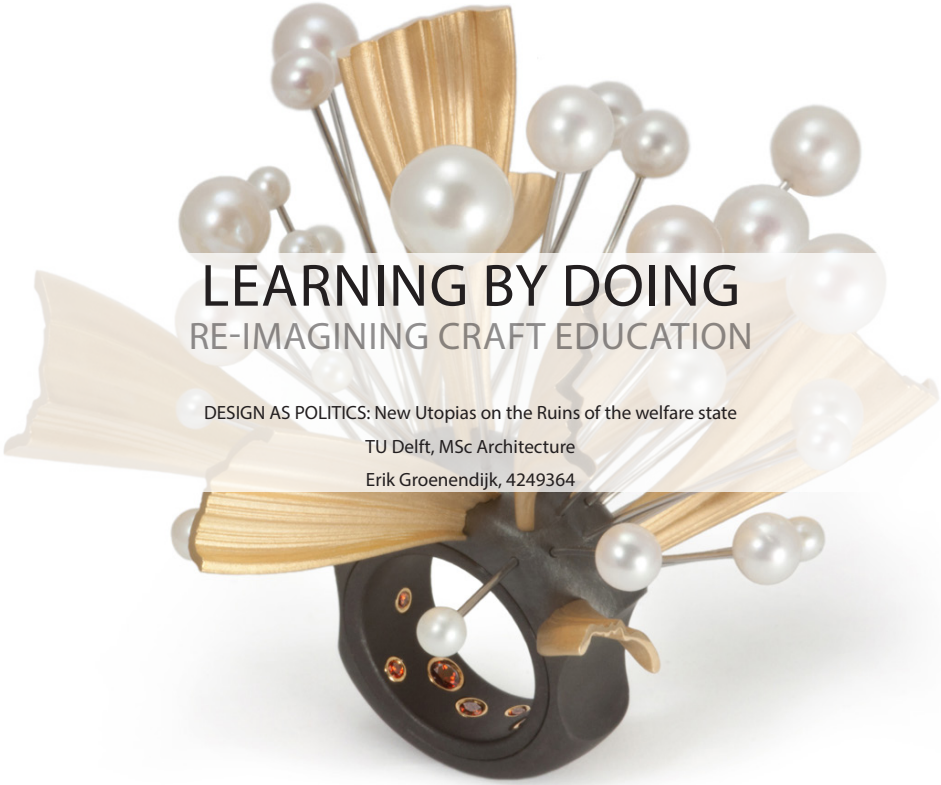

LEARNING BY DOING

RE-IMAGINING CRAFT EDUCATION

DESIGN AS POLITICS: New Utopias on the Ruins of the welfare state

TU Delft, MSc Architecture

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Contents

Introduction

1.1 Design as Politics

This research is done as a graduation project at the TU Delft Faculty of Architecture within the chair Design as Politics. The chair understand politics in the widest sense possible and defines it as the level in society on which conflicting interests of groups of people become visible and are being solved.

This year's graduation studio is called New Utopias on the Ruins of the Welfare state and its aim is to imagine a world beyond the comfortable realities of the past decades where public and government were always associated. Students should think of and construct ways in which design can create new public values, create new communities and build new societies even on the ruins of a century of imagining, building and then dismantling welfare states.

One of the reasons for me to enroll in the Design as Politics studio is because it combines two of my interests: architecture and politics. Furthermore I agree with the studio's idea that architecture by virtue is always a political act. Another reason for me to enroll in the studio is because I wanted to do a Research by Design project.

1.2 Ruin of the welfare state

In the Netherlands the idea is that education has to be affordable for everyone. This means that the government pays part of the tuition fee, and gives students a monthly stipend. In the last few years, the government has announced budget cuts on the educational system, which results in a raise of the tuition fee, and the abolishment of the monthly stipend. The Dutch welfare system could no longer deal with the high costs of the educational system. In 2009 34% of the people with a higher education were underemployed, meaning that they had a job that was below their degree (CBS, 2011, p. 61). There were too many high-educated people and both the government and the people themselves had invested a lot of money in the education.

From the industrial revolution onwards machines have replaced a lot of manual labor. As a result of this the educational system has moved away from a system that teaches practical skills, to a system that places emphasis on cognitive skills. This is what is called the knowledge society: knowledge is considered most valuable and emphasis within society is being put in it. There are several in between steps that led to the current state of society: after the industrial revolution, the Dutch turned their society in a service society. This changed into an information society, which finally led to the knowledge society. The idea was that automatisation would eventually make manual labor useless (Klamer, 2013, p. 7). The result of the knowledge society is an emphasis on higher educated people in the educational system. In 2009 34% of the people with a higher education were underemployed, meaning that they had a job that was below their degree (CBS, 2011, p. 61). There were too many high-educated people and both the government and the people themselves had invested a lot of money in their education.

At the same time there is a shortage of 63.000 technical skilled persons and craftsman, which will only become more over time (Verlaan, 2013). The Dutch workforce is not only over-educated, there is also an emphasis on knowledge which results in a lack of skilled craftsman. The shortage of craftsman will only become bigger, since the older craftsman are retiring and the amount of students who decide to become a craftsman is way smaller (Ruis, Span, & EIM, 2012, p. 4).

Een hotel, een supermarkt maar geen geschikte lokalen

Bij ROC Leiden keek iedereen weg

Minister redt ROC Leiden met maximaal 40 miljoen

ROC Leiden dieper in crisis

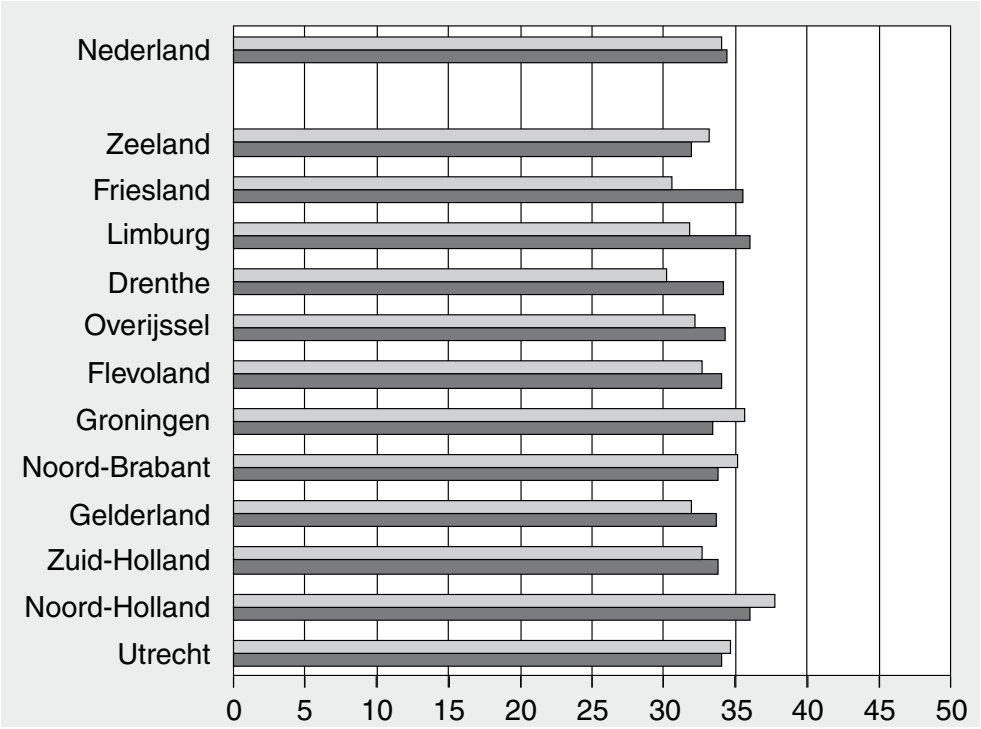
De gebouwen zijn niet alleen te duur, er is ook niet goed nagedacht over roltrappen, gangen en liften om de leerlingen goed door de gebouwen te laten stromen. Er zijn lokalen niet afgeschermd zodat concentreren lastig is.

‘Megalomaan bouwproject’

Betrokkenen zeggen tegen deze krant dat het jarenlang alleen maar over geld en gebouwen ging, en nauwelijks over onderwijs.

'Nederland heeft meer vaklui nodig'

4. Aandeel 25–64-jarige hoogopgeleiden dat een beroep onder zijn of haar opleidingsniveau uitoefent, 2007/2009



1.3 Research Questions

In order to try to tackle above stated problems, we need to consider the role of architecture within all this. This results in the following research question and sub-research questions:

1.3.1 Research question

'What would an alternative, tertiary educational model, which focuses on craft skills, look like.'

1.3.2 Sub-research questions

'How to embed this new model so that it revitalizes the city?'

'How can this model stimulate other educational facilities, so that the students have a broad range of options?'

1.4 Relevance

1.4.1 Societal relevance

The intention of this project is to come up with an alternative for the education of craftsmen. This is important since the current educational system is dysfunctional. There is an enormous mismatch in the type of skills the educational system offers and what the market wants. This becomes a threat to society. For example, if the Netherlands does not train more craftsmen, they will eventually lose their competitive position("'Nederland heeft meer vaklui nodig,'" 2014). This project shows an alternative for the educational system that can be a solution to the problems that society currently faces.

1.4.2 Scientific relevance

A lot of research has been done on the Dutch education system. From this respect there are not a lot of things this project adds. There is limited research on what the role of architecture within this is or how education can function as a catalyst for urban development. This project is relevant because it is looking for solutions for a serious problem.

Theoretical Framework

The current educational system is not capable of educating the amount of craftsmen that are necessary within the industry. A lot has been written about the necessity of craftsmen, and why it is relevant in today's society, in which computers and machines are becoming more important everyday.

2.1 Craftsmanship

In his book *The Glass Cage* Nicholas Carr argues that when machines and computers take over, a piece of knowledge goes lost. He gives several examples of things that happened, just because people had forgotten a certain skill. One of the examples is an airplane crash that happened because the pilots got so used to flying on the automatic pilot, that they forgot how to control the airplane in a certain situation (Carr, 2014). The knowledge that goes lost is described as tacit knowledge. This is something that only humans can posses. Machines can never posses it.

According to Richard Sennett craftsmen function in a domain in which judgments are made on tacit habits and supposition (Sennett, 2009, p. 50). Craftsmen can transmit tacit knowledge by teaching other people how to perform their craft. Sennett also gives some examples of why tacit knowledge is important, but unlike the arguments of Nicholas Carr, his arguments are not about tragic accidents but rather about improving the quality. One example he addresses is the construction of the Peachtree Center in Atlanta. He talks about several moments during the construction process when craftsmen intervened and made changes to the design, which resulted in a better and safer building.

