

# wedgan square



## water recycle

The implementation of a new water and sanitary system requires information, maintenance and a consistent supervision. We have developed a strategy for establishing this new system and how to run it properly, resulting in an operation central and water treatment plant on Wedgan square. The square holds a strategic location, as it is connected to the planned city.

### identity



\_design following the same structural principles of volumes and backyards as in Aba Shawl

### sustainability



\_recycling of water  
\_handling storm water  
\_adding green public spaces

### technical features



\_the waste water treatment plant is low-tech compared to western standards, but requires qualified staff  
\_some materials must be imported

### top-down



\_ recycling water  
\_ waste collection services  
\_ maintaining public spaces, streets and sanitary stations  
\_ provide information

### functions



\_water treatment plant  
\_information and maintenance central  
\_agriculture showroom  
\_meeting point between the planned and the unplanned city  
\_public space

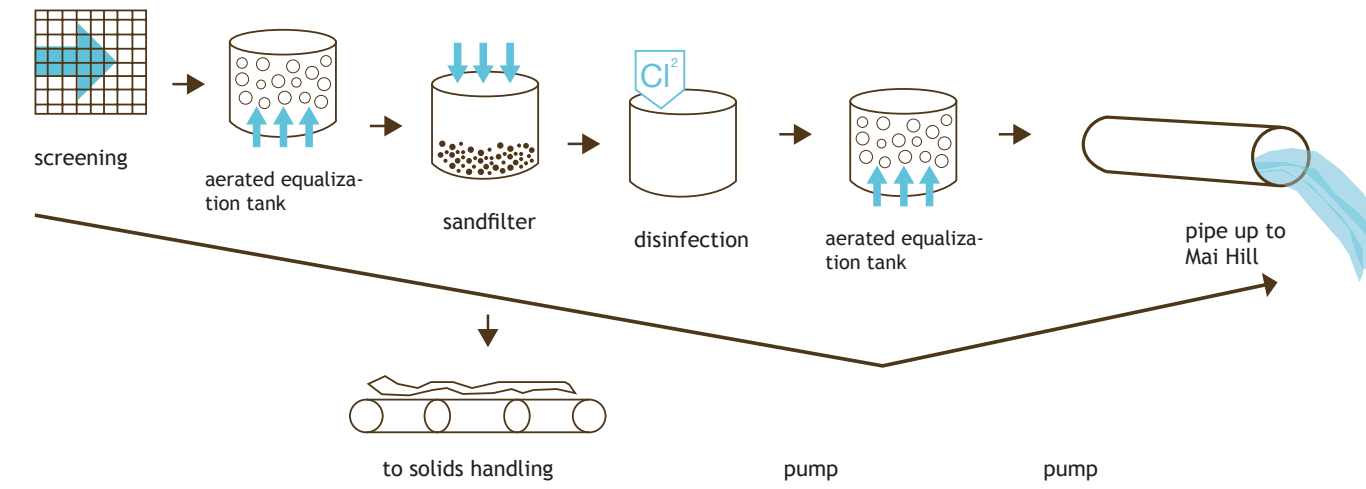
### bottom-up



\_decide usage of the common areas  
\_adding commercial functions

## water treatment plant

The water situation in Asmara is poor, both because of the leaking pipe network and the bad access to water of good quality. However, the leaking pipe network is the only existing, and we



The plant itself is constructed underground. This will likely give higher costs than a plant above ground, due to expenses connected to the excavations. However, in this case, due to limited space and the negative consequences for the neighbouring habitation when constructing above ground, it is necessary that parts of the plant are placed underground. It is therefore important that the constructing underground is watertight, so it does not interfere with the groundwater. The plant is constructed in such a way, that the treatment area slopes downwards. Gravitation will then send the water through the different treatment steps, reducing the need for booster pumps. Pumps are necessary on the last step, transporting the water up to Mai Hill.

