Reflection Paper

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Personal Information

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Studio

Architectural Engineering Graduation Studio

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Research tutor: Marcel Bilow

Project Title

Exploration of Space Efficiency: 24H-Architecture

1. The relationship between research and design

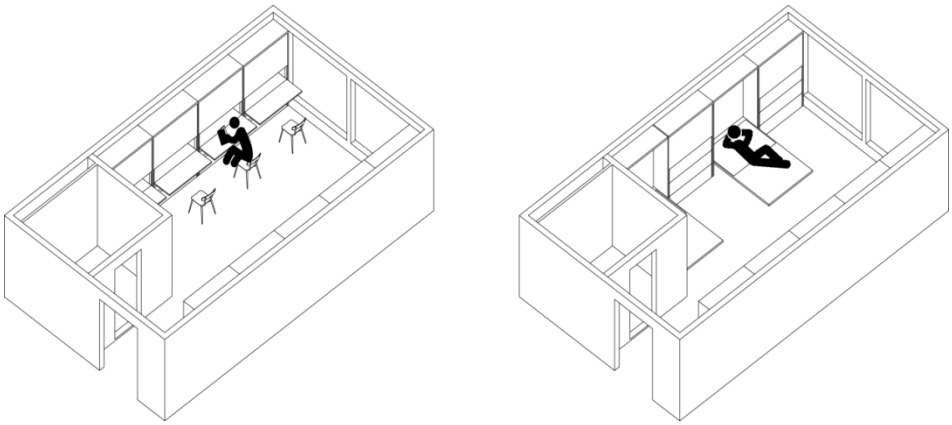

Fig.1. Illustration: axonometric drawings of Horizontal prototype (the result of research process)

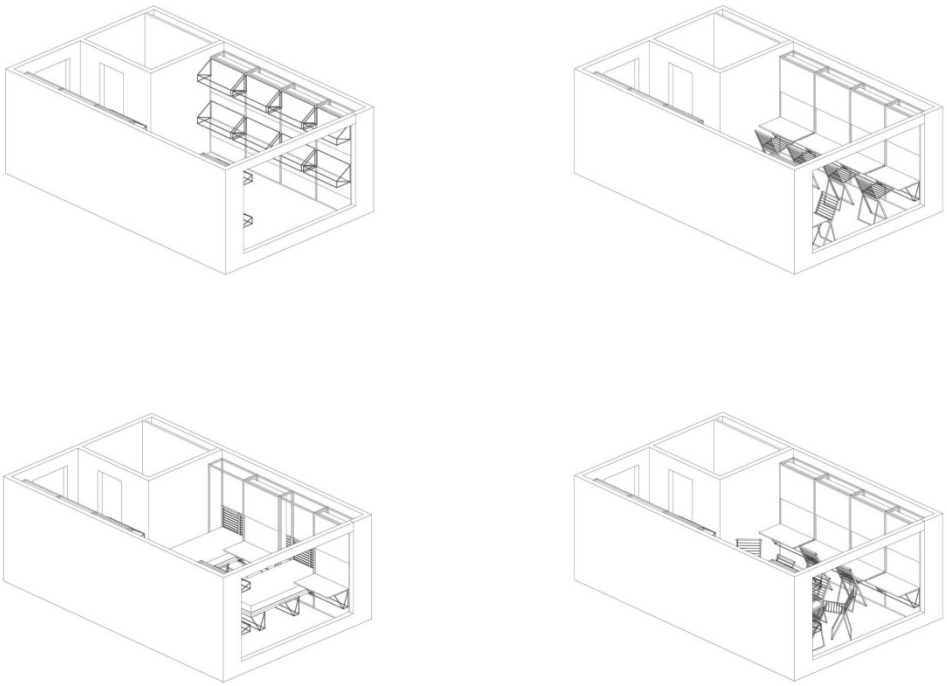

Fig.2. Illustration: axonometric drawings of Horizontal prototype (the result of design process)

