

There, where they are

We are there, where they are, not
overthere, but here which is where we
make products they can call theirs
overthere

Including social cohesion in product design IO3029
Case II: Garbage collecting service

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We are there, where they are, not overthere, but here which is where we make products they can call theirs overthere

Mission statement

[There,] aims to make the people that use its products proud of their own community. It wants to maintain and improve the social networks that people are part of. [There,] wants to make people aware of each other and let them experience the social cohesion of their community.

Table of contents

Social Cohesion, introduction

SEDG	6
group dynamics	7

Phase I Identification

Case analysis	8
Setting X, scenario matrix	9
Setting X, element description	10
Idea generation	11
Final idea	13

Phase II Integration

Final scenario	14
Concept design	15
CIPS the system	15
The place	16
The technical system	17
Visualisation	18
Garden edition	19
Mock Ups	21
Social Cohesion	22

Phase III Implantation

Step I	Elements	23
Step II	Feasability	24
Step III	Upscaling	25

[SEDG]

social cohesion

what it is...

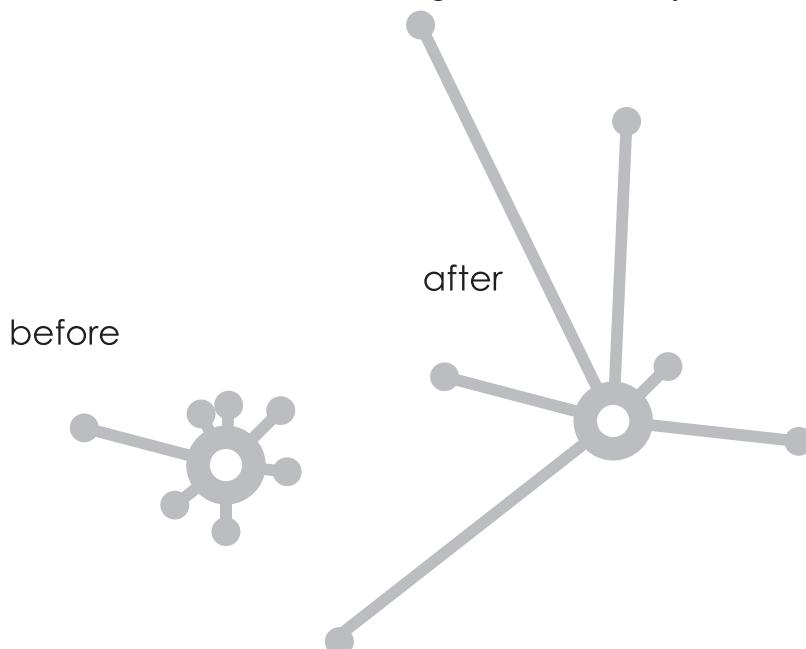
[There,] is a SEDG (or social entrepreneurial design group), which is a design group brought to life to bring people together through products and make profit by doing it. The reason for this is that our social fabric in the west is disrupted and slowly disintegrating. It is thought to be a by product of the great technologies brought to us by the digital revolution.

Before the digital revolution people knew their neighbours and used to depend on social ties provided by a community with a strong sense of social belonging.

In the words of John Donne: “No man is an island entire of itself; every man is a piece of the continent, a part of the main” Well that’s for an introduction. When it comes to explaining what social cohesion is we’ll have to take a deep breath and dive into the science of sociology.

Definition

Social cohesion is about kinship and shared values. Sociology describes it as a measure of how tightly glued; robust and unified a community is when taken into account a set of indicators. A community that has common goals or is faced with a certain dilemma is considered to be more cohesive than one in which its participants are more or less care free. A cohesive community is also able to deal with these problems more effectively, they are more open to change and have a strong sense of solidarity.

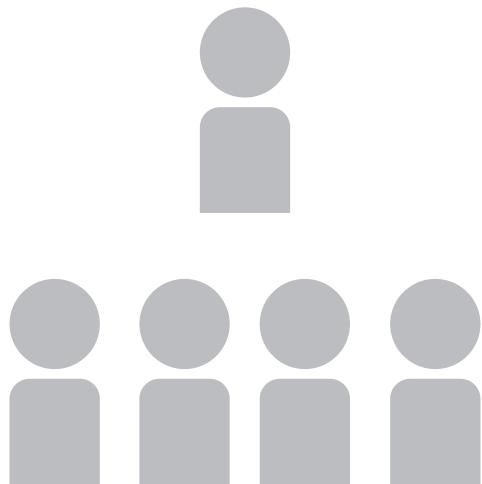


Group Dynamics

[There.] consists of five IDE students from the TU Delft who have a common interest in designing for social cohesion.

Although all decisions and distribution of tasks are made together through discussions, a clear overview on the case and what has to be done is needed. Therefore we choose a different group-leader for each case. The group leader keeps track of what has to be done and makes sure our noses are pointed in the same direction. This of course is something we all pay attention to, but the group leader takes the actions if necessary.

We change leaders on each case because we believe variation of work keeps our minds fresh and sharp. Also this way everybody will have the same level of involvement in the company, which leads to equality and cohesion.



As a Social Entrepreneurial Design Group we aim to design products that act like 'drivers' for social cohesion in a community.

