

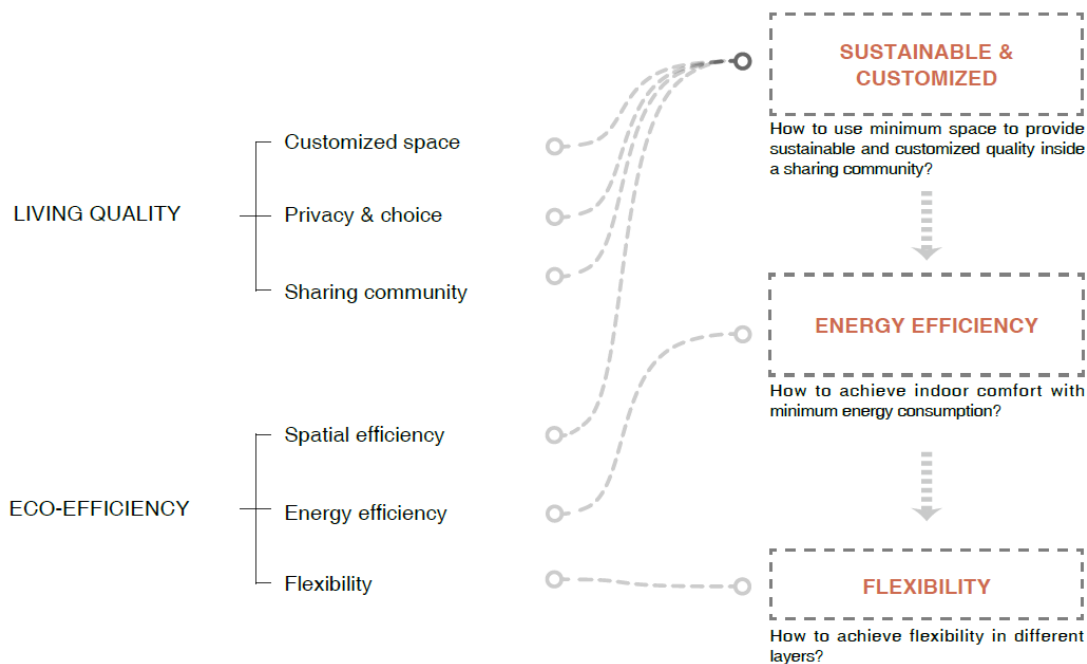
# REFLECTION

## ‘SHARING FLEXIBLE COMMUNITY’

### the relationship between research and design

At the beginning of my graduation year, I had the ambition of providing good living quality and building it in the right way to the environment. Also, the fast increasing of young single people population draw my attention greatly. Because of the economic development and the need for a soulmate, young people spend a longer period being alone which I see it as a new phenomenon for the new modern society.

There are more aspects I researched than the core concepts ‘sharing and flexibility’. I would not say that they were useless. In contrast, they also take part in forming the final shape of my project and the taste of them can still be seen in the final result.



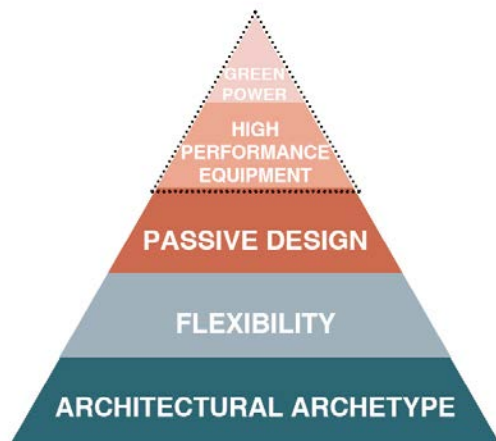
The research part advises on my design thinking and helps to set up rules for my community. For example, how to make use of the natural resource as much as possible, how to form a sharing cluster, how big should the private living space be, etc. Besides, by doing these research, I keep all the aspects in my mind while designing. So the final result is integration with conscious or unconscious consideration of building technology and architectural social aspect.

### the relation between the graduation lab and the subject

The way I interpret Architectural Engineering is not only solving the social problems using engineering but the good integration between the social aspect which means people’s happiness, and the building technology. This required me to always keep both sides in mind while designing. How can these two subjects be combined into a one and enhance each other?

The project explores both building technology and architectural social aspect and integrates all the research results into a design. It focuses on the new group of single young people. The research is about a new way of living with sustainable quality and shows the responsibility of people's happiness as an architect. On the other hand, the system integrates the energy-efficient system and flexible concept by using an architectural approach.

