World Heritage cities: Amsterdam's canal district as case study

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ABSTRACT:

The aim of this paper is to describe the impact of building merges on the condition of the Amsterdam canal district in terms of its Outstanding Universal Value (OUV) as World Heritage property. The effect of building merges is investigated within a broader research and mapping process; that defines, locates and analyses the OUV of the property and aims to contribute new insight to management and monitoring discussions within Amsterdam as World Heritage city. This is achieved by researching the nature and occurrence of building merges and relating it to other mapping themes that describe the value of the architectural ensemble within the historic urban landscape of Amsterdam. Results indicate a causal link between building merges and the integrity of the property in terms of its building scale, façade composition, functional mix and architectural typology.

1 INTRODUCTION

1.1 World Heritage cities: Amsterdam as a case study

The "Seventeenth-century canal ring area of Amsterdam inside the Singelgracht" (Amsterdam canal district), as indicated in figure 1, was inscribed on the UNESCO World Heritage list in 2010 under the classification of a "group of monuments in an inhabited historic town" (Kingdom of the Netherlands, 2010:18). This paper shows how the detailed mapping of a part of the property reveals certain attributes, the tangible and intangible elements within the property that convey value. In addition it shows the effects of a specific factor, building merges (figure 1), on the Outstanding Universal Values of this World Heritage property. This paper presents selected results of a broader research which used the Herengracht (one of the canal streets within the Amsterdam canal district) as study area within the case study. The research aims to assist the municipality of Amsterdam on local level, but also provides output from to a larger research program short-titled: “Outstanding Universal Value, World Heritage cities and Sustainability” lead by the Eindhoven University of Technology in the Netherlands and the UNESCO World Heritage Centre in France. This research program is an innovative, collaborative and comparative research program that aims to make a significant contribution to both research and practice on World Heritage management and sustainable development (Pereira Roders & van Oers, 2010). The research of this particular case study is executed in collaboration with the Amsterdam World Heritage Bureau.
Figure 1: The Amsterdam canal district as World Heritage site, definition of core and buffer zone

Figure 2: Map indicating building merges on the Herengracht, Amsterdam
1.2 Problem field

Being listed as World Heritage means that a property is considered to be of "Outstanding Universal Value" (OUV), with its cultural and/or natural significance being "exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity". In addition “the permanent protection of this heritage is of the highest importance to the international community as a whole" (UNESCO, 2008). Such protection efforts however, are often perceived as an obstruction to the (socio-economic) development of cities while at the same time development pressures and management deficits are commonly found factors affecting cultural heritage being protected (ICOMOS, 2005; Pereira Roders, 2010).

With ongoing urbanization globally and a growing list of properties inscribed on the World Heritage List, cities containing World Heritage are an increasingly relevant phenomenon (Pereira Roders, 2009). Such a World Heritage city faces "difficulties in reconciling conservation and development" (UNESCO, 2011) and needs to manage development in such a way their OUV is maintained or enhanced rather than threatened or damaged. This is also the task set for the city of Amsterdam upon its nomination in 2010 because, as with any other historic urban landscape, Amsterdam needs to continue evolving as a city. However, just as any other UNESCO World Heritage property, this evolution should be managed by the national and local stakeholders in order to prevent the irreversible destruction of the attributes conveying its Outstanding Universal Value.

1.3 Aims

The research aims to contribute to the monitoring and decision making processes in relation to the Amsterdam canal district, by locating and clarifying the attributes present in the property. This is done by revealing the significance of the Amsterdam canal district in terms of its Outstanding Universal Value and relating this significance to the factors that threaten or affect it. Therefore the main question of the research is: “What is the relation between the state of authenticity and integrity and the factors affecting the property?” This paper will shortly explain the methods used to reveal the presence of the OUV and the factors affecting it. Thereafter the paper will focus on the specific phenomenon of building merges along the Herengracht and its effects on other themes such as building scale, building facades, functions and typology.

In order to accomplish the research goal, first, a content analysis on the official UNESCO documents regarding the property revealed the set of attributes that convey the outstanding universal value of the Amsterdam canal district. Following, a selection of the architecture related attributes was analysed and mapped within the property while interviews and further analysis indicated which related threats could be affecting these attributes and thus the OUV of the property. As the study area only covers a part of the Amsterdam canal district, the Herengracht, further research is needed to present overall conclusions on the property. However, there is uniformity across the urban areas of the property and this sub-division is not expected to compromise the research, nor the reliability of the results within the Herengracht as study area.