This report will show how we, [There,] include aspects of social cohesion in a Community Integrated Product System. This product system will exist of three design cases placed in 'Setting X', an imaginary slum community.

We will work on these cases using the 3I approach.

Case I

Pedal Power Led

A pedal power system is used to charge batteries for a LED-light that should replace expensive and polluting lighting systems like kerosene lamps. Our challenge is to design a Community Integrated Pedal Power System to enhance Social Cohesion in Setting X.

Case II

The garbage collecting service

Bags made of garbage, collected and processed in the slum, with a picture of the one who made it are sold in Holland at the Bijenkorf. This will increase social cohesion between the people in Holland and the people from setting X. The service we will introduce is to collect the garbage that we will use to make the bag out of. People will pay for this service and will profit from a clean living environment. As an extra bonus the people of setting X will be rewarded with a stove that burns garbage.

Case III

Mobile furniture

Develop mobile furniture in setting X is an alternative for sitting as temporarily at outdoor cinema events, games, neighborhoods parties etc. Instead of moving the furniture to different places, we build a space with mobile furniture inside. People can use it for dinning, watching movies, even health examinations when they put the seats down in different ways. When put all the furniture up there will be a big space for games or dancing courses. We want to make people gather around in this space to enhance social cohesion.

The place will be build around the incinerator stove they were rewarded from the last case. It's normally for vendors using the stove and selling food daily. In addition, we will sell home edition to Bijenkorf for few years.

Case analysis

Phase I

Identification

More social cohesion by creating places to sit together.

In slums people do live in their small houses and meet each other in the streets, maybe walking or working together. No services are available to entertain people and make it possible just to have a nice time together. Besides, places where a lot of people can have a meeting or can be informed about different things are not present in most of the slums, just because it is too expensive to build it just like comfortable seats.

So what we could do is improving social live by creating a nice place where people can sit together, being educated, being entertained or just having a nice time together. With the input of micro credits and an amount of money earned from the previous projects it could be done by us, the SEDG together with local people.

Setting X

Scenario matrix

Our scenario (setting X) is a little slum village on a fault zone. Because of the fault, it had been divided into two levels. Most of the public places are on the upper level, a community center, a water reservoir, and a school. The community center where a community 'leader' lives in is also a religious place. We have put a cross-like symbol on a tower to represent this. People can get clean drinking water from the rocket-shaped water reservoir next to the elementary school. The school is recognized by the pilars it is built on to prevent it from sinking into the soft soil.

On the upper part are also workshops, a radio station, a local authority microcreditbank, some houses, and our office. There are three workshops, which work with wood, steel and fabric. The radio station gives announcements and information of the community. Our office is next to the microcreditbank with a view on the playground and the community centre so we are always in touch with the heart of the community.

The lower level is filled with people's houses, but there is also a shop, toilets and a riverbank.

We made the 3D model with cardboards because it makes the model more like a slum with those corrugated sheets.

The clothing of the people is



colorful so they stand out in the brown slum. This represents our design is focusing on people.

Compared to the map in the reader we have changed the given setting a bit. For instance, we added more houses, the school is bigger, and we made the slop to make it more realistic. The open space is on the other side of the community centre and we added a riverbank.



Setting X

Element description



This time we have added the open area, or square as a field of opportunity. We did this because the space we will design furniture for will be used, as the assignment says, by several events. These events will be visited by many people so a large area is required. This is why we added another element which we will use in the (sub-) scenarios.

Incinerator Stove

People in the slum join the trash collecting service to save money for buying an incinerator. It took them three years to arrange it with part of our profit from “There, Bag.” The incinerator is actually been used as a big stove. The community cooker burns garbage and generates heat for sterilizing water while reducing dependency on wood and charcoal to protect forests. The oven burns at temperatures of up to 930 degrees F. which basically detoxifies many hazardous pollutants. So any kind of trash can be burned (plastics, food wastes even clothes.) It’s really special equipment in the slum. People use it a lot to burn their waste and feel very proud because they invest to buy this incinerator stove themselves. And the waste that is collected with the garbage collecting system is being used for the oven.

Square

We build the incinerator stove in an open area close to our slum. At first, people go there just because they are curious about the new incinerator. Then, some people start to incinerate their trash and teach others how to use it (as well as the waste from the garbage collect-

ing). After a while, everybody goes there not only to incinerate their garbage but also to get information and gossip around there. It has become the new community square now.

Local artist

There are around 5 local artists that live in this slum. Some of them make ceramics, some of them paint it, and some of them work with the wood shop. They sell their creations in the city close to the slum. But most of them also have other jobs to make a living.

