



# &connect

social cohesion design

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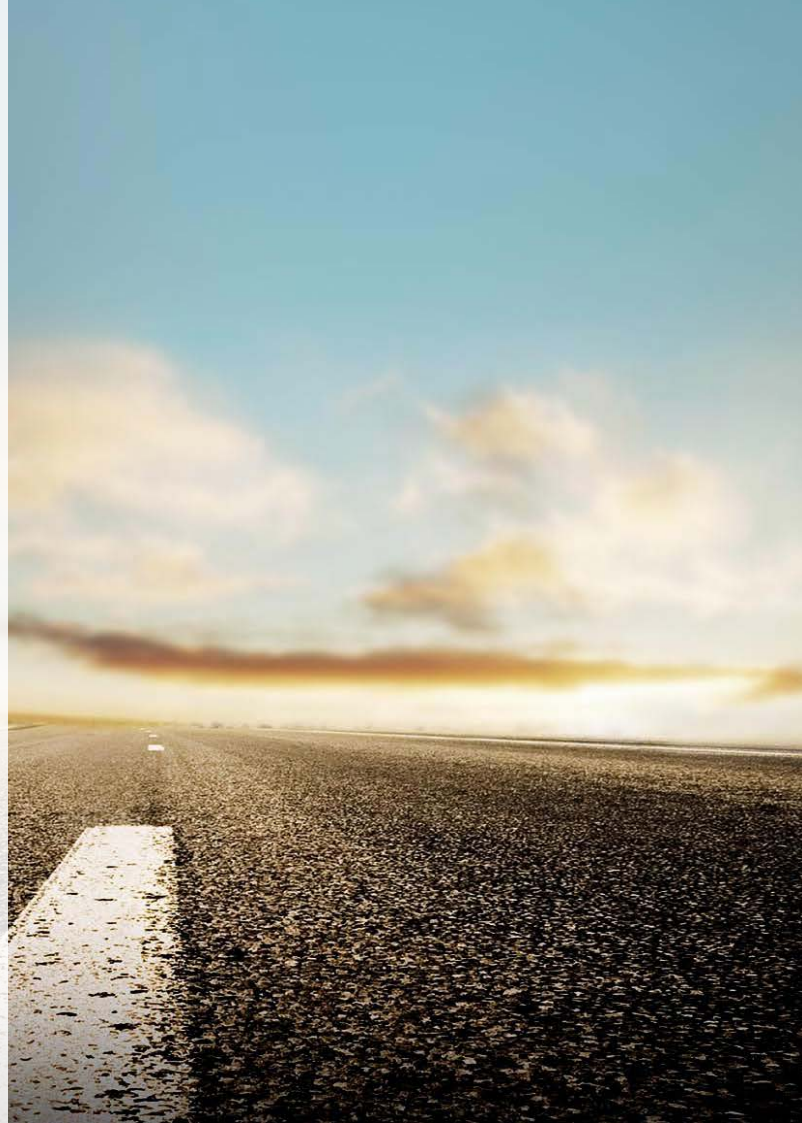
# introduction

This project draws its focus from how technology, in our case designed products can serve to have both positive and negative effects of social cohesion. The ultimate aim is to design a piece of technology that works within a specific setting to join people between common elements in a way that is both socially and culturally benefitting.

We will be working in conjunction with the company Oase-Lease to design a Community integrated product system (CIPS) to be introduced into the Gillis region in Delft. Through our collaboration we hope to develop both a piece of technology and system within which it exists designed to enhance social cohesion and its causal factors. This will be done by researching and addressing values, needs and elements of the neighbourhood, through a methodology comprising of three stages: Identification, Integration and Implementation.

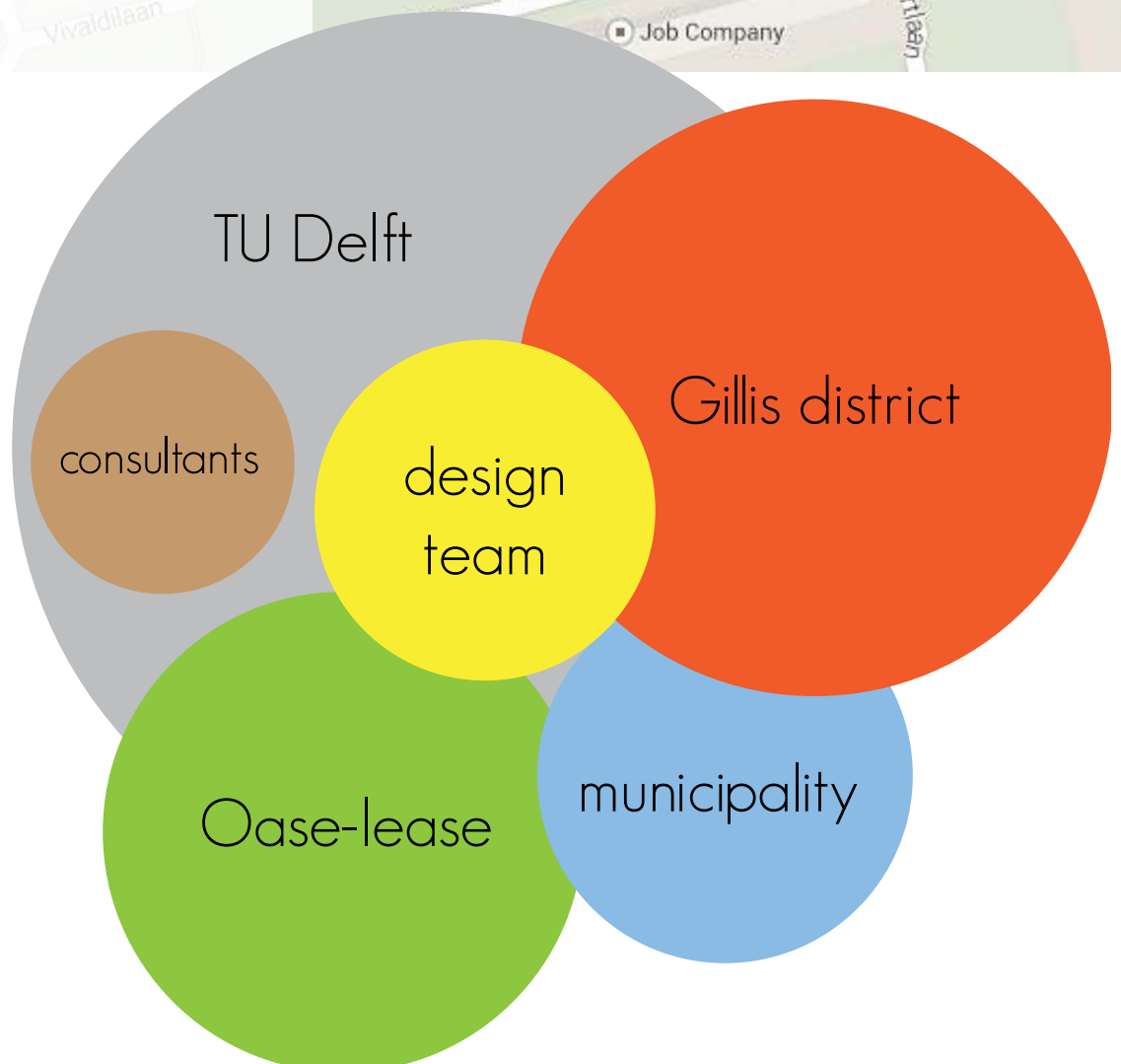
The Gillis is both a multicultural and under-privileged neighbourhood and therefore must be dealt with sensitively. Located in the Buitenhof region where levels of social interaction are already low, we hope to improve this in three ways described in the main line of social theory.

This will be done by designing types of street furniture that respond to the social needs of the community, by creating an enhanced sense of belonging, increasing face to face contact and ultimately creating greater social capital.



# project

There are several parties that make up and are involved in this project. The TU Delft is the facilitator of the whole, headed by Clemens de Lange. For this particular design project, the company Darthuizer Oase-Lease will be involved as a client, and the future design will be implemented in the neighbourhood 'Gillis' in the Buitenhof in Delft. The city council has the role of a connector. Experts will share their knowledge and ideas about the (residents of) the Gillis district and will help implementing the designs. Thereby, sociology and psychology students from the University of Utrecht will act as consultants during this project.



# team

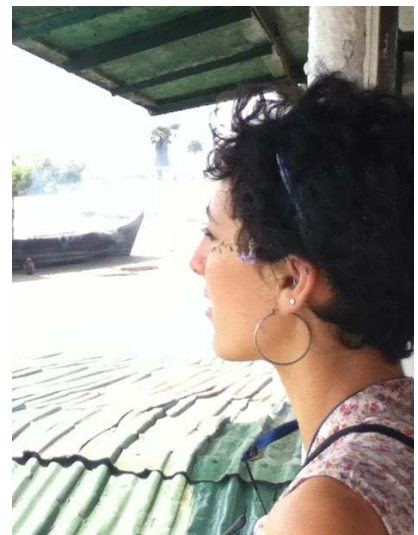
The team at this stage consists of two Industrial design students working in collaboration with the company Darthuizer Oase-lease. Julia is from the Netherlands studying at TU Delft while Elise is on exchange from Australia for one semester to study at TU Delft.

Together, they will work on this project for ten weeks, from the beginning of February till the end of April.



## meet elise...

I was initially attracted to this course because I liked the idea of collaborating with a company and having the opportunity to follow a brief that could be discussed with a client rather than just the hypothetical situations I have dealt with in the past. Moreover, design and the social implications it can and should have is an area that really excites me. Social and behavioural effects are my favourite source of inspiration for design. I think for me the challenge will be incorporating the client's needs and making them applicable to our specific brief on social cohesion.



## ...and julia

In the first place, designing to create face-to-face contact in a community is what attracted me the most. I would love to design a simple object that can connect people and increase happiness. I like to analyse and explore, and talk to a lot of people. For me, the fact that a company is involved is challenging: combining the request of the company and the needs of the neighbourhood into an interesting product or service. I am interested in both technology and social behaviour, so this is a great opportunity to combine my interests.



# company

The team is going to design a CIPS in collaboration with the company Darthuizer Oase-lease. The company provides floral plant decorations for public spaces. Our goal is to both meet the desires and respond to the needs from both the company and residents of the Gillis district in our future design.

Darthuizer Oase-lease produces live floral decorations for public spaces in the form of hanging baskets, flower pyramids and bridge-and wall arrangements. This company, based in the Netherlands follows a 'green' ideology, stressing the importance of plants and flowers in everyday life as "an essential part of a healthy and comfortable environment." The company holds certificates to ensure its work is safe, healthy and environmentally sound.

Oases' focus on beautifying the streetscape would also help to create a more attractive neighbourhood, encouraging residents to feel more proud and connected to the Gillis. This would also encourage people to spend more time in public areas within the neighbourhood resulting in a greater sense of belonging within the neighbourhood.

Oase is committed to being both socially and economically efficient. This is particularly

important for the Gillis which means that this development will need to be socially valuable at a reasonable price.

Previous inclusion of the Oase product into public areas has seen many positive effects for the surrounding community. The inclusion of flower baskets to an area can lead to image improvement resulting in an increased sense of security. Flower baskets can therefore lead to greater social capital and more positive face to face contact due to community behavioural changes.

The ideology and company attitude outlined in their website suggests that Oase-lease will be well suited to the working on this project. This is also based on their vision and effects of current projects:

- Willing to contribute to a positive environment
- Positive effect on behaviour and social cohesion
- Involved in several social projects already

# products

Oase-lease has several different products. On their website, different options are given: two hanging baskets, four flower pyramids, bridge and wall baskets. Thereby, the products have a 'wintergreen' possibility as well. Furthermore, Oase-lease is willing to make a custom made product, according to the customers demands. The custom made line provides the possibility to use more exclusive and exotic plants. In contrast to the leaseability of their basic line, the custom made products are for sale.

Products are manily sold to municipalities as a way of improving the streetscape.







## meeting the company

The TU delft students have met and spoken with account manager Guido Janssen and sales director Arnoud Oortwijn on several occasions throughout the course of the design project.

The first meeting involved a general introduction as well as a short overview of what and general outline of the company brief. Oase-lease would like a concept that involves using their existing product in a more creative way. Ideally this would give the product greater use and make it more appealing to a larger number of users. They like to have a design based on a user-centred view, instead of their current plant-centred vision.

The first visit to the company was on the 28th of February. This meeting discussed plans and progress. It helped to clarify the brief from the perspective of the company and to focus design direction to address more specific desired outcomes for the Oase-Lease. Mr. Janssen gave insight into current products and glasshouse via a tour of the company. This first visit was both inspiring and mutually beneficial for both Oase-lease and the design team.

Possible areas for development might include a modular seating arrangement where inhabitants of the

neighbourhood can rest, eat, etc and while enjoying the flowers or light provided from them via LEDs. Maintenance of the flowers could become something that the community take an interest in and become partially responsible for their care. This might involve the school with children taking part in a program that learns about the flowers and how to take care of them etc.

The company would like design to be focussed towards the inclusion of LEDs, a solution for less frequent watering of the plants and potentially a modular design. In short, extending the use of the flower baskets to make them more appealing to a greater, and more varied audience. The design should also be practical and address needs of high level maintenance, from watering as well as seasonal changes.

Oase-lease would ideally like a mock up in the final stages of this project and if successful, production in batches of 500 over 3 years.





# green

According to several academic papers and research studies, green has been considered as an important factor for providing a better atmosphere within a neighborhood. In this part of the report, we will state outcomes of these findings, with specific consideration for our own project.

## *The advantages of green in the city*

The Research booklet 'Green in the city' looked at the emphasis placed on individual's health and mood and the way this is affected by the green environment. A short summary of the most important findings to take into account:

According to Stichting Groenforum Nederland (2005), people living in a green environment are less exhausted and therefore less likely to become irritated leading towards criminal activity and aggressive behaviour. Whenever a park is well maintained, vandalism will reduce and social cohesion increase, whereby the feeling of safety will become greater. Green will reduce criminality in general by 50%.

For kids, green in a the neighbourhood can have a positive effect as well. It encourages playing outside and has a positive effect on their level of concentration. Nowadays, there are a lot of children dealing with attention disorders, such as ADD. The maintenance of green around home will stimulate children to play outside and to perform in a better way. Thereby, green

provision will improve recovering of stress.

The Millinx district in Rotterdam improved a lot when implementing parks. The value of housing increased, costs for criminality-prevention and nuisance reduced and social cohesion increased.

In a study titled the 'Vitamin G program' it demonstrated that residents with a high amount of 'greenspace' in their residential environment felt less lonely and less often experienced a shortage of social support, compared to those with a less green residential environment. (Maas, Van Dillen, et al. 2009) The finding in the Vitamin G program indicate that social cohesion is an important mediator of 'greenspaces', relating to health.

"In the urban neighborhood study, the finding that residents of neighborhoods with higher amounts of streetscape greenery reported less acute health complaints and better mental health, could be explained by the stronger social cohesion in (these) greener neighborhoods.

Overall, social cohesion explained one fifth to one third of the relationships between quantity of streetscape greenery and the health indicators.” (De Vries et al, forthcoming).

These findings demonstrate that social cohesion is a major factor linking together green neighborhoods and greater well-being. Moreover, the study determines that greater social cohesion tends to exist in greener neighborhoods, providing evidence connecting greener neighborhoods and wellbeing, increased social cohesion.

### **Conclusion**

Though just two examples of many, both the study and research booklet demonstrate the strong correlation between ‘greenspaces’ in the residential environment, positive relationships, and health.

In short, it is clear that empirical research is being done in order to encourage the design sector to put these findings into constructive development. Stimulating design not only for greater health and well-being, but for the triggers that lead to this,- namely social cohesion.

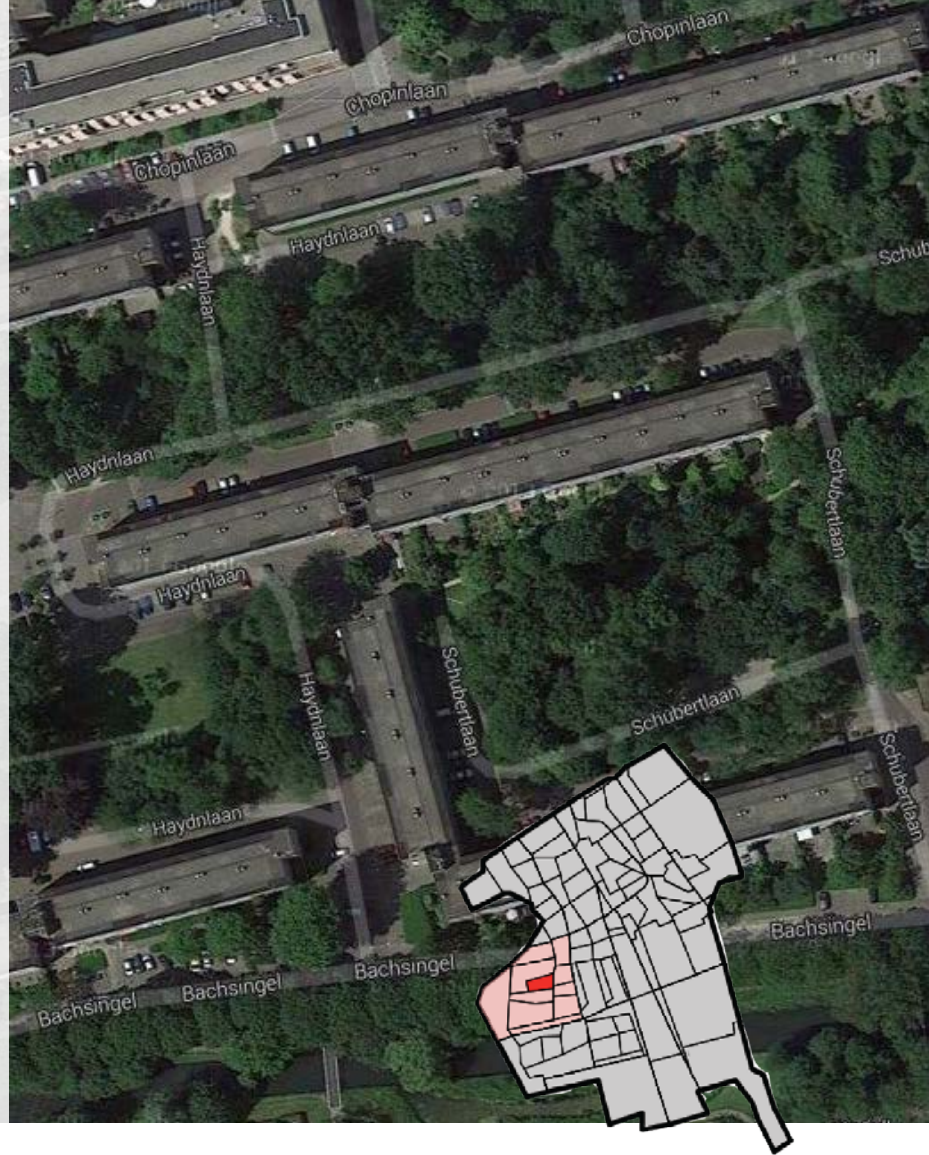


In the Gillis district, the quality of parks and green provision could be improved.

# district

The Gillis district is a neighbourhood in the area Buitenhof in the south of Delft. The area is enclosed by six buildings of flats on the Chopinlaan, Buitenhofdreef, Bachsingel and Buitenhofdreef. Within the area, there are a lot of grassy areas, parks and playgrounds.

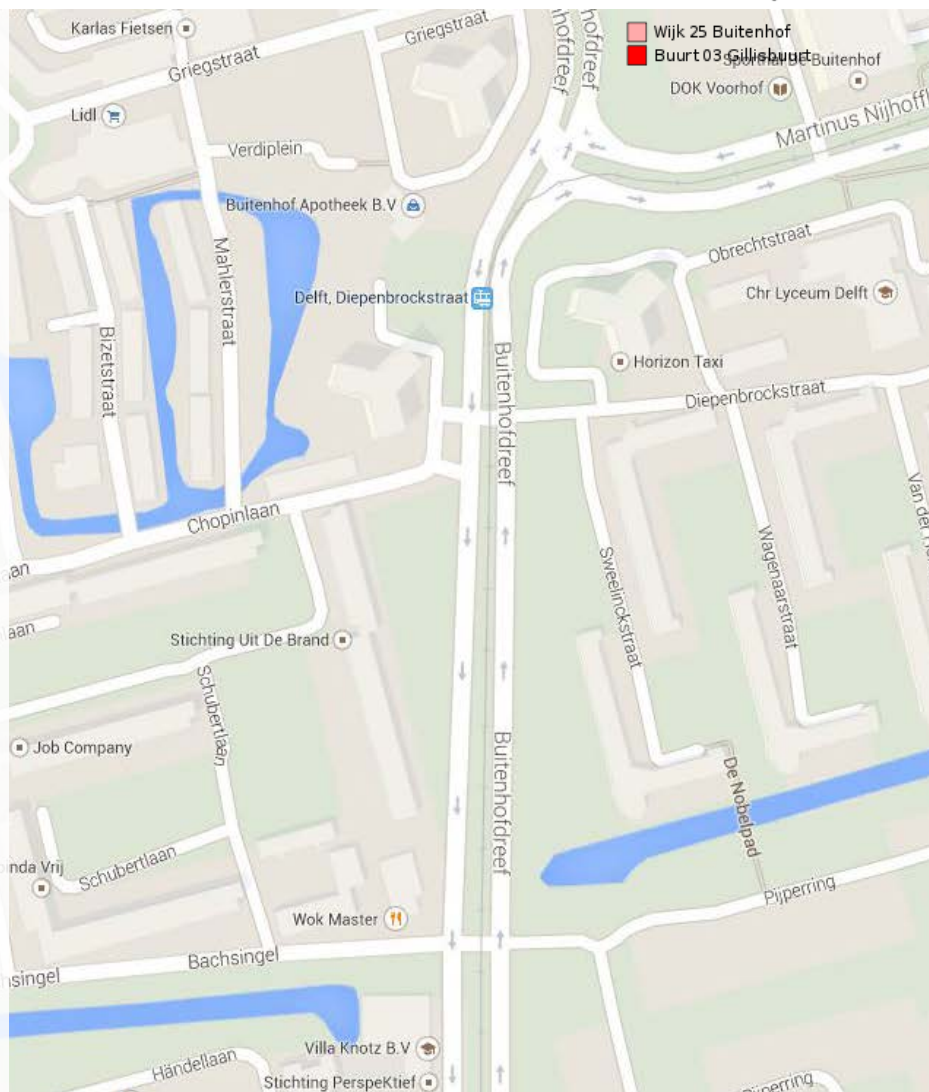
In the neighbourhood, more than 40 different nationalities can be found and 78% of the inhabitants is an immigrant. Furthermore, 60% of the people living in the Gillis district is unemployed and can just afford the housing.



