riegl matrix to include spirit of place instead of adding it as a [+] to the shearing layers.

GENIUS LOCI VERSUS AUTHENTICITY

While the proposed Norberg-Schulz/Riegl matrix aims to incorporate a more subjective, phenomenology-based understanding of spirit of place, Plevoets et al. (2019) further emphasizes the necessity of moving beyond rigid authenticity frameworks. Unlike authenticity, which is tried to be made as an objective and scientific standard in the conservation sector, a genius loci approach to adaptive reuse remains subjective and open to personal interpretations. The possibility to tie a building to its location through the right interpretation and concretisation of the building's subjectively sensed values should allow a designer to make an inherent connection between building and user. Plevoets (2019) further explains how these values are highly dependent on alterations throughout time:

> *"Confronted with the task of adaptive reuse, both the genius loci as well as the zeitgeist have to be taken into account. The product of the overlap between place and time is memory. Memory is impossible without forgetting, just as buildings cannot be preserved without decline."*
>
> (Plevoets, 2019, p. 91)

The ratio between place (genius loci) and time (zeitgeist) is what is decided upon during the adaptive reuse process. And this is seen as an opportunity to 'recreate, rethink, or strengthen the genius loci of a building, a site, or a landscape.' (2019, p. 92) In the case of De Biesboschhal this means that it should balance the characteristics that influence the place its genius loci with the contemporary challenges of our society.

REPURPOSING INSTEAD OF REUSING

This balancing gets systematically presented in Architecture Repurposed (2024), which introduces a dialogue between historical layers, which are visually expressed in floorplans, drawings and sections using the *YellowRed* technique. The book highlights the problem of most adaptation projects striving for reversibility, as already observed by Plevoets (2019), and contrast to distinguish itself from what is existing, while new and old are not supposed to be separate worlds (2024, p. 10). Therefore it introduces the term 'Repurposing' as a way of

reassessing the fundamentals of both the 'new construction' approach and contemporary heritage conservation practice (2024, p. 15). Repurposing allows the existing to enter into dialogue with additions and offers a chance for De Biesboschhal to articulate the genius loci through engaging with its existing architectural detail.

MATRIX REFLECTION ON CASE STUDIES

The case study analyses will be conducted using the previously proposed matrix (see figure 6). This approach provides a systematic method to evaluate how the selected projects incorporate the formulated principles that influence genius loci. For each project, characteristic examples will be chosen to illustrate their impact on the spirit of place and how the adapted projects connect this with its user. These examples are combined with images to help the reader experience this impact themselves as an attempt to fully understand the influence it has on the whole.

CASE STUDY PROJECT 1

LocHal

Braaksma & Roos
Tilburg, NL

The LocHal's key design strategy is the preservation of its structure, ensuring the enduring recognisability of the identity inherent to the building. The structure plays a decisive role in preserving the building's atmosphere, maintaining recognisability across various scales. This is evident in spaces where the full height is left open (figure 7), as well as in moments of close interaction (figure 8), such as standing beside the columns on the added walkway. Approaching the structure this closely one gets drawn into the details of the craftsmanship, emphasising the industrial character embodied by the structural building's components. These details establish a direct connection to the site and settlement, a critical aspect of the man-made place within Norberg-Schulz his concept of genius loci.

Additionally, the reuse strategy allowed for preservation of the atmosphere the light transmittance creates, which originates from its characteristic high-level industrial scale openings rather than elements scaled for human use. By deliberately embracing this with the incorporation of interconnected open spaces, allowing the light transmittance to penetrate deeply into the building (figure 10), the designers have clearly demonstrated their sensitivity to the genius loci.

Another important aspect that the building addresses is the rootedness in localities. It has a historical relationship with the railway (figure 11) and the way the building presents itself in the streetscape (figure 12) is inherently tied to how it did so in the past.

