Citizens urban regenerating cities

Urban regeneration of a desolate site with the power of the people

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# Table of contents

1. Project description p. 5  
   1.1 Motivation p. 6  
   1.2 Location p. 6  
   1.3 Research question p. 7  
2. Methodology p. 9  
   2.1 Methodology p. 10  
   2.2 Designers position p. 11  
3. Analysis p. 13  
   3.1 What p. 14  
   3.2 Where p. 16  
   3.3 Who p. 25  
   3.4 Political system p. 26  
   3.5 The red tape p. 28  
   3.6 The people p. 30  
   3.7 Preliminary conclusion p. 32  
4. Theoretical framework p. 35  
   Literature review p. 36  
5. Relevance p. 41  
   5.1 Academic relevance p. 42  
   5.2 Social relevance p. 42  
   5.3 Power struggle and distribution p. 43  
   5.4 Ethical issues p. 45  
6. The involvement tool p. 47  
   6.1 Explaining the tool p. 48  
   6.2 The variables p. 49  
   6.3 The matrix p. 51  
7. Campaign p. 69  
   7.1 Website p. 70  
   7.2 Results p. 72  
8. Winning design p. 75  
   8.1 Principles for winning design 8 p. 76  
   8.2 Layout principles p. 77  
   8.3 Layout plan p. 79  
   8.4 Allotment study p. 80  
   8.5 Design (phasing) p. 82  
   8.6 Impressions p. 87
1. Project description
For this graduation project the starting point is to regenerate an urban area with the involvement of citizens. The urban regeneration of cities is chosen as design principle, because it is currently an important topic in modern developing cities all around Europe. Even in small cities like Delft this shift to urban regeneration is noticeable the last couple of years. Instead of developing and building new neighbourhoods to the city, the municipality of Delft tries to redevelop the inner city tissue. Some projects are on the restructuring of existing city parts, others are about the regeneration of totally or partially desolate sites. The involvement of citizens in these urban regeneration projects, is often not more than having insight in the zoning plans, after the plans are made. Citizens can then decide to agree on these plans or not. During the realization of these zoning plans, the involvement of citizens is usually not more then informing them. Genuine participation during the development of zoning plans does not take place.

1.1 Motivation

The aim for this graduation project is to increase the involvement of the people in design projects, by giving them more democratic power in the design process. To achieve this, an urban regeneration project will be done for a case study area in Delft, where the involvement of the citizens takes a central role.

1.2 Location

The chosen case study area in Delft is a partially desolate industrial sites, embedded to the north of the city centre of Delft (figure 1). It is a shrinking industrial area that consist out of a still functioning site in use by industrial giant DSM and a desolate area, or brown field, formerly in use by Unilever. The industrial area has been located to the north of the city centre since 1896. For almost 120 years the citizens of Delft have been living with its industrial neighbour. A long period of environmental noise and smell contamination with explosion hazard as well. Beside these past and still existing burdens, the citizens are now facing a shrinking and partially abandoned area.

Problem statement

Aim

The chosen case study area in Delft is a partially desolate industrial sites, embedded to the north of the city centre of Delft (figure 1). It is a shrinking industrial area that consist out of a still functioning site in use by industrial giant DSM and a desolate area, or brown field, formerly in use by Unilever.
1.3 Research questions

The main aim of this graduation project is trying to increase the involvement of the people in design projects. To achieve this goal this graduation project tries to give an answer to the following main research question:

**How can citizens be involved in the urban regeneration of desolate sites, embedded in and around cities?**

To give an answer to this question, a case study will be done for a desolate site in Delft. The partly desolate industrial area to the north of the inner city of Delft is chosen as site. To understand the case study area in all its features, the following research questions will be answered as a general analysis:

1. **What is the physical situation of the area?**  
   (chapter 3.1: What)
2. **What are the spatial characteristics of the area?**  
   (chapter 3.2: Where)
3. **Who and what is involved in the area?**  
   (chapter 3.3: Who)
4. **What is the political system for the area?**  
   (chapter 3.4: Political system)
5. **What are the policies for the area?**  
   (chapter 3.5: The red tape)
6. **What is the role of all the stakeholders (the owners, the municipality, the citizens, etc.) in defining the area?**  
   (chapter 3.6: The people)

Furthermore, a general literature review is done on the role of citizens in an urban regeneration project for desolate sites. In literature the commonly defined role of communities is discussed in brown fields (desolate sites):

7. **What can be the role of a community, as a participant in the urban regeneration of brown fields?**  
   (chapter 4: Theoretical framework)

Finally, to give an answer to the main research question, a research will be done for a possible involvement tool for citizens. For this last research, the derived answers from the case study area research and the literature review will be used.

8. **What can be an involvement tool for citizens, to help them participate in urban regeneration projects of desolate sites?**  
   (chapter 6: The involvement tool)

Answering the last question and thus create an involvement tool for citizens to participate, delivers the first part in answering the main research question. Testing the involvement tool and making a final design from the result of the test will be an answer to the main research question.
2. Methodology
To give an answer to the main research question, the first step is answering the first 6 sub research questions.

1. What is the physical situation of the area?
2. What are the spatial characteristics of the area?
3. Who and what is involved in the area?
4. What is the political system for the area?
5. What are the policies for the area?
6. What is the role of all the stakeholders (the owners, the municipality, the citizens, etc.) in defining the area?

To answer the first 6 research questions, a general analysis is made. This general analysis can be found in chapter 3 and is made to gain a grasp on the case study area. The general analysis will also make clear in what way the citizens are involved, regarding this case study area.

Sub research question 7 is answered by making a literature review on the topics participation in design and brown fields. This literature review can be found in chapter 4.

7. What can be the role of a community, as a participant in the urban regeneration of brown fields?

The derived answers from the case study area research and the literature review will be used to give an answer to the last sub research question.

8. What can be an involvement tool for citizens, to help them participate in urban regeneration projects of desolate sites?

This last sub research question will be answered in several steps. The first step in making an involvement tool, is combining the results from the case study area research with the conclusions of the literature review. In this way a framework can be created that can function as a basis in answering the question. The case study area provides all the tool variables that have to be taken into account and the literature review provides the theoretical part.