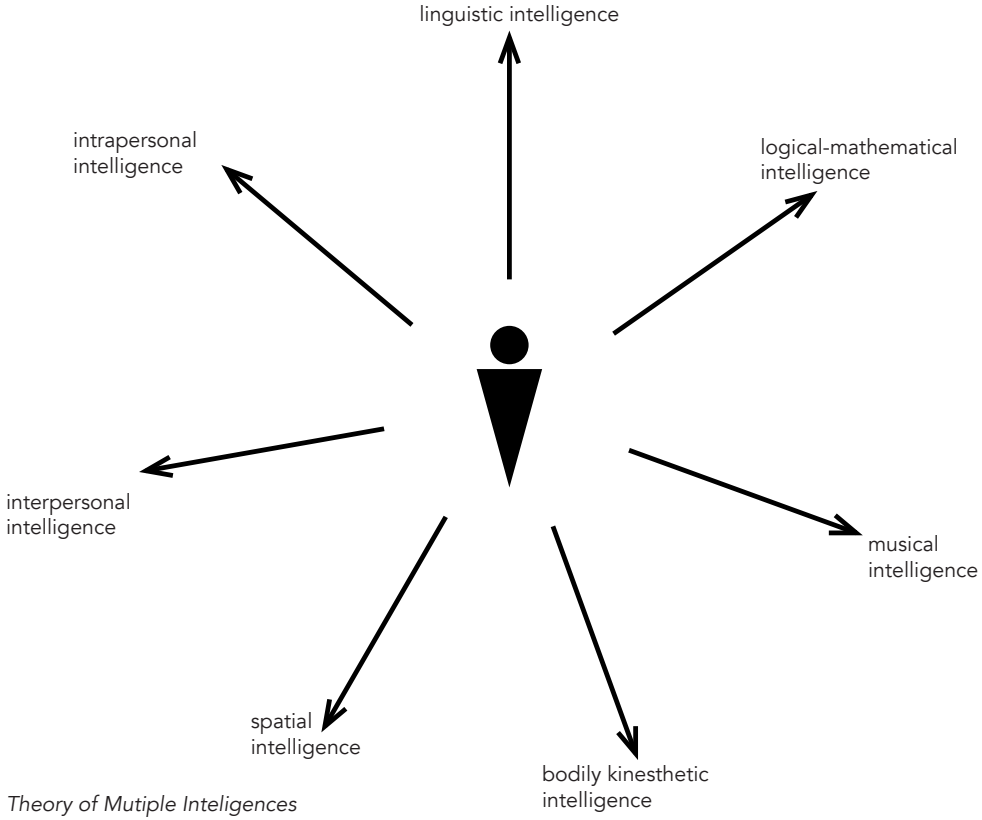
If the current trend continuous the shortage of craftsmen would become even bigger. According to both Sennett and Carr this would result in the loss of valuable tacit knowledge. This could lead to serious problems within society.

2.2 The Capability Approach

The problem presented within this research does not limit itself to craftsmen. There is a broader issue in which the educational system puts too much emphasis on cognitive learning. In the 1980's Amartya Sen, an Indian economist and philosopher, conceived an economic theory as an approach to welfare economic. The capability approach is a theoretical framework that entails two core normative claims: first, the claim that the freedom to achieve well-being is of primary moral importance, and second, that freedom to achieve well-being is to be understood in terms of people's capabilities, that is, their real opportunities to do and be what they have reason to value. Despite the fact that Sen has not explored educational thought in itself deeply, his capability approach seems to be significantly related to education in many ways. The current education system does not grant students the freedom and opportunity to explore their capabilities, but is based on a more utilitarian school of thought in which society dictates and projects its values on everybody else. This results in an unbalanced society in which craftsmen and skilled workers are not appreciated as much as they should be.

2.3 Theory of Multiple Intelligences

Support for implementing the capability approach within the educational system could be found in Howard Gardner's *Theory of Multiple Intelligences*. According to Gardner's theory, each human being is capable of seven relatively independent forms of information processing, with individuals differing from one another in the specific profile of intelligences that they exhibit. Howard Gardner argues that the big challenge facing the deployment of human resources 'is how to best take advantage of the uniqueness conferred on us as a species exhibiting several intelligences'. Gardner initially presented a list of seven intelligences: linguistic intelligence, logical-mathematical intelligence, musical intelligence, bodily kinesthetic intelligence, spatial intelligence, interpersonal intelligence and intrapersonal intelligence (Smith, 2002).
Within the current educational system the main focus is on linguistic intelligence and logical-mathematical intelligence. Sen would argue that in order to achieve well-being within society, there should also be a focus on the other skills. This would allow student to explore and develop their capabilities.



Theory of Mutiple Inteligences
Howard Gardner

2.4 German model

The intelligences that Howard Gardner proposes in the *Theory of Multiple Intelligences,* all require different ways of being taught. In Germany vocational training is generally more accepted than in the Netherlands, with over 60% of their students following a *duale Berufsausbildung*, a mixture between going to school and working. The idea is that there are a lot of jobs which require skills rather than knowledge, and that these skills are taught by doing. To accomplish this, education is not arranged by big institutions, but rather by the industry, schools and the government.

There are 342 recognized trades (Ausbildungsberufe) where an apprenticeship can be completed. The apprentice needs to find a company that he can work for before he can start his apprenticeship. The apprenticeship takes about 2,5 to 3,5 years. The apprentice works 3 to 4 days for the company and goes to a vocational school the other 1 or 2 days. The schooling is public funded. The curriculum is made by Unions, employers and school, and every field has it's own standard.

These apprentices could work because of a strong relationship between the industry and the trade unions that have made agreements about for example the amount of apprentices and their wage.

2.5 Future of craft education

Changing the educational system is one way in which the Netherlands could attract more craftsmen. In order to make try improving the educational system, the Netherlands should base its education on Howard Gardner's Theory of Multiple Intelligences. This theory entails that different talents require different ways of teaching. For craftsmanship, this leads to a system that is based on skills rather than knowledge. The skills that they require are skills that one can learn by doing. To have a balance in what skills are considered to be important by the industry and what skills are taught, the implementation of the German model should be adopted.

Methodology

The studio consists of several parts.

1. Analysis & Decision - In this part of the project I picked my *Ruin of the welfare state*. It was about researching and analyzing the educational system.

2. Position & Design - In order to turn *the Ruin of the welfare state* into a new Utopia, different positions on this topic have been explored.

3. Design - The third part of the project is about translation the chosen position on the subject and the research into an architectural intervention.

4. Present - The last part of the project is about making documents that make the architectural intervention presentable to the public.

Design

In order to see what this new educational system looks like, Schoonhoven, a small town in the Netherlands, is taken as a case study. Schoonhoven is known for it's silver industry and is officially known as the *Zilverstad* (Silvercity).

The silver industry had played a vital role in the (urban) development of the city. The *St. Eloy Gilde,* the silver guild, helped with the creation of the water piping system in 1901 and the building of a gas factory in 1856. Some of the other facilities that they helped creating were the electricity network in 1921, and the founding of a school for silversmiths.

This school, *De Vakschool,* is the only silver- and goldsmith school in the Netherlands. The school has developed into a school with national focus and an international reputation. The building in which the school is located, which was finished in 1972, is outdated and is in need of a very costly renovation in order to adapt to the current needs of the school. At this point, several scenarios are being developed.

This project makes use of this problem, and is a scenario in which the silver school is no longer an institution that is separated from the city, but becomes part of the city. Schoonhoven functions as a case study for the future of craft education.

The national silver festival in Schoonhoven attracts 20.000 tourists each year.

The new educational system is spread out throughout the entire city. A central street acts as a spine along side which the activities can be found.

Image of the city and educational area

Spreading the educational activities throughout the city, allows it to become part of the public realm. This will dramatically change the way the city looks. This can for example be seen in the central area and the industrial area.

Zoom ins into city center and industrial area

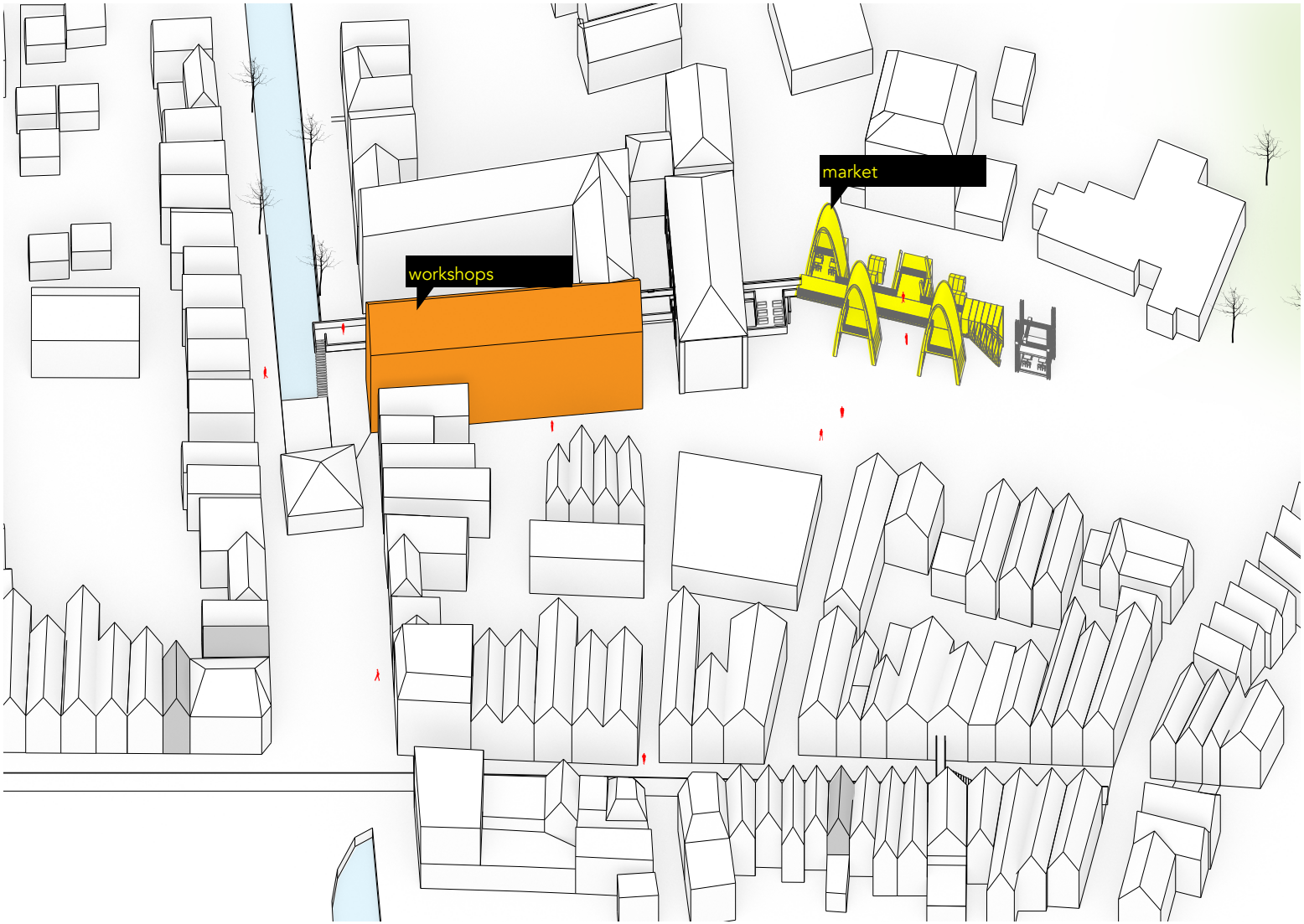
In the city center a lot of ateliers can be found. In the new scenario, crafts become even more visible because there will also be educational activities.

