Value Assessment of Urban Planning Structures in Historic Industrial Complexes

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SUMMARY

In this presentation, I guide the audience through my survey of urban planning structures of historic industrial complexes. The aim of the survey is to establish recognition and acknowledgement of these structures as the carriers of cultural-historical values, and to underline their role in spatial transformation planning. This research is well-timed to meet a growing need in the Netherlands for obtaining better and more verifiable results in the cultural historic assessment of built heritage.

This survey is based on the publication of the Dutch "Guidelines for surveying building history", in combination with the "Fundamentals of Urbanism in perspective of the Twenty-First Century", as recently published by TU Delft. The theme of this survey is explored within the framework of the governmental policy of 'preservation through redevelopment' (Nota Belvedere 1999). In order to evaluate the industrial complex at an urban-planning level, the survey is using the methodology of Industrial Archaeology.

The survey takes as its primary case study the former Philips factories at Strijp-S, located in the city of Eindhoven. The 27 ha industrial area saw the development of the Philips company from a small lightbulb factory into a multinational electronic equipment manufacturer, serving both the domestic and professional markets. In order to conduct an 'external valuation', as prescribed by the Guideline approach, a comparison is made with the Bata factory in Zlín, in former Czechoslovakia.

General practice and applicable laws show that cultural historic valuation has concentrated on individual buildings, rather than pure urban planning structures. The historic overview of the development of Historic Valuation (Emstede 2015) provides an insight into this phenomenon, and exposes the void that exists in the survey regarding urban planning structures of historic industrial complexes.

Results of the Research into Urban Planning Structures of Historic Industrial Complexes

Assessment of the historic value of urban ensembles on their own merits: This proposition seems to be as obvious as ever, but as a theorem at the basis of my dissertation it proved to be productive for filling in gaps in the practice of the assessment of cultural historic values based on urban design theory. Urban Design 'merits' have been carefully re-defined in a series of volumes by professors and researchers at the Technical University Delft,[1] but they have found little application in researching thoroughly and consistently historic values for the purposes of assessment. While conducting my research, I had the opportunity to explore the methodology to its full extent.

In addition to this proposition, the practice and policies of historic conservation are being applied. The conservation of monuments and urban ensembles is increasingly aiming at re-use and redevelopment, as opposed to conservation and treatment of monuments as museum pieces.[2] Therefore, the bridge between research and design is increasingly being instrumentalized in order to obtain a verifiable and complete image of cultural historic values, and provide designers with effective accessibility. My research into "Value assessment of urban planning structures in historic industrial complexes" intends to participate in this process, and provide additional instruments to value urban design structures, and to map results, thus enabling designers to incorporate these considerations directly 'on the drawing board'.

"Recent developments in Dutch conservation practice lead increasingly to systematic development and institutionalization of the valuation of monuments, explicitly naming the values of a monument and methodologically founding a value-based judgment as the basis for the monument's conservation."

Thus claims Charlotte van Emstede in her dissertation presented in Delft in 2015.[3] The fact that this

historical study was performed at the Technical University of Delft within the department of the leading professor in Historical Conservation, Professor Paul Meurs, underscores the significance of this work.

This document provides an interesting context for the relevance of my presentation, and brings to light many pretenses that illustrate the need and the logic of research into value assessment of urban planning structures in historic industrial complexes. My research can be interpreted in three ways: as a historically logical continuation of governmental and institutional policies, as a much-needed addition to the theoretical developments in practice, and as filling the (albeit small) void in recent research literature.

Terms of Governmental and Institutional Policy

Van Emstede describes the emergence and development of value assessment, and the application of this phenomenon in conservation practice, between the years 1981 and 2009. Her critical overview starts in 1981 with the first attempts to develop "instruments for historic conservation" that were initiated by the governmental organization that managed state-owned buildings. The overview ends with the publication in 2009 of Guidelines for Research into Building History.[4]

The developments gained such momentum that "systematic development and institutionalization of the valuation" became scaled up to the level of urbanism, and the valuation of ensembles was approached through the theoretical discipline of urban design.

Theoretical Developments in Practice

To support this position and extend it to the level of urban design, the city of Amsterdam developed "an assessment system in which cultural historic value is defined for the purpose of the urban design tasks". Results are mapped and classified in so-called "orde-kaarten", sub-divided into 4 categories. The purpose of these classifications is to assess situations in the city that give "an impression of cultural historic value of objects and ensembles in the city". The city was divided into (14) areas, and criteria were developed for each of these "Spatial Systems". The progress of the work in Amsterdam has reached areas in which industrial complexes are more prevalent. The requirement to study the very specific nature of industrial complexes therefore needs to be extended to the discipline of urban design.[5] Instrumentation of this line of research did not exist till recently.