2 METHODOLOGY

2.1 Theory

The study investigates attributes conveying the OUV of the Amsterdam canal district; as such the understanding of this OUV was the point of departure. The research consisted of desk research and fieldwork. Content analysis methods and interviews have been used to identify the attributes and related threats within the property. Documents used for this analysis are the official UNESCO Decision File, the Advisory Body Evaluation (ABE) as prepared by ICOMOS and parts of the nomination file as prepared by national government. The resulting list of attributes provides a comprehensive overview of the attributes within the Amsterdam Canal area. The attributes mentioned in the official documents were often non-specific in description and of an intangible nature - ranging from the property being a “characteristic architectural ensemble” and a “homogeneous ensemble with at great variety of individual decorative detail” to the buildings
being a “model for the type of Dutch single dwelling” with “gable pediments that vary greatly” and conveying an “individual, personalised style” (ICOMOS, 2010; UNESCO, 2010). These attributes were perceived as being attribute-themes which had to be further detailed, interpreted and revealed in the actual context of the Herengracht. The presence of such themes, and their respective changes over time, has been evidenced within the property by fieldwork and archival research. This part of the research thus focused on a mapping process that aims to locate, clarify and visualise the OUV of the property; and to identify factors affecting the OUV. The research was limited to a selection of themes which had an architectural nature and was further informed by a workshop with stakeholders and interviews within the Amsterdam municipality. In addition the possibly related factors affecting those attribute-themes where analysed.

2.2 Mapping focus and scale

The attributes revealed by mapping are the ones related specifically to architectural qualities on a collective scale. Because, one of the main ‘vague natured’ attributes is the relationship between individual qualities and collective value within the architectural ensemble, the mapping has been done on three different scales (figure 3):

1) The individual architectural unit - qualities assigned per building;
2) Building block - graphical representation per street segment;
3) The Herengracht as study area - data counts and positional map over study area;

The analysis mediates and correlates between the three scales in order to connect individual qualities to collective value and broader scale data.

In addition, the mapping to study the Herengracht was developed in three different phases. Firstly phase A: Comparative visual analysis of the facades to reveal the gradual changes of composition, style and silhouette between 1770 and the current visual state (figure 4). Phase B then evidences the changes for the underlying elements such as functions and building scale. When Phase A and B were related, it revealed further attributes that could be affected. Those were mapped in further detail within Phase C to get a better understanding of current and emerging threats. Attributes and threats researched in phase C were informed by expert opinions on possible relations, obtained during interviews.

As stated before, this paper emphasizes on one specific factor possibly affecting the property: the merging of buildings. Building merges is directly related to the attribute ‘layout of building plots’ (parceling) within the Amsterdam canal district. This parceling is an important feature of Amsterdam’s urban layout that created uniformity within the urban ensemble and was the foundation for the development of specific building types and architectural styles. As such, building merges was considered as a threat by the stakeholders. To understand the effect of building merges and reveal possible trends affecting the properties OUV, a comparative analysis is done that tracks merges over time and correlates this with the outcome on changes in building scale, facade composition and function. This further led to an analysis of the building typology as specific attribute that appeared to be affected and rather unnoticed.

The ‘merging of buildings’ is defined as follows: Cases where buildings that were originally outlined within geographical records as separate buildings and indicated with separate street numbers, at some point in time become merged and subsequently outlined as one larger building, often with only one street number remaining. It must be noted that the exact nature of merges is not researched: they could indicate major change where separate buildings were demolished and replaced with a larger scale structure or in some cases could simply mean that separate buildings were connected with internal doors or openings.
Figure 3: Three scales of analysis used within the research

Figure 4: Visual data used for streetscape and facade analysis over multiple time periods
3 RESULTS

The results presented, evidence the increasing occurrence of building merges and their effect on three specific attributes within the property: Facade composition (phase A) building scale and mixed functions (phase B), and Dutch single dwelling as building typology (phase C).

3.1 Building merges

The research of identifying the changes to the scale of buildings along the Herengracht has been completed in two stages:

First, the building sizes indicated on the 1876 municipal atlas were compared to 2011 data (figure 4). The results of this comparison indicate a high percentage of buildings merged between these two time periods and thus an average increase in building scale. The amount of individual buildings decreased from 610 buildings in 1876 to 452 in 2011. This means at least 26% of the separate buildings were merged into larger single buildings over time. These merges include cases where up to ten buildings merged into a single one. The average amount of individual 1876 buildings traced back within each of today’s larger scale buildings is 3.23, thus the average size of a merge is 3.23 original buildings per merged building. These merges can be found spread all along the Herengracht. Additionally, no separations were found.

Secondly, in depth studies (figure 5) were done on the larger merged buildings and geographical data from six additional timeframes between 1876 and 2011 was included. It was found in all of those studies that the merges remained or grew incrementally with individual buildings added to the merges over different periods of time. Only one temporary separation was found. The merges grow steadily over time, at this point there are no explicit indications merging was stimulated or discouraged at a certain period of time. It does indicate the trend that could be defined as ‘incremental merging process’ within the property. If continued, this trend
will affect the OUV of the property further by its influence on parcelling. Further it is a potential cause for changes to attributes such as facade composition, mixed use, and Dutch single dwelling as building typology; these attributes have therefore been further researched in correlation to building merges.

