

## AR3A160 LECTURE SERIES RESEARCH METHODS

# THE LOGIC ARGUMENTATION AND RESEARCH IN HERITAGE

Public space sequence and Environmental Psychology

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Thesis "Roaming"

## I INTRODUCTION

Everyone owns their design method, and each method may have different emphasis and value in different situations. An objective understanding of design methodology will more clearly see concerns /ignore. What I learned in the course made me reflect on my approach. Before this course, I did not systematically consider what my design method was. Most of the time I just collect a lot of information, find problems and try to solve them. I haven't seriously considered that they are also a methodology. But after this course, I thought and classified my method logically.

My design research question is "What 's the significance of public space sequence in the context of an industrial heritage site?".

My project is located in a small town on the Dutch border, Winterswijk. The industrial area has been abandoned as the industrial era has passed. Where should the vacant workshop go? Their geographic location, function, and appearance are incompatible with their surroundings. So what should these buildings do in the context of transforming city?

As an architect, for the future, I think there are sufficient buildings existing. In the future, there will be fewer and fewer newly built houses. It will be a huge social issue for the remaining buildings to follow as the times change. In China, many factories have also been abandoned due to the rapidly growing industry. They used to be functional buildings with excellent space, streamlines and structures. Almost every city faces these abandoned factories. How about giving them a second life? What new role should they play in the city? What can they do for cities and residents? For heritage, how to connect the past with the future, respect the value of context, retain the precious value of legacy, and meet the functional needs of the present or future society?

The textile industry has been in Winterswijk since the 18th century. It is part of the city's cultural legacy. Due to the decline of industry and the expansion and development of city center, the old industrial area, which is now located near the city center, is no longer suitable in the perspective of urban planning. The textile culture slowly starts to fade. Within the context of the industrial area in Winterswijk, while it is searching for a new position in the society, it's lack of open space for public, disordered site leads to vacancy and lack of activity. Located in the middle of the dwelling area, enclosed, self-defend appearance, make citizens difficult to utilize this area.

So, how to adapt this site into a Cognitive practice is a test of the site and building limitations. When the whole process begins with investigation and collection of information, the reason of the current situation of the problem is found, and then the solution is found, which is embodied in the form of a building, and the practice of the final collection is a mix of all information and measurements.

## II RESEARCH-METHODOLOGICAL DISCUSSION

I was inspired and enlightened by the way of various means of methods were discussed during the lecture series. In research, my method is similar to architectural exploration, evaluation, and discovery.

As I read from G&W's literature, they proposed several methods almost cover every strategy.  
"Groat and Wang identify seven research strategies in:

- 1) Historical Research,
- 2) Qualitative Research,
- 3) Correlational Research,
- 4) Experimental and Quasi-Experimental Research,
- 5) Simulation Research,
- 6) Logical / Argumentation
- 7) Case Studies and Combined Strategies. ”