City center

The industrial area of Schoonhoven will also look different after the design for the new school has been implemented.

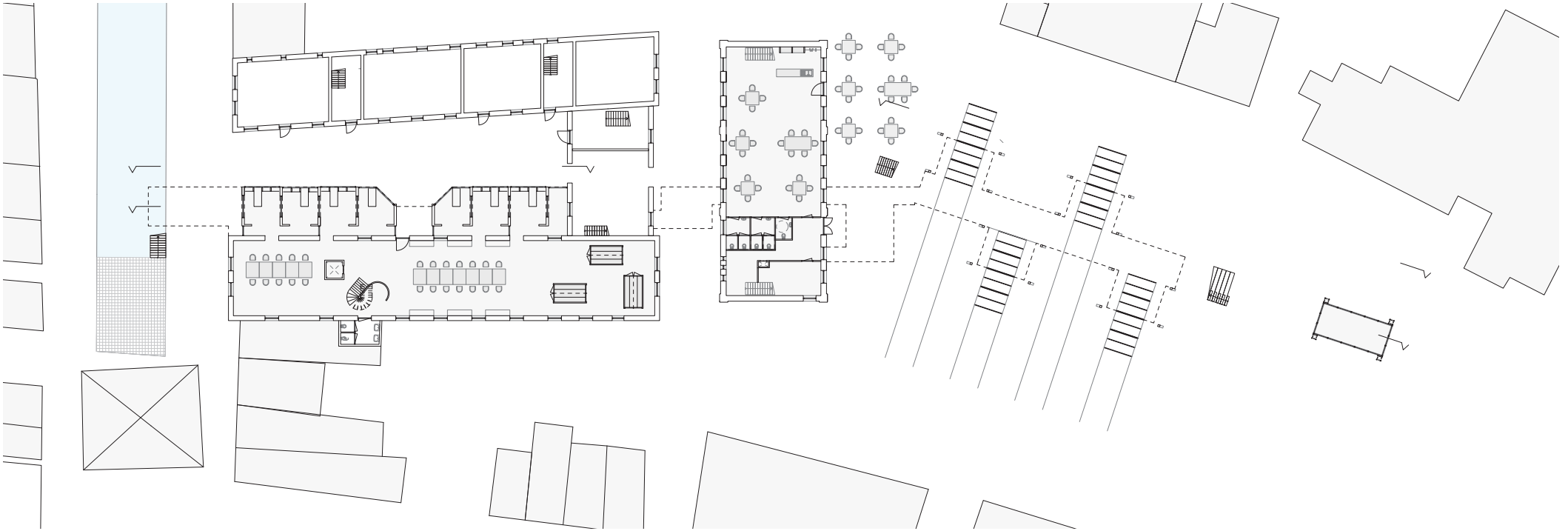
Industrial area

A new structure will be added to an old military building which currently houses the silvermuseum. The structure houses workshops and allows activities to happen on the main square *Doelenplein.*



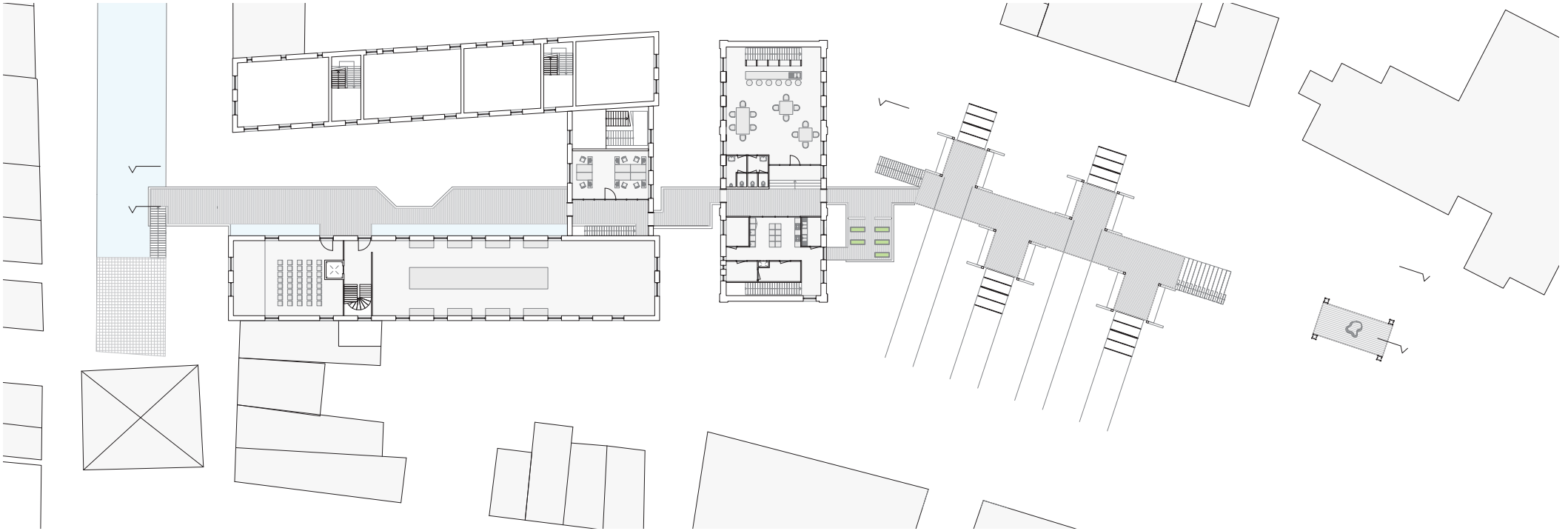
City center

Alongside a public accesible route workshops for silversmiths are situated.



First floor

The new structure creates a route which connects the main canal with the main square *Doelenplein*.

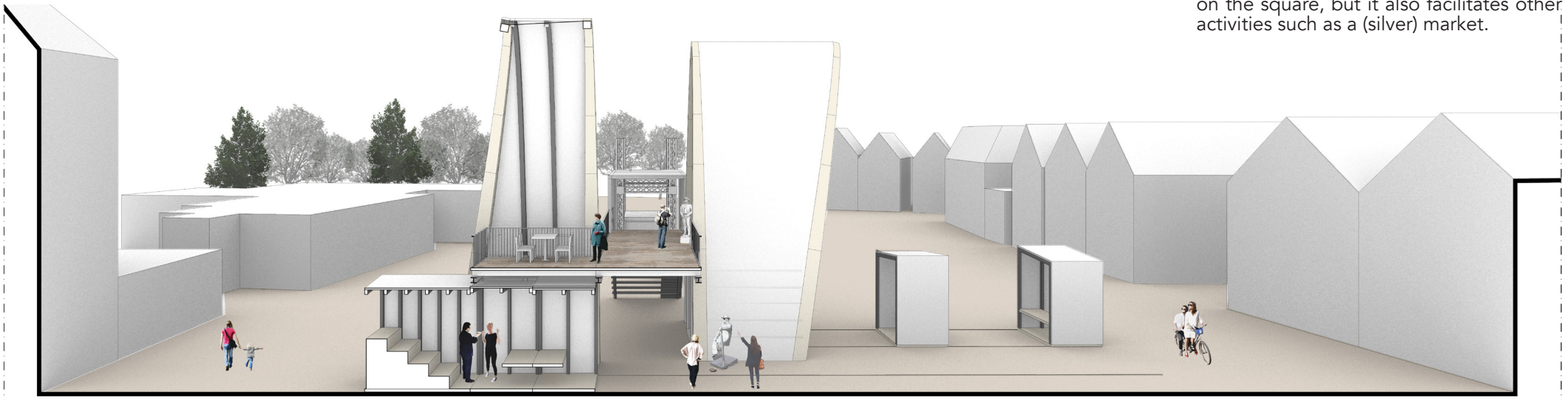


Second floor

This section shows how the newly added structure claims public space and adds it to the existing building. On the first floor the newly created silversmith workshops bring craftsmanship to the public realm. The public route on top of the structure makes the program adjacent to it accessible from outside.

Section

These two sections show the main square *Doelenplein*. The new designed structure allows (educational) activities to happen on the square, but it also facilitates other activities such as a (silver) market.