Figure 5: Case study indicating merges that incrementally expand over time

3.2 Facade composition

The results of mapping the facade composition are presented in order to clarify the subsequent comparison between facade composition and building merges (3.3). Building facades were analysed in terms of collective qualities such as rhythm, variety and composition within a sequence of facades but the basic mapping discussed here in order to clarify the comparison with building merges is individual facade scale. This analysis of facade scale mapped the division of the streetscape into the amount of individual facades that it is composed of. These divisions between facades appear along vertical lines where there is a continuous construction break between two individual facades. This analysis was done on streetscape data from 1770 and 2011 and allowed for a quantitative analysis on the number of individual facades and the average change in the scale of the facades within this area. The amount of individual facades within the study area decreased from 582 in 1770 to 529 in 2011, a general decrease of 9%. However, it must be noted that after 1943 (figure 4) there are no major changes to the facades and no occurrence of facades being merged and thus the amount and outlines of the facades have remained unchanged since at least 1943.
3.3 Correlating building merges and facade composition

The decrease in amount of individual facades of 9% between 1770 and 2011 occurs where a new larger scale facade replace multiple smaller facades. These changes to the amount of individual building facades occurred in all cases as a result of the merging of buildings behind the facades. However, not in all cases does building merges behind the facade cause the facades of the original individual buildings to merge, to clarify: When the 9% decrease in individual facades (1770 to 2011) is compared to the previously mentioned 26% decrease in individual buildings over an even shorter amount of time (1876 to 2011), a clear discrepancy between the change of scale to the facade and the change of scale to buildings behind the facade becomes visible. This becomes even clearer when results from only the second part of the 20th century are compared. The amount of individual facades has remained unchanged since at least 1943, yet building merges behind the facade kept on appearing. Thus, since the second half of the 20th century building merges behind the facades are not causing major changes to the amount of individual facades or their outline.

3.4 Function

In order understand the relationship between building merges and changes to building functions, a basic overview of functional changes has been mapped. The mapping of building function (figure 6) analysed changes to building function between 1958 and 2011. This mapping and indicates whether a single building contains a residential function (A), commercial function (C) or both (A+C). When comparing this functional composition of the buildings between 1958 and 2011, the following was found: The percentage of mixed function buildings (A+B) within the total amount of buildings was 56% in the 1950’s, however in 2011 these buildings make up only 22% of the total amount of buildings. The functional trend within buildings is thus that the amount of multifunctional buildings decreased and a general trend towards monofunctionality is found.

3.5 Building merges and function

The results of mapping functions (3.3) revealed a decrease in the amount of buildings that contain mixed functions (both residential and commercial). This trend has been related to the occurrence of building merges to investigate the relationship between building merges and monofunctionality. The functional change between 1958 and 2011, as explained in 3.3, indicate that amongst all buildings along the *Herengracht*, 54% of buildings that contained a mixed function in 1958 still contain a mixed function in 2011. The data only amongst buildings that have been involved in a merge indicate that only 36% of these buildings that contained a mixed function still contain a mixed function in 2011. Thus the decrease of mixed functions within buildings that have been merged is more significant than in buildings that have not been involved in a building merge.

Further, these changes from mixed function to single functions within buildings is analysis to indicate how much of these buildings changed to residential functions and how many changed to commercial functions. It was found that 46% of the changes lead to residential functions and 54% of changes lead to commercial functions. Thus, building merges relate equally to residential and commercial functional changes.
3.6 Building merges and typology

During the mapping process it became apparent that building merges could be affecting another attribute: the single Dutch dwelling. The typical features of the Amsterdam canal house, which is defined by Killiam (2006) as a building that has its own facade, its own roof and its own entrance. Following this definition, the effect of building merges on typology could be analysed by comparing building merges with facade composition (3.2) and then mapping two additional themes: roof structure and use of entrance. The combination of these three themes provides the basic set of criteria for the Amsterdam canal house as building typology (figure 7).

When mapping the effect of building merges on these typological criteria, the occurrence of merges are isolated and compared to criteria 1) The amount of individual entrances retained within the merge, to criteria 2) the amount individual facades retained within the merge and to criteria 3) the amount of individual roof structures retained within the merge. For example the state of a currently merged set of buildings is compared to the state of the same ensemble in 1876, regarding the three criteria (1: entrance, 2: facade, 3: roof), to see whether the individual building retained (after the merge) the qualities of having its own/individual entrance, its own/individual facade and its own/individual roof. Merges could happen without any of the three criteria changing, however, none of the criteria appear without the building merging, therefore it was not needed to evaluate all buildings to determine if it was really the influence of merges on the typology.