Recent Research Literature

More fundamental research was needed to extend the discipline of urban design, as was shown in a comparative study of different area developments in the Netherlands.[6] Examples of large developments are the Hembrugterrein in Zaanstad, the RDM shipyard in Amsterdam, the former Philips Strijp-R area in Eindhoven, and the Spinx area in Maastricht, and within these considerable differences are apparent. These projects were classified as the most authoritative in Dutch practice at the time, according to statements by the "Rijksdienst voor het Cultureel Erfgoed"[7]. No unequivocal system is shown or available for the research into spatial structures which are the result of functional or social incentives, in terms of the historical significance of industrial complexes.

In the research paper I presented at the Berlin AKTLD conference, the methodological aim was to analyse the built structure as a result of functional characteristics of the logistic industrial process. This fundamental approach led to the recognition of basic concepts by means of which a cultural historic assessment could be established.

In the following (in italics) extract, the research results are summarized to provide an insight into the way the tools were developed and results were obtained:

This dissertation is the result of a study of urban planning structures of historic industrial complexes. The aim of the study is to promote recognition and acknowledgement of these structures as the carriers of cultural-historical values in spatial transformation.

Apart from object value, industrial heritage also has ensemble value. Being "the field of study of the material culture remains of industrial production and technology", the field of Industrial Archeology offers the opportunity to gain further knowledge of the nature and background of industrial spatial planning. Given the current focus on cultural-historical values in spatial planning, and the fact that the strategy of 'conservation through development' has found widespread recognition and application, this dissertation has set out to arrive at concrete definitions and instrumentation of reuse and transformation in urban planning.

The study is based on existing sources of knowledge which allowed two spheres of human involve-

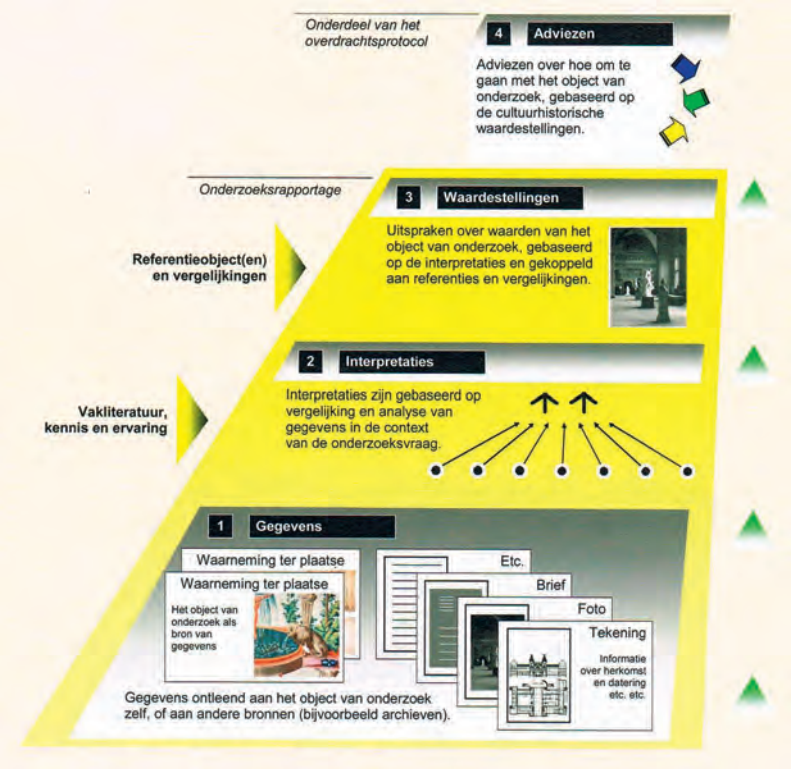

Fig. 1: Research scheme Building History

ment and endeavor to be connected. The first is building archeological research that has been included in operating guidelines, and has developed into a considerable volume of knowledge and experience which has shaped the practice of planning, as well as the teaching of design (Fig. 1).