Figure 7 primary construction precense LocHal (author's own work)

Figure 8 Architectural detail LocHal (author's own work)

NORBERG-SCHULZ / RIEGL +	AGE *value*	HISTORICAL *value*	INTENTIONAL COMMEMORATIVE *value*	NON INTENDED COMMEMORATIVE *value*	USE *value*	NEW-NESS *value*	(relative) ART *value*	RARITY *value* [+]	OTHER *relevant values* [+]
LOCALITIES IN WHICH PROJECT IS ROOTED									
NATURAL CONDITIONS AND SETTLEMENT MORPHOLOGY									
PRECENSING OF BOUNDARIES									
STANDING AND/OR RISING									
SILHOUETTE AGAINST SURROUNDINGS									
HORIZONTAL ELEMENTS VS. VERTICAL ELEMENTS									
SOLIDITY VS. TRANSPARENCY									
LIGHT TRANSMITTANCE									
INSIDE/OUTSIDE CONCRETISATION									
PRIMARY STRUCTURAL ELEMENTS' ATMOSPHERE	■	■			■				
SITE, SETTLEMENT AND ARCHITECTURAL DETAIL RELATION		■							

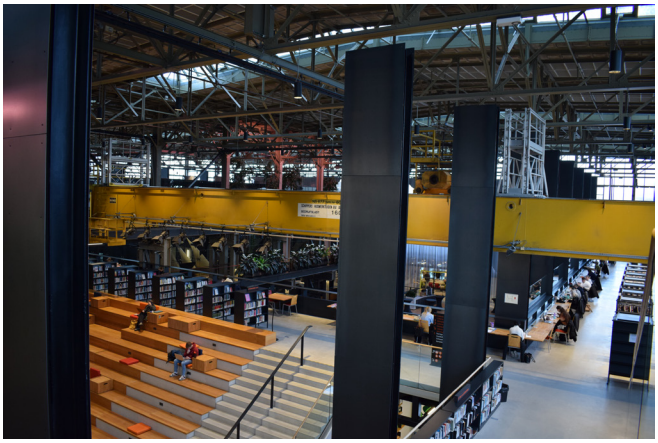

Figure 9 interior image LocHal (author's own work)

Figure 10 inverted image to show light transmittance (author's own work)

NORBERG-SCHULZ / RIEGL +	AGE *value*	HISTORICAL *value*	INTENTIONAL COMMEMORATIVE *value*	NON INTENDED COMMEMORATIVE *value*	USE *value*	NEW-NESS *value*	(relative) ART *value*	RARITY *value* [+]	OTHER *relevant values* [+]
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SOLIDITY VS. TRANSPARENCY		■			■				
LIGHT TRANSMITTANCE		■			■				
INSIDE/OUTSIDE CONCRETISATION									
PRIMARY STRUCTURAL ELEMENTS' ATMOSPHERE									
SITE, SETTLEMENT AND ARCHITECTURAL DETAIL RELATION									

Figure 11 LocHal 1934 (author's own work)

Figure 12 Local rootedness LocHal (author's own work)

NORBERG-SCHULZ	RIEGL +	AGE *value*	HISTORICAL *value*	INTENTIONAL COMMEMORATIVE *value*	NON INTENDED COMMEMORATIVE *value*	USE *value*	NEW-NESS *value*	(relative) ART *value*	RARITY *value* [+]	OTHER *relevant values* [+]
LOCALITIES IN WHICH PROJECT IS ROOTED			■		■					
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HORIZONTAL ELEMENTS VS. VERTICAL ELEMENTS										
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LIGHT TRANSMITTANCE										
INSIDE/OUTSIDE CONCRETISATION										
PRIMARY STRUCTURAL ELEMENTS' ATMOSPHERE										
SITE, SETTLEMENT AND ARCHITECTURAL DETAIL RELATION			■			■				

CASE STUDY PROJECT 2

Mastenloods

Office Winhov
Den Helder, NL

The Mastenloods owes the preservation of its spirit of place largely to two key design strategies. On one hand, Office Winhov has retained the visibility of the characteristic wooden structure (figure 13 and 14) throughout the building, allowing visitors to connect with the historical layers embedded within it. The impact achieved by preserving the structure is comparable to the approach taken in the LocHal. Norberg-Schulz's criterion for maintaining the atmosphere created by the structure, and with that the genius loci, therefore seems decisive.

Another important starting point of the what Office Winhov calls 'repurposing' (Architecture Repurposed, 2024) of the Mastenloods is the implementation of the supervisor's house (figure 15). The architectural language of the house is used as an inpiration for the interior wall design in the rest of the building. With this, a connection is made between architectural detail and the buildings site, a criterion that allows the genius loci to precense itself on the smaller scale.