Of the individual buildings in 1876 that was subsequently involved in a merge, an analysis of the 3 criteria in 2011 reveal the following: 18% of buildings lost the quality of having its own/individual entrance, 32% of buildings lost the quality of having its own/individual facade and 50% of buildings lost the quality of having its own/individual roof. If these three criteria are overlapped, in total 82% of all merged buildings were affected in any of the three ways, and XX % were affected by all tree. Thus we can conclude that building merges, in a high percentage of cases, affected the historic building typology within the canal district. The high percentage of affected facades (50%) and roofs (82%) indicate that merges caused major structural changes to the roofs, and subsequently possibly to the whole building. As previously indicated (3.2), the mapping of facade composition shows that the facades do not display major changes since the 1943 mapping, thus the effect of building merges on criteria 2 of typology (individual facade) is not a current trend. However, the effect of building merges on the other two typological criteria (individual entrance and individual roof) occurred throughout the second half of the 20th century and can as such the merging should be indicated as an ongoing concern.
CONCLUSION & DISCUSSION

4.1 Summary

The results presented in this paper contribute to a better understanding of the effect of building merges by describing the occurrence of building merges and importantly: testing the effects that it has on other attributes of the property’s architectural ensemble. The main results are an analysis of the extent and nature of scale increase due to building merges and the relationship between building merges other trends such as 1) the increased scale of building facades, 2) the trend towards mono-functionality within buildings and 3) the decrease in buildings that correspond to the canal district’s historic building typology. The results found within this variety of themes confirm the value of an integrated mapping process that relates various mapping themes to each other.

4.2 OUV, Authenticity and Integrity

To relate the results of the research back to the main research question “What is the relation between the state of authenticity and integrity and the factors affecting the property?” it is important to explain the effects that building merges have on the OUV of the property and the level of authenticity and integrity of the Amsterdam canal district. Within UNESCO’s Operational Guidelines (2008) Authenticity is defined as “the degree to which information sources about
this value may be understood as credible or truthful.” Integrity “is a measure of the wholeness and intactness of the natural and/or cultural heritage and its attributes.” Because the Amsterdam canal district was only inscribed on the World Heritage list in 2010, the research does not attempt a comparison between levels of authenticity/integrity between the current scenario and the inscription but rather between the current scenario and earlier dates as discussed for each part of the research.

Building merges caused dramatic change to the scale of individual buildings and the uniformity of building sized in the urban ensemble since at least 1876. These changes mark a decrease in the visibility and integrity of the original layout of building plots (parceling), an important feature of Amsterdam’s urban layout that created uniformity within the urban ensemble.

The decrease of buildings that contain mixed functions indicate a decrease of integrity of the attribute mixed use/functional composition of buildings. The typical “Amsterdam canal house” as building typology forms an important attribute of the OUV of the property, the results of the research show that the typological integrity of buildings are affected by building merges in multiple ways. The high occurrence of cases where the building typology was affected by changes to the roof structures of buildings also lead to further questions regarding the integrity of the property’s roofscape and the structural authenticity and integrity of individual buildings.

4.3 Discussion

The trend, in the 20th century, is that merges cause dramatic changes to the buildings on the Herengracht that are often hardly noticed on the streetscape, this should be of concern. Attributes are being affected and this tension could even increase in the future due to the fact that that the monument status of buildings within the property protects the façade from dramatic visual changes and the historic facades are valued by investors and property owners while economic and development pressure increasingly demand for dramatic changes to building structures behind the facades and developers seek larger floor areas that lead to a demand for building merges and interior reconstruction. Building merges, if not executed with respect to the typology of the buildings, threaten the basic historic character of Amsterdam by leading towards modern, larger scale mono-functional urban buildings. In addition, it may lead to façadism and musealization, both general threats often mentioned in cases of the heritage management of historic centers (Yang, 2003).

To achieve the goal of protecting and enhancing OUV instead of threatening or damaging it, these pressures for change within the property should be managed by limiting the impact of merged buildings and future merges on other attributes such as typology. Further research on the building interior relation with parceling could help clarifying the impact of such trend even more, which could also help Amsterdam authorities to create strategies for its mitigation.

In fact, building merges, as a threat to cultural values, are currently under discussion within the Amsterdam municipality; however, it had been so far not proven with facts. The fact that policy has to allow for the city to change and evolve means that Amsterdam municipality needs to discern areas of significance from areas where such changes will do no harm to the cultural significance of Amsterdam. Thus, to manage OUV, in addition to policy, research is highly recommendable to help uncover the nature of the attributes within the property and assess their changes through periodic monitoring. With such information, Amsterdam municipality can, together with the other stakeholders, make informed decisions which will place them closer to achieve the golden goal of a sustainable balance between World Heritage and development.

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