Cultural significance assessment of Mariahoeve and impact assessment of developments strip of Z-flats as case study

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Award date: 2015
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SUMMARY

Focus of cultural heritage management is slightly shifting from the management of monumental assets to the values and attributes that convey their cultural significance. In that respect, a value-based management process is introduced in which the “Statement of Significance”, which is the outcome of performing cultural significance assessment, becomes important. This thesis aims first to assess the cultural significance of Mariahoeve, a postwar constructed neighborhood in The Hague, and then to assess and minimize the impact of developments on the architectural values of the neighborhood. Through the application of Cultural Value Survey Method, cultural values and their representative attributes that make this area eminent, are distinguished. Same assessment is carried out on a strip of Z-flats; a residential complex located at the edge of the neighborhood that is of municipal value. As this case study is assessed as a proper representative of the valued architectural attributes of Mariahoeve, recommendations made to avoid or minimize the adverse impacts of developments on these attributes can be easily adapted to be applied to other buildings of the neighborhood inheriting the same attributes. One third of the building blocks of this strip has been demolished and then rebuilt in 2008, another third has been renovated in 2015, and the rest are still in their original condition. The impact of these interventions on the architectural values of the case study was assessed and compared. ICOMOS guidance on heritage Impact assessments for cultural world heritage properties provided the framework of this assessment. The encountered insufficiencies of this method are presented as a critical piece. Results show that the adverse impacts of renovating the Z-flats on their architectural values have been far less than demolition and building new. This thesis concludes with providing a guideline for renovating the untouched blocks of Z-flats; renovation which do preserve the architectural values of the property.
Definition of Terms

Cultural significance:

Cultural significance means aesthetic, historic, scientific, social or spiritual value for past, present or future generations. Cultural significance is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects. The term cultural significance is synonymous with heritage significance and cultural heritage value (ICOMOS, 2013).

Cultural values:

Cultural values are the notions often used to term the reasons for regarding cultural heritage as important (Pereira Rodgers and Hudson, 2011).

Attributes:

Attributes are the “qualities and characteristics seen in things, in particular the positive characteristics (actual and potential)” (Mason, 2002) embodying the cultural values (UNESCO, 2011)

Outstanding universal value:

Outstanding Universal Value means cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity. As such, the permanent protection of this heritage is of the highest importance to the international community as a whole (UNESCO 2011).

Sustainable development (in the context of cultural heritage management):

Sustainable developments “meet the social, economic, and ecological needs of the present generation” (Boxem, Robert, et al. 2012), “without compromising the ability of future generations to meet their own needs” (Brundtland, 1987), nor “adversely impact the cultural value, integrity and/or authenticity of the property”.1

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1 The actual terminology, nor “adversely impact the outstanding universal value, integrity and/or authenticity of the property” (UNESCO, 2011), is here adapted for heritage properties that are not world heritage and subsequently do not have outstanding universal value.
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1 Introduction

Focus of cultural heritage management is slightly shifting from the management of monumental assets to the values and attributes that convey their cultural significance (Tarrafa Silva & Pereira Roders, 2012). In that respect, the Burra charter (ICOMOS 1999) describes a value-based management process in which the “Statement of Significance”, which is the outcome of performing cultural significance assessment, becomes important.

Mariahoeve neighborhood\(^2\) is one of the fifteen areas of national cultural-historical importance selected by the Cultural Heritage Agency of the Netherlands\(^3\), being constructed in the post-war period. However, now after more than fifty years of its construction the neighborhood calls for attention. Housing quality is low (WSA, 2005) and there are social problems such as safety and livability (Staedion, 2005). The existing dwelling stock are being adapted -renewed or renovated- to improve the current situation. The main focus is on attracting several target groups (adolescents, families and elderly) which would raise the social value of the neighborhood (Dienst Stedelijke Ontwikkeling Den Haag, 2008).

Designation implies that in cases of considering any transformation to the neighborhood, preservation of the attributes that represent the cultural values of Mariahoeve are taken as a starting point; so the urban and architectural cohesion is respected (Valentijn, D., & Lambregts, B. 2004) (Dienst Stedelijke Ontwikkeling Den Haag, 2008). In this respect, strict guidelines must be provided that development strategies can be checked against; so that the cultural significance of the area does not get affected negatively. The collaboration between the Eindhoven University of Technology and UNESCO World Heritage Centre has taken a number of historic cities as case study and has provided recommendations on how these cities can develop sustainably, without causing harm to their outstanding universal values (A.R. Pereira Roders & R. van Oers. 2010). These researches provide guidelines for sustainable development of world heritage cities. Regarding the fact that development of heritage properties need to be treated with equal sensitivity regardless of whether they are listed on a heritage register or not (Wilson et al. 2014), similar researches on valuable properties that are not world heritage contribute to the body of knowledge in this field.

This thesis aims to assess the cultural significance of Mariahoeve through the application of Cultural Value Survey Method\(^4\). The cultural values and their representative attributes that make this area eminent, are distinguished. Same assessment is carried out on a strip of Z-flats; a residential complex located at the edge of the neighborhood that is of municipal value. One third of the building blocks of this strip has been demolished and then rebuilt in 2008, another third has been renovated in 2015, and the rest are still in their original condition. The impact of these interventions on the architectural values of the case study was assessed and compared. ICOMOS guidance on heritage

\(^2\) The Hague, the Netherlands

\(^3\) “Kiezen voor karakter, Visie erfgoed en ruimte” a publication of Cultural Heritage Agency of the Netherlands (Rijkdienst voor Cultureel Erfgoed; RCE), 2011

\(^4\) The Cultural Value Survey Method was proposed by A.P. Roders PhD in her doctoral thesis ‘Re-Architecture: Lifespan Rehabilitation of Built Heritage’ in 2007. This method is furthered developed over years (Tarrafa Silva & Pereira Roders (2012), Speckens et. al (2012))
Impact assessments for cultural world heritage properties\(^5\) provided the framework of this assessment. The encountered insufficiencies of this method are presented as a critical piece in chapter 4. This thesis concludes with providing a guideline for renovating the untouched blocks of Z-flats; renovation which do preserve the architectural values of the property.

1.1 Problem description

Focus of cultural heritage management is slightly shifting from the management of monumental assets to the values and attributes that convey their cultural significance (Tarrafa Silva & Pereira Roders, 2012). In that respect, the Burra charter (ICOMOS 1999) describes a value-based management process in which the “Statement of Significance”, which is the outcome of performing cultural significance assessment, becomes important.

Mariahoeve neighborhood is one of the fifteen areas of national cultural-historical importance selected by the Cultural Heritage Agency of the Netherlands, being constructed in the post-war period. Its design principles are unique in comparison to other post-war constructed areas; the principles which were applied to create a higher quality of living (Meurs, 2005). Division of the neighborhood into six quarters through the system of the main roads, free composition of allotments, and presence of freestanding buildings -of diverse housing typologies- in green spaces, are eminent attributes of Mariahieve (RCE, 2011). However, now after more than fifty years of its construction the neighborhood calls for attention. Housing quality is low; almost 90% of the dwellings, that are mostly apartments, are built before 1970 and are relatively small (WSA, 2005). More serious are the social problems; safety, livability, and the big differences in cultures and life phases of the inhabitants in a small area (Staedion, 2005). Number of people older than 65 years is much higher than the average of The Hague. Average income is lower and unemployment rate is higher. The percentage of social housing is higher than average in the city (WSA, 2005). Investments in the neighborhood are scarce and the value development of the buildings is low (Dienst Stedelijke Ontwikkeling Den Haag, 2008). The existing dwelling stock are being adapted -renewed or renovated- to improve the current situation. The main focus is on attracting several target groups (adolescents, families and elderly) which would raise the social value of the neighborhood (Dienst Stedelijke Ontwikkeling Den Haag, 2008).

In cases of considering any transformation to the neighborhood, preservation of the attributes that represent the cultural values of Mariahoeve must be taken as a starting point; so the urban and architectural cohesion is respected (Valentijn, D., & Lambregts, B. 2004) (Dienst Stedelijke Ontwikkeling Den Haag, 2008). In this respect, strict guidelines must be provided that development strategies can be checked against; so that the cultural significance of the area does not get affected negatively.

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\(^{5}\) A publication of the International Council on Monuments and Sites January 2011
1.2 State-of-the-art

The need for change and development is an undeniable feature of the built environment. Sustainable urban development is defined as being interdisciplinary in Environmental, Economic and Social dimensions (Brundtland, 1987). Historic places make broad contribution to sustainable urban development (Tweed, 2007). The role of built heritage in enhancing the economic growth through urban regeneration is now acknowledged (ODPM, 2004). Built heritage attracts tourists, particularly to established heritage cities, who boost the local and national economy (PICTURE, 2005). Moreover built cultural heritage makes contribution to the social well-being of different groups living within increasingly cosmopolitan towns and cities (Tweed, 2007). Social equity enforces that the current generation preserves the cultural landmarks as a source of education and identity for the next generations (UNIDO, 2005).

Historical buildings across the whole world are considered good examples of sustainability. First, traditional building techniques are inherently sustainable, with their usage of local materials and craftsmanship. Their age and durability proves the point (Godwin, P. J. 2011). Second, historical buildings have inherent characteristics, such as natural ventilation and high thermal mass of the building envelope, that are acknowledged as effective passive sustainable solutions (Curtis, 2010; Buhagiar, 2009). In many cases, it is more energy efficient and profitable to preserve historical buildings than to construct a new building (Wolf et al. 1999) (Webster et al. 2002). Historical buildings can be further adapted to meet sustainable building regulations. They are a finite resource and in their existence there is not only embodied energy and carbon, but the spirit and identity of a country (Godwin, P. J. 2011). Therefore, in case of considering transformations, special attention should be paid to the preservation of their cultural heritage value (Godwin, P. J. 2011; Alev et al. 2014). Selected technical solutions to improve the energy performance should be more suited for the historical houses and landscape.

The collaboration between the Eindhoven University of Technology and UNESCO World Heritage Centre has taken a number of historic cities as case study and has provided recommendations on how these cities can develop sustainably, without causing harm to their outstanding universal values (A.R. Pereira Roders & R. van Oers. 2010). These researches provide guidelines for the stakeholders involved in policy, management, and development of these places so that their current development strategies can be checked against. In their guideline for development of the historic center of Galle, Boxem (2012) determines the present level of authenticity and integrity of the OUV6, as well as the attributes which convey it. They study the effects of development-related threats caused by the evolving needs of the local community on the OUV and evaluate the conservation management. For the stone town of Zanzibar, Voormen (2012) has made use of the Cultural Value Survey Method (Pereira Roders, 2007) to specify the attributes and cultural values. By means of a physical survey, a distinction is made between the attributes coded from the policy documents and the physical attributes which identifies the disparity between the policy documents and the current situation of the property. Speckens (2012) facilitates the conservation management of the city of Willemstad through reflecting the identified cultural values and attributes in the regional regulations. Coding the official documents is the applied method to retrieve the cultural values and their correlated attributes. Similar study is carried out on Port Said that is not a world heritage city (Megahed, 2014).

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6 Outstanding Universal Value
The research aims to outline an approach for exploring the architectural styles of Port Said; present the desire of communities to conserve their built heritage through the community participation and propose the challenges and opportunities for sustainable development.

A recent study by Sunikka-Blank et al. (2016) implies the necessity of a clear guideline for heritage development. They report the results of qualitative interviews with retrofitting owners of traditional or aesthetically pleasing homes in Cambridge, UK. They find homeowners struggling to balance thermal issues against a range of heritage and aesthetic concerns which often interfere with each other. They find that homeowners develop their own logic in working these through, and their aesthetic convictions strongly influence what happens with retrofitting. Such independent decisions by individuals could be a threat for the heritage embodied in the housing stock. Although the development strategies must be set by experts, Wilson et al. (2014) confirms the need for case-by-case methods. They have sought insights about the design process in heritage building adaptive reuse projects in Brisbane, Australia from interviewing experts who have been involved in such projects. This research found that all participants emphasized that a paradigm shift is necessary to evolve from pure preservation to a new 21st century approach that emphasizes contextual innovation. All participants agreed that design methods, techniques and activities have to be context specific and selected based on each project’s characteristics.

Regarding the fact that development of heritage properties need to be treated with equal sensitivity regardless of whether they are listed on a heritage register or not (Wilson et al. 2014), similar researches on valuable properties that are not world heritage contribute to the body of knowledge in this field. This Thesis presents a comparative impact assessment –renovation vs demolition and building new- carried out on a case study whose importance is not more than of national scale.

1.3 Aims and Research Questions

The aim of this thesis is to provide a guideline for renovating a strip of residential Z-shaped blocks of flats that apart from its key role in the urban structure of Mariahoeve, is one of the hundred valuable objects of the city of The Hague. The objective is to make recommendations to avoid or minimize the adverse impacts of renovation on the determined architectural values of the building blocks that are still in their original condition. These recommendations could be generalized to other dwellings in the neighborhood that inherit mutual architectural values and could be put into use by the stakeholders involved in policy, management, and development of Mariahoeve. In this respect, the main research question is defined as follows:

MQ: “How can the Z-flats of Mariahoeve be renovated in such a way that their architectural values are preserved?”

Subsequently it is first essential to determine the answer to the following sub questions:

SQ 1: “What are the attributes that represent the architectural values of the Z-flats?” and on larger scale “What is of national cultural-historical importance in Mariahoeve that has to be preserved and why is it important?”
Therefore a cultural significance assessment will be provided for Mariahoeve neighborhood through distinguishing the cultural values and their representative attributes that make this area exceptional. Same assessment will be carried out for the case study. One third of the studied building blocks are demolished and then rebuilt, another third are renovated, and the rest are still in their original condition. These interventions will be carefully studied to answer the next sub question:

SQ 2: “What is the impact of interventions on the architectural values of the Z-flats and how can they be avoided or minimized?”

Based on the outcomes of these studies, recommendations will be made for further developments.

1.4 Methodology

The project was defined to assess the impact of interventions -renovation or rebuilding- on a case study located in Mariahoeve neighborhood and subsequently find an answer to how the studied dwelling can be adapted in such a way that its architectural values are preserved. In this respect the following stages were carried out:

1.4.1 Selecting the case study

The chosen case study had to be a proper representative of the valued architectural attributes of Mariahoeve, so the proposals to avoid or minimize the adverse impacts of developments on these attributes, can be easily adapted to be applied to other buildings of the neighborhood inheriting the same attributes. In order to achieve this goal a cultural significance assessment was carried out on the scale of the neighborhood. The applied method is explained bellow. A complex of dwellings that embodies the valued architectural attributes was taken as case study. This strip of building blocks is solely inscribed as a valuable object of the city of The Hague. To assess the domain in which the proposals can be generalized dwellings of Mariahoeve were analyzed in terms of their typology and age (figure 2, 3). Not only the selected case study inherits the valued architectural attributes of the neighborhood, but also it is of the most repeated typology of dwellings in Mariahoeve and it is built in the year that most construction has taken place in the neighborhood.