Idea generation

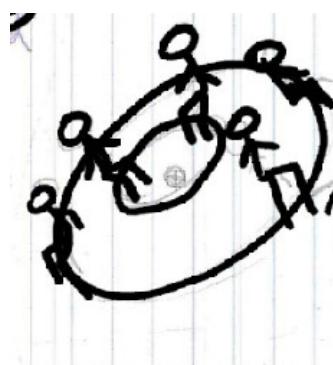
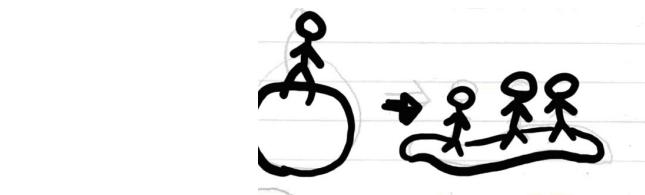
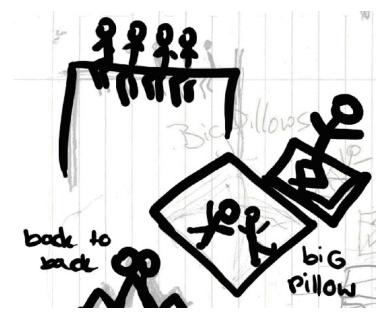
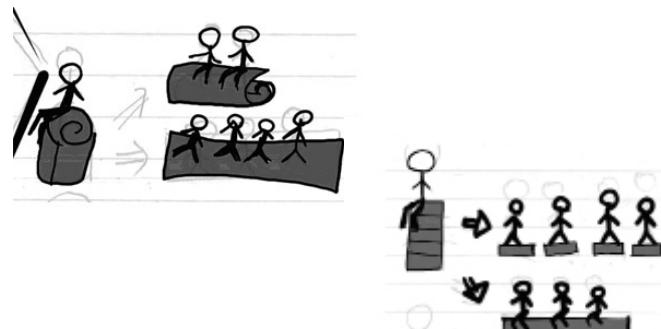
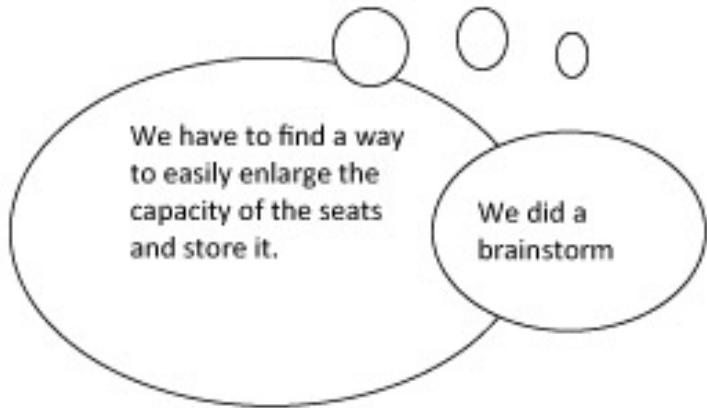
Why we did what we did

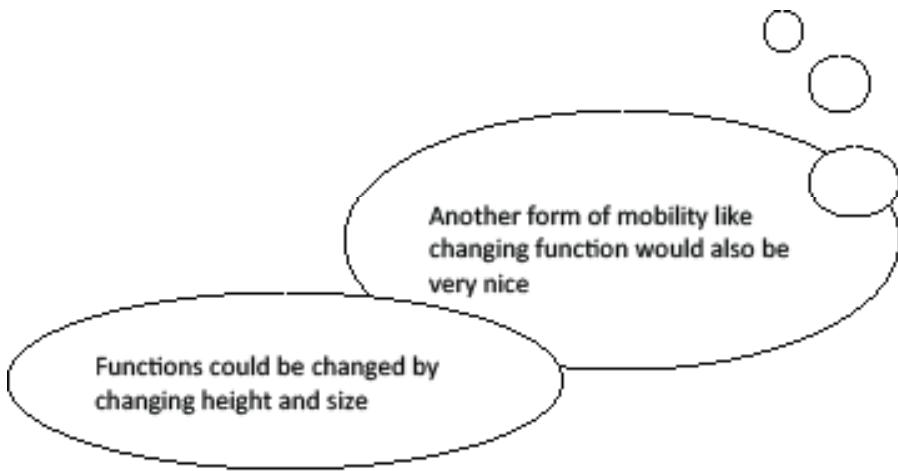
This module we didn't created ideas making use of a sub-scenario matrix because we had too many questions about the design itself and a little less questions about the different elements being involved in the system which we will design around the mobile furniture.

We started a brainstorm using the technique of generating ideas around one main question, also called a "How could you...?"

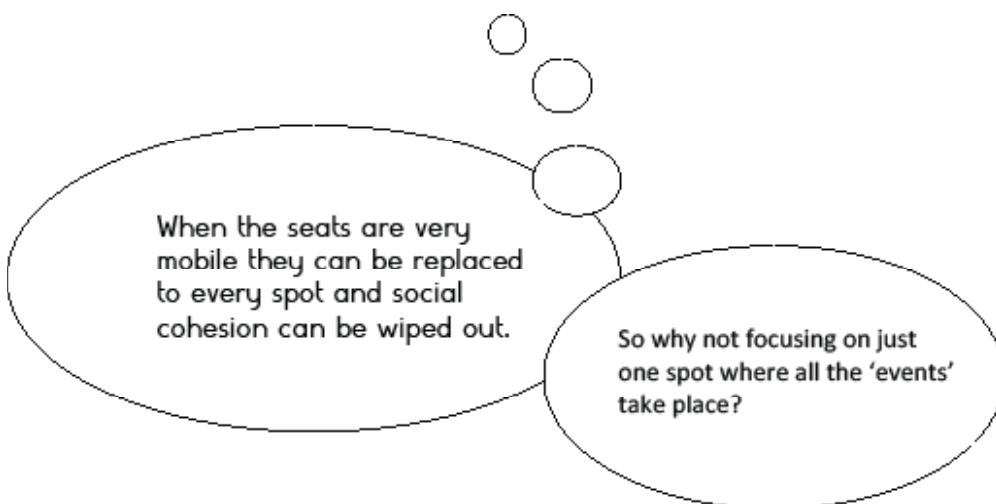
We started with clearing up our main goal:

- What do we want: Social cohesion
- What do we want to use for creating social cohesion: seats, space and a reason to come together.
- Space is about bringing these people together, together in one limited area. Together means bringing a lot people together.
- The reason for coming together could be an event or meeting.
- The seats make it more comfortable and have to attract people to come to that particular spot. When comforting a lot of people with a seat will need a lot of seating places and as well a lot of storing space.



