

The relationship between the university and the city

Report 1
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Msc3 Interiors Buildings Cities:
Spaces of collection Fall year
Irene Cieraad Research Seminar AR3AI055
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Introduction

In the graduation studio Spaces of collection within the chair of Interiors, Buildings and Cities, we as students are asked to design an institution for the TU Delft university in the inner city of Delft. This 'institution' will be a complex of 'spaces of collection' for the accommodation and display of artefacts belonging to both the university and the city, accompanied by environments whom support social and intellectual contact. The technical university of Delft used to be located in the inner city, but now has its Campus just outside the city centre. This design assignment researches possible ways to reintroduce the technical university into the city centre and what it could mean for the city of Delft. To find a proper way to do this, it is necessary to understand the relationship between the university and the city and specifically the relationship of the TU delft university to its city. Next to that it is important to understand the meaning and/or value of these collections to be housed to the city. This report addresses these topics through study on literature.

The relevance of this research lies in the search for factual information that represents a link between the university and the city. This information can contribute to developing a narrative for the design assignment. Therefore the research question of this report is as follows:

What is the relationship between the TU Delft university and Delft, and how can it support the reintroduction of the university in the inner city?

This report tries to answer this question by literature found on the technical university and Delft, but also on university collections in general. First focus is laid on the relationship between the TU Delft and the city of Delft and after that specifically on university collections in relation to their city.

University and the City

To better understand the relationship between the TU Delft university and Delft, it is useful to also take the general history of universities into account. Bender addresses that the university today is searching for its proper place in modern intellectual and social life. Historical perspectives may contribute usefully to this search for academic identity and purpose.¹ Hyde defines university as a scholastic guild, of students or masters engaged in a higher education and study. It is essentially urban and public. That is why he believes all universities somehow descend from three prototypes: Oxford, Paris and Bologna.² The university as an urban institution can be understood quite literally, considering that the concentration of population involved in an university including the 'logistic' support would have created a town of its own if one had not existed already.² One can imagine that it was economically better to use the already existing facilities of a city to accommodate an institution of education. therefore, these prototypes would not have existed if there wasn't great growth in the towns and cities of Europe in that time. In contrast to monasteries, these university prototypes were much more open to the public, everyone was allowed to attend the university. The attenders of the university for example in Bologna started to form a guild. 'It was a guild of consumers. ... They regulated the product they were receiving. ... relations between the university and the city settled down to a remarkable pattern of

1. Bender 1988: 3-4
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3. Hyde 1988: 19
4. Ergazakis, Metaxiotis and Psarras 2006: 3-4
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6. Etkowitz and Webster in Romein et al 2011: 150
7. Hearn in Romein et al 2011: 150
8. Kraaijestijn 2003: 4-6
9. Romein, Fernández-Maldonado and Trip 2011: 160
10. Romein, Fernández-Maldonado and Trip 2011: 160-161
11. Lourenco 2005: 105
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13. Lourenco 2005: 121
14. Meadow n.d.

mutual support. The cities were proud of their universities.Because the students brought in money, and they gave renown to the city.”³ This existence of protection from the city over the universities was unique to Europe according to Hyde. It is important to conclude from these historical perceptions that the relationship between the university and the city, to be more specific the municipality of the city, is originally based on a two-sided beneficial arrangement.

This two-sided beneficial arrangement between municipalities of cities and universities seem also evident in the university cities today. Especially, the term knowledge plays a big role in this current relationship. In the past ten years knowledge management has been very important in the business world and evolved into other areas such as education. Becoming a ‘knowledge city’ is of high interest to cities nowadays.⁴ This same literature source explains that the concept of a knowledge city is very broad and may refer to all aspects of social, economic, and cultural life of a city: “A knowledge city is a city that aims at a knowledge-based development, by encouraging the continuous creation, sharing, evaluation, renewal and update of knowledge.”⁴ This could be achieved through a continuous interaction between citizens and other cities or citizens. Thereby it is mentioned that universities can play an active role in creating such a city of continuous interaction. Another resource also stresses the importance of knowledge in cities nowadays. Romein for example stresses that it is widely accepted that knowledge is an increasingly significant resource for urban development and that cities with a rich knowledge capacity have a relatively favourable position in the competition between cities in the current knowledge-based economy.⁵ Next to that studies of the role of knowledge capacity in urban development pay much attention to universities. There is a ‘second academic revolution’ in progress which can be defined as: a “translation of research findings into intellectual property, a marketable commodity and economic development.”⁶ This revolution is evidence of a new interest of universities next to teaching and researching in technology transfer. Hearn emphasises that innovation in the current knowledge-based economy often is determined by bringing together and merging existing knowledge in a transdisciplinary manner. This is achieved by making networks whom interconnect tasks, people, technologies, markets and firms. But also by combining knowledge, technology and local culture and creativity.⁷ To summarize, knowledge has become more and more important for cities not only in businesses but also in other areas such as education. Therefore, universities play a big role in the knowledge capacity of knowledge cities. Universities show their interest in knowledge cities by a new academic revolution where knowledge transfer becomes one of the main goals for universities. New innovation however is often determined by combining existing knowledge.

TU Delft University and Delft

Knowing now that the relationship between the municipalities of cities and universities was based on a two-sided beneficial arrangement and becoming a knowledge city is of high interest to cities nowadays, I researched literature specifically on the TU Delft university. With the information already achieved a base ground for a possible relation is found in terms of knowledge and innovation. The city of Delft is globally known to be a knowledge city. That

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the university plays an important role in this, is undeniable. This is visible in the way the local government responded to the decline in employment in the 20th century. Firstly, by that the local government asked the technical university and the TNO for help in providing and creating new knowledge and jobs in the 1970s. After that the local government founded the project 'View of Delft'. This project was focused on the future development of Delft by visualizing Delft as a modern centre of knowledge, a cooperation between the city, the university of Technology and TNO.⁸ The local government took initiative in 1992 to make Delft a knowledge city by making a network which link local businesses, the university, research institutions and the local government as partners.

Delft being a 'knowledge city' seems to be the connection between the TU Delft university and the local government of Delft. The technical university here is an important part of the city's knowledge capacity. Addressing this common interest in knowledge and innovation in the reintroduction of the university in the city, could further develop the city. As the campus of the technical university has moved out of the inner city, there is a gap noticeable in the relationship between the city, not only the local government but also the residents, and the university. This gap is mostly physical as the *Schie* separates both parties from each other. Causing the university to form its own 'Island' which stands in the way of the collision of the university and the residents of the inner city. Therefore, many people don't know what is going on in the university.⁸

The well thought strategy for making Delft a knowledge city distinguishes five main themes: information and communication technology, environment and energy, innovative transport systems, water and soil, and architecture and design. The local government started to recognize that the technical university is an important incubator of new technology businesses, 30% of these new businesses located itself in or around Delft's area.⁹ It is important not to forget Delft's position between two larger cities: Rotterdam and the Hague. In 2003 an knowledge alliance with the province of South Holland was established. This alliance brought together municipalities and universities of different cities as; The Hague, Rotterdam, Leiden, and Delft. However though its best effort to be a knowledge city, Delft has disappointing results in its main objective, creating jobs. According to Romein this is not only due to a lack of a big industrial firm in Delft to cooperate with the university and the city in an equal way, but also because the local government and the university have lived rather apart from each other.¹⁰ Only recently The technical university has become more cooperative with the municipality. This is exactly where in my opinion new possibilities can arise. By reintroducing the university back in the inner city of Delft, the cooperation between the university and the local government can be strengthened. Next to this the inner city location can also provide collision between the university and Delft's residents. Therefore, I envision this new institution, mainly consisting out of spaces of collection, as a place to show the TU delft university to the city's residents and visitors. In this way the institution can provide knowledge for both the local government and the residents of Delft. The university and the local government of Delft can work actively together in this new institution to involve the residents in the notion of Delft being a knowledge city. In this way Delft being a knowledge city is not only an economical importance but also a social one.

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University collections and the City

As just decided that this new institution should be a place to show the TU Delft university to the city's residents and visitors by providing them knowledge, it is important to understand the meaning and value of the possibly to housed university collections to the city. With the term the city now is not only meant the local government but also the residents of the city. With the general theme the city as an archive in the chair, the design assignment takes it quite literally by briefing for an institution that houses spaces of collection. The TU Delft has a lot of university collections in possession which could be housed in this inner city project. Before, relocating these collections one must consider the value and/or meaning of these collections to the local government and/or the residents of Delft.

The Netherlands has an advantage in regulating their university collections, since the museums and universities are regulated and funded by the same ministry. Unfortunately there still seems to be a division between culture and science. *Stichting Academisch Erfgoed* which is founded by the five 'old' universities in the Netherlands has been the main actor in the promotion of the Dutch university heritage.¹¹ Lourenco notices an important dilemma with the university collections in modern time: 'In order to stay relevant for the university, collections need to contribute significantly to teaching and research; in order to be relevant to society at large, they need to increasingly provide access to collections, raise their professional standards and deliver public service more broadly.'¹²

After researching the collections of the TU Delft I found out a lot of the university collections are stored in multiple places, hidden from the public. The collections mostly have limited access and are hardly known by students themselves. It seems that the university collections are not made available for the residents of Delft at all and only is in purpose of research within the university. A suggested key to this dilemma is to achieve collaborative efforts between universities, governments and the museum sector. 'University collections need to be seen in an integrated way as part of a nationally and internationally distributed collection. ... collaboration and an integrated vision are essential for a more effective promotion of university heritage.'¹³ The problem that university collections face today are linked to the struggles of the universities themselves in modern time. Universities seem to be changing constantly and adapting to contemporary time. Therefore, universities are dynamic institutions. What the meaning of the university collections is within this dynamic change is an important question to ask.

