



assisted living

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AR0550 Urban Design
TU DELFT

assisted living

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assisted living

theme

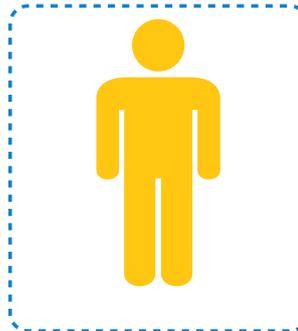
Site

why elderly?

Why we need to consider elderly when designing a neighbourhood?

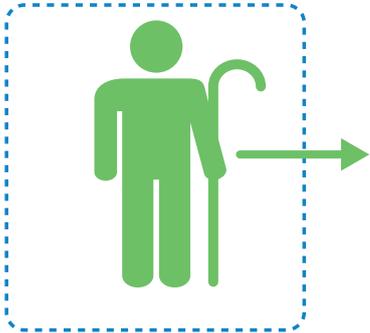


Why can't we just designing neighbourhood for young people?



why elderly?

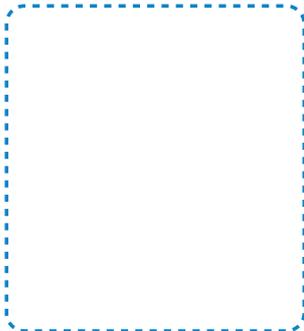
Site



Because the **young** will **become elderly** as well

If we do not make area which is suitable for them

They will **move out** from the neighbourhood

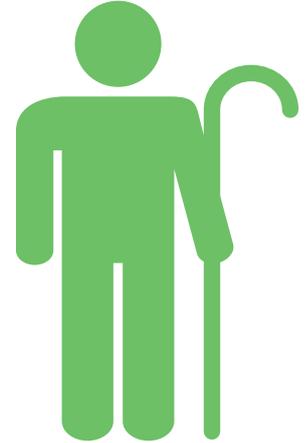


The neighbourhood can be **empty**

Site

why elderly?

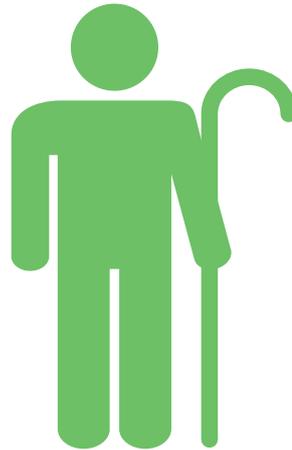
It is more **sustainable** to make a neighbourhood which is **considering elderly**



sustainable

why elderly?

Site

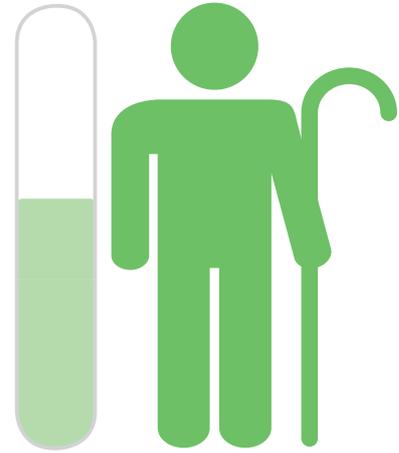
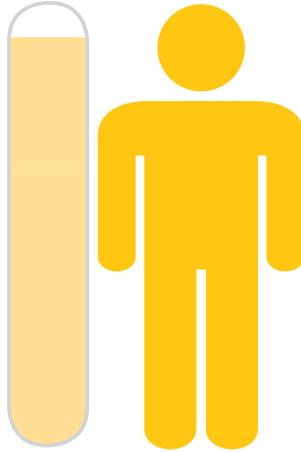


Since we need to include elderly into account, we need to know **who** are the **elderly** ?
why we considering them to be **different**?

why they are different?

Site

The main reason which make the **different** between **elderly** and **young** people is their **independency**



independency

independency level

independency

Site



independency



mobility



facilities

When people are getting **old**, their **independency** is **lesser**

They have **less mobility**

They need **more facilities**

based on **independency**, elderly people will be divided into 3 groups :

- **independent**
- **part dependent**
- **dependent**

Site

activities

- meeting people
- activities with less physical work
- active in social life (teaching small children, baby sitting)

significant for them

- accessible street
- meeting place

independent group



picture 1.1.independent elderly
source: gettyimages.com



picture 1.2.independent elderly
source: gettyimages.com



picture 1.3.good pedestrian
source: gettyimages.com



picture1-4.lively meeting place
source: gettyimages.com



Area of life independent

1000 m

oudcharlois (and bigger)

picture 1.5. 1000m -area of independent elderly

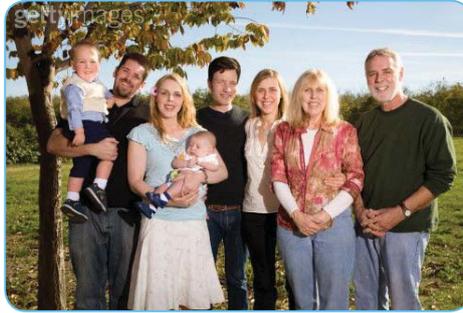
Site

activities

- interact with **family** members, **close friends** or small children
- activities that do **not** have **much physical** activity and which are **within** the **complex**(play table games, painting, reading)
- **not** much **active** in **social life**