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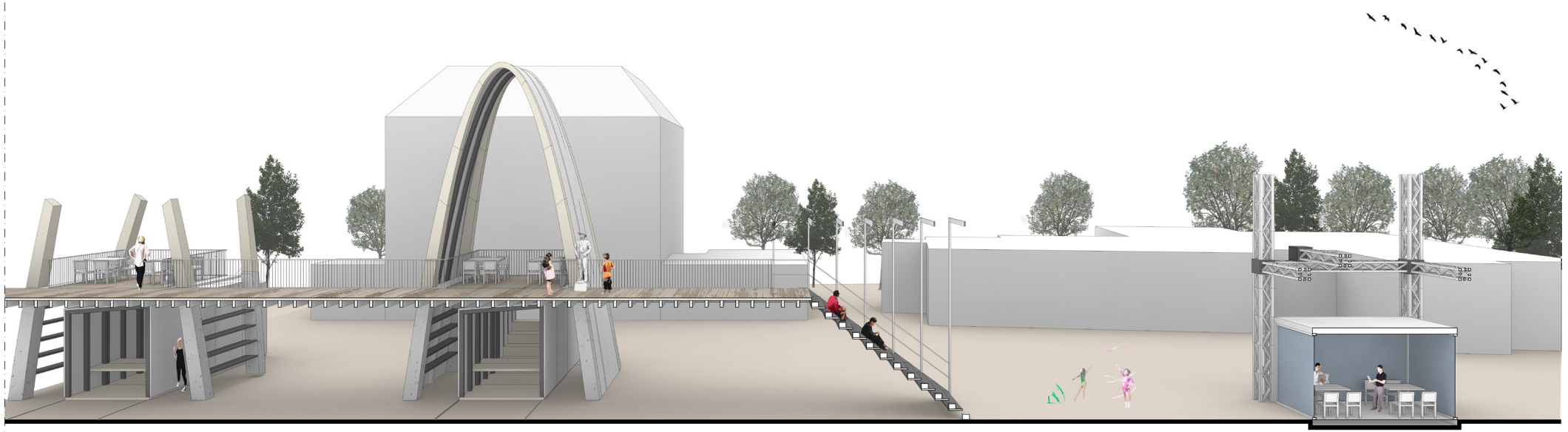
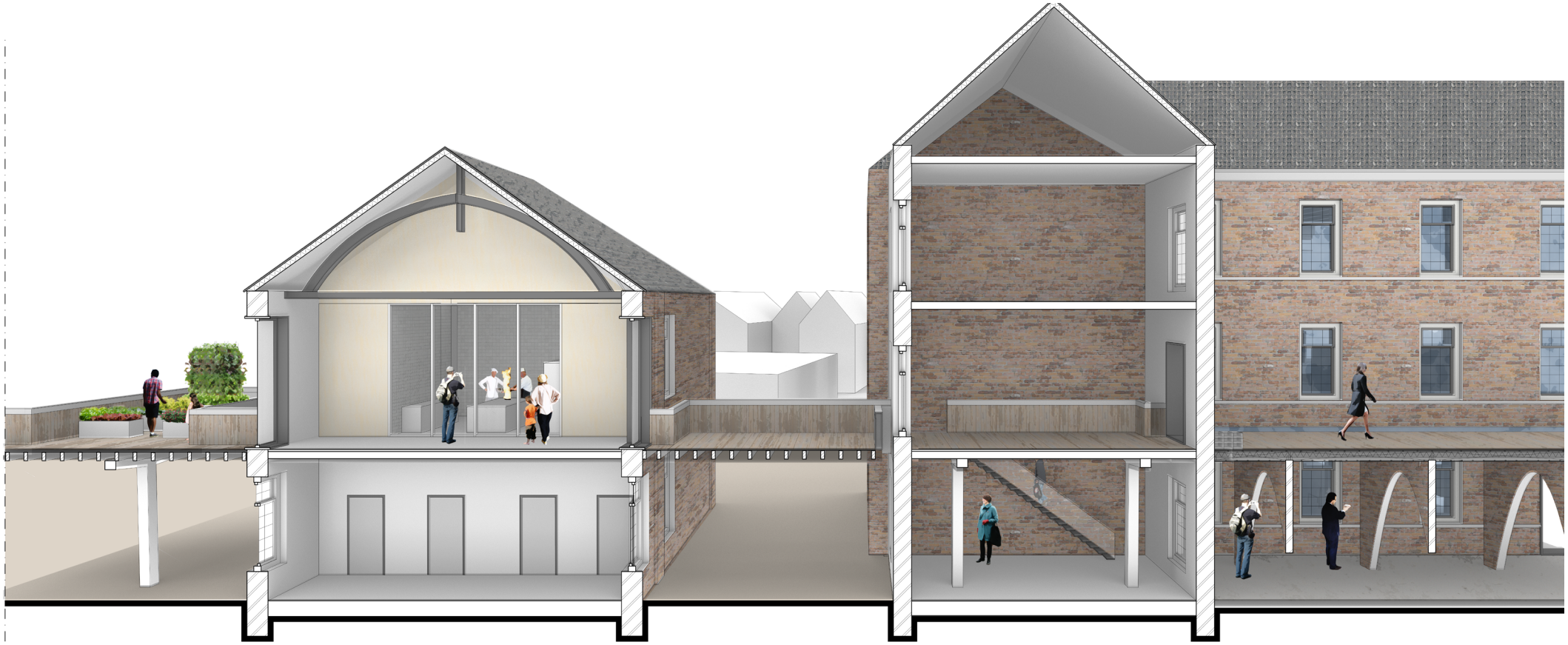


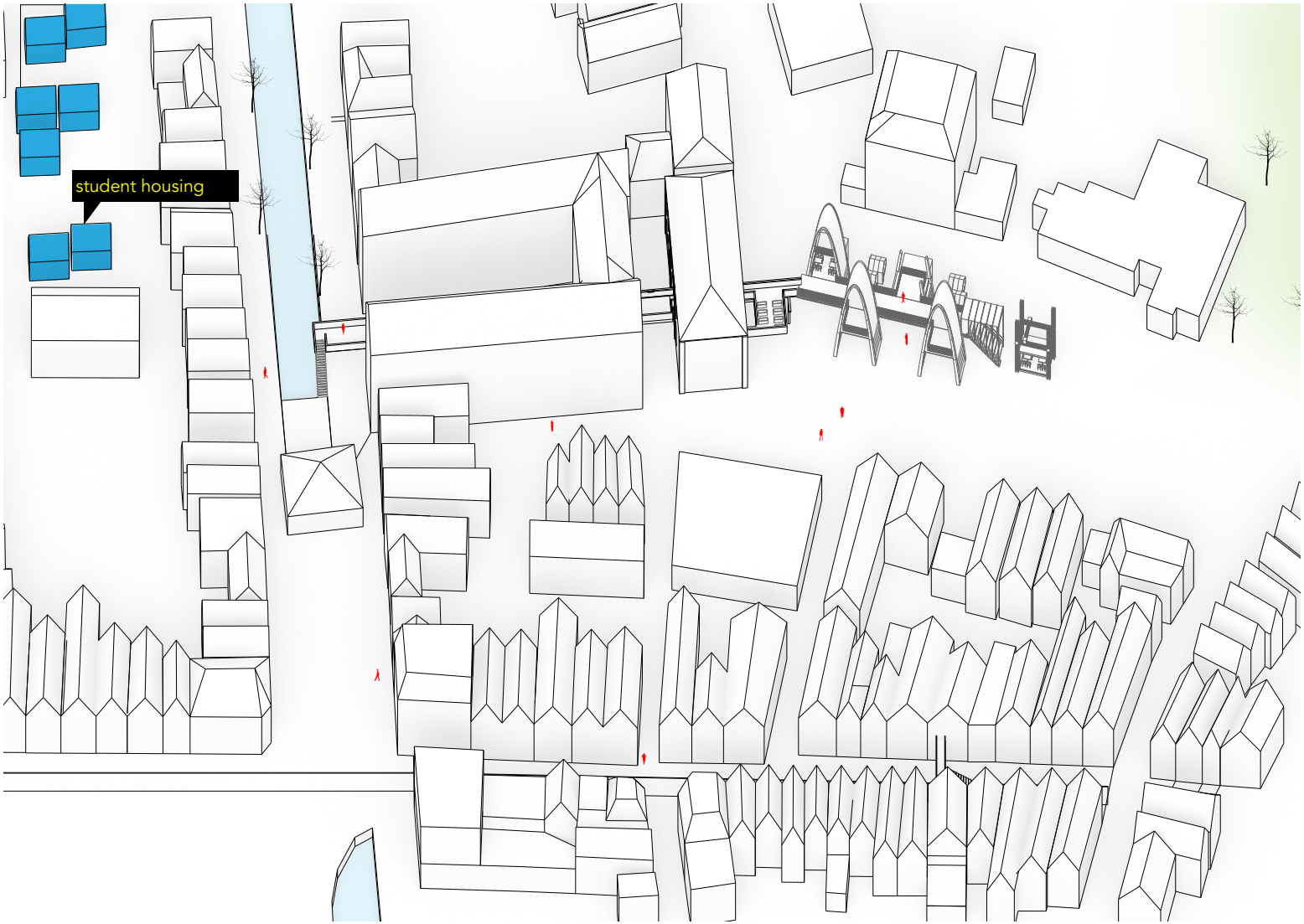
Section

The new structure also allows for other educational activities to happen.
For example, students could run a newly created restaurant. This would allow the students to gain experience in an actual working enviroment.

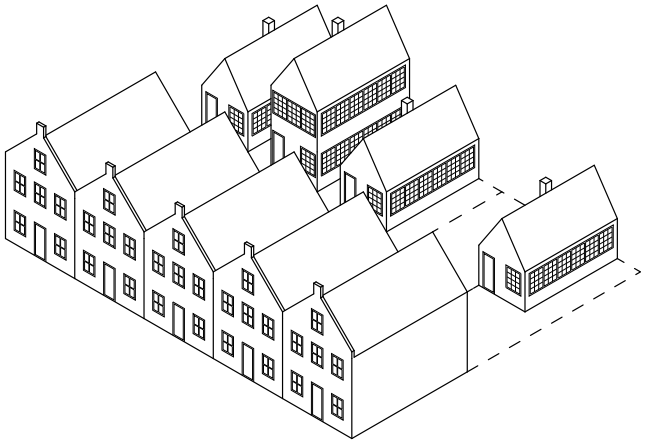


Section

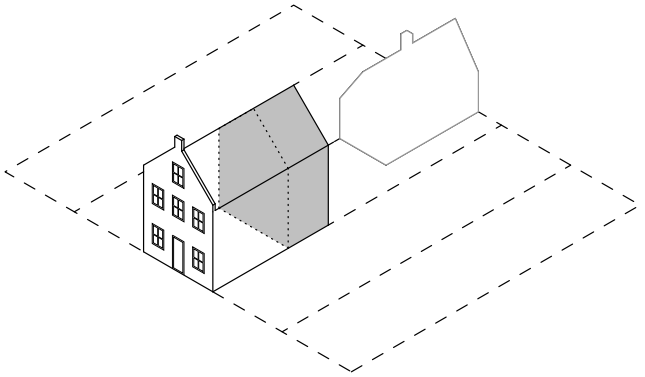
In order to create a good educational system, not only classrooms are needed. By putting student housing in the center of the city, the students become more visible in Schoonhoven



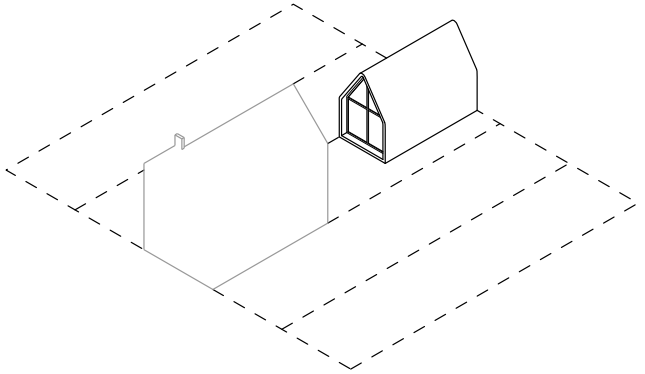
City center



Historically, a lot of houses in Schoonhoven have a silver workshop in their backyard.



Nowadays most of the silversmiths work in the back part of the buildings. The silver is sold in the front part. A lot of workshops have been demolished.