Meadow seem to agree on the ever changing university; '...neither collections nor disciplines are stable entities. ... Over a given period of time, the accretion of new research questions, new methods, new technologies and even new subject matter results in enough change within a discipline as to constitute an essentially 'new' field of study.'¹⁴ University collections continue to expand and new collections are constantly being formed. Within this process old collections can lose their meaning and/or importance. Other collections '...change locations, owners and functions over time. Indeed, viewed from a sufficiently long historical perspective, it becomes clear that objects and collections are in constant circulation and change functions and values in the process.'¹⁴ As the university, and especially the technical university of Delft, is an ever changing institute, the university collections have to deal with

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this notion. Also the collections themselves change, lose their importance or suddenly regain importance by new insights. Understanding this dynamic in both the university and its collections, it is logical that housing one of the collections in this new institution permanently will not work, due to its ever changing value. Next to that moving a university collection to another location doesn't suddenly give new value to a collection. To give one of the historical collections value again, they must be interpreted, used or viewed in a new way. For this reason I will not house one specific collection in my design for the new university building in the inner city, but will design exhibition spaces which are flexible in housing multiple different collections. As I want to give these collections new meaning and make them available for the public, the residents and visitors of Delft, I will combine them to the term knowledge, as it will contribute to the development of Delft. This will be evident in making this institution a knowledge centre by providing exhibitions for the residents of Delft with research/graduation outcomes from the TU Delft university. Accompanied with exhibitions of historical collections for further research purposes and other facilities which turn this institute into a centre of transporting knowledge and interdisciplinary collaboration. Possibilities are in focussing on one of the themes of Delft's knowledge city strategy. The theme which is very present in all the faculties in the university and therefore a good candidate for this new institution is: environment and energy. This theme is focusing on the sustainability of the future.

Summary/Conclusion

Looking at historical perspectives of the relationship between the university and the city, we can conclude these existed on a two-sided beneficial arrangement. This arrangement is still visible today, where also knowledge and becoming a 'knowledge city' is in high interest to cities. For this reason universities become very important for the city's knowledge capacity. This is also evident in the case of Delft, as the technical university provides the local government with knowledge and created a lot of job possibilities in and around the area. To further improve Delft as a knowledge city the local government should closely work together with the university more. The design assignment for making a TU Delft institution in the inner city of Delft could provide for a closer collaboration of these two parties. Furthermore, it could also involve the residents in the notion of Delft being a knowledge city. This makes Delft being a knowledge city not only an economical importance, but also a social one. The new institution could provide the residents of Delft with exhibitions which show them what is going on in the university and provide them with knowledge. In terms of university collections, collections constantly change in size and value. Next to that new collections are developed constantly. Furthermore not only the collections change but also the university itself. Therefore, we have to conclude moving a historical collection to the inner city will not instantly give value to the collection. The inner city location for this new TU Delft university building is perfect to strengthen the relationship between the university and the local government, as well the residents of Delft. By making a building in the inner city which is focused on sharing knowledge and interdisciplinary collaboration, the gap between the city and the university might be fixed. The collections in this building will therefore change constantly as well, consisting out of research and/or graduation outcomes, or historical

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collections which encourage or further develop research. The possibility lies in combining an overall theme in the TU Delft university to this new building of knowledge transfer and interdisciplinary collaboration. This theme, environment and energy, which is also a theme for Delft's knowledge city strategy is fully focused on sustainability which the technical university totally supports in all its faculties.

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Urban presence in the inner city of Delft

Report 2
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Msc3 Interiors Buildings Cities:
Spaces of collection Fall year
Irene Cieraad Research Seminar
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09-01-2017

Introduction

In the first report literature is studied to understand the relationship between the TU Delft university and the city of Delft. Knowledge seems to be the core of this relationship, where the university plays an active role in maintaining Delft as a knowledge city. These findings form the starting point in creating a design proposal for the graduation studio Spaces of Collection. In this design proposal the relationship between the technical university and the local government and residents of Delft is strengthened by proposing a platform to show the TU Delft university. This is achieved by creating a platform for sharing knowledge and interdisciplinary collaboration. The complex will consist out of multiple exhibition spaces which will house collections of research and/or graduation outcomes and historical collections to support new researches and developments. These exhibitions will be accompanied by spaces which makes this institution into a center of knowledge. To further develop the design proposal several analysing studies are made collectively in the design studio. In this second report these collective studies on the inner city of Delft are described and analyzed to further motivate the design proposal. This motivation will be based mainly on the location and the user focus of the design proposal.

Before getting to the analysing section of this report I will start with a small introduction to the city of Delft. The city of Delft is more or less 750 years old. The name Delft comes from the word 'delven' (to dig) and refers to digging up the oldest canal named 'de Oude Delft'. In the 13th century a court was located on the place where we can now find the city hall. The court was in possession of the counts of Holland and had their headquarters, het Binnenhof, in The Hague. It is unknown how this court should have looked like, but it supposed to be a complex of wooden buildings. Next to dwellings it contained some public buildings and was closed off by fences and gates.

In 1246 the city of Delft received its city rights from the Dutch earl Willem II. The city grew a lot since then with the flourish of trade and industry. Until the 17th century Delft was one of the biggest cities of the county which later becomes Holland. In 1400 Delft was the 3rd city after Dordrecht and Haarlem, and in 1560 even the second biggest city after Amsterdam. In 1536 a big part of the city was burned down by fire. In the Golden Age Delft was a rich merchant city. The city is known for its famous Delft blue pottery and for being a knowledge city. With this information we can expect that Delft changed quite a bit due to the city fire and had a lot of breweries and pottery (craft) places.

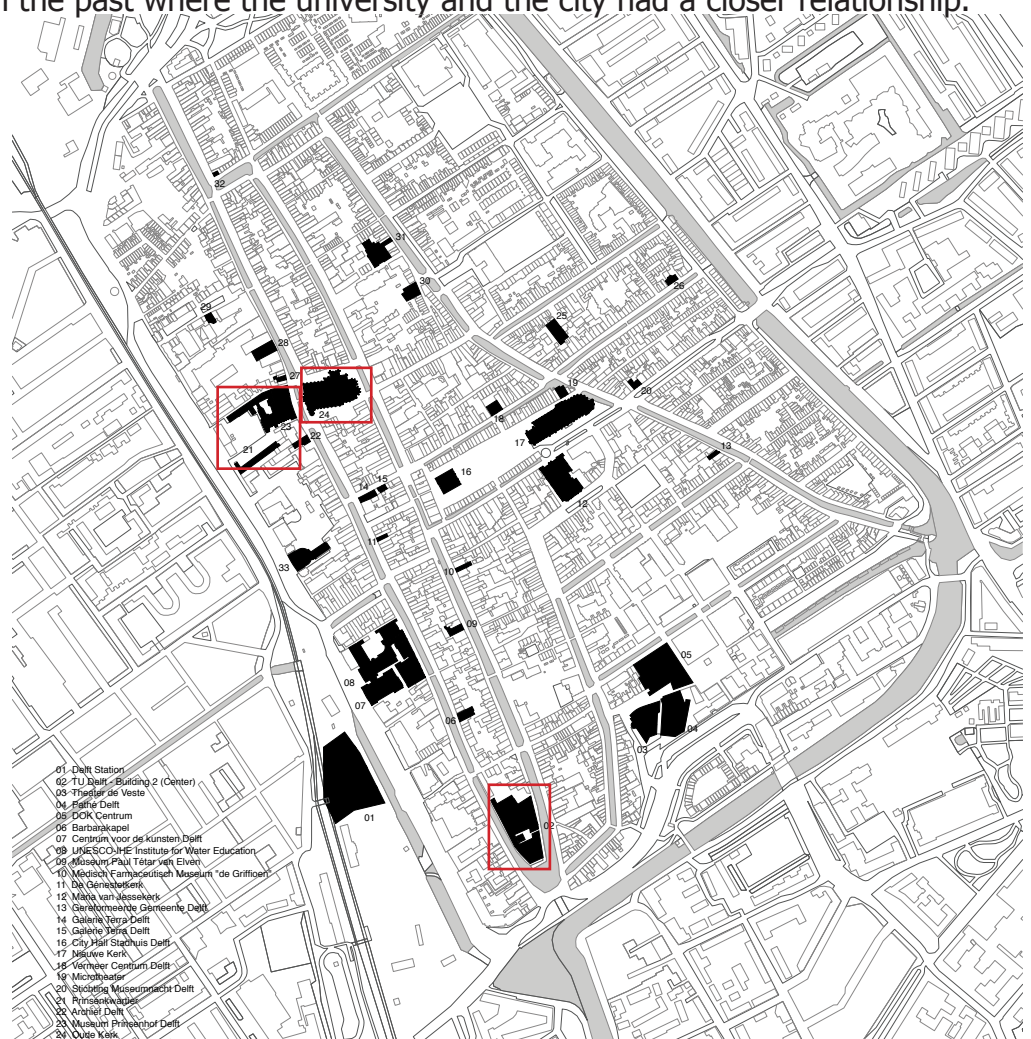
When we talk about the user's presence in the city we can categorize them in three main user groups: Residents, Students and tourists. The residents as the inhabitants of the city, the students which show their presence mainly from out the university and tourists from all over the world, as well as from other cities in the Netherlands. Within the studio the user's presence is mapped along with the functions the city accommodates. The maps consist out of two base maps and three overlaying maps. The two base maps show all the buildings of the inner city of Delft and are coloured by the functions these buildings accommodate. This categorization contains the following categories; living, hotel, retail & services, office, health, restaurants/bars & cafes, cultural, religious, education, municipality & infrastructures and craft. Which of these functions are vacant or outcomes of the TU Delft university are marked by a cross for vacancy and a TU logo for TU outcomes. There is a base map for the functions on ground level and another base map for functions on the first floor. This extra map is relevant since many buildings share functions, separated by the levels in the building. Along with these two base maps come three overlay maps, one for tourists, one for students and one for residents. Laying them over the base map can tell us something about which functions are used by whom, but also can tell us to which extent these three different user groups are present in the inner city of Delft. First we will look into the distribution of the categorization of functions, before combining them to the knowledge received about the users of the inner city.