From this the involvement tool will be created. The tool will function as a matrix that provides several different solution scenarios, from the variable input.

Defining this involvement matrix tool and the resulting solution scenarios is done in chapter 6. The matrix consists out of variables that can be combined in different ways. The users of the matrix put the variables in and a solution scenario is the result. The scenarios are designs for the case study area, following the combination of variables. The involvement matrix tool is the answer for sub research question 8.

The next step in answering the main research question is testing the tool. The tool will be tested by making it accessible on a website. By means of a campaign, the website and the tool will be promoted. The aim is to let the citizens of Delft and its surroundings use the tool by means of a questionnaire. The result of filling in the questionnaire, is one of the solution scenarios for the case study area. The person can than decide to vote for this solution scenario. In chapter 7 the website will be explained further. The final results are also presented in this chapter.

The solution scenario that is voted most, will then be further designed. This design can be seen as a final design outcome for the case study area. The final design is shown at the end of chapter 8.

The design will be presented to all the stakeholders. This will be done by presenting it on the same website as the questionnaire.
2.2 Designers position

The role for the (student) designer during this graduation project began as an activist. Questions were asked about the case study area concerning the process of urban regeneration. A thorough research on the area followed, concluded by preliminary research findings. These findings were used to raise awareness on how urban regeneration projects like the case study area take place. With a special focus on the involvement of the people.

To get the people involved, an involvement tool was made. Creating this tool and let it be used by the people was the most important goal of this graduation project. The designer took a position as campaigner during this process.

After the involvement tool was created and used by the people, the results were used to create a final design. The gained knowledge from the research, the winning parameters of the involvement tool and own expertise were used to create this design.

The designer would hold a position as adviser if this design was to be presented to the involved people. If the designer would present the design to the concerned owners or municipality of the case study area, the designer would take a position as advisor on behalf of the involved people.

The main features of the design are the created layout and its principles. A further given elaboration of this design by phasing it, is an extra advice of the designer that does not have to be taken into account. The layout plan and its principles do however need to be taken into account, as it is part of the advising role of the designer, concerning the design.

In the ‘real’ world, the designer could act as activist or campaigner or adviser or all three of them. Regarding the always changing urban environment, all three types of designer will be necessary to shape the urban environment.

The designer can’t however be an activist, campaigner or adviser like the student. He or she will probably have to be paid by one of the stakeholders, if the designer isn’t doing the work voluntarily. In the case of this graduation project, several options are possible. The designer could be paid by the involved people to be an activist and raise awareness about the case study area. A designer could also do the activism and campaigning from a personal stand. After having the peoples support, the owners and the concerned municipality could be approached. They could then hire the designer to execute the involvement design. Another option could be that the process of this graduation project is executed by a designer, hired by the owners of the area or hired by the concerned municipality.
3. Analysis
3.1 What

View on location

Figure 2 shows a zoom in on the case study area. In the north the area is enclosed by a street, which is also the border between Delft and Rijswijk. To the west the area is enclosed by the railroad connection between Delft and The Hague. In the east the area is bordered by the river Delftse Vliet and to the south finally, the area is enclosed by a harbour and the provincial road Wateringsevest.

Figure 3 shows a birds eye view on the case study area from the east. The red highlighted buildings are former factory buildings (both from DSM and Unilever), that are now unused because of the reducing production of the industrial site. The green highlighted buildings are factory buildings that are still in use by DSM.

At the right side of figure 3 the brown field area, formerly in use by Unilever, is highlighted in purple.
3.1 What

Figure 4 shows a birds eye view on the case study area from the south. The yellow highlighted part at the bottom is rented by DSM to OBS. OBS is the organization that is currently building a railway tunnel, which goes underneath Delft. After this project is finished, the area will be desolate as well.

Figure 5 shows a birds eye view on the case study area from the north. The figure shows how the former Unilever site (purple) has turned into a brown field, and the way this site is surrounded by the DSM area (light purple).
3.2 Where

Alteration of the area

The case study area has been going through some significant changes over the last decade. As shown in figure 6, Unilever has left the area and the site of DSM has shrunk in the south.

The result of these changes is shown in figure 7. After Unilever left, all the factory buildings on the (purple) site were demolished, except for two monuments.

The shrinking of the DSM site has resulted in a row of unused former factory buildings. These buildings are monuments as well and are therefore not demolished and still located on the east part of the site. The whole south-western part of the DSM site has been rented to OBS after the shrinking of DSM. When the railway tunnel is finished, the area will be unused as well.
3.2 Where

Accessibility
The case study area is well connected to its surroundings. On figure 8 is shown that the area is bordered to the north, east and south by a provincial road.

On figure 9 is shown that the area is very close to the (future) railway station and that the area will have a direct connection to the neighbouring residential area, after the construction of the railway tunnel is finished.
3.2 Where

In figure 10 and 11 is shown that the case study area is currently well connected to the public transport. The tram and bus line both have a stop to the south of the area and in addition the bus line goes to the north along the east border of the area.

Figure 10: Accessibility by tram

Figure 11: Accessibility by bus
3.2 Where

The case study area is in the south connected to the inner city of Delft. In figure 12 is shown that all the common functions can be found in this area. Furthermore there are also some clustered common functions located to the south-west.

Functions
The case study area is in the south connected to the inner city of Delft. In figure 12 is shown that all the common functions can be found in this area. Furthermore there are also some clustered common functions located to the south-west.
3.2 Where

Monuments

In figure 13 the main monuments in Delft have been indicated. It becomes clear in figure 14 that many of these monuments are located on the case study area.