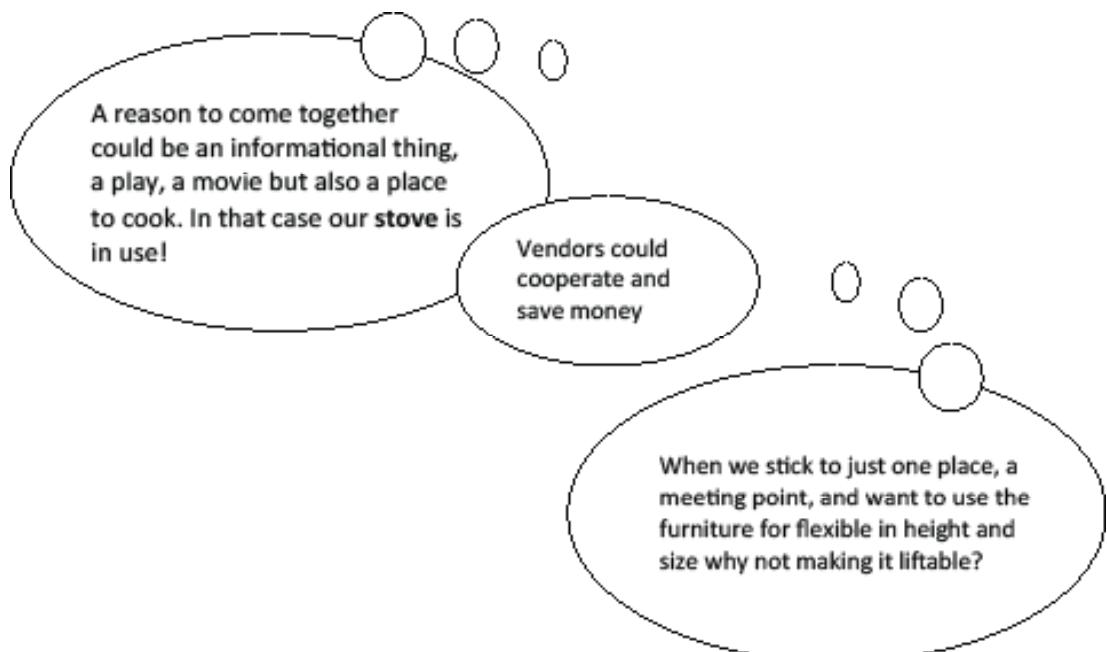


We found a problem in the system, a disadvantage that could occur:



And this is the point where we fixed the idea and all of us were content with the idea. This should be the concept to develop more!

Some advantages were found and finally the idea of the system became physical.



Statements we created finally as being the solution for our project:

- One spot will create more social cohesion because people will come to just THAT place and will not be seated widespread.
- If we have created one spot to have several activities, the furniture there should be modified to those different activities, so change from function or property.
- How can we make seats changeable or/and interchangeable? How to make the seating space multifunctional?

By changing the height, by connecting more seats, by changing their position.

Final idea

A physical product

The physical product:

Swinging seats, seats that can change from function by changing their height. Changing its height can be done easily by pulling the ropes where it is hanging on.

Lifting it up to the sealing is storing the unit. Lifting it up to 80 cm above the floor will make it a table. Letting it down to 55 cm above the floor will make it a seat.

A table should be stable, stable enough to have a meal at. Stabilizing an 'swing' can be done by tided strings.

Hanging two seats next to each other at 80 cm above the floor will make it a bigger table.

Lifting the seats as it is a stairs will give it the function of a stand.



Final scenario

a day in the life of...

Phase II

Integration

While life in a slum is not always too easy, it's not nearly as disastrous as what most foreigners expect it to be. At least, that is Julia's experience. She always thought it was kind of weird that her neighborhood is being called a 'slum' by the outside world. Surely she sees the differences in wealth, but the way of living and the people are not different from anywhere else. Julia has seen dozens of representatives from western organizations visiting her slum in her life. And she knows all too well that most of the projects that they set up eventually end up being either not profitable enough to continue or because of the lack of interest from the locals.

Not too long ago there was the introduction of THERE, place. This really is something different than these previous projects. They have actually created a place where the whole community loves to gather and enjoy some quality time with their family, friends and neighbors. Julia goes there every Sunday to have dinner with the whole family. They buy their dinner from the food venders who cook on the stove. It is just cool to see how the waste from the whole slum provides for the energy to cook food on. More than a place to eat (a restaurant), THERE, place is a place where the community can meet and take part in activities. Every Sunday morning there is a church service where Julia listens to endless preaching. She really hates that part, although she knows that after that comes the fun, playing with the other kids when the benches are lifted up.

