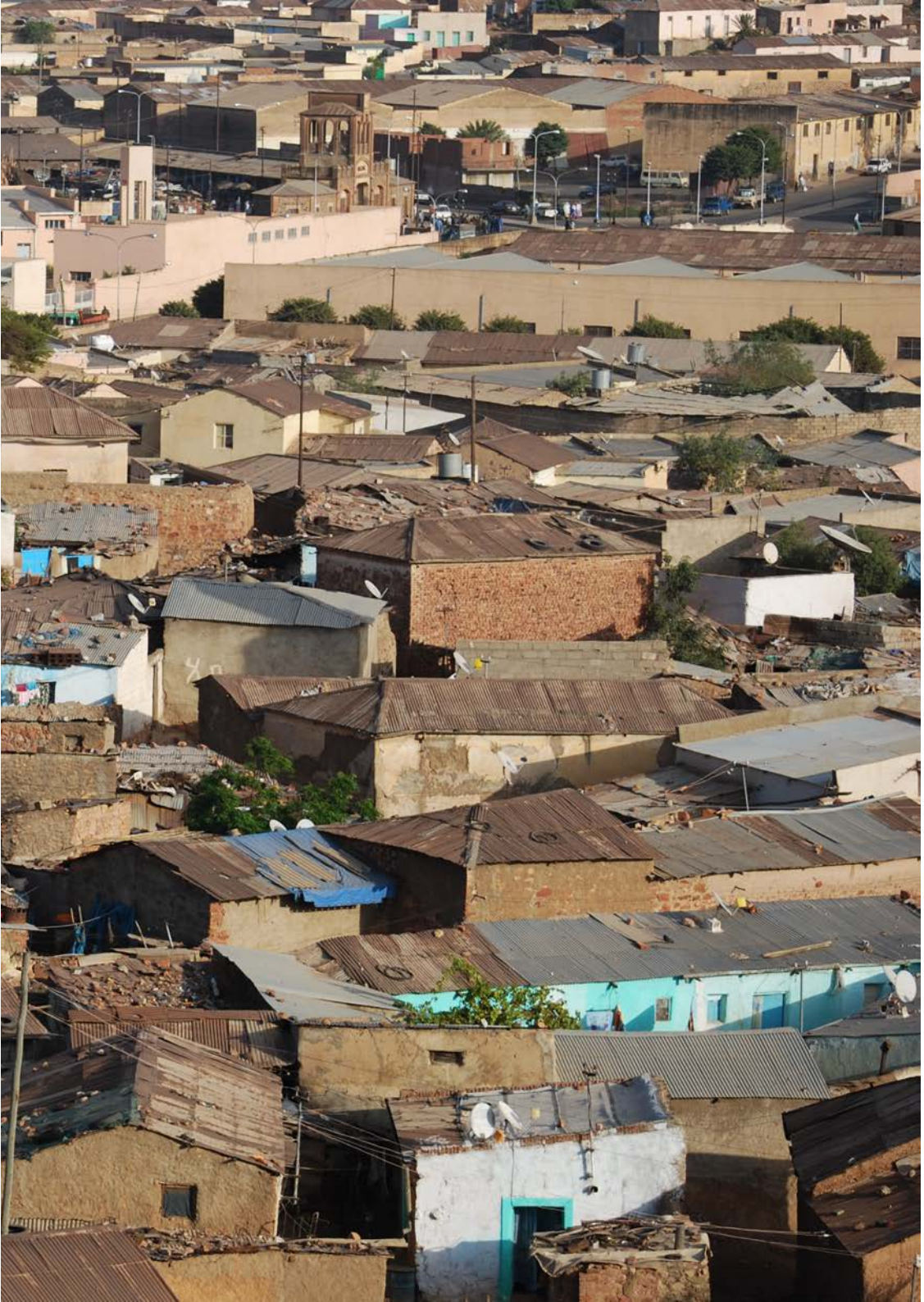
aba shawl_sketch project

presentation in Asmara



_unplanned city

Silje Høyem Amundsen & Kjersti Os Mathisen

analysis

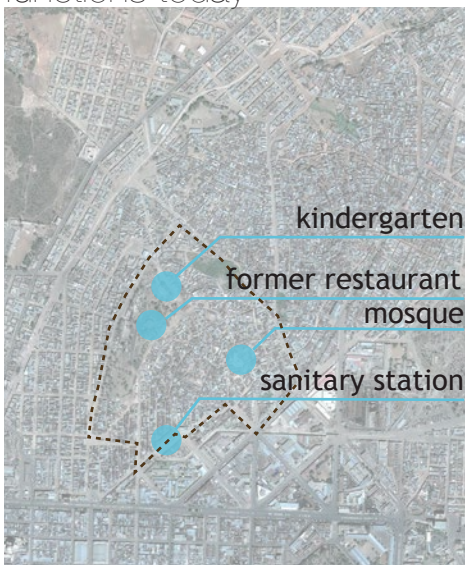
planned city

former unplanned city

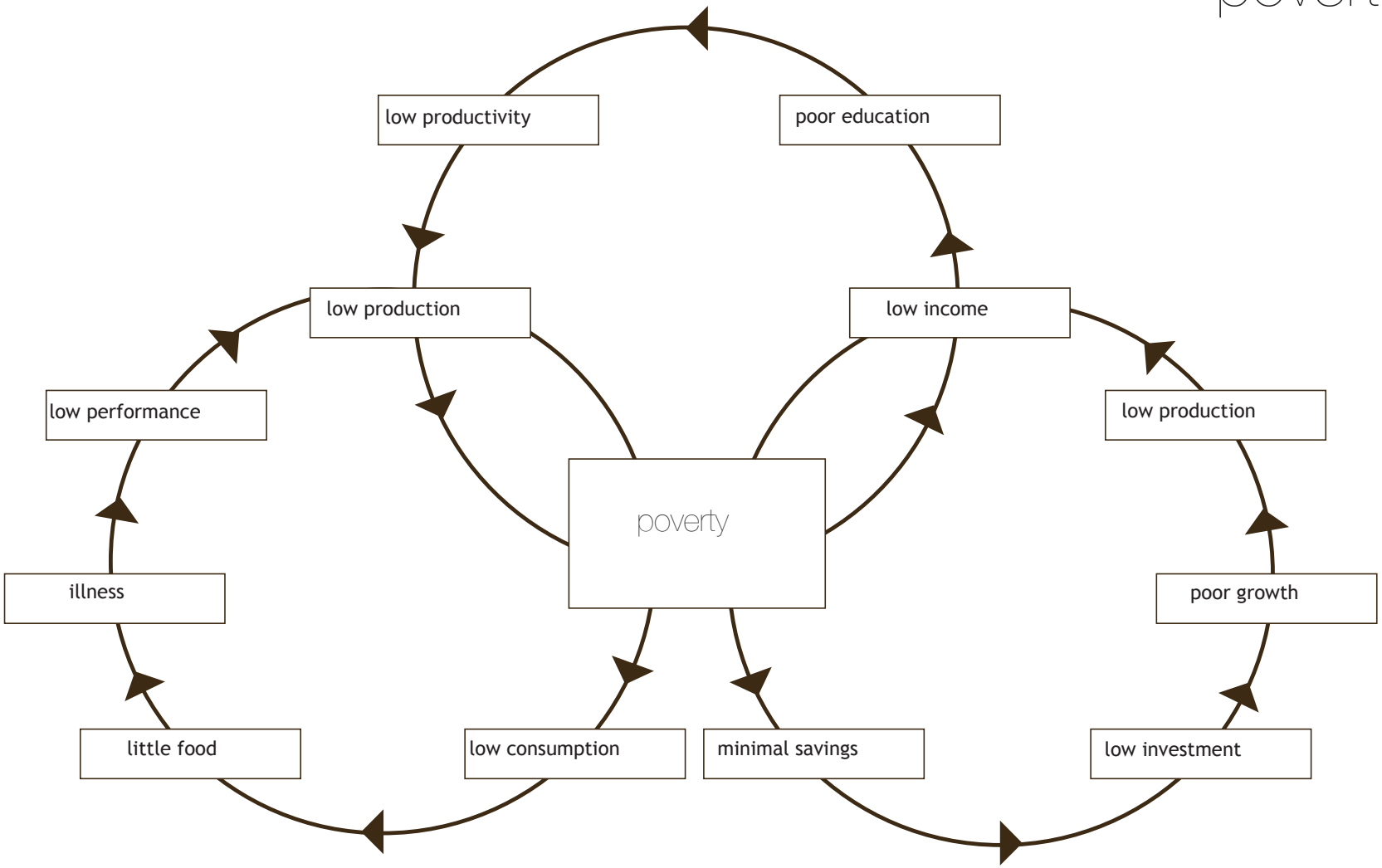
analysis

the hill

functions today



poverty circle



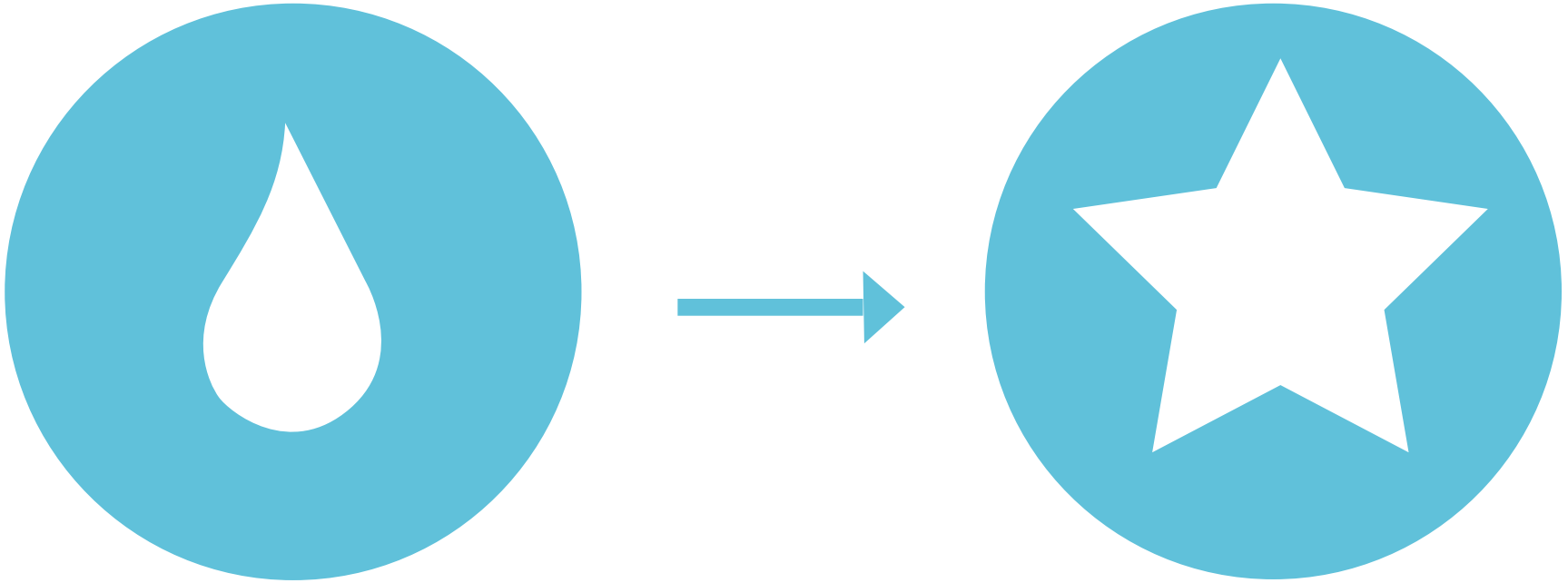
As we have understood it, this area is quite poor. The poverty often goes in a circle, and it is therefore difficult to get out. For example when you have a low income, you don't get a proper education, which again means that you don't get that much paid. So if a whole area is in this circle, it needs a boost to get out of it.

We think that architecture can be one of the methods to prevent the circle keep going. If the area gets a proper upgrade, it will get extended effects beyond the upgrade itself. The areas status will improve and become more popular, which again means that the will for further improvements will be stronger.

Botanical Garden in Medeliin

Spanish library in Medeliin, C. Mazzanti

Gym Studio in Caracas, Think Tank



As we said, our area in Asmara have no proper water system today. By upgrading this and adding suitable functions, we think the area's status can change. We are going to start by presenting the technical aspect of this, followed by how we suggest this can be performed with an architectural view.