Figure 14 shows a zoom in on the case study area. All the relevant monuments in the area are named. One on the formal Unilever site and five on the DSM site. A last building in the centre of the formal Unilever site is still in the run for a monument. On the following pages the mentioned monuments are shown.
3.2 Where

Figure 15: Monier building (source: municipality of Delft)

Figure 16: Old office building KNGS (source: municipality of Delft)
3.2 Where

Figure 17: Frisooloods (source; municipality of Delft)

Figure 18: Laboratory east (source; municipality of Delft)
3.2 Where

Figure 19: Old entrance north (source; municipality of Delft)

Figure 20: Taplokaal (source; municipality of Delft)
3.2 Where

Environmental conditions
For the case study area, certain environmental contaminations circles are applicable. These environmental circles are caused by the factories of DSM. Because of these circles certain developments are not allowed in the case study area. On figure 21 the noise circle is shown, on figure 22 the smell circles are shown and on figure 22 the safety circles are shown. The darker the circle the higher the contamination is for figure 23. For figure 23 a darker circle means a bigger hazard.
3.3 Who

Regional

The Ministry of infrastructure and environment, develops the environmental rules that are applicable on the case study area.

The Province of South Holland develop the regional zoning plans that apply on the case study area.

Local

DSM is the partial owner of the case study area.

The case study area lies in Delft. Therefore all the local zoning plans are developed by the municipality of Delft.

Although Unilever has left the area, they are still partial owner of the ground.

The case study area is in the north bordered by the municipality of Rijswijk. All the plans made area can effect this municipality.

ProRail is the owner of the railway track that borders the case study area in the west. Their plans and the area plans effect each other.

The citizens of Delft directly neighbour the case study area, as residents of Delft.

Analysis

Figure 24: Stakeholders for the case study area
3.4 Political system

Environmental and infrastructure rules

Rules for regional zoning plan

Rules for local zoning plan

Environmental contamination

Owner

Figure 25: Political system scheme
3.4 Political system

The Ministry of infrastructure and environment develops the environmental and infrastructure rules. The stakeholders on which these rules apply, have to take them into account when making plans. These rules are also directly applicable on the case study area.

The Province of South Holland develops rules for regional zoning plans. The rules apply for the municipalities of Rijswijk and Delft, but also for DSM. DSM creates environmental contamination which is of big influence in the province. The regional zoning plans have an indirect effect on the case study area.

DSM is the partial owner of the case study area and therefore the company makes plans for the area. In addition DSM also creates environmental contamination circles with their factories. These environmental circles are of big influence for the plans of the area and have to follow guidelines by the Ministry.

The municipality of Delft develops local zoning plans, which apply for all the companies in Delft. The rules of the Ministry and the Province have to be taken into account when making zoning plans. The municipality can create zoning plans for the case study area, but the plans have to be discussed with the owners of the area; DSM and Unilever.

Unilever is also partial owner of the case study area, they however left and now want to sell the land. In the search of an appropriate buyer, they have to take the zoning plans of the municipality of Delft into account.

The municipality of Rijswijk is a direct neighbour of the case study area. The plans that are made for the area can have a direct consequence for their plans. The municipality is therefore included in this political scheme as neighbour and will be closely involved when plans are made for the case study area.

ProRail can also be seen as a neighbour, because of the railway track to the west side of the case study area. In addition they also create environmental contamination with the railway track. The plans they make will influence the case study area and vice versa.

The citizens can be considered as neighbours, that are mainly affected by the area because of the environmental contamination. They will have insight in zoning plans, and can decide to agree upon them or not, but they will not be involved in making the zoning plans.
3.5 The red tape

Tranen bij afscheid Calvé Delft
2008
Delft, 30 mei. Na ruim twaalf jaar is
vrijlagervoorzitters deel
komen aan de productie van Calvé-
pandensamen Delft.

2008

2009

2010

2011

2012

2013

Persbericht

Vrijlagert, 02 maart 2012

DSM investeert in kennis en innovatie in Nederland

Bedrijventerrein Delft Noord krijgt
een nieuw gezicht en iedereen mag er
over meepraten

Cru

DSM in Delft: dat werkt!

Gemeente Delft

Figure 26: Chain of events
## 3.5 The red tape

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Till 2008</td>
<td>The south-western part of the case study area has become unused, because the industrial site of DSM has shrunk over the last couple of decades. Except for the monuments in the east, all the unused buildings are demolished.</td>
</tr>
<tr>
<td>May 2008</td>
<td>Unilever closes the Calvé factory in Delft. The production is moved somewhere else. The unused factories on the site are demolished the following months, except for two monumental buildings. Unilever searches a new buyer.</td>
</tr>
<tr>
<td>October 2008</td>
<td>Commissioned by the municipality of Delft, Crux architects made a feasibility plan for the case study area, concerning a residential area. The plan concludes in a loss of 8 million euros if dwellings would be build.</td>
</tr>
<tr>
<td>Early 2009</td>
<td>At the beginning of 2009, the long awaited ‘Spoorzone’ projects starts, which is about building a railway tunnel underneath Delft. The northern entrance to this tunnel lies south-west of the formal Unilever site.</td>
</tr>
<tr>
<td>October 2009</td>
<td>DSM launches its plans for the next decade. On the west side of the DSM site (west of the railroad) a Industrial Biotech Campus (IBC) will be developed, the east side (on case study area) production factories will be maintained.</td>
</tr>
<tr>
<td>January 2010</td>
<td>The municipality of Delft publishes the zoning plans for the formal (Calvé) Unilever site. The area should maintain an industrial area, but because of future residential development to the east, no heavy industry is possible.</td>
</tr>
<tr>
<td>July 2010</td>
<td>The Province of South Holland publishes the regional vision for South Holland. They set among other things, that DSM should further develop its site to create more jobs and that the Province will invest in the IBC.</td>
</tr>
<tr>
<td>December 2011</td>
<td>DSM informs the citizens of the neighbouring residential areas that their environmental permit is approved by the government and that they will build a new dry tower for their yeast.</td>
</tr>
<tr>
<td>May 8 2012</td>
<td>The municipality of Delft accepts a preparation decision that freezes the development for the case study area. This because there is no zoning plan and the municipality doesn’t want unwanted development for the area.</td>
</tr>
<tr>
<td>May 22 2012</td>
<td>DSM announces in a press release that they will invest a 100 million euros the next couple of years in their sites. For Delft this means the start of the development of a Bioprocess Pilot Facility (BPF), earlier mentioned IBC.</td>
</tr>
<tr>
<td>January 2013</td>
<td>The municipality of Delft publishes the new zoning plans for its northern industrial site. The case study area is appointed to be a new creative industrial area. The citizens can join in the conversation about the area.</td>
</tr>
</tbody>
</table>
3.6 The people

Figure 27: Concluding relationship diagram
3.6 The people

The Ministry of infrastructure and environment has the biggest influence on the case study area, regarding the rules. Because of the applied environmental rules on the area, only certain plans can be developed.