This field of knowledge represents the cultural-historical component of the study. In addition, there is the domain of spatial planning discipline. The knowledge acquired in this area has been brought together in a series of four publications under the heading "The Fundamentals of Urbanism in the Perspective of the Twenty-First Century". This, too, incorporates a considerable volume of knowledge and experience, which has been laid down in publications classified on the basis of a planning-level approach, to distinguish aspects of design, theory, law and programming. This planning-level approach allows for a structured and differentiated methodology for tackling industrial urbanization at the level of its composite parts (Fig. 2).

One case study lies at the heart of this dissertation's research: the former industrial estate of Philips Strijp-S at Eindhoven, The Netherlands. In selecting this location, aspects of size and range have been taken into consideration. A decisive factor in its selection, no doubt, has been the degree of attention generated by and for the transformation itself. Prominent administrative and professional parties have gone through a process of research and planning that has been extensively documented. As a result, a fair account of the facts could be made. In it the administrative and societal contexts are closely connected with both research and design of the transformation. Urbanization archeological research is conducted under two denominators: research and value assessment. In order to reach a cultural-historical valuation, this study includes reference research for the city of Zlín, the cradle of Thomas Bata's shoe industry in the former Czechoslovakia, for three reasons. There are major similarities between Philips and Bat'a in momentum, industrial ambition, and fundamental attitude towards innovation, first at the personal level of the entrepreneurs, secondly at the company level of industrialized production, and thirdly at the level of spatial and societal conditions.

Philips started as a light-bulb factory located in a street called Emmasingel, now part of the city center of Eindhoven. When the company expanded with the addition of its own glass factory, it marked the beginning of the Strijp-S industrial estate. The Strijp-S study continues to concentrate on the most important period in terms of urbanization history, from the start of construction at the site in 1916, up to the 1950s. At that point, the company's expansion involved the outplacement of essential parts of the company. The year 1951 marks the completion of the Strijp-S era, because it was then that the company's spatial situation was documented by means of an 'enriched' map of the factory's industrial estate.

The 'bottom-up' approach of the Guidelines for Building Archeological Research (2009)[8] has been adopted for the research study of the history of the construction and use of Strijp-S. The origin and expansion of the spatial planning structure of the Strijp-S estate have been shown in connection with the development of the company itself. The fundamental attitude towards innovation that led to the diversification of production (from light bulbs to a broad range of electrical appliances), in the first half of the twentieth century, turned out to have been the breeding ground for an equally innovative architectural and urban-planning establishment of spatial and societal conditions, in the interest of the company and the city of Eindhoven as a whole. Narrowly tracing the growth stages of the estate has brought into focus the elementary parts of the kind of spatial and programmatic structure, which, in the course of time, have developed into typological constructs.

The singularity of the research case study has served to intensify the careful examination of structures in a historical, social and spatial sense. However, an attempt was made to find and research a comparable development, making it possible in the end to upgrade results to the level of concepts, rather than merely providing an overly detailed description of an example. Knowledge of Zlín and Bat'a helped to identify the factors that contributed to the success of the Philips company organization, as inspired by American examples, such as Daylight Factories, Integrated Industry and Company Town. Thomas Bat'a built nearly a hundred daylight factories in and around Zlín, a city with a population of 40,000. Here the Integrated Industry did not only involve the production of shoes, but also the 'production' of the entire city, in recent literature praised as a model company town. There was a substantial connection with Philips, made evident by the decision in the 1920s to locate the Dutch branch of Bat'a in the town of Best, not far from Philips.

In addition, an architectural-historical connection came to light between Zlín and Tony Garnier's plan for a 'Cité Industrielle', which he had already developed in 1904, but was not published until 1917, under the title Une Cité Industrielle, in reference to Lyon. Garnier's spatial concept was virtually copied for Zlín. Although there is no irrefutable proof, a connection between Strijp-S and Garnier's work is not unlikely in view of the personal connection between Anton Philips and Thomas Bat'a.

On the basis of existing knowledge of the Zlín reference case, a value assessment has been made for Strijp-S. As an extension of the editorial section, a values map was drawn up to serve as an instrument for the urban spatial developer. Much was to be gained from a cartographer's point of view, since existing maps are wide of the mark. Maps that seemed to fit into the framework of the archeological urban approach turned out to be too focused on the object, inconsistent in their levels of abstraction, and to be unsuitable as blueprints for development.

Elementary parts of the spatial and programmatic development of the urbanization of Strijp-S could be identified and inserted into the planning-level structure of "The Fundamentals of Urbanism". As a result, a classification of concepts in the interest of cartographical representation was possible. The urbanization archeological values map that has been produced in this way has all the hallmarks that are needed for it to serve as a blueprint for the development process: topographical precision, abstract representation of spatial structures, and distinguishing features according to cultural-historical values.