main issues

clean water in

_access to a water source

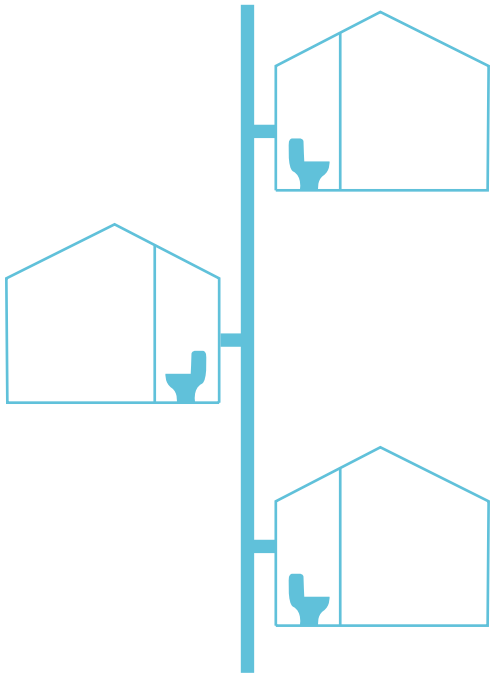
greywater out

_contains food waste, soap left overs and such
_possible to recycle

blackwater

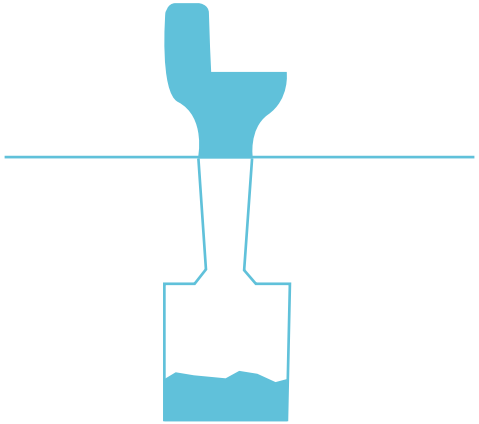
_water from toilet
_no recycling

black water



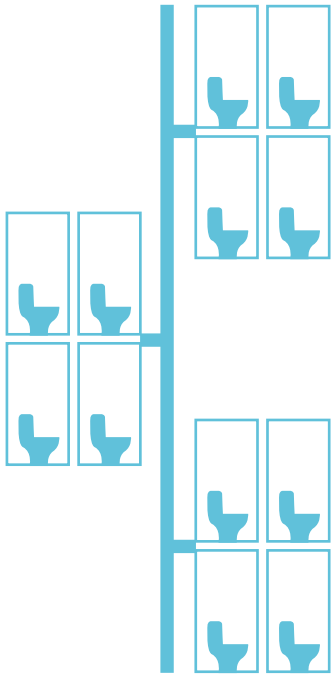
private water closet (on grid)

_blackwater mixed with greywater
_no realistic way to recycle the water
_expensive
_big intervensions



dry compost toilet (off-grid)

_no interventions
_easy
_cheap
_quick
_sustainable

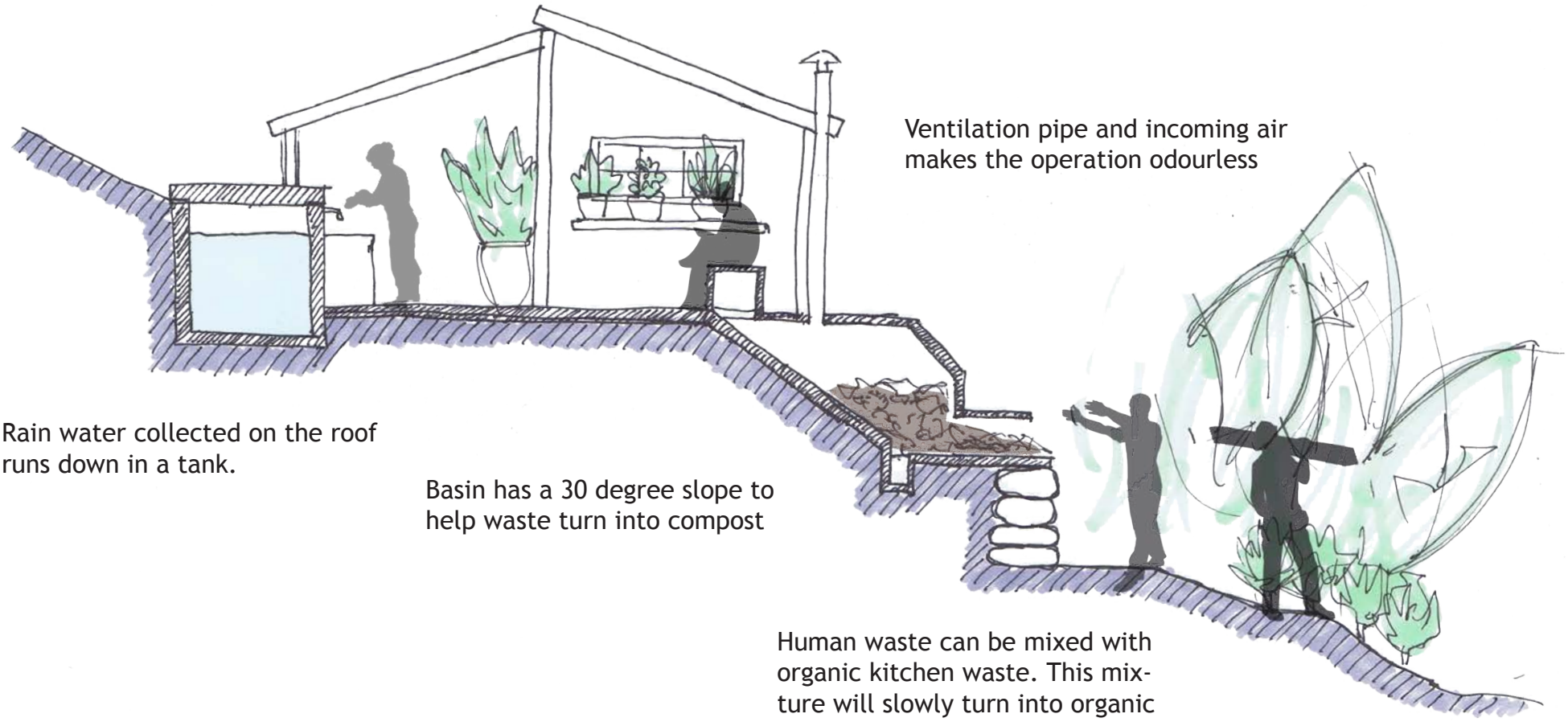


toilet clusters (on or off-grid)

_within a certain range of everybody
_unconvenient
_some interventions

black water

Ventilation possibilities



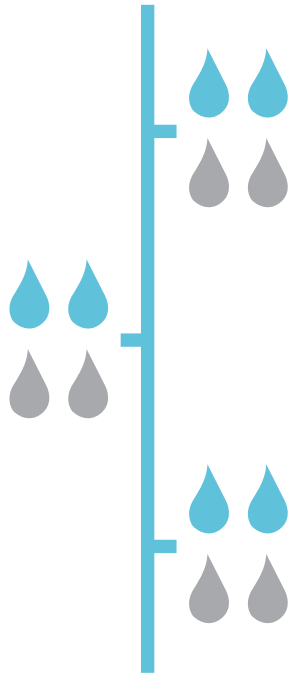
Ventilation pipe and incoming air makes the operation odourless

Rain water collected on the roof runs down in a tank.