It's nice that a week ago they hung up a speaker so that you can listen to the local radio station. She hopes that they can use it to have parties as well. The place would make for a nice dance floor if there's some good music to put up.

She remembers the first theater performance two

weeks ago. The benches were hung up like big stairs, for the audience to sit on. It was a big success and a lot of people could sit there. She heard that next week there will come someone from the Red Cross to inform them about hygiene and how to deal with diseases.



This time our product is based on the incinerator stove we earn for them in last project. In last project we spend 3 years to buy the small incinerator for the slum by the trash collecting service and 5% of the profit from selling “There, Bag” in the Bijenkorf. The incinerator can be also used as a stove.

We decide to build a common space with the mobile furniture inside. We would not make the mobile furniture move to other place but only mobile in this space.

The common space will be a 10m*5m shed build with bamboo. Inside there are 40 benches for maximum 200 people. The benches are going to be hanging on the roof of the common space in order to move up and down. In this way, the benches can be table or stairs like audience seats for different occasions. It can be a dance floor or a field for games

if we put up all the benches. We can control these benches by the pulleys close to the pillars.

In daily use, the incinerator stove will be rented to 10 vendors. The space will be setted like a canteen. People come here to have meals with others. For vendors it's also an easier way to get more customers.

On the other hand, we are going to sell the garden edition to Bijenkorf. But it will only be a small amount of product, like a concept product. We are thinking selling 80 products per year for 3 years.



[The place]

Let's get connected

Close to the stove a building will be build out of bamboo.

This building will provide a maximum of 200 people for having a nice time while sitting there together.

The roof will protect the visitors from the burning sun.

The stove, used by the food vendors, will provide the visitors from delicious and cheap meals that they can eat together sitting on the benches.

At other moments, like when a special event is going on the benches can be lifted up to make stand out of it and everybody can have a nice view on the stage or the movie screen.

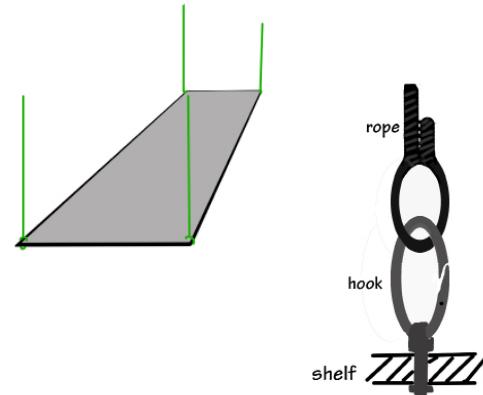


The technical system

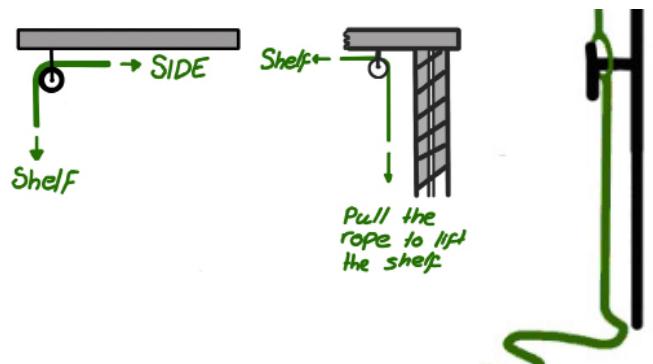
How it works

The seat consists of a squared wooden shelf of 500 by 2000 mm

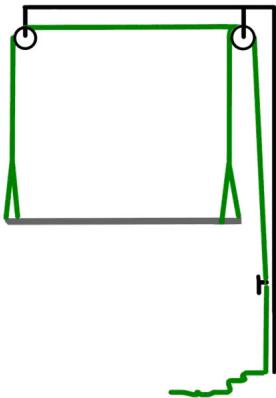
It is supported by ropes at the four corners. The ropes are connected to the shelf by hooks.



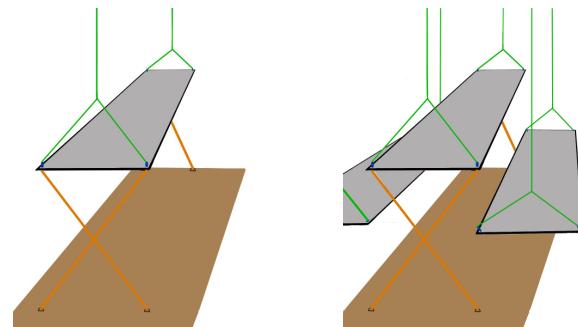
The ropes are hanging at pulleys at a big beam. The shelf can be lifted by pulling the ropes. The ropes can be pulled down on the sides of the building. The rope can be fixed with a loop of the rope around a pin. The rope has three loops to lift the shelf at three different positions (seat, table and stand position)



The next drawing will explain the system.