1.4.2 Cultural significance assessment

Cultural significance assessment was carried out, both on the scale of neighborhood and case study, by the application of significance survey. The central question in such assessments -what is heritage and why- was answered by coding the most relevant documents that describe Mariahoeve\(^\text{7}\). These documents are as follows:

\(^7\) Text coding was done in collaboration with L. Hermans. Results and analysis can be found in: http://alexandria.tue.nl/extra2/afstversl/bwk/Hermans_LMC_2015.pdf
The cultural values (answers to the “Why” question) and their representative attributes (answers to the “What” question) were identified in each document. Length of text and number of specified attributes that represent cultural values was compared between documents and illustrated in bar chart. It was then determined whether the identified attribute is tangible or intangible. Ratio of tangible attributes to the intangible attributes of the documents was also compared and illustrated in bar chart.

The determined cultural values were classified in eight categories: social, economic, political, historic, aesthetical, scientific, age, and ecological. Percentages of each category of values per document were compared and depicted. Concerning all documents, a number of attributes are specified to whom the ascribed value is not clearly mentioned in the text. These values are presented as “assumed values” besides the explicitly mentioned “real values”. The ratio of the number of assumed values to the total number of values specified in each text was provided by bar chart. Comparison was also made between the number of assumed and real values of each document separately.

The identified attributes were analyzed and classified in defined categories and subcategories according to their notion and frequency. Variations of their ascribed values and frequency were depicted.

Recommendations were subsequently made to preserve the highly valued attributes.

1.4.3 Impact assessment

ICOMOS guidance on heritage Impact assessments for cultural world heritage properties provided the framework of the impact assessment:

- The attributes which value the studied property were determined
- A statement of condition was provided for the determined attributes
- Impacts of (proposed) changes were specifically studied on the determined attributes

Attributes that represent the architectural values of the Z-flats were determined by carrying out a cultural significance assessment on the property. A statement of condition was provided for these attributes in the original design, after the building blocks were demolished and then rebuilt, and also
after they were renovated through photographic analysis. The extent, to which each identified attribute had changed during each of the two development phases, was provided in percentage. It was then determined whether this intervention had adverse or beneficial effect on the architectural value the attribute represents.

As the case study is not a WH\(^8\) property, the scales provided by ICOMOS guidance for assessing the value of the heritage asset and the magnitude of change, are not literally applicable (Appendix 1). Even if the case study was a WH property, the magnitude of change could not be reliably defined by the guideline. The provided scales for the magnitude of change are not in terms of percentage. The significance of the impact, that is a function of the importance of the attribute and the magnitude of change, cannot subsequently be rigorously determined. The proposals of this thesis to mitigate these insufficiencies are provided in chapter 4.

Architects who have been involved in the first\(^9\) and second\(^10\) phase of development were separately interviewed (Appendix 2). Discussions mainly consider the non-visual impacts of development: social, environmental, and economic. ICOMOS guidance states that these impacts have to be considered for their relevance to the HIA. However, it is not made clear how to balance the beneficial social/environmental/economic impacts of the change against its adverse heritage impact (chapter 4).

Based on the outcome of these analyses, recommendations were made to avoid or minimize the adverse impacts of renovation on the determined architectural values of the building blocks that are still in their original condition.

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8 World Heritage

9 Locus architecten

10 CHNL architecten & adviseurs
1.5 Introduction to Mariahoeve neighborhood

Mariahoeve neighborhood, situated in the northeast side of the city of The Hague, is founded in the 1960s. The neighborhood was designed for 25,700 inhabitants in 6900 dwellings (Gemeente Den Haag, 2014). Its master plan, designed by F. van der Sluijs, was influenced by Scandinavian housing principles: structured neighborhoods with clear boundaries and cores, variation of housing types on neighborhood level, application of high-rise buildings to win space on ground level, free composition of volumes in green areas, high quality of furnishing and finishing, and harmony of architecture and nature (Meurs, 2005). All these principles are applied in the design and realization of the Mariahoeve. The neighborhood is divided into six “quarters”, surrounded by the main roads. Every quarter has the same structure with the least possible streets, closed borders with flats of four or five floors on the north side and low rise buildings on the south side. The core area is as green as possible and has schools, shops, public buildings and three residential towers of twelve floors.

The aim of the design was to create a higher quality of living in comparison to other neighborhoods built in the post-war period (Meurs, 2005). Mariahoeve is still recognized for its green spaces, peace, and security. However, now after more than fifty years of its construction the neighborhood calls for attention. Housing quality is low; almost 90% of the dwellings, that are mostly apartments, are built before 1970 and are relatively small (WSA, 2005) (Figure 2, 3). More serious are the social problems; safety, livability, and the big differences in cultures and life phases of the inhabitants in a small area (Staedion, 2005). Number of people older than 65 years is much higher than the average of The Hague. Average income is lower and unemployment rate is higher. The percentage of social housing is higher than average in the city (WSA, 2005). Investments in the neighborhood are scarce and the value development of the buildings is low (Dienst Stedelijke Ontwikkeling Den Haag, 2008).

The city of The Hague wants to grow; its neighborhoods will develop subsequently. To provide a development strategy for Mariahoeve it is crucial to know what is vital for a high quality future of the neighborhood (Dienst Stedelijke Ontwikkeling Den Haag, 2008). Interventions have to maintain and enhance the identity of Mariahoeve and meanwhile provide space for development and renewal. On the urban scale the characteristics of the neighborhood should be a starting point for renewal and the structural coherence should be maintained (Dienst Stedelijke Ontwikkeling Den Haag, 2008). The current dwelling stock has to be adapted and renewed and renovation has to be focused on attracting several target groups (adolescents, families and elderly) which would raise the social value of the neighborhood.
Figure 1: Borders of Mariahoeve, The Hague. Source: Historisch ruimtelijk onderzoek (Meurs, 2005)

Figure 2: Typology distribution of buildings in Mariahoeve, Gemeente DenHaag 2013

Figure 3: Number of yearly construction of “portiekwoningen” in Mariahoeve, Gemeente DenHaag 2013
Cultural significance assessment of Mariahoeve

Cultural significance assessment was carried out, both on the scale of neighborhood and case study, by the application of the significance survey. The central question in such assessments -what is heritage and why- was answered by coding the most relevant documents that describe Mariahoeve. These documents are as follows:

- Document 2: Architectuurgids wederopbouw den Haag 1940-1965 (Galema, 2013)
- Document 4: Historisch ruimtelijk onderzoek (Steenhuis stedenbouw/landschap| Urban Fabrik) (Meurs, 2005)

In the first document, position together with spatial and urban design of Mariahoeve are analyzed; main spatial structure is described as well as spatial bottlenecks and improvements, urban and cultural-historical valuations, and demographic and functional developments. The second is a book that introduces one hundred objects spanning the entire city of The Hague, which are above the average of cultural-historical value. This book briefly introduces Mariahoeve; in which five of the hundred valuable objects are located. The case study of this thesis is among them. The third is a book written about the post-war heritage in whole the Netherlands within a short chapter is about Mariahoeve. The fourth document analyzes the spatial structure of the neighborhood in text and maps as well as making a field characterization of the neighborhood based on cultural and historical background. This research has mapped out the spatial carriers and valuable elements without having a point of view in advance on possible interventions. In addition, it has documented the remarkable history of the district.

Length of text and number of specified attributes that represent cultural values differ dramatically from one coded document to another (Figure 1). This dramatic difference is mainly because Document 1 and Document 4 are wholly describing Mariahoeve, whereas only short chapters of Document 2 and Document 3 are written about the neighborhood. Ratio of the number of attributes to the number of words per document varies from 3% for Document 1 and Document 3 to 6% for Document 2 and 7% for Document 4 (Figure 2). Ratio of tangible attributes to the intangible attributes is considerably higher in Document 2 and Document 3 compared to Document 1 and Document 4 (Figure 2).
**Figure 1:** Comparison of the number of attributes to the number of words of each document

**Figure 2:** Comparison of the ratio of number of attributes to number of words per document & frequency of tangible and intangible attributes
Figure 3 depicts the cultural values that specified attributes represent. As the number of specified attributes is higher in Document 1 and Document 4 comparing to Document 2 and Document 3, the number of correlated cultural values is also higher. Concerning all documents, a number of attributes are specified to whom the ascribed value is not clearly mentioned in the text. These values are presented as assumptions. The ratio of the number of assumed values to the total number of values specified in each text varies from approx. 40% for Document 4, 50% for Document 1, to 60% for Document 3 and 100% for Document 2 (Figure 3).

![Bar chart showing comparison of real to assumed values for each document](image)

**Figure 3: Comparison of the number of real to the number of assumed values of each document**

### 2.1 Cultural values classification

For each coded document, real and assumed values ascribed to the specified attributes are classified into eight categories: Social, Economic, political, historic, aesthetical, scientific, age, and ecological. Instances for these categories are stated in appendix 3. Figure 4 depicts the comparison between the percentages of each category of real values per document.
There are dramatic differences among the frequency of each category of value per document. The most considerable difference is related to the historic value. Its frequency varies from 5% of all the real values specified in Document 4 to more than 30% in Document 2. For all other categories of values there is also variation in their frequency per document but the percentages are relatively closer to each other. The least difference among the frequency of a category of value per document is related to the age value; it has almost no share of the real cultural values in all documents. Figure 4 also depicts that the highest number of real values are in Aesthetical category. Before, by small margin, are Scientific, Economic, and Social categories with almost the same number of real values. Number of real Social and Historic values is almost half of the number of Aesthetical values. Political and Age category have the smallest share of real values with not more than 5% of each document and almost zero respectively.

2.1.1 Discussion

The applied coding method specifies the values that are precisely mentioned in the text. Therefore the specification of values is highly dependent on the statements of the coded text. There are dramatic differences among the percentages of a certain category of value derived from each coded document; historic category is the most eye-catching instance of this case. Considering this fact, there is a high probability that a number of values are assessed subjectively and are disregarded as a result of personal judgment of the author, who determines what to state valuable and what not to; or simply due to their implicit, or ambiguous, style of writing.

2.1.2 Recommendation

Concerning the risk of subjective assessment, it is strongly recommended to apply the text coding method on more than a single document. This would reveal the inconsistencies so they can be dealt with more caution. If not more than one document is available for a case study, it is recommended to have one professionally written. In cases that a certain category of value is assessed so low in one document in comparison to the others, it is recommended to specify the assumed values of that category in that document. If the number of assumed values is relatively high, the matter can then
be related to the author’s implicit way of writing. This fact then has to be taken into consideration for all the values specified in that document. But if the assumed values are also relatively low, it would then be about their professional judgement on that certain category of value. In such case, it is recommended to consider the highest assessed value among all the coded documents.

### 2.2 Real values vs assumed values

Assumed values are the ones that are not explicitly stated in the text but are specified based on personal interpretation. For all the coded documents, assumed values are specified and a comparison is made between their number and the number of real values (Appendix 4, Figures 1-4). Figure 5 depicts a comparison of the total number of real values of each category derived from all four coded documents to the total number of assumed values.

![Figure 5: Comparison between the numbers of real values of each category and the numbers of assumed values](image)

The ratio of the number of assumed values to the number of real values vary from almost 100% related to the Social value to approx. 25% related to the Ecological value. Aesthetical category has the highest number of assumed values. The share of Age category also form the assumed values is zero.

#### 2.2.1 Discussion

The number of assumed values specified per document is an indication of an implicit -or ambiguous- style of writing. The higher is this number, the more critical is the value assessment. If the assessment is merely based on real values, in cases that the ratio of the number of assumed values to the number of real values is high, there is the risk that the values are not assessed properly.
2.2.2 Recommendation

It is crucial for a comprehensive significance assessment to specify the assumed values. In cases that the ratio of the number of assumed values to the number of real values is high, it is recommended to search for the attributes ascribed to the assumed values, in another document and check whether they correlate a real value.

2.3 Classification of Attributes

Attributes that represent cultural values are specified in all coded documents. For each attribute, the quotation from the text that it is derived from, being tangible or intangible, and the category of value it represents is specified. The most frequent attributes are: Urban structure and composition, Architecture, Green spaces and Facilities (Appendix 5). Most specified attributes are either among these main categories or their sub categories.

2.3.1 Urban structure and composition

Design of the neighborhood and its underlying concept is widely appreciated. It is so unique for its time of construction and despite most neighborhoods of the 60s, has not undergone impoverishment. The clear urban structure of Mariahoeve, both at neighborhood and quarter level, is exceptional. It is based on a spatial plan and has urban ordering principles.

2.3.1.1 Allotments\textsuperscript{11}

Allotments are frequently mentioned in all the coded documents. Their variety is highly considered. The fact that the allotment typologies completely differ from the traditions, highly contributes to cultural and historical significance of the neighborhood.

2.3.1.2 Edges and filling composition

Presence of clear edges and a green filling both around the neighborhood as a whole and around each of its quarters, is highly influential on spatial and urban quality of the neighborhood. Their composition has to be maintained.

**Striking building along the edges**

Spatial image of Mariahoeve is largely determined by the developments along the edges of the neighborhood. Tall buildings in strip plots are designed differently in terms of height and location to respond to the surrounding environment and highlight the open landscape. These are one of the features that make Mariahoeve unique in the Netherlands.

\textsuperscript{11} verkaveling
2.3.1.3 Residential quarters

The neighborhood is structured in six residential quarters. Because of the coherence and spatial quality of the entire composition, four uniform residential quarters are considered as special urban compositions. These quarters consist of closed and transparent buildings on the edges, a central green field as a filling which contains three towers and buildings for special functions, combined with a wide variety of allotment typologies and a composition of different building heights.

2.3.1.4 Height variation

It is frequently made use of differences in height of building blocks. Creating variation in construction volumes reinforces the urban composition of the uniform neighborhoods.

Figure 6: clear edges distinguish the six residential quarters
Source: Historisch ruimtelijk onderzoek (Meurs, 2005)

2.3.2 Architecture

Mariahoeve is in its architectural appearance a typical sixties neighborhood where rationalizing and standardizing the construction methods has strongly determined the look of the building blocks. However, its architecture has relatively achieved a high aesthetical quality in housing design for the middle class. More attention was paid to the design of the building blocks, despite the impoverishing circumstances the architecture of the sixties went through. Within certain margins, architects were free in their design, so that in spite of uniform floor plans, façades are not monotone. Implementation of rich details, both in private and social housing, is a feature of Mariahoeve’s architecture.
2.3.2.1 Construction system

The greatest significance of the architecture of Mariahoeve is the application of pre-fabricated system and other modern construction techniques\(^{12}\). The application of such methods has been due to a need for efficiency; realizing the largest possible number of houses in the shortage of time, materials, manpower and budget. These new construction methods have had great influence on building façades.