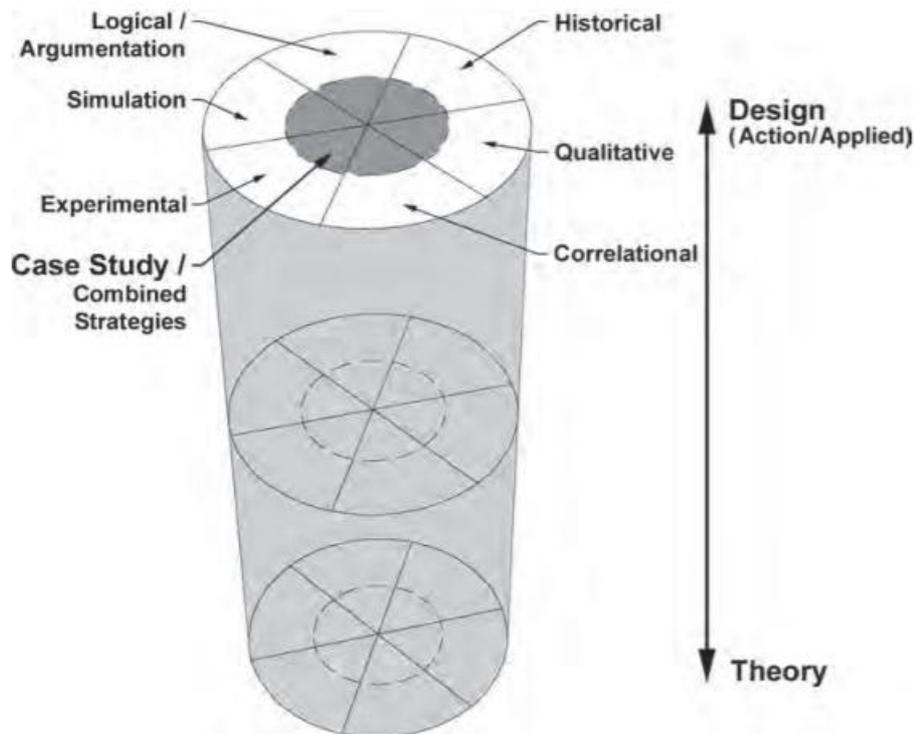


Fig 1. A conceptual framework for research methods

My main research question is: What 's the significance of public space sequence in the context of an industrial heritage site?

In this issue, the spirit of the place and how people perceive the place through the guidance of the space is very important.

My main investigative method is logical argumentation.

My logical framework is:

collect information- organize information (positive and negative)- find problems(conflict)- come up with solutions. (I think it is the same as lecture 1).





Fig 3. Nolimap for private and public. From chen zhu.(2019) Tudelft.

Of course, there are positive and negative results. For example, there is a well-preserved yarn hall in the venue. Its wooden structure is well preserved and has high architectural and aesthetic value. However, the facade and roof of this building lack historical value. They were added by the owners at random in the later period. The language of the facade is very boring. Inside the building, even if the space is very large and empty, it still creates a depressed and isolated space experience. This contradiction also exists on the site scale. This well-preserved building is in the southwest corner of the site, blocking the road inside the building. Formed the fort of the site. The closed shape and façade texture make it impossible to distinguish the direction, and it also explores the site and the building. The internal courtyard loses contact with the main traffic arteries of the outside, forming two completely separated blocks. As a public building, it has a high degree of privacy and is very unfriendly to pedestrians who explore the city.

So the question is, should this building be demolished or retained? It has a high value in part and low value in part; it is in good condition but caused many problems in the site.

At the same time, these "existing results" allow us to find out why this happened from the bottom up. For example, the lack of lighting in yarn hall is due to the owner's desire to save construction costs, coupled with the fact that the spinning workshop does not require good ventilation, and artificial lighting is cheaper, so this result has been produced.

Due to the conflict of values, a dilemma arises. At this time, a solution to compromise between the two parties will be formed.