The transformation history of Strijp-S is characterized by a process in which urban-planning research has not always been connected to development in the proper chronological order. In a review

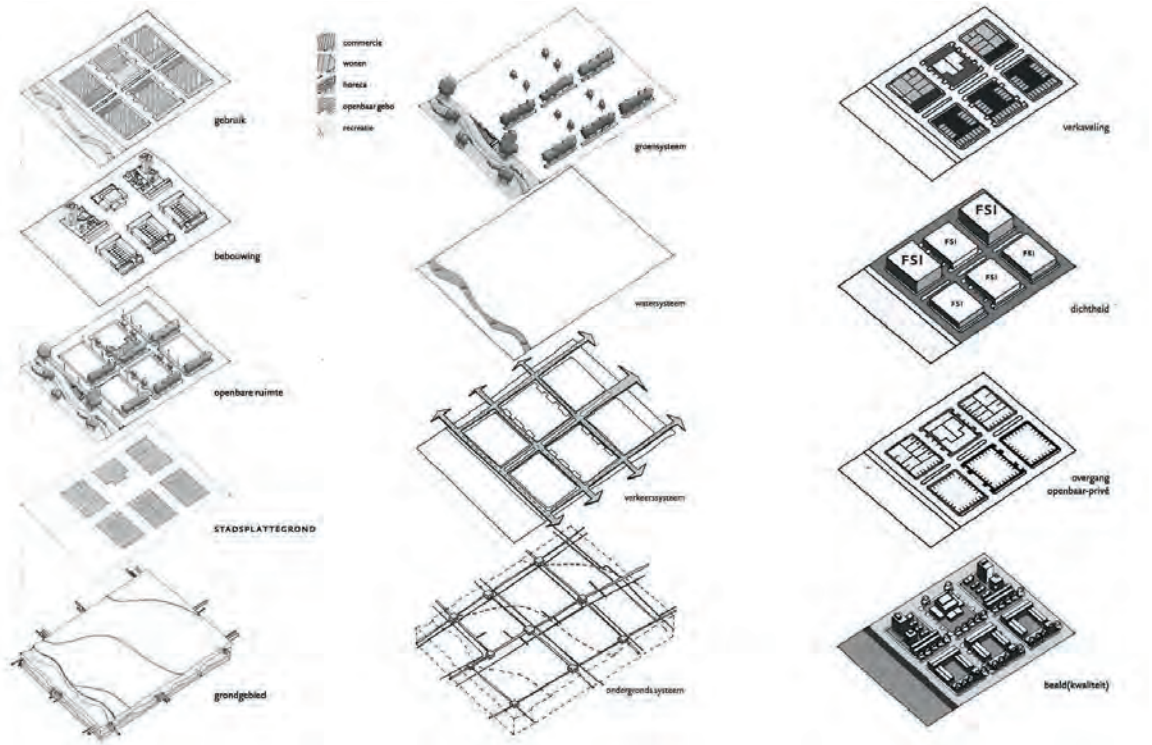

Fig. 2: Planning level approach

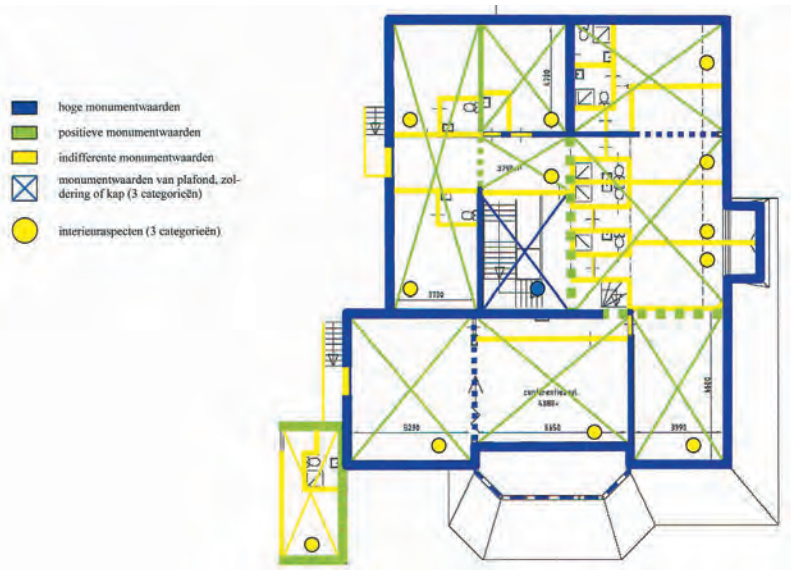

Fig. 3: Mapping value assessment for building history research

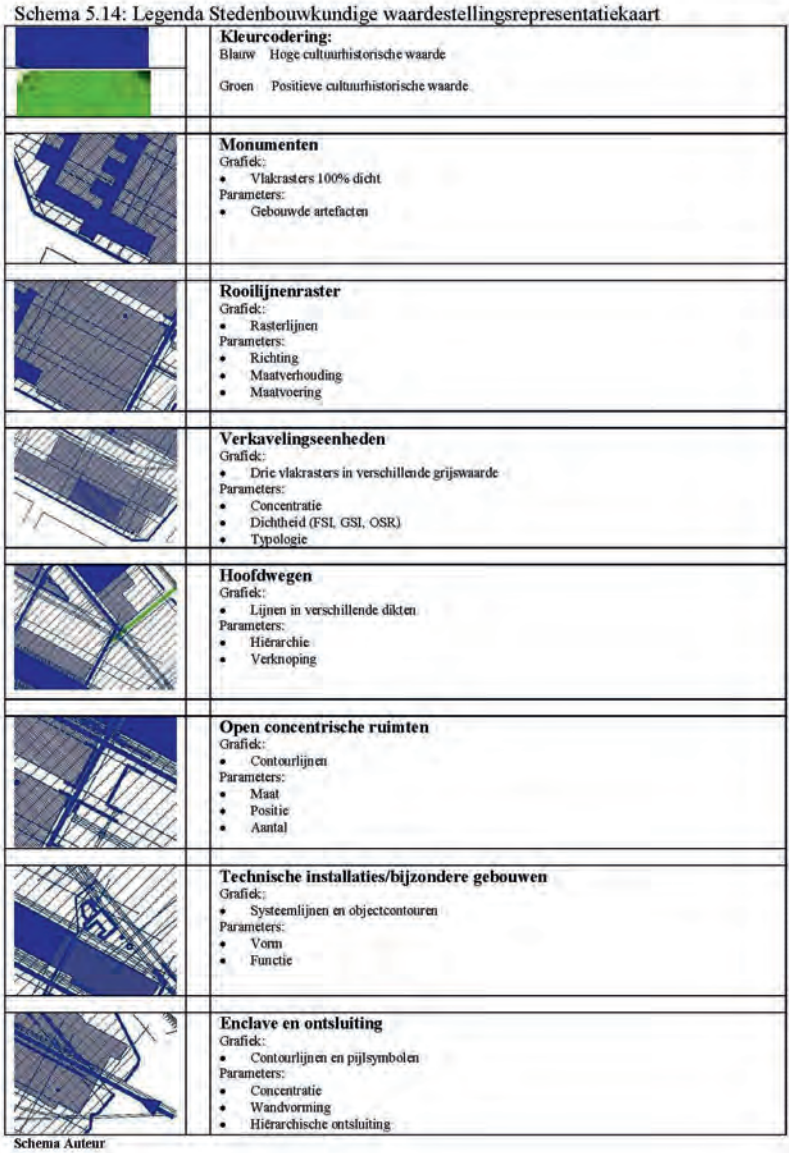

Fig. 4: Mapping urban design value assessment

of that process and the development plans that have been made for Strijp-S in recent years by means of the set of instruments developed, it has been found that there is much left to be desired concerning those plans in terms of the cultural-historical values of the industrial spatial planning of the estate.

Summary of My Dissertation to Date

The tools that are used to perform the research, as well as the instruments, as mentioned in the beginning of this article, developed for the value assessment itself, have been chosen and composed to link very closely to theories and tools that are used in the process of urban design. I seek to illustrate this idea by means of three examples: The layering system as introduced by Prof. Dr Ir Han Meyer[9], the insights into Industrial Archaeology as imported from England by Peter Nijhof in 1978[10], and thirdly, the mapping system of urban design related cultural historic values.