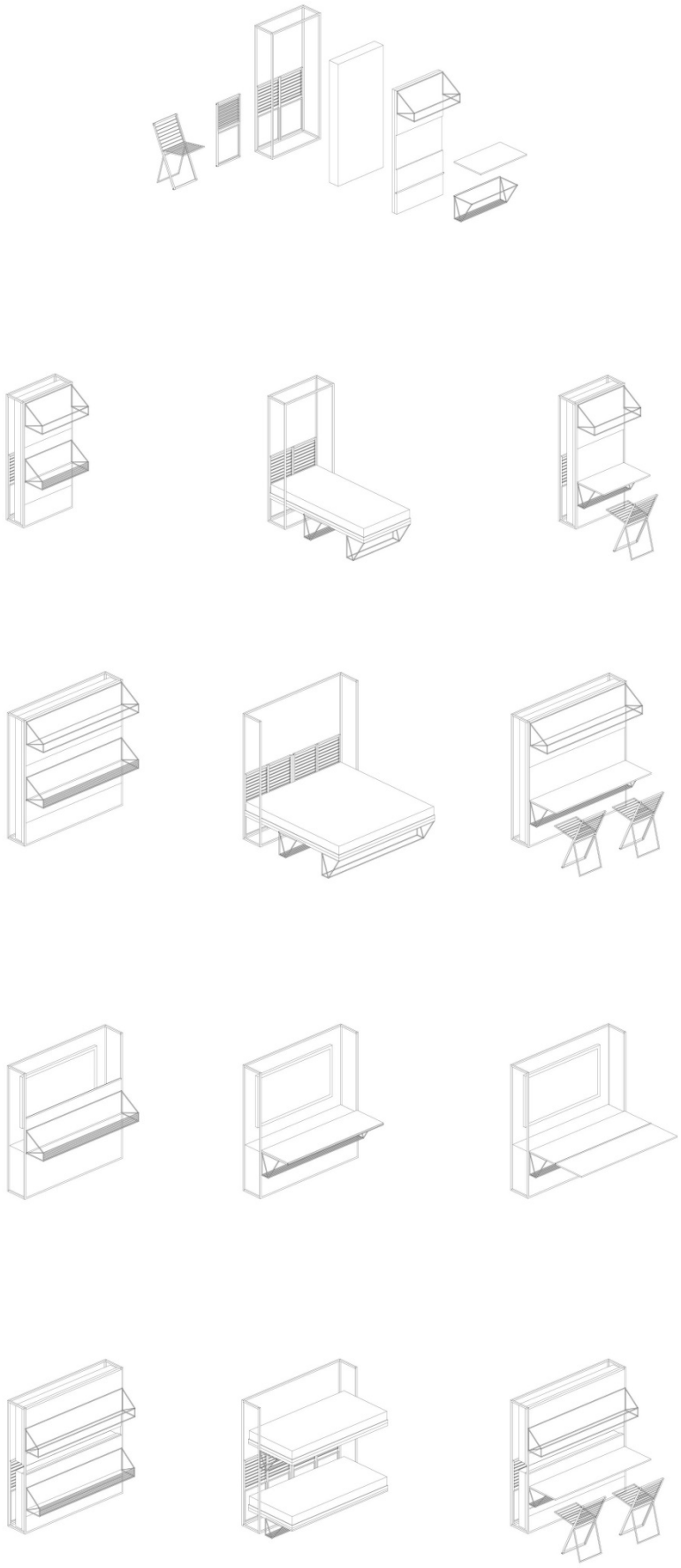

Fig.3. Illustration: detailed design for flexible furniture (the result of design process)

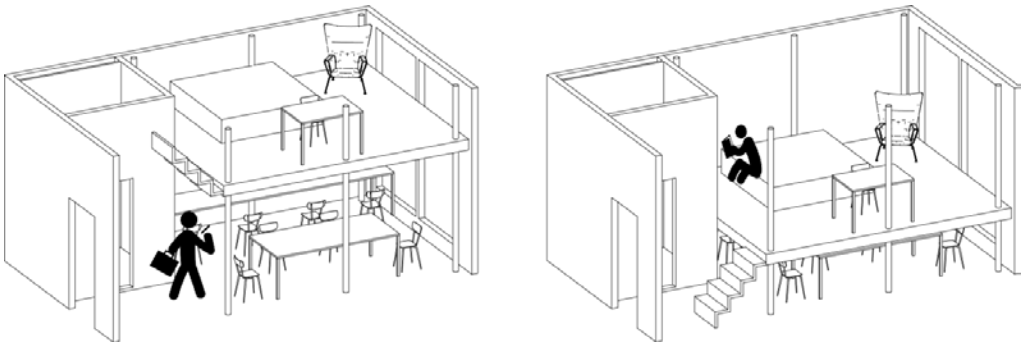

Fig.4. Illustration: axonometric drawings of Vertical prototype (the result of research process)