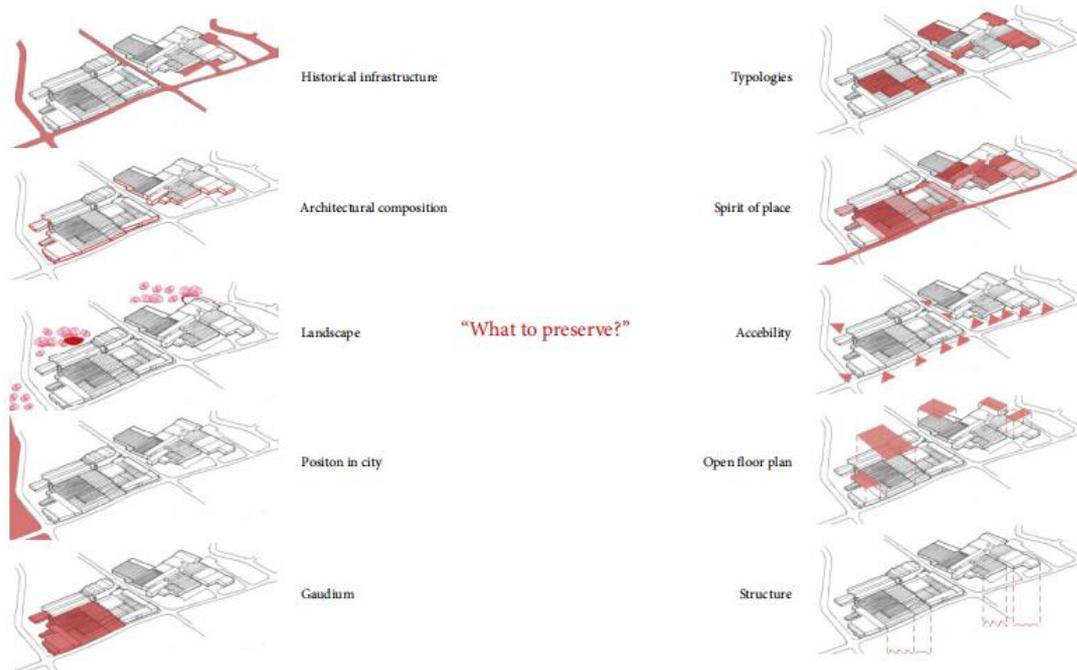


Fig 4. Values. From Chen Zhu, Joost Joose & Juillite Zegers. (2019) Winterswijk industrial area research booklet for p1. TUDelft

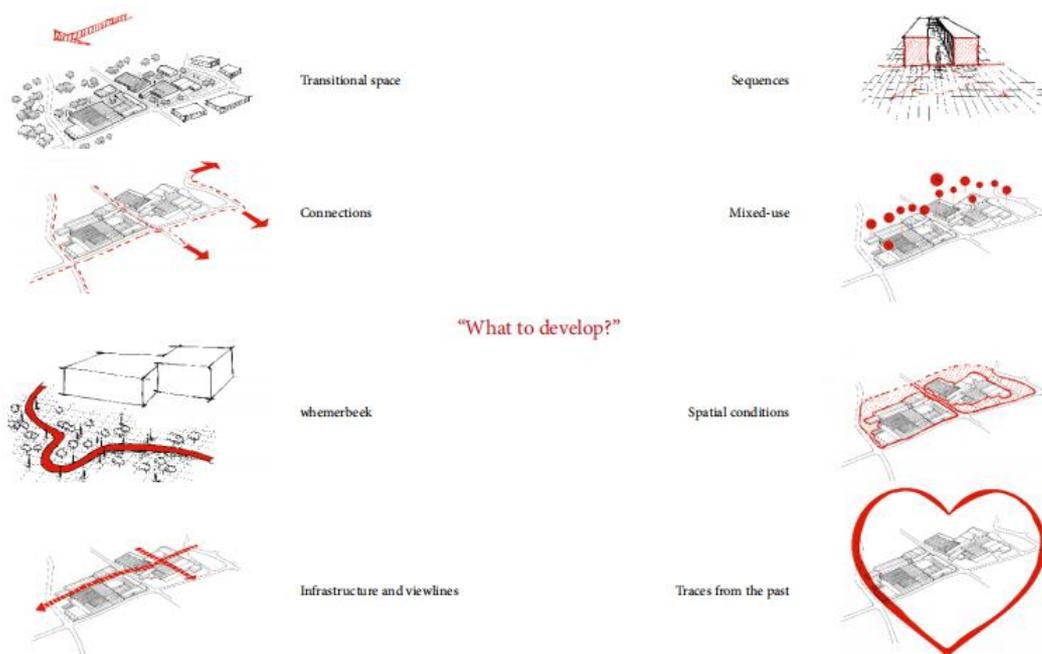


Fig 5. Problems. From Chen Zhu, Joost Joose & Juillite Zegers. (2019) Winterswijk industrial area research booklet for p1. TUDelft