It is clear DSM has the biggest influence on the case study area. They own the major part of the area and have therefore the biggest influence on the plans. In addition they are also the biggest investors. Finally they have a big influence in the environmental contamination. This because of the factories that are still in use in the case study area and in the adjacent area.

The Province of South Holland has the smallest influence of the big stakeholders, because the regional zoning plans and accompanied rules can be considered as guidelines. They do however provide subsidies plans in the area and can therefore be seen as the second investor.

Unilever also had a big influence, because they are still partial owner of the area.

The municipality of Delft is the third party with big influence, because of the developed zoning plans and the accompanied rules.

The municipality of Rijswijk has almost no influence, but because they border the area in the north, they can be considered as an important ‘neighbour’ stakeholder.

ProRail has almost no influence, but because they border the area in the west and create environmental contamination with the railway track, they can also be considered as an important stakeholder.

The citizens of Delft have little influence on the case study area. As already mentioned can they be considered as neighbours that are mainly affected by the area, because of the environmental contamination. They do have the democratic right to agree upon plans or not, but are not involved in making the plans.
3.7 Preliminary conclusion

The case study area is a dynamic area where a lot is going on. The area has gone through quite a lot of changes the last couple of decades:

- Shrinking of the DSM site on the south-western part of the area
- Leaving of the area by Unilever

These changes have resulted in an industrial area that is partly abandoned or unused; a partial desolate site. From the analyses however comes that the case study area is strategically located in the urban tissue of Delft. Although the area is well located, the desolate parts of the area have been like this for about five years. The main reason for these parts to be desolate, has to do with the political system over the area and the resulting rules and regulations.

Another problem on democratic level that comes forward, is the lack of influence from the citizens during the process of urban regeneration. The citizens are involved in the way that they can agree or not agree with plans made for the area. These plans are however already made in advance by the big stakeholders. During the creation of the plans the citizens are not involved at all.

The citizens should be able to intervene earlier in the process of urban regeneration. In this way the bureaucratic urban regeneration approach for an area like the case study area, could be broken and decisions could be made sooner.
4. Theoretical framework
Introduction
This next chapter is a literature review paper on the participation of communities in the urban regeneration of brown fields. The aim is to give an answer to the question: What can the role of a community, as a participant in the urban regeneration of brown fields be?

The research is two-folded. In the first chapter a general research is done on the urban regeneration of brown fields, the value of the regeneration and the additional difficulties. The chapter ends with relating the regeneration of brown fields with the possible involvement of communities. The second chapter gives a general investigation on participation. The chapter defines participation, its purpose and the consequences and necessity. At the end of the chapter a framework is described that is necessary for the development of a participatory design program.

The paper finishes with a conclusion and recommendation chapter, where the most important findings of the literature review are summarized and an attempt is made to give an answer to the research question.

1. Urban regeneration of brown fields
Many medieval cities in Europe have brown fields imbedded in or around their city centers. Simons (1998) defines a brown field as “a formerly industrial or commercial site prevented from attaining its highest and best use as a result of perceived or actual environmental contamination” (p. 3). Current brown fields exist because of the shrinking or even abandoning of industries or centres of commerce. The total or partly abandoning of the sites by the industrial or commercial companies can be explained in several ways. Sometimes because cheaper ground and labour can be found outside the cities, but it is also possible that the site cannot fulfil the infrastructural or morphological needs anymore. What is left of these former industries or commercial centres are large open areas, with an occasional monumental building. Neighbourhoods surrounding these areas, are now facing empty unused grounds. Because of this, unused brown fields are unwanted for a city and therefore these areas are fit for urban regeneration. Urban regeneration is defined by Roberts and Sykes (2000) as “(...) an outcome of the interplay between [these] many sources of influence and, more importantly, it is also a response to the opportunities and challenges which are presented by urban degeneration in a particular place at a specific moment in time” (p. 9). In this case the urban degeneration is the shrinking or abandoning of a industrial or commercial site, resulting in brown fields in or around a city.

The regeneration of these brown fields can be very attractive for a city. Besides the fact that unused areas will be made useful again, the converting of a brown field can be economically and socially profitable for a city (Rafson and Rafson, 1999). Regenerating these desolate sites is however not such an easy task.

First of all matters are complicated because during regeneration processes or design processes in general, a distinction can be made between the (future) users and the providers (Kernohan et al., 1992). In this case the providers are the formal landowners and the users the individuals or groups that will use the site after regeneration. These two parties based on demand and supply have different values, goals and expectations that should be derived from the regeneration process.

In addition, there is also a more specific problem with the regeneration of brown fields, that tends to make the involved parties more cautious than in other regeneration projects. Rafson and Rafson (1999) claim that the involved parties in a brown field regeneration or transaction have a fear of liability that makes the redevelopment more difficult. This because of the already stated problem that these sites are formal industrial or commercial sites with perceived or actual environmental contamination.

These facts make brown field regeneration projects complicated. Ducharme (2009) states that therefore from a redevelopment point of view, a significant cooperation is required between the private sector, the government and the community, to assure that these projects will succeed. For this paper a further focus will lie on the role that a community could have in these regeneration processes.

An involved community can be of high value when they contribute in the process and the resulting design. King et al. (1989) state that they are “(...) an incredibly rich yet often untapped source of information for the designer” (p. 23). According to these authors a community can contribute to the designing of many different areas or layers of the process. For example, a community knows a lot about the site values, its history, the current politics and the routes on and
around the area (King et al., 1989). Ducharme (2009) states that a community can also play an important role in the planning of a design and the eventual implementation of it. The community can do this with general advising and actively participating in the design process. In this way a community can provide a basis of knowledge and active engagement from which the regeneration can start off. A basis which is important for difficult project like the regeneration of brown fields.