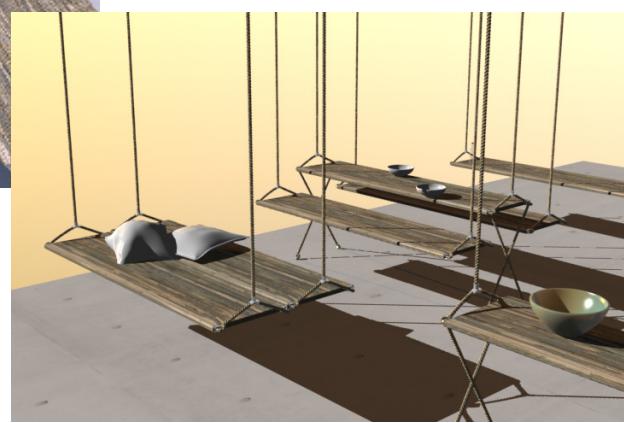
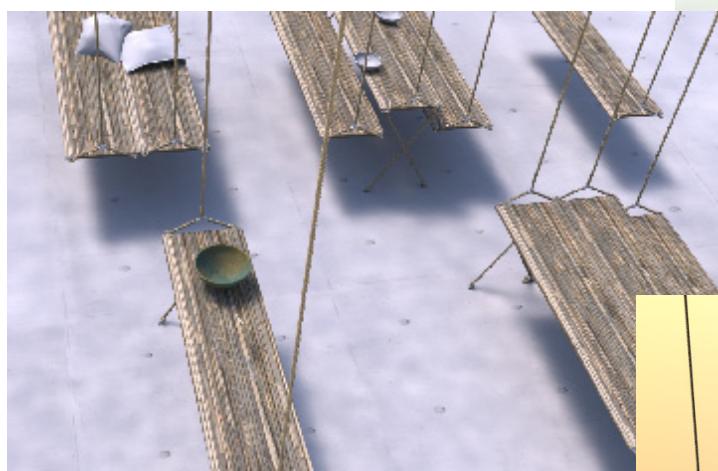
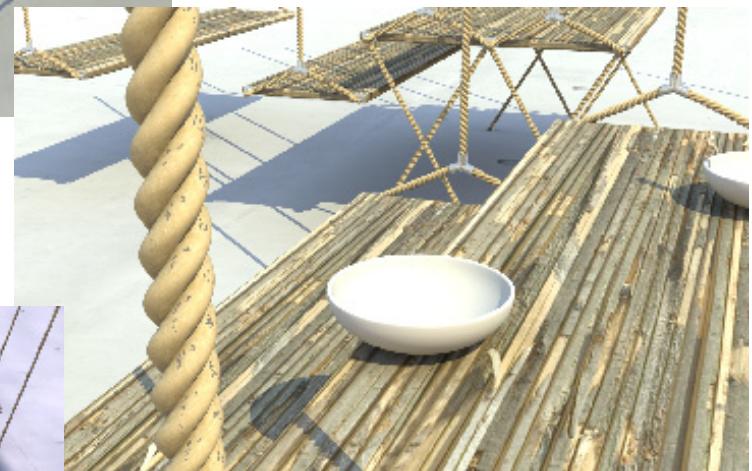


When the shelf has to have the function of a table it has to be more stable so it will not be swinging anymore and people can have a nice meal there. The shelves, in this case will be fixed to the floor with crossed cables. At the floor they are fixed and tied to hooks that. These hooks are well fixed in the concrete floor.



Visualisation

How it will look like

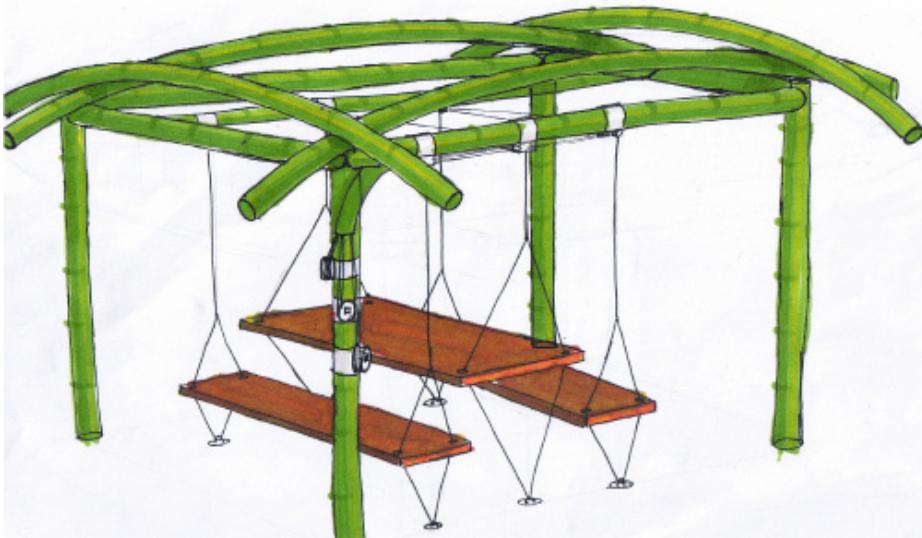
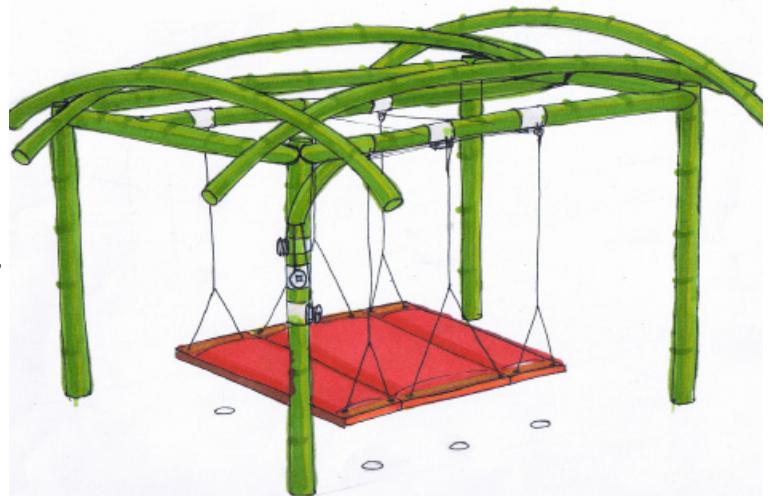