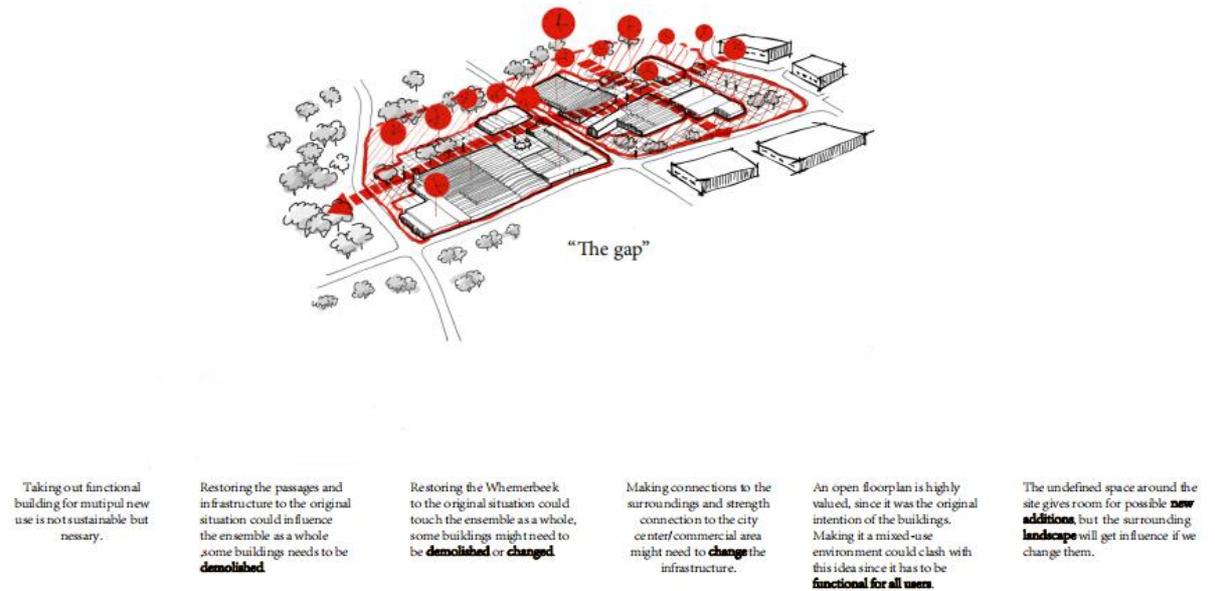


Fig 6.Dilemma(conflict).From Chen Zhu.(2019)Tudelft

For the whole site, if I design a series of comfortable and diverse public spaces through the existing houses and environment, it is my main concern. For a single building, I propose to place a museum. However, the significance of the museum for the site, the relationship between the museum and public space, how to integrate the museum with the surrounding environment through public space, and how to integrate it into the urban texture are all parts of my research. Difficulties can be encountered when looking for answers. This is what I would choose to find similar cases for analysis.