Next to this knowledge and active engagement, another advantage of contribution or participation can be found in the participation process itself. For a community this process can result in an engaged and informed society that feel better connected to their own environment (Francis, 2003). It provides awareness for the people of the actual society that they live in. They get a voice in the process which makes the process more democratic.

There are however also risks and limitations that have to be taken into account when it comes down to participation. For participation to be effective, a clear vision or view should be developed by the city officials and designers on the desired future of the design. If there is no clear goal that needs to be achieved, the participation can lead to a ‘participatory gridlock’. This means that nothing is agreed upon after the process between all the involved parties or that the resulting plans go against established environmental or social goals (Hester, 1999).

It is thus necessary to make sure the participation is well organized and is properly executed during a generation project. In the next chapter a further elaboration on participation will be made to better understand the topic. The aim is to discover what types of participation there are and which one could be the most suitable for the regeneration of brown fields.

2. Participatory design

Participation has several different synonyms like involvement, influence, contribution, action groups, etc. They can all be seen as part of the same common concept that describes different forms of decision making by a certain amount of parties or stakeholders (Wulz, 1986). In literature there are different ways of defining participation. One of the clearest definitions is given by Francis (2003, p. 59): "Participation is the process of working collaboratively with individuals and groups to achieve specific goals." It is clear that the definition of participation can vary per person and vary per situation. The purpose of participation is however the same and can be described in two main ways (Sanoff, 1992):

* The involvement of people in the process of design and decision making, with as a result that they gain confidence and trust in organizations working on a specific project. In this way it is more likely that people accept plans and/or decisions made by these organizations. When a plan and/or decisions is executed it is also more likely that people will actually work along.

* The involvement of people a voice in the process of design and decision making. As a result, it will improve the making of plans, decisions and the delivery of services. The participation process can also be seen as more democratic than a project without the involvement of people.

The consequences of participation for individuals, communities or the society as a whole, have also been numerous described in literature. Davidoff (1965) states that participation reduces the feeling of anonymity in culture and society. Furthermore it also communicates to the users of a design a greater degree of concern when it comes to management or administration. Becker (1977) complements this with the fact that because people are actively involved in the development process, a better maintained physical environment, a greater public spirit, more user satisfaction and significant financial savings will occur.

The necessity of participation is pointed out by Sanoff (1992, p. 55): “People need to participate in the creation of their environment, they need the feeling of control; it is the only way that their needs and values can be taken into consideration”. According to him participating in design is the only way of protecting the interests of groups and individuals. If it does not occur in the process of design, the needs of people will be ignored totally or partially by organizations, institutions, bureaucracies or the planners and designers.

The last mentioned necessity shows one of the first important elements of participation that should be agreed upon before participation can take place. What is the position of the planner or designer during the participation process? This position can vary from advising a participant where the participant in the end makes the decision, to a classical planner or designer role that takes the wishes
of a participant in account, but in the end makes the decisions himself. This of course goes hand in hand with the way the participant contributes to the design process. Sanoff (1992) describes a passive or an active way of participating, which both have different results on the outcome of the design.

To make sure the relationships during participation projects between the involved parties are well organized and understood, it is important to create an appropriate organizing framework at forehand. The factors described above that determine who is participating, how they are participating and what the role is of the designer or planner are important parts of this framework. Another important factor that should be included in the framework is the goal or the effect that the participation should have, in other words, where do we want the participation to lead to? Next to the who, how, what and where questions, the additional question ‘when’ should also be part of the framework (Sanoff 1992); when is the participation actually taking place, needed or desired in the design process? This last question is a factor in the framework that is quite specific for a project, because it depends on the length of a process and therefore can differ a lot per project.

Where participation could lead to is a more general question, since it is easier to create scenarios out of experiences from previous participation projects. Burns (1979) states that the path of participation can be categorized in four future scenarios or stages; awareness, perception, decision making and implementation. Awareness is the stage where a given environment or a situation is discovered or re-discovered, to make sure all the involved parties speak the same language. The second stage is perception, which means moving from the awareness of an environment or situation, to really understanding it. This means understanding its physical, social, cultural and economical ramifications. The parties should share all the knowledge on these topics so they can become resources for planning. Decision making is the third stage where a program for the environment or the situation can be made. The participants make actual designs or models based on their priorities. The planner or designer can use this to make alternative and in the end final designs. The last stage is the actual implementation, where the participants stay involved throughout the process and together with the planner or designer take responsibility for the result. This stage is sometimes skipped or forgotten, with often fatal results for the project. Because there is no responsibility for the end result, a project could become a failure.

To prevent participation from failing and let it lead to a satisfying result, it is of most importance to determine clear goals and objectives. Per project the list of possible participation objectives will be different. When the list is put together and the participation goals or objectives are stated for every party, it will become clear that the participation purpose per party is perceived differently. In the end an unanimity should be reached for participation to really work. When an unity can be achieved for the purposes of participation, it is possible to plan the related activities. Goals and objectives can be for example to generate ideas, to identify attitudes, to disseminate information, to resolve an identified conflict, to review a proposal or just to be used as a safety net for unexpected emotions (Sanoff, 1992).