[Garden edition]

There, Place to be sold at the Bijenkorf

For the Bijenkorf we have developed a special 'garden edition' of [There,] place. It is like a small 'place' for the garden to provide shade and a place to eat or lounge. The garden edition could be seen as a small, luxury version of [There,] place in setting X. We want to use higher (aesthetic) quality materials and we will produce it in small numbers. This way it will become a more exclusive product, so we could make more profit out of it.

It is based on the same concept of lifting the benches to create different functions. If you put the middle board at about 80 cm and the outer boards at seat height, you will have a place to eat. If you put them all at the same height, you will have a nice 'floating' lounge. For the lounge you can decide either you want it to be fixed to the ground or let it swing.



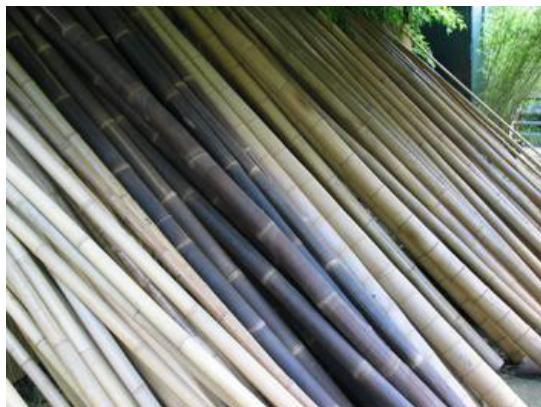
Garden edition

There, Place to be sold at the Bijenkorf

The benches will be made of Plybamboo (laminated bamboo strips) while the frame, or pergola itself will be made out of large bamboo stems. Various colors can be chosen to fit your taste. We chose bamboo because it's a strong, light and sustainable material that, in our thought, should be known more as a beautiful building alternative in stead of (hard) wood. With this pergola we hope to help create awareness of bamboo as a building material.



Plybamboo Examples



Bamboo stems in different colors



The ropes of the benches will be led to the winches by pulleys on the horizontal stems of the pergola. The winches will be attached to one of the vertical stems. This way it is easy to adjust the height, as you just have to turn a hinge around until it is at the preferred height. The ropes will be led from the winches to the ground, to lighten the load on the winches and vertical stem.

This Pergola will be sold in the Bijenkorf for \$1000,-. This price is a market conform price, as similar sized pergola's (without furniture) are about a \$1000 as well. The parts we be made in Setting X, which will make production rather cheap and the production costs are estimated around \$500,-. This way we will make a profit in the North, which we will invest in Setting X and use to support the [There,]place project.

Mock ups

Showing the bag



Social Cohesion

The effects

Here we will describe the effects brought forth from our product/service as it is now.

Building a stove which can be rented by local street vendors

By building a waste incinerator which can be used as stove, we create certain awareness among the slum inhabitants. Because the stove runs on their own garbage, they will get a strong sense of belonging. The food that they can buy there is nonexistent without their trash. And of course this is also from an environmental perspective nice, because the waste will get burned and doesn't pollute the surrounding. On top of that, local entrepreneurship will be stimulated.

Making a place to stay which can be easily adapted to any event taking place

This offers a new meeting place for the whole slum (and maybe even a couple of slums) because normally it will serve as a place next to the stove to sit and eat your dinner. But because of the flexible system, the benches and tables can easily be transformed into a tribune, of an empty space for a fitting context for several events. These events can be organized by the local community themselves, so this is an obvious example of strengthened social cohesion.

Selling a garden edition of the There, place in the Bijenkorf

This feature will serve as an extension on our previous project. Because we sell a similar design as built in the slum, it will strengthen the cohesion between the people who buy the product and the people in the slum. Another connection between the North and South is formed. The people in the North will also know that if they buy the pergola (as well as the Bag) they will contribute to other projects for slums.



Step I

Elements

Phase III

Implantation

Step 1: make a worklist of all community elements that you have integrated into the CIPS.

Incinerator stove

“There, Place” will be place around the incinerator stove, which vendors can rent it to cook. They use trash from the garbage collecting system to heat up the stove. In this way they save money and energy resources.

Square

The place we build our product on. People like to gathering around the incinerator stove being curious or to exchange information. It’s also another reason for vendors to rent a spot here in order to get more customers. The square is becoming the second community center.

