

# LSRM FINAL ASSIGNMENT

## Self-Assessment on Research Methods

### O TITLE

Logical Argumentation and Social Related Renovation Project

### I INTRODUCTION

There is no doubt that the way of doing something will, more or less, shape the result. In doing research, using different research methodology may result in a different conclusion. Generally speaking, a clear methodological awareness is very important in architecture research and design. However, every coin has two sides. Only focusing on single existing methodology could limit the result of research.

In conducting a research, choosing a methodology is like picking a weapon to fight a battle. Without a suitable weapon, you have nearly no chance to win. So does research. Without a clear methodology, the whole process of research is chaos, and a convincing product is almost impossible.

On the other hand, one specific weapon always has its defect. That is why some people choose to combine different weapons in a battle. Sometimes, in doing research, a combination of methods could benefit each other and produce a more comprehensive conclusion.

Furthermore, creating your own weapon is also a choice. Although it is not easy to do so, it will be great to create a new weapon or research method. With a bright new method, research could reach the field that no one has ever found.

Through the study of research method, I acquired a better understanding of theory, methodology, and research. Although I still do not fully understand each methodology, I learned why and how to choose a methodology in doing a specific research.

In the coaching of this course, I was in group 5 whose topic was narratives. I used to focus too much on graphics. By studying narrative as a research method, I started to realize that writing is also very helpful. Images have blurry directionality and could be interpreted in different perspectives. But literature can be very accurate in expressing your idea. Using writing to accurately describe ideas helped me to form clear design thinking and convincing expression.

My graduation project is to renovate a famous Structuralism building – Centraal Beheer. Basing on the renovation project, we are supposed to discuss the Future of Dutch Structuralism Architecture. After the case studies, I found out that the most important social idea in Centraal Beheer and other Structuralism Architectures was making people meet. By making people meet, they wanted to achieve a better social interaction and then form the equality and solidarity of society.

I appreciate the idea of making people meet, but their design method was too rigid. Although they did offer open space to make people meet, the repetitive pattern limited the way of interaction. Also, too many open spaces disturbed people's privacy, which is not a balanced human relationship. So, what I am going to do is to change the space to achieve a more complex and diverse social interaction. And my research question is "how to renovate the structuralism architecture, Centraal Beheer, to achieve its original social ambition?"

## II RESEARCH-METHODOLOGICAL DISCUSSION

My research methodology is mainly based on logical argumentation. By case studies and studies about architectural theories, I will connect what I find and form my own logical argumentation. It will guide me in my design process and support the result. Also, because my research is, with a clear goal, to renovate a specific valuable building. Without a clear logic, I cannot even convince myself to change this very important historical building. In heritage studio, I think, logical argumentation is the general approach to do research. Also, choosing this methodology is very much based on my own personality. Logical argumentation is my methodology not only in architecture design but also in daily life.

A clear logical argumentation could help to produce my design, while a narrow logical argumentation could also lead my design to a wrong way. In my experience, I had been trapped in my own narrow logic and designed a terrible building that ignored many issues. After that, I reflected my design process and realized that logical argumentation has its drawbacks. If you focused too much on your logic, without tests and critics, it will definitely fail.

So, I think there are two things that are very important in developing logical argumentation. First, the logic should be based on large quantities of case studies or existing theories. A logical argumentation that only base on several case studies is obviously not convincing. If you shared some ideas with an existing theory, it could help to support your argument. Second, critical thinking is the key to avoid being trapped by yourself. You should constantly read different works of literature and think from different perspectives to argue with yourself. In this process, your logic will be modified and developed beyond your own prejudice.

*Research Methods for Architecture* wrote by Ray Locas is very helpful when starting a research. It did not directly discuss logic argumentation as a methodology. But it helped to distinguish the definition of method, methodology, and approach etc., which is the basic structure of doing research.<sup>1</sup> *Architectural Research Methods* wrote by Linda Groat and David Wang is a very systematic book about strategies in doing architecture design as research. Its content about logical argumentation built my basic understanding of logical argumentation as a design methodology.<sup>2</sup> *Architecture and Structuralism - The Ordering of Space* wrote by Herman Hertzberger is a comprehensive book about the theory of Structuralism Architecture. It mainly took logical argumentation and historical research as research methodologies. This book is a very fundamental book for dealing with structuralism architecture.<sup>3</sup> *Deconstructivist Architecture* produced by Museum of Modern Art (New York) used logical argumentation to explain the theory of Deconstructivist Architecture. Through historical research, it positioned Deconstructivist Architecture in the development of architecture. Also, by case studies, it showed the design of Constructivist Architecture.<sup>4</sup> It partly convinced me and will become one of the theoretical foundations of my design process. *Heritage based Design* by Paul Meurs is a book from the chair of Heritage & Architecture. In this book, the trends in heritage design are showed and explained in a logical way. In terms of cultural value, it showed different perspectives of doing value assessment, while they are all based on logical argumentation.<sup>5</sup>