The design approach also allowed for the boundaries between inside and outside, maintaining their character they add to the overall atmosphere. This allows for spaces that are connected to this inside/outside connections to fully enter into dialogue with the building's spirit of place, making the intervention part of the original, rather than a contrasting reversible addition pursued by the conservation industry.

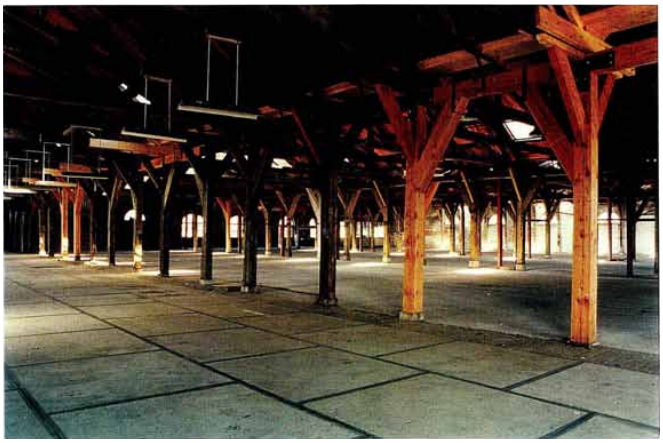

Figure 13 Stripped down Mastenloods with its characteristic structure (Onderzoeksrapport Gemeente Den Helder)

Figure 14 Structural element's clear precence (winhov.nl)

NORBERG-SCHULZ	RIEGL +	AGE *value*	HISTORICAL *value*	INTENTIONAL COMMEMORATIVE *value*	NON INTENDED COMMEMORATIVE *value*	USE *value*	NEW-NESS *value*	(relative) ART *value*	RARITY *value* [+]	OTHER *relevant values* [+]
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LIGHT TRANSMITTANCE										
INSIDE/OUTSIDE CONCRETISATION										
PRIMARY STRUCTURAL ELEMENTS' ATMOSPHERE		■	■			■				
SITE, SETTLEMENT AND ARCHITECTURAL DETAIL RELATION										

Figure 15 former supervisor's house (winhov.nl)

Figure 16 translated architectural detail of supervisor's house (winhov.nl)

NORBERG-SCHULZ	RIEGL +	AGE *value*	HISTORICAL *value*	INTENTIONAL COMMEMORATIVE *value*	NON INTENDED COMMEMORATIVE *value*	USE *value*	NEW-NESS *value*	(relative) ART *value*	RARITY *value* [+]	OTHER *relevant values* [+]
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SITE, SETTLEMENT AND ARCHITECTURAL DETAIL RELATION			■		■	■				

Figure 17 Mastenloods before 'repurposing' (Onderzoeksrapport Gemeente Den Helder)

Figure 18 inside/outside connection (winhov.nl)

NORBERG-SCHULZ / RIEGL +	AGE *value*	HISTORICAL *value*	INTENTIONAL COMMEMORATIVE *value*	NON INTENDED COMMEMORATIVE *value*	USE *value*	NEW-NESS *value*	(relative) ART *value*	RARITY *value* [+]	OTHER *relevant values* [+]
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SOLIDITY VS. TRANSPARENCY									
LIGHT TRANSMITTANCE									
INSIDE/OUTSIDE CONCRETISATION	■				■		■		
PRIMARY STRUCTURAL ELEMENTS' ATMOSPHERE									
SITE, SETTLEMENT AND ARCHITECTURAL DETAIL RELATION									

CASE STUDY PROJECT 3

Onderzeebootloods

Marge Architecten
Rotterdam, NL

The Onderzeebootloods serves as an example of how minimal interventions can preserve the genius loci while bringing the building into the present and preparing it for the future. The public program of the building, rentable event space, helps to make this approach feasible. With the complete original open floorplan the building can house a wide variety of events. Parallel to this practical advantage, several aspects contribute positively to preserving the spirit of place. By leaving the spaces entirely open, the impact of retaining the structure on experiencing the spirit of place is most effectively demonstrated.

The concretisation of the rising of a building, which Norberg-Schulz classifies as an aspect that determines the character of a place, is prominently present. This plays a significant role in preserving the atmosphere, and with it, the spirit of place.