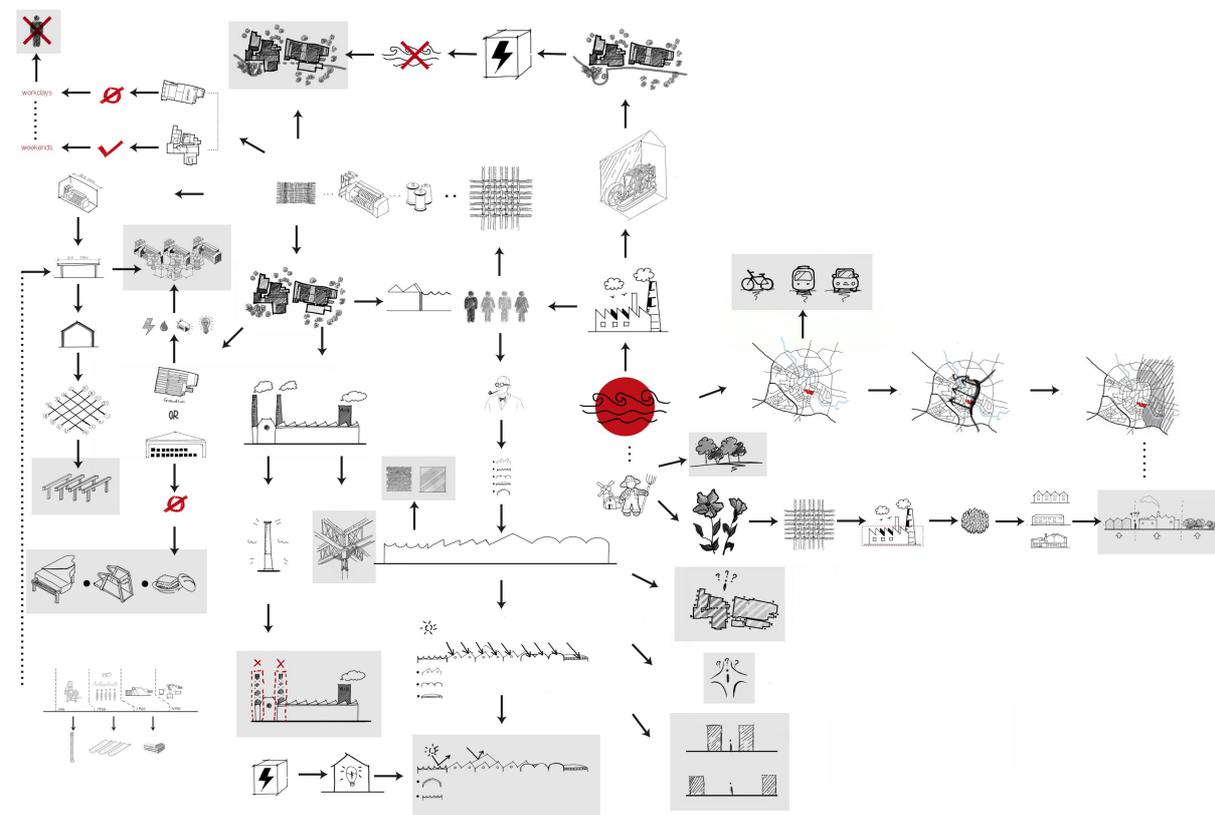


Fig 7. Final overall conclusion mapping. From Chen Zhu, Joost Joose& Juillite Zegers. (2019) Winterswijk industrial area research booklet for p1 .Tudelft

### III RESEARCH-METHODOLOGICAL REFLECTION

Logical Argumentation appeared long ago. It can be said that this system existed when philosophy appeared. It doesn't just exist in architectural research.

Two thousand years ago, Aristotle proposed his four first principles in his architectural philosophy: the material, the formal, the efficient, and the final causes.

"Aristotle sometimes used house construction to illustrate his ideas: 1. houses need materials to build; 2. houses need formal reasons. 3. houses need valid reasons. 4. houses need final reasons. Aristotle thinks that everything exists for a purpose: for example, the purpose of healing is health; the end of the house is the residence; The end of the matter is also a reason. "<sup>1</sup>

Regarding the application of environmental psychology logical argumentation, which, if we used time and landmark events as reference standards, and it first emerged in North America in the 1970s.

The research focuses on the logical clues of the development of environmental psychology and conducts in-depth research, combing, and synthesis of the history, current situation, basic concepts, theoretical paradigms, core topics, and future development of environmental psychology.

The basis of its rise is the pragmatism of native American philosophy, the reflection of human activities caused by the deteriorating relationship between people and the environment, and the active accession of psychology itself to pay attention to people's environmental awareness, attitudes and behavior, and the interaction between people and the environment, try to solve the environmental problems facing human beings, and explore the interaction between people and the environment. Enrich Pol from Spain divides the development of environmental psychology into four stages: origin; transformation in the United States; architectural psychology; and sustainable environmental psychology. In 1968, the United States established The Environmental Design Research Association. This is the world's first international comprehensive academic research group to study the environment and behavior. The following year, the magazine Environment and Behavior was published. In 1979, the Journal of Environment Psychology was launched. It can be seen here that environmental psychology is a relatively young but rapidly developing discipline. In the study of environmental psychology, it can be divided into seven parts:

1. Human perception and evaluation of the environment
2. The influence of individual cognition and motivation factors, and social factors in environmental research
3. Environmental danger awareness and quality of life
4. Sustainable development behavior and lifestyle
5. Ways to change sustainable development behavior patterns
6. Public policymaking and decision-making
7. Relations between individuals, organisms and ecosystems-environmental protection psychology.

Among the contents of this research, the individual's perception and evaluation of the environment is a traditional research topic concerned by environmental psychology. It mainly examines the impact of the physical environment on individual psychology and behavior, such as crowding, noise, and light on individual cognition, emotion, Impact of motivation. In general, this type of research focuses on how to promote and develop sustainable lifestyles and behavior patterns.