This chapter will outline the research into the area, including a visit to the district, information given by experts and statistics found online.

Several pictures are displayed to show the different aspects in the district: a park, seven flats, parking spots and sidewalks. There is a park in the public area between the flats with some street furniture and playground equipment. However, this area is not properly maintained, neither the equipment nor the area which we noticed was flooded the day of our visit. The inhabitants have stated they do not like and spend little time in the playgrounds and furniture because of this lack in maintenance.

The flats are decent but basic and have little to distinguish them. One addition that serves to personalise them is that some people have put their own flowerpots on the balcony.



## getting to know the neighbourhood

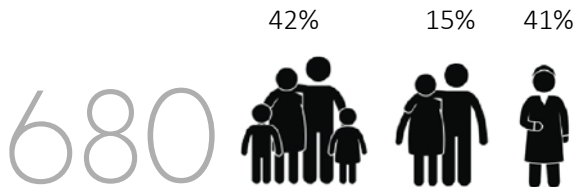
The Gillis district is a 40+ district, as Jan van Oosten (project manager of Woonbron), explains. Besides the Vogelaarwijken, smaller districts has been nominated for getting more attention and support from both the government and city council. Other neighbourhoods comparable to the Gillis district are Terweijde in Culemborg and Holendrecht in Amsterdam.

To get better insight in the people living in the Gillis, we looked into statistics of the population. The data are from CBS 2013 and the SCD manual.

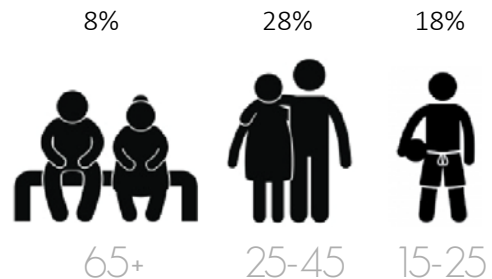
Statistics chosen were those most interesting and useful with regards to our future design. In the blue frame, an additional explanation is given.

**1595** the number of inhabitants in the Gillis district

In total, there are 680 households in the Gillis district with the majority being households of parents with children at just over 50%. Almost the same percentage makes up those in a one-person household. On average, a household counts 2.5 people. The level of unemployment is relatively high at 60%.



The distribution of men to women is almost equal. In 2013, majority of inhabitants aged between 15 and 45 years and just over 20% between 45 and 65.



The neighbourhood comprises of just over 40 different nationalities, with prominent communities of Moroccan, Iraqi, Turkish and Somali people.



On average, one out of two households own a car, attributing to approximately 340 cars in the district.



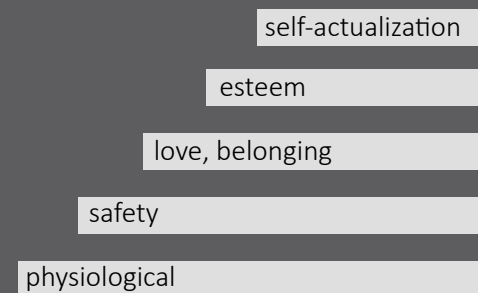
## why is this important?

These statistics are important in helping to draw insight in the lifestyle and needs of people living in the Gillis. Jan van Oosten, refers to Maslow's 'Hierarchy of Needs' theory, which describes five levels of need. The needs of an individual depend on various factors such as their living situation, socio-economic status, education and health. Maslow's hierarchy begins with basic needs and works up to more specific and indulgent needs. Therefore, unemployed people with little money will be focused on the lower levels, trying to meet basic

needs, such as a living, food and safety. As a result, needs further up the pyramid dealing for instance with responsibility for public spaces is of less importance. They will be less willing to participate meaning that time and money invested into projects in areas where there are a lot of these people is often wasted. This is not always the case with some in this situation constantly having to jump to the top level of the hierarchy (as shown on the right).

Heleen van der Linden explains the same phenomena: "people are often

distracted by their own problems", and a language barrier makes people feel less comfortable talking to each other. Consideration should be given towards designing something wherein non-verbal communication is the key.



## visiting the gillis

To get more knowledge in the ins and outs of the neighbourhood, we visited the area a couple of times. The first visit was a general observation of the district: how are flats divided? Are there enough playgrounds and parks? This was meant to set up Setting X.

The second visit included the Q board research. We talked to a couple of residents, kids and a teacher of school De Horzion. In this part of the report, our findings are given.

### 1. not properly maintained

It seemed very cold, empty and uninhabited. Though green with lots of grass etc, the area looked quite bleak, particularly the park which was full of mud and puddles suggesting that no one had used it in a while or the outdoor gym situated nearby. The footpath was uneven and un-kept. The blocks of flats were dull, cold and lacked much character. The only bit of colour came from the few pots of flowers that some had hanging outside their windows.

Overall, it seemed as though attention was lacking in public areas: poorly kept nature strips and public walking routes. Grassy areas which might have been fine to walk through in summer were unfit to walk through in winter having turned to mud. All together it turned the public outside area into a space that is not really habitable, in the colder/rainy months at least.



### 2. unpersonal atmosphere

The uniformity of housing areas makes them seem as though they are not owned by individuals but rather, just a place of residence. This atmosphere is likely to encourage personal displacement from the area, turning it into an area where they happen to live rather than a place of belonging.

### 3. outdated walking paths

The neighbourhood was smaller than we expected, there were few building to congregate near or in, few shops and a kindergarten just on the outskirts of the perimeter. The journey walking through the neighbourhood to school, shops etc in the surrounding areas could be greatly improved and we feel that this is definitely an area of opportunity.

### Second visit

However, during our second visit on a sunny day, there were a lot of people around. People were greeting each other and very keen to talking to us about their neighbourhood. The atmosphere was friendly and open.

We used our Q set (see appendix) to get more insight in people's preferences and needs. Since people were on the go, we did not ask them to actually fill in the Q board, but got a lot of information from asking them about the statements. An extended Q board can be executed in a future meeting with residents of the Gillis. The outcomes are given in the next section.



# research

Besides information we gained by district experts (see next chapter), a field research has been done to get insight in the needs and preferences of both residents and the district itself.

Approximately ten residents were spoken with briefly as many were in transit between tasks. They represented a reasonable cross-section of the Gillis district comprising of mothers, teenagers, children and elderly people.

## observations

The district could benefit from an inclusion of a communal outdoor area, for meals, etc. During summer, many groups often organise barbecues together with neighbours. However, with no specific place for events like this, residents would like to have seating or a meeting point. Moreover, in summer people tend to spend more time outdoors in general.

The grassy area between flats is often used for short dog walking, but as a space for the dogs rather than the owners.

Many were highly enthusiastic about playing games together outside, with enthusiasm shown by both younger as well as elderly residents.

There is opportunity to involve the school De Horizon in conjunction with an already implemented program run by the school on

Wednesday afternoons. It involves garbage collection in the neighborhood by the children and could possibly be extended to involve maintaining (watering) the street furniture. This idea generated excitement from both younger and older members of the community.

Play equipment in the park was described by children as worn down, old and therefore no longer used anymore. Simple game areas for hopscotch were preferential examples given by children, to enhance playing outside.

Ambient lighting was rated with differing degrees of enthusiasm, however, with many displaying levels of indifference.

Residents were enthusiastic about flowers and most were excited about some new development.

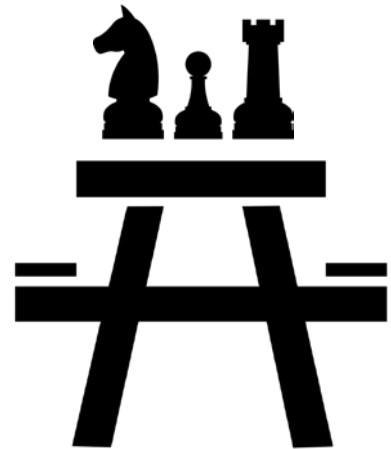
## conclusion

We can state that there is potential for greater social cohesion if people were given reason to stay and linger. Therefore, street furniture development could serve as a touch point where to stop briefly so that a short hello could be extended to include 'how are you'. As Beate Völker explained: seeing neighbours around is the first step for social cohesion.

Several design opportunities can be stated after the interviews in the Gillis district. We will shortly give an overview of these opportunities.

As given in the previous section, the following aspects can be considered:

1. more seating areas to eat in summer, raised platform for a BBQ.
2. The general look and therefore appeal of the area could be improved with colourful street furniture, different sizes, shapes etc to make it exciting in addition to flowers.
3. Board-games painted on street furniture could be easily maintained and versatile enough to change if requested.
4. In summertime, when the days get longer and people stay out longer this would be ideal to spend time in groups outside. BBQs etc are already happening, ambient lighting may keep people out after the meal has been finished to engage for longer.
5. Seating/street furniture spread out more might encourage larger and broader groups of people getting together.
6. Many people walking dogs, might be good to include plastic baggies on poles to pick up after pets. (Encouraging people to take care and feel pride in the area.)
7. The area in general (though green) still looks dull, especially play equipment in park. Bright street furniture could break up the dullness and together with flowers add some colour and life into the neighbourhood.





## creating social cohesion

The criteria sociologist Beate Völker gave, can be taken into account. It is important that all these criteria are responded to in our street furniture design.

1. Trigger for physical contact. The seating must attract people in its colour, shape to suggest use, ambient lighting and pleasant floral display.

2. The seating provides value through the relationship it has to the community via the school flower care project. Moreover, the inclusion of painted game boards might encourage regular usage by a group of people, so that it becomes their spot and they feel a connection to it and to the other sharing that spot with them.

3. The flower pole modular seating would serve as a meeting spot where people can sit and wait in a nice public space and beneath a light at night-time. Also, using the game boards would encourage people to make arrangements to play and borrow game pieces together from the community centre. Encouraging arrangements and therefore relationships involved contact, respect and a mutual agreement all factors necessary for positive social cohesion within a community.

4. The seating would also provide an attractive alternative to sitting inside the flat and rather encourage people to stay in public areas.

To make the project into a successful one, we have to get in touch with the residents of the Gillis. We will take the following things from the experts:

1. Word of mouth is the best way to communicate a plan for a meeting.

2. Make people own or share the project. This will result in a feeling of responsibility, and will make people care about the project and the area they live in.

3. Buurtvaders can play a role in the implementation of the project and spreading of the word.

4. A school is a perfect location to start off with a project, because there are a lot of people around. Thereby, we can make use of their network and current projects such as the Wednesday sessions.



# experts

Throughout the course of this project several 'experts' have been involved in the project, sharing knowledge, experiences and more intimate details concerning the neighbourhood. Many volunteer and/or who work in the neighbourhood, as religious leaders, social workers and community representatives providing us with great insights into the goings on within the district.



## **Hasan Karadirek**

*Chairman of the Sultan Ahmet Mosque*

Hasan explains that the mosque is a place to meet, chat and play games. This establishment helps to prevent kids from loitering in the streets and causing trouble. He touched on issues that arise with many different nationalities sharing a single district, namely those concerned with language barriers. *"Buurtvaders interact with both parents, children and other residents, and mediate whenever problems occur."*

*"The residents need a reason to communicate or say hello, otherwise, they will not communicate with each other"*

## **Peter van Lopik and Heleen van Linden**

*Social worker and district coordinator*

A couple of projects have been set up during the last few years in an attempt to increase feelings of safety and community, for instance the reconstruction of the public areas and establishment of a community garden. Residents are responsible for maintaining the gardens and they are all keen to do this. 'When something is your own property, you will feel responsible to maintain this'. This serves to prevent vandalism by increasing feelings of ownership and responsibility.

According to Hasan, the Gillis district is often used as a temporary solution for housing, with people being moved to another district as soon as possible. In contrast, Van Lopik says residents are more likely to stay where they start living, "because they have to deal with other problems and are happy to have a place to stay."

**Jan van Oosten**

*Woonbron*

Van Oosten explains that respect for people's religion, norms and values is needed to come up with a successful design. He used an example of discontent of youth in the neighborhood and its negative impact of the community as a whole. Therefore more attention given to development designed for children would be beneficial.

"One of the main problems in the Gillis district was caused by a group of 200 youngsters. They were hanging around during the night, being noisy and damaged things. People did not feel safe in their own neighbourhood anymore and social workers had to act like policemen."

*'let children develop their own game with a basic product you design'*

**Alice Hendriks**

*Projectleader city council, Ardemia*

Hendriks helped to address methods for promoting ideas concerning possible development.

"Start in an area where a lot of people come together, like a school. People talk to each other while waiting for their kids and it is easy to mingle in. Thereby, it is useful to get in touch with people such as 'buurtvaders', who talk to a lot of different people in the neighborhood. It is good to talk to a lot of people and get to know the area. Our opinions are normally based on what the press tells us, but this is a one-sided story!"

Together with two other ladies who had been living in the Buitenhof for some time already, Hendriks discussed many details of the Gillis district. She explains that in terms of communication, word of mouth works far better than flyers and posters when organising something. Also people are not used to talking in meetings. Hendriks emphasises, "show people something tangible, instead of talking about the plans".

*"face-to-face contact starts with seeing your neighbours around"*

**Beate Völker**

*Sociologist University of Utrecht*

Beate listed 4 conditions that theoretical findings have shown are important for a community to emerge:

1. Meeting opportunities
2. Social capital
3. Mutual dependency
4. Alternatives.

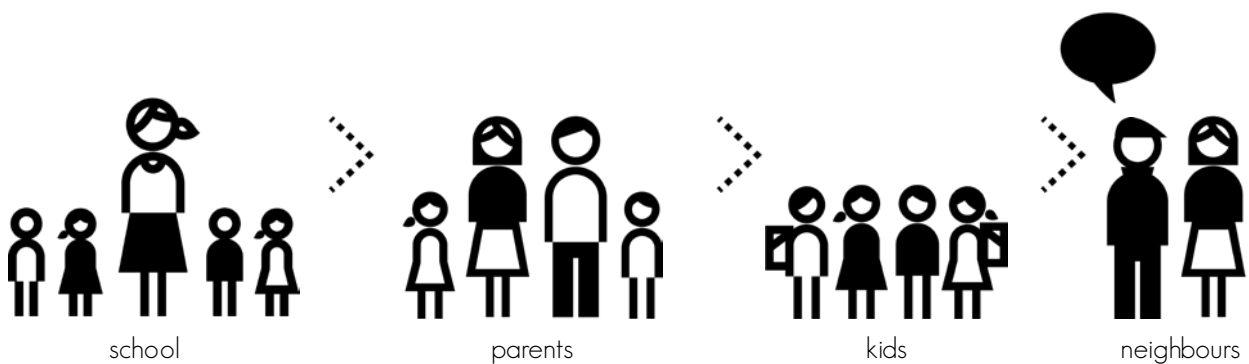
She also discussed the broken window theory: 'if people do not care for small problems, larger problems will occur. People have to care about their living and neighbourhood.'

*"with greater ownership comes greater responsibility"*

# scenario

Three sub-scenarios were developed in an earlier stage (see appendix). These scenarios deal with two target groups - parents and children - and focuses on general, everyday travel between key elements within our setting X –the Gillis neighborhood. Brief sub-scenarios were combined and developed to make them more personable, providing a greater scope for social understanding. In the integration stage, the sub-scenarios have been analysed, developed and converged into one main scenario.

The sub scenario matrix tool led us to develop richer scenarios with more believable actors and allowed for other social and cultural elements to be considered. By combining sub-scenarios involving children at school and parents watching their children play, factors to do with cultural motivation for talking became more apparent, allowing us to evolve the scenario to include this.



## main scenario

Our mission for social cohesion involves using elements from our setting X (the whole neighbourhood) such as the school and the community centre to both trigger and reinforce social cohesion.

The school provides an initial framework for the children to come together in an orderly and organised setting to water flowers after picking up rubbish (the latter being an activity already implemented in the Gillis neighbourhood). The regular nature of this activity ensures face to face contact occurs periodically. The children share a connection to the flowers through shared responsibility. The relationship is then encouraged to grow at this spot by participating in other activities that also use the flower pole street furniture. The playful seating and games might encourage children visiting the flowers to linger, play and enjoy each other's company.

Social cohesion may occur between parents as a secondary effect of this school project, whereby children who have made face to face contact as a result of the project may consequently cause their parents to do the same. Connections are also encouraged through a partnership between the cultural centre and street furniture, whereby the centre serves to facilitate contact using the street furniture as a trigger.

Street furniture with painted game boards encourage people plan activities and use this space together. In addition, an accompanying sign explains that game board pieces can be loaned from the community centre. Residents can either meet at this space with a shared interest, and/or make arrangements and plans to do so.

In the visualisation on the left page, the face-to-face process of the scenario has been shown.

1. Extend existing program organised by school of garbage collection on Wednesday afternoon to include watering flowers.

Children become responsible for certain flowers and develop a connection to street furniture which they share with their families.

2. Parents are made aware of street furniture, become curious and enquire prompting them to find out more at the school, community centre and around the neighbourhood.

Visiting these different elements inspires families to get more involved in clubs, events etc. Encourages them to use street furniture together as a family because it is important to their children. Prompts them to meet other parents, families who have gone down the same path, now sharing some things in common.

3. Events will be organised throughout the year by different organisations (Woonbron, Ardemia, De Horizon, Het Buitenhuis)

Residents get involved in several clubs and activities and get the possibility to be responsible for a certain task. Thereby, they get to know each other during organising or attending events.

# concept

The development of the concept knows different stages. The first stage focused on the way of watering the flowers the second stage included a focus on modular seating and finally LED and solar technology was added to the design.

In this chapter a timeline of the design process is given including sketches and considerations.

## first stage

*Focus: LEDs, flower display, water minimising, community involvement, maintenance.*

A first concept was developed, involving a system whereby community members are encouraged to make face to face contact through a shared responsibility for the flowers.

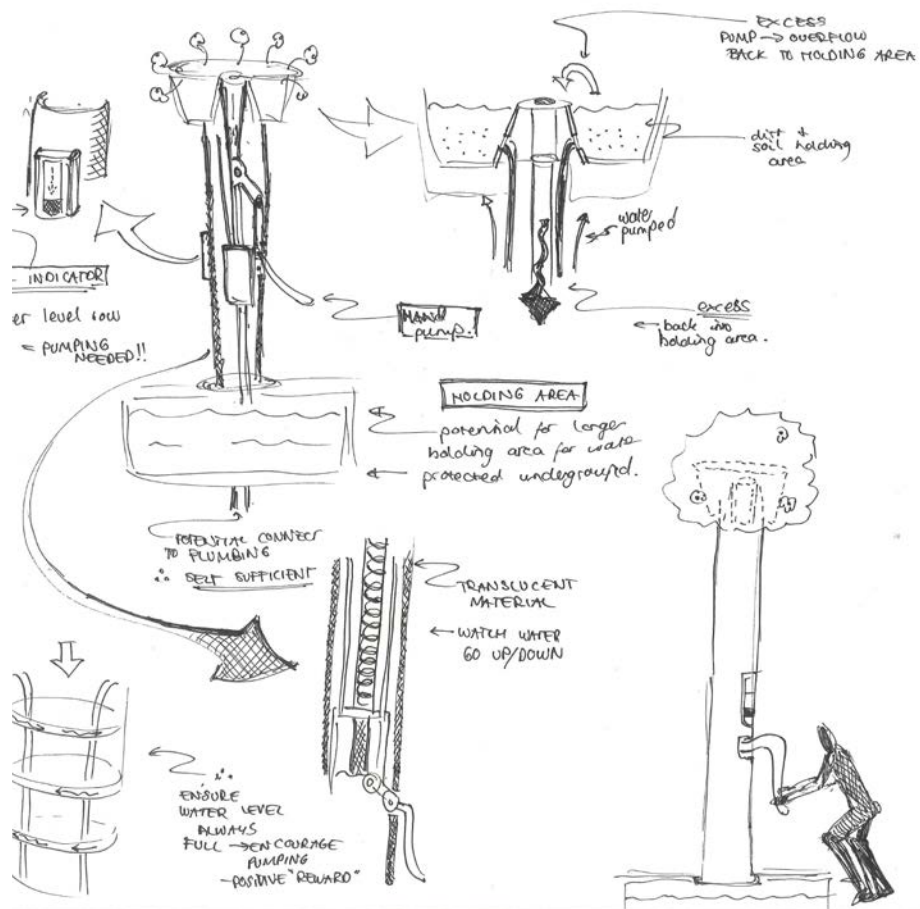
Involved use of a pump system whereby some form of indicator is used to determine water level in the flower holding basket. This is made aware to school children through an organised system where they have an allocated weekly time to water flowers.

Indicator may prompt community in general to get involved. Also included ambient lighting from the poles encouraging people to gather near to them, for a meeting point or place to spend time by in the evenings.

*Ideas for further development:*

- Touch or heat sensitive LEDs
- LEDs stimulated by pumping motion,
- providing the power to light them. (Excess water fall through pole into holding area below.
- LEDs illuminate path taken by water up the pole, to flowers (spiralling)
- LEDs placed below flowers allowing them to spin just beneath flowers, creating shadow patterns as they spin in the wind.
- Successful pumping involves two people in a form of game.
- Heat sensitive LEDs encourage people to come close to flower poles, illuminating them so they can discover pump system.
- Encourage shared responsibility between community members.
- Provide a place for youth to congregate around in the evenings, away from houses.

sketches and visualisations



## second stage

*Focus: modular seating, ambient lighting, opportunities for interaction, community involvement, promotion strategy, materials/production, involving neighbourhood, elements, program development.*

Concept two at the company's request, moved away from water saving strategies and maintenance and towards an option for modular seating.