significant for part dependent

- **accessible neighbourhood**
- **near to facilities**



picture 1.6.elderly and family
source:gettyimages.com

part dependent group



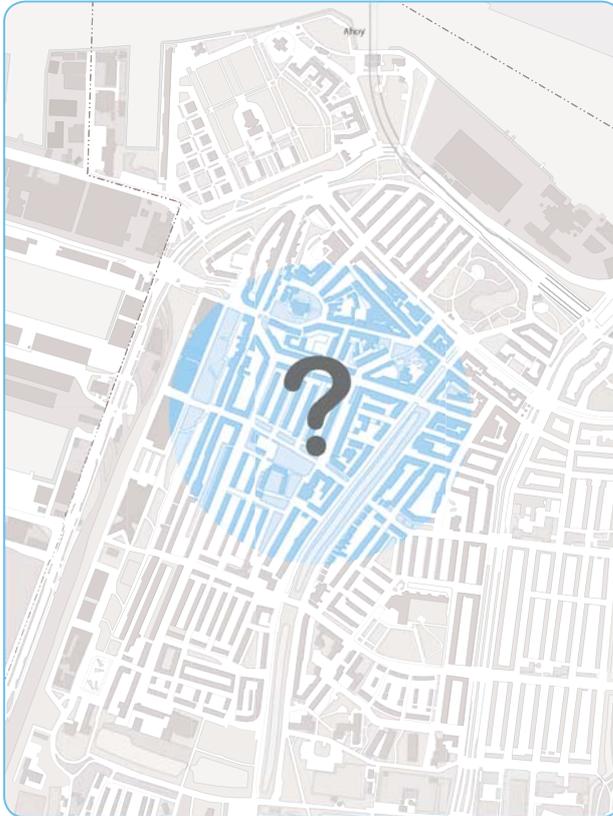
picture 1.7.elderly and close friends
source:gettyimages.com



picture 1.8.good pedestrian
source:gettyimages.com

part dependent group

Site



Area of life
part dependent

500 m

area in the city which is close to
all facilities

picture 1.9. 500m -area of part dependent elderly

Site

activities

- they have **no** physical strenght or any will for any **activity** or much **social interaction**
- mostly interested in listening to **music**, **knitting**, talking to small **children**

significant for dependent

- **accessible buildings**
- **near/ combine** with **kid facilities**

dependent group



picture 1.10.bad pedestrian



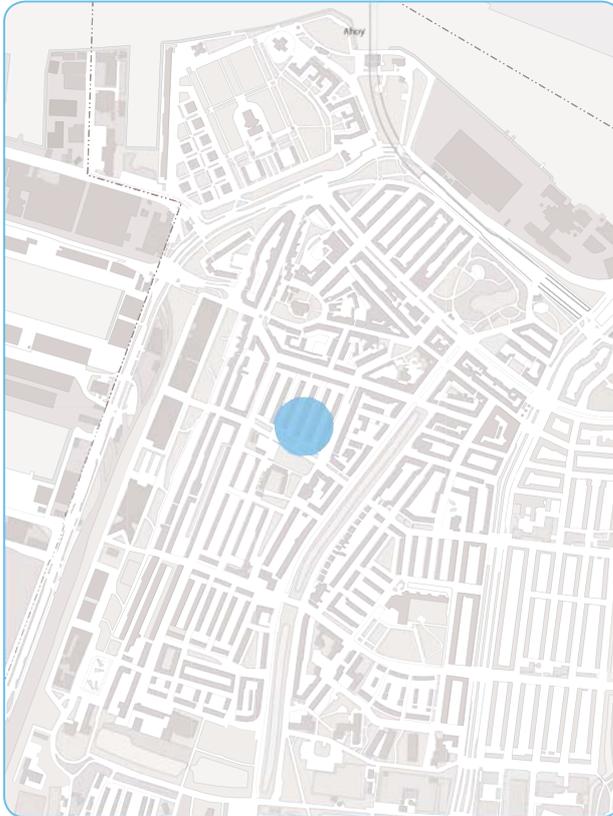
picture 1.11.bad pedestrian



picture 1.12.bad pedestrian



picture 1.13.bad pedestrian



Area of life
dependent

0-50 m

senior housing (building) for
dependent people

picture 1.14. 50m -area of dependent elderly

assisted living

focus

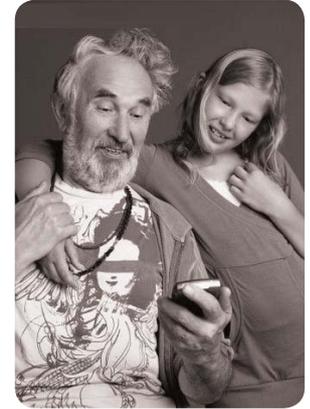
Site

The design of this area will be more **focus** for **part - dependent** group.

In the society kids are also considered as part dependent.

There is a beneficial **relationship** between **elderly** and **kids**.

Based on that reason, in designing this area, there's consideration to combine elderly and kid facilities.



picture 2.1.elderly and kids
source : gettyimages.com

elderly and kids

Intergenerational programs are related to an increase in children's academic performance as well as an increase in positive social behavior (Friedman, 2002)

Intergenerational programs increase senior citizens' sense of connection to others while maintaining their self-esteem (Fees & Berg 2002)

optimal area



legend

- 300 m radius elderly facilities
- health and care
- sports
- schools
- culture and clubs

picture 2.2. optimal area for elderly



legend

- 300 m radius from kid facilities
- schools
- least transport area

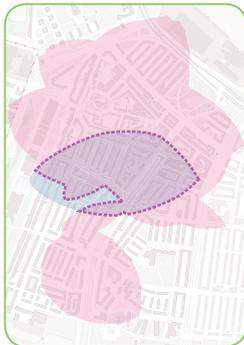
picture 2.3. optimal area for kids

This diagrams show optimal area in oud charlois for elderly and kids.

picture 2.2 is showing the optimal area for **elderly**

picture 2.3 is showing the optimal area for **kids**

picture 2.4 is showing the overlaid area. it means this area is the optimal area for **elderly and kids**.



legend

- optimum area - kids facilities
- optimum area - elderly facilities
- overlaid area

picture 2.4. optimal area for elderly and kids

assisted living

site

Site

Zoom in to the location, the area which is chosen is residential area near the old city.