## III RESEARCH-METHODOLOGICAL REFLECTION

The philosophy of logic is a widely used methodology and has a long history. In Europe, logic was first developed by Aristotle. He developed syllogistic logic and settled the spirit of philosophy that is exploring reality, truth and distinguishing falsehood. In the mid-19th century, with the influence of mathematics, mathematical logic started to develop. After that, Gottlob Frege, Bertrand Russell, Ludwig Wittgenstein etc. had profound influences on the development of analytic philosophy and philosophy of mathematics.<sup>6</sup>

In the field of architecture, the first book on architectural theory – *De architectura* wrote by Marcus Vitruvius Pollio was built on logic argumentation. The principle of firmitas, utilitas and venustas is a clear category that is difficult to add to or take away from. *Toward an Architecture* wrote by Le Corbusier, with logical argumentation, settled the basic theory of modernist architecture and instructed the following modernist architecture design. In this book, he connected items that seem irrelevant, found a logic and argued for a new type of architecture, which is typical logic argumentation.

Space Syntax that developed by Bill Hillier and Julienne Hanson in 1970s is also a method of logical argumentation. It abstracts the complex city fabric to linear map that has less interference for architects to read, which is an inductive reasoning. In the 1990s, Building Information Modelling appeared and rapidly grew in these years. It built a large logical framework that allows every architect to work within.

It is interesting to see that, both in philosophy and architecture field, logical argumentation started in sort of cultural argument and then strongly influenced by the mathematical approach. Vitruvius and Le Corbusier developed their theory in a large cultural way. And both space syntax and BIM were, in a different level, built on mathematics. Furthermore, there are still differences between Space Syntax and BIM. Space Syntax uses a mathematical system in the analyses of space, while the result must be valued in social or cultural view. The process of valuing results is part of Space Syntax. But BIM is different. It is purely a subjective mathematical process. It built its logic of categorizing architectural elements and their interaction. Architects can use it to produce their own design. The quality of the design is all controlled by the architect, not BIM.<sup>7</sup>

According to the book - *Architectural Research Methods*, there is a spectrum of logical argumentation. At the left pole are formal/mathematical frameworks, while at the other pole is cultural/discursive systems. In between these two poles, there are infinite positions that combining both systems. BIM is clearly on the mathematical side. Design-Polemical Theory is on the cultural or Social side.<sup>8</sup> Space Syntax, according to the author, is in the middle.

In the division of mathematical system, cultural system and in-between system, I rely my research on the cultural one. Because my research question is about achieving a social goal, my design methodology should be able to deal with the social problem. Maybe the mathematical approach is helpful in some aspect. The main focus is on the social side.

On this side, the Design-Polemical Theory is very helpful in answering my research question-how to renovate the structuralism architecture, Centraal Beheer, to achieve its original social ambition? In Structuralism Architecture, they created a way of designing architecture that was first called configurative design. Most structuralism buildings followed this design method, especially Centraal Beheer designed by Herman Hertzberger. There is a strong rule in Centraal Beheer. Although it allows a certain level of freedom, the freedom is within the rule. As I said above, after the analysis, I think the rule is a limitation of achieving its social goal. I need to find a new norm and argue why it is better, and then apply the new logic into my design, which is the basic idea of Design-Polemical Theory.

It is very difficult to quantify social related issues. Human behavior is very complex and human interaction is even more complicated. Some regular patterns can be found, but they are not restricted. Also, as a renovation project of a valuable building, experimental approach is also not suitable. Because the damage is irreversible. In the building analysis process, historical research helped me understand the building. The Correlational approach could be used in the design of a specific place. However, the overall design, for me, should be based on the logical argumentation.