### Water treatment step-by-step

As the access to materials and technology is difficult in Eritrea, we have focused on easy treatment processes. The operating equipment of the plant should be easy to operate and maintain, with indigenously available spare parts as far as possible. The different solutions and type of materials chosen for the different treatment units are meant to reflect this way of thinking and the conditions of Eritrea.

The treatment job is done step-by-step, beginning with a screening process. The biggest particles are removed here. The next step of the treatment process will be an aerated equalization tank, where the screened water will be

therefore wish to connect Aba Shawl to it. But by treating the water and then using it a second time, we reduce the amount needed.

### Staff

Ideally, in order to run the plant successfully, a mechanical engineer and a chemist are needed at the plant. In addition are mechanics and electricians desirable staffing for the operation of the plant. However, a majority of the various operation tasks connected to the different treatment units does not necessarily require skilled staff; such as tasks connected to cleaning or simple maintenance. The plant requires workers that can work on shift, and it is therefore suitable to live close by. In this way the plant is likely to provide work for some of the people of Aba Shawl. The amount of workers depends on the length of the shifts, and how big the tasks of the different workers are given. Labour is however not expensive in Eritrea and by providing new workplaces, the plant in itself is giving something positive back to the community. The plant will share an administration with the operation central.



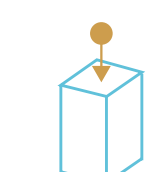
Wedgan Square today



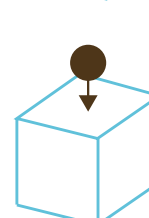
## operation central

### waste system

A safe and clean environment is essential when striving to keep a city healthy. We propose that Aba Shawl has its own maintenance system, independent of the rest of the city.



\_urine is stored in smaller tanks and emptied every week. The workers exchange the full tank with an empty one.



\_faeces is collected when the vault is full. The ideal situation is to have a two-vault system, which means that the toilet waste is fully sanitized when collected. Not everybody has the possibility to have this solution, meaning the toilet waste must be collected before it is sanitized. The workers shovel the waste out from the vault.



\_organic waste is kept in special containers, which are collected weekly by the workers.



\_trash must also be handled, but it is not normal to produce big amounts of trash in Eritrea. When the organic waste is stored in its own container, smell is not a problem. It is therefore only collected once a month.



\_medeber market will handle the special waste, and also provide the custom-made cars and containers needed.



### information

Using human toilet waste for agricultural purposes can in many societies be a taboo, and is easily thought of as unhygienic and unpleasant. Even though it is custom in many cultures, it is not easy accessible knowledge. Educating the residents is for that reason of the essence, with the intention of preventing wrong use and dissatisfaction.



### staff

It is desired that the inhabitants of Aba Shawl get the jobs the central provides. This will not only allow them to take part of the extended effects, but also secure that they are motivated to take the upgrade seriously. Ensuring that the word on the street is positive is very important, especially when implementing the new toilet system. It is easy to be sceptical about such solutions, and if the most respected people in Aba Shawl spread that they don't want to take part in the system, others may follow. It is therefore important that the workers are people from the inside that can control such affairs.

The number of people working there must be adjusted according to the need. During busy times and in the start up phase there will be more people working there, but with time it will stabilize.



### sanitation

The implementation of the new systems will probably be stretched over many phases, and take a long time. Showers are also a luxury most people won't have the ability to get. Because of this we have accommodated for the possibility to build a sanitary station with showers in connection to the square.

I mix the urine with water and give it to the plants I keep in my vertical garden in the backyard. Yesterday the operation central held an information event, where I learned that plants fertilized with urine grow more rapidly, larger and healthier than those grown with conventional agricultural techniques, and that less water is needed. They were testing spinach in the showroom, and it gave particularly good results, so I bought a plant from the neighboring shop. It tasted delicious. "