Ground floor



Picture 1: Function map (Ground floor)

When we look at the overall map of functions and users of Delft, we can discover a lot about the city. The base map of the ground floor of the inner city shows an interesting division in groups of functions. The northern and east part of the inner city mainly consist out of dwellings. These neighborhoods are part of the extension of the inner city to the east. In the middle we can see a triangle with the most diversity in functions, mainly consisting out of retail & services and Restaurants & bars, accompanied by some hotels, religious -, municipal -, cultural and educational buildings (see picture 1). At the edge of this triangle of high diversity of functions our design location is situated. The very west side of the inner city, west to the canal the "Oude Delft", we can find a lot of educational, cultural, municipal and service buildings as well. Most of these buildings and functions are situated here because the city was first created around this canal and they have always been situated here. That once the "Oude Delft" was the core of the city of Delft is also evident in the position of the old church, the Prinsenhof and the Armamentarium to this canal (see picture 2). These buildings were and still remain very important for the city of Delft. The Old church partly remained its old function, but also gained a touristic purpose, The Prinsenhof a former cloister is turned in a cultural museum for the history of Delft and the Armamentarium is nowadays used as extra education space for the TU Delft university. Later in this report we will have a closer look to some of these important buildings. The west side of the city also contains more TU related buildings than the east part of the city. We can find many offices related to technical topics, for example the architectural office of Mecanoo in the north west of Delft's inner city. These offices are outcomes of the technical university and helped the city of Delft in growing into a knowledge city and provided the city with more job possibilities. The location of these university related buildings in the west of the inner city is probably due to their high accessibility with both the regional road and the train station at this side of the city. Next to this also more student housing is located in the west than in the east. This due to the same reason and their close by facilities. Indeed, there are many student associations and former university buildings located around the "Oude Delft". These signs of former university buildings show there was a period in the past where the university and the city had a closer relationship.



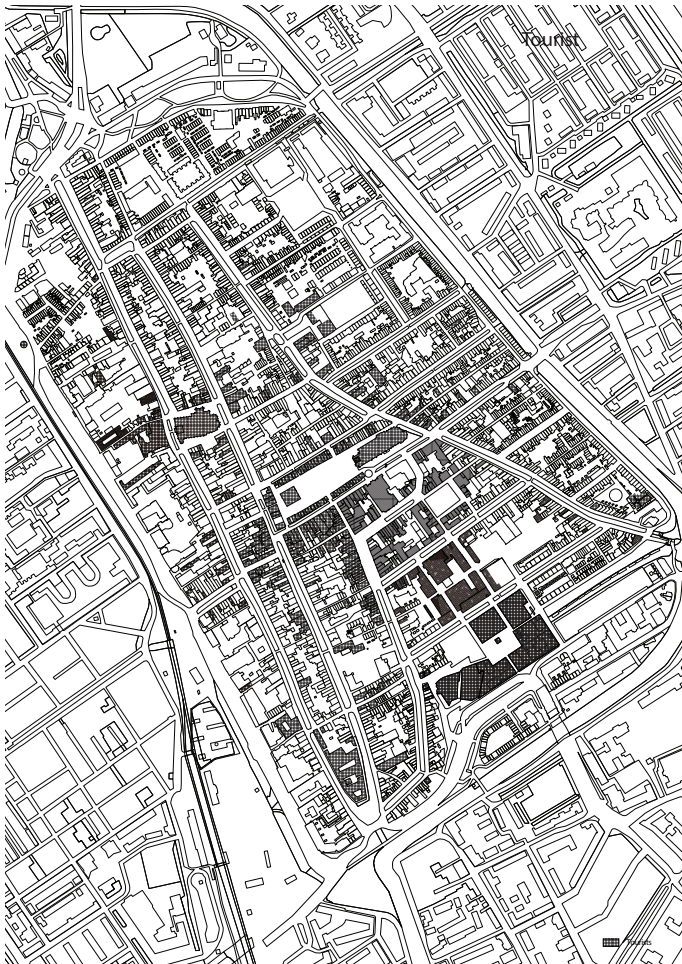
Picture 2: Public buildings

The base map of the first floor's functions (see appendix 1) shows much less diversity in functions, than the ground floor. More or less all the big public buildings keep remaining the same functions as the ground floor and mostly all other buildings change into dwellings. This makes the whole inner city a place for living and never will be deserted.

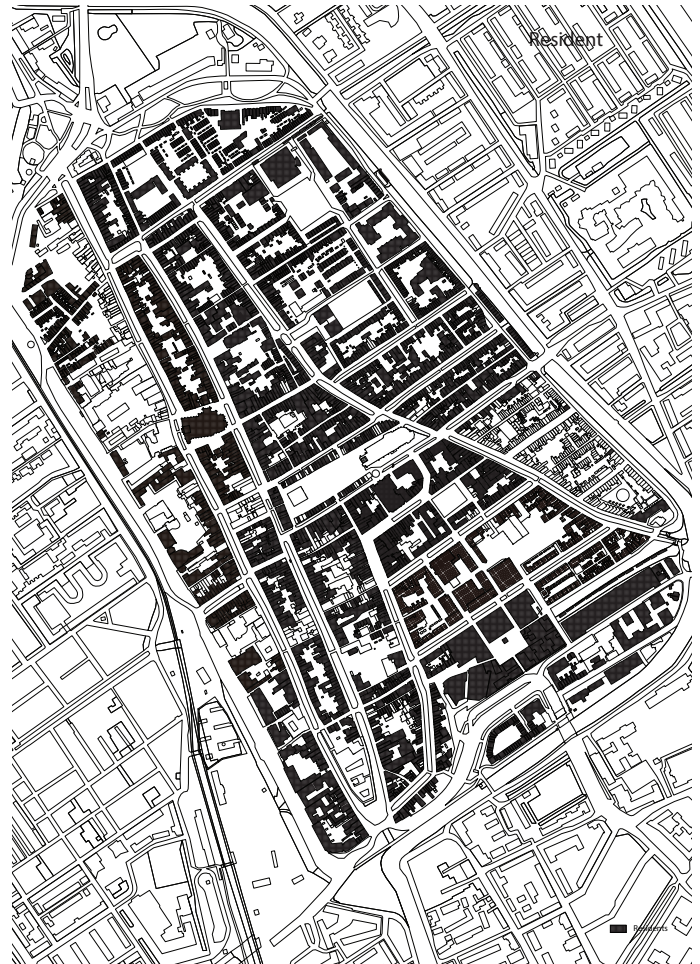
Looking at the overlay maps of users we can discover how the inner city is used and organized in terms of the user's presence. Looking at the map of the tourist's presence (see picture 3) in the inner city, it is noticeable that this user group concentrate itself in the core, the triangle of diverse functions earlier introduced. In this area are not only big touristic attractions like the town hall and the New church, but also many bars, shops and restaurants tourist enjoy during their stay in Delft. The presence of the tourist goes beyond this triangle in the west to some historical buildings and canals, next to that they will pass by some functions when they arrive at the station and move towards the big square. Furthermore, the tourist's presence is visible in the hotels the city provides.

The residents, are present everywhere in the inner city, with exception of buildings especially for student housing, associations and education. Their homes are spread all over the city and their retail, services and restaurants are often in the centre or close by around their home (see picture 4). This does not prove that every individual resident in Delft goes everywhere in the inner city, but we can assume that they regularly visit the centre, the "triangle", to shop, do groceries or visit bars and restaurants.

The students, of which some obviously are also residents of the city are a bit different than the average residents of Delft. Since students often leave the city after their graduation they can be seen as temporary residents. The students seem to locate themselves mostly in the centre of the city, close by their student associations, bars and the facilities the city offers (see picture 5). though the students can be divided in two groups: students who live in the inner city and students who only visit the inner city to use its facilities. The latter group can also be seen as partly tourist. What we can understand from these maps that especially the residents and the students mix themselves among each other. In terms of the design location I focused on these user groups.