Combined with the openness of the buildings interior spaces, the former industrial roller shutter door provides a connection with the building's characteristic environment. With its nautic historical use, the frame this doorway creates offers a unique opportunity to engange the building with this historical context. Being so prominently present, this transparant inside/outside connection offers a direct interaction between user and the environment the project is rooted in.

Figure 19 Rising character of assembly hall (Stadsarchief Rotterdam)

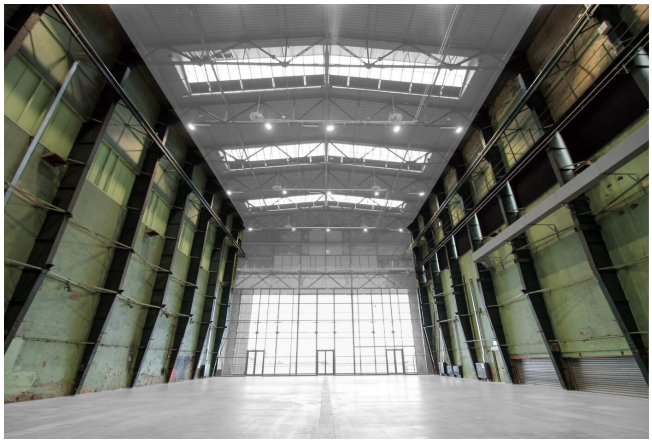

Figure 20 Horizontal building elements let the building 'rise' (bouwwereld.nl)

NORBERG-SCHULZ	RIEGL +	AGE *value*	HISTORICAL *value*	INTENTIONAL COMMEMORATIVE *value*	NON INTENDED COMMEMORATIVE *value*	USE *value*	NEW-NESS *value*	(relative) ART *value*	RARITY *value* [+]	OTHER *relevant values* [+]
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SITE, SETTLEMENT AND ARCHITECTURAL DETAIL RELATION										

Figure 21 Former use of front opening (Stadsarchief Rotterdam)

Figure 22 Inside/outside connection from main hall (rotterdam.info)

NORBERG-SCHULZ / RIEGL+	AGE *value*	HISTORICAL *value*	INTENTIONAL COMMEMORATIVE *value*	NON INTENDED COMMEMORATIVE *value*	USE *value*	NEW-NESS *value*	(relative) ART *value*	RARITY *value* [+]	OTHER *relevant values* [+]
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SITE, SETTLEMENT AND ARCHITECTURAL DETAIL RELATION									

4 CONCLUSIVE OVERVIEW

This study has examined how preserving genius loci, the spirit of place, might help with contemporary adaptive reuse of industrial heritage. The rapid industrialization of the Netherlands during the late 19th and 20th century left a lasting mark on the urban landscape, creating many industrial heritage sites that face challenges of decline and vacancy. These buildings now hold significant values that are highly vulnerable, threatened by neglect, making adaptive reuse of such structures a critical task.

Genius loci can serve as a strategy that connects these buildings significant values of place to its user. The theoretical framework of this study, grounded in this genius loci theory by Christian Norberg-Schulz's, has provided valuable insights into understanding the dynamic relationship between industrial heritage and user identity, and how genius loci could possibly help to retain and/or strengthen this unique character. Norberg-Schulz's emphasis on identifying and interpreting the genius loci of a place addresses the importance of designing with the intention for adaptive reuse strategies to maintain the unique character of these historic sites and offers a new strategy for adaptation.

The results of this research are grounded in the application of this adaptive reuse strategy based on the principles developed through the concept of genius loci, which will help guiding the adaptive reuse process of industrial heritage buildings and the project of De Biesboschhal. The case study analyses, conducted using the proposed matrix, provide a systematic evaluation of how genius loci principles are incorporated into the selected projects. Through this framework, each project was examined to identify key examples of how the spirit of place is included during the adaptive reuse process. The visual representations of the case studies offer insight into how different architectural interventions influence the genius loci of a building, allowing the reader to experience the spatial and atmospheric impact. Evaluating the different building characteristics that influence the genius loci with the matrix will inform the design with starting points (figure 23). These starting points contain the building characteristics that influences the spirit of place the most considering the outcomes of the case studies. With this, a basis for the approach on how to adapt De Biesboschhal while retaining its genius loci is made.