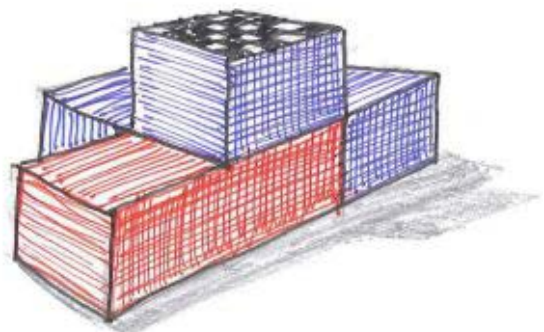
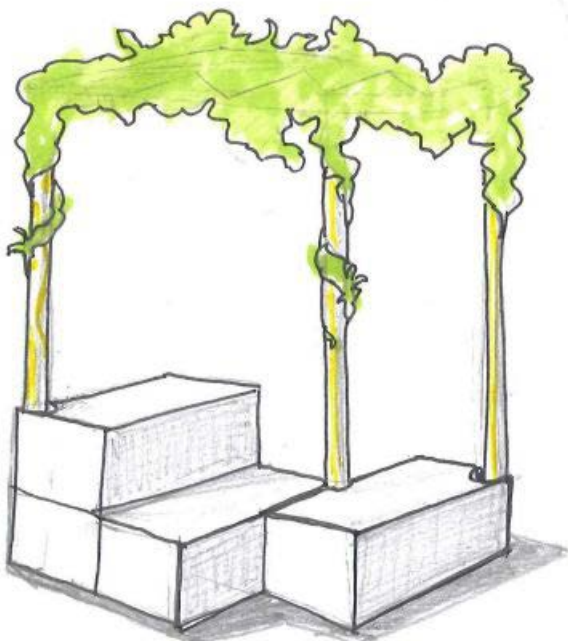
The design used a simple geometric shape (square with filleted edges) as the basic seating unit. The concept involved versatile arrangement of the square units to form various configurations, encouraging a range of different uses by the community.

Allows for different kinds of people to engage with the furniture in a range of ways depending on individual preference. Painted checkers, backgammon boards on some blocks to stimulate use for game playing.

Follow through with plan to involve children in the maintenance of flowers helping to encourage feelings of responsibility and stimulate relationship to street furniture. Potential development of street furniture in concrete, coloured using water based stains or dyes.

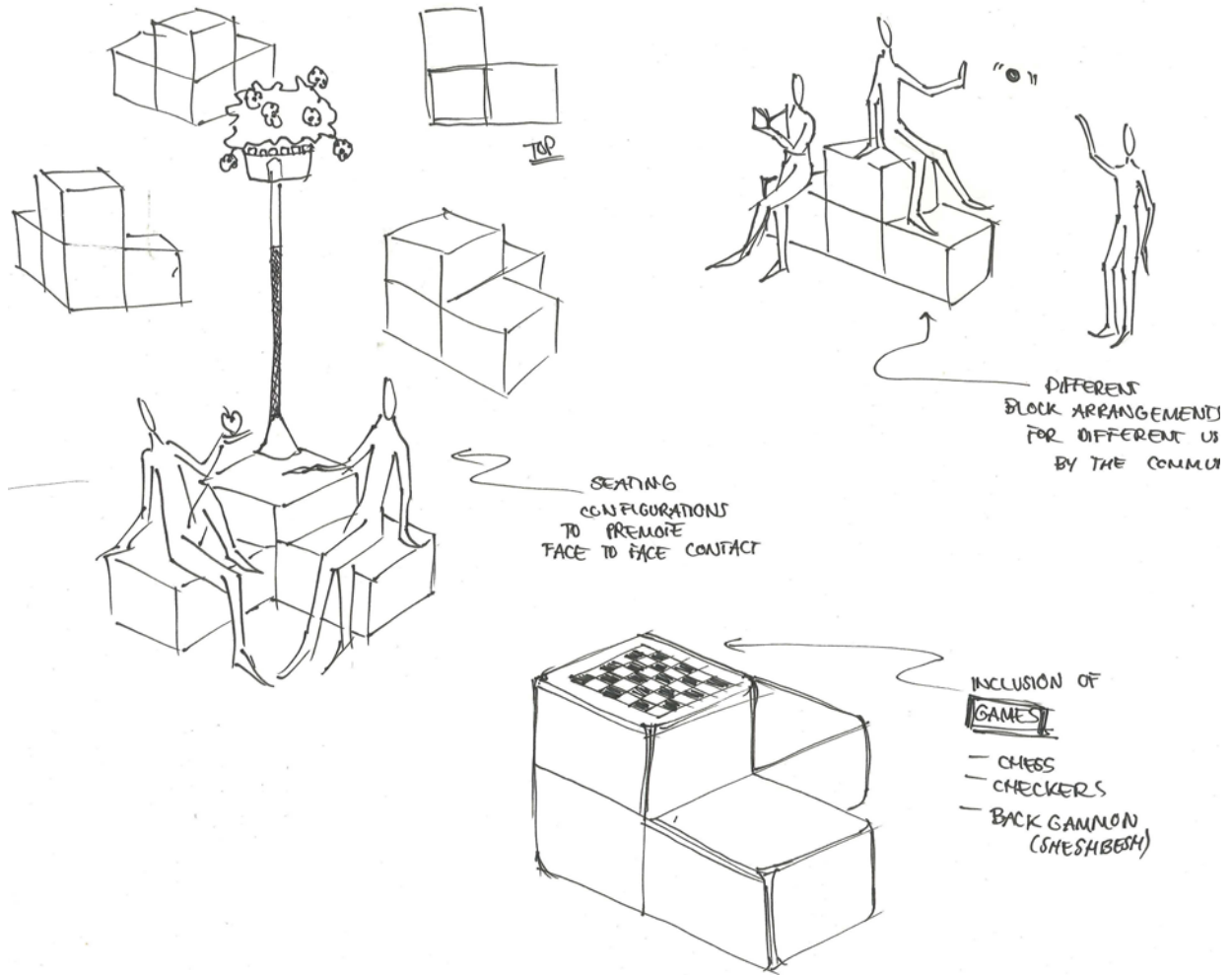
Ideas for further development:

- Types of boards
- Painting of boards/modular seats as community project/day
- Magnetic paint
- After-school programs using furniture
- Clubs at community centre that make use of street furniture
- Watering can/trolley for children to use during weekly watering sessions.
- Community art projects (painting modular seats, making watering trolley, etc)
- Seasonal events designed around using street furniture system and community elements.
- Annual spring, summer, autumn, winter events organised by neighbourhood.
- Furniture arrangements to reflect expected use by inhabitants in that area (playful use in areas with lots of kids, barbecue use in areas with families, seating options in areas with elderly, couples...)
- Concrete colouring methods
- Involvement of Delft company Vrijenban
- Ambient lighting in evenings
- Combining afterschool programs with community centre activities
- Community calendar with events, cultural events, different religious holiday, reminders for watering flowers, etc.
- Promotional material involving magnets to reinforce connection for residents between elements and their neighbourhood via the street furniture as a connecting enabler.
- Gillis rebranding around seasonal activity





sketches and visualisations



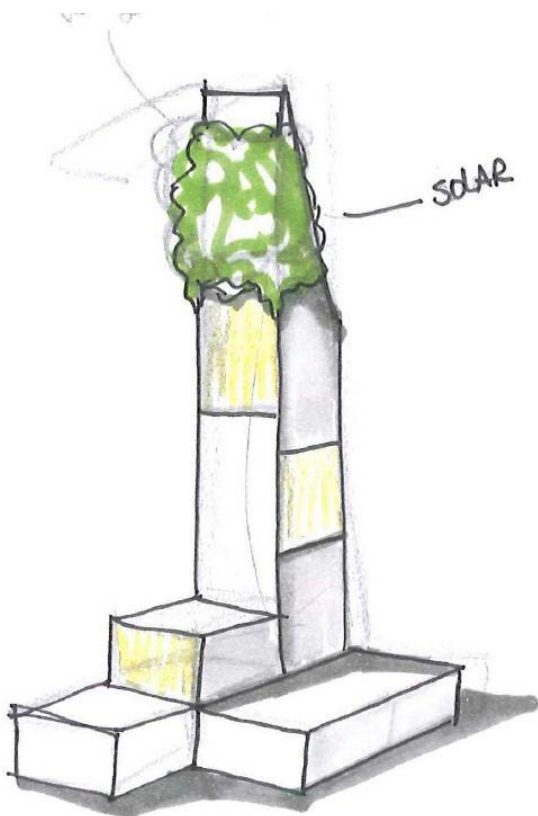
## third stage

*Focus: solar, design of pole including basket redesign options, street lighting, collaboration with existing solar company.*

The focus of concept three\* moved away from modular seating and instead is based around the inclusion of solar technology to create street lighting. It also focuses on rethinking the design for the 'pole' and flower basket, arrangement of solar panels and lighting options.

This concept also considers the additional purpose of selling it to an existing solar company and the intention of forming a collaborative design involving solar, street lighting and flower baskets. It allows focus to continue in two directions to accommodate social cohesion as well the development of solar technology as part of the one product.

Social cohesion is fostered via use of modular seating, connecting elements and activities within the neighbourhood. The inclusion of solar as part of the pole structure allows the technology to exist in conjunction with the modular seating design as well as apart from it, to enable versatility of this product in the market.



Ideas for further development:

- Using existing lower baskets in halved units
- Using 'wall flower' units
- Flower arrangement around the pole
- Solar panels and technology
- Necessary height and angling of solar panels
- LED technology/options
- Using LED panels
- Including LEDs in seating
- Watering/maintenance options
- Material options
- Using wood as surface for seating to unify organic elements
- Pole (with solar, LEDs and flowers) as free standing unit
- Free standing pole unit on sidewalks/ bus shelters.
- Solar panels that open out
- Solar and LED combined panels that flip over during day/night
- Modular pole with units that can move/spin in the wind.
- LEDs arranged to allow flower shadows to be projected on the ground.
- LEDs using both energy from solar and wind.
- Solar panels used to collect rainwater
- Colour considerations depending on context/ modular seating arrangement.

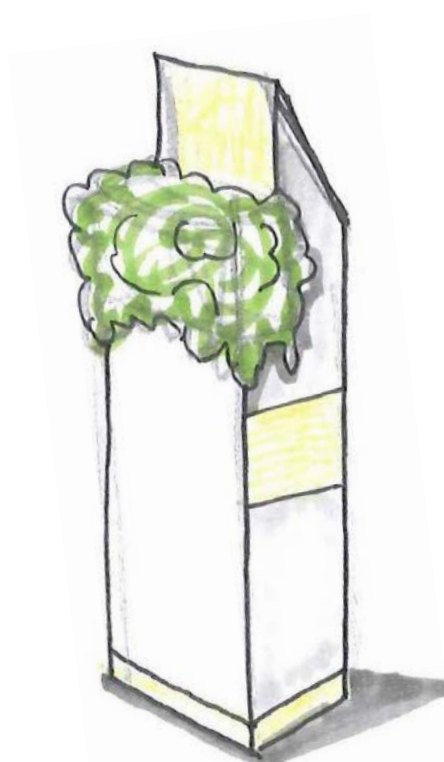
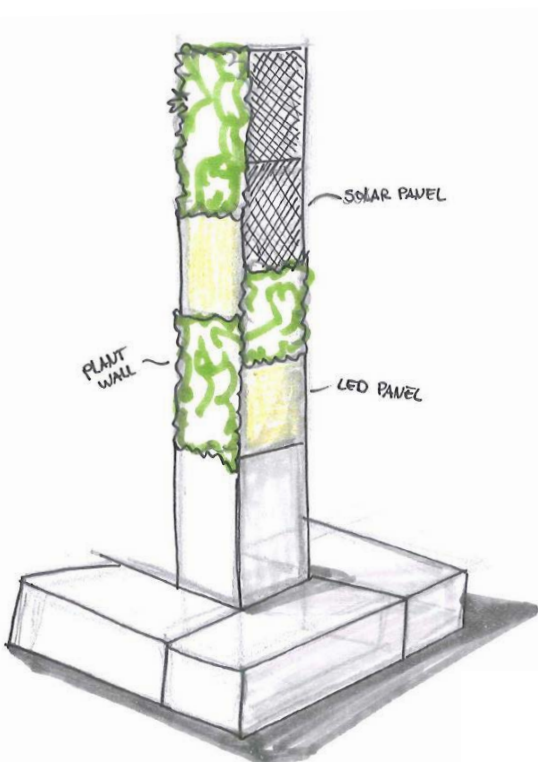
\*The inclusion of solar panels and LEDs in a modular style fits the existing aesthetic of the initial modular seating concept. Rather than a third concept this actually serves as an extended refinement of concept 2, however, for the sake of clarity they have been labelled separately.

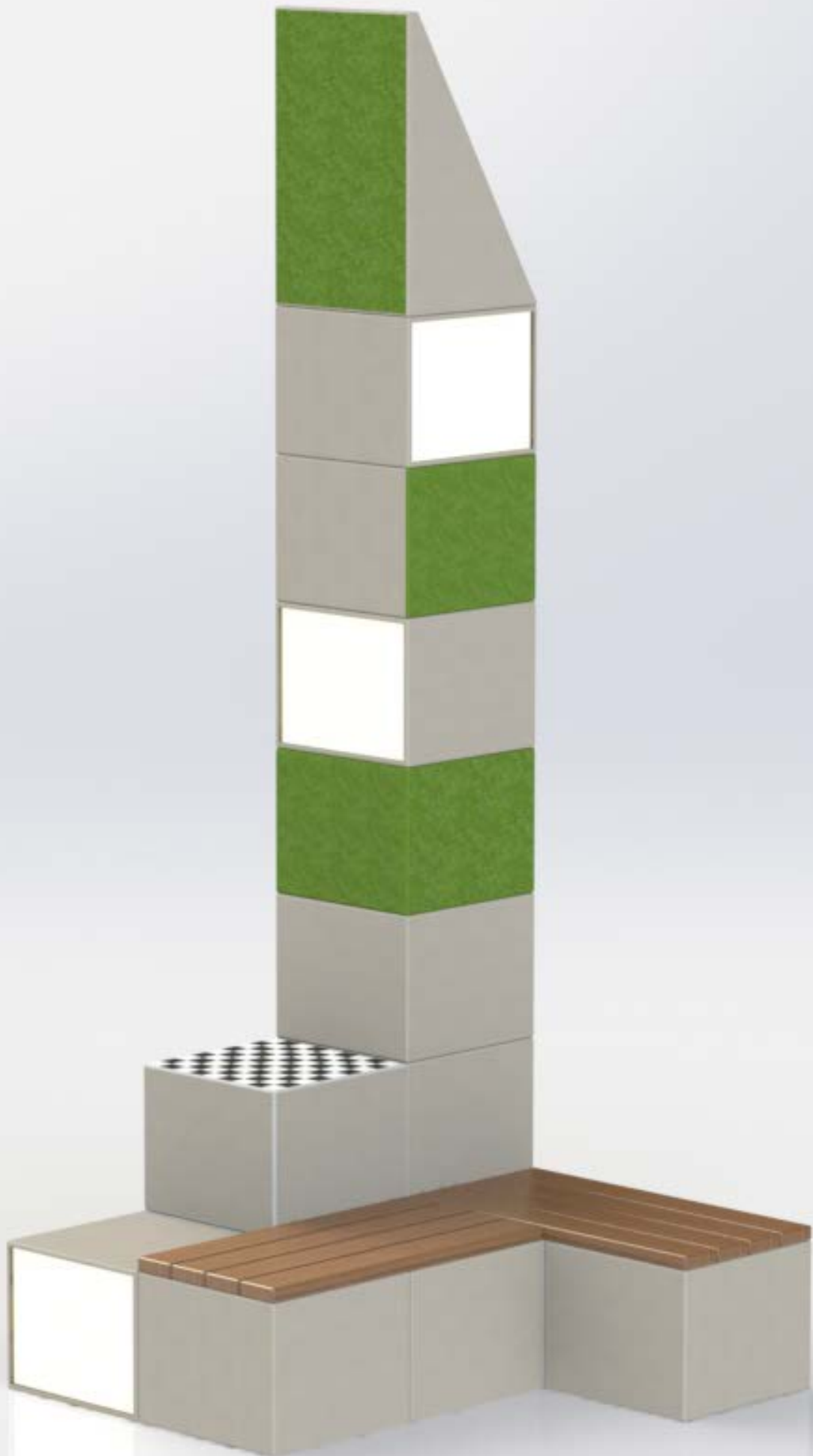
## look and feel

The technology designed uses simple geometric shapes for the form of the modular seating, coupled with LED lighting and solar panels.

The varying configurations that can be arranged by seating blocks make the design both versatile and playful, encouraging interaction by users in a variety of ways to suit their personal needs. This versatility of seating style is also reflected in the arrangement of solar and LED panels to create a variety of different designs for different uses and applications.

The overall look and feel should be simple, playful and inviting to promote a social message of inclusive and non-specific activity.





## Final concept

We are proud to present our final concept &connect: a modular system that can be build up into a piece of street furniture or a stand-alone unit that can be used in many different ways.

In this chapter we will explain all parts and possibilities of the design.

### Modular system

The system can be build up in many different ways, according to the preferences of the particular place where &connect will be implemented. The amount of seating, lights and plants can easily be changed.

### Plant walls

An upcoming trend is the 'living wall', a panel whereon plants can grow. Panels are included in the design, whereon plants can grow. The plants can be implemented in different ways and designs, according to season or preferences of residents.

### LED

Panels consisting LEDs will be included in the product

to provide ambient lighting and therefore an ambient atmosphere by night. The panels will also create the possibility to chat or play games in the evening.

### Solar

Solar technology will provide the LED panels of power. In this way, a sustainable and environmental system is created in both functionality and appearance.

### Seating

&connect is a spot to meet people: to chat or play games. Wooden seats provide the possibility to sit down for a set chess or a good conversation.

### Board games

To enhance face to face contact and activities, board games (chess, checkers, backgammon etc) can easily be painted on the concrete blocks. Thereby, magnetic paint can be used to make sure the pieces will not be blown away. Thereby, it creates a 'do it yourself' possibility as well, whereby children can make their own magnetic boardgame to connect to the block.

join in all seasons  
&connect

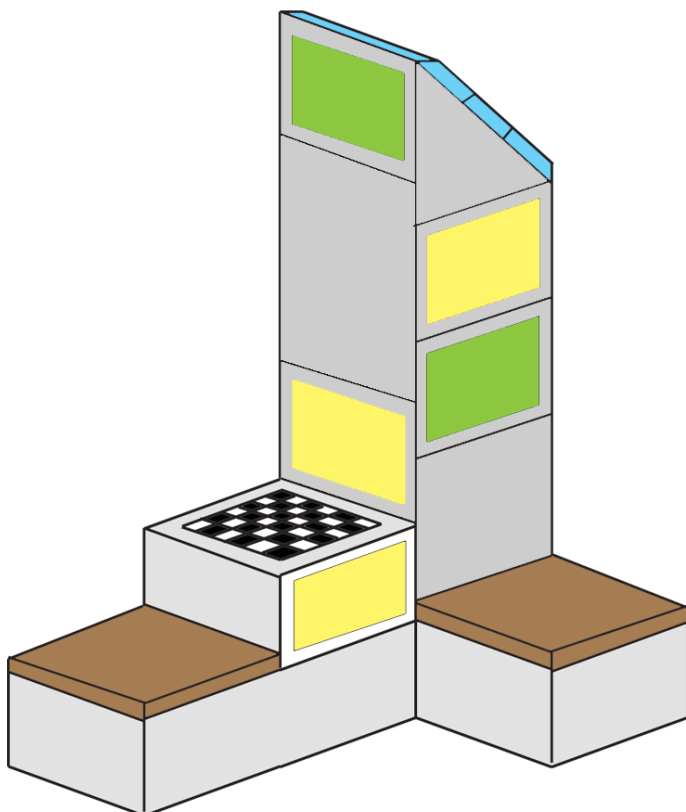


&connect



# structure

The product includes several parts that will be produced by different companies and finally have to be assembled manually. Material, production and assembly will be explained.



- Solar technology
- LED panels
- Flower baskets
- Wood panels
- Steel sheet
- Concrete



## production



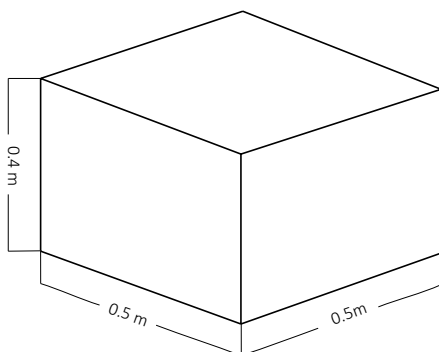
### Plant walls

- Prepare plants for wall garden according to Oase instructions.
- Wait until plants have taken root to suspend
- Angle at increment specified by Oase.
- Fix according to manufacturers recommendations



### LED

- Fix LED panels according to manufacturers recommendations
- Trim with aluminium
- Connect LED panel power supply to battery via daylight sensor switch
- Ensure all cables are neatly loomed
- Be careful to ensure rain and moisture cannot connect with any electrical components.



### Solar

- Fix Solar panels according to manufacturers recommendations
- Angle solar panels at approximately 30 degrees to horizon, facing south
- Wire solar panels to battery via solar controller
- Be careful to ensure rain and moisture cannot connect with any electrical components



### Seating

- Cast concrete blocks at required dimensions
- Cut timber to square dimensions same as concrete block
- Treat timber with polyurethane, applied in 3 separate coats
- Use waterproof adhesive to fix treated timber to concrete
- Adhere concrete blocks together to form desired arrangement.