Conclusion and recommendation

In chapter one is explained why the regeneration of brown fields is a relevant subject. These formerly industrial or commercial sites with perceived or actual contamination, are nowadays often embedded in or around medieval city centres. The regeneration of these desolate areas can be of economical and social value for a city. Because of the possible contamination however, it is difficult to gain the highest and best use from them. The future users and providers of brown fields have a great fear of liability because of the contamination topic when it comes to the regeneration of these sites. Therefore it is important that there is a good cooperation between the involved parties, but also with the government and the community. The value of community participation in these projects can be of different levels. Communities are of high value as a participant because they contain a large amount of knowledge on the other parties that are involved, like the government, the landowner and the actual community participates. Their interests are in this way protected and as a result it will be more likely that they will accept a plan. However, the other parties that are involved, like the government, the landowner and the actual designer or planner, also have their own interest that they want to achieve. What should be prevented is a ‘participatory gridlock’
between all the parties, a situation at the end of the process where nothing is agreed upon. Therefore, for participation to work in complicated projects like the regeneration of brown fields, it is important to create a good framework to work from. The factors of this framework are conceptualized by asking five simple questions; who is participating, how are they participating, when is the participation actually taking place in the design process, what is the role of the designer or planner and where do we want the participation to lead to? Answering these questions give a bigger chance of success for participation projects.

This last mentioned question is maybe one of the most important questions that should be answered. It defines a clear goal or set of objectives for a participation project. There are several questions imaginable in order to determine the goal that needs to be achieved, when talking about the participating role of a community in a brown field regeneration project. For example; is the participation intended to generate ideas for the brown field, or is the participation intended to gain or disseminate info, making the process more democratic and with that more fair, or is the participation merely to involve a community, resulting in the hope that they will approve the plans? Between brown field projects this question with a specific corresponding answer will be different.

References


BURNS, J. (1979). Citizens take part in the process of urban design, National Citizen's Weekly, 2, 43.


5. Relevance
5.1 Academic relevance

The involvement tool for citizens that will be created during this graduation project, is partly based on the existing theories on participation and brown fields, derived from literature. In addition, the tool is meant to be a generic method that can be used for other urban regeneration projects.

The created tool will give new insights on the involvement of citizens in urban regeneration projects, because it develops a new way for citizens to participate in these projects. The testing of the tool on a case study will give new information on possible citizen involvement in urban regeneration projects.

The new gathered information derived from the tool and the existing knowledge where the tool is based on, can as a result contribute to the urban regeneration and participation body of knowledge.

The involvement tool or method as a result of this graduation project, can therefore be seen as academically relevant.

5.2 Social relevance

In the literature review paper is stated that the regeneration of brown fields is a relevant subject. These formerly industrial or commercial sites with perceived or actual contamination, are nowadays often embedded in or around modern city centres. The regeneration of these desolate areas can be of economical and social value for a city.

The future users and providers of brown fields have however, a great fear of liability because of the contamination topic, when it comes to the regeneration of these sites. Therefore it is important that there is a good cooperation between the involved parties, but also with the government and the community, or the citizens of a city.

The value of citizen participation in these projects can be of different levels. Citizens are of high value as a participant, because they contain a large amount of knowledge on the area. Beside this, involving them also creates awareness about the environment that they live in. As an effect anonymity in culture and society will be reduced. Projects can even be seen as more democratic when citizens participate. Their interests are in this way protected and as a result it will be more likely that they will accept a plan.

The end result of this graduation project will contribute to this involvement of citizens, by giving them a tool by which they can carry out their democratic power.
5.3 Power struggle and distribution

Empowered current situation

- Strict rules and regulations by environmental laws
- Guidelines for desired development
- Owner of the northern and southern parts of the case study area
- Strict rules and regulations for the case study area by zoning plans
- Owner of the central part of the case study area
- No real power, put desires certain developments in the case study area to safeguard own plans
- No real power, put desires certain developments in the case study area to safeguard own plans
- Can agree or not agree with the final zoning plans for the area. Is not included in the making or process of these zoning plans

**Conclusion**

The big stakeholders are empowered and decide what happens with the case study area. The citizens of Delft do have the democratic right to agree with the plans or not, but are not involved in the preceding development of the plans.
5.3 Power struggle and distribution

Empowered after tool

Less strict rules and regulations by environmental laws

More flexible guidelines for desired development

Make as owner of the northern and southern parts of the case study area, temporary or permanent development more easy

Less strict rules and regulations for the case study area by zoning plans

Make as owner of the central part of the case study area, temporary or permanent development more easy

Keep the municipality of Rijswijk involved in the development of plans for the case study area, to meet their desires.

Keep ProRail involved in the development of plans for the case study area, to meet their desires.

Give the citizens more power in the development of plans, by providing them with an involvement tool

Conclusion

The big stakeholders are still empowered, but their rules, regulations and wishes are less strict to make it more easy to intervene in the area and thereby trigger development.

The citizens of Delft have more democratic power with the involvement tool and are now participating in the development of the plans.
5.4 Ethical issues

Conflict of values
In the previous chapter it becomes clear that all the stakeholders hold different influences and values. This conflict of values, where all the parties want to safeguard their interests, is one of the biggest reasons why an urban regeneration project is so difficult. It is also the reason why an urban regeneration project can take very long.

For citizens to participate in such a project, it is therefore important to make sure the involvement is done systematically. If it is done randomly the participation of citizens could only make an urban regeneration project even more difficult. Even if the participation makes the project more democratic.

As a designer it is possible to help citizens do this involvement systematically. For this graduation project that will be done by creating the already mentioned involvement tool.
6. The involvement tool
6.1 Explaining the tool

The involvement tool for citizens, or matrix, is developed from elements that come from the case study area. These elements are general variables that can also be found in other urban regeneration projects for desolate sites.

The first variable is about the rules that are applicable for a desolate site. The second variable is about the involved stakeholders. The third variable is about the duration of the development that can take place for a desolate site. The fourth variable is about the building envelop.

To the right the four variables are shown. Each variable consists out of two opposing parameters:

* **Rules**: Strict vs Loose
* **Stakeholders**: Top down vs Bottom up
* **Duration**: Permanent vs Temporary
* **Building envelope**: No buildings vs Buildings

The next pages will define the variables and its parameters more precisely.

The users of the matrix have to choose between one of the two parameters of the variable. The result is a set of 4 variables that concludes in a solution scenario for a desolate site. The matrix that is shown in chapter 6.3 has 16 solution scenarios; 4 variables with 2 parameters: $2*2*2*2 = 16$.

Every scenario will be tested by a design that will be made for the case study area. Because some parts of this area are still in use, the designs are in this case made for the unused land and monuments. The designs can be seen as catalyst designs for the whole case study area.