The location is strategic since it near to school and playground.

This area has the highest vacant buildings in this area and it's leading to violence

optimal area - zoom in



picture 3.1.vacancy
source: AR2U080 booklet -spring 2009



picture 3.2.violence
source: AR2U080 booklet -spring 2009



picture 3.3.existing houses



picture 3.4.school



picture 3.5.playground



picture 3.6.house with bad condition



picture 3.7.empty building

Bad image

The vacant area also make this area have bad image. Especially if we compare to old city nearby.

Site

area condition

Bad Pedestrian

There are a lot of area which is not accessible/ safe.

- **high sidewalk**

even this high sidewalk have a purpose to divide the car and pedestrian area, but this sidewalk become **obstacle** for pedestrian.

- **high barrier**

this barrier make people who's in street feel **unsafe**

- **many cars are parking in the street**

this condition make the pedestrian condition become **worst**



picture 3.8.high barrier



picture 3.9. cars parking in the street



picture 3.10.high sidewalks and sign as obstacle



picture 3.11.un-used bench, dead space



picture 3.12.dead green space

'dead' green space

Green space suppose to be area where people can meet together.

Green space suppose to be lively.

That's **not** the case in **this area**. In this area the green space is **dull**, there's **no vitality** there.



picture 3.13.unused pedestrian



picture 3.14. unused (almost unseen) green

assisted living

design

Site

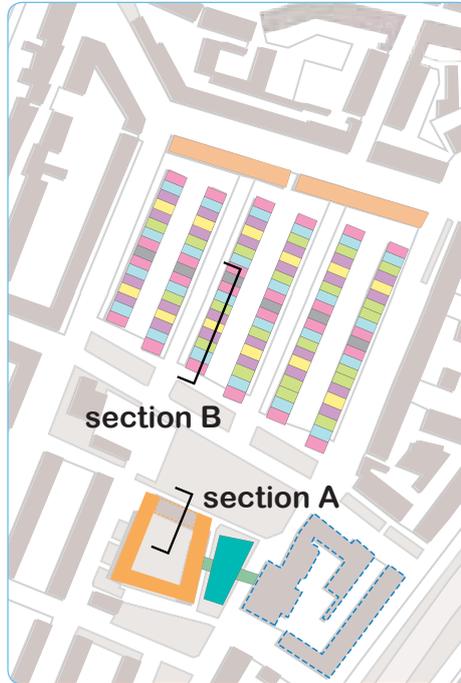
typology

It is **more sustainable** (in terms of **social**) to have **mix age** in 1 area.

Considering the existing house and sustainability, the picture 4.1 is showing the regenerated plan of this area.

There will be elderly people, students, family who stay in this area.

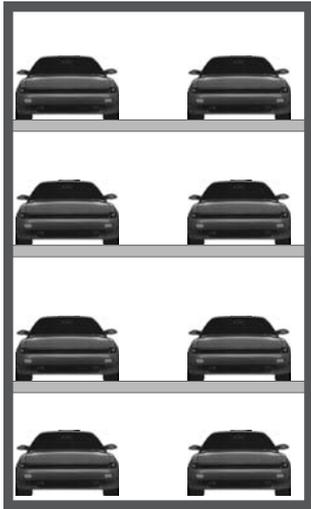
Empty building in the south part will be converted into senior house for dependent elderly. It'll be combined with facilities for elderly and kids.



legend

- sheltered housing
- elderly housing+relative
- relative
- student
- multistorey carpark
- elderly house near relative
- apartment (elderly + other society)
- school
- senior house (dependent)
- library
- connection to library

picture 4.1.plan



Picture 4.2. is showing typology section of the kangaroo house regeneration.

There will be **multistorey** carpark to make the pedestrian.

picture 4.4 showing combination of **elderly house** and **day care for kids**.

Site

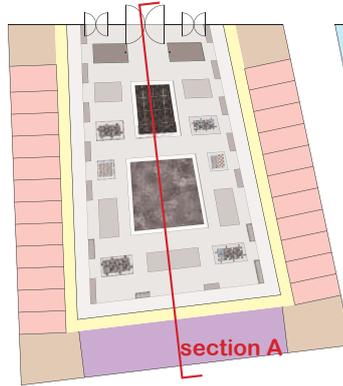
typology

South part senior house will be a 4 storey buildings.

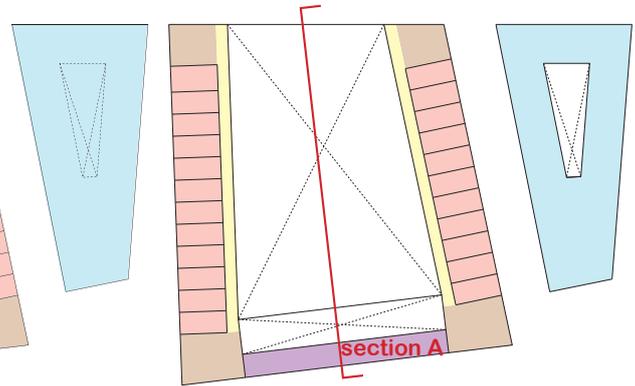
This senior house is located just behind the playground.

There will be big **facilities** at groundfloor that can be used by **elderly and kids** to do **activities** together. (cooking together, reading together etc).