### Dimensions

The dimensions of one block are 0.5x0.5x0.4 m. Total dimensions depend on the configuration of the blocks. The height of the pole will be 3.6 meters, whereby 9 blocks will be stuck on top of each other. The led panel will have a height of 0.8 meters.

# connect

&connect can be set up in different configurations, according to the needs and preferences of the residents of the specific area.



The modularity of the street furniture is central to both the aesthetic and intended use and purpose behind the design. Different arrangements are designed to encourage people to use the street furniture in different ways. For example, many modules arranged together in a sort of tower, with many painted game-boards creates a more playful aesthetic, while two layers of blocks with several blocks arranged around would provide a good area for enjoying a BBQ or meal outside and while a freestanding unit alone without blocks would serve as a good bus-helter or meeting point.

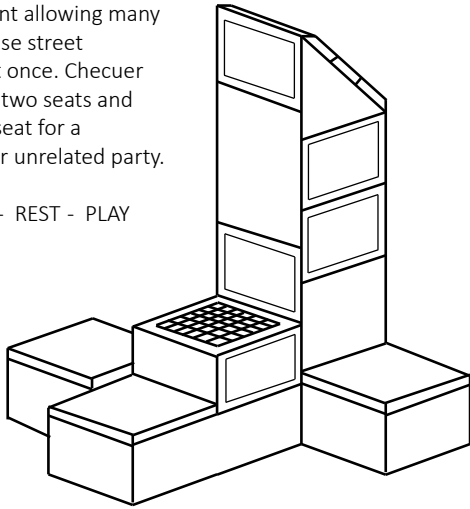
The different elements can be arranged to suit the needs of residents in that area. This means that in areas of the neighbourhood

where residents have expressed interest in have meals or BBQs together outside, modular seating arrangements to suit this need will be implemented there, but not for instance in areas where people have expressed no interest in doing this.

The modularity of this design is central to the Community Integrated Product System in 3 ways. These are present during the stages for development of the product. The CIPS has been designed to involve the community from the early stages of development right through to the implementation of the product into the neighbourhood.

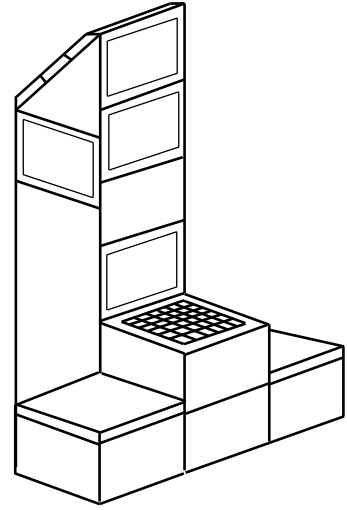
Arrangement allowing many people to use street furniture at once. Chequer board with two seats and additional seat for a spectator or unrelated party.

WAITT - REST - PLAY



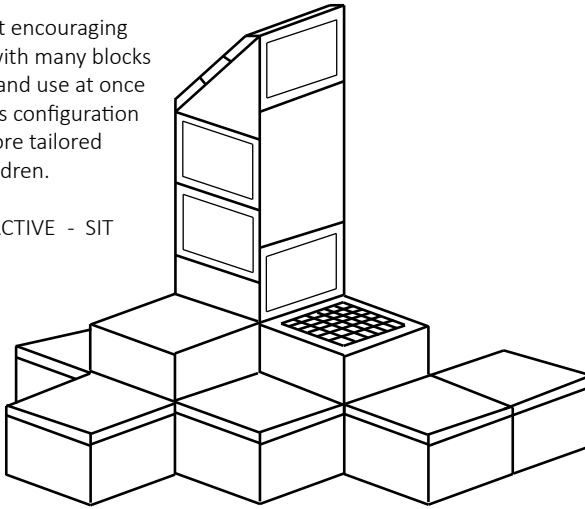
Arrangement ideal for playing board game or using painted top surface as a table area, to enjoy eating lunch together.

PLAY - REST - EAT



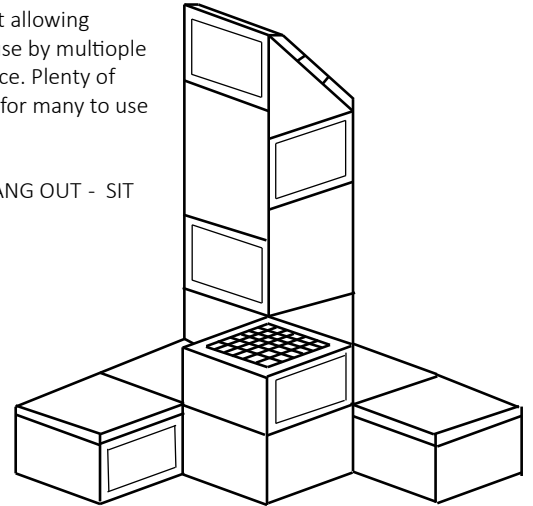
Arrangement encouraging playful use with many blocks to climb, sit and use at once by many. This configuration would be more tailored towards children.

PLAY - ACTIVE - SIT



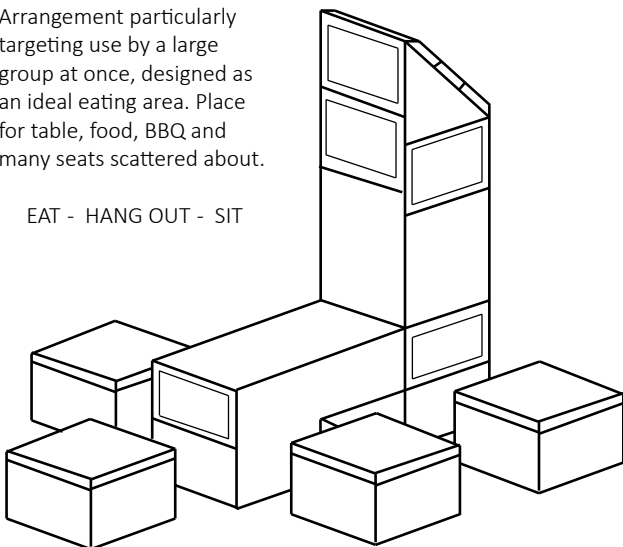
Arrangement allowing division for use by multiple groups at once. Plenty of seating area for many to use at once

MEET - HANG OUT - SIT



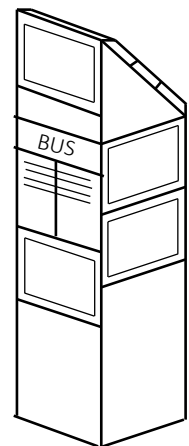
Arrangement particularly targeting use by a large group at once, designed as an ideal eating area. Place for table, food, BBQ and many seats scattered about.

EAT - HANG OUT - SIT



Arrangement of elements on the unit would be given greater consideration. This is an example of modular free standing unit that could be adapted to serve as a bus shelter or meeting point in an area with less space

MEET - WAIT - STAY



# costing

Our costing represents an estimate based on our own research and sources we had access to.

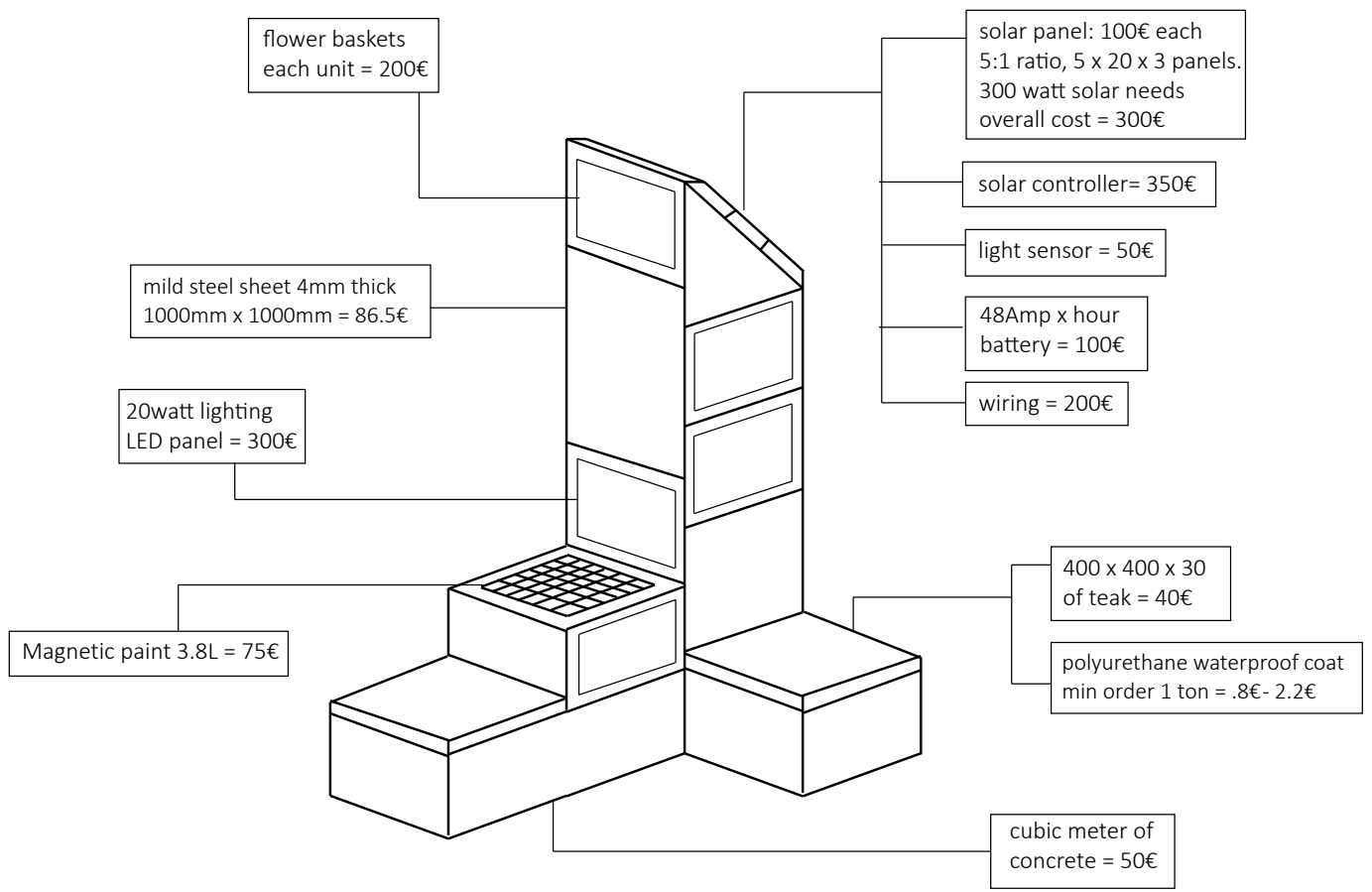
The price representation in the accompanying table is based on figures given that the minimum order on the necessary material is being purchased, as is worked out as a percentage of this figure.

The total cost given for a single unit will vary depending on size, number of solar panels, flower baskets, etc used. Therefore, the price per unit provided describes a unit containing 2 sets of 5 solar panels to power 2 LEDs and two flower baskets. The unit construction is made from 5 blocks of concrete with two wood panels for seating and 1 magnetic painted top surface and a 5 meter high steel centre pole.



# costs per part

part	quantity	each	cost €
Solar panels	3	100	300
Control charger	1	350	350
Light sensor	1	50	50
Battery	1	100	100
Wiring	1	200	200
Wood panel	2	40	80
Polyurethane coat	0.2	2	0.4
Magnetic paint	0.76	3.8	15
LED panel	3	300	900
Flower basket	2	200	400
Concrete	5	25	125
Steel	10	86.5	865
Installation			500
total			€3.885,40



# CIPS

Finally, a community integrated product system has been developed combining modular street furniture and the organisation of several events and activities by elements in the Gillis district.

&connect will make use of the four seasons, by having a theme and responsible organisation for each season. &connect will therefore be a dynamic system.



## involvement

1. Initially residents are asked to create arrangements of these modular elements that they would like to see in their neighbourhood and explain why each arrangement would suit a purpose of need. Arrangements are made in groups, ideally by people sharing an area.
  - Needs will be discussed giving residents the opportunity to discover overlapping needs, therefore opportunities for more face to face contact and social cohesion.
  - With so many possible arrangements of the modular design residents are encouraged to spend a decent amount of time discussing possible options and engaging.
2. Groups either come to a consensus or vote on a final modular arrangement for an area.
3. All together decide where in the area the modular design will be implemented.
  - This will need to be overseen by Oase and builder etc.
  - The site will also need to be visited by the community before decision is made final.
4. Once community decided development can begin, the surrounding elements in the neighbourhood are brought into the equation.
  - This is governed and coordinated by the district advisor.
  - Involves three follow up meetings, one in each quarter to assess progress and ensure other groups are satisfied with the direction being taken by each element.

# Elements

Each organisation will have different tasks or events to organise, a possible scenario:

## School De Horizon

- Teachers begin writing curriculum to involve flowers.
- Person in charge of rubbish collection work out timetable with Oase to allow children to water flowers, though with fortnightly checkups.
- Person in charge of afterschool activities to create an activity specifically designed to make use of the street furniture.
- Organise a spring event based on the theme 'create &connect' and promote this to the Gillis residents

## Community centre Het Buitenhuis

- Consider existing program of activities already offered and include new ones that make use of street furniture
- Tailor existing programs, for example games club to use modular furniture in future.
- Look at combining afterschool programs with community centre clubs based around the shared use of street furniture (thereby encouraging contact between age-groups)
- Organise a summer event according to the theme 'come &connect' (BBQ, chess tournament) and promote this to the Gillis residents.

## Ardemia

- Begin organising grand opening event to introduce and celebrate the inclusion of the new street furniture.
- Design a winter event, based on the theme 'care &connect', wherein health and fitness is the main focus.

## Woonbron

- Design an autumn event based on the theme 'collect &connect'. (for example a neighbourhood harvest market in Autumn that involves the community vegetable garden and uses modular seating to set up stalls.)
- Design a strategy to allow all seasonal events to be enacted, possibly enlisting the help of other elements.

# create & connect



spring



learn

Learning about seasons



care

Caring for the plants



play

Using furniture to play

Creating game and activities, facilitated through clubs and programs, resulting in a huge tournament. Clubs are given the change to host a major competition between all competitors using the furniture or own game boards created.



# COME & connect

summer



eat

Eating meals together outside



chat

Getting to know each other



play

Playing games together

Come together for summertime BBQ outside where residents can meet their neighbour and share in a meal together. Parents have chance to meet, sit and chat while kids play together on the street furniture.

# collect & connect

autumn



trade

Trade goods and services



create

Create opportunities for profit and fun



display

Display crafts and produce

Collecting artefacts, projects, produce and crafts and bringing them together to celebrate the accomplishments of the Gillis neighbourhood. Enjoying possible financial benefits or just the chance to appreciate the work of the community.

# care & connect



winter



connect

Connecting through programs



move

Staying active and healthy



stay

Staying to rest together

Caring for each other and the neighbourhood as a whole by keeping, active, staying fit and being healthy. Working on improving the general wellbeing and care for the community.

# branding

Under the leadership of the district advisor, each element will promote via the use of fliers and word of mouth a meeting for each element that allows residents the opportunity of participating in the organisation of the design implementation.



District advisor will organise:

- Woonbron to make fliers to promote the new street furniture and advertise opportunities for community involvement.
- Ardemia to print fliers promoting one off grand opening event with food, drink, and there, distribute addition fliers and information about new events, community initiatives that have been created around the inclusion of the new street furniture so that residents are made aware of the new opportunities and possibilities to get involved at the grand opening event.

Examples opportunities for community involvement: Offer services to help plan annual seasonal events, help out at after-school programs, be involved in the school program of flower maintenance, etc)

1. Introduce learning about flowers seasons into school curriculum prior to introducing street furniture.
2. Brief children on new flower maintenance project
3. Initiate communal lunch times after garbage collection to be followed on with flower watering.
4. Hold meeting at school to explain new project to parents, involving them and generating excitement.
5. Create event for 'grand opening of street furniture'
6. start up board game clubs/ afterschool programs and advertise grand opening and chance to use this equipment for club purposes.
7. Mail out magnet invitations with information about school, community centre, opening hours etc connecting the elements via new street furniture.

## promotion

For each seasonal event, one person of the specific organisation will be in charge to promote the activities of the season. The person in charge will organise a meeting wherein a list of tasks will be presented. People can pick a preferred task to deal with, for example the design of the invitation.

Several branding possibilities are:

- postcards
- invitations
- magnets





# implantation

Within a year the CIPS can be implemented into the Gillis district. This process exist of four different stages: selling, setting, planning and commencing. Thereby, at least two major eternal parties are involved: the school and the community centre. An implantation manual has been set up to give an overview of the several aspects on a timeline basis. Furthermore, several possibilities for the school and the community centre are given.

## School (De Horion)

1. Excursion to visit blocks when they are first introduced.
2. Allocated flowers In particular areas/groups.  
(divided by class / neighbourhood area)
3. School study  
*Learning about flowers*  
*How to take care of them*  
*Seasonal changes/ lifecycle*
4. School projects: (afterschool, programs)  
*Making a calendar:*  
*Include photos/ pictures*  
*Reminders when to water flowers*  
*Community events*  
*Festivals/ religious days*  
*What vegies to harvest when.*
5. After-school Programs  
*Chess Club*  
*Board-game making (magnets on back to be used outside on blocks)*  
*Calendar making*

## Community centre (Het Buitenhuis)

1. Event to introduce residents from the Gillis to the centre.
2. Purchase chess/ checkers/ backgammon pieces (magnetic)
3. Create a system of loaning pieces out (card/ deposit/ID swipe)
4. Start up board-games club  
*Members play against each other*  
*Scoring tally kept in the centre*  
*Weekly organised game sessions*  
*Monthly tournament.*
5. Invite residents to join / create a committee to help with organisation/ plan events etc...



### First quarter

1. Initially look to install 4 units
2. Sell units to municipality
3. Municipality organise installation in conjunction with Woonbron.

### Second quarter

4. District coordinator discusses 4 places to implement street furniture.
  - *Must consider areas of high foot traffic.*
  - *Types of arrangements to suit a particular place in the neighbourhood.*
  - *Verify with Oase whether the area is possibly with regards to maintenance.*
  - *Oase verify in conjunction with solar company whether there is enough access to sunlight.*
5. Begin initial stages of development:
  - *Fence off areas*
  - *Begin laying foundations*
  - *Provide estimated timeframe for development.*
6. Organise meeting with Ardemia, community centre Het Buitenhuis and school De Horizon to discuss future involvement of each element with the street furniture, possible uses, etc. A season will be given to each organisation, to give a certain responsibility for organising events.

### Third quarter

7. Create year plan with events and activities held by various neighbourhood elements to reinforce using the furniture through specific activities and events.
8. Plan event for grand opening of street furniture to introduce it to the community and explain new activities and events based around its inclusion to the neighbourhood.
9. Hold meeting to explain new development and potential events etc to residents
  - *Allow them the opportunity to get involved*
  - *Delegate roles to those willing to be involved/ already members of different community groups to ensure events/ activities are well planned.*
  - *Schedule 2 follows up meetings to check on progress prior to event/installation.*

### Fourth quarter

10. Create calendar with all proposed events, scheduled meetings, any other relevant information for residents.
11. Organise meeting between Municipality, Woonbron and Oase prior to completion .
  - *Check progress*
  - *Finalise date for grand opening event.*
12. Organise meeting between Oase and elements to discuss feasibility of programs. Eg: school
  - *When the flowers or plants will be introduced*
  - *When the children can begin taking care of them*
  - *How this will be done*
  - *Fortnightly plan for Oase to check on flowers to ensure maintenance of flowers by school is sufficient.*

## elements and major roles

In the visualization the different elements involved are shown including their major focus or role within this project.



Starts a board-games club

Provides board-game pieces



### Woonbron

Organises autumn event

Keeps an eye on to the annual calendar and manages contact with all involved parties.



Sponsors events (by using e.g. the buurteuro concept)



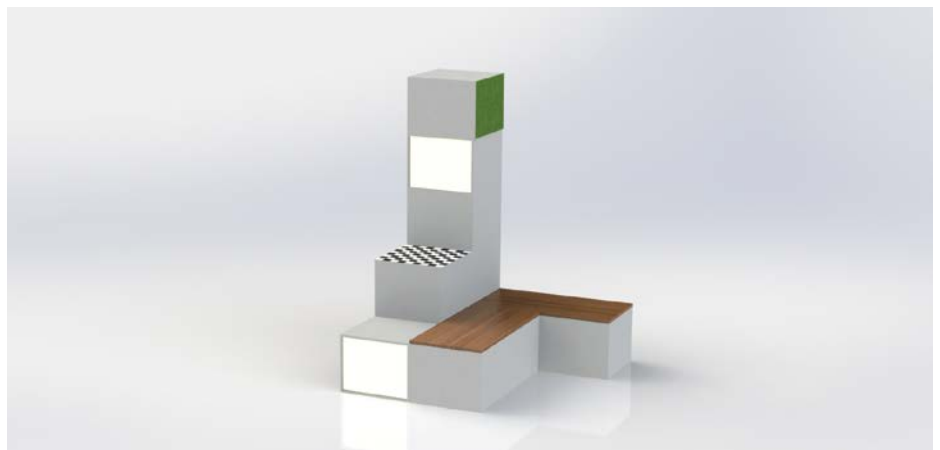
Organises summer events

### Het Buitenhuis

Organises winter event



### Ardemia



### Municipality

Buys the product in accordance with Woonbron

### Oase Lease

Delivers the product and gets in touch with the school about maintaining the plants



Kids learn about plants in class

Several (after) school projects:

- chess club
- board-game making
- calendar making

### De Horizon

Organises spring event



An after school program takes kids into the Gillis to water the plants



## activation

### School

#### Activated through *taking care of flowers*

1. learning about flowers,
2. Allocation of groups to specific flower baskets to take responsibility for maintenance, care (watering, etc).
3. Scheduled time to check on and water the flowers, in conjunction with pre-existing garbage collection program on Wednesday afternoons.