Using the layers from Han Meyer, as shown in figure 2, was a deliberate step in my research to establish links within a basic understanding of the urban structure in terms of 'state-of-the-art' knowledge of urban design. This layering system is defined by Meyer as the basic approach for distinguishing and defining modifying elements and groups of elements in the urban fabric. Although the system was very carefully designed as the basis of the most recent 'body-of knowledge' by a very prominent university, the system was critically reviewed for its adaptability to the industrial landscape. The research of the specific Philips factory led to the conclusion that an important layer was missing. For the infrastructure above ground, an additional layer was added, as this infrastructure was very characteristic of the plant. Apart from this addition, the system could be translated for adaptation to the industrial landscape, and made the step to mapping internal structural elements as a basis for categorising historical cultural values.

Industrial Archaeology is a rather confusing term because it stands for the science of industrial logistics in the building history of the nineteenth century. The main subject of the work concerns the building history, and only so could a relationship be explored between the industrial logistic and the urban structure, by Prof. Ir B. Zweers and Ir W de Bruin, in 1989.[11] Knowledge of industrial archaeology made it possible to characterize the logic of the layout of the industrial area, as a result of an emblematic exam-

ple of Integrated Industry, and thereby relate this to density and architectural typology (Fig. 3).

In the mapping system of values of listed buildings as shown in figure 3, elements of the plan of the building, but also of elevations both inside and outside, as well as ceilings, are represented in different colours, stating the importance of the contribution of the specific element to the historic value. The categorization is linked very closely to the actual built fabric.[12] In order to design a close equivalent for urban structures, I based my mapping on theories of cartography.[13] I chose a basic graphic symbol for each modifying parameter of the urban structure (Fig. 4).

By intersecting these parameters with the emblematic concepts, I was able to assess the historic value of each of the elements in the urban structure. To show that my graphic system links closely to common practice, I made a comparison with the graphic system by Kevin Lynch, to demonstrate the basic assumption of the need not to stray too far from both common practice and morphological reality.

Image sources

1, 3 Hendriks, Leo en Jan van der Hoeve, Richtlijnen Bouwhistorisch Onderzoek, Lezen en analyseren cultuurhistorisch erfgoed, Den Haag 2012

2 Own collection of figures from Han Meyer CS., De Kern van de Stedenbouw in het perspectief van de eenentwintigste eeuw, Delen 1, 2 en 3, Amsterdam 2002, 2006 en 2008

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Notes

1 Heeling, Jan / Meyer, Han / Westrik, John: Het ontwerp van de stadsplattegrond, de kern van de stedenbouw in het perspectief van de eenentwintigste eeuw deel 1, Amsterdam 2002 (Translation of this title: Design of the city plan, the essence of urbanism with perspective on the twenty-first century); Meyer, Han / de Josselin de Jong, Frank / Hoekstra, MaartenJan: De kern van de stedenbouw in het perspectief van de eenentwintigste eeuw deel 2, Het ontwerp van de openbare ruimte, Amsterdam 2006; Meyer, Han / Westrik, John / Hoekstra, MaartenJan: De kern van de stedenbouw in het perspectief van de eenentwintigste eeuw deel 3, Stedenbouwkundige regels voor het bouwen, Amsterdam 2008; Meyer, Han / Westrik, John / Hoekstra, Maarten-Jan: De kern van de stedenbouw in het perspectief van de eenentwintigste eeuw deel 4, Het programma en ruimtegebruik van de stad, Amsterdam 2014

2 The Dutch word is ‘musealiseren’. There is no good English translation for it.

3 van Emstede, Charlotte: Waardestelling in de Nederlandse Monumentenzorg 1981–2009, Delft 2015

4 van der Hoeve, Hendriks, Leo en Jan: Richtlijnen Bouwhistorisch Onderzoek, Lezen en Analyseren van cultuurhistorisch erfgoed, Den Haag 2009

5 Gemeente Amsterdam, Welstandsnota De Schoonheid van Amsterdam, Amsterdam 2016

6 My dissertation „Stedenbouwkundige waardestelling van industrieel erfgoed ”, Delft 2014, pp. 217–229

7 The governmental institute which manages cultural heritage affairs

8 See figure 1

9 Heeling, Jan et al. 2002 (as in note 1)

10 Nijhoff, Peter c.s.: Monumenten van bedrijf en techniek, Industriële archeologie in Nederland, Zutphen 1978

11 van Duin, Leen: Functioneel ontwerpen, Ontwikkeling en toepassing van het doelmatigheidsbeginsel in de architectuur, Uitgebreide editie, Delft 1989, pp. 103–129

12 See figure 3

13 One of the exemplary works I used: Ormeling, F.J. / Kraak, M.J.: Kartografie, visualisatie van ruimtelijke gegevens, Delft 1993