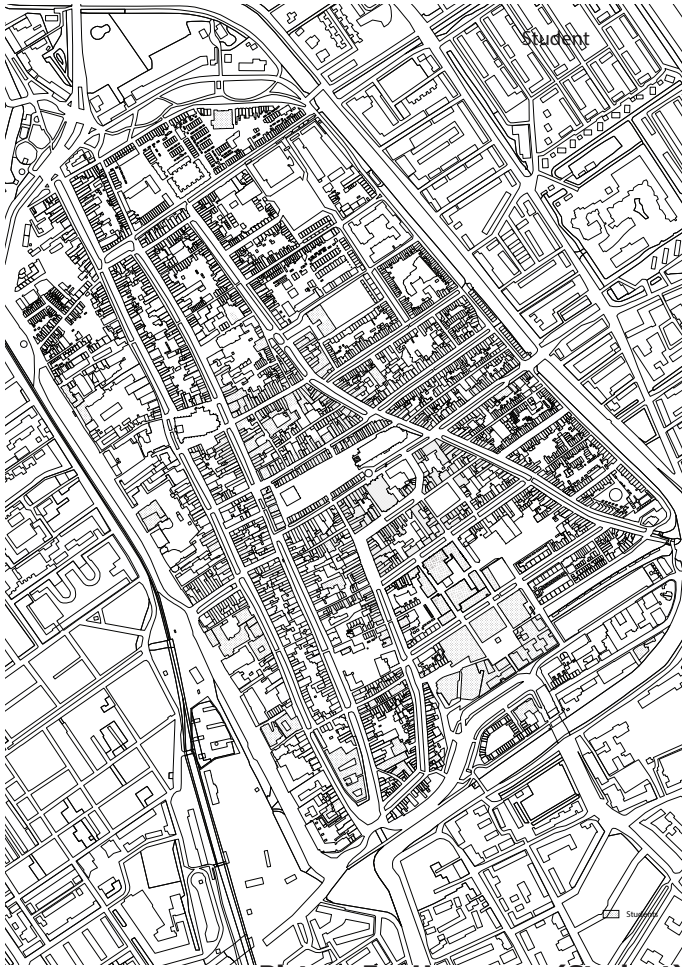


Picture 3: User map (Tourist)



Picture 4: User map (Resident)

Looking at the design location and the user groups maps, We can note that the residents and the students are mixed in and around our design location. In this case mainly a mixture of residents and students who live in or around the design location. The location is a mix of very diverse functions, from dwellings, to hotels, restaurants, services and offices. The void in between can be described as a backyard for the surrounding buildings and nowadays serves as a parking lot. The infrastructure map of bikes (picture 6) shows that there is a popular route next to the design location coming from or going to the train station. This route is a connection between the campus, the inner city and the train station. Both Students and residents will often use this to transport themselves in the city. Therefore, the design location is in a great location to let different user groups meet. It is close by the campus and student homes/associations, residents can easily access the location and even other universities or influencers can be involved because it's close situated to the train station.

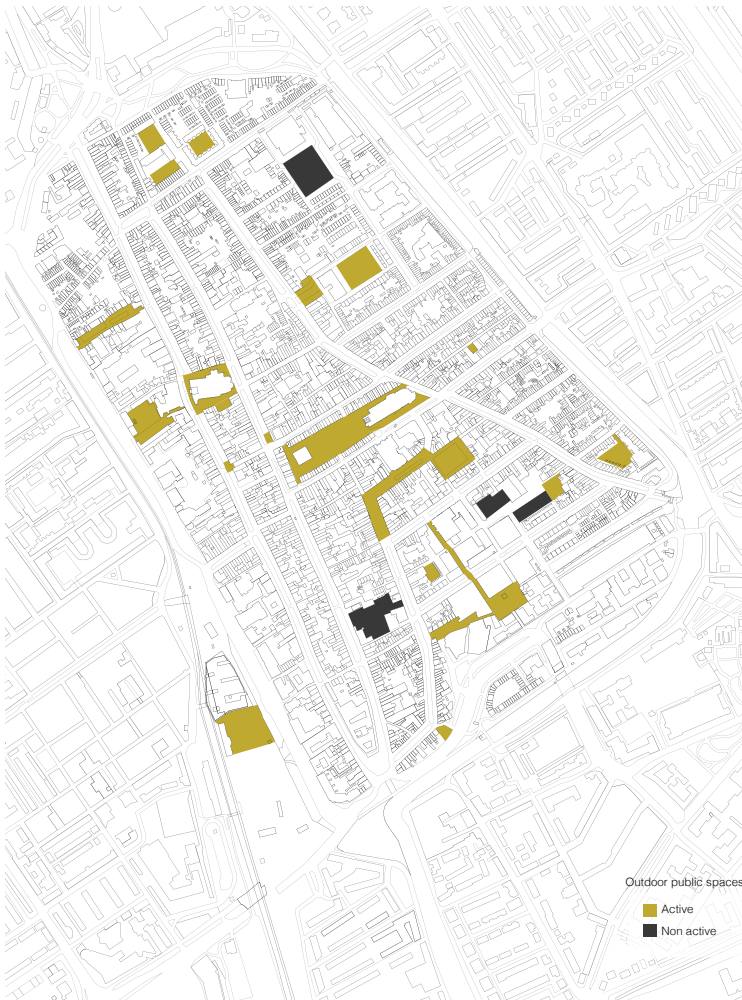


Picture 5: User map (Student)

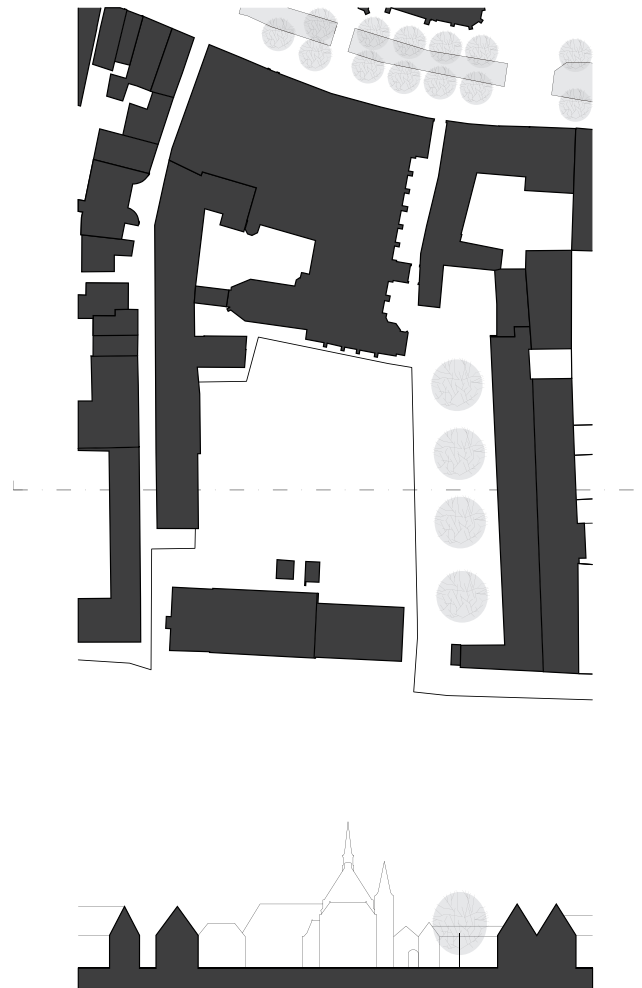


Picture 6: Traffic density map (Bike)

To become more acquainted with places where students and residents collide and could meet, I looked into other voids of the inner city of Delft. Picture 7 shows these voids in the city and if they are active or not for the city. With active is meant if the place is attractive for the user groups or not. By comparing these spaces to the function map, it is noticeable that these attractive places are accompanied by bars, restaurants & cafes or by cultural buildings. One must take into account that these functions are bound to a certain time of the day. Bars and restaurants mainly are visited in the evenings when normally all museums or other public buildings close their doors. The cafe is an important exception, since it is mostly used during the day to drink a coffee or have lunch by students, residents and tourists. One void in particular to look into is the courtyard of the Prinsenhof museum. Earlier in this report this building was introduced as an important building for the city. The building used to be a cloister and nowadays serves as a museum for the history of Delft. Between the buildings is a courtyard with a garden and a square (see picture 8). These two functions form an informal place of meeting, where people can relax, talk and walk around. Though this courtyard is mostly visited by tourists or residents who are interest in a cultural day in