2.3.2.2 Façades

Due to the application of pre-fabricated building system, building façades are no longer bearing walls and only have a sealing function. These façades are thinner in width than the façades that are built with traditional construction methods. As they no longer carry the building load it was possible to create large open surfaces on the façades and enhance the interaction between inside and outside the dwelling; these facades are more transparent.

Architectural articulation

The newly applied construction system plays a role in architectural articulation. Façades are constructed from grids of horizontal floor slabs and vertical separation walls or columns. The space between them is filled in different ways; usually a combination of wooden doors, brick parapets and concrete elements are used.

2.3.3 Green areas

Extensive green areas, consisting of green highways, a central park, common and private gardens, and green borders around the neighborhoods are considered in the design of Mariahoeve. Green areas along the edges of the neighborhood mainly serve as ecological corridors between Mariahoeve and the surrounding environment. At the level of the city, these areas have articulating function in spatial terms.

2.3.4 Facilities

Recreation areas such as sport complexes and shopping mall, and facilities such as schools, kindergarten, churches, and elderly care, are considered in the urban plan of the area.

\(^{12}\) MUVI system
Figure 7 depicts that the most valued attribute is the striking edges of Mariahoeve. Before it, with small margins, are the allotments, edges and filling composition, and the facilities. Scientific value has the most ascribed attributes. Before that is aesthetical value. Age value has no attributes ascribed to it and the social value has the smallest share of attributes. Figure 7 also shows that each attributes is ascribed to various values. A juxtaposition of scientific, aesthetical, and historic values is frequent.

2.3.5 Discussion

The appreciation of Mariahoeve is essentially due to its urban structure and spatial plan which is based on the concept of residential quarters, with clear edges and green, park-like centers. Public spaces and landscapes are thoughtfully designed. The implementation of high quality of housing, with variation in building heights and typologies, is exceptional. The distinctive design system, the striking buildings along the edges of the neighborhood and the almost total absence of traditional building blocks and allotments, qualifies Mariahoeve as a unique post-war urban phenomenon in the Netherlands and of great cultural and historical significance (Valentijn, D., & Lambregts, B. 2004).

Cultural Heritage Agency of the Netherlands has selected thirty areas built in the period of 1940-1965, that are of national cultural-historical importance. These areas are assessed on the quality of

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13 Rijksdienst voor het Cultureel Erfgoed

14 "Kiezen voor karakter, Visie erfgoed en ruimte" a publication of Cultural Heritage Agency of the Netherlands (Rijksdienst voor Cultureel Erfgoed; RCE), 2011
the original plan or design, design principles, the current urban integrity and rarity, the exemplary role of their design and execution, the (inter)national importance, and their current cultural-historical value. A distinction is made in three areas: the actual reconstructed city centers/areas (reconstruction\(^{15}\) of war damage), post-war housing estates, and rural area (reconstruction after war, land consolidation and new country). Mariahoeve is selected as one of the fifteen post-war housing states.

Way before this selection, in August 2001, Mariahoeve was proposed under the monuments regulation\(^{16}\) of The Hague to be appointed to municipal conservation area.\(^{17}\) This is based on the unique position Mariahoeve occupies in the early post-war Dutch urbanism due to the high quality of the buildings, housing estates and public spaces.

Designation implies that in the management and transformation of a neighborhood, valuable characteristics are taken as a starting point; so the urban and architectural cohesion is respected (Dienst Stedelijke Ontwikkeling Den Haag, 2008). The range of interventions in valuable urban and architectural ensembles is limited by the designation, since after all the aforementioned cohesion is central. The purpose of the designation is not freezing the current situation but is to take care of maintaining the urban and architectural coherence (Valentijn, D., & Lambregts, B. 2004).

### 2.3.6 Recommendation

Mariahoeve is valued as one whole. Its appreciated ordering principles have structured the quarters same as each other and same as their whole composition. Urban and architectural coherence has made the neighborhood be perceived as a clear urban unit. Mariahoeve is a uniquely designed residential area that is still reasonably intact and authentic (Valentijn, D., & Lambregts, B. 2004). In case of considering transformations to the neighborhood, it is crucial that they be in harmony with the context. To be as so, the valued characteristics have to be maintained; the composition of clear edges and green centers, variation in building heights and typologies, free composition of allotments, the striking buildings along the edges, and transparency and the architectural articulation of the building façades.

In case of buildings that are individually designated as municipal valuable objects\(^{18}\), apart from their value as being a component of a neighborhood of national importance, extra caution is called for when considering interventions.

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\(^{15}\) Herstel

\(^{16}\) Monumentenverordening

\(^{17}\) “Beschermingsbeleid voor de Wederopbouw (1945-1965)” An investigation carried out into the cultural and historical appreciation of the reconstruction period

\(^{18}\) Architectuurgids wederopbouw Den Haag 1940-1965
2.4 Introduction to the case study

“Inventarisatie Wederopbouwarchitectuur (1945-1970) Den Haag” introduces one hundred objects spanning the entire city of The Hague, which are above the average of cultural-historical value. When selecting these objects, the architectural quality has been the main criterion (Valentijn, D., & Lambregts, B. 2004). Aspects that determine the architectural quality include: Special structures, Use of special materials, Special decorations, Special programmatic structure, Special spatial structure, and Special urban design. There is often a combination of different aspects. In addition, a building can also be important in the socio-cultural history of the city or an important work of an architect. The valuation has also considered the integrity of the object and its urban importance. Three buildings and two residential complexes located in Mariahoeve are on this list.

Cultural significance assessment carried out on Mariahoeve revealed the significant role the striking buildings along the edges play in determining the spatial image of the neighborhood. Among these buildings are a three bent-shaped blocks of flats located on the north and a strip of Z-shaped blocks of flats located on the south of Mariahoeve. These residential complexes are inscribed as two of the hundred valuable objects of the city of The Hague. As these two strips of flats are considered as the most striking buildings along the edges of the neighborhood, and these edges are a highly valued feature of the unique urban structure of Mariahoeve, it is concluded that the two residential complexes are the most valued building blocks of Mariahoeve.

2.4.1 The strip of Z-flats

The Z-flats are located on the south side of Mariahoeve; projected into a long strip of Z-shaped, interlocking allotments. The residential complex is designed in 450 homes by architect C. Pet. He began his career at the municipal house service of The Hague; where he gained experience in prefabricated construction systems. In Mariahoeve, he further elaborated on the MUWI-system.

The Z-flats are realized in identical three and four story height stripes. Spaces in between the blocks are arranged as common gardens. Due to the interlocking layout of the blocks, these gardens have a private state. In the architecture of the blocks rhythm and repetition form an important motif. The concrete floor slabs provide horizontal articulation. In between wooden doors, with embedded clear and frosted glass, are installed in combination with an etherniet panel. These panels are placed on each floor on either side of the living room window and are alternately painted red or blue. Parapet panels of balconies are also staggered. With this rhythmic format, the monotony is somewhat broken.

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19 De geknikte vorm
20 Gemeentelijke woningdienst
21 MUWI system arose in 1951, due to acute shortage of dwellings after WWII and the urgent need for fast and cheap construction. This method enabled more flexibility in floor plans. In this system walls that are made of hollow concrete blocks, are placed on concrete beams. These hollow blocks are then filled with mortar. This method easily adapted to developed construction techniques such as water tight seal, cavity wall, prefabricated building elements, plaster boards, and central heating system.
Figure 8 depicts that the most valued attribute is rhythm and repetition. Its value is mainly aesthetical. Before that are the setting attributes: striking edges and the green areas. These represent ecological value as well as scientific and social values. The applied construction system which has led to transparent façades has just scientific value.

One third of the building blocks of this strip are demolished and then rebuilt in 2008, another third are renovated in 2015, and the rest are still in their original condition. Despite their high importance, preservation of the attributes that represent the architectural values of the Z-flats has not by far been considered by stakeholders involved in development of Mariahoeve. Considering the outcome of cultural significance assessment carried out on this strip of building blocks and the architectural attributes of Mariahoeve this strip represents, it is concluded that transparency, rhythm and repetition, and the urban character are the valued attributes in the architecture of the Z-flats that have to be preserved (appendix 6). The impact of the two phases of development on these attributes was assessed. As the building is a proper representative of the valued architectural attributes of Mariahoeve, recommendations made to avoid or minimize the adverse impacts of developments on these attributes, can be easily adapted to be applied to other buildings of the neighborhood inheriting the same attributes.
Assessing the impact of interventions on the strip of Z-flats

The strip of Z-flats in three states. Source: Google

- Original blocks
- Renovated blocks
- Demolished and rebuilt blocks
Figure 1&2: The original Façade
Figure 5&6: The renovated Façade
3.1 Transparency

The open surface of the original façade is approx. 225m². Clear glass has a share of 83% of the openings (approx. 190m²). The rest is covered with frosted glass (approx. 40m²). The openings are 50% of the whole area of the façade that is approx. 450m². Fragmentation pattern is the same among all the four stories; openings have the same form and dimensions (Figure 7). Glass reflection enables having the view from outside to inside the building (Figure 10).

In the first phase of intervention, the open surface declines to 29% of the whole façade area (approx. 110m² to 375m²). 15% of the glasses (approx. 15m²) are laminated and 15% (approx. 15m²) are hidden behind the balcony fence. Fragmentation pattern varies from one floor to another. The ground floor has almost 50% more open surfaces in comparison to the first and second floor (Figure 8). Reflection of the glass is higher than the original façade and decreases the view from outside to inside the dwelling (Figure 10).

In the second phase of intervention, the original main structure remains untouched; as so are the dimensions of the openings. The open surface is 50% of the whole area of the façade. Frosted glasses of the original façade are replaced with dark grey isolated panels. This is also applied to the original clear glasses of the basement (Figure 9). Reflection of the glass is considerably higher than the original façade and almost blocks the view from outside to inside the dwelling (Figure 10).

The original façade is valued because the application of modern construction method has made it possible to create large open surfaces. This façade is no more a bearing wall and the openings are more than 50% of the whole façade surface area. This openness is almost completely lost on the basement level in the first phase of intervention. The first floor has almost the same openness as the original design but the open surface area of the second and third floor is 45% lost. The open surface area remains as the original in the second phase of intervention.

The open surface area and the visibility, from inside the building to outside and vice versa, are the indicating factors of the transparency of the façade. Therefore, it is recommended not to reduce the open surface area of the façade in case of renovating the remaining original blocks of flats. It is also recommended to use a type of glass with the same reflecting effect as the original glasses.

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22 MUVI system
<table>
<thead>
<tr>
<th>Attribute</th>
<th>Original design</th>
<th>First phase of intervention</th>
<th>Second phase of intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transparency</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open surface</td>
<td>Basement 43%</td>
<td>03%</td>
<td>43%</td>
</tr>
<tr>
<td></td>
<td>1st floor 55%</td>
<td>58%</td>
<td>55%</td>
</tr>
<tr>
<td></td>
<td>2nd floor 55%</td>
<td>30%</td>
<td>55%</td>
</tr>
<tr>
<td></td>
<td>3rd floor 55%</td>
<td>30%</td>
<td>55%</td>
</tr>
<tr>
<td></td>
<td>4th floor 55%</td>
<td>__</td>
<td>55%</td>
</tr>
<tr>
<td>Type of glass</td>
<td>Basement 100% Clear</td>
<td>__</td>
<td>100% Isolated panel</td>
</tr>
<tr>
<td></td>
<td>1st floor 82% Clear 18% Frosted</td>
<td>90% Clear 10% laminated</td>
<td>82% Clear 18% Isolated panel</td>
</tr>
<tr>
<td></td>
<td>2nd floor 82% Clear 18% Frosted</td>
<td>81% Clear 19% laminated</td>
<td>82% Clear 18% Isolated panel</td>
</tr>
<tr>
<td></td>
<td>3rd floor 82% Clear 18% Frosted</td>
<td>81% Clear 19% laminated</td>
<td>82% Clear 18% Isolated panel</td>
</tr>
<tr>
<td></td>
<td>4th floor 82% Clear 18% Frosted</td>
<td>__</td>
<td>82% Clear 18% Isolated panel</td>
</tr>
<tr>
<td>Visibility from inside to outside</td>
<td>Basement 100% Visible</td>
<td>__</td>
<td>100% Invisible</td>
</tr>
<tr>
<td></td>
<td>1st floor 82% Visible</td>
<td>100% Visible</td>
<td>82% Visible</td>
</tr>
<tr>
<td></td>
<td>2nd floor 82% Visible</td>
<td>100% Visible</td>
<td>82% Visible</td>
</tr>
<tr>
<td></td>
<td>3rd floor 82% Visible</td>
<td>100% Visible</td>
<td>82% Visible</td>
</tr>
<tr>
<td></td>
<td>4th floor 82% Visible</td>
<td>__</td>
<td>82% Visible</td>
</tr>
<tr>
<td>Visibility from outside to inside</td>
<td>Basement 100% Visible</td>
<td>__</td>
<td>100% Invisible</td>
</tr>
<tr>
<td></td>
<td>1st floor 01% hidden 81% Visible</td>
<td>29% Hidden. Glass reflection decreases the Visibility</td>
<td>01% Hidden. Glass reflection considerably decreases the Visibility</td>
</tr>
<tr>
<td></td>
<td>2nd floor 01% hidden 81% Visible</td>
<td>0% Hidden. Glass reflection decreases the Visibility</td>
<td>01% Hidden. Glass reflection considerably decreases the Visibility</td>
</tr>
<tr>
<td></td>
<td>3rd floor 01% hidden 81% Visible</td>
<td>0% Hidden. Glass reflection decreases the Visibility</td>
<td>01% Hidden. Glass reflection considerably decreases the Visibility</td>
</tr>
<tr>
<td></td>
<td>4th floor 01% hidden 81% Visible</td>
<td>__</td>
<td>01% Hidden. Glass reflection considerably decreases the Visibility</td>
</tr>
</tbody>
</table>

*Table 1: The indicators of transparency in three states*
Figure 7: Open surface of the original façade

Figure 8: Open surface of the rebuilt façade
Figure 9: Open surface of the renovated façade

Figure 10: Glass reflection. From left to right: the original, the rebuilt & the renovated façade
3.2 Rhythm and Repetition

3.2.1 Vertical and Horizontal Articulation

Architecture of the Z-flats is valued for its rhythmic format. A grid of floor slabs and columns provide horizontal and vertical articulation. On the original façade, floor slabs form five horizontal lines. They extend all along the width of the façade and are not even limited to the brick works on the edges. Forty eight columns form twelve vertical lines that extend in the height of the façade. These twelve lines are concentrated in three segments in groups of four. Wooden doors are installed in between them. Panels and window frames are located in the distance between the concentrations of the vertical lines (figure 13). Vertical and horizontal elements are homochromatic; they are painted in light grey color (figure 11).