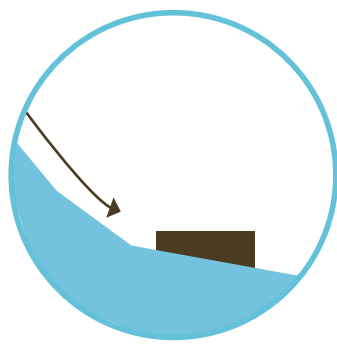
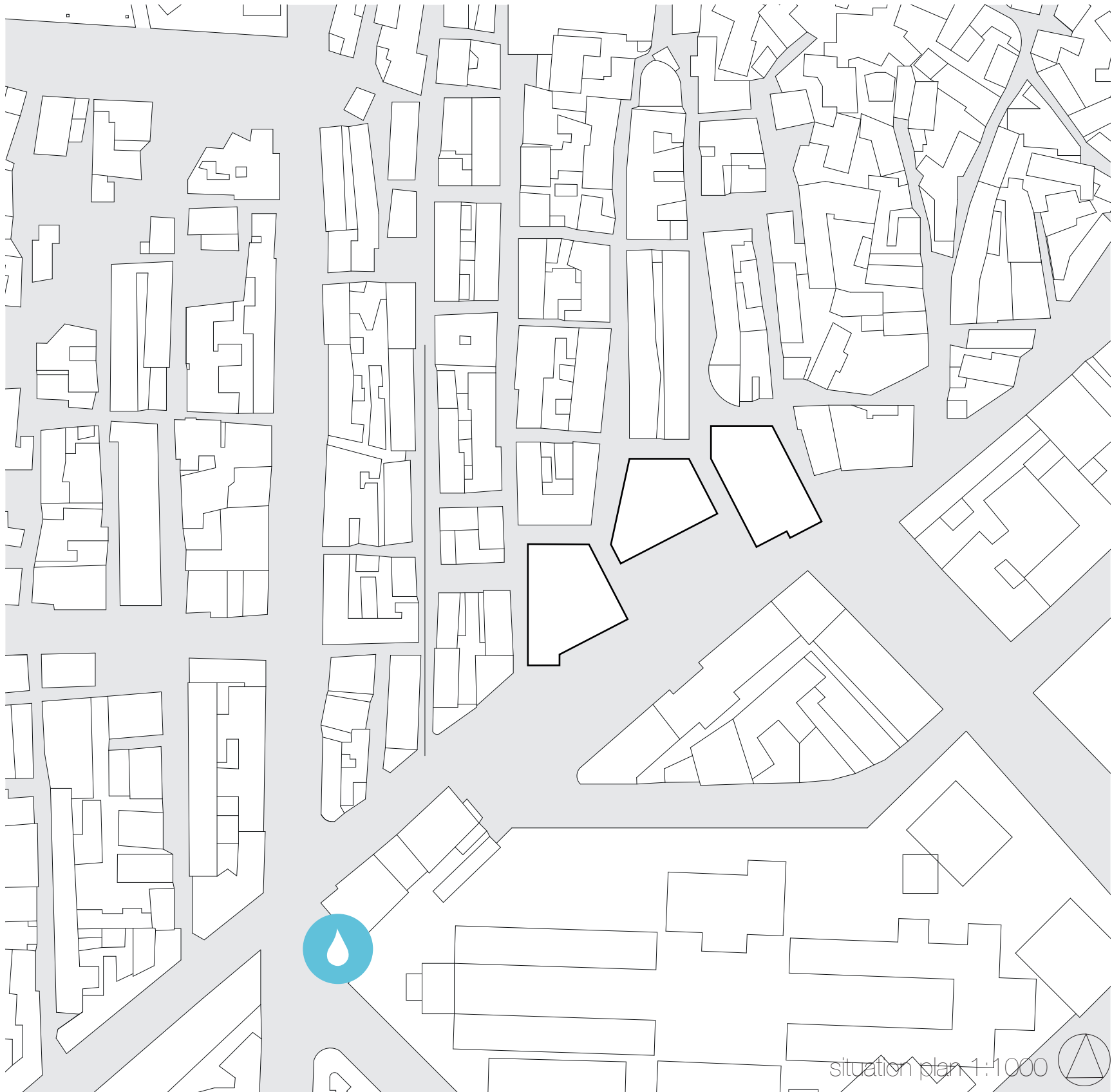


By contributing to the new system I got many advantages. The new toilet in the backyard is odour-free and practical. When it is full, the operation station collects the waste. They secure that it is fully sanitized, and distribute it along the service path in the allotment gardens. There I can use it as fertilizer in my part of the allotment garden. I share a unit with the same people as I live with in my backyard, and we help each other with the daily chores. The food I grow I either take home or sell on the market in Edaga Hamus.