Basin has a 30 degree slope to help waste turn into compost

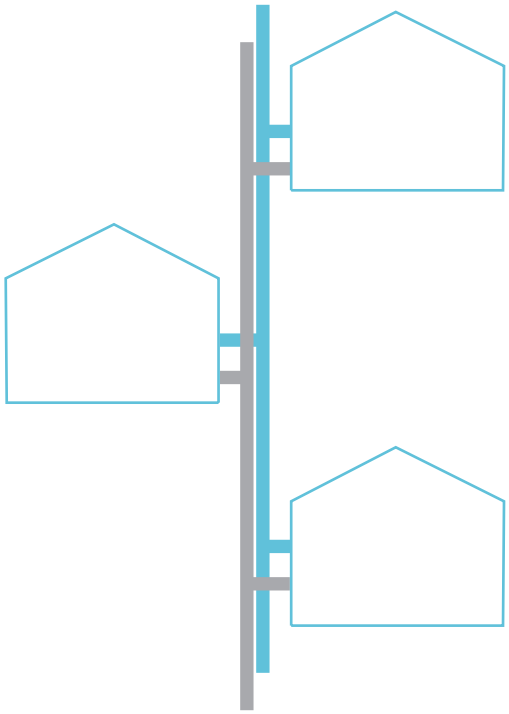
Human waste can be mixed with organic kitchen waste. This mixture will slowly turn into organic waste

water and greywater



water stations with greywater handling

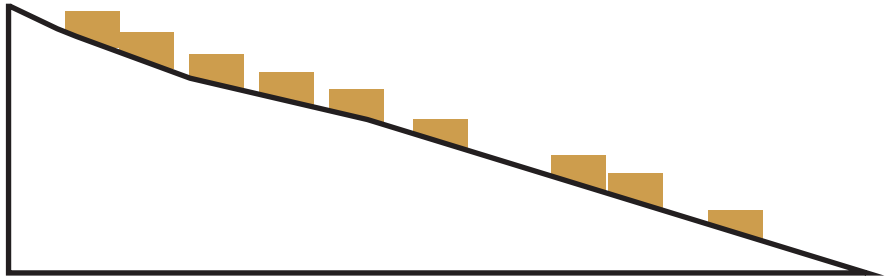
_add many water stations with greywater handling, so that it won't be so far to walk. This would mean that pipelines needs to be added in some streets, but not all. Of course the issue of what happens to the greywater is difficult, as it is very unconvenient to have to go back to the station with it, in order for it to be recycled.



clean water and wastewater in every unit

_add water and wastewater handling in every unit. It may not be possible to do this in every unit, but a certain coverage is possible.

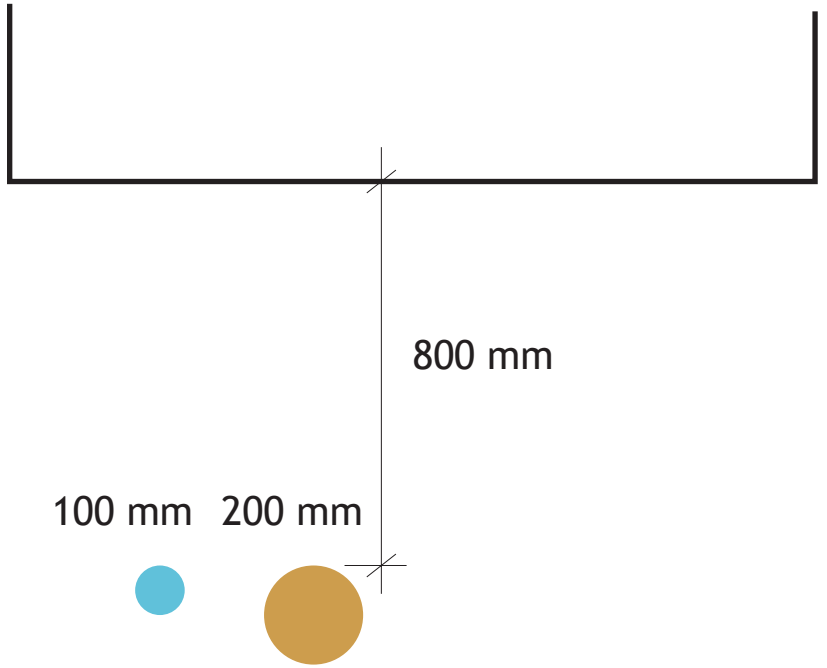
water and greywater



>1 %

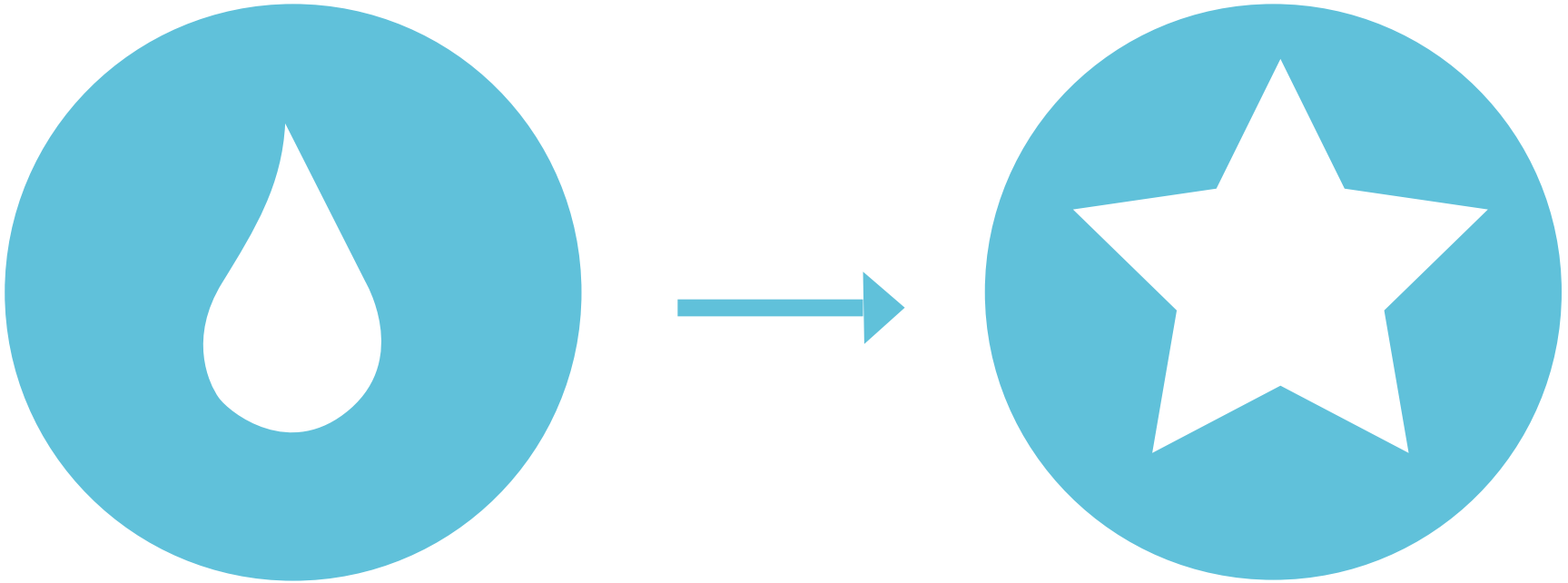
sloping terrain

_in order to add water pipes one depend on a minimum 1 % slope, at all times. Therefore we need to find the streets that have this, and the ones that don't, will not be suitable for adding pipelines.