#### IV POSITIONING

Topics discussed in the course are all very interesting and helpful in research. However, for my specific research question, some are not very related while some may be helpful. Generally, material and meaningful elements are important topics in a normal heritage renovation project. Because historical value or age value of a building always strongly relate to the physical material. Therefore, material culture approach could be very useful in those cases. But, Centraal Beheer is different. As an important building in the development of modern architecture. Its historical value mainly comes from its architectural value instead of local culture or local history. The material was not very focused at the beginning of the design. Herman Hertzberger just applied common material and construction technic of the time. So, material culture approach has little influence in my research. In terms of narrative approach, I value it a lot. My focus is not on poet or script. It is about argumentative writing. The logic argumentation itself will be the story that supports my design. So, in the process of research and design, I will rely on the narrative approach to criticize and develop my idea.

A social problem is always an important topic in the field of architecture. Nowadays, architects are still working on these problems like poverty, refugee, public space, education, and dwelling etc. For example, the 2016 Pritzker Prize winner, Alejandro Aravena designed the Half-homes to solve the dwelling problem of low-income group. The 2014 Pritzker Prize winner Shigeru Ban used recycled cardboard tubes to build temporary houses, schools, and churches for refugees. In Netherlands, these problems may be not serious. However, there is still some other social problem. For instance, energy and resources are unavoidable topics. Sustainability is considered in every architecture project. The chair of Heritage & Architecture is strongly related to sustainability. To reuse an abandoned building instead of demolishing it is helpful in saving resources and reducing pollution. A good renovation of an old building could change people's perception. Making people re liking a building is releasing the potential value of an old building, which is very sustainable.

For Centraal Beheer, to reuse this abandoned huge building is a great contribution to sustainable society. Although it is not an energy sustainable building because it was built in the 1970s. To apply energy sustainable requirements is an important issue in the renovation project. On the other hand, this building is also a social problem for Apeldoorn. Because Centraal Beheer is a huge building located in the city center, its abandonment made damages to urban public space of Apeldoorn. As an iconic building, how to make contributions to the city is a serious question.

In conclusion, I choose logical argumentation as my research methodology. Because my topic is a social related question, my logical argumentation will rely more on cultural discussion instead of the mathematical approach. Case studies will build the foundation of my logic, and argumentative writing will help me to criticize and develop my idea. After the development of my design theory, the correlational approach will help me to design the specific space. Good precedents can help me to decide material, light, atmosphere etc. Also, at the beginning of the studio, historical research helped me understand the building. By studying the social ethos in the 1960s, the initial design idea is related to its time and becomes more reasonable for me.

For now, I finished the analysis of the building and started to develop me design strategy. As I mentioned above, in the analysis, I found out that the initial design has a strong social ambition. But it did not achieve what it wanted. So, what I want to do in my renovation design is to achieve its original social goal. About the design strategy, I found the shortcoming in structuralism building through case studies. Actually, the late structuralism buildings have already realized their own problem and went beyond the rigid geometric pattern. Deconstructivist architecture inspired me to break the original rule. But sometimes they break too much, which is not what I want. The book

*Architecture of Happiness* that talks about the beauty of harmony sit opposite to Deconstructivist architecture.<sup>9</sup> These cases studies brought me to a very fundamental question that is to achieve a balance between rule and freedom.

- 1 Lucas, Ray. *Research Methods for Architecture* (London: Laurence King Publishing, 2016).
- 2 Wang, David, and Linda N Groat. *Architectural Research Methods*. Second Edition / ed. (Hoboken: Wiley, 2013).
- 3 Herman Hertzberger. *Architecture and Structuralism : The Ordering of Space*. (Rotterdam: Nai010, 2015).
- 4 Johnson, Philip, Mark Wigley, and Museum of Modern Art (New York). *Deconstructivist Architecture*. (New York Etc.: Graphic Society Books Etc, 1988).
- 5 Paul Meurs, *Heritage-based design*. (Delft: Section Heritage & Architecture, 2016).
- 6 Lina Ning, *Philosophical Motivation on the Turning Point of Logical Methods*. (Beijing: Guangming Daily, 2007).
- 7 Wang, David, and Linda N Groat. *Architectural Research Methods*. Second Edition / ed. (Hoboken: Wiley, 2013), 385.
- 8 Wang, David, and Linda N Groat. *Architectural Research Methods*. Second Edition / ed. (Hoboken: Wiley, 2013), 116.
- 9 De Botton, Alain. *The Architecture of Happiness*. Reissued in This Edition. ed. (London: Penguin Books, 2014).