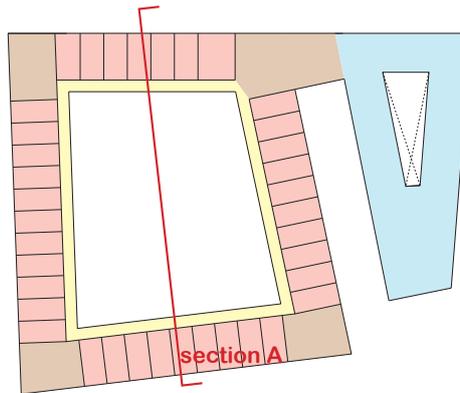
It can be used also for **daycare** by elderly



picture 4.5. senior house - ground floor



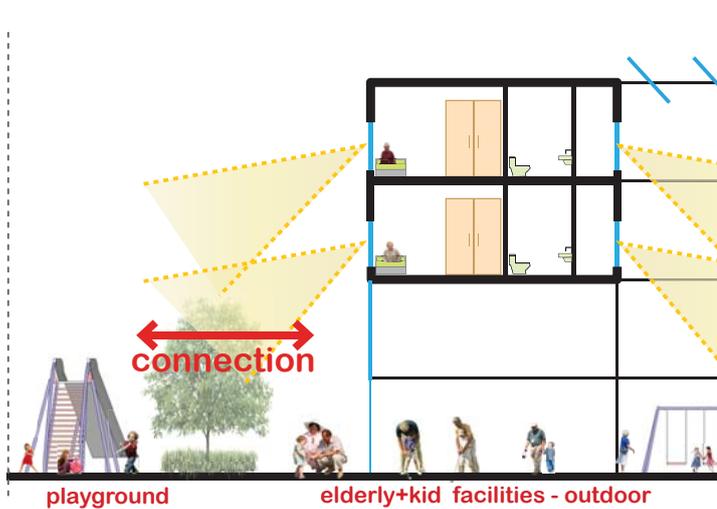
picture 4.6. senior house - 1st floor plan



picture 4.7. senior house - 2nd&3rd floor plan

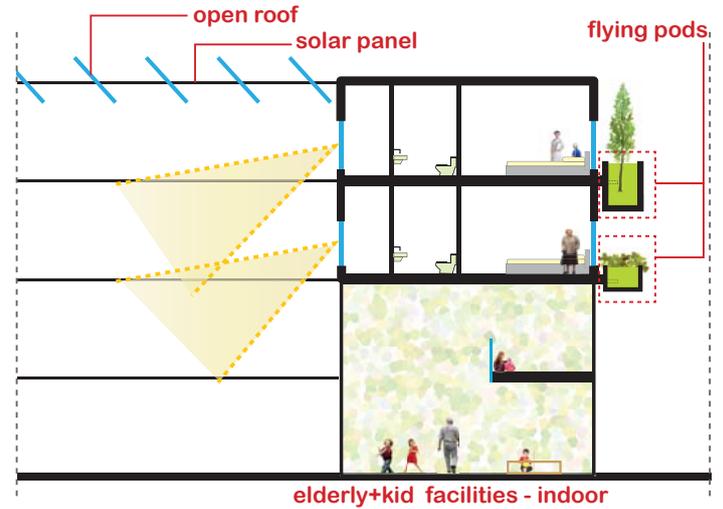
legend

- elder room
- core
- (lift, stair, kitchen, meeting room, utilities)
- elderly and kid facilities - indoor
- elderly and kid facilities - outdoor
- library



picture 4.8. senior house - section

We can see in picture 4.8., the **playground** is **connected** to **park** at **senior house**. Kids can also play to the park at senior house.



picture 4.9. senior house - section

In picture 4.9. we can see the combination of **daycare** at ground floor and 1st floor and **senior house** at the upper floors.

Site

typology

The park at this senior house is using **openable roof** and **solar panel**.

When it's good weather, the roof and doors can be opened so people can enjoy open environment.

At winter / bad weather the roof can be closed so elderly can still sit 'outside'



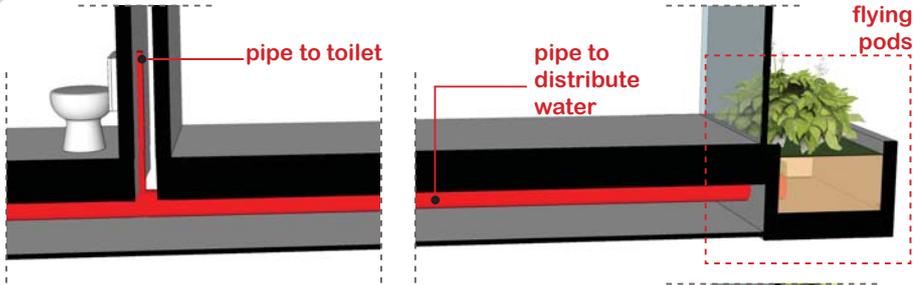
picture 4.10. senior house - section
<http://www.crunchgear.com>



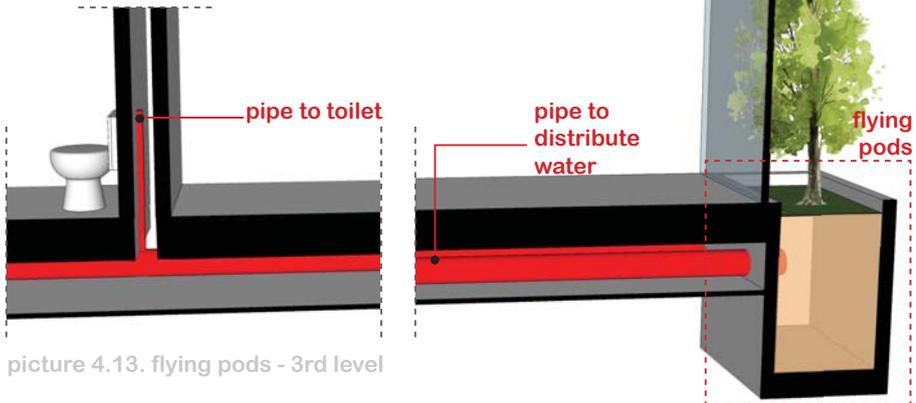
picture 4.11. senior house - section
<http://www.cook.rutgers.edu/>

typology

Site



picture 4.12. flying pods - 2nd level



picture 4.13. flying pods - 3rd level

There'll be **flying pods** in front of several rooms. This pods can be used to **collect rain water**.