Picture 7: Public spaces activeness



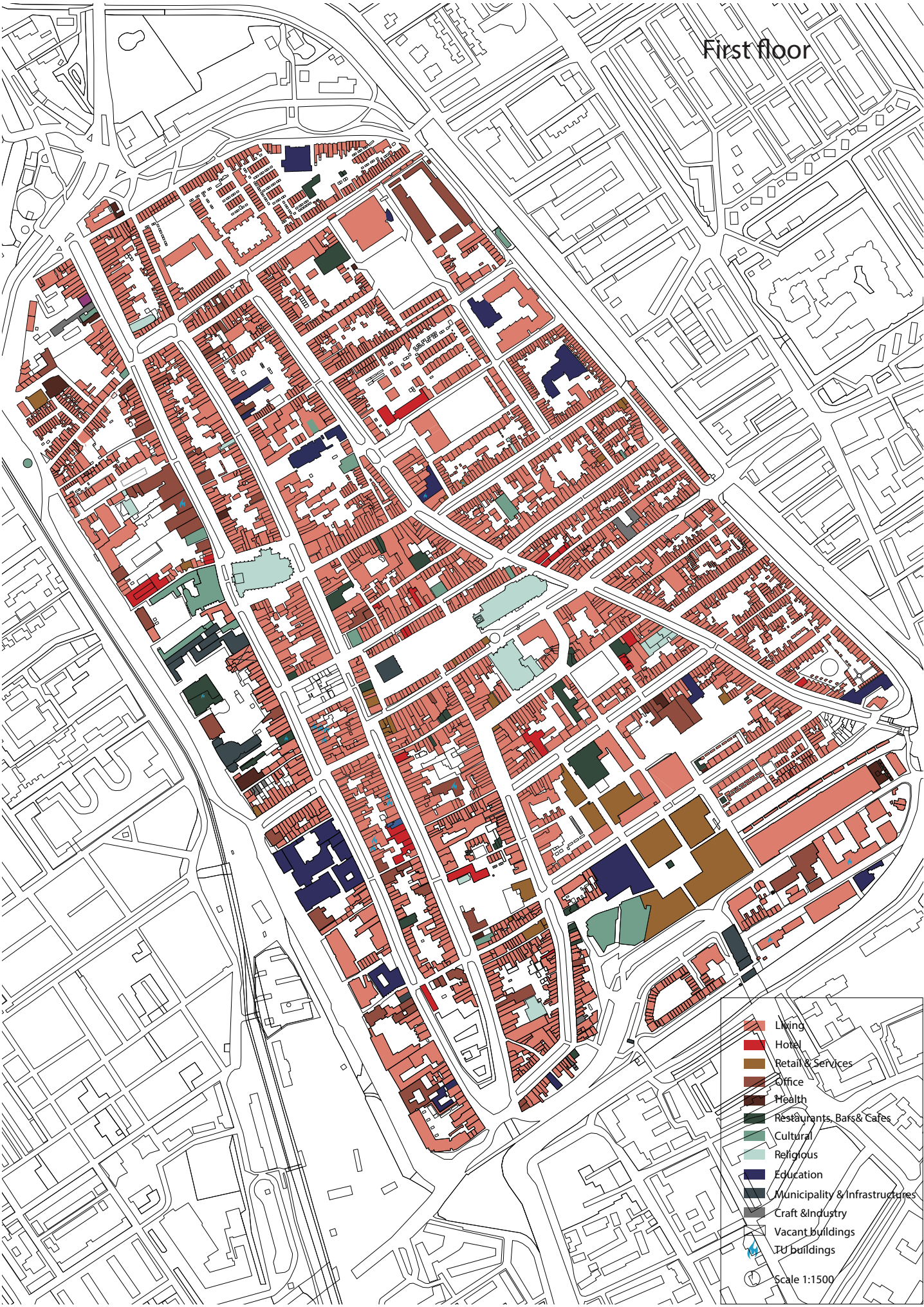
Picture 8: Plan & section Prinsenhof

the weekend. It is evident that most people who visit this public space are there on purpose for the visit of the museum. As the design assignment is focused on a public building, I can conclude that I will have to attract people in by actively involving them in the building. The collision of the user groups of students and residents is possible by providing exhibition focused on both user groups and accompany these by public spaces such as study spaces which will mainly attract students. The void in this case should be in service of the building instead of becoming a leisure square which happens to be joined by a museum. Though the void should provide an informal place of meeting which is pleasant to stay longer. Therefore, the addition of a cafe, a daytime function used by both user groups, to the void can help to attract people in and encourage informal meeting. The building itself should be visible on the Koornmarkt to attract the people coming from the station. In the void map we can also see that the location is close to several attractive voids in the city, by making the void of the location an attractive place to be by creating an informal place of meeting for the attenders of the new building, The voids can be connected and stretch out more towards the train station.

Conclusion

To conclude, the residents and students mix themselves a lot in the inner city and around the design location. Residents have their homes all over the inner city and the location has many student houses and associations nearby. Next to that it is located in an area of very diverse functions and attractive areas, in which the place could get involved to. The design location is situated between the train station, the core of the inner city and the TU Delft campus. Therefore, students and residents often pass by the location coming from or going to the train station. These findings make it legit to say that the location is very suitable to attract both residents and students. Furthermore, due to its close relation to the train station also other universities or parties from other cities can be invited in the design proposal.

To make the design location belong to the scheme of attractive places, it could achieve this by making similar spaces as other attractive spots in the city. Bars, restaurants and cafes are very attractive, and so are cultural buildings as well. Though, these 'leisure squares' are mainly occupied in the evenings when most public buildings close their doors. Therefore, the location should achieve an attractive place by making its void in service of the 'new institution'. This is possible by making an informal place of meeting you want to stay longer such as a park to have lunch or relax from the activities happening inside the building and by adding a public service used by all user groups during the day: a cafe. By introducing functions as a café and a public building for cultural and educational purposes in the design proposal the attractiveness for the residents and students of the city might be improved. Lastly, the location close to the station is perfect to locate a building for interdisciplinary collaboration and knowledge transfer as it can involve not only residents and students from Delft, but also from other cities. By involving both students and residents as users of the building, the proposal to further develop Delft as a knowledge city not only for economical purpose but also as a social one can be achieved.



Facilitating knowledge transfer and interdisciplinary collaboration

*Report 3
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*Msc3 Interiors Buildings Cities:
Spaces of collection Fall year
Irene Cieraad Research Seminar AR3AI055
09-01-2017*

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Introduction

After a literature study on the relationship between the TU Delft and Delft and an analysing study on the user's presence in the inner city, this last report is an account of my social research to motivate my design proposal. My design proposal is to make the TU Delft University visible in the city centre again to strengthen the relationship between the university and the city not only on an economical, but also on a social level. I want to achieve this by designing a building that will function as a platform for sharing knowledge and interdisciplinary collaboration. This because knowledge is a common interest for the university and the local government and combining it through interdisciplinary collaboration can lead to new innovations and the development of Delft, renowned as a 'Knowledge City'. This Knowledge Center will focus itself on one of the five main themes of Delft's strategy of becoming a 'Knowledge City': Environment and energy. This theme also comes forward in one of the main goals within the faculties of the university which is sustainability. Therefore, the university will put in its expertise on this subject in this new institution by sharing its knowledge through exhibitions and gatherings with the residents and visitors of Delft. In this way the university can not only show itself by displaying its current discoveries and developments on sustainability through all faculties, but also function as an expert center where residents can come with their sustainability problems. To find out what such a 'Knowledge Center' should look like and what kind of spaces it should provide, the following research question is researched:

What qualities and spaces does a building need to encourage knowledge transfer and interdisciplinary collaboration between different user groups?

To find an answer on this question which is based on architectural quality and programme, I researched multiple existing interdisciplinary collaborations of the TU Delft University. From out the list of collaborations found of the university I further researched the following collaborations: the *Veldacademie*, The Green Village, the Prêt-à-Loger project and getZED. The latter three are next to being an interdisciplinary collaboration also fully focused on sustainability and thus highly relevant for my research. The Veldacademie is highly relevant since it provides insight in architectural quality and programme when providing for knowledge transfer and collaboration on a social level, with the residents of the city. The methods used for this qualitative research are interviews with spokesmen from these collaborations, a case study and an observation/participation within the Veldacademie. First the case study of the Veldacademie, with the interview with the spokesman and the observation will be addressed. After that I will address the interviews of the collaborations based on sustainability. Followed by a summary of the research findings and how these can be linked to my design proposal as I will define my understanding of an urban institution through this report.

Chapter 1: The Veldacademie

The Veldacademie is social research institute which provides research projects in the field of urban development. In this institute which is located in Rotterdam Waalhaven Oostzijde 1, interdisciplinary collaboration between students from different faculties, schools, researchers and residents take place. Students can also do their graduation project within this institution which will be based on field research.

Interview

To get more insight in the Veldacademie and to understand what the location and the building provides for this academy, I interviewed Otto Trienekens, initiator and chairman of the Veldacademie. With this interview I wanted to find out what makes this interdisciplinary collaboration relevant and how it could be encouraged and facilitated. Therefore I made the following main questions:

1. In this academy interdisciplinary collaboration takes place, why do you think this is important today and what can be achieved with it?
2. In what way do you think we can encourage interdisciplinary collaboration?
3. Which facilities and/or spaces are essential in this building?
4. What could be improved in this location, what is missing in this building?
5. Where and how do you present the end results of the researches that take place here?
6. Are start-ups founded by attenders of this academy and if so are they supported by the academy?
7. Is there contact with other companies within this building and what are the advantages of being located in the same building?

With these main questions in mind I interviewed Otto Trienekens for 25 minutes. As the conversation went on while taking the interview new questions came up and accidental findings were found.

Interview Otto Trienekens December 12 2016 12:04 interviewer: Felicia Hompus

In this academy interdisciplinary collaboration takes place, why do you think this is important today and what can be achieved with it?

We concentrate ourselves as research workshop on the urban redevelopment of the places where the people live. Where companies are located. In these redevelopment challenges are many social challenges incorporated. For example new job possibilities, education and elderly living longer at home, and this makes that next to that in such areas are many stakeholders involved and people have a history with each other, many interests, makes that such exercises are very complicated. This complexity can be dealt with in our opinion by looking at the problem through different disciplines. Everything we do here is more or less social and spatial driven. It always has a spatial component, but also a social component.

And Do you think that the location of the Veldacademie is essential here in Rotterdam?

We have the understanding that in order to gather the information the residents hold in the neighbourhoods, it is important to be closely located to them. For the Veldacademie this means that everywhere we are doing research in the city we try to be there in person. As close as possible, so you are approachable and you can build up trustful relationship with the residents. So we do this by organizing many eyes and ears in the area. We notice that a lot of meetings and observations take place on moments you not planned them. But by being there it happens.

Do new collaborations arise by these accidental meetings?

Yes many collaboration arise by informal meetings. The fact that we are located on this spot is an example. When we started to locate ourselves on this location we were quite unknown. Because people from the area saw something happening here, they came to us to ask what we were doing. And can we participate? So that visibility lead to this kind of meetings and that led to residents coming here to organize their parties. And that we have entrepreneurs in the harbour here that help to develop here as well. Also these entrepreneurs helped students in this building to get a job by being around in this area and this building. These things can't easily be planned on forehand, but happen by place making, by being somewhere.

Do you rent out spaces in this building? As this room we are in now?

Yes, this room for example is rented by housing associations that take their inspiration sessions here. Last week the Hoogeschool Rotterdam was here with a big amount of students to do a pressure cook. But also an energy company and the municipality rent spaces here often. Also one a twice times per month concerts are taking place in the building organized by residents associations.