In the first phase of intervention, the rebuilt blocks of Z-flats are built in two and three stories; that in comparison to the original design in three and four stories, have one floor less. Consequently, four floor slabs could have provided the horizontal articulation; but only two are realized. Despite the original design, these slabs do not break the limitations of the brick works on top and on the edges. Neither the horizontal nor the vertical elements of the grid are realized even to the possibilities of the new design. Vertical elements are limited to seven separating columns that extend from the ground to just the first floor. This means that only one third of the possible vertical elements are realized as these columns could have been extended to the top of the second floor. On the opposite façade -the courtyard façade of the two story blocks- columns are extended to the top of the building (figure 14). Here also a concrete slab is replaced with the massive break work on top of the volume. The original rhythm of the vertical elements -concentration and repetition- is not maintained. The realized columns are not even fully visible as approx. 35% of their height is hidden from sight behind the balcony fence. The color of vertical and horizontal elements is homochromatic; they are all white (figure 11).

In the second phase of intervention the original horizontal and vertical elements are fully kept (figure 15). The only difference is the change of colors. The horizontal lines are painted white which is the only light color of the façade; whereas, the columns are dark grey and are not easily distinguished next to the dark grey window and door frames. Colors provide a hierarchy that makes the vertical elements secondary to the horizontal lines (figure 11).

Figure 11: Horizontal and vertical elements are homochromatic in first & second phase.
From left to right: the original, the rebuilt & the renovated facade

23 Architectuurgids wederopbouw Den Haag 1940-1965
<table>
<thead>
<tr>
<th>Attribute</th>
<th>Original design</th>
<th>First phase of intervention</th>
<th>Second phase of intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rhythm &amp; Repetition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The grid</td>
<td>Horizontal articulation</td>
<td>5 floor slabs</td>
<td>2 floor slabs. 60% lost</td>
</tr>
<tr>
<td></td>
<td>Vertical articulation</td>
<td>48 columns forming 12 main vertical lines in 3 groups of four</td>
<td>7 separating columns. Not fully visible. 90% lost.</td>
</tr>
</tbody>
</table>

*Table 2: The indicators of rhythm & repetition in three states*

*Figure 12: Grid of horizontal & vertical articulation on the courtyard façade of the two-story blocks*
Figure 13: Grid of horizontal & vertical articulation on the original facade

Figure 14: Grid of horizontal & vertical articulation on the rebuilt facade
Figure 15: Grid of horizontal & vertical articulation on the renovated facade
3.2.2 Window and door frames

A surface of approx. 65m\(^2\) is covered with window and door frames. This is approx. 15% of the façade surface area. All these frames are made from wood and are all colored white in the original façade. Same pattern is repeated in all four stories.

It is made use of the same material of the same color in the first phase of intervention. The white wooden frames cover an area of approx. 30m\(^2\) that is almost 8% of the façade surface area. The frames do not play any role in the repetition; their pattern varies from one floor to another.

The design and material of the frames remains untouched in the second phase of intervention. Wooden frames form approx. 15% of the façade surface area. Here the color of the frames has changed. Same as the columns, the frames are painted in dark grey colors so that the white floor slabs become more imposing\(^{24}\).

Z-flats description text as one of the hundred valuable objects of The Hague values window and door frames primarily for their wood material and then for their repeating pattern\(^{25}\). Therefore, a change in their color is not considered effective on the architectural value this façade element conveys.

Use of plastic frames instead of wooden frames is considered for the third phase of intervention\(^{24}\). In this phase the blocks of Z-flats that are still in their original condition will be renovated. This decision is made because the maintenance costs of plastic frames are assumed lower. As the wood material of the frames is valued in the description texts and their improper replacement with plastic frames is considered as the greatest threat to the architectural value of the dwellings of Mariahoeve\(^{26}\), it is strongly recommended to put wood material in use also in the last phase of renovation.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Original design</th>
<th>First phase of intervention</th>
<th>Second phase of intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rhythm &amp; Repetition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frames</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>Wood</td>
<td>Unchanged</td>
<td>Unchanged</td>
</tr>
<tr>
<td>Repeating pattern</td>
<td>Same pattern is repeated in all four floors</td>
<td>100% lost. Each floor vary from the other</td>
<td>Unchanged. Same pattern is repeated in all four floors</td>
</tr>
</tbody>
</table>

Table 3: The indicators of rhythm & repetition in three states

\(^{24}\) CHNL architecten & adviseurs

\(^{25}\) Architectuurgids wederopbouw Den Haag 1940-1965

\(^{26}\) Mariahoeve, Toonbeeld van de Ongedeelde Stad
Figure 16: Window & door frames are repeated on the original facade

Figure 17: Window & door frames pattern vary from one floor to another on the rebuilt facade
Figure 18: Window & door frames are repeated on the renovated facade
3.2.3 Panels and balcony parapets

Besides the horizontal and vertical elements that embody the architectural articulation, panels and balcony parapets are the elements of the rhythm that breaks the monotony of the façade. Panels are repeated on each floor on either side of the living room window so that they are not vertically aligned. They are clustered in four segments; in the borders of the volume and in the space in between the vertical articulations. Their color shifts between red and blue on each floor (figure 19).

In the first phase of intervention, it is not made use of panels. The space between the windows is covered with brick work. Although the arrangement of windows and consequently the space in between them is inspired by the original design, in particular the arrangement of the brick work on the first floor, the original rhythm is completely changed. The brick work is completely dispersed and constant in the width of the facade. Brick works do not even play a role in the repetition as their pattern varies from one floor to another. Also there is no variation in the brick color (figure 20).

The dimension and location of the panels on the façade of the second phase of intervention do not differ from the original design (figure 21). The only difference is in their color. The primary original colors are replaced with natural colors of wood. Here the color of panels does not differ from one floor to another, but vary from one building block to the other block (figure 22).

The architect of the first phase argues that the essence of paneling is taken from the original design but not literally; because their design was not supposed to be a copy of the original. The matter is argued from a social perspective by the architect of the second phase. They state that the change of primary colors to different colors of wood is due to the wishes of the inhabitants. For the last phase of renovating the Z-flats, it is recommended to carry out a survey from the inhabitants to have an exact over view from their pinion about the colors of the panels. Even though it turns out that the original primary colors are no more welcome, it is strongly recommended to make use of two different colors of panels on each façade.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Original design</th>
<th>First phase of intervention</th>
<th>Second phase of intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panels</td>
<td>Alternate colors</td>
<td>Blue and red on every other floor</td>
<td>100% lost. brick works do not vary in color</td>
</tr>
<tr>
<td></td>
<td>Repeated on each floor on either side of the living room window. Clustered in 4 segments</td>
<td>100% lost. Pattern varies from one floor to another. Constant &amp; dispersed</td>
<td>Unchanged.</td>
</tr>
</tbody>
</table>

Table 4: The indicators of rhythm & repetition in three states

27 Locus Architecten
Figure 19: Rhythmic & repetitive pattern of panels on the original facade

Figure 20: Constant & varying pattern of panels on the rebuilt facade
Figure 21: Rhythmic & repetitive pattern of panels on the renovated façade. 
The alternate colors are missing.
Figure 22: Wood color of panels varies from one block to another after renovation.

Source: CHNL Architecten & Adviseurs
Figure 23: Parapet panels of balconies are staggered on the original facade

Figure 24: Balcony parapets form a solid wall on the rebuilt facade
Figure 25: Parapet panels of balconies are staggered on the renovated
3.3 Urban character

In the documents that analyze the whole Mariahoeve, the Z-shape blocks of flats are most considered for the role they play in the urban structure and spatial image of the neighborhood. Being projected into a Z shape is highly considered together with the open spaces that are formed in between the blocks. This composition is maintained both after demolition and then rebuilding the building blocks, as well as after the renovation; however the rebuilt building blocks differ in two points. The original building blocks are formed by three and four-story strips; but they are rebuilt in two and three-story strips. The other point of difference is the possession of the courtyards. Courtyards are accessible to public in the original design; however none of the four courtyards of the rebuilt blocks are open to public. Public access is prohibited by high obstacles in three of them and the forth is filled with water (Figures 26, 27, 28).

*Figure 26&27: Public access to the courtyards is prohibited by fences (up) and in a softer way by bushes (bottom)*
Not only these courtyards are not open to public, but also two of the four have access limitations even for the inhabitants. One is fully filled with water that makes it inaccessible for all. The land of the other courtyard is divided into small private gardens for each house (Figure 29).

3.3.1 Discussion and recommendation

The rebuilt blocks of Z-flats do not only differ from the original design in visual terms; their design concept is totally different. According to the words of their architect\(^{28}\), the rebuilding project was a part of municipality development program for the neighborhood\(^ {29}\). They argue that to improve the area diversification in the housing offer was a necessity. The project was defined by the municipality to design individual houses for sale instead of apartments for rent; so it would be attractive for

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\(^{28}\) Locus architecten

\(^{29}\) Appendix 2
people of high social class. The private state of the courtyards is in line with the new design concept. Architects argue that the landscape design of the courtyards is a compromise between the will of individual clients, who wished for a private garden, and the openness architects appreciated.

In the renovation building blocks there is no such difference and the dwellings are social housing apartments for rent. As the green areas along the edges of the neighborhood mainly serve as ecological corridors between Mariahoeve and the surrounding environment, it is recommended that the original public accessibility is maintained.
3.4 Discussion; Architects’ point of view

3.4.1 Window frames

According to the architects’ statements who renovated the second phase of the project, the original window frames had caused many problems. As the owner company had considered re-building the whole area, buildings were not maintained for almost ten years. Lack of insulation and water infiltration are mentioned as strong objections to the original window frames. The front façade is affected the most by the weather. The original single glazing window frames are replaced with double glazing. Architects argue that the original energy label of these buildings had been G and after renovation it has risen to B and even A in some flats. They argue that this is the consequence of replacing the single glazing frames with double glazing together with insulation.

Although the new window frames are made of wood - just as the original ones-, replacing plastic window frames has also been considered by the architects. They argue that this replacement is not realized because of budget scarcity. Wooden frames were chosen because they cost less at the moment of purchase; despite the fact that these frames would not stay cheap during the building’s life span because of their maintaining costs. In the 90s the trend went towards using aluminum or plastic frames because their maintenance costs were lower but now people have come to realize that it is very hard to manage if anything goes wrong with these frames and it is far too easy to repair the wooden frames. Another stated problem for plastic frames is that these frames are available in a limited number of colors (only around ten different colors). Also if the plastic frames are in large dimensions it becomes necessary to install steel elements inside the frame which also requires a layer of insulation and these raise the costs. The plastic frames are assumed cheaper because they do not have to be painted after 5 or 10 years. Although this dimension of frames makes use of steel elements inevitable, there will be more plastic used in the next phase of renovation because of their lower long-term costs.

“The greatest danger to this architecture (architecture where modern construction systems are applied) is improper replacement, in particular the wooden or steel frames with gross plastic ones or taking wall insulation in the view of the brick outer walls.”³⁰ Architects argue that the strong objection to the plastic frames is fading away as now it has become the matter of the quality of the plastic frames; now there are plastic frames which are hardly recognizable from wood.

An argued advantage of the plastic frames is that they are found in the same dimensions as standard wooden frames, while modern wooden structures with stronger building codes have become bigger in size and have far less fine details. It is worth noting that although wooden frames appeal more to architectural taste, particularly in terms of their fine appearance, plastic ones are slightly more energy efficient.

³⁰ Mariahoeve, toonbeeld van de ongedeelde stad. Een toetsingskader voor ontwikkelingen gebaseerd op stedenbouwkundig, cultuurhistorisch en demografisch functioneel onderzoek (Valentijn & Lambregts, 2004).
3.4.2 Insulation

The whole roof, the ceiling on the cellar, and the outer walls are insulated. Architects argue that insulating the buildings has been a challenge. The critical point is insulating the concrete floor which continues from outside to inside. There would be the risk of condensation in the concrete structure if over insulation was considered; cold outside vs hot inside. At first, a proposal for renovation was brought forth which is based on addition of a second layer to the façade. The underlying cause for this proposal is to overcome the above mentioned problem. Moving the façade to the outside line of the concrete would make it possible to maximize the insulation.

The big advantage of leaving the concrete as it is, is that the architecture would be preserved. As a result, the current level of building insulation is a balance between the level of energy efficiency and preserving the valuable attributes of the Z-flats. Moving the façade to the edge of the concrete floor slabs on the other hand results in winning space inside the flats. This proposal also includes elevator. But the weight of beneficial impacts of leaving the façade as it is, is evaluated more than moving it forward.

3.4.3 New color schema

Execution of the new color scheme has been a challenge for the architects. They have proposed more quiet and present-day colors. There have been discussions about the new colors with Welstand\textsuperscript{31}, who preferred to use the original colors or at least something similar. The idea to use the primary colors -not necessarily the original ones- had been discussed. The architects’ argument is that the application of the primary colors creates a typical 60s façade, and that is quite the contrary to the development’s objective. They argue that the whole renovation process is meant to “upgrade” the neighborhood. The architects state that they -as professionals- do appreciate the 60s style, but the important matter here is that the inhabitants do not take it the same way. Architects argue that a large number of social housings in the whole Netherlands use the primary colors and they are so easy to recognize by that. Vestia\textsuperscript{32} itself and specially the inhabitants really did want it to change. Two proposals, one in primary colors and the other in colors of wood, were offered to a commission of inhabitants. Four different types of wood were presented to the inhabitants as scheme and also proposals with primary colors in different shades of green, yellow, and blue. Although architects argue that the primary colors –even very original red and blue combination-suited their architectural appeal, inhabitants did not want the typical social housing appearance anymore and they chose the wooden panels. As a result the decision was made to give the whole building a 2015 facelift.

Architects have carefully studied the new colors. They describe the original façade whole white with no orientations. They see much of horizontal lining in architecture -the floor slabs which come through the façade- that are used as an order to think of a new color scheme. Next to the panels, which are apparent the most, the floor slabs are kept in white and all other in between are in dark

\textsuperscript{31} The Commission for Monuments and Welstand delivers opinions, monument advices and placement recommendations to the Amsterdam city council (and central city districts). The main task of the Commission for Welstand and Monuments is to ensure the quality of the built and the yet to be developed environment.

\textsuperscript{32} The housing corporation who owns the renovated building blocks
grey, even the columns. Windows were kept in white first but the building did not have the expected horizontal accent. So there are the very strong horizontal lines and the whole inner façade is secondary to that. Architects state that this brings a whole new architecture to the building. In the architects opinion it even makes the architecture stronger through highlighting the typical elements of the 60s. The buildings of that period have a layered structure. Z-flats front façades are all in white and this new color scheme has made these layers even more visible. The new color scheme also makes it possible to apply the wooden frames because they would then fit in the whole concept of having the very strong horizontal lines and that everything in between has to be modest and the wood colors are more modest in their nature than the primary colors.