#### the method and result of scientific research



#### HOW TO BE SUSTAINABLE?

In my opinion, for an architect, the main steps to be sustainable is not green power or some high-performance equipment but the architectural archetype, flexibility and passive design. For passive housing, the cases are mostly low density but not middle or high-density dwellings in the city. The reason for that is probably because it is easier to achieve a passive design with just one or two floors with more natural resources around. So my goal is to find a way to integrate passive solutions into my middle dense single-living housing. In this case, the whole building needs to be seen as a whole. For example, northern apartments may not get the solar energy directly, but they can benefit from the atrium or the solar hot water which can be transported from the southern side.

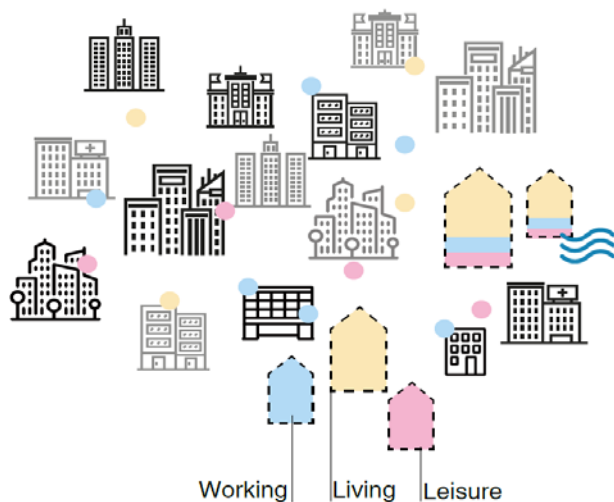
As in my research paper, the research starts with the analysis of the climate in the Netherlands and single living pattern. The strategies following are based on literature research and integrate single solutions into collaboration. It uses natural resources as much as possible and encourage the inhabitants to control their own living environment by themselves. Researches show that if inhabitants have some form of input to the control of their own indoor environment, their subjective view of comfort zone changes and they are more willing to accept wider conditions.

The final result is a prototype of the energy-efficient system for multi single-living housing described in different climate conditions. It is finally a combination of passive and mechanical solutions but starting with the passive ones. However, as an architectural student, in this research, I focus more on the integration of the architectural element and the energy-efficient system rather than the professional climate design. But the calculation part in my research advises on the design of the sustainable single-living housing.

## the method and result of social research

### Living-working balance

Jobs-housing balance can relieve traffic congestion, improve air quality and thus is more sustainable. And because there is less commuting time on the way, people have more time for a happy life. But there are also many other social and economic factors, like job supply and need, housing production and need, urban planning interventions or market forces, etc. So the conclusion is that jobs-housing balance is something we can hope for but not the main issue my design can solve.



### Home for single young people

Generally, if the apartments are smaller, then less space and energy is needed for the same population which is good for the environment. But at the same time, we also need good living quality and a nice home to nest in. So firstly, I ask myself what is the essential parts to form a 'decent home'.

After literature studies and some interviews, I found that home is not only about the physical space but also largely about the feelings, such as privacy, intimacy, comfort, belonging, social connection, etc. As the basic need of human being, we need private space. On the other hand, the social connection. The answers to the question 'what the essential quality' shows that personality space and natural elements are very important. For example, some people would like to have a unique space where they can place their own needs like watching movies or doing sports. The question 'what space you would share with others' also draws my attention to the hierarchy of privacy and public. Most people are OK with sharing living area, some are happy to share the kitchen. But the toilet and bedroom are the private spaces they would like to keep inside own apartment.

## HOME Definition: Interviews

1. What your best experience/memory in your home?  
(Enjoyable, cozy, comfort, happy...)

**WEATHER; HOBBY; ACCOMPANY; STATE/MEMORY.**

2. What is the essential quality/the imagination of your dream home?

**FRESH FEELINGS; PERSONAL SPACE; VIEWS; PRIVACY;  
NATURAL SUNLIGHT & VENTILATION; PUBLIC SPACE;  
CONVENIENCE; CONTROL.**

3. What extra space would you like to have if you have a very big apartment?

**MOVIE; CAT; SPORTS; MUSIC; WORKSHOP.**

4. What spaces would you share with others if you have to choose one/two/three?

**LIVING ROOM, KITCHEN > TOILET > BEDROOM**

5. Which one do you prefer? A studio totally belongs to yourself, or a sharing house living with others?

**IT DEPENDS...**

Then I started with a single apartment. To achieve sustainable quality, I analyse the minimum living space and add certain extra qualities for each functional space. However, not everyone has the same needs for these qualities. So, one can customize the private living space by choosing one or some of these extra qualities. This study gives me the estimated area of every private apartment, which is around 30m<sup>2</sup>.