Are there plans to expand the building?

Yes, behind this building are halls of 4000 m2 which is the old bus depot and the plan is to redevelop those in the future. That makes it possible to do very different things than now.

In what way do you think we can encourage interdisciplinary collaboration?

The most important thing is that you do not randomly bring together people because you want to do something interdisciplinary, but because you have a collective interest. That there is a challenge where everyone thinks this is something I can contribute to. So very focused on a specific goal instead of randomly say let's do something together. The goal to achieve must be visible.

Which facilities and/or spaces are essential in this building?

We always said that if we want to collaborate with different students from different schools and different researchers, that we should sit all together in one space. In this studio we all sit mixed together, with the idea that we provide for this informal meetings. That during the lunch you start talking to each other, that people make small talk and that you can look together at certain issues. That the professionals, as we have a team of 7 researchers, also have contact with the students in an informal way. We also have lunch in the same space and almost everyone does join it.

What could be improved in this location, what is missing in this building?

We think that at the moment we have to little entry from the neighbourhood, but we currently also don't have a public function to generate this walk-in. For example a coffee shop, although a coffee shop is not the function for this location. We often think about how can we get more people to walk in.

Do you think this perhaps has to do with the entrance of the building? Since, I could not find the right entrance immediately.

Yes the findability is complicated for many people. Last year we sent out a contest to make that piece of furniture outside. So students from different disciplines thought together how can we make a place that it becomes more a place of meeting. But, I totally agree that we are almost not findable and the entrance does play a role in this.

So you would prefer to see some difference in the accessibility in the building? And also would like to have more space than that the building provides at moment.

We would like to improve the accessibility and it would be nice to have more space, the space behind here will get the function of a kind of lobby or bar. That when you get into the building you are being

welcomed. And the halls behind the building will provide for new functions, we would like to have a space where things can be build. A kind of workshop where not only the Veldacademie can participate but also the residents of the neighbourhoods and companies to provide for informal meeting. We are here located on the pivot point between neighbourhood and harbour. We would like to bring them together. We found out that it is useful when people can show what they can do by making stuff. If you want to start up something like that, it is important to have space for experimenting. As we started out we decided to first just start to locate ourselves here and see with the time what kind of programme we need. We moved to this place three years ago, because our former building was too small to house other functions. We were searching for a place where we could collaborate with other parties. On the top floor in this building is a company called Creatief Beheer, which is very strong in carrying out ideas. We think it is important to combine research and implementation.

Where and how do you present the end results of the researches that take place here?

In this lecture hall a lot of outcomes are presented. These panels which you can see along the walls are made by students of the TU Delft and were made for an exhibition in the town hall.

SO, in that way you try to bring the outcomes to the public and the city?

Yes, so we try to both sides. Inviting people in and visiting the people by going to them. We think it is important to bring back the results to the parties we work together with. We like to do that in the areas they are located. We organize many gatherings in neighbourhoods to bring back the outcomes of researches.

Is there contact with other companies within this building and what are the advantages of being located in the same building?

There is contact between the companies within this building. Currently half of the building is not in use yet. At the moment the building is full, a meeting will take place to discuss how we can work together. At the moment we do some things together with Creatief Beheer, but there is no structure behind it yet.

Are start-ups founded by attenders of this academy and if so are they supported by the academy?

We have some students whom came to graduate here and started their own company. If they were supported I don't know. What the idea of the start-ups on the higher levels here is that we have facility to let these people start. We think it is very useful to have students educated much closer to the practise. We hope to play a role in bridging education and the practise. We also work together with some people have begun their own start-up. Most of the people who work here also graduated at the Veldacademie.

Are there also internationals in the building?

Yes, we do have some internationals. Though, it can be hard sometimes, because when doing field research language can be an issue sometimes.

Research outcomes

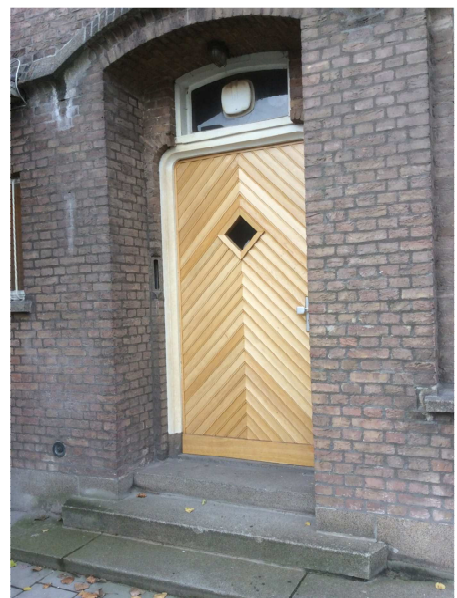
From this interview a lot of information comes forward which is relevant for my design proposal. First it supports the relevance of creating a platform for interdisciplinary collaboration, as Otto Trienekens states that is very complex projects can be dealt by looking at it through different disciplines. Further it is important to locate such a platform close by the residents, so you encourage informal meeting between the researchers/students and the residents of the city. Also new collaborations arise through informal meeting, mostly these collaborations can be planned but happen by accidental meetings. To encourage interdisciplinary collaboration it is important to focus on a specific goal. You don't bring people together because you want to do something interdisciplinary, but because you have a

collective interest. From out these findings it is important that to encourage interdisciplinary collaboration in my design proposal, I should put down a main theme. The theme for my design proposal is in this case sustainability. By setting down sustainability as a goal I will attract students, companies, researchers and residents which are interested in this topic and think they can contribute to it. The places which are essential in encouraging interdisciplinary collaboration are informal meeting spaces. Informal meeting spaces can be open workplaces or many other things such as the public function of a lobby or a café. Also these informal meeting spaces provide for more accessibility in the building, which is an important factor to accommodate such an institute. In my design proposal I should look into ways to provide high accessibility in the building. Also becomes evident that it is important to provide links with research and companies which carry out the ideas. By making this link much more is possible and therefore a workshop could provide in making better connections between two worlds. At last this interview also learned me that it is important to bring back the results of research back to the residents to create a better relationship with them.

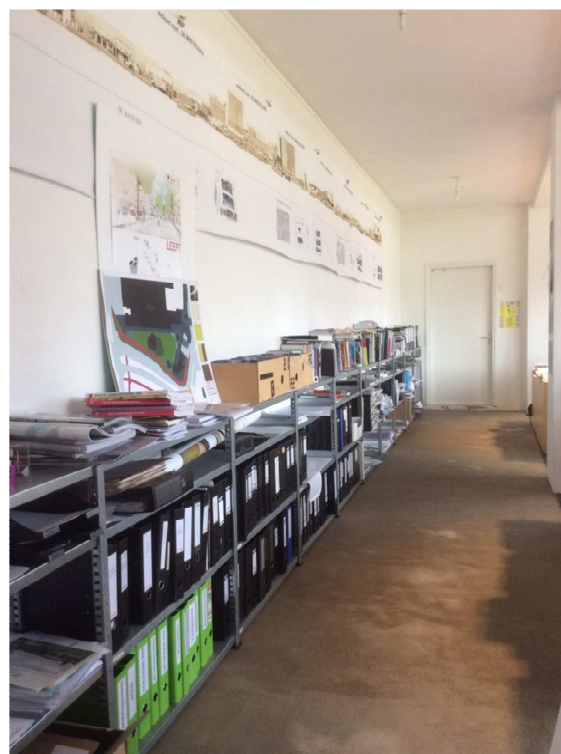
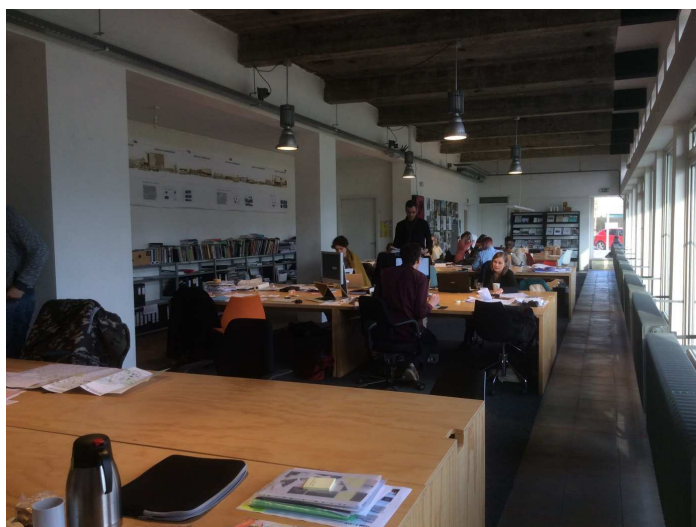
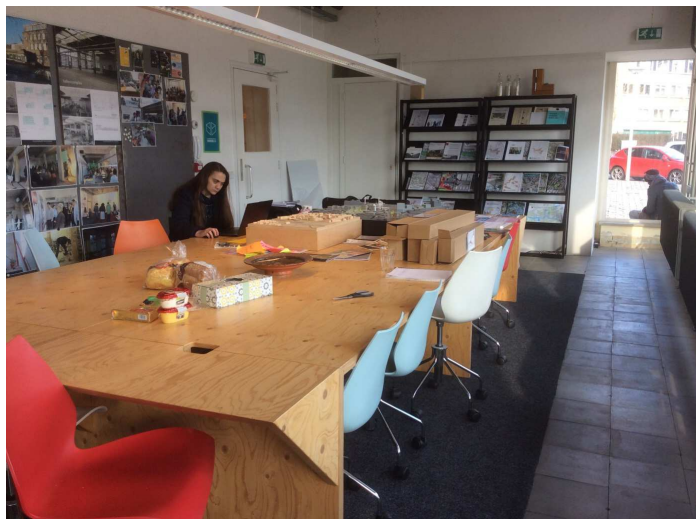
Case study

In the case study of the Veldacademie I researched the accessibility of the building and the organization of the programme. This study consists out of a series of photos which show the accessibility of the building and the quality of the spaces. Further in this report an observation of one of these spaces is made to get a better understanding of the use of this specific room.