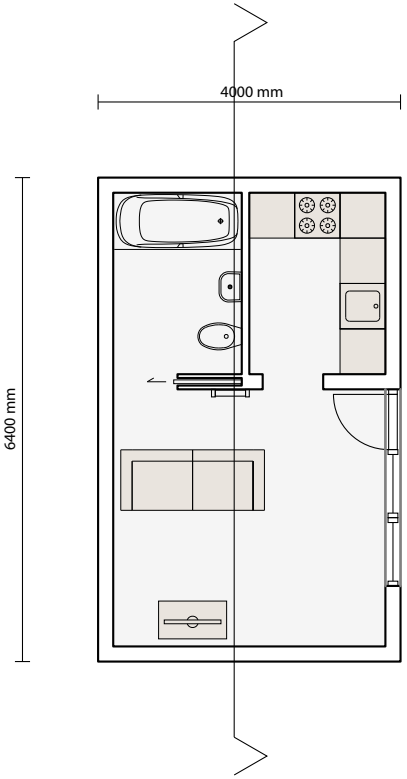


The idea is to restore this typology by giving people the opportunity to house students in their backyard.

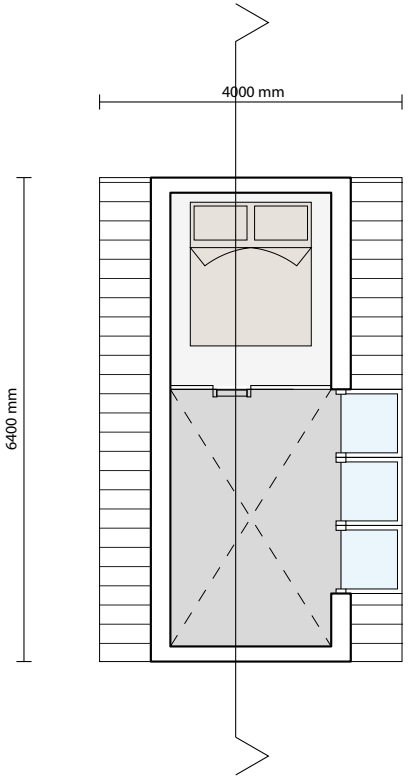
Existing workshop

Visualisation

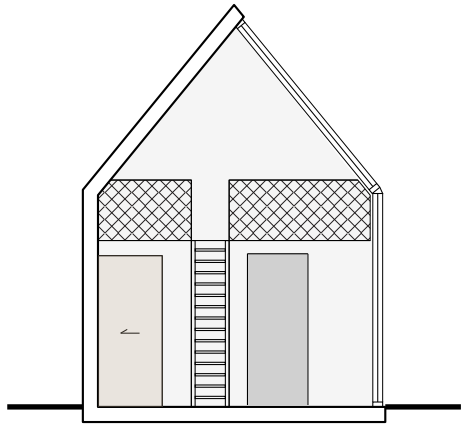
The small housing units have all the basic necessities for students. There is also enough space to study in the house.



First floor



Second floor



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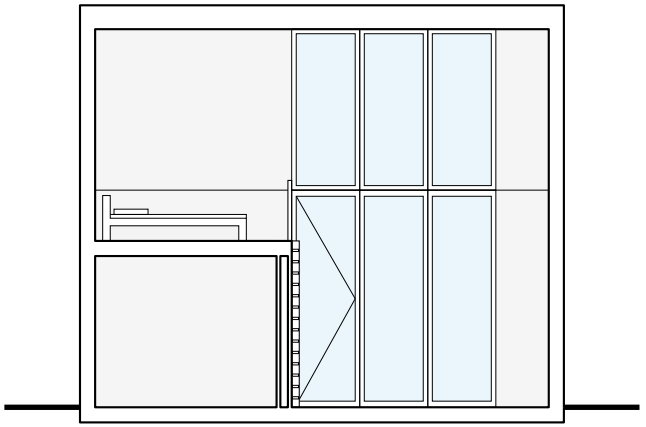
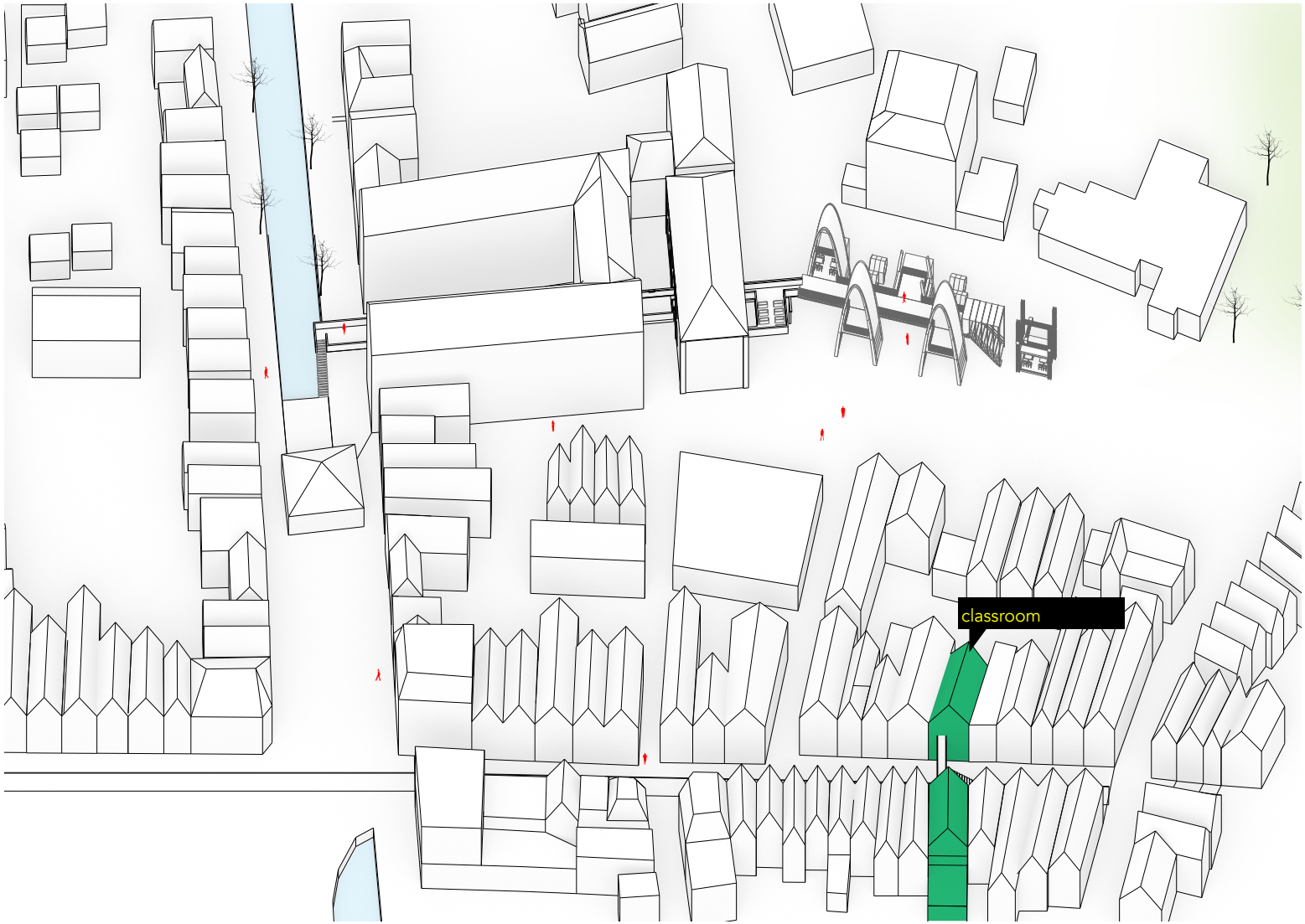
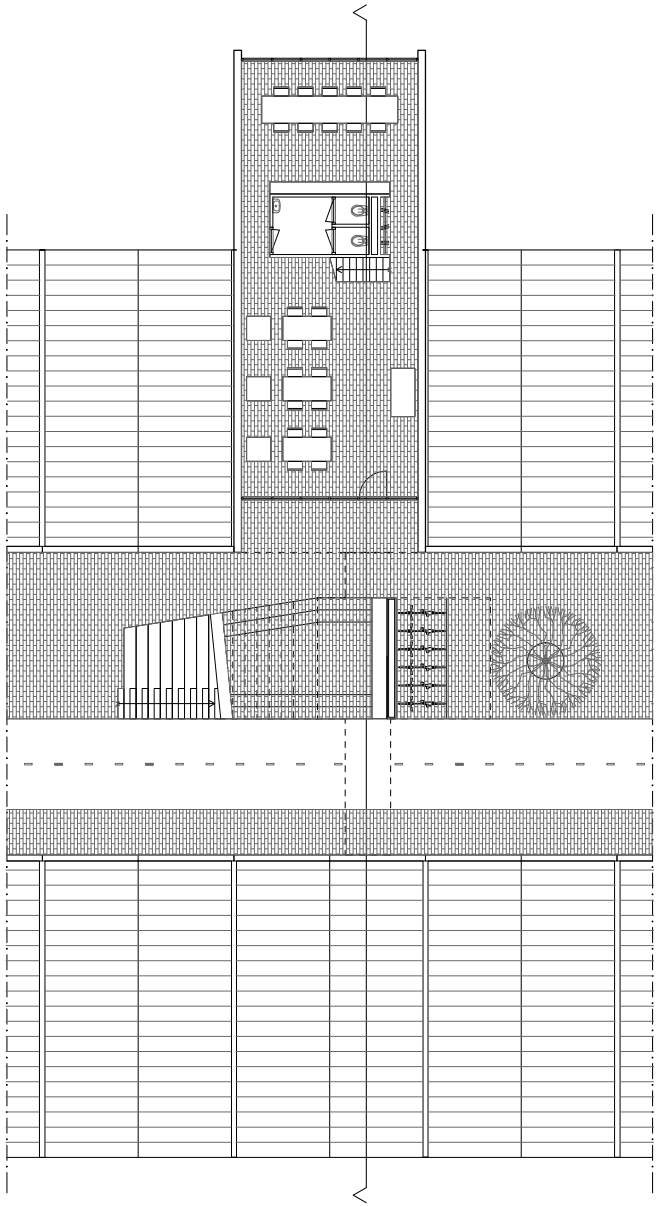


Section

Classrooms in which students get taught about the silver craft will be situated in the main shopping street of Schoonhoven. This makes education become part of everyday life.