To further succeed in retaining the building its spirit of place critical importance of the designer's deep understanding of the building's historical layers is needed, as stated in *Architecture Repurposed* (2024). The overall success of the interventions hinges on the

1. connect building to historic context

2. preserve 'rising' character of interior space

3. preserve presence of primary structural elements

4. continue architectural detail connected to the place

Figure 23 starting points for the adaptive reuse of De Biesboschhal (rotterdam.info)

careful balancing of preserving the essence of the place while introducing new layers that contribute to the contemporary and future use of the building, balancing the genius loci and zeitgeist (Plevoets, 2019). The drawing technique that is used to distinguish the different layers of a building, YellowRed, will be used during the design of the Biesboschhal. This will show how taking away and/or adding layers can contribute to retaining the place its genius loci and connect it to the building's user.

The findings of this research offer valuable insights into the role of genius loci in retaining this spirit of place within adaptive reuse projects. The matrix developed in this study, along with the practical examples drawn from the case studies, provides a valuable tool for designers to assess and incorporate the complex thoughts behind genius loci into adaptive reuse strategies of industrial heritage sites. The results contribute to the ongoing debate on adaptive reuse by offering an alternative approach than the standard that's constituted by the heritage conservation sector. Genius loci emphasizes the importance of maintaining the unique character and atmosphere of historic buildings to gain a deeper connection with the object and design with the goal to continue what's already there, repurposing instead of reusing, as opposed to adding contrasting empty layers.

5 DISCUSSION

The results of the research serve as guiding principles for the design project of the Heritage & Architecture studio. It provides a framework for me as an aspiring architect to be able to design an adaptive reuse of the designated location *De Biesboschhal* retaining the unique spirit of place, which is critical for the conservation of the area's unique historical identity.

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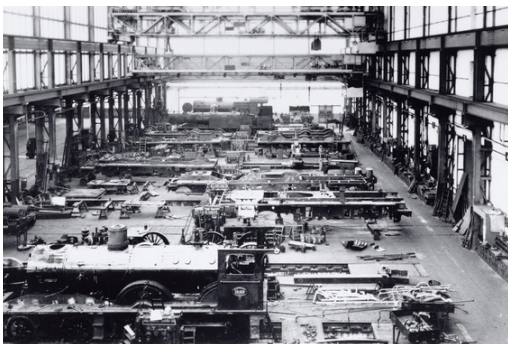
LocHal

Architect	**Braaksma & Roos**
Location	**Tilburg, NL**
Building year	**1932**
Transformation	**2017**
Function(s)	**Library, meeting and events location, office**

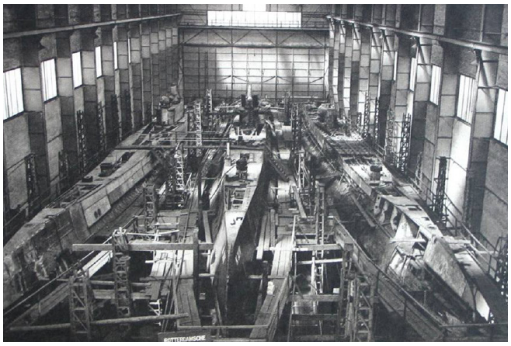


The LocHal once was a production maintanence hall for locomotives. The building went vacant after the company closed down in 2009. The hall is redesigned as part of the city. Orthogonal, industrial division of spaces is put into the design from large to small scale. The riveted steel structure narrows down to the . Workers used to only be able to look at the high skylights, now visitors can walk up to it with the addition of ascending stairs.

source: https://www.braaksma-roos.nl/project/lochal-tilburg/

RDM, Onderzeebootloods

Architect	**Marge Architecten**
Location	**Rotterdam, NL**
Building year	**1929**
Transformation	**from 2004**
Function(s)	**Meeting and events location**

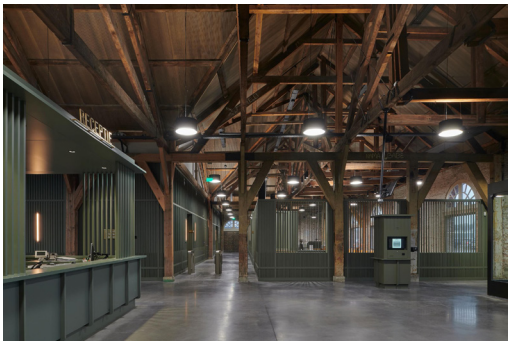


RDM (Rotterdamse Droogdok Maatschappij) has a long history in shipbuilding and this particular building was used to produce submarines. After it went vacant and fell into the hands of the municipality it got transformed into a multi-purpose venue supporting cultural and educational activities. The transformation is done with minimal interventions, preserving the spirit of place.

source: Contrei, Bouwhistorische Verkenning RDM Onderzeebootloodsen. 2014.