It is argued that the new color scheme along with the addition of new glass fences of the balconies with their perforated steel plates has given a far more modern impression to the buildings than what they used to have. It is also stated that the change of colors has created an identity for each block of flats as the color of panels vary from one block to another. It has to be considered that these buildings are a worthwhile manifest of the social movement of the 50th and 60s. The equality all blocks have in their appearance, which is now interpreted as lack of identity, is influenced by the belief that the least difference between the houses is the best. The new color scheme fades away this historical value.

On the other hand, when it comes to the color of the columns, frames, and the fences of the balconies, it is argued that the new color scheme has strengthened the architecture of the blocks. Floor slabs are taken as the basis of the new color scheme. It is argued that these elements have to be brought to sight as much as possible as they are not as distinguishable as they should in the original color scheme of the front façade.

3.4.4 Conclusion

According to the words of architects who carried out the second phase of renovation, the owner company (Vestia) had planned to demolish the whole blocks of Z-flats and re-build the area. It was the occurrence of the economic crisis that has saved two third of these buildings otherwise all blocks would have been demolished by today. This fact raises a question that how the value of these buildings was overrode. The remaining original blocks of Z-flats de facto are in risk of being demolished or being renovated improperly. According to the words of the architects “it is all about investment”. The current development trend can easily shift from renovation to re-building if the owner company would be able to afford it. Renovation can also take place in a higher level, which would lead to the loss of key attributes, if a higher budget is provided. In fact, the architecture of the 50th and 60th is not so widely appreciated. It is argued that the cultural value of these buildings is limited because the large number of them in The Netherlands; “these are repeated thousands and thousands of times, they are not that unique.” Such statements intensify the concern that the value of this complex is not well-known; the concern created from the fact that one third of the blocks are already demolished and the remaining, which were also exposed to demolition, are not at all maintained. This thesis tried to clarify the attributes that value the property and worth being preserved. It would assist entities involved in the development process of this property; the
development proposals for the remaining original Z-blocks of flats could be tested against the recommendations of this work.

The argued beneficial impacts of development should not be neglected. It is argued that the level of comfort has improved, energy efficiency of the flats has risen dramatically, and the social problems neighborhood has been facing will probably be solved. In return the architectural significance is affected negatively. Architects argue that the matter here is the tension between theoretical beauty (seen by professionals) and the beauty as is seen by the users. They state that there has been an emancipation movement in the Netherlands that people want to be involved in the shape of their houses themselves. Therefore high value is given to the opinion of the inhabitants who actually do appreciate the way the buildings look after renovation much more. In short, this design is a desired balance between maintaining the architecture of the building, meeting the demands of the moment, and keeping to the provided budget. Nevertheless, implementing the recommendations provided in this thesis mitigates the adverse impacts of the development. It is highly recommended for future researches to be carried out on the argued environmental and social impacts of the development. As it will be discussed in the following chapter, assessing environmental, social, and economic impacts besides the heritage impact is crucial for a comprehensive overall impact assessment of a change.
International Council on Monuments and Sites (ICOMOS) has provided guidance on Heritage Impact Assessments (HIAs) for World Heritage (WH) properties in order to evaluate effectively the impact of potential development on the Outstanding Universal Value (OUV) of properties.33

As this guidance is particularly meant for WH properties, it could not be just used for the case study of this thesis - whose importance is not more than of national scale - without further adaptation. Provided guides to assess the value of the heritage asset, the scale/severity of the proposed changes, and subsequently the significance of impact are not literally applicable to properties that are not WH. To adapt the method for assessing the value of case studies that are not world heritage, it is necessary to subtract the considered added value of being a component of a WH property. In this thesis this matter is realized by lowering the value of heritage by one grade; for instance if the value of a heritage property is assessed “High” in the context of OUV, its value is assessed “Medium” if the property is not a component of WH (Appendix 1). This rate of deduction is speculative and is only meant to open up discussion for further research.

Moreover, in case of WH properties, the carried out HIA is disputable. One critical point of this method is that independent professional judgement is highly influential on assessing the value of the determined attributes and the magnitude of the proposed changes. It is made use of undefined and qualitative descriptions of the property and the change (Appendix 1). For instance the description text of a heritage property that is categorized as “Built Heritage or Historic Urban Landscape” being of “Medium” value is: “Conservation Areas containing buildings that contribute significantly to its historic character.” where “Significantly” can be interpreted subjectively. Also in description of changes is made use of more ambiguous terms: “Comprehensive changes to the setting”; “Changes to many key historic building elements, such that the resource is significantly modified.” “Slightly different; Noticeably changed; Hardly affected” are other examples of such vague descriptions. It is recommended to quantify these descriptions as much as possible to increases the reliability of the assessment. Defining the grades of change in terms of percentage is the recommended solution of this thesis (Appendix 1). Changes to the attributes of a heritage property that are up to a maximum of 10% are considered “Negligible”, between 10%-25% are “Minor”, between 25%-75% are “Moderate”, and if attributes are changed more than 75% it would be a “Major” change.34 Here again these percentages are not definite and need further elaboration. These intervals are defined as such to keep to the five grades ICOMOS provides; which has “No change” as its minimum and “Major change” as its maximum. Even though these percentages are speculative, finer scales will be more accurate.

Even if the value of a heritage asset and the magnitude of the proposed change are assessed by the provided guidelines, and the significance of impact is subsequently determined, the method does not provide any insight into the limit of acceptable change or absorption capacity of the asset with regards to its value. It merely states that “Every reasonable effort should be made to avoid, eliminate...”

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34 Providing percentages for impact grading is also done in the report of M. Raja (2014)
or minimize adverse impacts on attributes that convey OUV and other significant places. Ultimately, however, it may be necessary to balance the public benefit of the proposed change against the harm to the place. In the case of WH properties this balance is crucial.”

The method defines a nine-point scale for the significance of impact:

Major/Moderate/Minor/Negligible/beneficial, Neutral, Negligible/Minor/Moderate/Major adverse

Four scales are defined for the adverse impact. But no distinction is made among them when considering balancing the public benefit of the proposed change against the harm to the asset. For instance a WH property of High value have to be demolished –that is a Major change- in order to construct a highway that will significantly reduce the traffic load of an overcrowded megacity. The impact of change is Large/Very Large. But on the other, its public benefit is highly appreciated. The method does not provide an answer whether it is possible to make this change or it is not within the limits of acceptable change of a property of high value.

Method states that environmental, social, and economic impacts of the change must also be considered for their relevance to the heritage impact assessment. But how these aspects could be incorporated is not determined. It is recommended to provide guidance on assessing the significance of environmental, social, and economic impacts of a change on a heritage asset. It is recommended to introduce an overall impact of a change on a heritage asset that is a function of heritage, environmental, social, and economic impacts. Developing uniform scales to indicate the significance of impact of each of these aspects would ease the process of overall impact assessment.

Method states that “Sustainable development of WH properties is extremely important, including the protection of OUV elements.” Regarding this statement, impact of proposing “no change” to heritage assets cannot always be assessed “Neutral” regardless the case. Not causing any change to a property not only might not lead to its sustainable development, but could also have adverse impact; heritage assets at least need maintenance. The case study of this thesis confirms this argument. The building blocks that are still in their original conditions have not been maintained for almost ten years. Flats have lost their qualities; rental price is subsequently low and social problems of a low-income society have occurred consequently.

After all, the overall framework of this method -which is applied on the case study of this thesis-, is considered applicable for impact assessment process regardless the value of the property.
5 Conclusions and recommendations

Mariahoeve is a post-war neighborhood of national cultural-historical importance. Such designation implies that preservation of the cultural values have to be the starting point when considering any interventions to the neighborhood. The outcome of cultural significance assessment carried out on the neighborhood, based on coding four documents, specifies that most frequent attributes which represent the cultural values of Mariahoeve are a subset of four main themes: urban structure and composition, architecture, green areas, and facilities of Mariahoeve.

The applied coding method specifies the values that are precisely mentioned in the text. Therefore the specification of values is highly dependent on the statements of the coded text. Considering this fact, there is a high probability that a number of values are assessed subjectively and are disregarded as a result of personal judgment of the author, who determines what to state valuable and what not to; or simply due to their implicit, or ambiguous, style of writing. Concerning the risk of subjective assessment, it is strongly recommended to apply the text coding method on more than a single document. This would reveal the inconsistencies so they can be dealt with more caution. If not more than one document is available for a case study, it is recommended to have one professionally written.

Cultural significance assessment reveals the significant role the striking buildings along the edges play in determining the spatial image of the neighborhood. Among these buildings are a three bent-shaped blocks of flats located on the north and a strip of Z-shaped blocks of flats located on the south of Mariahoeve. These residential complexes are inscribed as two of the hundred valuable objects of the city of The Hague. As these two strips of flats are considered as the most striking buildings along the edges of the neighborhood, and these edges are a highly valued feature of the unique urban structure of Mariahoeve, it is concluded that the two residential complexes are the most valued building blocks of Mariahoeve. As the strip of Z-flats is a proper representative of the valued architectural attributes of Mariahoeve, it is of the post repeated typology of dwellings in Mariahoeve, and it is built in the year that post construction has taken place in the neighborhood, recommendations made to avoid or minimize the adverse impacts of development on these attributes can be easily adapted to be applied to other buildings of the neighborhood inheriting the same attributes.

One third of the building blocks of this strip are demolished and then rebuilt in 2008, another third are renovated in 2015, and the rest are still in their original condition. Despite their high importance, preservation of the attributes that represent the architectural values of the Z-flats has not by far been considered by stakeholders involved in development of Mariahoeve. Considering the outcome of cultural significance assessment carried out on this strip of building blocks and the architectural attributes of Mariahoeve this strip represents, it is concluded that transparency, rhythm and repetition, and the urban character are the valued attributes in the architecture of the Z-flats that their authenticity and integrity have to be kept.

The studied indicators of transparency are the open surface area of the façade and glass reflection degree that adjusts view from outside to inside of the dwellings. The layout of openings is repeated in all four stories of the original façade. Approximately 55% of the façade surface of each floor is open and clear glass surface provides 45% visibility from outside to inside. Basement façade area is
approx. 45% open and visible from outside. The layout of openings varies from one floor to another on the newly built façade. Although the first floor has almost the same open surface as the original façade, this indicator is 45% lost on the second and third floor façade. On the basement façade surface this number goes up to 100% as there are almost no openings. Reflection of the glass installed on this façade is higher than the original and decreases the visibility from outside to inside of the dwellings. The renovated façade has the exact opening layout as the original. The only difference is the high reflection of the installed glass that considerably decreases the visibility from outside to inside. Also the whole basement open surface is covered with isolated panels that block the visibility from outside to inside and vice versa.

The indicators of rhythm and repetition are Vertical and horizontal articulations, Window and door frames, and Panels and balcony parapets. A grid of five floor slabs and 48 columns provide horizontal and vertical articulation on the original façade. Their number and the division their layout provides on the original façade are significantly changed after rebuilding. These elements remain untouched on the renovated façade. Nevertheless, the new applied color schema has provided hierarchy; the vertical elements are secondary to the horizontal lines.

Window and door frames are valued primarily for their wood material and also for their repeating pattern. Both in rebuilding and renovation phase, the material is preserved. However, the repetition is completely lost after rebuilding as each floor has different opening layout.

Panels and balcony parapets play a key role in breaking the monotony of the original façade. Neither their repeating pattern nor their shifting colors are realized after rebuilding. On the renovated façade, the original layout is realized in only one color.

The Z-flats are most considered for the role they play in the urban structure and spatial image of the neighborhood. Their Z-shape projection and the open spaces that are formed in between the blocks—that are highly valued- are maintained both after demolition and then rebuilding the building blocks. The courtyards of the rebuilt blocks are no more accessible to public; these blocks are no more rental apartments but they are privately owned houses. The renovated blocks however, are social housing as the originals. As the green areas along the edges of the neighborhood mainly serve as ecological corridors between Mariahoeve and the surrounding environment, it is recommended that the original public accessibility is maintained.

It has been decided by development managers of Mariahoeve to renovate the remaining original blocks just like the already renovated ones. This is good as the adverse impact of renovating the Z-flats on their architectural values is assessed far less than demolition and building new. By applying some changes that are here recommended the already designed renovation can preserve the attributes that represent the architectural values of the Z-flats. In order to maintain the transparency, it is recommended to install a type of glass with the same reflection degree as the original glass. In case of horizontal and vertical articulation, it is recommended to paint the columns white, just like the floor slabs, to avoid hierarchy. It is strongly recommended not to replace the wooden frames with plastic frames in order to reduce the maintenance costs. To preserve the rhythmic format it must be made use of two colors for panels on each façade; the colors should shift from one floor to another (figure 30).
Development of heritage properties need to be treated with equal sensitivity regardless of whether they are listed on a heritage register or not. The most commonly used method to assess the impact of developments on the outstanding universal values is meant for WH properties and is not entirely applicable to valuable properties that are not world heritage without further adaptation. Moreover, ICOMOS method -even if applied to WH properties- is disputable. It is made use of undefined and qualitative descriptions of heritage property and the change proposed to it. Therefore, independent professional judgement is highly influential on assessing the value of the determined attributes and the magnitude of the proposed changes. It is recommended to quantify these descriptions as much as possible to increases the reliability of the assessment. Defining the grades of change in terms of percentage is the recommended solution of this thesis.

It is crucial for an impact assessment method to clearly define and -as much as possible- quantify the extent to which an attribute can be changed; so that the development plans could be checked against. The method does not provide any insight into the limit of acceptable change or absorption capacity of an asset with regards to its value. This is particularly crucial in cases that it is necessary to balance the public benefit of the proposed change against the harm to the asset. This matter was encountered in this thesis. Original color scheme is changed at request of the inhabitants. It is recommended to provide guidance also on assessing the significance of environmental, social, and economic impacts of a change on a heritage asset. It is recommended to introduce an overall impact of a change on a heritage asset that is a function of heritage, environmental, social, and economic impacts. Developing uniform scales to indicate the significance of impact of each of these aspects would ease the process of overall impact assessment. It must then be clarified whether this overall impact is within the absorption capacity of an attribute or not.

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Figure 30: Homochromatic horizontal & vertical articulation & Alternate color of panels


BUHAGIAR, VINCENT M. "Occupant Satisfaction in Post-Refurbishment of Historic Buildings."


Staedion jaarverslag, by “Kamer van Koophander Haaglanden” 2005


UNESCO (2011), Operational guidelines for the implementation of the World heritage Convention.