The 16 different designs are shown after the matrix in chapter 6.3.
6.2 The variables

Rules

The strict parameter means that the zoning plans, rules and regulations for desolate site are followed. It depends on the stakeholders and the surroundings of a desolate site, what kind of zoning plans, rules and regulations are applicable on it.

For the case study area for example, there are strict zoning plans made by the municipality of Delft and regional zoning plans made by the Province of South Holland. In addition environmental rules are applicable on the area, because of the environmental contamination by DSM.

The loose parameter means that the zoning plans, rules and regulations are followed more flexible. It depends on the stakeholders and the surroundings of a desolate site, if it is possible to execute the zoning plans, rules and regulations more flexible.

For the case study area this could mean that the zoning plans, rules and regulations are not followed that strict, which results in more possibilities for the area.

Stakeholders

The top down parameter means that more power will be given to the top down stakeholders: owners of the land, municipalities, etc. They will decide what happens with a desolate site and will execute the plans.

For the case study area for example, this means that the owners of the area, Unilever and DSM, and the involved municipality Delft, will decide and execute the plans for the area.

The bottom up parameter means that more power will be given to the citizens. People and entrepreneurs of the city where the desolate site is situated, will decide what happens with a desolate site and will execute the plans. This participation approach can lead to a faster development of a desolate site. This approach only works however, if there are people and entrepreneurs willing to participate.

For the case study area for example, this parameter can be chosen if somebody has a plan for the area and can execute it.
6.2 The variables

Duration

The permanent parameter means that the development for a desolate site will be there for a long duration. It depends often on the stakeholders and the zoning plan applicable on the area if a permanent development is chosen.

For the case study area for example, the big stakeholders rather see a permanent solution for the desolate sites. They publish this in their plans.

Building envelope

The no building parameter means that the plans will only be about the desolate site itself. The buildings will be left out of the plans.

For the case study area this means that only the desolate site of Unilever will be developed and that all the monuments will be left untouched.

The temporary parameter means that the development for a desolate site is not permanent and for a short time. The advantage of this parameter is that developments faster take place and can be removed if necessary.

For the case study area this could mean that the area would not be unused for 5 years, but that temporary structures are developed. The temporary structures could then be removed when definite plans are made.

The building parameter means that the plans for a desolate site will also involve the buildings on the site.

For the case study area this means that the monuments on the DSM site and the monuments on the Unilever site will be used in the development of the area.
### 6.3 The matrix

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</table>
6.3 The matrix

Design 1

In the right figure a map is shown of an example design, following the combination of 4 parameters at the top of this page. Figure 30 shows a birds eye perspective of this design. The perspective is shown from the south - east.

Because the rules from the parameters are followed, it will be impossible to build 'weak'-functions in the case study area. The plan will be executed 'top down'. As a result of the combination of these first 2 parameters, industry will appear as a function on the formal Calvé-area. Because of the third parameter, the industry will be there as a permanent development that will stay there till and after 2020. The monuments will not be used as a result of the fourth parameter.
In the right figure a map is shown of an example design, following the combination of 4 parameters at the top of this page. Figure 32 shows a birds eye perspective of this design. The perspective is shown from the south - east.

Because the rules from the parameters are followed, it will be impossible to build ‘weak’-functions in the case study area. The plan will be executed ‘top down’. As a result of the combination of these first 2 parameters, industry will appear as a function on the formal Calvé-area. Because of the third parameter, the industry will be there as a permanent development that will stay there till and after 2020. The monuments will be used in the design as a result of the fourth parameter.
6.3 The matrix

Design 3

In the right figure a map is shown of an example design, following the combination of 4 parameters at the top of this page. Figure 34 shows a birds eye perspective of this design. The perspective is shown from the south - east.

Because the rules from the parameters are followed, it will be impossible to build ‘weak’-functions in the case study area. The plan will be executed ‘top down’. As a result of the combination of these first 2 parameters, industry will appear as a function on the formal Calvé-area. Because of the third parameter, the industry will be there as a temporary development that will stay there till 2020. Flexible industrial halls could be an example of this development. The monuments will not be used as a result of the fourth parameter.
6.3 The matrix

Design 4

In the right figure a map is shown of an example design, following the combination of 4 parameters at the top of this page. Figure 36 shows a birds eye perspective of this design. The perspective is shown from the south-east.

Because the rules from the parameters are followed, it will be impossible to build ‘weak’-functions in the case study area. The plan will be executed ‘top down’. As a result of the combination of these first 2 parameters, industry will appear as a function on the formal Calvé-area. Because of the third parameter, the industry will be there as a temporary development that will stay there till 2020. Flexible industrial halls could be an example of this development. The monuments will be used as a result of the fourth parameter.
6.3 The matrix

Design 5

In the right figure a map is shown of an example design, following the combination of 4 parameters at the top of this page. Figure 38 shows a birds eye perspective of this design. The perspective is shown from the south - east.

Because the rules from the parameters are followed, it will be impossible to build ‘weak’-functions in the case study area. The plan will be executed ‘bottom up’. As a result of the combination of these first 2 parameters, creative industry will appear as a function on the formal Calvé-area. Because of the third parameter, the creative industry will be there as a permanent development that will stay there till and after 2020. The monuments will not be used as a result of the fourth parameter.
6.3 The matrix

Design 6

In the right figure a map is shown of an example design, following the combination of 4 parameters at the top of this page. Figure 40 shows a birds eye perspective of this design. The perspective is shown from the south - east.

Because the rules from the parameters are followed, it will be impossible to build 'weak'-functions in the case study area. The plan will be executed 'bottom up'. As a result of the combination of these first 2 parameters, creative industry will appear as a function on the formal Calvé-area. Because of the third parameter, the creative industry will be there as a permanent development that will stay there till and after 2020. The monuments will be used as a result of the fourth parameter.
6.3 The matrix

Design 7

In the right figure a map is shown of an example design, following the combination of 4 parameters at the top of this page. Figure 42 shows a birds eye perspective of this design. The perspective is shown from the south - east.