#### Activated via *afterschool programs*

1. Creating new afterschool programs designed to involve the street furniture.
2. Board game making, chess/checkers club
3. Games evenings, held weekly
4. Tournament event held once a month.

### Ardemia

#### Activated through *a health club*

1. staying fit together
2. healthy breakfast
3. running clubs

#### Activated via *events*

1. A seasonal event based around using the street furniture
2. Running game

### Community centre

#### Activated through *clubs*

1. Checker/ backgammon/ chess club held weekly
2. Potentially combine with afterschool programs so grandparents/parents and children can play together.

#### Activated through *events*

1. Seasonal event based around using the street furniture  
Eg: summer community BBQ
3. Involve other elements such as neighbourhood vegetable garden.



appendices

## appendix 2 - visiting Gillis

On the first visit to the Gillisbuurt neighbourhood it seemed very cold, empty and uninhabited. Though green with lots of grass etc, the area looked quite bleak, particularly the park which was full of mud and puddles suggesting that no one had used it in a while or the outdoor gym situated nearby. The footpath was uneven and un-kept. The blocks of flats were dull, cold and lacked much character. The only bit of colour came from the few pots of flowers that some had hanging outside their windows.

Overall, it seemed as though attention was lacking in public areas: poorly kept nature strips and public walking routes. Grassy areas which might have been fine to walk through in summer were unfit to walk through in winter having turned to mud. All together it turned the public outside area into a space that is not really habitable, in the colder/rainy months at least.

The uniformity of housing areas makes them seem as though they are not owned by individuals but rather, just a place of residence. This atmosphere is likely to encourage personal displacement from the area, turning it into an area where they happen to live rather than a place of belonging.

The neighbourhood was smaller than we expected, there were few buildings to congregate near or in, few shops and a kindergarten just on the outskirts of the perimeter. The journey walking through the neighbourhood to school, shops etc in the surrounding areas could be greatly improved and we feel that this is definitely an area of opportunity.

On the second visit, we went during lunchtime and talked with residents. They were happy to chat for a bit but were generally in transit, running errands etc. Did not use Q-board as this felt too awkward but rather used statements generated by q-board to prompt questions. (in Dutch- Julia)

- Residents were enthusiastic about flowers and most were excited about some new development.
- Many expressed doubt concerning whether people would use seating areas outside commenting that this was not an area generally to spend time in, rather go elsewhere to nicer places.
- Space between flats only used to get from A to B or walk the dog etc.
- People seemed friendly on the street to one another, greeting each other etc. Explained it is popular to eat, outside, have BBQs in summer
- Currently the area is not a nice place to spend time. Play equipment is worn down and not used anymore
- People like the idea of playing games together outside- both met with enthusiasm from younger children and

young adults and potentially for an elderly community (board-games).

- Young girl mentioned she would love simple game areas for things like hopscotch etc. This was reinforced by a young boy who commented that his sister would like that kind of play equipment as he and the other boys tend to play ball games.
- Both young and old from those we asked were enthusiastic about being involved with maintenance of flowers, watering etc.
- Liked the idea of ambient lighting but this was met with differing degrees of enthusiasm. In summer people tend to spend more time outdoors.

### **Analysis - areas for opportunity**

- Potential for greater social cohesion if people were given reason to stay and linger.
- Street furniture development could serve as a touch point where to stop briefly so that a short hello could be extended to include 'how are you'...
- Might be nice to have more seating areas to eat in summer, raised platform for BBQ
- The general look and therefore appeal of the area could be improved with colourful street furniture, different sizes, shapes etc to make it exciting in addition to flowers.
- Board-games painted on street furniture could be easily maintained and versatile enough to change if requested. This could also get community/kids involved in deciding what and where...
- Summertime when the days get longer and people stay out longer this would be ideal to spend time in groups outside. BBQs etc are already happening, ambient lighting may keep people out after the meal has been finished to engage for longer.
- Seating/street furniture spread out more might encourage larger and broader groups of people getting together.
- Many people walking dogs, might be good to include plastic baggies on poles to pick up after pets. (Encouraging people to take care and feel pride in the area.)
- Area in general though green still looks dull, especially play equipment in park. Bright street furniture could break up the dullness and together with flowers add some colour and life into the neighbourhood.

## appendix 3 - Oase Lease

### **The company**

The focus on **beautifying and enhancing streets** with their wide range of flower arrangements which can be replaced by special winter planters during the colder months.

Their mission is to “**contribute to a positive and innovative green environment**”. Darthuizer Oase-lease envision pleasant and enduring environments and the company strive to achieve this by contributing in a way that is both socially and economically efficient.

Products include hanging baskets, flower pyramids, bridge and wall, wintergreen and custom made. ‘custom made are the only products actually for sale and can be modified to suit specific customer needs.

Darthuizer Oase-lease has done work for a variety of public clients ranging from municipalities through to amusement parks and shopping centres. Products are custom made, vandalism insured and home grown by the company. Inclusion of their product to public areas has seen many positive effects such as image improvement, **increased sense of security and efficiency** as well as behavioural changes such as a decrease in crime and causing people to linger and **encourage social cohesion**.

### **Meeting**

The first meeting between the design student and the company involved a general introduction as well as a short overview of what the company does and general outline of the company brief. The company would like a concept that involves using their existing product in a more creative way. Ideally this would give the product greater use and make it more appealing to a larger number of users. Darthuizer Oase-lease is a company that makes flower baskets, primarily for decoration in public areas. The brief involves combining flower baskets with LEDs and are fixing them to a stand that would act to serve other purposes.

The structure of the basket must remain but the container holding the water may be modified as well as the way it attaches to poles etc. The pole on which the basket is fastened can also be part of the design, potentially modular. Modules may allow for the inclusion of things like bike racks, seats, pumps, bins, water fountains, etc as well as providing a simpler solution for watering the flowers.

The company would like us to focus on including LEDs, a solution for less frequent watering of the plants and potentially a modular design. In short, making the flower baskets more useful and therefore more appealing to a greater, and more varied audience. The design also needs to address the fact that flowers need lots of maintenance from watering as well as seasonal changes.

We were given a basket to have a closer look at the product and there were talks of potentially visiting the factory in Utrecht.

Darthuizer Oase-lease would ideally like a mock up in the final stages of this project and if successful hoping to create in batches of 500.

It was decided that further communication would happen on Friday with an email to arrange a time to meet. Ideally keeping in contact by email at least once a week.

On the 28th of February, we will visit the company to clarify needs and expectations further and hopefully get a more concrete idea of what they would like us to design –whether that includes the stand for the baskets or not. We will also discuss the possibility of LEDs and using solar power.

## appendix 4 - visiting Oase

During our visit, we have showed Arnoud and Guido a short presentation, a summary of the work we did during the last couple of weeks, including ideas and examples of existing products. Arnoud is interested in a modular design system: involving their flowers in a concept with for example a bench.

One of the ideas that came up during the conversation, was a meeting point in front of the flat (they both liked last year's concept, that identification panel). This would create a place where people can meet, mothers can sit while their children are playing. Involving lights, it would create a nice and safer atmosphere in front of the flat.

What they are developing more and more, are flower/plant walls; walls filled with holes, where they stick in plants. A watering system is included in the wall.

Oase Lease can collaborate with other companies to create products like this. At the moment, they are collaborating with a company specialized in LED lighting. They want to cover the flower baskets with LED's in winter, as decoration lighting on the street.

They prefer to keep the inner basket, but we can design anything we want besides that product. We don't even have to use that product, but it is convenient since they already have a lot of those made.

They would like to develop 'stand-alone' units, that don't

have to be built in, but can easily be placed. Therefore, couches have to be heavy enough, for example.

Another interesting research for our report could be 'what is the impact of green in a neighbourhood?'. Apparently, the effect on people's behaviour, wellbeing and health is positive. I got a booklet with information about it.

What they like about collaborating with Industrial Design students, is that they will gain fresh ideas. Oase Lease has the central focus on the plant and flowers. They are set in the middle of a forest, and grow their own plants together with Darthuizer. New concepts are developed from another perspective than ours, so they are keen to see our ideas.

So, the following ideas came out of this visit:

- Creating a personalized 'meeting point' per flat
- Using LED for ambiance lighting
- The use of flower walls
- Oase lease wants to control the choice of flowers
- People volunteering in the vegetable garden are probably more interested in gaining advantages out of it; flowers are just decoration.
- A modular design is preferred:  
Bench, Bike rack, Playing equipment, etc.

## appendix 5 - talking to the experts

During the last two weeks, several 'experts' involved in the project have shared their stories and experiences about the neighbourhood. They are involved in the area through (voluntary) work, religion or for social reasons and have given us a lot more insight in what is going on in the district.

### **Hasan Karadirek**

Hasan, the chairman of the Sultan Ahmet Mosque and four teenage guys were keen to explain everything about the Moslim culture and problems in the district where the mosque is placed; the Buitenhof. The mosque functions as a place to meet others. The mosque itself functions as a place to meet others. Not just to talk about religion, but it also is a place where people can just interact and share stories. There are special rooms for teenagers, where the boys and girls can watch television or play games. The reason to provide a place like this, is to prevent kids from hanging around in their neighbourhoods and cause nuisance or trouble.

One of the remarkable things Hasan explained, was that a lot of people use the housing in the Gillis district temporarily; they move to the area because it is an accessible and cheap option, but want to find a better place as soon as possible. As a result, people are not willing to improve the area and make contact with the other residents. Furthermore, because of the many different nationalities within the district, a language barrier occurs. The residents need a reason to communicate or say hello, otherwise, they will not communicate with each other.

Another way to deal with nuisance has recently been introduced; 'buurtvaders'. These men interact with both parents, children and other residents, and mediate whenever problems occur.

### **Peter van Lopik and Heleen van Linden**

On Monday 17 February, two 'district-experts' came to the faculty to talk about their work in the Gillis district. Peter van Lopik is a social worker in the Buitenhof and Heleen van Linden is a district coordinator for the city council. Peter's job is to improve safety, create possibilities to meet other people and so on. Heleen pays attention to neighbourhoods that are underdeveloped, where problems occur on a regular basis and where the safety can be improved.

A couple of projects have been set up during the last years. For example, a reconstruction of the public area has been done to increase safety. Also, a community

garden has been introduced. Residents are responsible for maintaining the gardens and they are all keen to do this. 'When something is your own property, you will feel responsible to maintain this'. This feeling will prevent vandalism, and people are therefore still taking care of the gardens.

Another project of the city council is 'buurteuro', an initiative wherein people can submit plans for improving the quality of the neighbourhood. Whenever a plan is approved by both social workers and residents, the initiator receives money to realise the specific plan. So far, around 60 plans have been submitted.

The city council is thinking about changing the structure of the district. They want to diversify the housing, to create a mix in residents. Currently, all flats are cheap and look the same. Would it be possible to create another atmosphere and increase safety by diversifying the housing?

Hasan told us that people use the Gillis district as a temporary solution for housing. They move to another district as soon as possible. Peter, on the other hand, says that the residents actually mostly stay where they start living, 'because they have to deal with other problems and are happy to have a place to stay.'

'One of the main problems in the Gillis district was caused by a group of 200 youngsters. They were hanging around during the night, being noisy and damaging things. People did not feel safe in their own neighbourhood anymore and social workers had to act like policemen.'

### **Jan van Oosten**

As introduced before, Jan van Oosten is working in the district for Woonbron and often speaks to people living in the Gillis district. During his visit, he explained a lot about how to get in touch with the residents. 'Bring cookies to a family, let them provide tea. Or bring a football to a park and start playing with the children hanging around. These are the best ways to start conversations. At least, do not say 'I will help you', because a lot of people have said that in the past and plans have not always been realised.'

Talking about design, Jan says that failure will lead to the best inventions. For example, people were throwing food outside, because they did not want it to become garbage, but wanted animals to eat it. Consequently, rats started to settle in the area. Finally, someone designed a product that people could use to feed birds. Respect for people's religion, norms and values is needed to come

up with a successful design.

But once talking to a resident, how do you spread the word about the project? 'Start in an area where a lot of people come together, like a school. People talk to each other while waiting for their kids and it is easy to mingle in. Thereby, it is useful to get in touch with people such as 'buurtvaders', who talk to a lot of people in the neighbourhood in general. It is good to talk to a lot of people and get to know the area. Our opinions are normally based on what the press tells us, but this is a one-side story!'

As Heleen and Jan explained as well, Jan talks about the desire to get a mix of different houses and people in the area. According to a table (Positioning Community Projects), there are four different types of people, all given a colour. In the Gillis district, there are a lot of 'yellow people', who are looking for cosiness and cohesion within their neighbourhood. Furthermore, 'green people' living in the Gillis want safety, love and happiness in the first place. It is good to get a mix of people, to make the good characteristics of each group come together.

Creating incentives for care within the neighbourhood is likely to have a positive impact. Greater care incentives in public areas have an effect on the community at large. (Described by broken window theory). Follows on the idea that areas that are less cared for people have less interest in. Therefore, drawing focus and positive attention towards public areas through the introduction of street furniture could help instigate care for the area and connection to the community, through shared interest, values, etc. Sharing this belief in caring for the neighbourhood would lead to greater social order. Thereby involving two factors known to be instrumental in the successful development of community.

### **Ardemia**

Chairman (33): has been living in the Buitenhof for 23 years. Originally from Turkey.

Alice Hendriks lives in Delft Buitenhof. Has been living there for the last 9 years Lives in the "white area" (houses, not same flats/Studied cultural anthropology. Works for the municipality.

73% migrants in the Gillis area,  
30% migrants in all of Delft.

Project: sports for elderly women, they love it.

School De Horizon: children go to the Gillis every Wednesday to clean the area. Collecting garbage etc. They earn some money (or something like that) with it. Kees Huisman.

The women think the area is not clean; there's a lot of garbage on the streets. No one maintains the plants and grass, so it looks crappy. "You need a roof to feel comfortable and sit down"

Word to word promotion is better than promoting by flyers and via a website.

People aren't used to talk in meetings. They want to see things happen, instead of just talk.

**Beate Volker** listed 4 conditions that theoretical findings have shown are important for a community to emerge.

There are:

1. Meeting opportunities
2. Social capital
3. Mutual dependency
4. Alternatives.

It all starts with seeing your neighbours around, face-to-face contact. When you can say 'hello' to someone, it creates a better atmosphere already.



# The advantages of green in the city

Source: 'De baten van de groene stad' Stichting Groenforum Nederland, 2005

Some positive effects of green in a neighbourhood:

- In a green area, people are healthier. Thereby, even a view on trees or plants will help people to recover from a disease.
- Green provision has a positive effect on the level of concentration. Nowadays, there are a lot of children dealing with attention disorders, such as ADD. The maintenance of green around home will stimulate children to play outside and to perform in a better way.
- Green in the neighbourhood will improve recovery of stress. After a busy day, people tend to find relaxation in a green area.
- Green provision is highly appreciated and intensively used in general.
- When the amount of green raises with 10%, the amount of health problems decreases with 0.15%.
- People are going into nature when it's close to home, and this will have a positive effect on their health. Nature in general has a positive effect on people's well-being. (Gezondheidsraad, 2004. 'natuur en gezondheid')
- Nature has an influence on people's behaviour: they go out for a walk more often. Thereby, it brings life into the city: birds and other animals will join. People will become more aware of the seasons.
- The value of housing increases when green is provided in the area.
- A lack of recreational facilities causes criminality.
- Youngsters will start hanging around, committing vandalism and small criminality
- A pleasant green environment where young people feel at home, are able to talk to each other, and if possible doing some exercise, has a positive effect on socially acceptable behaviour.
- People in a green environment are less exhausted and thus less likely to become irritated

- .. less likely to commit criminality and aggressive behaviour
- A lot of green reduces criminality by 50% (Kuo en Sullivan, 2001)
- A green environment is a factor in decreasing criminality: 7-8%.
- Social cohesion increases in a green area, which creates a safer atmosphere.
- Well maintained parks prevent vandalism (de waarde van het groen, 200)
- The Millinix district in Rotterdam improved a lot when implementing parks. The value of housing increased, costs for criminality-prevention and nuisance reduced and social cohesion increased.

Kuo en Sullivan, 2001. Aggression and Violence in the inner city: impacts of environment via mental fatigue. In: Environment and Behaviour 33.

"Is a Green Residential Environment Better for Health? If So, Why?" 2012

Study done in 2010 involving a research program looking at the relationships between green-spaces and health, called themselves the 'Vitamin G program.

Aim was to "empirically verify relationships between 'greenspace' in residential areas and health and to gain insight into mechanisms explaining these relationships."

Studies showed that residents with a high amount of 'greenspace' in their residential environment felt less lonely and less often experienced a shortage of social support compared to those with a less green residential environment. (Maas, Van Dillen, et al. 2009)

"In the urban neighbourhood study, the finding that residents of neighbourhoods with higher amounts of streetscape greenery reported less acute health complaints and better mental health could be fully explained by the stronger social cohesion in greener neighbourhoods. Social cohesion also partly explained the positive relationship between quantity of streetscape scenery and self-rated general health. Overall, social cohesion explained one fifth to one third of the relationships between quantity of streetscape

greenery and the health indicators. Furthermore, social cohesion was always a partial mediator in the analyses of the relationships of health indicators with the quality of streetscape greenery (De Vries et al. forthcoming).”

These findings label social cohesion as a major factor linking green neighbourhoods and greater well-being. Moreover, the study determines that greater social cohesion tends to exist in greener neighbourhoods. This provides converging evidence between greener neighbourhoods and wellbeing through the presence of greater social cohesion.

Overall, the studies through the program demonstrate a strong correlation between ‘greenspaces’ in the residential environment, positive relationships, and health.

The finding in the Vitamin G program indicate that social cohesion is an important mediator of greenspaces relating to health .

Practical implications and outcomes of the study encourage a greater understanding of the link between “greenspace” and health relationships in order to help with design for effective and health-promoting areas.

From this we take that empirical research is being done in order to encourage the design sector to put these findings into constructive development. Designing not only for greater health and well-being, but for the triggers that lead to this- namely social cohesion

Groenewegen, P P., Van den Berg, A E., Maas J., Verheij, R A., & De Vries S. (2012). Is a Green Residential Environment Better for Health? If So, Why?. *Geographies of Health*. 102, 5: 996- 1003 Sourced online 07/30/2014 <http://www.tandfonline.com.ezproxy.lib.rmit.edu.au/doi/full/10.1080/00045608.2012.674899#.UxnWIPmwKSI>

De Vries, S., Van Dillen, S. M. E., Groenewegen, P. P. and Spreeuwenberg, P. (2003) Forthcoming. Streetscape greenery and human health: Stress, social cohesion and physical activity as possible mediators. *Environment and Planning A*, 35: 1717–31.

## Setting X

The selected setting describes the space between the three major elements identified: kindergarten/school, park and home building through which the key actors- inhabitants of the suburb go about their day to day life. The interplay between these elements is based around key events such as going to school/work, free time spent before/after school/work as well as the act of journeying between these elements.

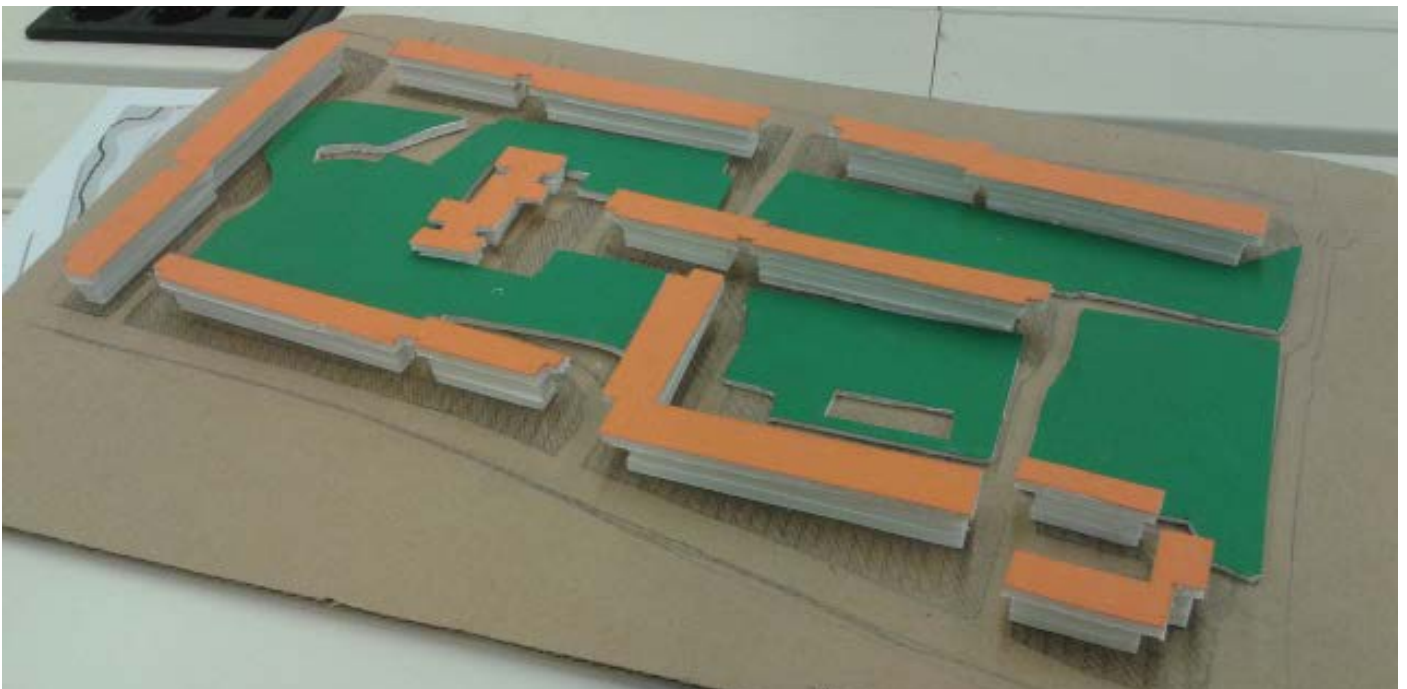
Setting X is literally the journeyed space between elements made up of some paths- concrete, paved, gravel or mud running through public areas or more hidden between buildings and largely un-kept grassy areas and nature strips.