## Appendix 1: ICOMOS guide

### ICOMOS guide for assessing the value of heritage assets

<table>
<thead>
<tr>
<th>Proposed for not WH properties</th>
<th>Grading (WH properties)</th>
<th>Archaeology</th>
<th>Built heritage or Historic Urban Landscape</th>
<th>Historic landscape</th>
<th>Intangible Cultural Heritage or Associations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
<td>Very High</td>
<td>Sites of acknowledged international importance inscribed as WH property</td>
<td>Sites or structures of acknowledged international importance inscribed as WH property</td>
<td>Landscapes of acknowledged international importance inscribed as WH property.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Individual attributes that convey OUV of the WH property.</td>
<td>Individual attributes that convey OUV of the WH property.</td>
<td>Areas associated with Intangible Cultural heritage activities as evidenced by the national register.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Assets that can contribute significantly to acknowledged international research objectives.</td>
<td>Other buildings or urban landscapes of recognized international importance.</td>
<td>Historic landscapes of international value, whether designated or not.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Associations with particular innovations, technical or scientific developments or movements of global significance.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Extremely well-preserved historic landscapes with exceptional coherence, time depth, or other critical factors.</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>High</td>
<td>Nationally-designated Archaeological Monuments protected by the State Party’s laws</td>
<td>Other buildings that can be shown to have exceptional qualities in their fabric or historical associations not adequately reflected in the listing grade.</td>
<td>Undesignated landscapes of outstanding interest.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Undesignated sites of the quality and importance to be designated.</td>
<td>Conservation Areas containing very Important buildings.</td>
<td>Internationally significant areas or activities associated with globally important Intangible Cultural Heritage activities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Undesignated landscapes of high quality and importance, and of demonstrable national value</td>
<td>Associations with particular innovations, technical or scientific developments or movements of national significance.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Assets that can contribute significantly to acknowledged national research objectives.</td>
<td>Undesignated structures of clear national importance</td>
<td>Well preserved historic landscapes, exhibiting considerable coherence, time depth or other critical factors.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Associations with particular individuals of national importance</td>
</tr>
<tr>
<td>Low</td>
<td>Medium</td>
<td>Designated or undesignated assets that can contribute significantly to regional research objectives</td>
<td>Designated buildings. Historic (unlisted) buildings that can be shown to have exceptional qualities or historical associations.</td>
<td>Designated special historic landscapes.</td>
<td>Areas associated with Intangible Cultural heritage activities as evidenced by local registers.</td>
</tr>
<tr>
<td>----------</td>
<td>--------</td>
<td>-----------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>----------------------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Negligible</td>
<td>Low</td>
<td>Conservation Areas containing buildings that contribute significantly to its historic character.</td>
<td>Undesignated historic landscapes that would justify special historic landscape designation.</td>
<td>Associations with particular innovations or developments of regional or local significance.</td>
<td></td>
</tr>
<tr>
<td>Negligible</td>
<td>Negligible</td>
<td>Historic townscape or built-up areas with important historic integrity in their buildings, or built settings.</td>
<td>Landscapes of regional value.</td>
<td>Associations with particular individuals of regional importance</td>
<td></td>
</tr>
<tr>
<td>Unknown potential</td>
<td>Unknown potential</td>
<td>Averagely well preserved historic landscapes with reasonable coherence, time depth or other critical factors.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negligible</td>
<td></td>
<td>Designated or undesignated assets of local importance.</td>
<td>“Locally Listed” buildings.</td>
<td>Robust undesignated historic landscapes.</td>
<td>Intangible Cultural heritage activities of local significance</td>
</tr>
<tr>
<td>Negligible</td>
<td></td>
<td>Assets compromised by poor preservation and/or poor survival of contextual associations.</td>
<td>Historic (unlisted) buildings of modest quality in their fabric or historical associations.</td>
<td>Historic landscapes with importance to local interest groups.</td>
<td>Associations with particular individuals of local importance</td>
</tr>
<tr>
<td>Negligible</td>
<td></td>
<td>Assets of limited value, but with potential to contribute to local research objectives.</td>
<td>Historic Townscape or built-up areas of limited historic integrity in their buildings, or built settings.</td>
<td>Historic landscapes whose value is limited by poor preservation and/or poor survival of contextual associations.</td>
<td>Poor survival of physical areas in which activities occur or are associated</td>
</tr>
<tr>
<td>Unknown potential</td>
<td>Unknown potential</td>
<td>Assets with little or no surviving archaeological interest.</td>
<td>Buildings or urban landscapes of no architectural or historical merit; buildings of an intrusive character.</td>
<td>Landscapes little or no significant historical interest.</td>
<td>Few associations or ICH vestiges surviving</td>
</tr>
<tr>
<td>Unknown potential</td>
<td>Unknown potential</td>
<td>The importance of the asset has not been ascertained.</td>
<td>Buildings with some hidden (i.e. inaccessible) potential for historic significance.</td>
<td>n/a</td>
<td>Little is known or recorded about ICH of the area</td>
</tr>
</tbody>
</table>
### ICOMOS guide for assessing the magnitude of impact

<table>
<thead>
<tr>
<th>Impact Grading</th>
<th>Archaeology</th>
<th>Built Heritage or Historic Urban Landscape</th>
<th>Historic Landscape</th>
<th>Intangible Cultural Heritage or Associations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Major</strong> (75-100% change)</td>
<td>Changes to attributes that convey OUV of WH properties</td>
<td>Change to key historic building elements that contribute to OUV, such that the resource is totally altered.</td>
<td>Change to most or all key historic landscape elements, parcels or components; extreme visual effects; gross change of noise or change to sound quality; fundamental changes to use or access; resulting in total change to historic landscape character unit and loss of OUV.</td>
<td>Major changes to area that affect the ICH activities or associations or visual links and cultural appreciation.</td>
</tr>
<tr>
<td></td>
<td>Most or all key archaeological materials, including those that contribute to OUV such that the resource is totally altered.</td>
<td>Comprehensive changes to the setting.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Comprehensive changes to setting.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Moderate</strong> (25-75% change)</td>
<td>Changes to many key archaeological materials, such that the resource is clearly modified.</td>
<td>Changes to many key historic building elements, such that the resource is significantly modified.</td>
<td>Change to many key historic landscape elements, parcels or components; visual change to many key aspects of the historic landscape; noticeable differences in noise or sound quality; considerable changes to use or access; resulting in moderate changes to historic landscape character.</td>
<td>Considerable changes to area that affect the ICH activities or associations or visual links and cultural appreciation.</td>
</tr>
<tr>
<td></td>
<td>Considerable changes to setting that affect the character of the asset.</td>
<td>Changes to the setting of a historic building, such that it is significantly modified.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Minor</strong> (10-25% change)</td>
<td>Changes to key archaeological materials, such that the resource is slightly altered.</td>
<td>Change to key historic building elements, such that the asset is slightly different.</td>
<td>Change to few key historic landscape elements, parcels or components; slight visual changes to few key aspects of historic landscape; limited changes to noise levels or sound quality; slight changes to use or access; resulting in limited change to historic landscape character.</td>
<td>Changes to area that affect the ICH activities or associations or visual links and cultural appreciation.</td>
</tr>
<tr>
<td></td>
<td>Slight changes to setting.</td>
<td>Change to setting of an historic building, such that it is noticeably changed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Negligible</strong> (a max. of 10% change)</td>
<td>Very minor changes to key archaeological materials, or setting.</td>
<td>Slight changes to historic building elements or setting that hardly affect it.</td>
<td>Very minor changes to key historic landscape elements, parcels or components; virtually unchanged visual effects; very slight changes in noise levels or sound quality; very slight changes to use or access; resulting in a very small change to historic landscape character.</td>
<td>Very minor changes to area that affect the ICH activities or associations or visual links and cultural appreciation.</td>
</tr>
<tr>
<td><strong>No change</strong></td>
<td>no change</td>
<td>No change to fabric or setting.</td>
<td>No change to elements, parcels or components; no visual or audible changes; no changes in amenity or community factors.</td>
<td>No change</td>
</tr>
</tbody>
</table>
ICOMOS guide for assessing the significance of effect or overall impact

<table>
<thead>
<tr>
<th>Value of Heritage asset</th>
<th>Scale &amp; severity of change/ impact</th>
<th>Significance of effect or overall impact (either adverse or beneficial)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No change</td>
<td>negligible change</td>
</tr>
<tr>
<td>For WH properties</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very High – attributes which convey OUV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>For other heritage assets or attributes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very high</td>
<td>Neutral</td>
<td>slight</td>
</tr>
<tr>
<td>High</td>
<td>Neutral</td>
<td>slight</td>
</tr>
<tr>
<td>Medium</td>
<td>Neutral</td>
<td>Neutral/slight</td>
</tr>
<tr>
<td>Low</td>
<td>Neutral</td>
<td>Neutral/slight</td>
</tr>
<tr>
<td>Negligible</td>
<td>Neutral</td>
<td>Neutral/slight</td>
</tr>
</tbody>
</table>
Interview with CHNL architecten & adviseurs who designed the renovation phase; words of architects

It did not matter if the building is valuable. The priority was demolition, like 10 years ago there was plans to renew (rebuilt) this area (some are already rebuilt) and that is actually the reason buildings are not maintained (for even more than 10 years).

The cultural value of these buildings is limited because the large number of them in The Netherlands. These are repeated 1000 and 1000 of times. They are not that unique.

They have so many problems: energy loses, noise reduction, heating system, insulation, no elevators (it makes it difficult for the 4 storey blocks), wooden window frames (lots of problem with insulation and water), and lots of social problems (the quality of buildings was so low so the rent was also very low). But the main structure is quite ok.

Demolishing and rebuilding was the enterprise but there came the crisis and brought about renovation. It is all about investment.

The renovation started where the social problems were highest.

As these buildings are a lot in the country, it is a shame to demolish them.

Ideas behind the project: an analysis was made for the whole area (the area of the Z-fats) and what types of buildings are there / elevators were not seen feasible for this area/ for the energy problems it was an idea of second layer of façade and following this renewing the ground floor with bigger bathrooms and kitchens/ the budget of 60.000€ was considered to renew (renovate) each unit.

There was also the idea of adding another layer on the top to be sold. These ideas were rejected because Vestia could not afford the renewal at this level. A year later they decided to renew the buildings at a lower level.

There were strong objections to the windows; they had asbestos inside the panels and also in the walls. The balconies and their fences they also had lots of problems so the whole changing of the façade within the old structure was considered. Also inside the flats the kitchen, bathroom, toilet and the heating system are changed. Each flat has its own heating system now and also natural ventilation.

The front façade had been affected by the weather the most. They were completely made new. The façade but the panels were made in factory. The panels were added on the site.

The area was analysed about the colours which had lots of difference. The colours were decided to change. Something more quiet, more of this time, it was considered for each block to have its own identity from a unique colour of the woods.

First the asbestos was removed, then the windows and everything around, and then the plates on a second round.

Welstand has controlled the design. There has been a discussion about the colour with them and also with Vestia. Welstand preferred to use the original colours or something like that but they were convinced by the architects’ suggestions. The idea to use primary colours (not necessarily the original ones), as a typical 60s façade, has been discussed. The argument was that this whole renovation process is an upgrade of the neighbourhood. The architects, as professionals, do appreciate the 60s style, but the the inhabitants do not take it the same way. So two proposals, one in primary colours and the other in wood, were offered to a commission of inhabitants and they
chose the wooden panels. The new colours have been carefully studied. The original façade is whole white with no orientation. It has vertical and horizontal bars. If you look at the building you have very horizontal lining in architecture, the floor plates which come through the façade that you can use that as an order to think of a new colour scheme. Next to the panels, which are apparent the most, the slabs are kept in white and all other in between are in dark grey, even the columns. So you have these very strong horizontal lines (floor plates) and the whole inner façade is secondary to that. So this brings a whole new architecture to the building and the addition of new fences (perforated steel) and the glass fences give a far more modern impression to the building than what it was and it even makes the architecture stronger and also the typical elements of the 60s. The positive point is that the architecture of the 60s is also brought into sight. The buildings of that period do have the layered structure. Z-flats were all in white and this new colour scheme made these layers even more visible. The new colour scheme also makes it possible to apply the wooden frames because they would then fit in the whole concept of having this very strong horizontal lines and that everything in between has to be modest and the wood colours are more modest in their nature than the primary colours. The other problem with the original colours is that a large number of social housings in the whole Netherlands use these primary colours and they are so easy to be recognised for that. Vestia itself and specially the inhabitants do want it to change. This change of colour has brought about a sense of social equality. Four different types of wood were presented to the inhabitants as scheme and also proposals with primary colours in different shades of green, yellow, and blue. Although the primary colours suited the architects’ architectural appeal, inhabitants did not want the typical social housing appearance any more. So the decision was made to give the whole building a 2015 face lift and lift the whole architecture of the building. Windows were kept in white first but the building did not have the expected horizontal accent.

The single glazing windows are replaced with double ones. (Behind the panels were just concrete block but now they are well insulated behind the panels, insulated panels were then introduced). Whole roof has been insulated. The ceiling on the cellar is also insulated. The critical point for insulation was the concrete from outside to inside. So there has not been over insulation so that there would not be a condensation in the concrete structure (cold from outside) so we made a balance between insulation and prevention of condensation. The big advantage of leaving the concrete as it is, is that the architecture would be preserved (there would not be the necessity for moving the façade to the outside line of the concrete so that everything would be insulated). If you really insulate the building to the maximum you would lose the balconies, the façade comes to the front, and you would win space inside of course but at the price of complete loss of the architecture. These buildings had the energy label G but after taking these actions, they are now at B or even A level.

We do have proposals for a higher budget which do result in the complete loss of the cultural value of the façade. The proposal includes elevator.

Insulation was intended for all walls but was not realised considering the results of calculations (only the outer walls are insulated). The next renovation phase will have floor insulation (3 cm) because of the sound problem which is still unsolved.

The new window frames are also made of wood. Plastic material was also considered, but it was cheaper at first place to use wood, but it is not cheap for long as they have to be renewed every 10 years. We decided to reuse some wooden element and the combination of that with plastic would also not be nice. In the 90s the trend went towards using aluminium or plastic frames because the maintenance costs were lower but now people have come to realise that it is very hard to deal with
these if anything goes wrong and it is far too easy to repair the wooden frames. But in the next phase there will be more plastic used because of the costs. We carried out studies on how much these buildings could be affected. And this design is the desired balance between maintaining the architecture of the building and the demands of the moment. The strong objections to the plastic frames are fading as it now depends on the quality of the plastic frames. Now there are plastic frames which they are hardly recognisable. The other advantage of the plastic frames is that they are found in the same dimensions as standard wooden frames, the modern wooden structures with stronger building codes and they have become bigger in size and have far less fine details. The other problem of plastic frames is their colour; they are only around 10 different colours. Also if you have plastic frames in large dimensions you have to install steel elements which also require insulation in between and these are all costly. The plastic frames are assumed cheaper because you do not have to paint them after five or ten years but this dimension of the frames makes use of steel elements inevitable. We are in favour of wood, in terms of fine appearance also. But in terms of energy efficiency the plastic ones are a little bit better. The panels are not made of real wood. Passengers have quite a distance from the panels so that is not recognisable. If it was at street level and you would pass it every day directly within a meter then you would notice. A passenger would not ever be so close to notice that the material is not real wood.