### Extra quality



Bedroom: dreaming



Kitchen: meeting



Bathroom: self-wellbeing



Besides the private space, inhabitants can also choose which kind of space they want to share based on their habits and interests. This choice works together with the customized private space, giving a flexible solution to the shared living community.

## elaborating the design based on the research

### The sharing community

People are different from each other, and as a single person, and they are in different situations and mode from time to time. So the fact that they can always have the choice matters. In my project, people have the choice over which kind of space they want to share with others and how big the sharing cluster is. Apart from sharing the kitchen and dining area, other choices include living area, studying and reading space, music recording room, pet room, etc, based on their hobbies and interests. This is also the way how the sharing cluster can be formed. According to my study, a suitable number of inhabitants in a working sharing cluster is from 4-12.

"Collaborative Communities" by Fromm Dorit

- < 15 persons** create a more intimate community but more social friction may occur because of the small number of people
- 18-35 persons** provide more choice of association and are small enough to allow members to know each other well
- > 35 persons** afford a greater number of shared amenities, but their large size means that a certain percentage of households will probably not participate in common dining because of the less intimate nature of the large group

"One shared house 2030" by Space 10

-  would love any kind of pet in the house
-  think 4-10 is the right amount of people for a community
-  want new house-members to be selected by a consensus vote
-  would prefer to pay energy costs based on the amount of energy used per person

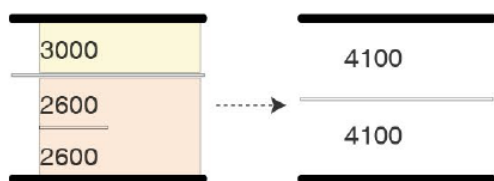
Also, people can choose to share the kitchen, but when they just cook something very simple or want to stay in their private space, they can achieve that without going out of their apartment. So for every single living apartment, even they choose to share the kitchen and dining area, there is still a kitchenette which is only 1.3 m². In conclusion, my research of sharing community try to help with urban loneliness with the consideration of sustainability and living quality.

### A flexible system

A flexible building which is adaptable to different functions and situations stays longer and thus is more sustainable. Most flexible buildings nowadays apply the floor height of 4 meters for both the office and residential program. But that also means some space is wasted because a normal residential building only

needs 3-meter floor height. So I try to figure out a new system which can be both residential and office function by just changing parts of the floor elements. By doing this, the system also provides loft apartments which have higher spaces with good quality.

On the other hand, there are other flexible ideas such as adding layers or structure on the top or next to the first phase of construction. But this kind of buildings is not applied widely because it has limitations of the need for extra huge installation machines from the top and it is easy to lose control at the urban scale. Also, because all the structure is flexible, the structure system needs more effects to stay strong enough. However, this approach works for clients who don't have enough money at the beginning.



The structure system of my project was developed based on the above research. So there are different layers and order in my system. The concrete megastructure acts as the first layer to support the building. The infills wooden elements create different space based on the function and they can be moved to a new position if the function changed. The characteristic of each layer depends on its flexible possibilities. For the relatively fixed layer, in my system is pre-fab concrete, it shows the strongness and permanence. And for the relatively flexible layer, the wooden elements, they show the feeling of liveness, light and nature.

## Conclusion

The project achieves a community for young people to settle down, where they can meet friends and enjoy a happy balanced life. We provide living facilities with quality as well as possibilities for social life. There are big kitchens and living rooms for parties, a gym and restaurant for sports and food, roof gardens where you can plant your own fresh vegetables... There are both practical social space and quality living space. The community is a platform from where you can start your wonderful life.

On the other hand, it provides a natural controllable indoor climate and a flexible structure system. The project achieves good integration of the architectural elements and the energy-efficient system. It advocates natural ventilation and using natural resources. Inhabitants are encouraged to control their own living environment based on their feelings and the advice of the system. The concrete megastructure acts as the first layer to support the building. The infilling wooden elements create different spaces based on the function and they can be moved to a new position if the function changed. The flexible structure system provides small spaces for living as well as big spaces for social events and working.

For its economic scenario and the future, The building is owned by one company. They provide rental housing to young people as starters and rent working space to company agency or freelancers. The rental contract is at least 6 month to maintain the stability of the community. The company can provide similar working and living community at different locations and different cities. The service of rental living and working space can become a membership for young people, so they can work and live around the world and easily settle down anywhere.