Mastenloods Willemsoord

Architect	**Office Winhov**
Location	**Den Helder, NL**
Building year	**1825**
Transformation	**2023**
Function(s)	**Municipal**

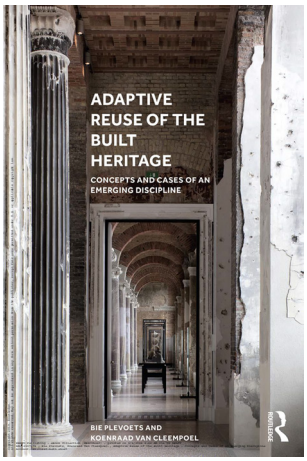


The Mastenloods is located on the former Dutch marine wharf Willemsoord, where it used to function as a production and maintanence hall. After the marine base was relocated 1995, and fulfilling multiple purposes, it became vacant. Office Winhov, together with Van Hoogevest Architecten, decided to use the building to function as Den Helder's town hall. They suggested that it the moving of the municipality would renew the close bond with its nautic culture and history. The neoclassical builing retains its identity through clever design strategies used by both architecture firms.

source: https://bbn.nl/app/uploads/2024/03/Stadhuis-Den-Helder.pdf

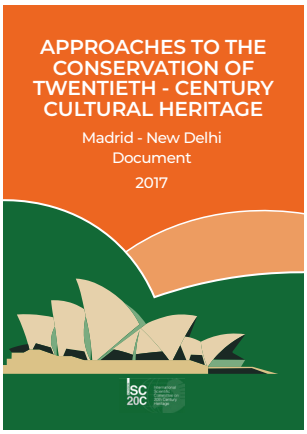
APPENDIX B LITERATURE

Adaptive Reuse of the Built Heritage



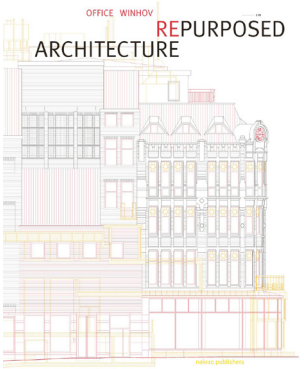
Author B. Plevoets and K. Van Cleempoel
Year **2019**
Topic **Design Approaches and Strategies**
Relevance
The book examines theories and methodologies that guide adaptive reuse. It emphasizes the role of adaptive reuse in sustainable development, presenting it as a strategy to retain cultural value while meeting current urban demands

Approaches to the Conservation of Twentieth-Century Cultural Heritage



Author **ICOMOS**
Year **2017**
Topic **Design Approaches and Strategies**
Relevance
The document outlines methods for preserving modern heritage by addressing its unique materials, construction methods, and social values. It emphasizes the need to understand and respect the specific cultural and historical contexts of 20th-century sites.

Architecture Repurposed

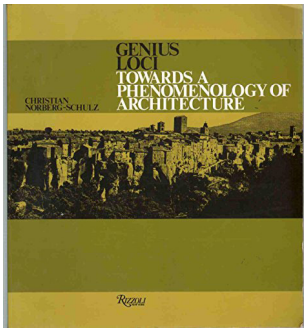


Author U. Gilad, J. P. Wingender, A. Pronkhorst
Year **2024**
Topic **Design Approaches and Strategies**
Relevance

Designing from Heritage

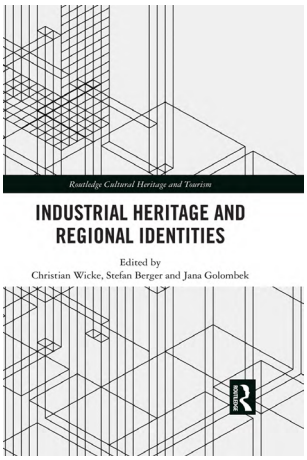
Author **M. Kuipers and W. de Jonge**
Year **2017**
Topic **Design Approaches and Strategies**