For the next phase of renovation the material of frames might change to metal. A supporting statement for changing the colour scheme is that the whole buildings were in white, red, and blue. So they did not have an identity, what that the new scheme brings about. These houses are the manifest of the social movement of the 50s and the 60s in which the least difference between the houses was the best. The fact that the ground floor houses are also designed in a way not to have direct access to the garden is another feature of that period. There was a gas stove in each house as the heating system which was only limited to the living room. And now it is their own CV system (own gas) with radiator in all rooms. The natural ventilation, which is actually a mechanical system, is maintained. There are openings in the windows for that but they are hardly recognizable.

The dwellings are now modern, having modern heating system, modern ventilation, and modern insulation. In each room there is always one window that you can open. The small above windows are closed. In the original design there had been no ventilation at all but now that there is natural ventilation they have lost their function and there is no use to open them. Solar panels were also considered but those were considered not necessary as the building had already reached the energy label of B or even A. If that was at C level, the solar panels would come to use. The labelling system really sets targets for renovation and the actions taken towards energy savings might be limited as this project is an example. The target which is set for all these types of renovation is to reach to at least label B. We have taken necessary actions for placing solar panels and maybe this would be done sometime.

The renovation results in a sort of gentrification. Now that the flats are of a much higher quality, the rental price is raised (from 250-350 to 650-710 which is the maximum) so not all the people who used to live in this area are able to continue. This might lead to disappearance of the social problems the neighbourhood faced. Balconies were made of steel pipes which are replaced with perforated steel plates which affect the architecture quite a lot.
The appreciation for architecture of the 50s and 60s is not so widely spread (also in comparison to the architecture of the 20s). This a matter related to the history of architecture and the modern movement. These buildings are quite le Corbusier inspired buildings (using material efficiently to reach as much as spacious and architectural richness possible). Comparing to other post-war buildings (reducing everything from the building, standardizing to the max, striped from all their beauties, charm, harmony, or poetry, being nothing but stacked concrete slabs with steel fences), the Z-flats are more rich in terms of architectural value (the reduction that happened in them was in order to create a sublime peace of architecture).

The matter here is the tension between theoretical beauty (seen by professionals) and the beauty as is seen by the users. There has been emancipation in the Netherlands that people want to be involved in the shape of their houses themselves (there must be a connection).

The reaction of the government of The Hague is not known yet.

High value is given to the opinion of the people who live there who in fact do appreciate the way the buildings look now much more.

This is the result of an effort to reach a balance between maintaining the architecture, respecting public benefit, and keeping to the budget.
Interview with Locus architecten who designed the rebuilding phase; words of architects

The project had no social content. It was a competition municipality called for, because they had started a new development of the area. The area had been decaying because of the housing corporations were not doing anything in the maintenance. The municipality was looking for ways to improve the area. To improve the area you need diversification in the housing offer. And in that area at that time properties were mostly not renewed and mostly were apartments. We did not do anything special, the assignment was already defined. It was defined to design individual houses instead of apartments to bring something new in the area.

The idea was to keep the structure of the area; to keep the same sort of stamp. What we did is more or less what there already was, with another kind of rhythm; not rhythm, dimensions. The rhythm is almost the same. There was nothing special; no movement.

Developers: west 8 made a plan for the area, and Era was the client.

This project is from 2005, it was delivered in 2009 and that time the crisis had already started. The project was going to continue along the strip.

The aim was to keep the qualities of the area. In the area you find a lot of courtyards around which the buildings are built. Like a pattern, like a stamp. The architecture, the main theme, was brought back to area. So it will not be a huge impact.

It was not the idea to copy what it was; it was to take the elements that were there and to repeat them in a modern way. We did the conditions of the competition, where the basis was a document of west 8, and we went through it and made our own conclusions and not just taking over what someone else says. Our conclusion was that we should keep something of the area.

Façade elements

The panels are there, a little bit, not in the same way. The elevations have the horizontal lining, the colors are the same, and they have also the patches. So maybe they are not precisely the same as they were.

We made studies both for designing flats and houses and was said that it is better to make houses there so it would be more variety to the area. The developer is very good because they did lots of good social studies in what is necessary for the area and what sort of clients are there.

What are kept from the original buildings are the courtyards, the color of the building, the lining, the paneling; but not literally the rhythm, not literally the size, nothing literally because it is a new development and you have to put so many houses in the area. So you have to find the size for each house, each partition. You have to do something different to fit so many houses there; this was a part of the design. There had to be no parking outside; so we had to deal with this matter also. This led to fewer autos at street level and there is no place outside for them anyway.

The situation was not that we could consider renovating the area, the assignment was made fix and it was to make something new. In most cases, it is not the decision of architects. Municipality had
called for developers, not architects; the studies to assess the renovation possibilities, if they are made, are made before by others; west 8 perhaps.

If renovation is considered, probably building regulations would not allow it because they have changed. The floor height has changed and there is no way to keep it.

Nothing special was done to raise the energy efficiency; no solar panels or doing anything special about the heating system.

To our experience, this project was just standard. Maybe of a better quality than norm, because money is not the only matter the developer has considered; but nothing special. The energy index was just as it had to be; not recognizably below that, and it was possible to reach by taking ordinary actions. We insulated the building of course, because a building of the 60s has no insulation. We insulated the building as standard.

This project was only special in the term that the sphere of the area had to be kept; and the sphere of the courtyards. And based on developer’s demand we made the court yards vary in terms of privacy: from very open, to less open and private. There are four court yards; first one is water. The municipality is in charge of its maintenance and safety. The second is more open, there is a path and you can walk through, the third one is visible but it is not reachable because the level is a bit higher – as an obstacle for someone who is walking around, and the last one is completely private and is all divided into small gardens. And this is a bit different from the original area because that is all open and you can walk through. This was the concept not energy, not something social. The social aspect was that you had to do something to get people that were from another – higher- class with expensive housing. Developers usually offer the clients possibilities so if they want something else, the basic design with a couple of variations, and if you push that, you could have your own variation.

This design is a compromise between the wishes of individual clients, who wish to have a private garden, and the openness architects wish for.

This assignment was meant for sale, not for rent. Era was trying to buy the next bocks and implement the same design. But there has come the crisis. The plan was for the whole strip.

What they have done in the second phase (renovation phase) is a make-up. Only some improvements in the quality of energy use and bathrooms... but in the ends it is the same.

High level of interaction with the inhabitants is quite normal in a renovation project, because you have to give back their homes. But in this project, the inhabitants were moved somewhere else and the houses were sold. In this case the interaction was to have the buyers and see what they wanted; an evening for potential buyers (even the interior that was presented to them, was not the one delivered at the end). In these events, they got to know what clients want and sometimes it was necessary to make change in the design according to that. The concept of parking and houses remained intact, but they change the stair case inside.

It was quite a rush. In the very night we won the competition, it was discussion on making drawings for building, for putting them to the municipality to get license.
### Appendix 3: Guide for cultural values classification

<table>
<thead>
<tr>
<th>Social (identity)</th>
<th>Economic (profit, utility)</th>
<th>Political (symbolism)</th>
<th>Historic (authenticity, collective memory)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spiritual</td>
<td>Beliefs, myths, religions, legends, testimonial of past generations;</td>
<td>Use</td>
<td>Educational</td>
</tr>
<tr>
<td>Emotional, individual</td>
<td>Memory and experiences;</td>
<td>Non-use</td>
<td>Expired functions;</td>
</tr>
<tr>
<td>Emotional, collective</td>
<td>Cultural identity, motivation and pride;</td>
<td>Entertainment</td>
<td>Tourist industry;</td>
</tr>
<tr>
<td>Allegorical</td>
<td>Social hierarchy, status;</td>
<td>Allegorical</td>
<td>Oriented to publicizing financial property;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Aesthetical (creativity)</th>
<th>Scientific (knowhow)</th>
<th>Age (patina)</th>
<th>Ecological (survival)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Artistic</td>
<td>Original product of creativity and imagination;</td>
<td>Workmanship</td>
<td>Original result of human labour, craftsmanship;</td>
</tr>
<tr>
<td>Notable</td>
<td>Product of a creator, has his signature;</td>
<td>Technological</td>
<td>Skillfulness, within techniques and materials;</td>
</tr>
<tr>
<td>Conceptual</td>
<td>Integral materialization of conceptual intentions;</td>
<td>Conceptual</td>
<td>Integral materialization of conceptual intentions;</td>
</tr>
<tr>
<td>Evidential</td>
<td>Authentic exemplar of a decade, within a stylistic and/or discursive movement;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix 4: Real and assumed values of each coded document

A comparison is made between the number of real and assumed values of each coded document. The results are illustrated with bar charts (Figures 1-4).

Figure 1: classification of real and assumed values of document “Mariahoeve, Toonbeeld van de Ongedeelde Stad”

Figure 2: classification of real and assumed values of document “Architectuurgids wederopbouw Den Haag 1940-1965”
Figure 3: classification of real and assumed values of document “Atlas van de wederopbouw Nederland 1940-1965”

Figure 4: classification of real and assumed values of document “Mariahoeve, steenhuis stedenbouw/landschap, Urban Fabric”
Figure 5: The ratio of the assumed values ascribed to the attributes coded from the documents
## Appendix 5: Attributes of Mariahoeve

<table>
<thead>
<tr>
<th>Quotation</th>
<th>Attribute</th>
<th>Category</th>
<th>Sub-category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Based on the analysis part, the main structure and the cultural and historical urban appreciation can be concluded that Mariahoeve is a uniquely designed residential area that is still reasonably intact and authentic.</td>
<td>Design of Mariahoeve</td>
<td>Urban structure &amp; Composition</td>
<td>2</td>
<td>Historical</td>
</tr>
<tr>
<td>both at neighborhood level (wijkniveau) and at quarter level (buurtniveau) Mariahoeve is designed according to a spatial plan (ruimtelijk schema)</td>
<td>Design of Mariahoeve</td>
<td>Urban structure &amp; Composition</td>
<td>2</td>
<td>Scientific</td>
</tr>
<tr>
<td>By combining these elements with a variety allotment typologies and open and connected buildings, making transparency and visual relationships in the quarters themselves, but also between quarters are strongly present, the spaciousness of the plan is designed in a thoughtful way.</td>
<td>Design of Mariahoeve</td>
<td>Urban structure &amp; Composition</td>
<td>2</td>
<td>Scientific</td>
</tr>
<tr>
<td>The distinctive design system, the striking buildings along the edges and the almost total absence of traditional building blocks and allotments Mariahoeve qualifies as a time-bound (tijdgebonden), post-war, urban phenomenon, unique in the Netherlands and of great cultural and historical significance.</td>
<td>Design of Mariahoeve</td>
<td>Urban structure &amp; Composition</td>
<td>2</td>
<td>Historical</td>
</tr>
<tr>
<td>Scientific Aesthetical</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Due to the &quot;kinks&quot; in the main grid and the position of the building along the grid (mostly situated perpendicular or oblique) there is a varied and spatial image (ruimtelijk beeld)</td>
<td>The main grid</td>
<td>Urban structure &amp; Composition</td>
<td>2</td>
<td>Scientific</td>
</tr>
<tr>
<td>The flats derive their quality especially on their position in the green and the accentuation of the different quarters, not individually architecturally</td>
<td>The flats</td>
<td>Urban structure &amp; Composition</td>
<td>1</td>
<td>Ecological</td>
</tr>
<tr>
<td>attention bij het design Mariahoeve is on the surface of the allotment (verkaveling) and housing supply (woningaanbod)</td>
<td>Attended allotments</td>
<td>Urban structure &amp; Composition</td>
<td>Allotments</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The layout (inrichting) of the quarters do at first sight might seem randomly but this is by no means. A certain order in the plan is made by grouping certain allotment configurations in repeatable units (Door bepaalde verkavelingsconfiguraties te groeperen in herhaalbare eenheden is een zekere ordening in het plan aangebracht).

The distinctive design system, the striking buildings along the edges and the almost total absence of traditional building blocks and allotments Mariahoeve qualifies as a time-bound (tijdgebonden), post-war, urban phenomenon, unique in the Netherlands and of great cultural and historical significance.

Because coherence (samengang) and spatial quality of the entire composition, consisting of closed and transparent edge buildings, a central green field as a filling containing three towers and buildings for special functions, combined with a wide variety of parcelling typologies (verkavelingstypologieën) and a composition of different building heights, four uniform residential quarters are considered special urban compositions.

Within the quarters is a wide variety of building and allotment (verkaveling) types coexist.