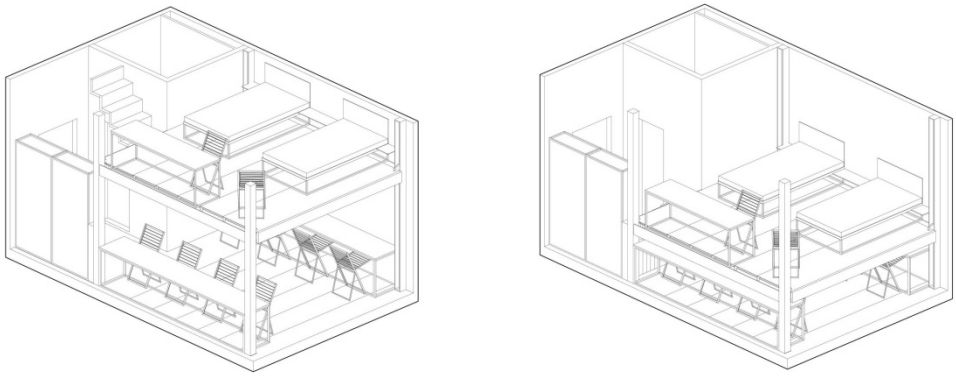

Fig.5. Illustration: axonometric drawings of Vertical prototype (the result of design process)

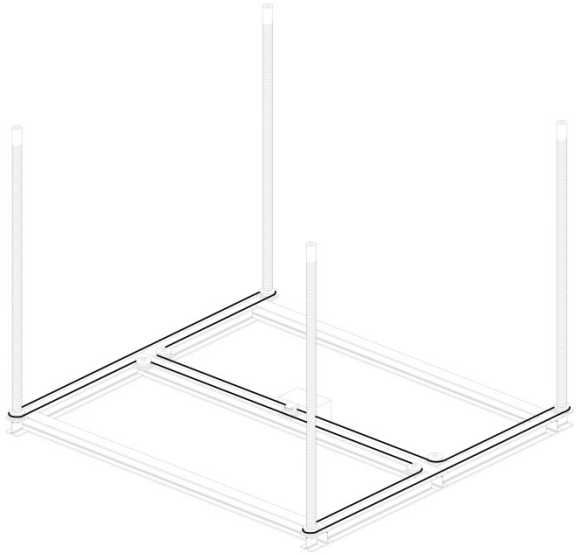

Fig.6. Illustration: detailed design for flexible floor system (the result of design process)

In my opinion, the research process is the basement of design concept, and the outcome of research should closely connect to design process rather than just a theoretical conclusion.

The end of my research paper is a series of spatial prototype rather than just a conclusion. I mainly focus on space efficiency during whole process. The research help me understand

what people already done for space efficiency and in what part I can still improve efficiency. At the end of research a series of special prototype is established to show different possibility of space efficiency. Such outcome is showed in research paper by plan and axonometric drawing; all data of the space and furniture is based on standard scale to make sure it works in different situation.

I'm happy to see my design is mainly an extension and deeper exploration of the result of research paper. In the beginning of concept design, I realized the outcome of research that base on horizontal way can effectively adapt to existing building, while the other part that focus on vertical way can be a good exploration in new building. Back to design process, there is already one existing building block in chosen site. So the concept that combines one new block with renovated existing block comes out. So during my graduation process research can be seen just as part of design.

2. The relationship between graduation (project) topic, the studio topic and master track

My research, my graduation design, the AE studio and my master track are closely connected to each other. I chose Architectural Engineering as my graduation project because I'm really interested in how to solve special problem by building technology. I already involved building technology and engineering during early research period. The theory of engineering help me to form design concept more close to human scale and human life, while design itself helps me complete technical problems more effectively.

3. Elaboration on research method and approach chosen by the student in relation to the graduation studio methodical line of inquiry, reflecting thereby upon the scientific relevance of the work