pipelines in street section

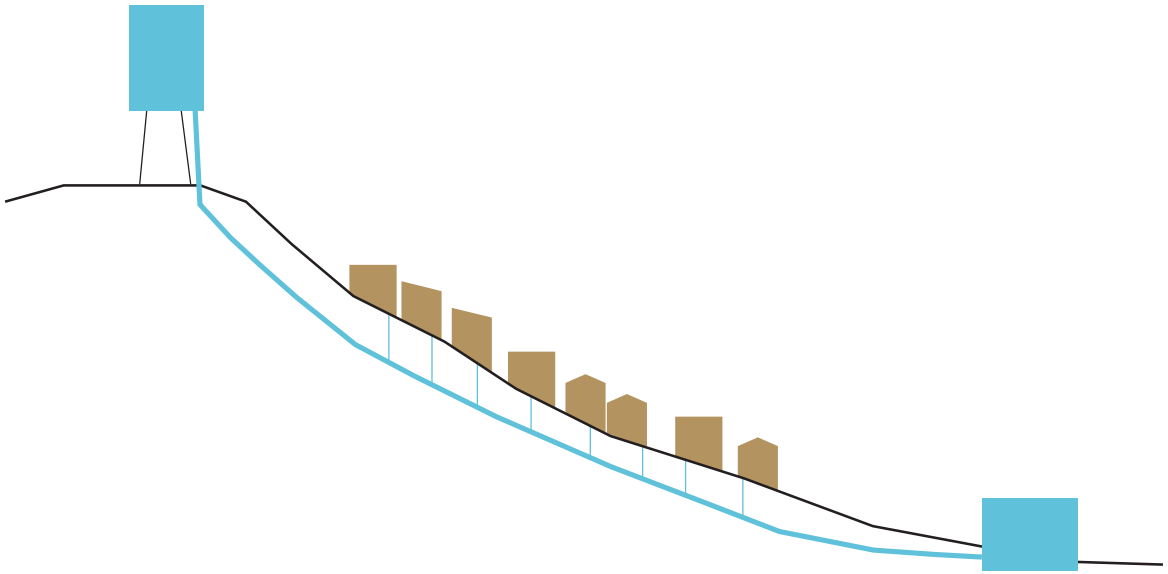
_the pipes handling water supply and waste water have to be placed 800 mm under ground to avoid damage from loads in the street. This is a dimension calculated for streets with vehicles. Pipes handling the water supply should be made of PE and pipes for wastewater should be made of PVC. Pipes handling water supply to private houses should have a diameter of 30 mm.



So, what we knew we needed in order to fullfill these technical requirement, was water supply at the top, a receiver at the bottom, and pipes in between. But we wanted to look at how the status can be improved as well. What types of buildings and functions can be added to this new water line? What is needed in the area?

This were issues we started working with.

water system



site

the hill: water tower

the hill: water tower

water collector

_Can be combined with a visitors centre, educational functions, water towers, parks, public places++
_Educational
_Social arena
_Permanent


Solys water collector by Fabrice Gordon

watertower

_Can be combined with a visitors centre, educational functions, water collectors, parks, public places++
_Educational
_Social arena
_Permanent

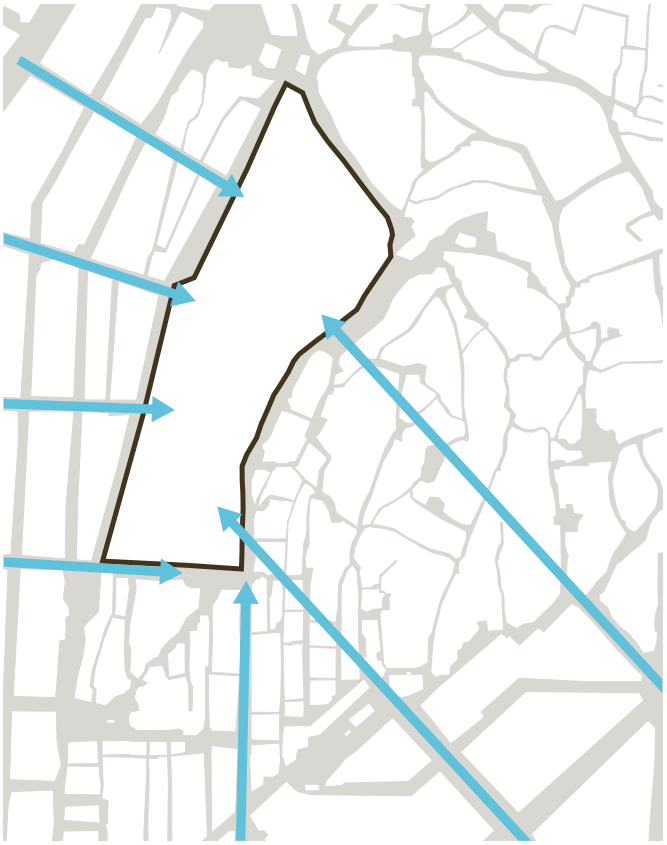

Hyllie water tower

infiltration plant

_Can be combined with water towers, water collectors and parks/agriculture
_Stores water underground (no loss of water)
_Improves water quality
_Permanent