When I arrived at the Veldacademie I first was not sure which door was the entrance of the building. I immediately got the feeling I should be in the room behind the curtain wall but when trying that specific door it seemed closed. The other door which looked very closed had a door bell, I was not able to enter the building immediately without someone opening the front door. The following pictures show the door which was closed and the entrance door. What we can learn from this that accessibility is not very high and people are not able to walk in whenever they want to. Though as stated in the interview this accessibility is very important. Thus, in my design proposal I should find a better way to provide this accessibility in the entrances of the buildings.



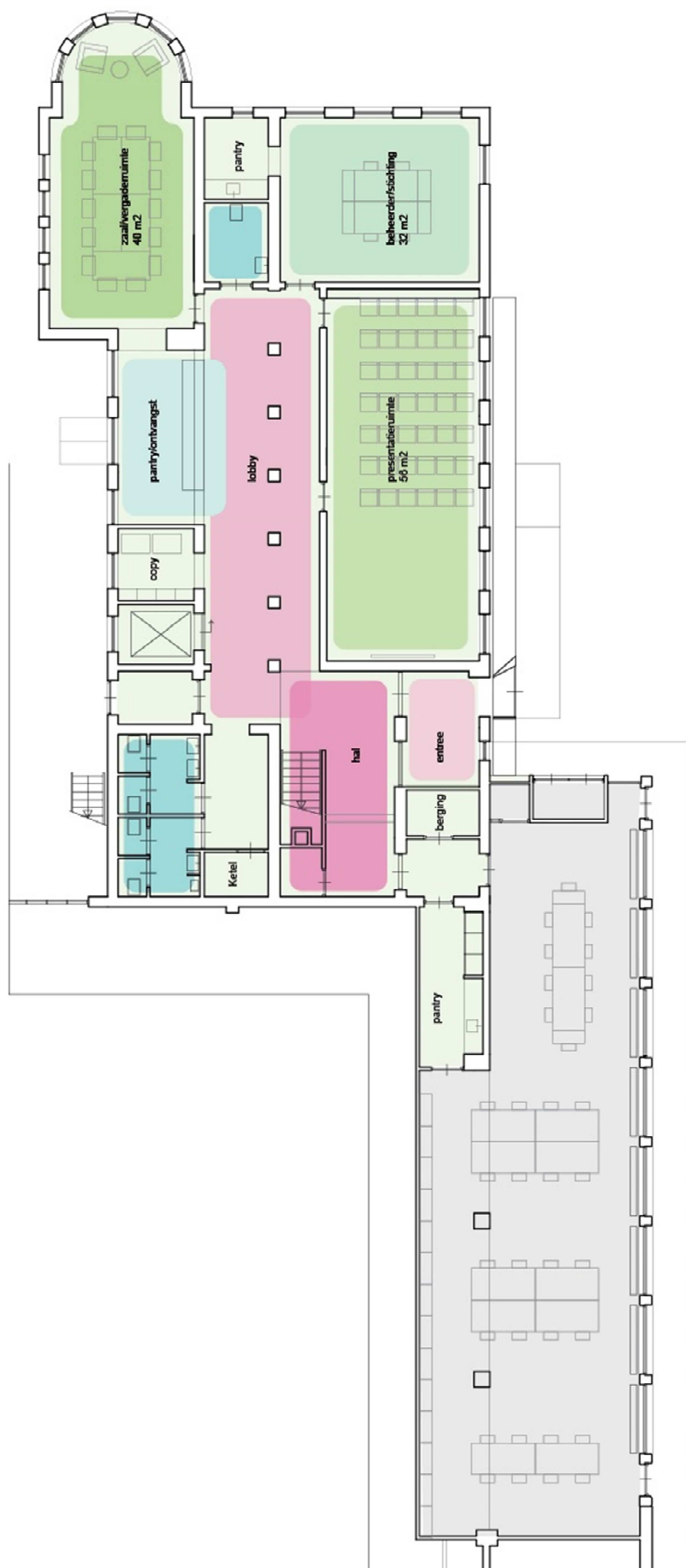
Once inside the building the hallway is not very inviting and does not give a clear direction of where to go to or which company is situated where. Eventually arriving in the main studio of the Veldacademie some qualities in the space come forward. In the pictures below this space is shown. The space is a big room of approximately 100 m². Within this space multiple tables function as working places as well for students as professionals. At the beginning of this room a large wooden table is functioning as a gathering table for discussions and the lunch. There is a nice relation to the outside by the large windows and makes the Veldacademie visible to the city.



Another important space is the lecture room which is at the other side of the building. This lecture room is not only a place to present research findings, but also does function as an exhibition space. Furthermore this space can be rented out to the residents of the area or other parties. The hallway attached to this lecture hall will become a lobby and therefore the informal meeting place of the building. Several gathering rooms accompany this hallway and are used for private collaborations and/or conversations. The following pictures will show these different spaces.

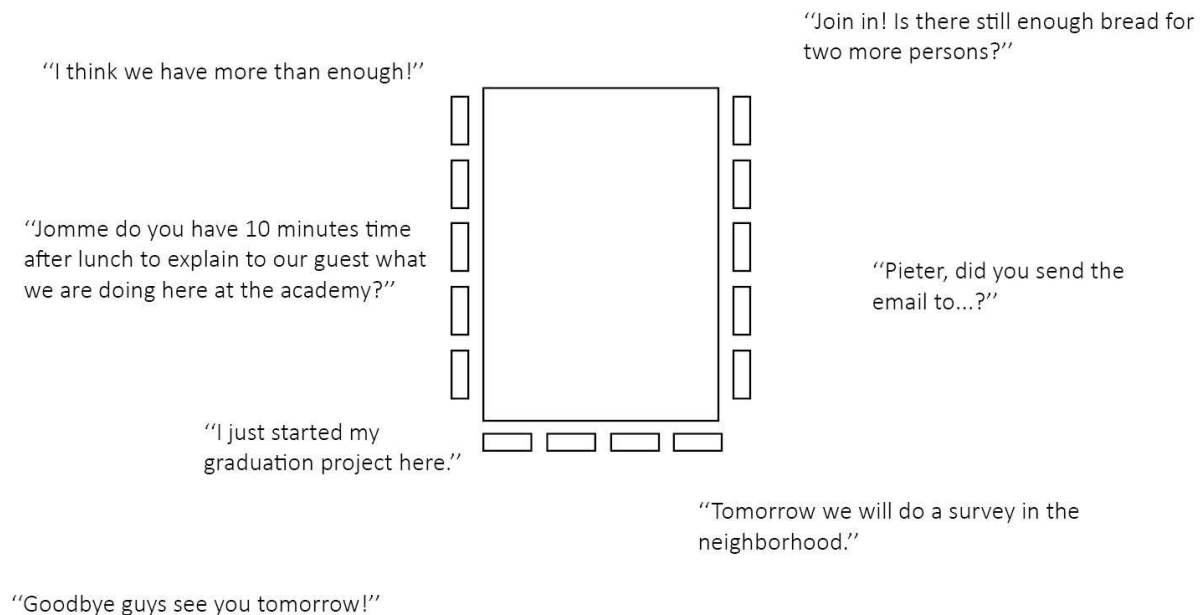


On the next page a plan is visible of the Veldacademie. This plan shows the different functions of the spaces as well as the squared metres of the rooms. From out this plan a conclusion can be drawn about the programme of a building for collaboration. This programme mainly consists out of good working places public as well as private ones. A lecture room/exhibition space, a space for informal meeting (a public space) and facilities such as a little kitchen and toilets.



Observation/Participation

In the studio I was invited to take part in the daily lunch which take place in the Veldacademie. I decided to make an observation of this lunch break by participating in the lunch. Throughout the lunch several conversations took place which make clear that to provide for such an informal meeting is very important in my design proposal. The picture below shows the my observation which was on December 12 2016 12:45.



Within this observation which is shown through softmapping, it becomes clear relationships between students and professionals are strengthened, plans are made, several duties are discussed and most importantly new relations are developed by inviting outsiders in this lunch as well.

In terms of the design proposal it is legitimate to say that I should provide the building with places for informal meeting. I will do this by facilitating a public function the café, urban courtyard/park which is highly accessible and public study places.

Chapter 2: Prêt-à-Loger/The Green Village

The Prêt-à-Loger project is an interdisciplinary collaboration between different faculties within the TU Delft University to compete in the Decathlon competition. For this competition the team made a fully sustainably house which relies upon the zero energy norm of 2030. This house is made in a 1:1 model on the terrain of The Green Village. The Green Village is a company founded by the TU Delft University to make place for testing prototypes. The terrain on which this can be done is at the south side of the university campus. Different researchers can ask for space to make their prototypes based on sustainability at this company.

Interview

To get a better understanding of the Prêt-à-Loger project I interviewed the contact person for this project Tim Jonathan, Program manager buildings at The Green Village. Starting this interview not knowing the project is not an company itself, Tim Jonathan explained me the outcomes of it and introduced me to The Green Village. With this interview I wanted to make clear what the project stood for and its relation to the TU Delft University.

Interview Tim Jonathan December 12 2016 16:00 Interviewer: Felicia Hompus

In what atmosphere was this project founded? Was it a group of friends?