School aged children and parents have many opportunities to interact as they move between home, school and the park on regular routes on a regular basis. People that have things in common, in this case, activities relating to the same elements, are more likely to interact.

## 3D scenario board

The 3D scenario board is a visual representation of the entire neighbourhood. This seemed like a logical first step because our focus is primarily on the area people travel between elements. Therefore, a broader picture is necessary before we have done the necessary research to know regular routes travelled etc my members of the community. In this way, we can analyse the routes people would take from their flat to the park, for example. Will they cross a park? Would they meet a lot of other people on the streets? Will they walk to their destination, or rather take a bike or car? This kind of questions pop up while researching the scenario board and can be answered by logical thinking and asking the residents of the Gillis district.

Our 3D scenario board includes living residence, streets, public nature strips, parks and the community centre.



# Subscenarios

## KINDERGARTEN/SCHOOL

1. Children use poles/lights for light to get home together with other children, if parents are late after work.
2. Pole/lights are used to guide children to/from kindergarten and are followed by the children in groups.
3. Children remember route to school by memorising colour pattern of flower poles together.
4. Children use pole as meeting point –meet parents/ siblings/friends.
5. Children that use specific poles to mark route home from school meet children doing the same thing from their neighbourhood on their way home.
6. Flowers create positive path between home and school (particularly for young children)
7. Children park bikes at poles before kinder/school provide opportunity for them to cycle home together.
8. Parents wait at poles (with seats) for children to finish at school/kinder and meet other parents doing the same things.
9. Poles used to mark bus route provide place for people to sit and wait together for bus.
10. Children learn about flowers/ when they bloom/ seasons from poles –visit different poles in the neighbourhood as a school group.

## PARK

1. Children use poles as drinking fountain, meeting other children while they wait/drink.
2. Poles create safe perimeter for playground.
3. Children hang bags at poles after school while they play at park.
4. Children park bikes at pole while they play at park then cycle home together.
5. Poles act as seats in playground for children/ teenagers to sit together..
6. Poles are used for playground games (eg: 40/40)
7. Poles provide colour to playgrounds making area more inviting
8. Poles keep play areas lit after dark so that children may continue playing.
9. Poles attract inhabitants to live near them, enjoy their colour.
10. Poles used by teenage age kids to 'hang' by.
11. Different colour flowers represent different pole uses (seat, bin, fountain...)
12. Children may enjoy planning to and decorating poles for festive seasons.
13. Poles give adults places to rest while children play.
14. Children enjoy taking care of flowers (pump).
15. Pole lights activated by movement when people

approach them.

16. Different types of contact with the poles active their light differently so that children enjoy discovering this together.

## HOUSES

1. Poles add colour to neighbourhoods attracting groups to live nearby.
2. Habitants can have input into deciding colour scheme of their neighbourhood.
3. Poles mark different sections of neighbourhood.
4. Flower baskets can also be used to decorate houses
5. Flower baskets can be used to mark houses.
6. Poles decorate house area in festive/seasonal way.
7. Poles keep neighbourhood areas well lit.
8. Neighbourhoods become responsible for keeping flowers healthy.
9. Flowers make neighbourhood a more inviting area for new inhabitants.
10. Poles act as meeting spot for community gatherings, parents group etc.

The three sub-scenarios developed deal with two target groups - parents and children - and focuses on general, everyday travel between key elements. Combined brief sub-scenarios and developed them to make them more personable, providing a greater scope for social understanding.

## PARK

Michael's mum works late so after school he goes to the park to play and waits for her. He hangs his bag up at the hook attached to the flower pole and ends up sharing the hook with Jon. After meeting this way Jon introduces Michael to his friends and all together they play hide and seek using the poles as home bases to run between.

Every day after work Judy goes to the park to pick up her son Michael as she finishes work too late to pick him up from school. Michael is having such a nice time playing with the other children he has met at the park that she decides to wait a while. She pulls out a seat rest from the flower pole and gets talking to Henry's mum who is doing the same thing. The mothers talk, realise their sons are playing together and arrange a play-date together.

Sam and his friends used to love playing at the park when they were younger, but now as teenagers they feel they have out-grown it. They used to roam the streets but have now discovered that the flower poles have lights that can be activated by touching them or running past them. Sam and his friends have invented many games that use these poles. This has also made Sam's mum Tina happy because she knows her son is in one area playing rather than wandering the streets after dark.

## SCHOOL

Katherine has just started school and is still a bit nervous travelling to and from by herself. She has made a game using the poles with hanging flower baskets that make a path between the two elements and follows specific colours to help navigate her route. She notices a boy Henry takes the same route as they live in the same building. Soon they are walking together and now Katherine enjoys the travel period to school and has someone to play with from her building.

Jenny's class have been learning about seasons by watching the flowers in the pole near her school. As a class they go on outings to look at the different flowers, learning about when they bloom and what needs to be done to take care of them.

Ittay cycles to and from primary school. He locks his bike up at the flower pole bike-stand near his classroom and so does Rahel. Though shy at first eventually he asks Rahel about her bike and they realise they share a love of cycling and make plans to go on a ride together that weekend.

## HOME

Dion and Cali live two flats down from one another. They met just over a month ago after the new flower poles were put in because they were both so excited to have the opportunity to take care of the flowers. Still, every few mornings they run down to have a look whether the dial on the side of the pole indicates that the flowers are running low on water and therefore they should pump some water for it. This activity has introduced them to several other kids in the flats close to them who also share the responsibility of taking care of the flowers near to them.

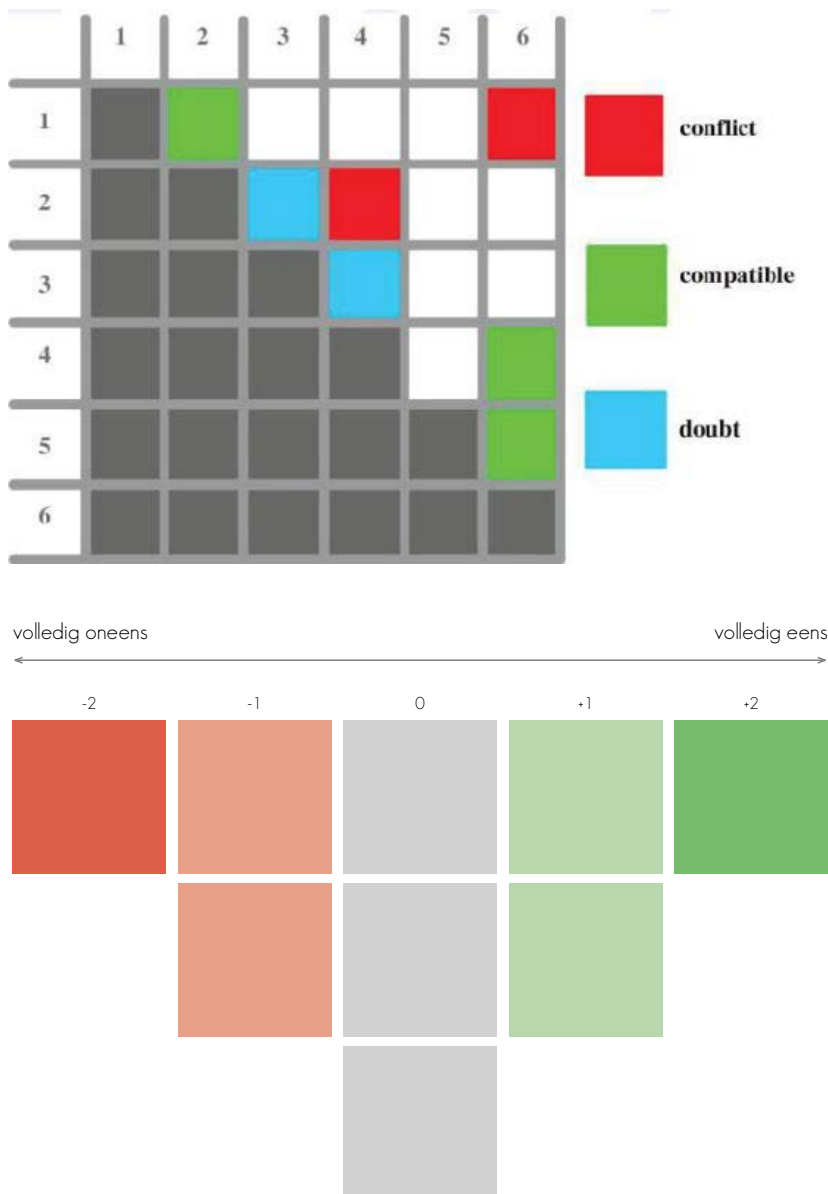
Alessa and her family moved to Gillis just over six months ago. She was hesitant at first not hearing such good things about the neighbourhood. When she arrived she was pleased to see so much colour, with the streets lined with flower poles that also shined in the night making interesting shadows. She was sent a flyer to meet at the pole the following day to discuss with those living near to her what flowers would be chosen for the winter season, also giving her a chance to meet her neighbours.

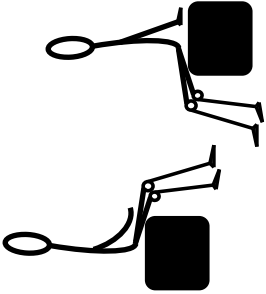
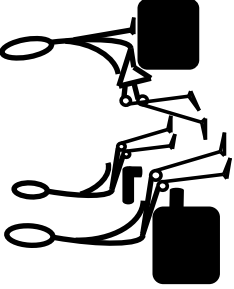
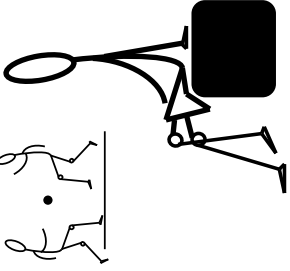
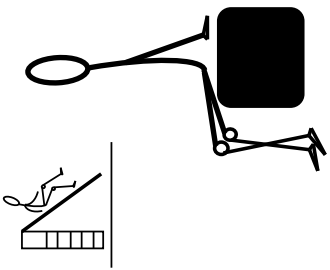
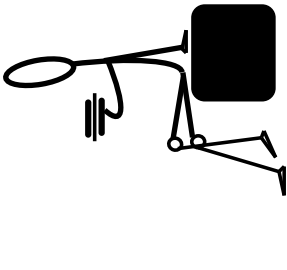
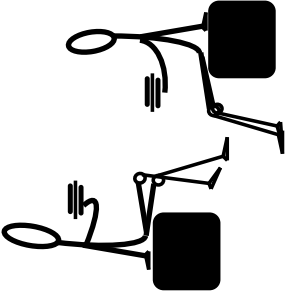
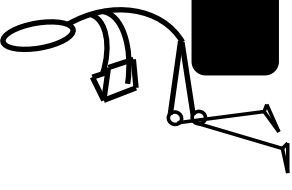
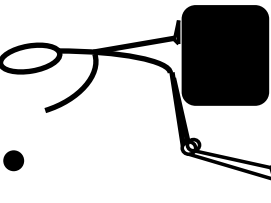
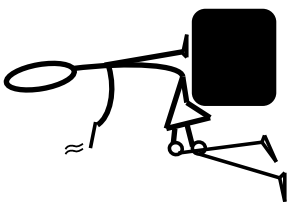
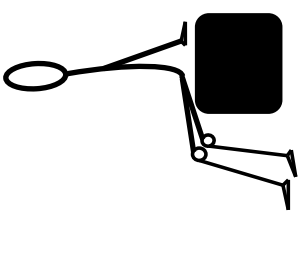
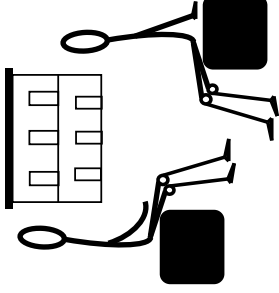
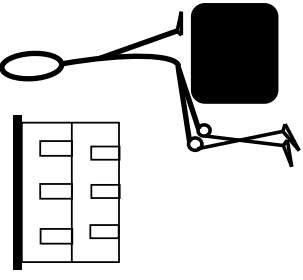
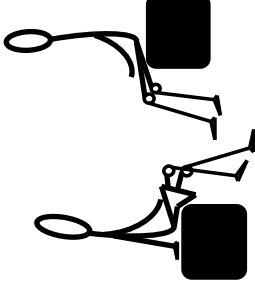
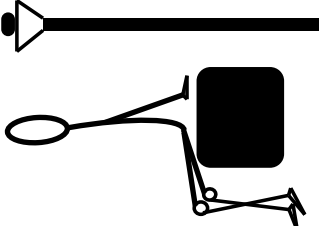
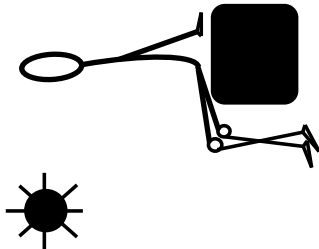
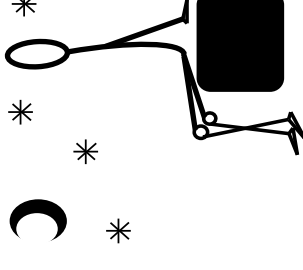
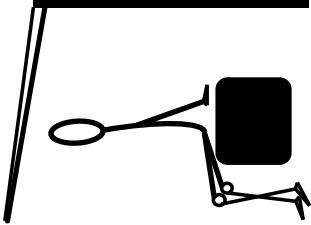
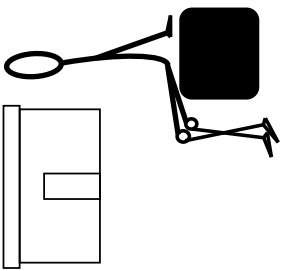
For the last few years Igor has had trouble getting to sleep at night. This is because a new group of teenagers have taken to hanging out by the light near houses and making noise until very late. Recently however this has stopped with the introduction of the flower poles. These have provided a new lit area for teenagers to hang out after hours away from houses so that Igor who is old can now get to sleep at a time that suits him.

# Matrix tool and Q board

We used this tool to gain insight to determine whether promising combinations could be achieved when combining sub-scenarios. The tool was effective in helping us combine various sub-scenario features to help us gain new insights about the way each of the characters would behave in a slightly different context. To realise and accurately predict actor behaviour and outcomes, the social science students from Leiden and Utrecht were able to offer insights.

New scenario combinations that we created helped us to both develop our characters (scenario actors) and context, leading towards a more realistic expectation for social behaviour within a more understood area.



 <p>met een vriend(in) zitten</p>	 <p>met mijn familie zitten</p>	 <p>zitten en naar mijn kinderen kijken</p>	 <p>bij het park zitten</p>	 <p>zitten en eten</p>	 <p>zitten en met iemand eten</p>
 <p>Zitten en lezen</p>	 <p>Zitten en een spelletje spelen</p>	 <p>Zitten en uitrusten</p>	 <p>in mijn eenje zitten</p>	 <p>zitten met mijn buurman</p>	 <p>voor de flat zitten</p>
 <p>met z'n tweeën zitten</p>	 <p>bij een lamp zitten</p>	 <p>in de zon zitten</p>	 <p>in de avond buiten zitten</p>	 <p>onder een afdakje zitten</p>	 <p>voor de school zitten</p>

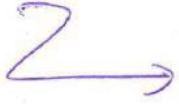
Conclusively, there is potential for greater social cohesion if people are given reason to stay and linger in the space between apartments where there is already much foot traffic. Therefore, the development of street furniture could serve as a touch point, to give residents the chance to stop briefly; a pause that might allow a short hello to be extended to include “how are you?”. As Beate Völker explains, seeing neighbors around is the first step towards social cohesion.

Several design opportunities can now be considered following the interviews in the Gillis district. An overview of these opportunities has been listed below.

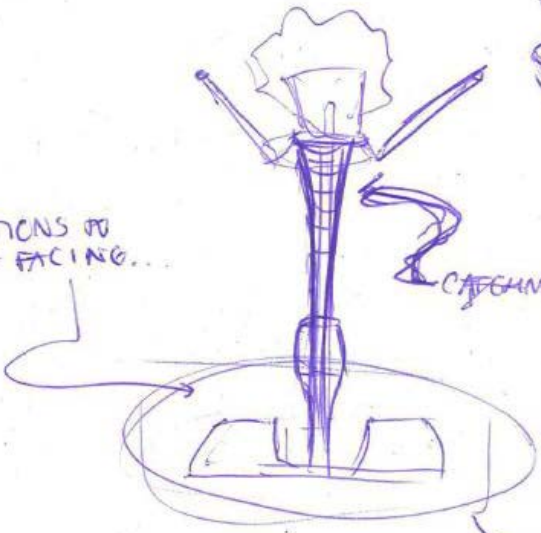
1. Inclusion of flowers to provide life and break up the dull landscape, improving the overall look and appeal of the space.
2. More seating areas to eat in summer, raised platform for a BBQ.
3. The general look and therefore appeal of the area could be improved with This inclusion of colourful street furniture, different sizes, shapes etc to improve the general look and feel and add an element of playfulness and excitement.
4. Board-games painted on street furniture might attract people towards using the furniture for a particular use. These could be easily maintained and versatile enough to change if requested.
5. In summertime, when the days get longer and nights warmer the presence of ambient lighting might encourage people, to stay and spend time together. With BBQs, etc already happening, ambient lighting may keep people out after the meal has been finished to engage for longer.
6. Seating/street furniture spread out more might encourage larger and broader groups of people getting together.
7. Many people walking dogs might benefit from seats to rest and watch their pets, as well as plastic baggies on poles to pick up after them. In addition, encouraging people to take care and feel pride in the area.)
8. The area in general, though green, still looks dull, especially play equipment in park. Bright street furniture could break up the dullness and together with flowers, add some colour and life into the neighborhood.



LEANING



OPTIONS TO SIT FACING...



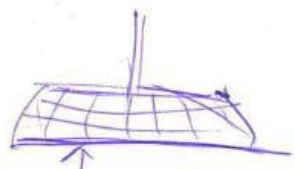
CAPTUREMENT



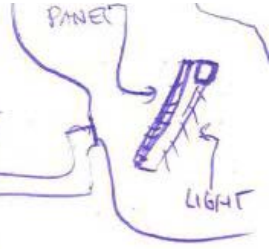
LEDS

SOLAR PANELS + SHELTER

ANGLED TO CATCH WATER



STORAGE FOR WATER

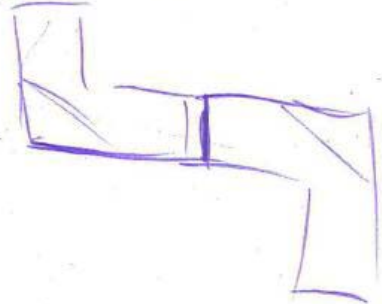
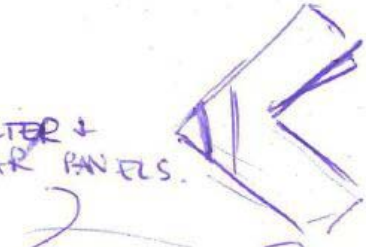


PANEL

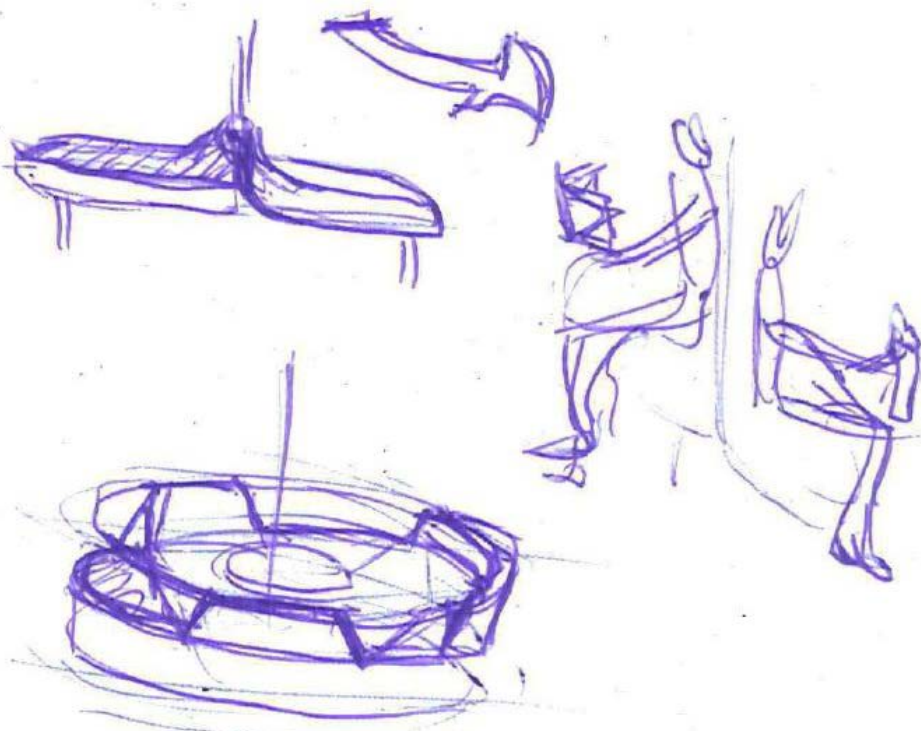
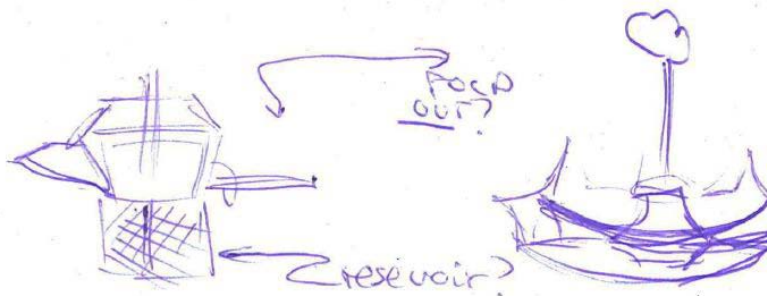
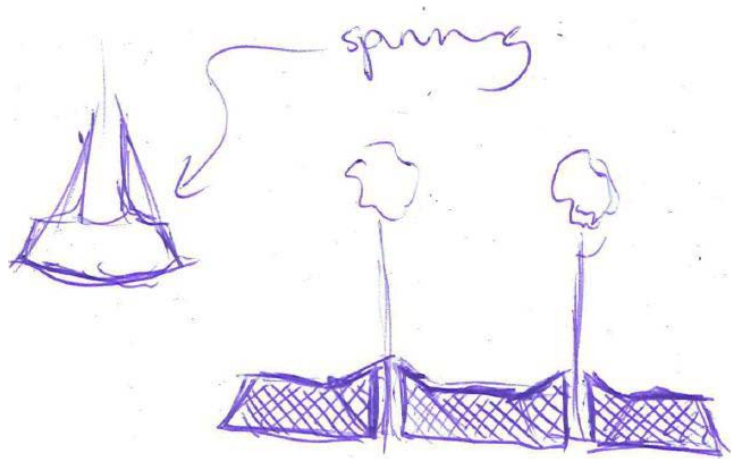
LIGHT

TWIST TO DIFFERENT CONFIGURATIONS

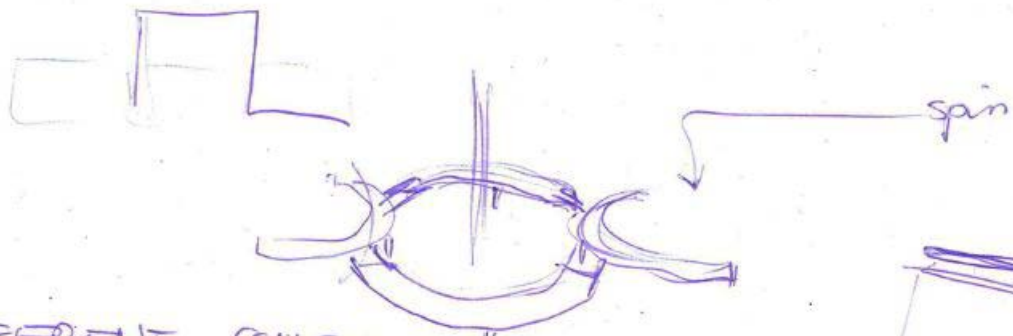
SHELTER + SOLAR PANELS



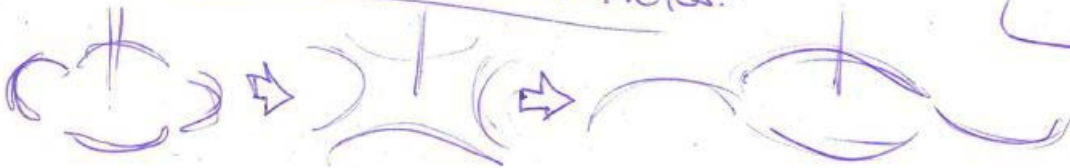
LEDS



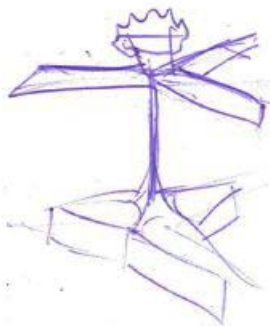
sitting  
in &  
out



DIFFERENT CONFIGURATIONS.