Hoppergarten Berlin, by H. Sieker

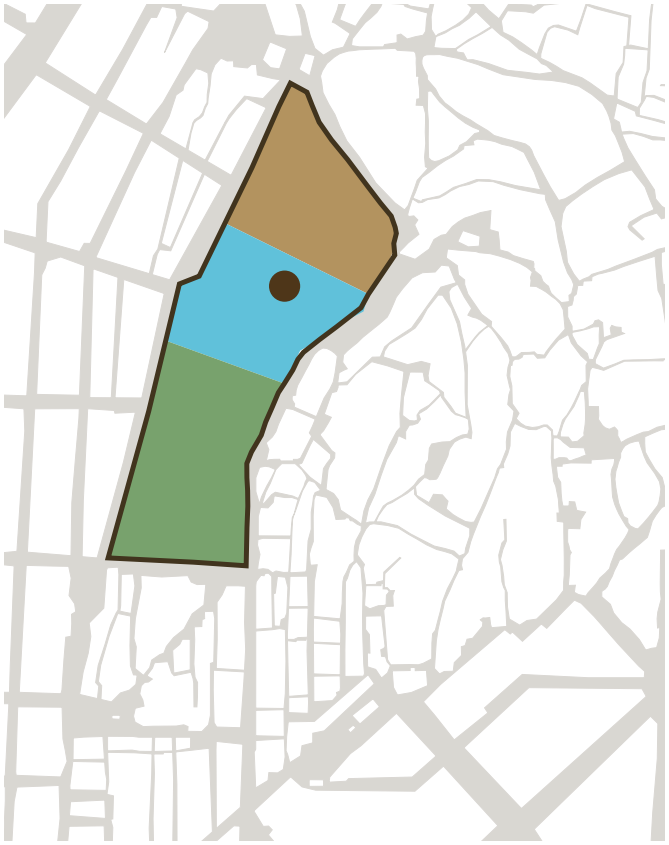
the hill: water tower



view

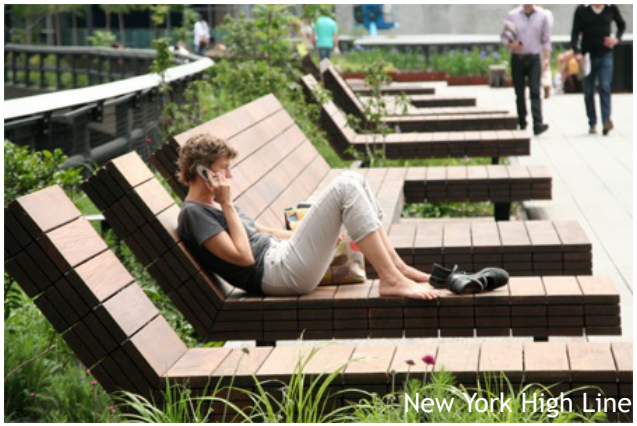
_there are many bigger streets leading to the top of the hill, which gives it a natural focus from the street
_a water tower or a different type of high building would emphasize this

the hill: water tower



three main parts

_the north part of the top already has a kindergarten. It would be natural to look at how more educational buildings could be located around this area.
_the water tower should be placed at the highest point, with an information center close to it. This could also be linked to the school buildings
_the south part could be transformed into a park, with possibilities for the school kids to play and for the inhabitants to have access to a green area.



New York High Line

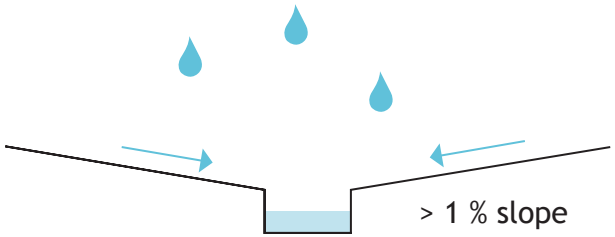
watertower and public space in Latina

New York High Line

the hill: water tower

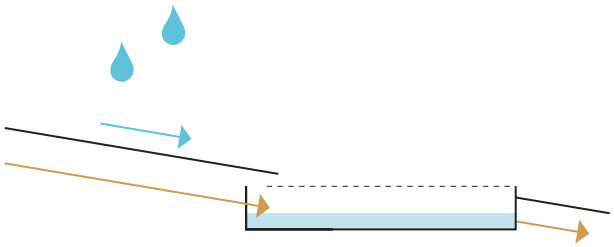
typical street section

typical street section



functions

_to handle the rainwater, the street section should be changed. By having two slopes leading down to a ditch in the middle, the water will be led into this ditch and not flood the street. The slope has to be more than 1 %, but not bigger than it is comfortable to walk in the street.



water reservoir

_a reservoir for collecting the rainwater should be made. This reservoir could also handle the greywater from the households. It is necessary to protect the reservoir with some kind of cover to prevent it from collecting dust and insects. It is necessary to install a spillway for flooding. The collected water can be led into the wastewater treatment plant to make it usable for irrigation and industrial purposes.

sanitary station

sanitary station

sanitary pods

_Element system
_Easy to put up and to take down
_A quick and easy way to improve the lives of people living in the area
_Temporary

school project by Sheffield school of Architecture

sanitary stations

_Can be combined with household stations and other similar functions
_Can be transformed to other functions if the needs change
_Improve the lives of people living in the area
_Permanent

sanitary station by TYIN

sanitary station

household station

_Can be combined with sanitary stations, water towers, water collectors++
_Social arena
_Permanent or temporary