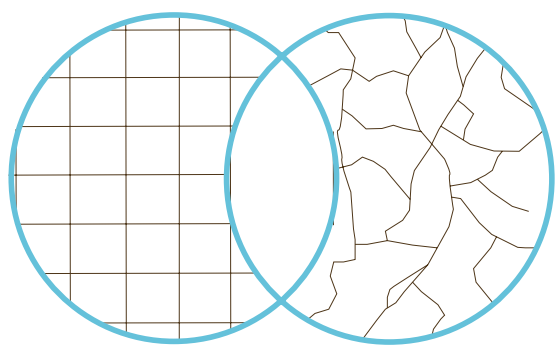


site



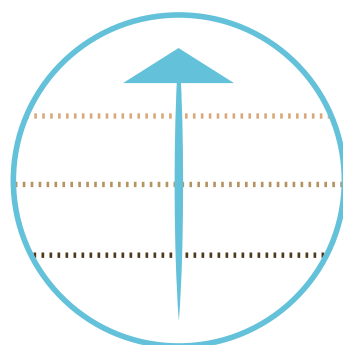
slope

The water treatment plant must be placed at the lowest point, but at the same time be close to Aba Shawl. Wedgan Square both has the right slope conditions and offers available plots.



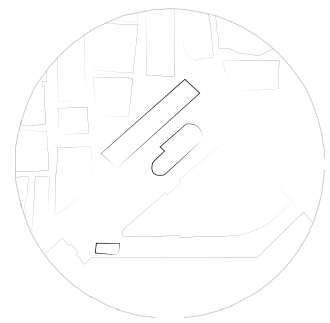
interaction point

Wedgan square lies between the planned and the unplanned city. We aim to make it a meeting point for both sides.



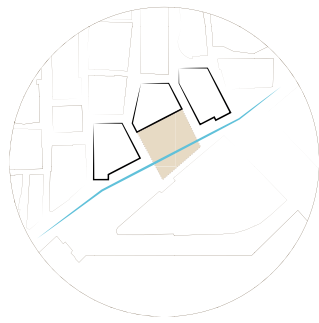
structure

Aba Shawls structure is built up of different levels of privacy. We aim to follow this principle in our design.



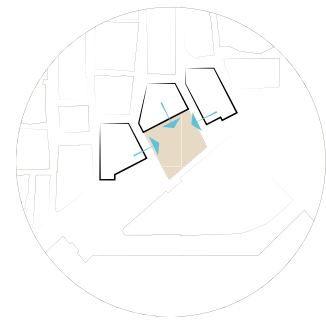
existing

Today a big sanitary station lies as a hindrance in the middle of the square. North of the square lie an old, ruinous building housing a chili shop. We demolish these in our proposal. The sanitary station in front of the prison we keep as long as it is needed.



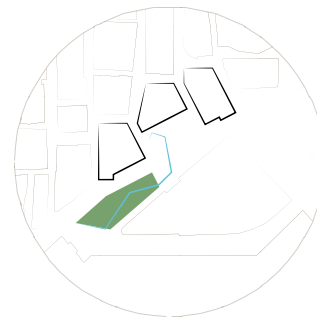
flow

Today the main stream of people goes right through the square. We wish to lead this stream through our centre point, and provide zones with different functions.



centre point

Our suggested three volumes turn to a common space, which can be used as a space for bigger gatherings.



showroom

Urban agriculture boxes and a small stream of water give the square character, simultaneous as displaying the new attributes of Aba Shawl.



suggestion water treatment plant 1:500