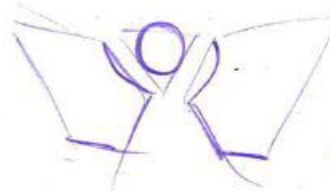
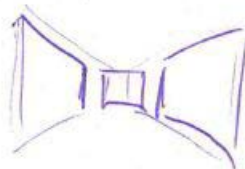
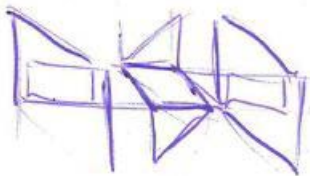
move/spin → different orientations.  
 seats → like flower petals.



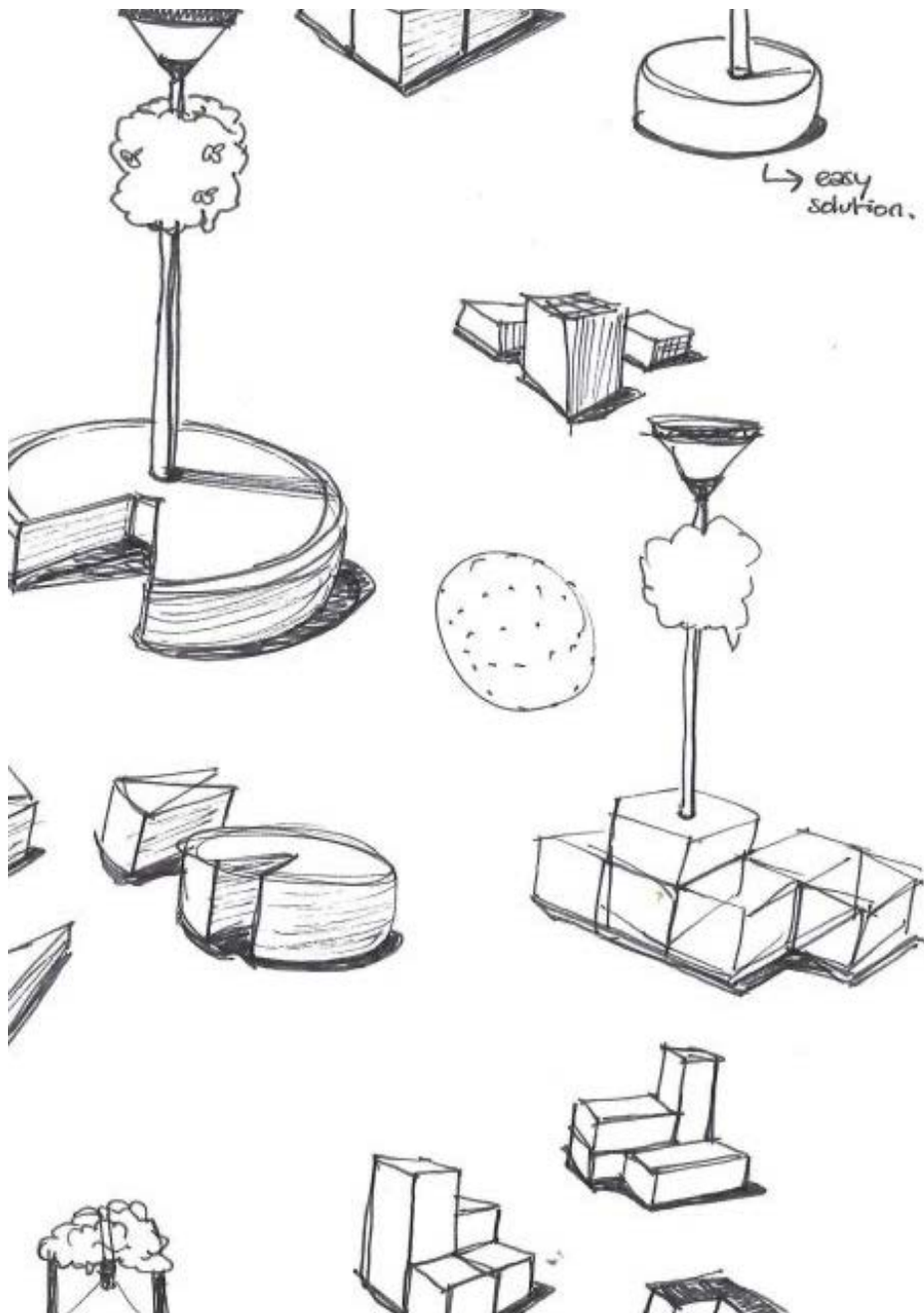
SEAT & PANELS  
 & COVERS

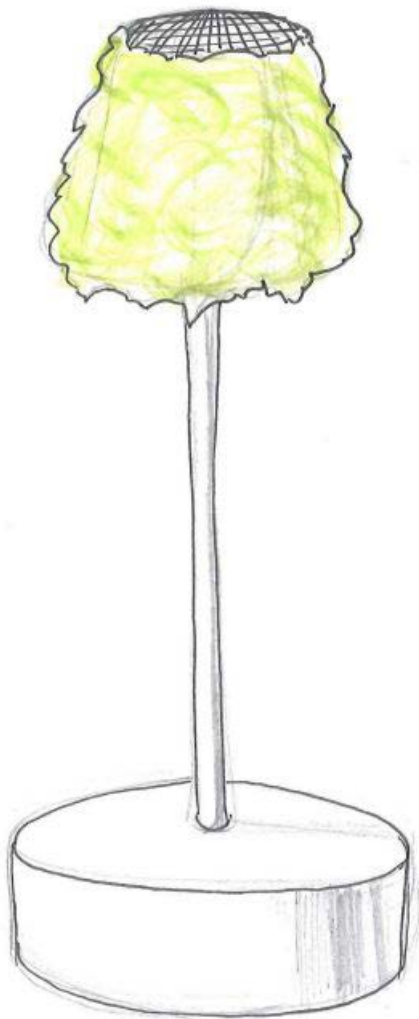
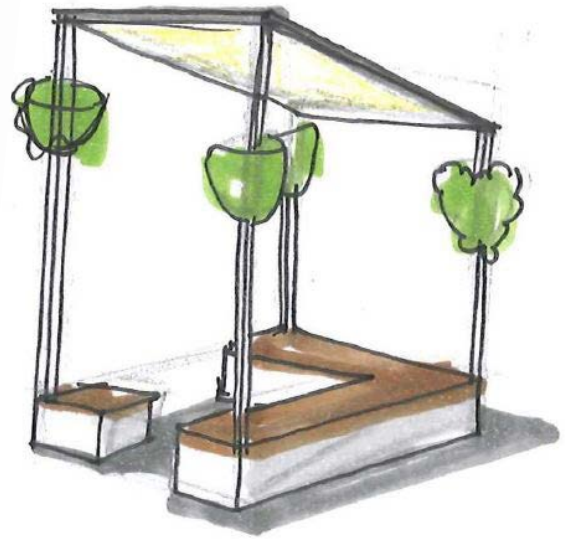
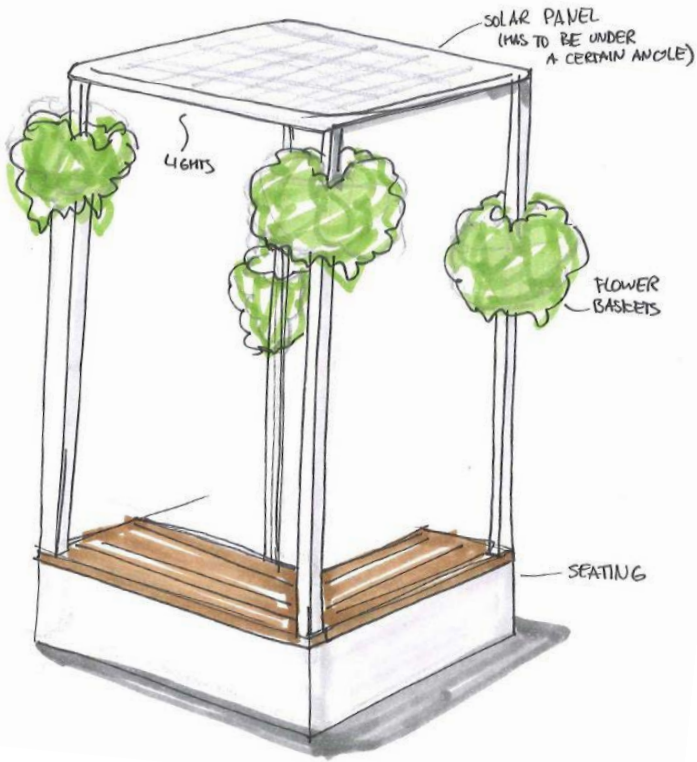


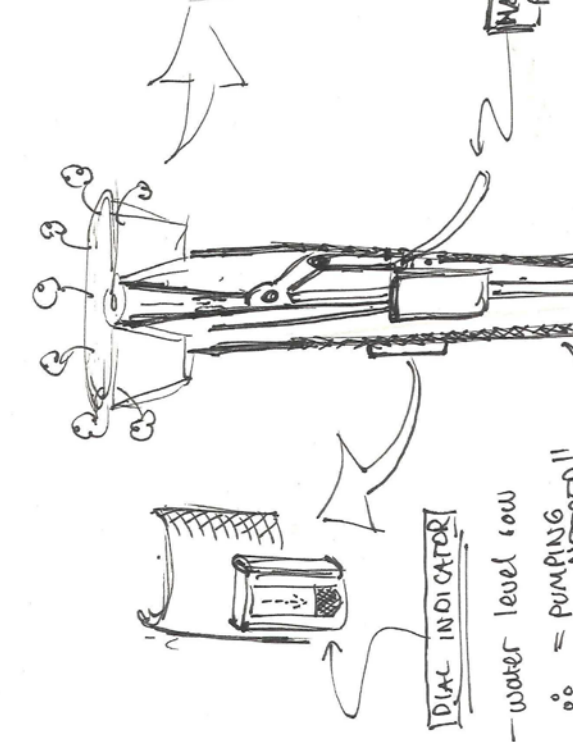
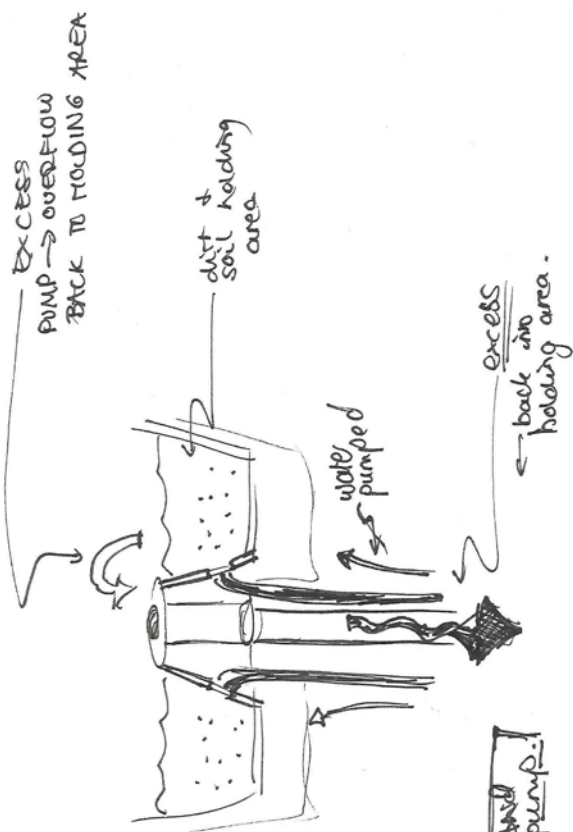
SEPARATE  
 MODULES.



SPIN







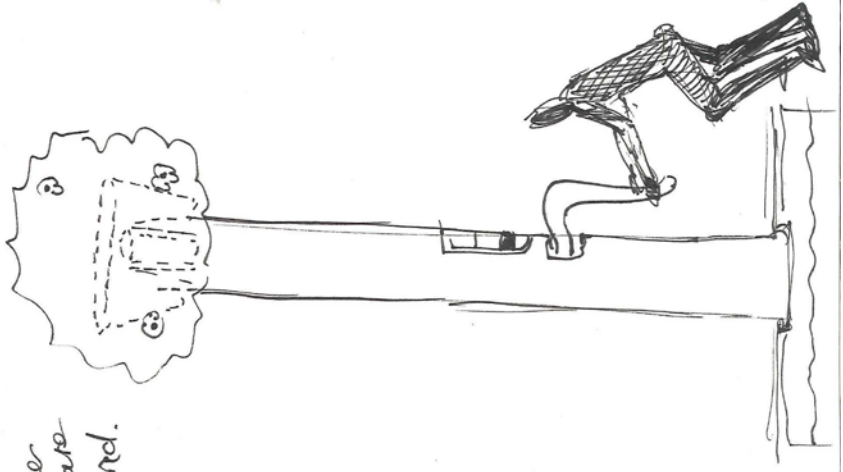
**HOLDING AREA**  
 potential for larger holding area for water protected underground.

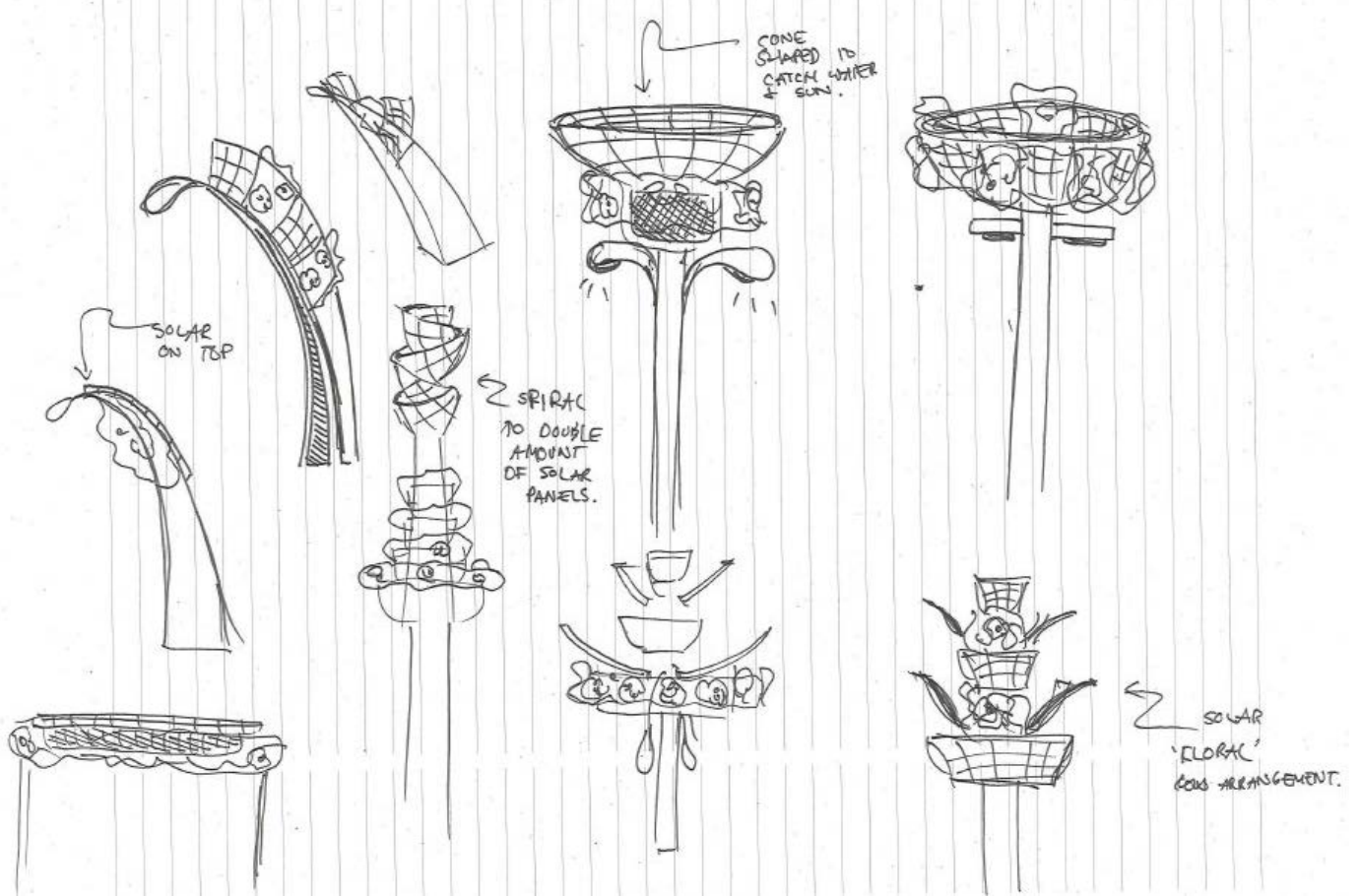
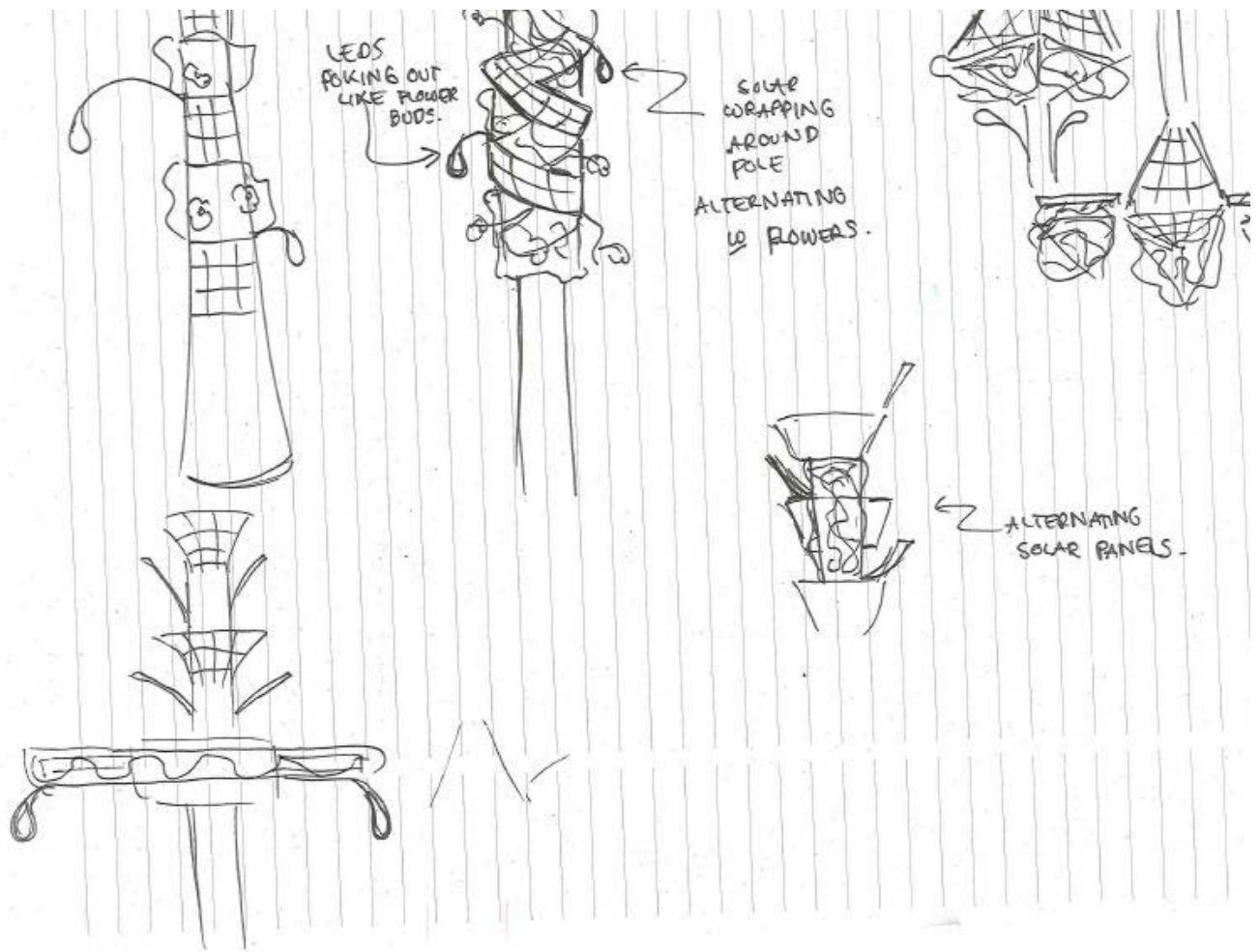
POTENTIAL CONNECT TO PUMPING  
 ∴ SELF SUFFICIENT