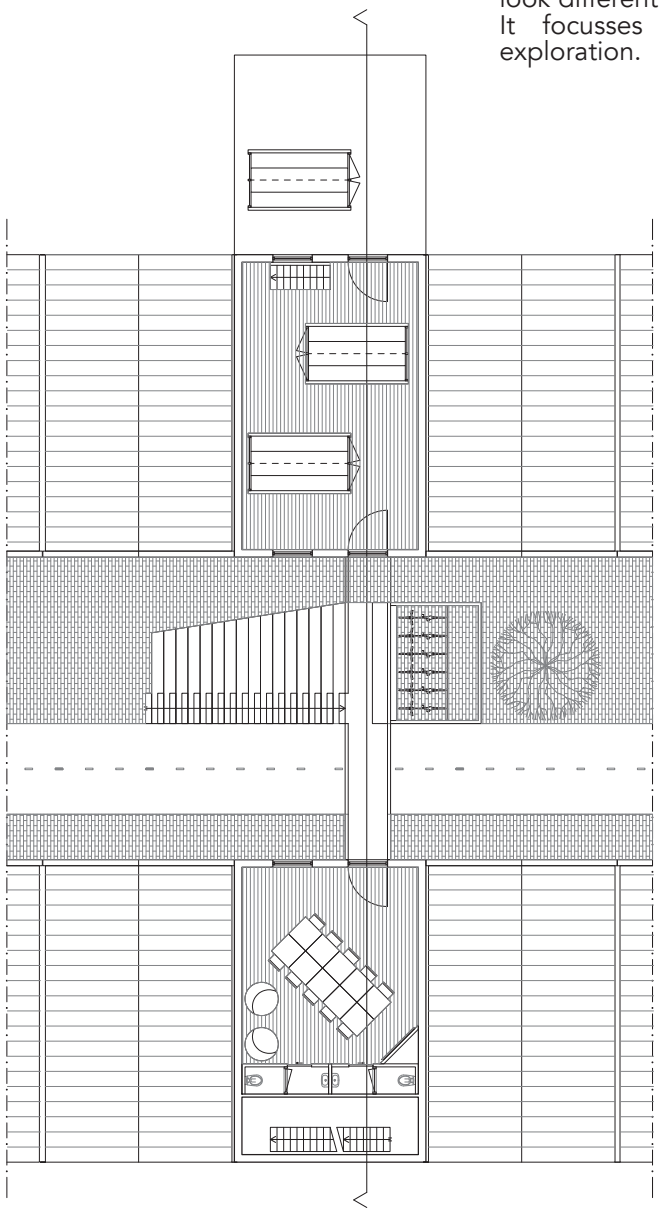


City center



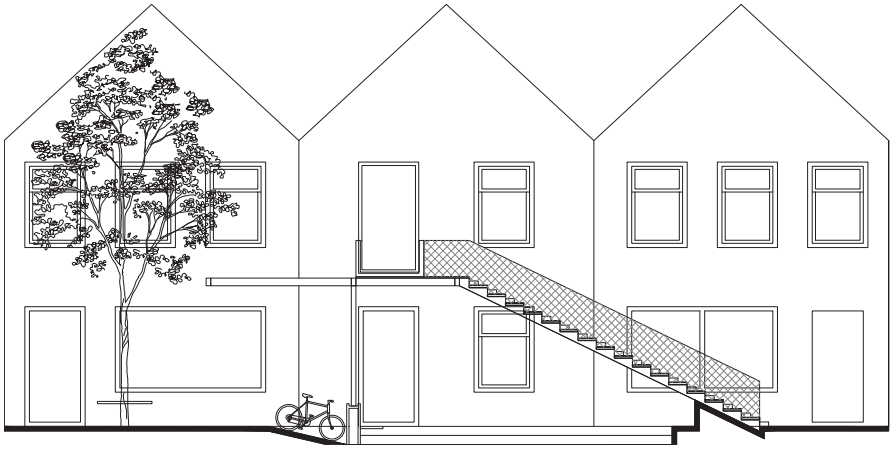
First floor

The organization of the new classrooms look different from traditional classrooms. It focusses on smaller groups and exploration.



Second floor

The stairs in the middle of the shopping street does not only serve as a entrance for the classrooms but also creates place in which people can stay and meet.



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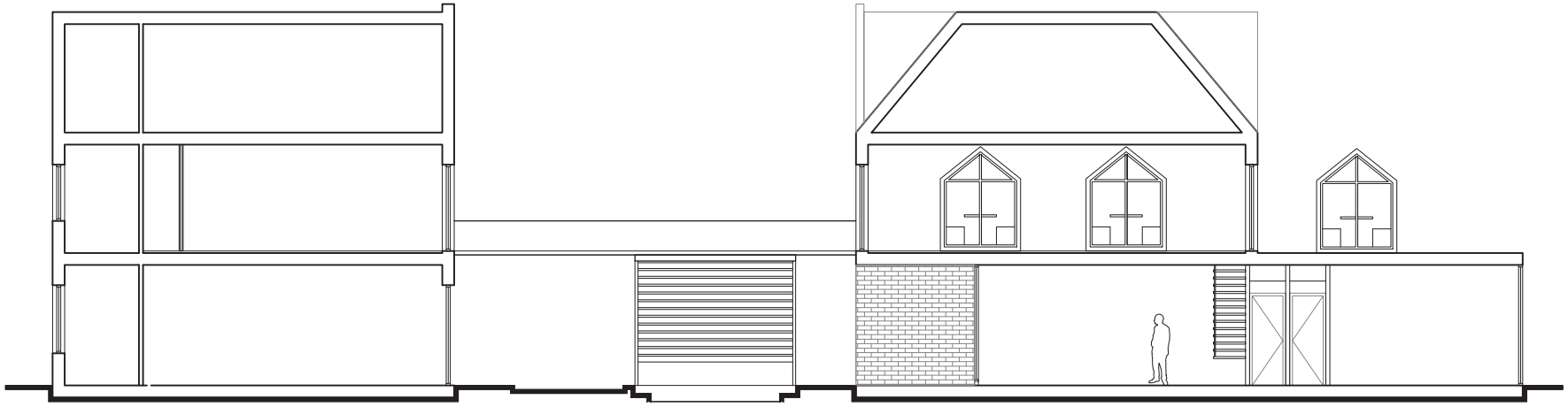
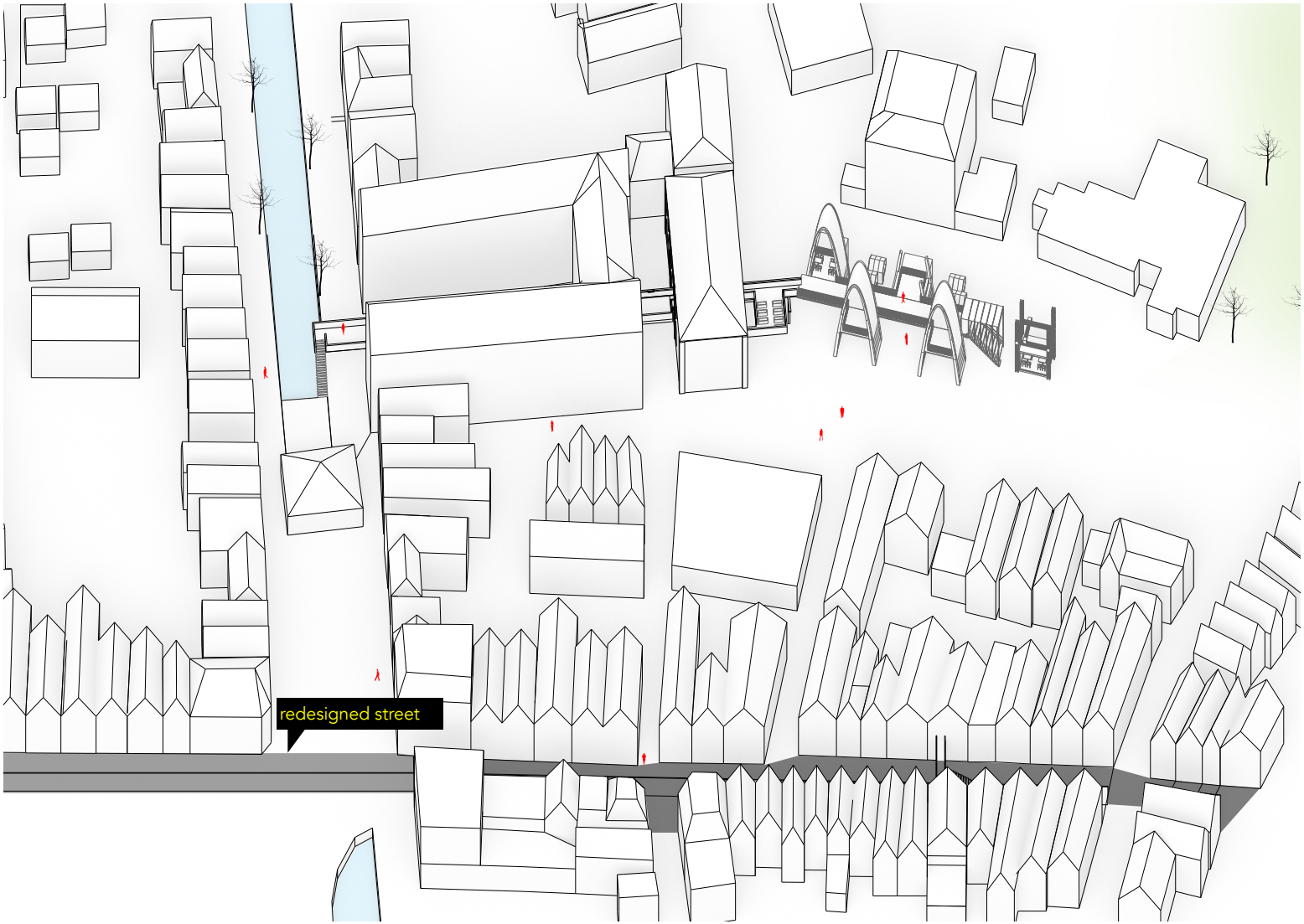
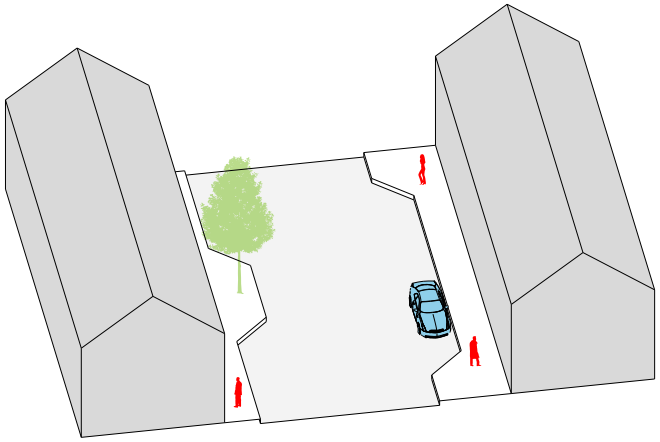


Section

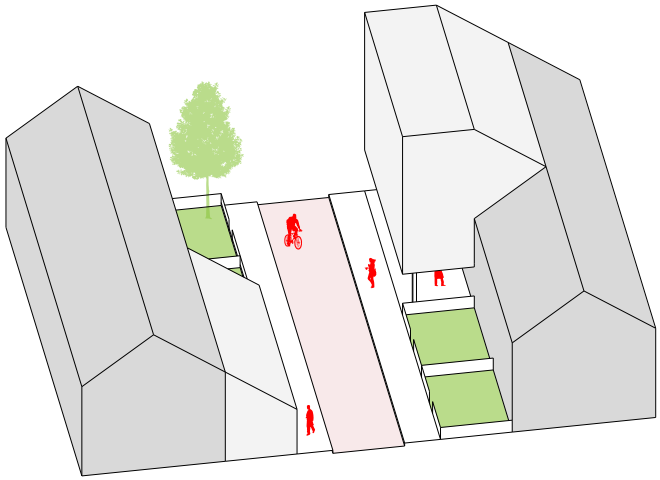
A street which runs throughout the entire city functions as a spine for the new educational area. In order to make it a vibrant place, a redesign is needed.