After being processed , the rain water can be **used** for **water usage** in the building.(toilet, washing,etc)

Site

street profile

In designing street profile in this area, the concept from **Hans Monderman** has been considered.

Hans Monderman was a Dutch road traffic engineer and innovator. He was recognized for radically challenging the criteria by which engineering solutions for street design are evaluated.

*His most famous design approach is **Shared Space**. Shared Space designs typically call for **removing regulatory traffic control features** (such as kerbs, lane markings, signs and lights) and replacing intersections with roundabouts.(wikipedia)*



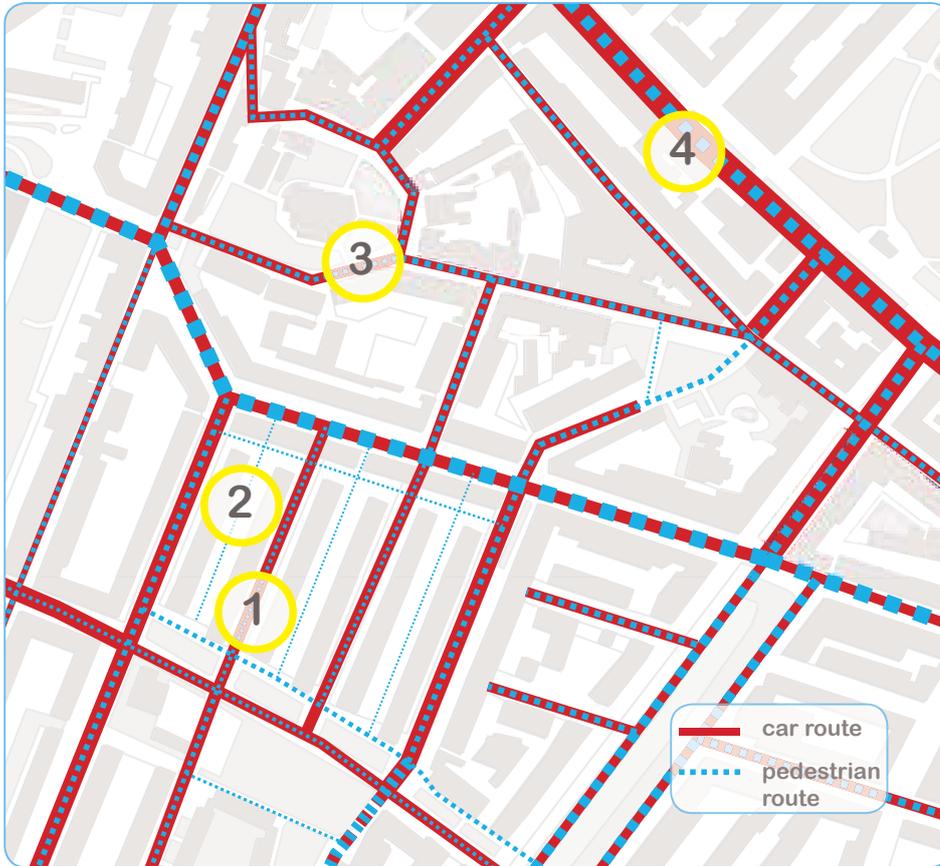
picture 4.14. hans monderman - previous



picture 4.15. hans monderman - after

street profile

Site



picture 4.16.routes

Ideally, of course every streets are need to be enhanced.

But in this proposal, there are 4 streets are proposed to be redesigned.

The reason to chose number 1&2 are to enhance accessibility in the area.

Street number 3 are chosen to enhance accessibility to reach the facilities (considering its bad condition).

Street number 4 is chosen because to enhance the environment in commercial area.

Site

This is the street at the back of the houses. The condition which is not appropriate is the solid and high barriers.

These **barriers** make people feel **unsecure**. It can make the area **not safe** as well.



picture 4.17.existing

The proposals are to make the barriers lower (picture 4.19) and to change the material with more transparent one (picture 4.20).

street profile



picture 4.18.existing



picture 4.19.proposal 1



picture 4.20.proposal 2

street profile

Site

condition	kids	elderly	others
high & solid barrier	0	0	1
total	1		

table 4.1.existing

condition	kids	elderly	others
low barrier	2	2	-1
total	3		

table 4.2.proposal 1

condition	kids	elderly	others
high & transparant barrier	2	2	0
total	4		

table 4.3.existing

To regenerate the area, we can't forget that this area is **not just for elderly.**

The whole society is living there. These **evaluation tables** are measuring how much the regeneration impact. Even **changes** will **not** be 'perfect' for everybody, we need to make sure that the effect **total** amount is **still positive.**

Like example table 4.2. Even this condition can lowering the privacy of others, (middle age people) but in total this change is positive.

From this tables, we can see that this **impact is positive to all society**

Site

street profile

The street beside kerkje Oud Charlois park was chosen because its **narrow** and **high pedestrian**. There are also a lot of **cars parking** beside the pedestrian and worsen the condition.

The **lightings** at pedestrian also become **obstacles**.

The proposal is to convert the carpark beside the pedestrian into pedestrian.

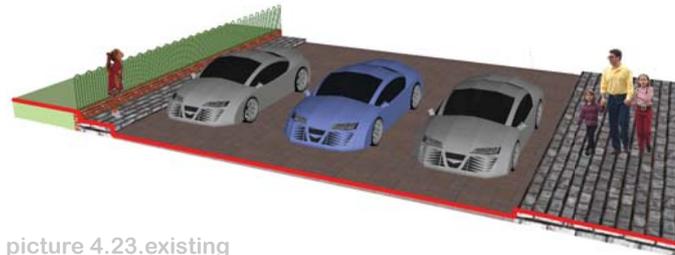
Instead of making the “new pedestrian higher”, the proposal is to make the pedestrian and car route **flat**.