Yes, that is correct, mostly it were a group of students from building technology, from buckylab, but also some friends from Civil engineering and Technical business management. In total seven persons took the initiative to collaborate together on this competition: the Decathlon.

Does this little start-up has its own location?

Well, that is not entirely correct. We competed with this competition and further on we tried to start up a company with five people out of 55. We noticed that there was a lot of interest in the project also in the market, so it would have been a shame to not start a company. But the company did not work, because we were interested in the development of products, but we were most of the time busy with financing the company.

So in this situation you actually needed another party to collaborate and take care of the finance of the company?

Yes, that is actually the next step we took. We decided not to do this company on our own, so we went to a renovation company called the Rijnmarkt. We told them we would like to work for them and keep working on the product development. The connection was already there during the Prêt-à-Loger project, so we could easily start this conversation. They agreed to this and I graduated and interned within this company. Another colleague graduated and started to work in that company.

So the project continued within this start-up?

Yes, that is one of the initiatives from out the project, but also another one was created called GetZED. The Rijnmarkt actually developed the project into a better second project, but this is fully controlled by this company.

Does the Prêt-à-Loger continue in any way or are these start-ups the only way in which the project is continued?

Well the concept continues within Rijnmarkt and GetZED is mostly focused in offering advice, but the house itself from the project is still used for many other researches. But in overall this project was mainly focused in competing within this competition only. At first we did not mean to start up a

company, but it just happened. There does not get designed further within the project for a new competition. The project lasted for 3 years, for many students you only compete once in such a competition during your studies. What is happening though, that the faculty of architecture would like to compete in a new edition of the competition, but this will be a total different concept off course.

You had a lot of contact with different companies within this project, did you search for these companies yourself or did the companies came to you?

We actively searched for sponsors for the project, those will not easily walk to you. We made a list of important people in the university and proposed our project to them to get their recommendation for this concept. With these recommendations we went to companies and showed them their support in our concept. In this way we could get some sponsors to participate with us.

Would it be useful to create an inner city location to create new start-ups?

For creating start-ups not so much since there already is the possibility to create them within the company YesDelft.

The Green Village is a company within the TU Delft University with mainly the focus on making the campus more sustainable, but are also very busy with initiatives outside the university campus. I work at the Green Village, it is located at the spot the former architecture faculty was located. We are designing this spot into a place for research. We are mainly focused on sustainability researches and also investigate how we can bring these sustainable technologies on the market. Here we look more into the laws put up by the municipality and acceptance of the residents. In this way we have a link with the residents. We are currently developing the location in the campus.

Research outcomes:

From out this interview we understand that the Prêt-à-Loger project was founded in an informal way between some students from different faculties. They took their own initiative to start competing with the competition and found help within the university to do this. Currently the project is developed further through two start-ups: Rijnmarkt and GetZED. GetZED will be discussed in the following part of this research. It is not necessary to provide a place to create start-ups in the design proposal as YesDelft company already takes care of this. Also the Green Village is a good example of a sustainable company which concentrates on collaboration between students, companies and residents. It provides a place to do prototyping for research and product development without laws. Also they do investigation in the laws of the municipality and the consumer acceptance. The Green Village is further observed within this report.

Observation

On December 13 2016 I visited the location of The Green Village for an observation. This observation took place at 14:30 under guidance of Tim Jonathan. I got the chance to look around on the construction site of The Green Village where currently is worked on the new accommodation of the offices of the company and a co-creation center. The plan for the location of the Green Village is showed in the following picture. Currently on the construction site only the Prêt-à-Loger project and the mini smart grid was already visible. In the future there will come a co-creation center a building with offices and a lecture space to give presentations. Next to that there will be student housing which will actively take part in the researches performed on their houses. Further there will be several more initiatives through time to develop sustainable technologies. The terrain is free from the building regulations, so this makes this spot interesting to make prototypes which are currently not yet supported through regulations of the municipality. The Green Village will take an active part in collaborating with the municipality to change regulations where needed to achieve certain technologies. What I learned from this observation in terms of the location, that it is well situated close by the technical university and the companies more to the south of Delft.

Though this project could better situated to really have more insights and social contact between the residents. At the moment there is a one way road where the company goes to the residents to do research, but could improve by creating more accessibility for the residents by welcoming them in. In terms of my design proposal, The Green Village shows a lecture hall indeed is needed to provide technology transfer to other people. Also more contact with the residents is needed to actively involve them in a knowledge center.



Chapter 3: getZED

GetZED is a start-up company as a result of the Prêt-à-Loger project. This company focuses itself on product development and developing houses which are sustainable. The Prêt-à-Loger project started out as an interdisciplinary contest, from out this project ideas were made to get the project in practise.

Interview

To get an better understanding of a start-up coming from out the TU Delft University I interviewed the spokesman of the company Gabriele de Leo, founding partner of GetZED. In this interview I wanted to find out if his company had its own location and in what way if any he was supported by the university. This in de understanding that my building could provide space and/or guidance for such start-ups. This interview was quite short since the lack of time the spokesman had, but very relevant at some points.

Interview Gabriele de Leo December 13 2016 10:07 Interviewer: Felicia Hompus

How did your start-up start?

We wanted to develop the product we made in the project to bring it on the market. Everyone in this start-up developed for this field in the project. And we joined together to develop this company. We kind of joined because of the expertise everyone had.

Is your company mainly based on giving advise to people on sustainability in dwellings?

Well actually it is mostly product development, but also giving advise to people.

Does your start-up has its own location?

Yes it is in Delft, but now we are placed at that location because we need it, but we are mostly working from home with internet or at the faculty or at the meetings of the Prêt-à-Loger meeting or at the client's space. We don't have an official office now, we just placed it at one of the houses where we meet usually, because we needed a location to start this company. We are still cutting on expenses.

Do you think the TU Delft University helped you a lot with this start-up?

Maybe not with the start-up, but we got a lot of help during the Prêt-à-Loger project. Without that we could not have done this. We can still do research on the house of the competition, so we are thankful for that.

Would you like it if the university helped more with your start-up by providing office space and an atmosphere where start-ups can grow?

It would be great, but there is already the YesDelft as an incubator of start-ups in Delft. In YesDelft start-ups can sign up to get professional help to start up their company and rent office space. Though, being closer to the residents would be great off course.

Do you have a lot of contact with other companies?

Yes we have a lot of contact with companies to produce or products. We have contacts from the Prêt-à-Loger project but also new contacts between companies. We developed new contacts in time.

How do you see the future of this start-up?

We want to develop some different products on the market and give some consultancy to help energy transition in the Netherlands. Also we would like to expand to other countries. When we can prove some products here we can enlarge to other markets.

Research outcomes

From out this interview we can understand that this start-up was founded in an informal way where different students decided to develop the product further. The company does not have its own location yet, but uses one of their houses to register themselves as a company. They are grateful for the help they got from the university throughout the project, but did not ask for any help to start up their company. An important thing to notice during this interview is that housing space to create start-ups in my design proposal will be irrelevant, since there already exist an incubator for creating start-ups within the university: YesDelft. Also becomes evident that contacts are developed over time by informal meeting. So by accommodating offices which can be used by different companies in the design proposal this informal meeting can take place as the companies will meet each other in the common places of the building.

Chapter 4: The urban institution

In this chapter I will motivate my understanding of an urban institution. As the design assignment asks to design an urban institution for the TU Delft University it is important to define an urban institution. As this definition might be differently interpreted by different students, teachers, etc., I will sum up my understanding of it within this part of the research. Within my design proposal I define the urban institution as an important public building in the city. An institution is not a normal public buildings, but should provide the public with an expertise. This expertise should be offered to the public, the residents and visitors of the city.

My design proposal for creating a Knowledge Center in the inner city of Delft fully supports this understanding of being an urban institution. This because the center will show an expertise to the public, by creating spaces for exhibitions based on the knowledge in sustainability within the university. Next to that, the center will give something back to the residents of the city in which it is located, by sharing their knowledge and through collaborations where the university answers the questions of the residents problems within their own homes. It is a building within the urban fabric which offers an expertise to develop not only the university itself but also the city on an economic and social level.

Conclusion

To summarize, the urban institution is a building that provides the residents and visitors of the city an expertise. It is a public building within the city fabric which focuses itself in giving something back to the city on a social level. Throughout the qualitative research into interdisciplinary collaborations it became clear that sharing knowledge from different disciplines can contribute to new insights and solve complex social problems. Multiple case studies show that places for informal meeting are important to encourage knowledge transfer and interdisciplinary collaboration. Next to that it is important to set up a goal within the institution to attract people with the same interests, as this results in meaningful developments. The quality of the building should be very visible and also accessible as you want to invite the residents of the city into the building. Therefore, the inner city location of the design proposal is perfect. The proposal should not function as an incubator for creating start-ups, since such a function is already housed within the company YesDelft. At last a place to experiment is perfect for interdisciplinary collaborations and combines the residents of the city to certain issues in a practical manner.

So the link to the design proposal lies within creating the perfect programme to facilitate a platform for knowledge transfer and interdisciplinary collaboration, by adding the following functions to the program: an urban courtyard/park, a café, public study places, lecture hall, exhibition spaces, a workshop and private discussion rooms. Next to that high accessibility is achieved by making an open entrance to the informal courtyard of the building and clear entrances in the building itself. Furthermore, high visibility is achieved by placing the building on the corner directed to the route coming from the train station. When students, residents and visitors of other cities use this route to go to the city they will easily recognize the building on the corner. This as the building is designed as a bold gesture, that is slightly bigger than the rest of the buildings surrounding it.