By combining these elements with a variety allotment typologies and open and connected buildings, making transparency and visual relationships in the quarters themselves, but also between quarters are strongly present, the spaciousness of the plan is designed in a thoughtful way.

the quarter idea (wijkgedachte), as urban ordering principle is recognizable in the division of the filling into six areas which are separated from one another by strips of roads or green

With this structure (opbouw), these areas seem to suggest a certain equality (gelijkheid).

| The layout of the quarters | Urban structure & Composition | Allotments | 2 | Scientific
|---------------------------|------------------------------|------------|---|------------------|
| Innovative allotments     | Urban structure & Composition | Allotments | 2 | Historical
| Scientific                | Aesthetical                  |            |   |                   |
| Variety of allotments     | Urban structure & Composition | Allotments | 2 | Scientific
| Aesthetical               |                             |            |   |                   |
| Variety of allotments     | Urban structure & Composition | Allotments | 2 | Scientific
| Social                    |                             |            |   |                   |
| Variety of allotments     | Urban structure & Composition | Allotments | 2 | Scientific
| Scientific                |                             |            |   |                   |
| Quarters                  | Urban structure & Composition | Residential quarters | 2 | Scientific
| Residential quarters      |                             |            |   |                   |
| Uniform quarters          | Urban structure & Composition | Residential quarters | 2 | Scientific
<p>| | | | | |
|                             |                             |            |   |                   |</p>
<table>
<thead>
<tr>
<th>Four of the six neighborhoods have a clear urban structure</th>
<th>Uniform quarters</th>
<th>Urban structure &amp; Composition</th>
<th>Residential quarters</th>
<th>2</th>
<th>Scientific</th>
</tr>
</thead>
<tbody>
<tr>
<td>The spatial image of Mariahoeve is largely determined by the development along the edges of the neighborhood and a uniform quarter centrally placed composition of three high-rise flats</td>
<td>Spatial image of Mariahoeve</td>
<td>Urban structure &amp; Composition</td>
<td>Edges and filling composition</td>
<td>2</td>
<td>Scientific</td>
</tr>
<tr>
<td>The entire composition of edge buildings, filling and different building heights is of such high spatial and urban quality that these compositional elements should be maintained</td>
<td>Edges and filling composition</td>
<td>Urban structure &amp; Composition</td>
<td>Edges and filling composition</td>
<td>2</td>
<td>Scientific Aesthetical</td>
</tr>
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<td>Because coherence (samenhang) and spatial quality of the entire composition, consisting of closed and transparent edge buildings, a central green field as a filling containing three towers and buildings for special functions, combined with a wide variety of parcelling typologies (verkavelingstypologieën) and a composition of different building heights, four uniform residential quarters are considered special urban compositions.</td>
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<td>2</td>
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</tr>
<tr>
<td>Here, too, the heart of the quarters of a green-field exists and is a clear edge construction provided</td>
<td>Edges and filling composition</td>
<td>Urban structure &amp; Composition</td>
<td>Edges and filling composition</td>
<td>2</td>
<td>Ecological</td>
</tr>
<tr>
<td>basic schema consists of two edges (randen) containing a filling (vulling)</td>
<td>Edges and filling composition</td>
<td>Urban structure &amp; Composition</td>
<td>Edges and filling composition</td>
<td>2</td>
<td>Scientific</td>
</tr>
<tr>
<td>It is, however, also provided here edges and fills to a less clear manner than in the uniform quarters</td>
<td>Edges &amp; filling of central quarters</td>
<td>Urban structure &amp; Composition</td>
<td>Edges and filling composition</td>
<td>2</td>
<td>Scientific</td>
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<tr>
<td>within the borders of the neighborhood is a filling consisting of six separate quarters</td>
<td>Edges and filling composition</td>
<td>Urban structure &amp; Composition</td>
<td>Edges and filling composition</td>
<td>2</td>
<td>Scientific</td>
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<tr>
<td>By Strengthening the link (coherence) between edges &amp; filling that is present both on the level of the neighborhood as the quarter, the neighborhood is perceived as a clear urban unit.</td>
<td>link between edges &amp; filling</td>
<td>Urban structure &amp; Composition</td>
<td>Edges and filling composition</td>
<td>2</td>
<td>Scientific</td>
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<td>Also at quarter level consists of the urban design edges and filling.</td>
<td>Edges and filling composition</td>
<td>Urban structure &amp; Composition</td>
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<td>Description</td>
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<tr>
<td>Tall buildings in strip plots highlight the open landscape</td>
<td>Tall buildings in strip plots</td>
<td>Urban structure &amp; Composition</td>
<td>Striking edges</td>
<td>1</td>
<td>Scientific</td>
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<td>The buildings in three angled walls (bebouwing in drie geknikte wanden) along Bezuidenhoutseweg, designed by architect P. Zanstra, are among the best of Mariahoeve.</td>
<td>bebouwing in drie geknikte wanden</td>
<td>Urban structure &amp; Composition</td>
<td>Striking edges</td>
<td>1</td>
<td>Scientific</td>
</tr>
<tr>
<td>To respond to the surrounding environment, the buildings along the edges of the neighborhood in terms of height and location also designed different</td>
<td>buildings along the edges of neighborhood</td>
<td>Urban structure &amp; Composition</td>
<td>Striking edges</td>
<td>1</td>
<td>Ecological</td>
</tr>
<tr>
<td>At neighborhood level, the north-eastern edge mainly determined by the high-rise residential buildings along the South of Houtse Weighing VeenzijdsDuivenvoordse polder. Because the neighborhood border here is simultaneously outskirts and this is adjacent to scenic areas, here is spatially made a firm gesture</td>
<td>high-rise residential on north-eastern edge</td>
<td>Urban structure &amp; Composition</td>
<td>Striking edges</td>
<td>1</td>
<td>Ecological</td>
</tr>
<tr>
<td>Along Bezuidenhoutseweg row housing is applied across existing buildings such as the villa quarter Marlot and Huisten Bosch. Three angled blocks are placed across the open meadows of the estates and Marlot Reigersbergen. In both cases, there is a high degree of transparency</td>
<td>bebouwing in drie geknikte wanden</td>
<td>Urban structure &amp; Composition</td>
<td>Striking edges</td>
<td>1</td>
<td>Ecological</td>
</tr>
<tr>
<td>The distinctive design system, the striking buildings along the edges and the almost total absence of traditional building blocks and allotments Mariahoeve qualifies as a time-bound, post-war, urban phenomenon, unique in the Netherlands and of great cultural and historical significance.</td>
<td>the striking buildings along the edges</td>
<td>Urban structure &amp; Composition</td>
<td>Striking edges</td>
<td>1</td>
<td>Historical</td>
</tr>
<tr>
<td>The series residential towers at the center of the quarters located green fields, which were developed by different architects, are fairly neutral and unarticulated of design</td>
<td>3 central residential towers</td>
<td>Urban structure &amp; Composition</td>
<td>Fillings</td>
<td>1</td>
<td>Historical</td>
</tr>
<tr>
<td>The filling of the uniform residential quarters consisting of the central green field on which three high-rise flats (12 layers) are often combined with a school and a shopping trip with duplex dwellings thereon</td>
<td>filling of the uniform residential quarters</td>
<td>Urban structure &amp; Composition</td>
<td>Fillings</td>
<td>2</td>
<td>Ecological</td>
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</tbody>
</table>
both fillings consist of several allotments around a central green area. In the north of het kleine Loo this green area consists of the park de Horst and in the southern area of a sports ground.

<table>
<thead>
<tr>
<th><strong>This consists of an ensemble of three high-rise flats on a central located near park would also include some provisions</strong></th>
<th>filling of the residential quarters</th>
<th>Urban structure &amp; Composition</th>
<th>Fillings</th>
<th>1</th>
<th>Ecological Economic</th>
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At intersections are height differences deployed as urban accent

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<th><strong>At intersections are height differences deployed as urban accent</strong></th>
<th>Height differences</th>
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<th>Height variation</th>
<th>2</th>
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The entire composition of edge buildings, filling and different building heights is of such high spatial and urban quality that these compositional elements should be maintained.

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At the location of the blocks and the flats is deliberately used the mutual height differences. The difference in construction volume reinforces the urban composition of the uniform quarters.

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Because coherence (samenhang) and spatial quality of the entire composition, consisting of closed and transparent edge buildings, a central green field as a filling containing three towers and buildings for special functions, combined with a wide variety of parcelling typologies (verkavelingstypologieën) and a composition of different building heights, four uniform residential quarters are considered special urban compositions.

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<th>Height differences</th>
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The architecture is primarily achieved a high aesthetic quality in housing designed for the middle class.

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<th><strong>The architecture is primarily achieved a high aesthetic quality in housing designed for the middle class</strong></th>
<th>Architecture of Mariahoeve</th>
<th>Architecture</th>
<th>2</th>
<th>Aesthetical</th>
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Mariahoeve is in its architectural appearance a typical sixties neighborhood where rationalization and standardization of construction methods determined the appearance of the building blocks strongly.

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<th><strong>Mariahoeve is in its architectural appearance a typical sixties neighborhood where rationalization and standardization of construction methods determined the appearance of the building blocks strongly</strong></th>
<th>application of prefabricated system</th>
<th>Architecture</th>
<th>Construction system (transparency)</th>
<th>2</th>
<th>Historical Scientific Aesthetical</th>
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The greatest significance of the architecture is the application of prefabricated system and other modern construction techniques that facades are no longer bearing walls but only have a sealing function (dat gevels niet

<p>| <strong>The greatest significance of the architecture is the application of prefabricated system and other modern construction techniques that facades are no longer bearing walls but only have a sealing function (dat gevels niet</strong> | application of prefabricated system | Architecture | Construction system | 2 | Scientific Aesthetical |</p>
<table>
<thead>
<tr>
<th>The structure will play a role in the architectural articulation</th>
<th>Main structure</th>
<th>Architecture</th>
<th>Construction system (articulation)</th>
<th>2</th>
<th>Aesthetical</th>
</tr>
</thead>
<tbody>
<tr>
<td>This facades are thinner and more transparent</td>
<td>Façades</td>
<td>Architecture</td>
<td>Façade transparency</td>
<td>1</td>
<td>Aesthetical</td>
</tr>
<tr>
<td>The facades are constructed from grids of horizontal floor bands and vertical separation walls or columns. The space between them is filled in different ways. Usually a combination of wooden doors, brick parapets and concrete elements used</td>
<td>Façades</td>
<td>Architecture</td>
<td>Façade elements</td>
<td>1</td>
<td>Aesthetical</td>
</tr>
<tr>
<td>The green areas (groenvoorzieningen) along the edges of the neighborhood next to the recreational mainly serve as ecological corridors between Mariahoeve and the environment</td>
<td>green areas along the edges of neighborhood</td>
<td>Green areas</td>
<td></td>
<td>2</td>
<td>Ecological</td>
</tr>
<tr>
<td>At the level of the city these areas in spatial terms (ruimtelijke opzicht) have geledende (articulating) function.</td>
<td>green areas along the edges of neighborhood</td>
<td>Green areas</td>
<td></td>
<td>2</td>
<td>Ecological</td>
</tr>
<tr>
<td>In addition to the larger green spaces are central quarters public gardens</td>
<td>public gardens</td>
<td>Green areas</td>
<td></td>
<td>2</td>
<td>Ecological</td>
</tr>
<tr>
<td>The area (Schenk) includes an ecological zone and recreation areas such as allotments and a petting zoo</td>
<td>Schenk area</td>
<td>Facilities</td>
<td></td>
<td>2</td>
<td>Ecological</td>
</tr>
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<td>Herein (Schenk) are generally bovenwijkse functions established as the municipal sports complex overBosch and offices around the Bordewijkstraan and the Mariahoeve Square.</td>
<td>Schenk area</td>
<td>Facilities</td>
<td></td>
<td>2</td>
<td>Economic</td>
</tr>
<tr>
<td>Around the park except dwellings there are also two secondary schools, a nursing home and two churches. These particular buildings could be urban characterized as separate buildings in a green setting (Deze bijzondere bebouwing is stedenbouwkundig te typeren als losse gebouwen in een groene setting)</td>
<td>two secondary schools, a nursing home and two churches</td>
<td>Facilities</td>
<td></td>
<td>1</td>
<td>Social</td>
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In this zone (Jade&Diamond Horst), the residential function is interspersed with three school buildings in 2 and 3 floors

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<th>Facilities</th>
<th>Economic</th>
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<tr>
<td>The main feature is bovenWijkse the mall. It is part of an elongated strip of the small facilities on het kleine Loo where two kindergartens, a primary school, features a library and hetwijken service center.</td>
<td>Shopping mall</td>
<td>1</td>
</tr>
<tr>
<td>Most facilities and major facilities are concentrated on the north side of Little Loo. The shopping center, the neighborhood and service center and a number of schools for secondary education</td>
<td>Shopping mall</td>
<td>1</td>
</tr>
<tr>
<td>Provisions that are not in the special fields, are scattered in the quarters mostly situated along roads</td>
<td>Scattered provisions</td>
<td>1</td>
</tr>
<tr>
<td>Other provisions are scattered in the neighborhood. The majority of this is concentrated at or near the green fields in the central quarters</td>
<td>Concentrated provisions</td>
<td>1</td>
</tr>
<tr>
<td>Around Sweden Burgwal Burg and in the green zone between the Vlaskamp and Little Loo one finds a concentration of facilities</td>
<td>Concentrated facilities</td>
<td>1</td>
</tr>
<tr>
<td>Quotation</td>
<td>Attribute</td>
<td>Category</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>In the urban plan for Mariahoeve much attention was paid to the edges of the neighborhood</td>
<td>Edges of Mariahoeve</td>
<td>Urban structure &amp; Composition</td>
</tr>
<tr>
<td>Despite their Scandinavian origin, the Z-flats do not essentially contribute park like (parkachtige) setting of the neighborhoods. Blocks form a transition area at the edge of the neighborhoods, a filter between the characteristic neighborhood centers and Schenktrook.</td>
<td>Composition of blocks</td>
<td>Urban structure &amp; Composition</td>
</tr>
<tr>
<td>Always (steeds) three volumes were coupled to a Z-shape. (volumes)Placed beside each other gave a long line public courtyards, accessible from two vertices</td>
<td>Common gardens</td>
<td>Green spaces</td>
</tr>
<tr>
<td>The intervening (tussenliggende) spaces are arranged as common garden that by the interlocking of the blocks, have a private (besloten) character</td>
<td>Common gardens</td>
<td>Green spaces</td>
</tr>
<tr>
<td>In the district Bouwlust he applied the so called MUWI-system, which is based on halfbrick walls of stacked hollow concrete blocks, which after placement were volgestort with concrete. Pet embroidered in Mariahoeve forth on this system</td>
<td>development of MUWI system</td>
<td>Architecture</td>
</tr>
<tr>
<td>The Z-flats are a large-scale example of the effect (development) in the Muwi building system</td>
<td>development of MUWI system</td>
<td>Architecture</td>
</tr>
<tr>
<td>The building is four storeys high, except for the south side, which has three layers. Here were originally nursing homes on the ground floor. The result is a strip with clear courts, well sunned and with a high density</td>
<td>South side blocks having one floor less</td>
<td>Architecture</td>
</tr>
<tr>
<td>in the architecture of the blocks rhythm and repetition form an important motif</td>
<td>rhythm and repetition</td>
<td>Architecture</td>
</tr>
<tr>
<td>---</td>
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<td>---</td>
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<tr>
<td>The concrete floor slabs (vloerbanden) provide a horizontal articulation</td>
<td>concrete floor slabs</td>
<td>Architecture</td>
</tr>
<tr>
<td>In between are wooden doors installed feature of clear and frosted glass in combination with an etherniet panel</td>
<td>wooden doors with embedded clear and frosted glass</td>
<td>Architecture</td>
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<tr>
<td>In between are wooden doors installed feature of clear and frosted glass in combination with an etherniet panel. These panels are placed on each floor on either side of the living room window and alternately painted red or blue.</td>
<td>layout of panels</td>
<td>Architecture</td>
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<td>In between are wooden doors installed feature of clear and frosted glass in combination with an etherniet panel. These panels are placed on each floor on either side of the living room window and alternately painted red or blue.</td>
<td>Alternate colors of panels</td>
<td>Architecture</td>
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<td>parapet panels (borstweringspanelen) of balconies staggered (verspringen). With this rhythmic format, monotony is somewhat broken</td>
<td>layout of balconies parapet panels</td>
<td>Architecture</td>
</tr>
</tbody>
</table>