Genius Loci



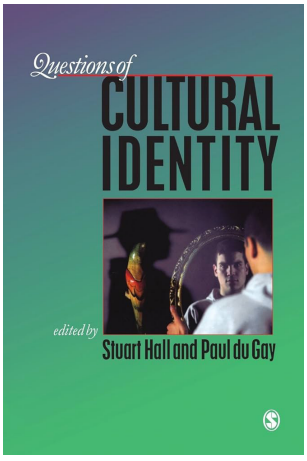
Author **Christian Norberg-Schulz**
Year **1980**
Topic **Design Approaches and Strategies**
Relevance:
Forms the basis of the theoretical framework of the research. The book delves into the phenomenology of architecture using the concept of spirit of place and claims this always remains.

Industrial Heritage and Regional Identities



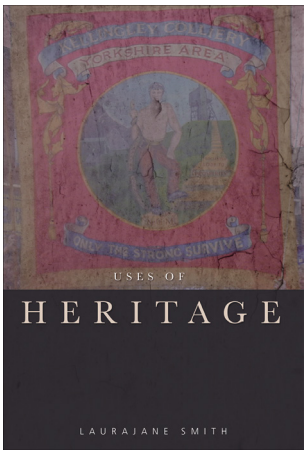
Author **C. Wicke, S. Berger and J. Golombek**
Year **2018**
Topic **Industrial Heritage, Social Studies**
Relevance
The book explores the relationship between industrial heritage and the formation of regional identities in a post-industrial time. It shows how former industrial sites and practices become symbols of local identity and how it can be a tool for cultural representation.

Questions of Cultural Identity



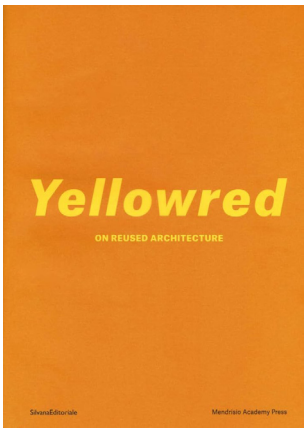
Author **S. Hall and P. du Gay**
Year **1996**
Topic **Social Studies**
Relevance
Hall examines the fluid, constructed nature of identity, arguing that identities are neither fixed nor stable but are shaped by history, language, and cultural narratives.

Uses of Heritage



Author **L. Smith**
Year **2006**
Topic **Heritage Studies, Social Studies**
Relevance
Discusses heritage not only as a collection of tangible aspects, but a cultural process that shapes social identities.

Yellowred: On Reused Architecture



Author **M. Boesch, L. Lupini, J. Machado**
Year **2017**
Topic **Design Approaches and Strategies**
Relevance
Boesch introduces a framework of colours to show how interventions of buildings treat the existing opposed to the additions, retaining historical significance.

APPENDIX C DE BIESBOSCHHAL

Location **Dordrecht, NL**
Building year **1952**
Function(s) **Shipwharf, Maritime production**

De Biesboschhal is one of the many industrial buildings that once stood on the former shipyard at De Staart in Dordrecht. From the time it was put into use until the year 2000, the hall functioned as a machine factory. Due to the area's transformation into a residential district, it remains the only surviving structure of the former shipyard. In addition to its local historical and cultural significance, it is also essential on a broader scale to preserve the building's monumental values. In retaining the values it can contribute to the 'Erfgoedlijn Maritieme Industrie'. The building is characterised by its externally recognisable steel load-bearing structure, combined with brick infill and large window openings. Internally, it features a spacious manufacturing hall dominated by its steel framework. Apart from storage areas and staff facilities, the spaces within the hall remain entirely open and interconnected. In 2012, the building was renovated by 2012Architecten, the firm now known as Superuse.

De Biesboschhal in august, 2024 (own work)

One of two production halls of De Biesboschhal in august, 2024 (own work)

Shipwharves on de staart, 1952 (Regionaal Archief Dordrecht)

New development on de staart (wonenindordrecht.nl)