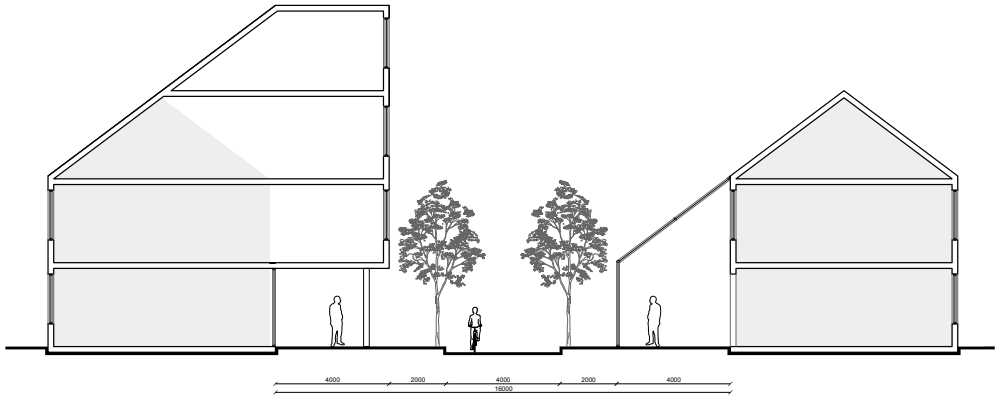
City center



The current street profile is mainly designed for cars.



The proposed redesigned street allows public activities to emerge. It also creates possibilities for house expansions and front yards



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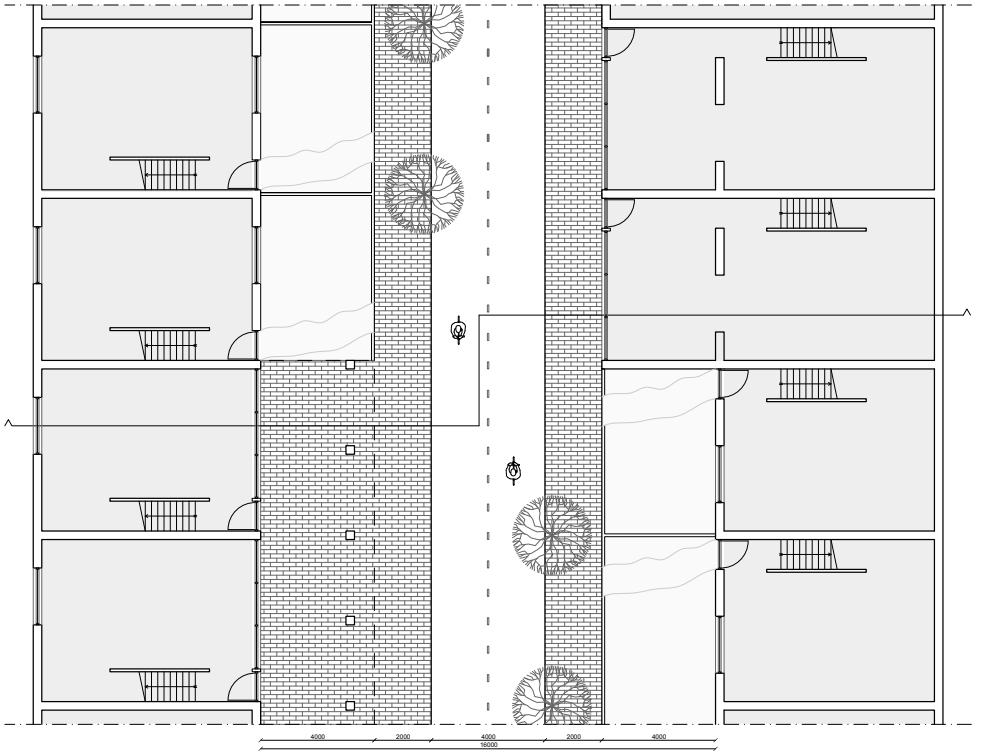
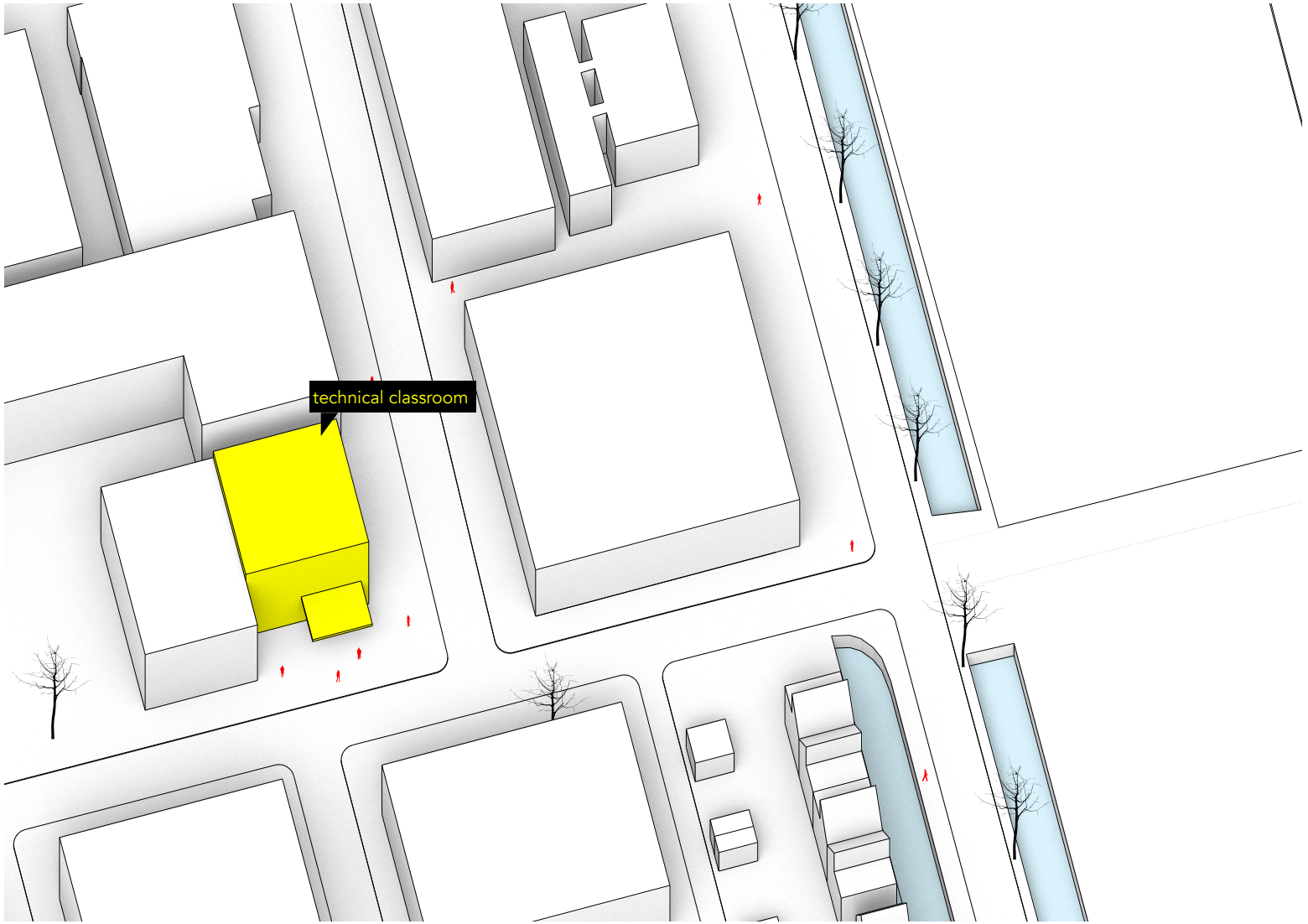
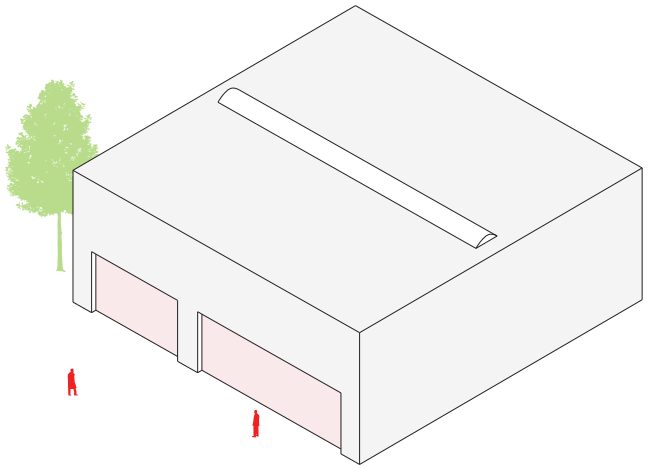


Plan

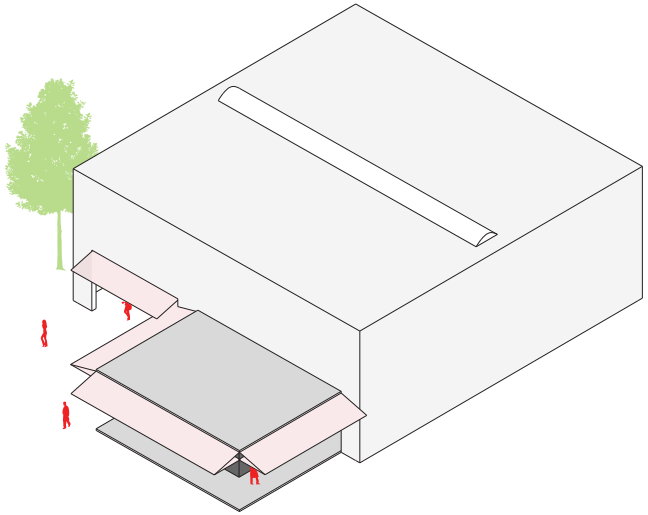
In order to bridge the gap between the industry and education, part of the school is placed in the main industrial area.