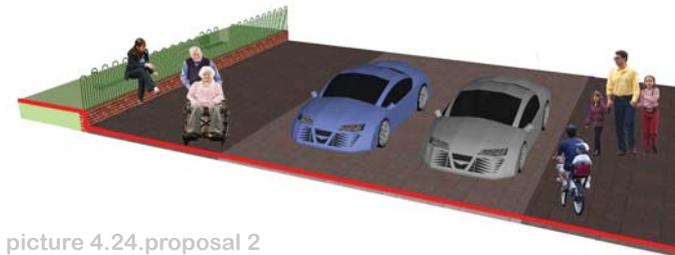
picture 4.21.existing



picture 4.22. existing



picture 4.23.existing



picture 4.24.proposal 2

street profile

Site

condition	kids	elderly	others
parking beside park	0	0	2
narrow pedestrian +obstacle	-2	-2	-1
total	-5		

table 4.4. existing

condition	kids	elderly	others
no parking beside park	0	0	-2
wider pedestrian & no obstacles	2	2	1
total	3		

table 4.5.proposal 1

People who own cars may not really like this change because they need to park their cars at other places.

But if we see consider the whole society, this change is positive.

This change even can make make this public place more comfortable.

Site

street profile

Cars are parking in front of the house at residential area.

Similar to previous solution the proposal is to **flatten** the **pedestrian** and the **car route**.

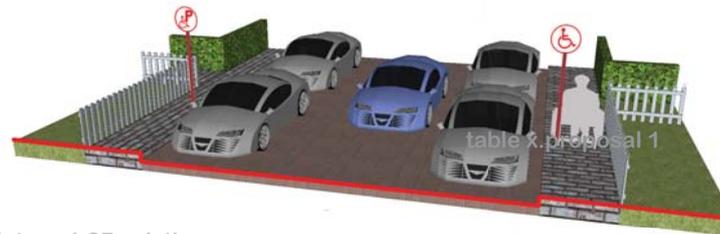
To make the street free of parking, this street profile is combining with the added of **multistorey carpark** which has been told in typology subject.



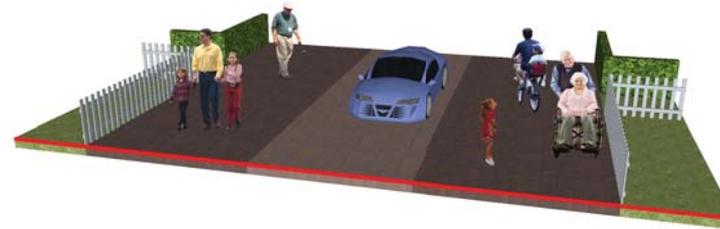
picture 4.25.existing



picture 4.26.existing



picture 4.27.existing



picture 4.28.proposal 2

street profile

Site

condition	kids	elderly	others
parking in front of house	0	0	2
narrow pedestrian +obstacle	-2	-2	-1
total	-5		

table 4.6. existing

condition	kids	elderly	others
parking in multistorey carpark	0	0	0
wider pedestrian & no obstacles	2	2	1
total	5		

table 4.7.proposal 1

Similar with the previous tables, even people who own cars may not really like this change but if we see consider the whole society, this change is positive.

This change even can make make this residential area more comfortable.

Kids can play at street since now the streets are safer.

Site

street profile

The **problem** at wolphaertsbocht street is the **green position** (green --> grass and vegetation at pots). The green is **not added value** when people are shopping.



picture 4.29.existing



picture 4.30.existing

In fact, the grass and the **tree roots** are becoming **obstacle** for the pedestrian.

The furnitures there are just **pots** which almost can't be enjoyed by anyone because the **cars** are **covering** it.



picture 4.31. plan existing

The proposal is to put the grass beside the pedestrian.

The vas/ pots for shrubs will be combined with **benches** so it can be **used** by people who walks there.



picture 4.32. plan proposal



picture 4.33.proposal

street profile

condition	kids	elderly	others
un used green (grass and vegetation at pots)	0	0	0
no benches (at pedestrian in front of commercial)	-1	-2	0
narrow pedestrian (beside carpark)	-1	-2	0
total	-6		

table 4.8. existing

condition	kids	elderly	others
life green (grass and vegetaton combined with benches)	2	2	2
benches (at pedestrian in front of commercial)	2	2	2
wider pedestrian (beside carpark)	1	2	1
total	16		

table 4.9.proposal 1

This regeneration will make the streets along the shops **more attractive**.

From the tables we can see that these **big interventions** can bring **high positive impacts**.

Different from three street profiles before, this intervention is more for **long term**.

Site

green space

Since the green space is the problem in this area, the design proposal will also **regenerate the green space**.

In general, the design purpose will put **more vitality** in the green space and make it more **functional**.