<sup>1</sup> Stanford Encyclopedia of Philosophy (2000),retrived from Monday 11/12/2019 from <https://plato.stanford.edu/entries/aristotle-psychology/>

logical argumentation and environmental psychology have been applied in many architectural examples. In *The Concise Townscape*<sup>2</sup>, a series of scene changes in front of the main square of Ipswich are mentioned. Through the degree of opening and closing of space, the contrast between privacy and public, a variety of artificial environments contrast with the natural environment, form a unique experience of perceiving.

Even while reading in static pictures, we can still imagine the desire to explore and dramatize when walking through this town. Through the analysis of the environment, the use of various fragmented elements forms a space of different attributes, the gray space surrounded by the colonnade and the winding streets form viscosity; however, the large square that is directly connected appears to have stronger circulation and unfriendly with a sense of surveillance.

In the design of public spaces (streets, squares, parks ...), a large number of environmental psychology methods have been adopted, and the positive public space order is very friendly to pedestrians. These techniques are also extensively discussed in *Life Between Buildings*<sup>3</sup>. Talking about specific buildings, the Memorial Hall of the Victims in Nanjing Massacre by Japanese Invaders designed by Jingtang He in Nanjing(China), use a lot of environmental psychology when organizing the sequence of the site, the open square in front of the entrance transitions to a very narrow diagonal, sculptural entrance, then quickly switched into the open cobblestone square of gray and black monuments without any green fabric. The space is open and desolate. Only at the beginning of the spatial sequence of this memorial, visitors' emotions were successfully guided through the language of space. I have visited this memorial more than eight times (from three times before I studied architecture and more than five times since I became an architect), even though the bustling commercial center is opposite the museum, there are still people laughing waiting to get into the building, as long as you start from the entrance, even the minors can't help quieting down.

#### IV POSITIONING

In the value evaluation matrix of heritage studio, I think the first-principles attribute and real-time monitoring are very distinctive features. We divided into value category such as age/art/newness, and separately discussed and classified the building's overall site, environment, the facade of the individual factory buildings, skin, structure, and materials. A lengthy discussion led to the valuation of all buildings.<sup>4</sup>

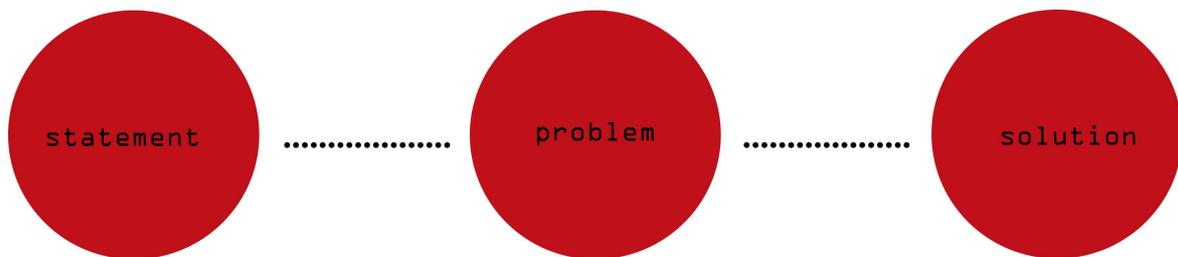
But this value evaluation matrix is a tool for my judgment and design. In the p1-p2 period, my main focus is on the layout of the site and how to make this site practical for urban texture. My process was finally simplified into three steps: statement, problem, and

<sup>2</sup> Gordon Cullen (2007). *The Concise Townscape*. Van Nostrand Reinhold Co.

<sup>3</sup> Jan Gehl (2011), *Life Between Buildings-using public space*. Island Press, Suite 300, 1718 Connecticut Ave., NW, Washington, DC 20009

<sup>4</sup> Marieke Kuipers & Wessel de Jonge (2017), *Designing from Heritage: strategies for Conservation and Conversion*. Delft, Netherlands. TUDelft.

solution.