Industrial area

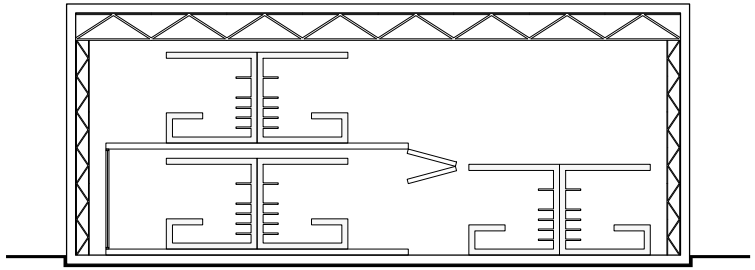


This vacant industrial building is transformed into a practical classroom. In this building students will learn the skills that they need in order to become a silversmith.



By inserting a new element, the building will open up to the public. This allows people to see what is going on inside the classroom.

A vacant industrial building is turned into a classroom. The intervention ensures that it becomes a public building.



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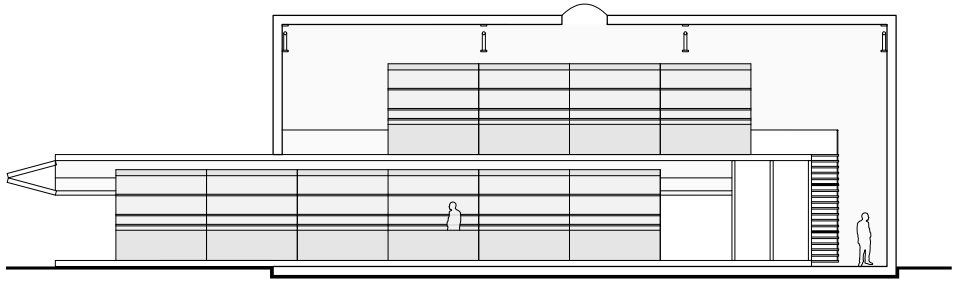
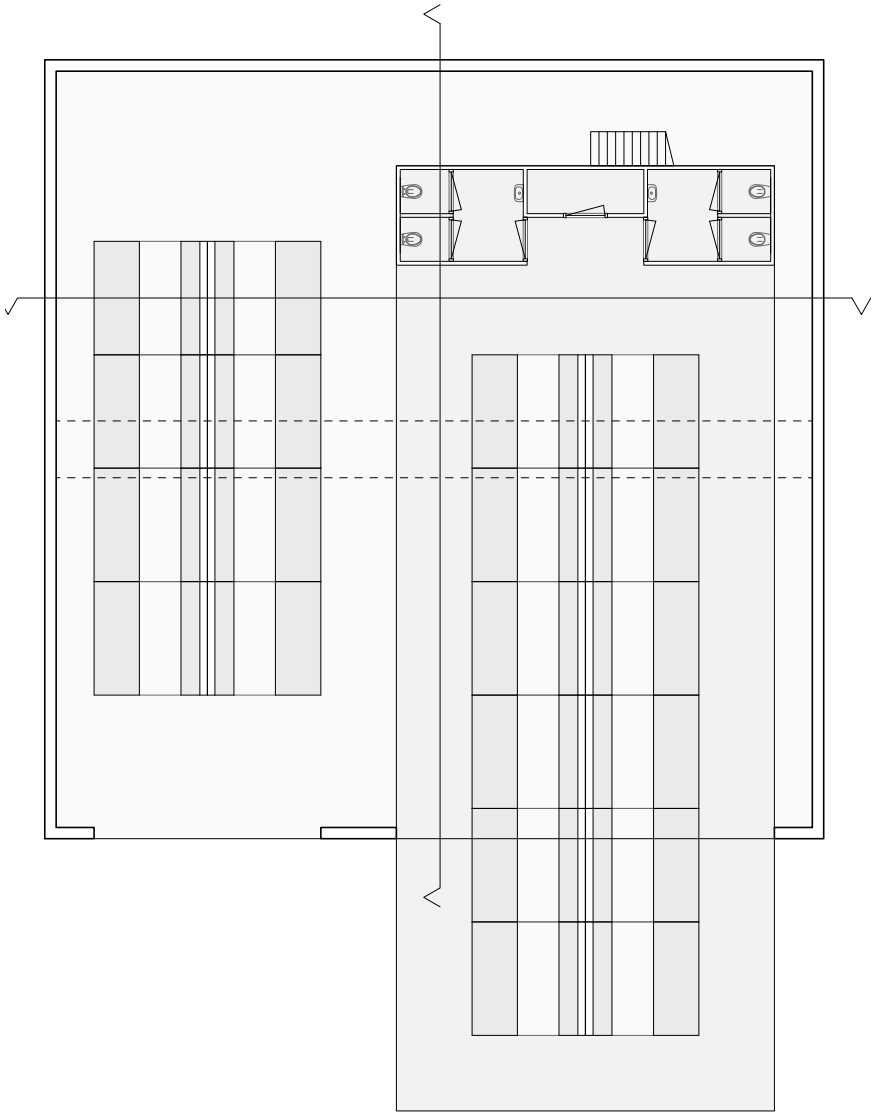
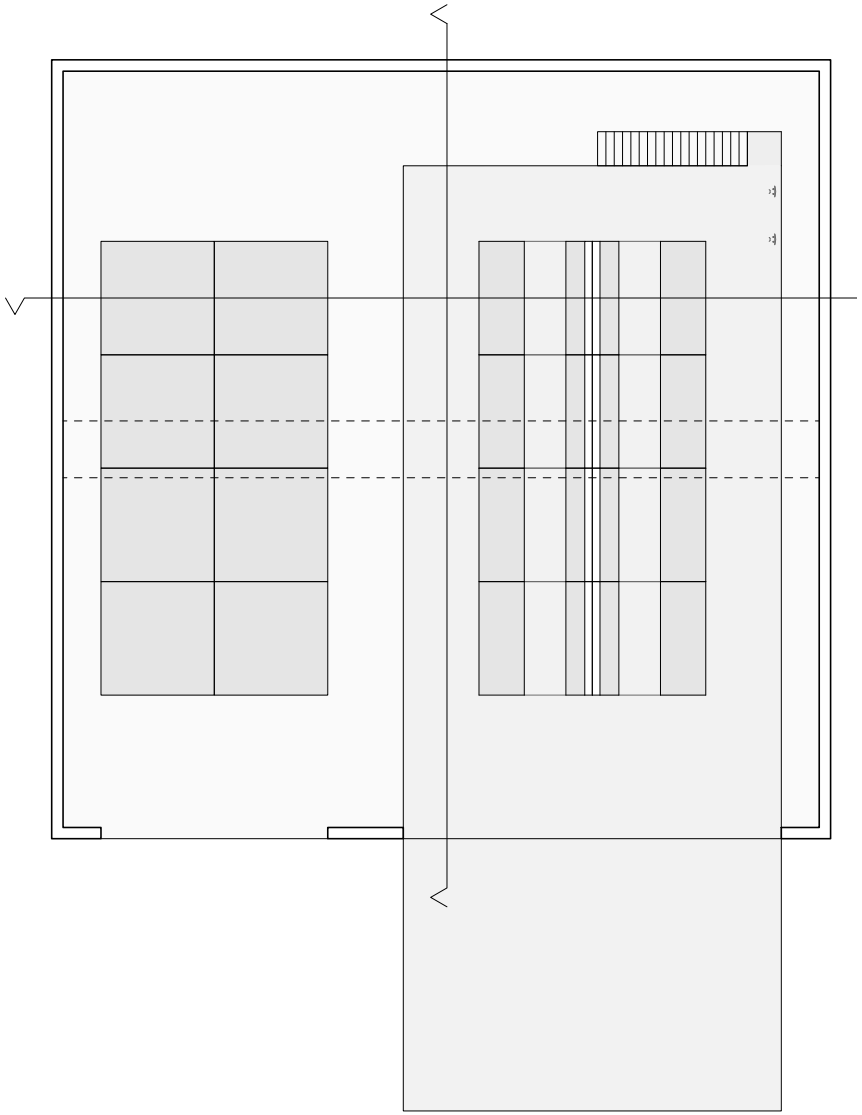


Section

The new element can be closed off from the existing structure of the industrial buidling. This makes the building also available for workshops for smaller groups.



First floor



Second floor

Reflection

5.1 Relationship between research and design
The studio design as Politics has adopted the *Research by Design* method. This results in a process in which the research is constantly being tested by the design. In this way, there is a very strong relationship between the research (results) and the design. The research results are implemented in the design. This is visible in for example the fact that the urban strategy is based on Howard Gardner's *Theory of Multiple Intelligences,* which results in a project that not focuses on a limited set of skills, but rather is open to allow other educational activities to emerge.

Another research result that is implemented has to do with craftsmanship. The research has shown that there are three things to consider educating more craftsmen and thus tackling the problem of shortage of craftsmen. These things are: How we educate craftsmen, what people think about craftsmanship, and what people know about craftsmanship.

Adopting the German model, in which the industry and the schools work together, changes the education of craftsmen. This has resulted in a system in which the industry and the students work together. This leads to a better connection between what skills students are taught and what skills the industry requires.
Finally, the status and the awareness of craftsmanship are being improved by making craftsmanship visible. This can be found in the fact that the new school opens up to the public realm.

5.2 Relationship between studio theme and graduation subject
This year's theme of the studio is *New Utopias: on the ruins of the welfare state.* The foundation of this project is based *on a ruin of the welfare state*: the educational system. The welfare state has developed the *knowledge society*, in which emphasis is being put on knowledge. Because of this, Dutch society is over-educated, which is a waste of money, and has also led to a shortage of skilled people.

In this project, an alternative system is presented. The alternative puts skills above knowledge and because of this system the students the option to develop the skills that they value, rather than developing skills which are a projection of societal values.

5.3 Relationship between methodology of studio and methodology of student
The methodology that the studio dictates consists two several steps. The first is to develop a *ruin of the welfare state* and than present a utopian to be built upon this ruin. During this project I have adopted this methods. As previously described, the foundation of this project is based on this methodology.

The utopian vision is the result of the design part of this project. This results in a society in which craftsmen are considered equally important as high valued jobs such as lawyers and doctors.

5.4 Relationship between project and wider social context
The philosophy of the Design as Politics chair is that design and politics are much related. Design is always a political act and is a reflection of a certain political ideology. This idea means that there is always a strong connection between architecture and the wider social context.

As explained in the first chapter of this report the Netherlands could lose its competitive advantage if they do not attract more craftsmen. This project tries to tackle this societal problem. It results in a new way of educating people. The ideology comes from Amartya Sen's *Capabilities Approach*, which states that welfare is to be measured against the amount of freedom that people have to develop the capabilities that they consider to be important.

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