picture 4.34.friendly barrier -



picture 4.35.friendly barrier



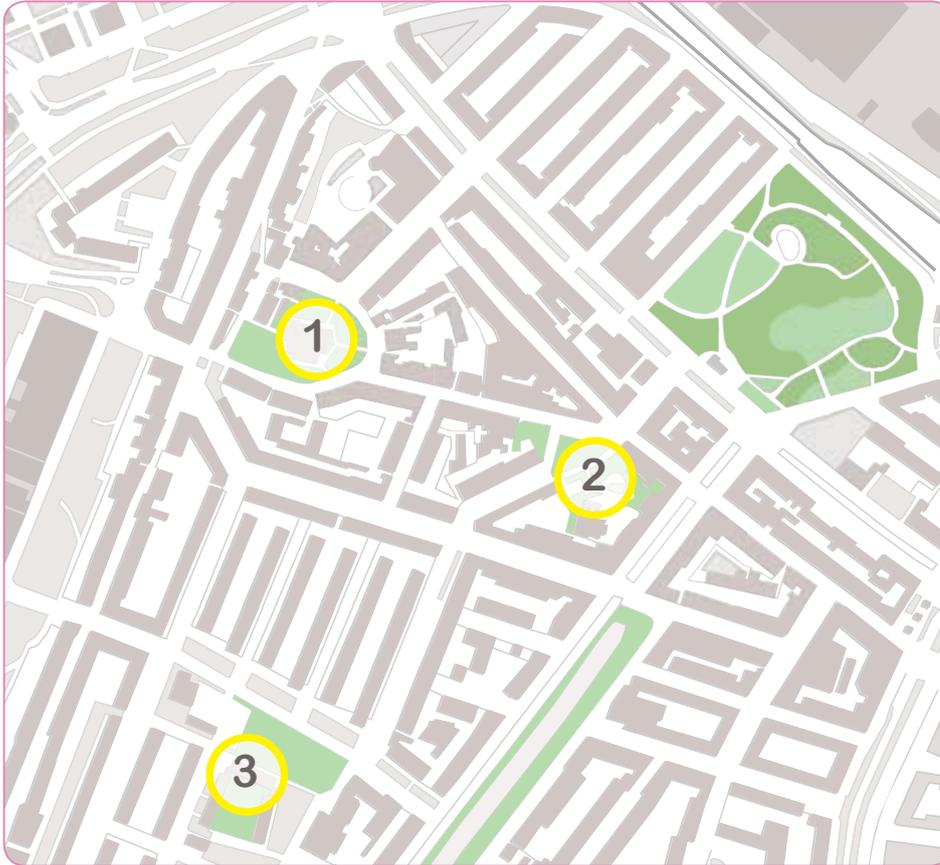
picture 4.36.life green space
sasaki.com



picture 4.37.life green space
sasaki.com

green space

Site



picture 4.38. bad pedestrian

The green space that will be regenerated is :

1. park at kerkje Oud Charlois
2. park at Schilperoortstraat
3. park at barendgregtstraat

Number 1 and 2 are chosen because it's worst condition.

Number 3 is new proposal to increase it's value since the building will be regenerated.

Site

There's no bench surrounding the park in front of the church.

It's potential to have benches in front of the park.

In picture 4.41 we can see the proposal is to **change** the some **parts** of the **gate** into **benches**.

To make the gate into the benches will have the feeling that the benches is part of the park.

Combined with the regeneration of street profile, this area can be more lively.

green space



picture 4.39. existing



picture 4.40. existing



picture 4.41. proposal

green space

Site



picture 4.42.existing



picture 4.43.existing

The condition of park at Schilp-eroortstraat is really poor.

The **bench** is in **bad** condition, there is **gate** that **seperate** the bench and the park infront. It seperate the kids who are playing in the park and the people who watch them.

The east part of the gate seems being **left behind** and become **dead space**.



picture 4.44.proposal

The proposal is to add more playground tools for kids, put **playground function** at the **east part** of the park, add more **benches** at the park, and to **remove** the **gate** that seperate the existing benches and the park.

Site

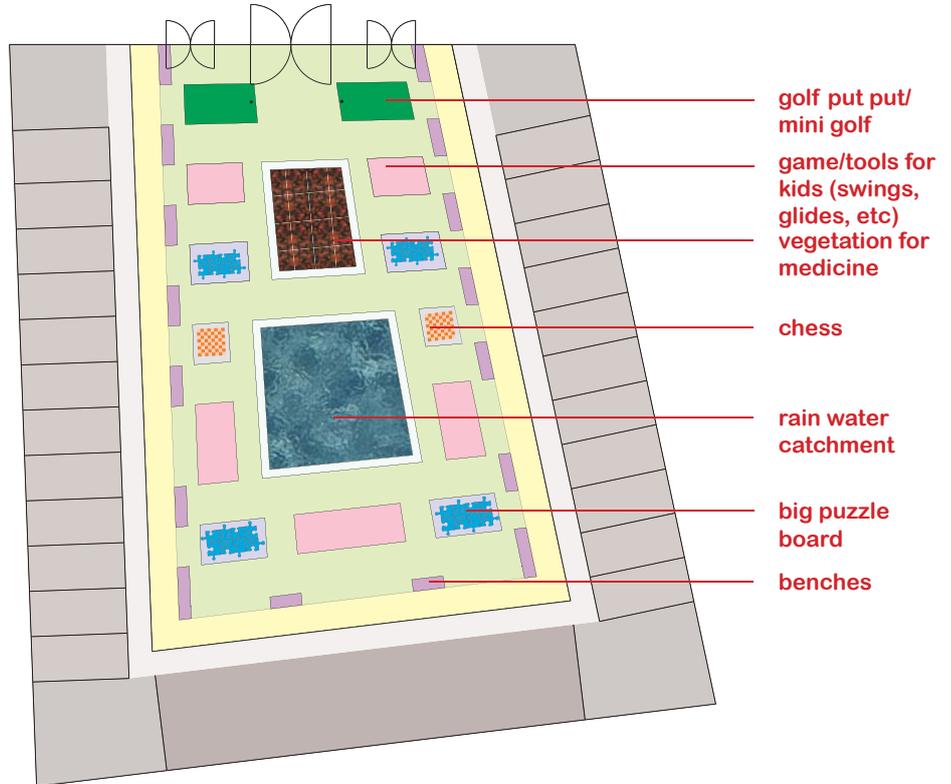
green space

There will be a **park** in front of the new senior house. The park will connect the existing play ground and this park.