Since my focus is also on the environment of the site, through the environmental theory of environmental psychology from Helloach (1.built world2. Geo-psychological factor 3.psycho-social factor)<sup>5</sup>, I divided the analysis into building factor, geo-psychological factor, and psycho-social factor.

In statements, I strive to be objective, only state the facts, and do not make value judgments:

building factor	<ol style="list-style-type: none"> <li>1.High building density</li> <li>2.Simpler function</li> <li>3.A high degree of enclosure</li> <li>4.Most buildings were built in the 1900s</li> <li>5.Most building structures are still well preserved</li> </ol>
geo-psychological factor	<ol style="list-style-type: none"> <li>1. There are no green plants, water bodies or animals in the site</li> <li>2. There is a large area of green space and water around the site</li> <li>3. Weather is rainy, windy, most wind come from north-east</li> </ol>
psycho-social factor	<ol style="list-style-type: none"> <li>1.Openness, depression, shady, isolation</li> <li>2. The pedestrians have an instinctive repulsion to the venue</li> </ol>

These statements may be positive or negative in their own right, and there may be crossovers between them.

Through the statement of facts, we found the problem:

building factor	<ol style="list-style-type: none"> <li>1. Lack of activity and people</li> <li>2. Not adapted to the texture of the surrounding city</li> </ol>
geo-psychological factor	<ol style="list-style-type: none"> <li>1. Low site greening rate</li> <li>2. There is no connection between inside and outside</li> </ol>

<sup>5</sup> Enrich pol.Blueprints for a History of Environmental Psychology(2006)95-113: From First Birth to American Transition. Medio Ambiente y Comportamiento Humano

	3. The waterbody is deserted
psycho-social factor	1. People don't use venues 2. Security issues

I don't think the problems in the factory area are separate. Many Dutch cities are facing such problems. The large building complex in the old factory area, and its excellent location, conflict with its functions today. The artificial river whermbreek, which is vital to the entire city on the site, was buried more than half because of the Industrial Revolution. If its value is respected, the building can be demolished or transformed.

Problems and statements are linked, and because of their intersection, the problems and statements themselves can be negative or positive, and we have multiple solutions:

building factor	1. Open up 2. Create public space for activity and people 3. Make connection with surrounding 4. Utilize the existing building
geo-psychological factor	1. utilize the existing green 2. Pull green inside of the area 3. Reshow the river
psycho-social factor	1. make site welcome and friendly to pedestrian 2. Create soft border and Viscosity <sup>6</sup> space 3. Create a surveillance space

These solution proposal is the first step for design. More meticulous actions will be determined through a large number of reference.

The above is my method and process when designing the site. I hope that through this research method, high-quality living space can be created. People not only have the necessary activities on this site, but they can also have selective activities. Finally, it leads to social activities. This is my original intention in designing public spaces.

In heritage design, the biggest contradiction is what to keep and what to demolish. Even with a valuation matrix, this can still be a conflict-filled move.

In my logical system (cultural), time, population, industry and social development are the first principles. In the current time dimension, the population of cities is shrinking, and the industry is also declining, but social development is moving forward. This trend has led to a lack of vitality in this area, which has led to a large vacancy rate.

Through research, I found that one of the basic characteristics of the venue is chaotic. The repetitive, organically grown facade language and random barriers give this site a maze-like atmosphere. Following my frame, the local site will be divided into smaller volumes, interspersed with the pedestrian system; the traffic flow will surround the periphery of the site, but will not reach the interior of the site; there will be multi-function buildings and people can experience venue, roaming in it; adding public space to the route, making roaming friendly, and enabling activities to take place. In summary, we can imagine a cheerful atmosphere of the venue.

I agree with the opinions in the literature that design and research are not the same, but they are not opposites. It could be said to be complementary. A variety of researches will collect more information, thus providing more possibilities for the design to solve the problem. Through continuous logical reasoning, real-time updating of my system framework, and even anticipating the future, it is my expectation for my own solution.

<sup>6</sup> Jan gehl(2011), *Life Between Buildings-using public space*. Island Press, Suite 300, 1718 Connecticut Ave., NW, Washington, DC 20009

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