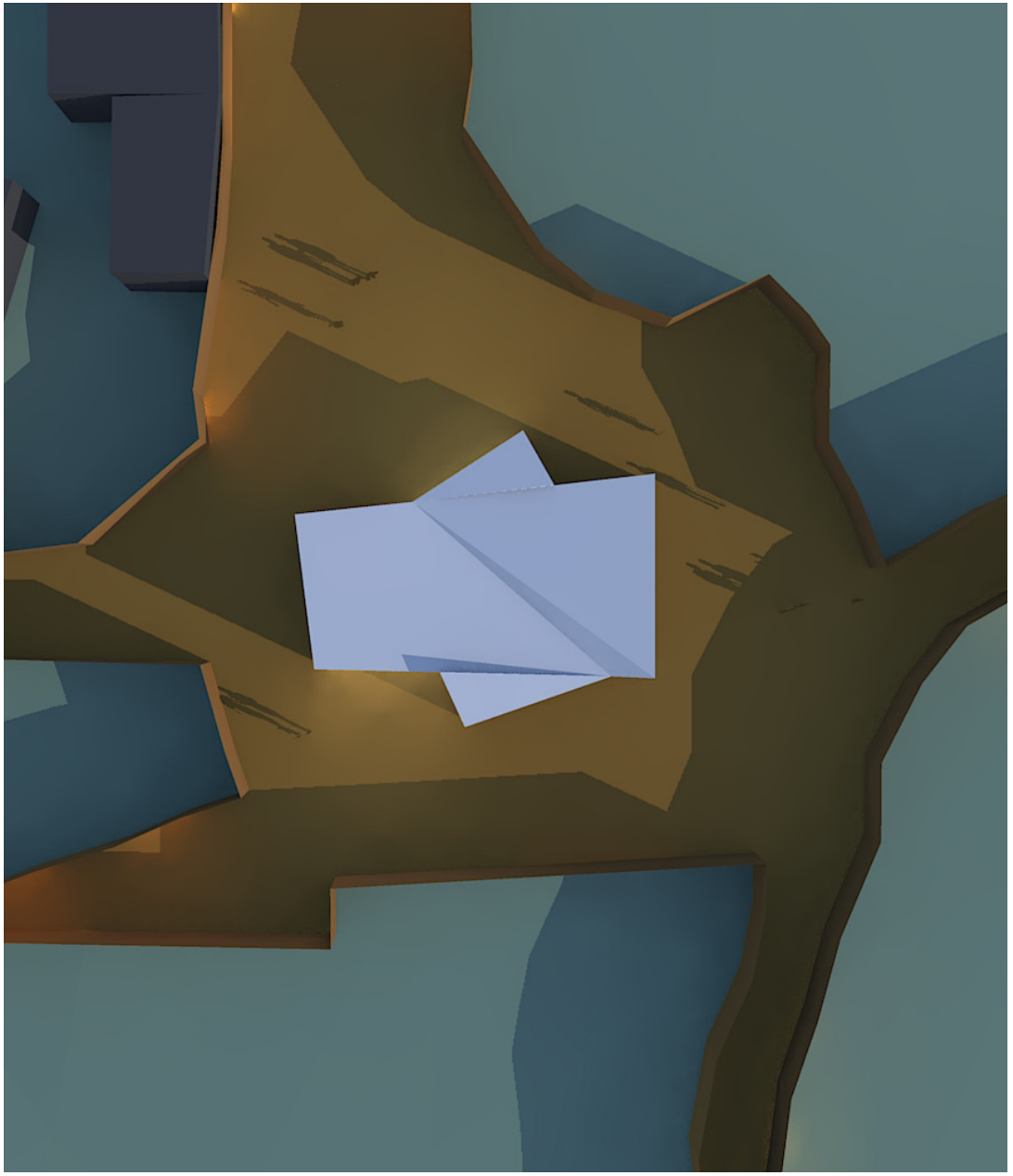

Torvdalshalsen by 70° nord

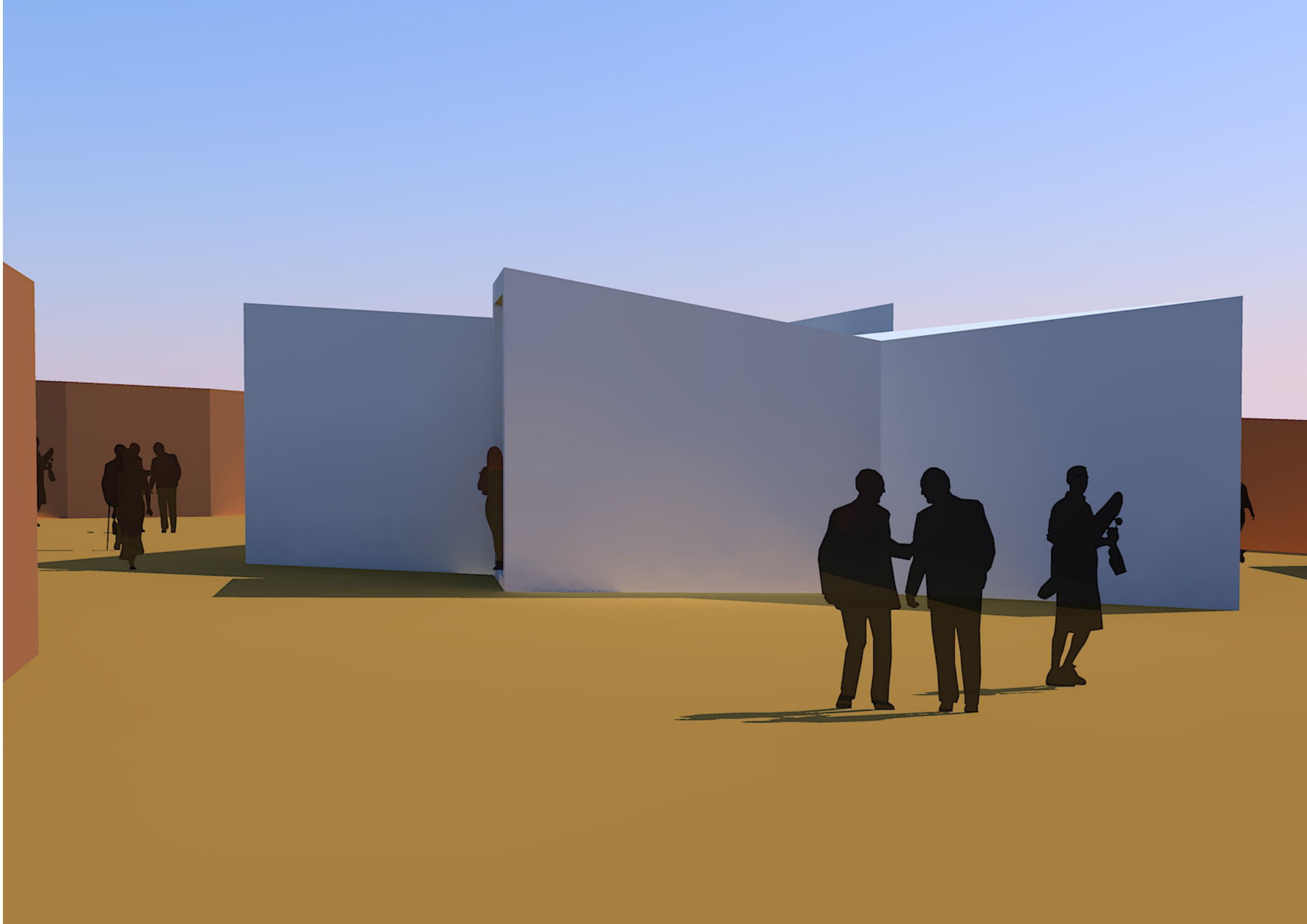
water tap

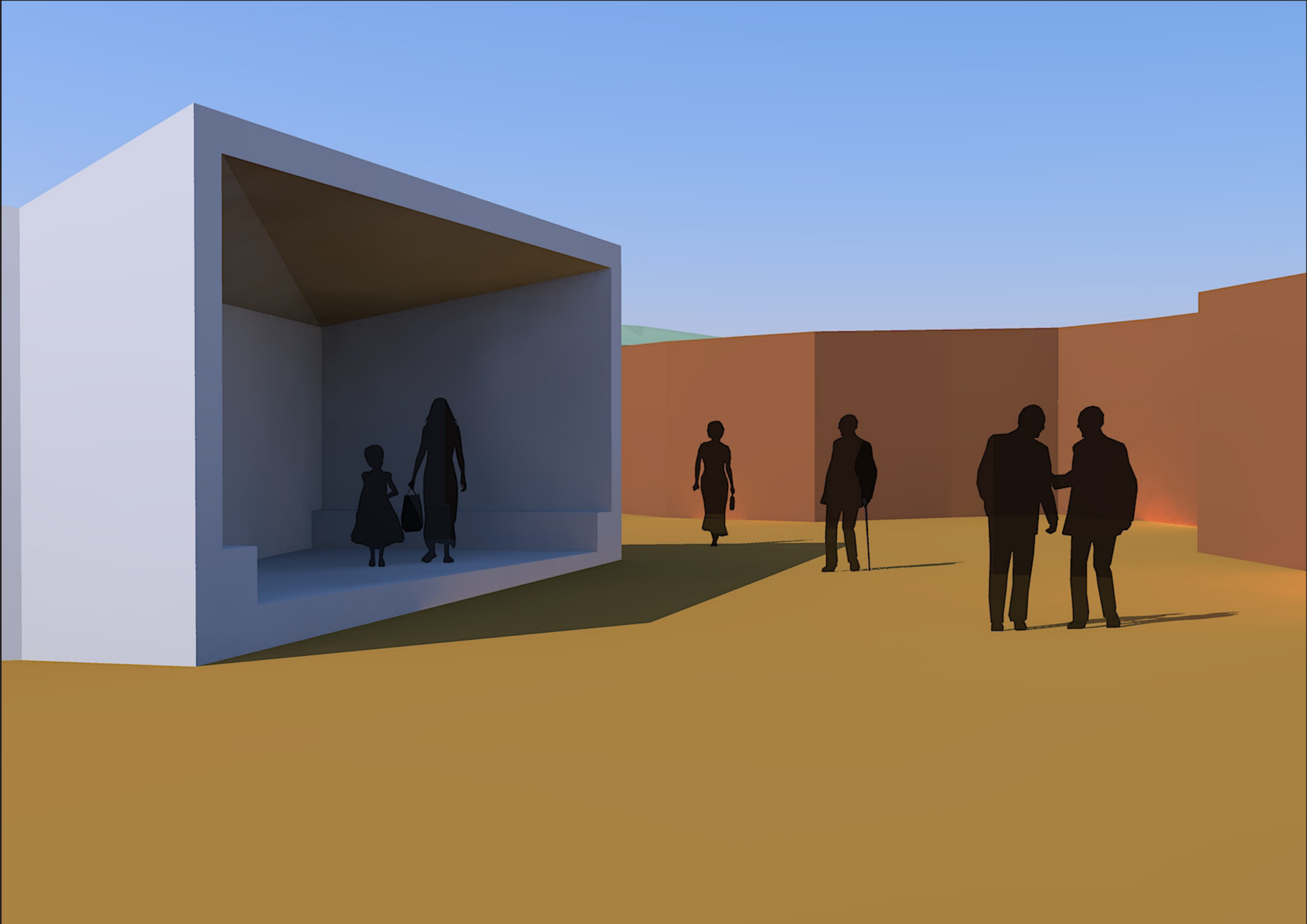
_Easy access to water
_Social arena
_Improve the lives of people living in the area
_Permanent


water tap

sanitary station







wastewater treatment plant

wastewater treatment plant

greenhouse/park/agriculture

_Ecological urbanism / sustainable perspective
_Technical solutions for handling surface water
_Simple methods for growing vegetables on private properties
_Long term

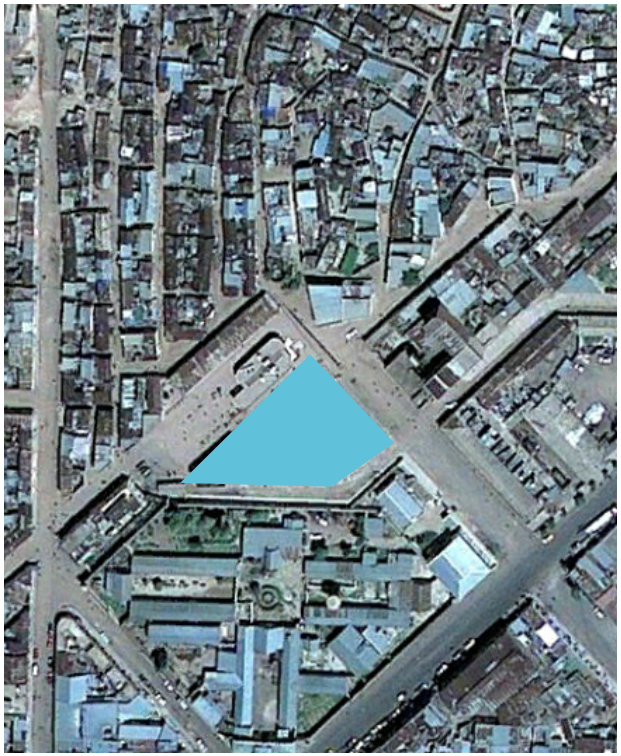
vegetable growing

wastewater treatment plant

_Can be combined with a greenhouse, parks, public places++
_Educational
_Social arena
_Permanent

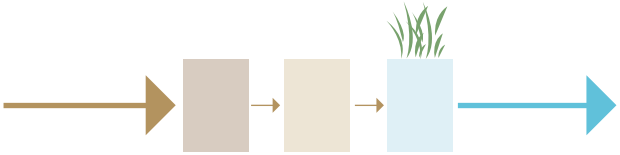
Kingsport water filtration plant

wastewater treatment plant



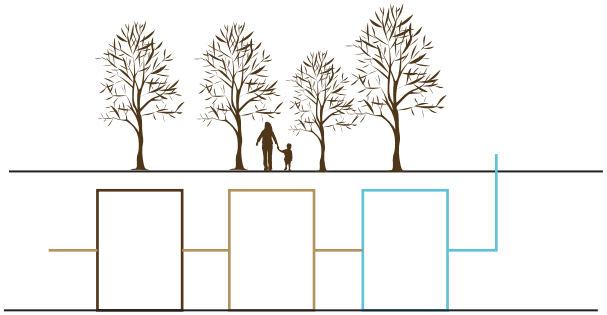
possible site

_the wastewater treatment plant has to be situated on a site that all new new pipes can reach and still have a slope of at least 1 %
_the plant has to be at least 200 - 300 sqm, depending on the load
_ is close to the unplanned city and the plant and green house can become a part of a public space
_ existing houses at the site will have to be demolished



reuse

_by separating black water and grey water in different systems, it becomes possible to cleanse the grey water and reuse it
_in areas where water resources are scarce, this recycled water can be very valuable
_by adding a function like a green house to the plant, it can become a public function



park on top of water tanks

_principle for the water treatment plant can be to have the plant underground, and the park on top
_the park can use the recycled water

wastewater treatment plant