Workshops

The workshop is the main production of “There, Place” and home edition “There, Place” are. The first year they will focus on building “There, Place”

next to the incinerator. After building it for the slum, they will start to make the material for selling in the Bijenkorf. we ship them to The Netherlands and install them in buyers garden. This business is running for three years.

Local artists

After build up “There, Place”, we ask local artists to help us paint the benches. We want to provide a sense of belonging by this.

Shops/ vendors

The vendors can rent the place in the square and use the incinerator stove to cook. It’s an easier way to get more customers and also save money for the fuel. On the other hand, people who want to start their vendor business don’t need to buy a stove cart, which is quite expensive.

Radio station

A radio speaker will be set in “There, Place”. When people are having their meals, they can get news in the slum.



Step II

Feasibility

After the last project, the trash collecting service successfully saves us a big amount of money. After 3 years running "There, Bag" project, finally we buy an incinerator stove in the slum.

We plan to build a 5*10m² place with bamboo beams close to the incinerator stove. And hang bamboo boards with ropes from roof beams which can maximum support 200 people from all the families in the setting X. After compare with other constructs in slums, we predict this will cost less than \$25.000.

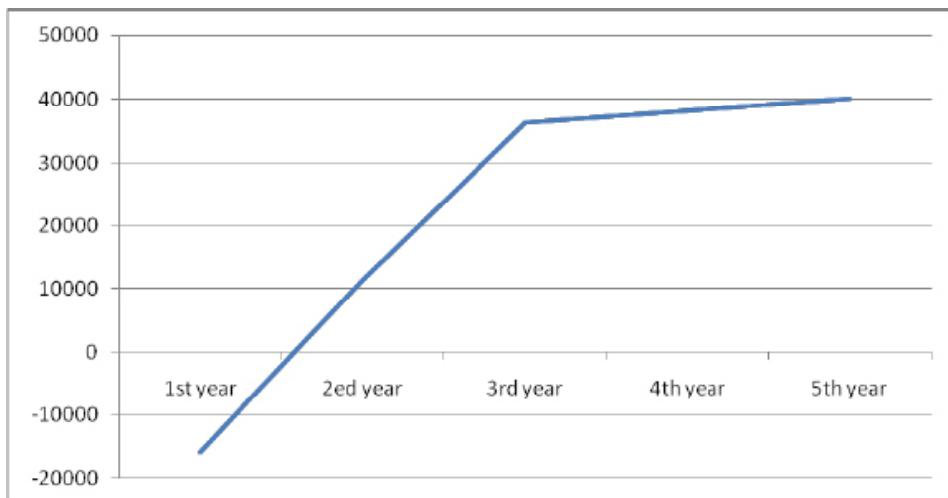
The period of cost recovery is set as 5 years. In regular days, the place will be rented to food vendors per week. The garbage that was collected in the previous project (that still runs) is being used to fuel the incinerator. That is of course the waste that is left because we can't use either for the bags or as organic waste. Because of the incinerator stove, people like to gather around it. Instead of

visit different streets and places, vendors can have more customers and stay in one place in this way. In addition, they could use the incinerator stove to cook as well instead of having to buy and own their own cooking cart. There will be 10 spots for them.

We will take \$5 of rent per week for every vendor. Vendors can apply for the spots with us. So we can earn \$2.400 maximum per year from this service. There can also be different kinds of events in our area. People also have to apply it with us in advance, but in this case we won't charge any fee.

On the other hand, the main profit is from selling the home edition "There, place" to customers of the Bijenkorf. Each "There, place" will be sold for \$1.000 and will make \$500 profit. But we are going to sell them for only 3 years like conceptual products. We predict we sell around 50 to 80 of them per year. Therefore, we earn maximum of \$40.000 from this per year.

	1st year	2nd year	3rd year	4th year	5th year
construction	-25000				
repair		-500	-500	-500	-500
rent	1200	1600	2400	2400	2400
promotion	-2000	-2000	-2000		
living cost	-12000	-12000	-12000	we are not there anymore.	
Bijenkorf	26000	40000	26000		
profit	-15800	11380	36280	38180	40080



Step III

Upscaling & planning

As being told, we will start this project in the third year of the There, Bag / Garbage collecting project. We need the money that we have earned from the other projects to be able to build the 'There, Place'. Except for the place (the actual building) we need to make the waste incinerator first. The design of this stove will be an existing one, which is already built in the Kibera slum in Kenya. We estimate that the building of this device (and setting it up, testing it) takes three months.

Then at the same time we need to make concrete flooring, as well as make the framework and the roof. After that is finished, we can install all the benches and tables. We estimate that we could build everything in three months with several people working for us.

Because we make quite a big investment, this is going to be a longer term project. Therefore it takes a while before we will start making some profit. We expect that we lose money in the first year, and only after that we will make a profit. When we earned everything back what the whole project has costed, we can start thinking about setting up similar projects in different slums around the world. This of course depends on whether the project was a success. We determine this success by measuring the happiness and satisfaction that the furniture has brought to the people in the slum. And it also depends on the money that we can make by selling the product in the Bijenkorf. If this turns out the way we predicted, all roads are open to the upscaling process. We suspect that we can start spreading out to other slums after 2 years. The selling in the Bijenkorf can continue, and we can add more products over time to our collection, if it turns out to be a success. We can even start a separate label under which we will sell different products that originate from the slum.