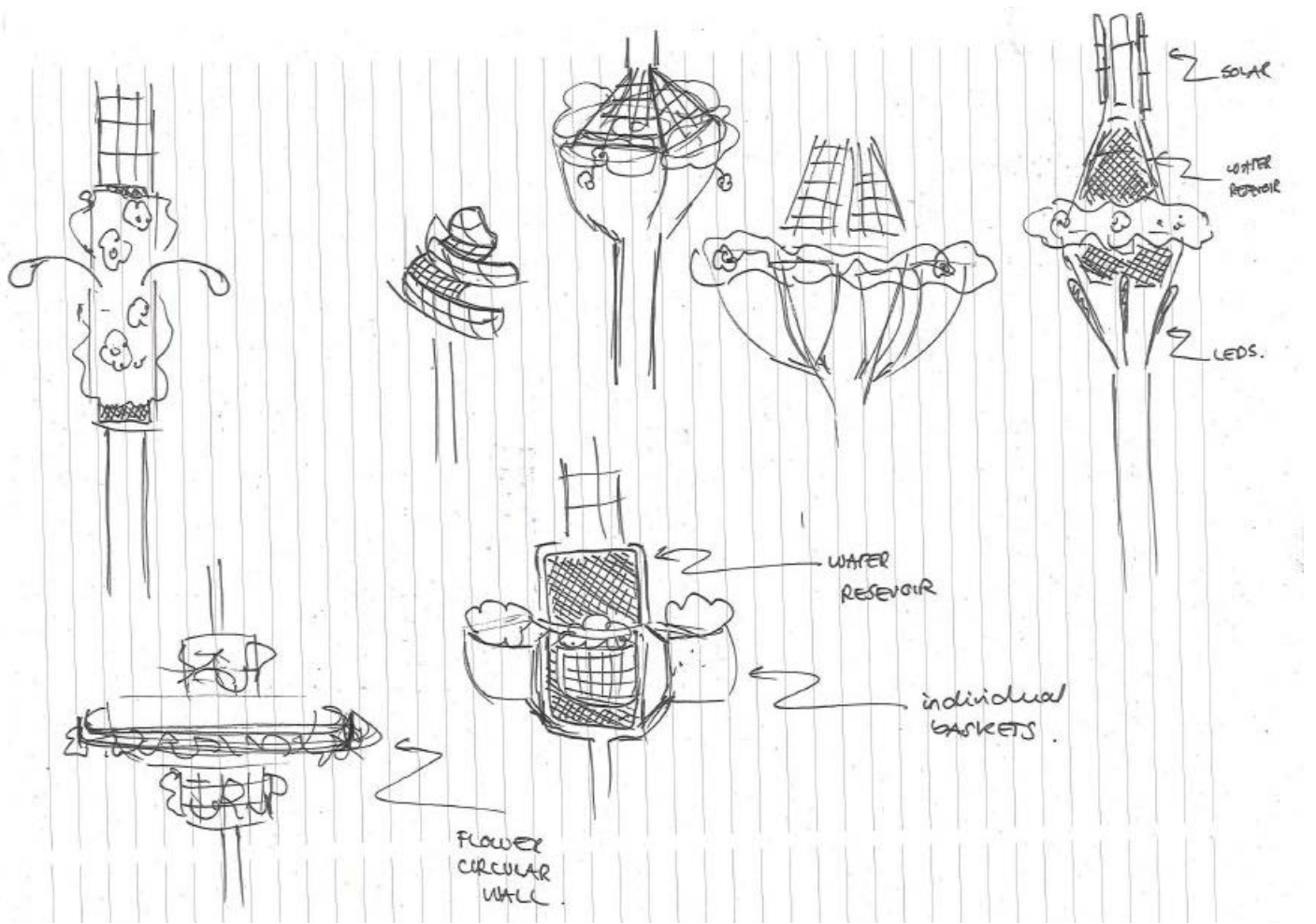
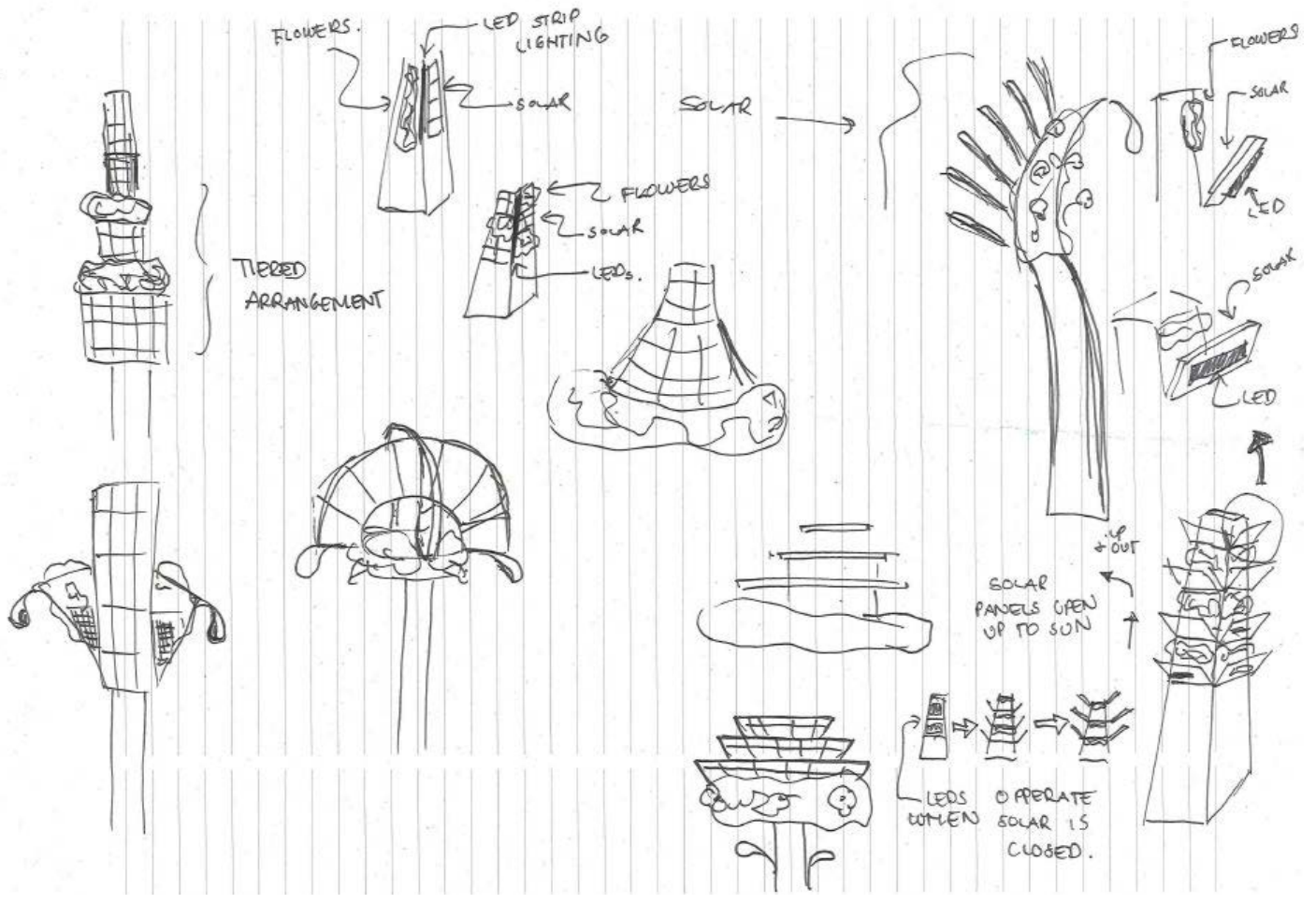
**DIAL INDICATOR**  
 - water level low  
 ∴ = PUMPING NEEDED!!

TRANSLUCENT MATERIAL  
 ← WATCH WATER GO UP/DOWN

ENSURE WATER LEVEL ALWAYS FULL → SEN COURAGE PUMPING "REWARD"  
 - POSITIVE "REWARD"





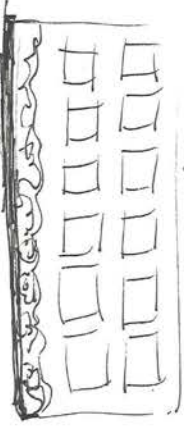




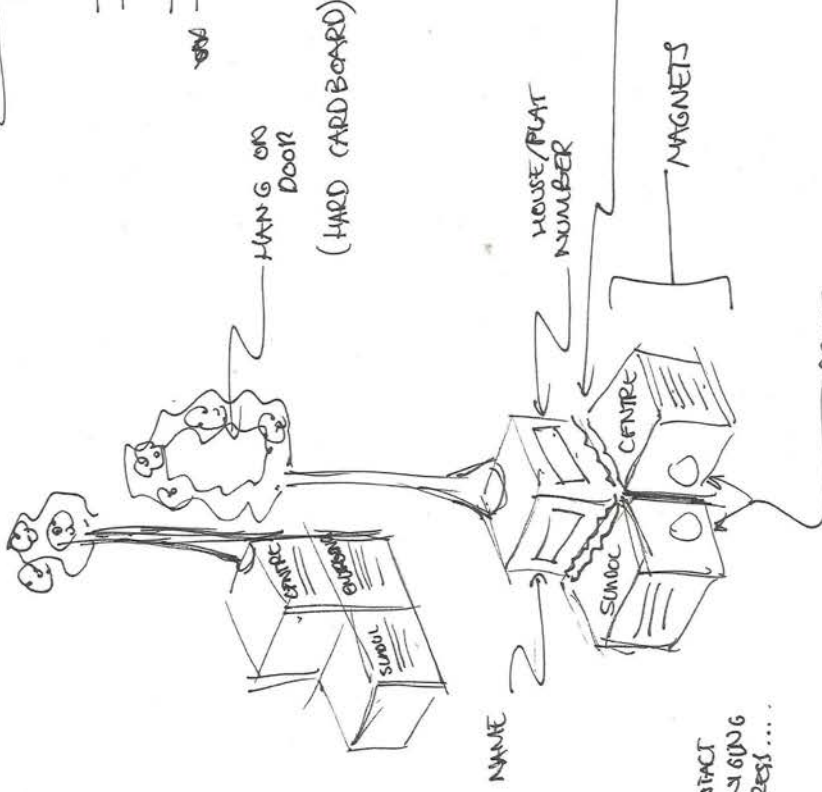


### SCHOOL OR COMMUNITY PROJECT

→ MAKE A CALENDAR FOR NEIGHBOURHOOD.



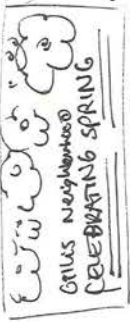
- MAGNET CALENDAR FOR REMINDING
- COMMUNITY EVENT
  - BIRTHDAY FEUDERS.
  - SEASONS
  - FESTIVALS (CULTURAL AWARENESS)



← KIDS DECORATE ??

← PEEKS OPEN UP COMMUNITY INFORMATION.

### INVITATION TO "OPENING"

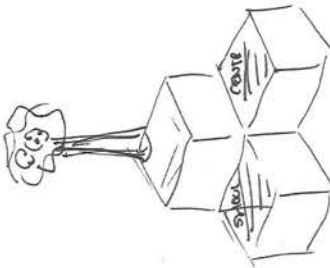


DETAILS

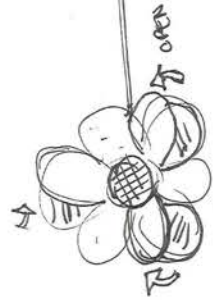
EVERYONE RECEIVES ONE! (IN GILLIS)

BADGE COMMUNITY BELONGING

ONE LEAF FLOWERS



NAME CONTACT OPENING ADDRESS...



WIRE/STICK  
FAMILIES CAN PLACE IN HOME - AWAY HAVE A "BLOOM"

## Costing

### **Costing**

40€ per cubic meter of concrete

20 Watt panel, need 5:1 ratio for lighting needs, therefore  
100 Watt solar panel, ordered in bulk of minimum order of  
100 at cost of 1€ per panel = 100€

40 amphr battery =100€

Control charger to control the charge between the solar  
panel and the battery = 250€

Wiring approximate cost = 200€

Light sensor (activated by light to turn off during the day  
and on at night) = 50€

Wood panel 400 x 400 x 30 = 40€

polyurethane waterproof coat, min order 1 ton = .8€- 2.2€

Flower baskets priced at approximately 200 euros per unit.

mild steel sheet 4mm thick 1000mm x 1000mm = \$86.5€

100watt lighting LED panel = 8€

Magnetic paint 3.8L = 75€

### **Event:**

Food, drink 200euro

Other:100euro

Printing promotion: 200 euro

Promotional magnets 47 x 72mm, for 1000 =16c per ma-  
gent

<http://www.servicemagic.com>

[http://www.alibaba.com/showroom/polyurethane-coating.  
html](http://www.alibaba.com/showroom/polyurethane-coating.html)

[http://www.metalhalidewholesale.com/square\\_pole\\_pric-  
ing](http://www.metalhalidewholesale.com/square_pole_pricing)

## FOCUS ON: SEASONAL ACTIVITIES!!

Centred around outdoor floral seating = Backdrop for community activities.

Street furniture acts as a trigger to encourage more activities in public places in the neighbourhood.

Structured around and inspired by the seasons

Encourage regular activity in the Gillis

Create 4 annual events (one for each season) Eg...

1. Spring: Harvest
2. Summer picnic and music in the Gardens
3. Autumn: Gillis Market
4. Games tournament evening.\*

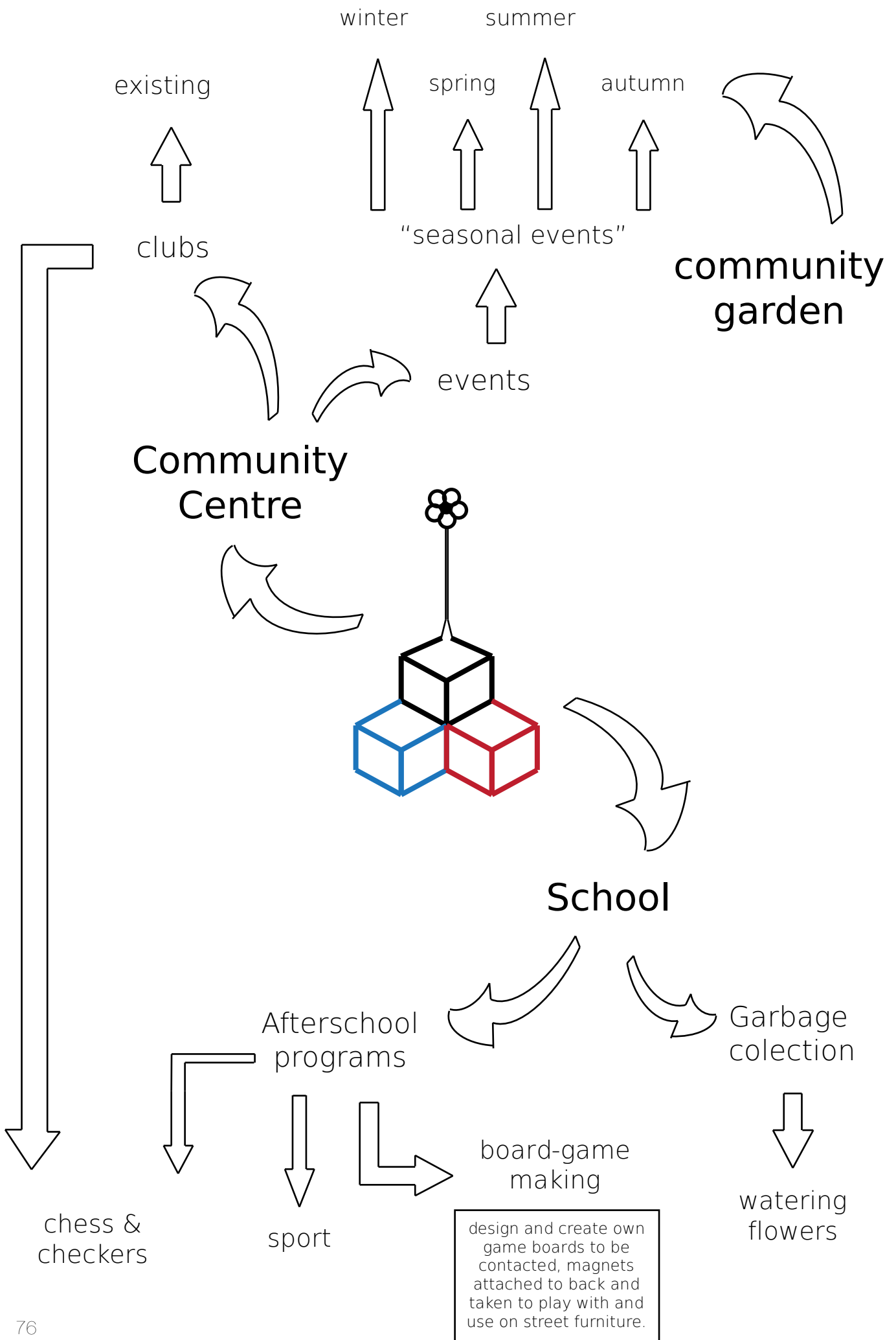
- Will only work if organised by specific members/ groups in the community
- To be included on a calendar.
- Magnet / flier/ promotional material to advertise events at the opening of street furniture.

### EVENT IDEAS:

Seasonal games evening

= Outside evening of games set up by afterschool program / community centre

- Use rolled up handmade game boards on blocks
- Also involve using the monthly seasonal produce from community garden.
- " Eat – Relax – Play"



## Material research

### Option 1 - Fiberglass

Examples: (colourful, durable, modular)

[http://www.suigeneris.co.uk/grp\\_seating/sgf106\\_cube\\_modular\\_seating.html](http://www.suigeneris.co.uk/grp_seating/sgf106_cube_modular_seating.html)

#### Advantages:

- Beautiful finish
- Durable, long lasting!
- Multitude of colours
- easily be moulded
- Hard, mechanical strength
- good electrical insulator
- weatherproof

#### Disadvantages:

- anti-magnetic
- Expensive
- High maintenance level (gel coated every 5 years)

### Option 2 - Plastic

Polyethylene:

- MDPE (Medium Density Polyethylene)
- Rotational moulding technique can create a light and hollow structure.
- Product has great durability.
- Can be filled to weigh it down.

### Option 3 - concrete

#### Advantages:

- Durable
- Low maintenance
- Weatherproof
- Easily moulded
- Cheap
- Can adhere to a finish/ plastic sheet cover

#### Disadvantages:

- Less attractive finish
- Less pleasant to sit on
- Will need a finish to complete our look.
- Finishes may need maintenance.
- Finishes will add to price, may be less durable

Dying concrete:

<http://www.uniqrete.ie/concrete-street-furniture#/Died-Finish/>

- Can be coloured stained and stamped.
- Iron oxide power dyes are most common.
- Can be applied to whole batch in liquid form (mass produced)

- Can also be dyed using powder only applied to surface.
- This is mixed with concrete making the outer layer harder and more durable.
- This is cheap but installers need to be experienced.
- Can also be dyed after it has cured
- This is more suitable for indoor applications.

Beton cire finish:

- Thin overlay material with very good durability.
- Leaves attractive shiny but uneven finish
- Comfortable finish for seating

Acid stained finish

Glass Fibre Reinforced Concrete (GFRC)

- Shares many of the same characteristics as normal concrete
- incredibly durable
- gets stronger as it ages
- extremely economical material on the front end
- recyclable on the back end
- won't burn, splinter or rot

King, Stephen (2011) creating imaginative playgrounds with concrete. Landscape structures.

[http://www.playlsi.com/Explore-Products/ParkThemes/concrete/Documents/ConcreteReprint\\_web.pdf](http://www.playlsi.com/Explore-Products/ParkThemes/concrete/Documents/ConcreteReprint_web.pdf) Sourced 18/3

Sandblasting and powder-coating.

### Option 4 - Metal

- Steel
- RECYCLED STEEL
- <http://www.designspotter.com/product/2010/07/Strip-Ease.html>
- STAINLESS STEEL
- Cast iron

Finishes:

- Plastic-coated finishes
- synthetically made and good
- prevent rusting or the metal changing color from air exposure.
- As strong as paint finishes
- Don't hold up as well as electroplated finishes.
- 
- Paint finishes are
- for both steel and aluminium furniture
- easily scratches and rusts