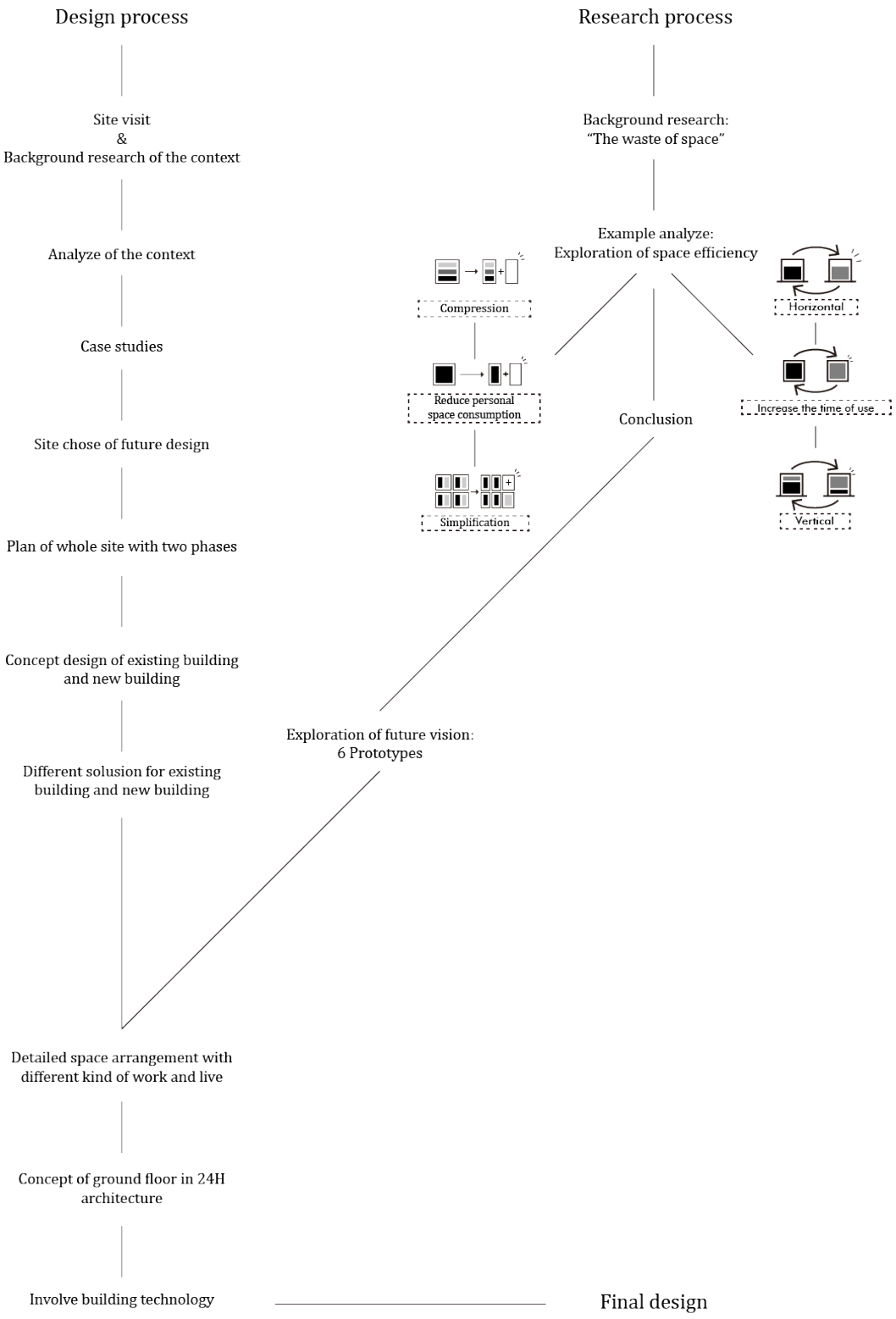

Fig.7 Whole process of design and research

The fig.1 clearly shows how I arrange research process and design process, and how I combine them. All special solutions are done in typological way first to make sure the result can be used in other place rather than just the context. Designing a new type of construction

that can be used during whole day is then possible, based on the output of the paper and the situation of the context and environment. The result of research shows possible ways for existing building and new building with enough height. As the extension and test of the research, design part also chose an existing block, and creates a new one besides, using these two as experiment of 6 space prototype. The outcome of design proves that it is possible to use such concept to improve space efficiency.

4. Elaboration on the relationship between the graduation project and the wider social, professional and scientific framework, touching upon the transferability of the project results.

These solutions are then reach higher space efficiency than architecture nowadays and can be suitable solutions to fix the problem with high price and low supply in central metropolis. Nowadays the need of space has been a serious problem in metropolitan areas. The rent price in central area of New York, Tokyo or Hong Kong becomes extremely high. Even in Amsterdam, value of office buildings in Amsterdam increased the most of all cities in the world.

My graduation project tries to explore how to make full use of central area of these cities. For architect, this question means to increase space efficiency, which means in same time more space is provided or more people is using the space; or the space can be used in more time during a day. All innovations need their land to grow. For exploration of space efficiency, the Marineterrein are can be a suitable place for experiment.

A new research and a new building that not only provide more space for the context, but also explore new way of space efficiency to make cities better can be a suitable vision.

5. Discuss the ethical issues and dilemmas you may have encountered in (i) doing the research, (ii, if applicable) elaborating the design and (iii) potential applications of the results in practice.

After almost whole process I'm glad to see the new 24H-Architecture reaches higher space efficiency, it can be effectively used by different group of people during day and night.

Furthermore, the idea of sustainability is also strongly carried out. All part of building except the concrete structure can be taken apart; the building can still change the function of itself easily. Also, the building consumes less energy by using good passive ventilation, double façade and solar panel.

On the other hand, one of the main problems I face with is the cost and maintenance of

flexible structure. Although in my future vision, all solutions in design in Marineterrein will gradually adapted by other metropolis, so the cost of facilities will decrease, but now the flexible floor system or customized flexible furniture can still cost more than normal design.

After all, I'm still satisfied with my whole graduation process, for it helps me to think in both theoretical and practical way. Before this project I can hardly imagine that research can be so close to practice.