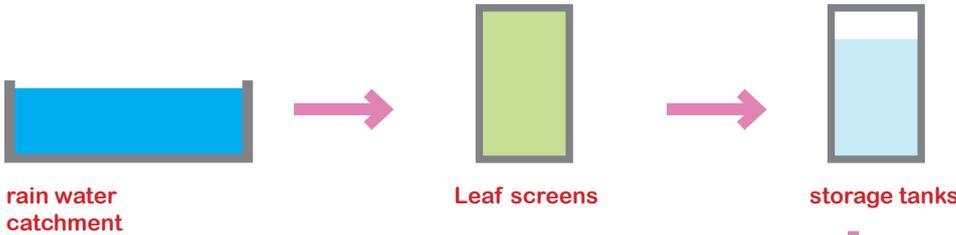
There will be **outdoor facilities** that can be used by **elderly** and **kids**

There will be a lot of benches that can be used by elderly in this park.

These **benches** will have **several functions**-not just for sitting. We can see the picture of benches variation at **picture 4.48**.



picture 4.45.proposal



There will be pool in the middle of the park.

This pool will be used for rainwater catchment. After go through leaf screens* and storage tanks, water can be used at senior houses.

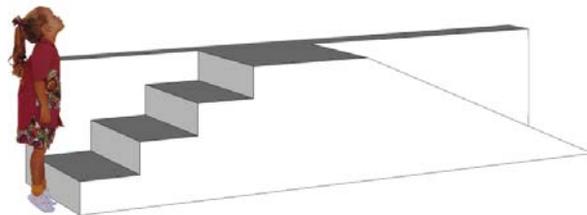
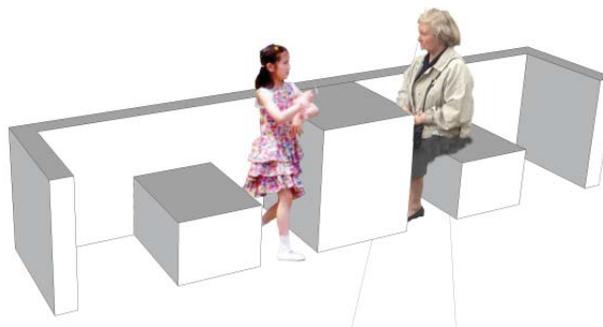


*leaf screens components which remove debris and dust from the captured rainwater before it goes to the tank

picture 4.46. rainwater catchment system
<http://www.hawaiirain.org/>



picture 4.47 park view



picture 4.48. benches variation

assisted living

gps

Site

Based on GPS data, we can see that many elderly spend their time at park.

It's obvious that for elderly, spending time for leisure is important.

The quality of public space is important for them.

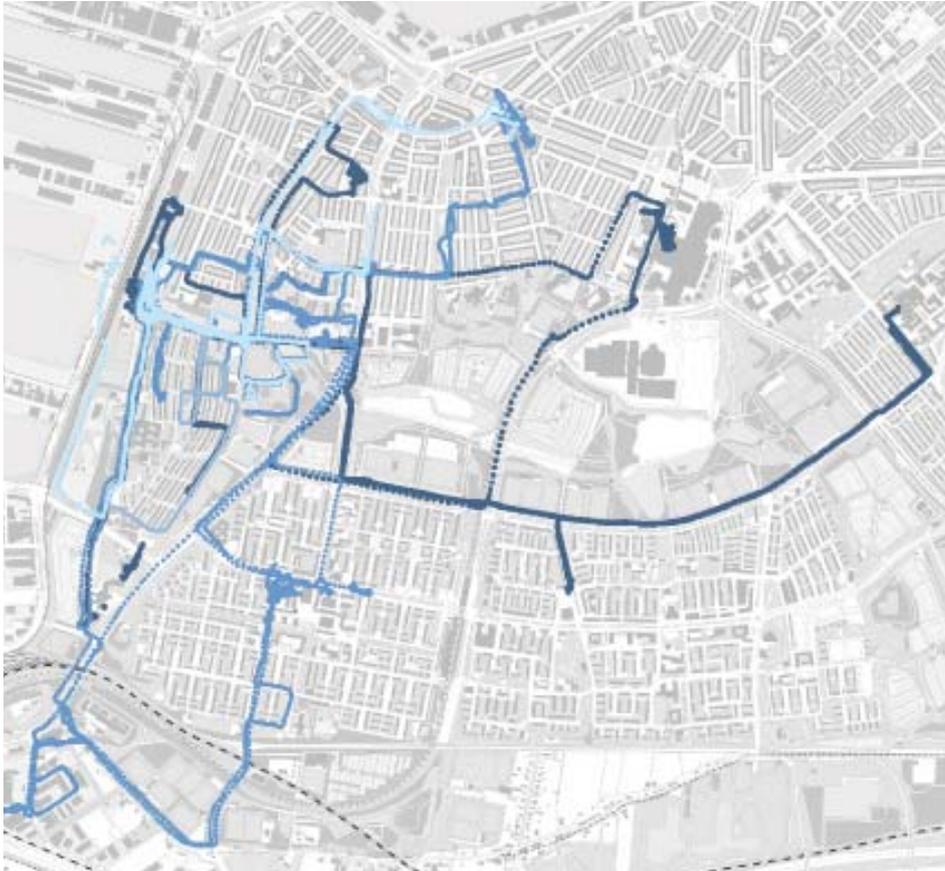
Like the proposal and based on this data, upgrading the green areas for leisure, to make it more lively is crucial.



Density

- Lower Level of Intensity
- Low to Medium Level of Intensity
- Medium to High Level of Intensity
- High level of Intensity

picture 5.1. GPS density



We can see in picture 5.1 that the elderly like to walk.

Like we see in site condition, the street profiles at the chosen area are bad for pedestrian.

So according to this data, the proposal to upgrade the street profile in this area will be very helpful for elderly.

Trip Duration

- 0-30 min
- 30 min-1 hour
- c
- c

picture 5.1. GPS duration