Because the rules from the parameters are followed, it will be impossible to build ‘weak’-functions in the case study area. The plan will be executed ‘bottom up’. As a result of the combination of these first 2 parameters, creative industry will appear as a function on the formal Calvé-area. Because of the third parameter, the creative industry will be there as a temporary development that will stay there till 2020. Flexible halls or other temporary structures could be an example of this development. The monuments will not be used as a result of the fourth parameter.
6.3 The matrix

Design 8

In the right figure a map is shown of an example design, following the combination of 4 parameters at the top of this page. Figure 44 shows a birds eye perspective of this design. The perspective is shown from the south - east.

Because the rules from the parameters are followed, it will be impossible to build ‘weak’-functions in the case study area. The plan will be executed ‘bottom up’. As a result of the combination of these first 2 parameters, creative industry will appear as a function on the formal Calvé-area. Because of the third parameter, the creative industry will be there as a temporary development that will stay there till 2020. Flexible halls or other temporary structures could be an example of this development. The monuments will be used as a result of the fourth parameter.
6.3 The matrix

Design 9

In the right figure maps are shown of example designs, following the combination of 4 parameters at the top of this page. Figure 46 shows two birds eye perspectives of these designs. The perspectives are shown from the south - east.

Because the rules from the parameters are not followed, it will be possible to build ‘weak’-functions in the case study area. The plan will be executed ‘top down’. As a result of the combination of these first 2 parameters, a residential area will appear as a function on the formal Calvé-area. Because of the third parameter, the residential area will be there as a permanent development that will stay there till and after 2020. The monuments will not be used as a result of the fourth parameter. The figures show 2 design examples.
In the right figure maps are shown of example designs, following the combination of 4 parameters at the top of this page. Figure 48 shows two birds eye perspectives of these designs. The perspectives are shown from the south - east.

Because the rules from the parameters are not followed, it will be possible to build ‘weak’-functions in the case study area. The plan will be executed ‘top down’. As a result of the combination of these first 2 parameters, a residential area will appear as a function on the formal Calvé-area. Because of the third parameter, the residential area will be there as a permanent development that will stay there till and after 2020. The monuments will be used as a result of the fourth parameter. The figures show 2 design examples.
In the right figure maps are shown of example designs, following the combination of 4 parameters at the top of this page. Figure 50 shows two birds eye perspectives of these designs. The perspectives are shown from the south - east.

Because the rules from the parameters are not followed, it will be possible to build ‘weak’-functions in the case study area. The plan will be executed ‘top down’. As a result of the combination of these first 2 parameters, a residential area will appear as a function on the formal Calvé-area. Because of the third parameter, the residential area will be there as a temporary development that will stay there till 2020. Flexible residential buildings could be an example. The monuments will not be used as a result of the fourth parameter. The figures show 2 design examples.
In the right figure maps are shown of example designs, following the combination of 4 parameters at the top of this page. Figure 52 shows two birds eye perspectives of these designs. The perspectives are shown from the south - east.

Because the rules from the parameters are not followed, it will be possible to build ‘weak’-functions in the case study area. The plan will be executed ‘top down’. As a result of the combination of these first 2 parameters, a residential area will appear as a function on the formal Calvé-area. Because of the third parameter, the residential area will be there as a temporary development that will stay there till 2020. Flexible residential buildings could be an example. The monuments will be used as a result of the fourth parameter. The figures show 2 design examples.
6.3 The matrix

Design 13

The rules from the parameters are not followed, therefore it will be possible to build ‘weak’-functions in the case study area. The plan will be executed ‘bottom up’.

As a result of the combination of these first 2 parameters, a lot is possible on the formal Calvé-area. Because of this there is no definite design made for the area, as shown in figure 54 and 55.

Because of the third parameter, an eventual function will be there as a permanent development that will stay there till and after 2020. Previous permanent designs of the matrix could be examples of designs that follow this combination of parameters. The monuments will not be used as a result of the fourth parameter.

Figure 54: Two birds eye views from the south-west on the design area

Figure 55: Two maps of example designs
6.3 The matrix

Design 14

The rules from the parameters are not followed, therefore it will be possible to build ‘weak’-functions in the case study area. The plan will be executed ‘bottom up’.

As a result of the combination of these first 2 parameters, a lot is possible on the formal Calvé-area. Because of this there is no definite design made for the area, as shown in figure 56 and 57.

Because of the third parameter, an eventual function will be there as a permanent development that will stay there till and after 2020. Previous permanent designs of the matrix could be examples of designs that follow this combination of parameters. The monuments will be used as a result of the fourth parameter.

Figure 56: Two birds eye views from the south-west on the design area

Figure 57: Two maps of example designs
6.3 The matrix

Design 15

The rules from the parameters are not followed, therefore it will be possible to build ‘weak’-functions in the case study area. The plan will be executed ‘bottom up’.

As a result of the combination of these first 2 parameters, a lot is possible on the formal Calvé-area. Because of this there is no definite design made for the area, as shown in figure 58 and 59.

Because of the third parameter, an eventual function will be there as a temporary development that will stay there till 2020. Previous temporary designs of the matrix could be examples of designs that follow this combination of parameters. The monuments will not be used as a result of the fourth parameter.
6.3 The matrix

Design 16

The rules from the parameters are not followed, therefore it will be possible to build ‘weak’-functions in the case study area. The plan will be executed ‘bottom up’.

As a result of the combination of these first 2 parameters, a lot is possible on the formal Calvé-area. Because of this there is no definite design made for the area, as shown in figure 60 and 61.

Because of the third parameter, an eventual function will be there as a temporary development that will stay there till 2020. Previous temporary designs of the matrix could be examples of designs that follow this combination of parameters. The monuments will be used as a result of the fourth parameter.
7. Campaign
7.1 Website

Pages
The first step of the campaign was putting the matrix on the following website: https://sites.google.com/site/calveterrein/
The website is in Dutch because the people that will use the matrix are also Dutch.

The website consists out of 3 main pages; a home page, a monuments page and a questionnaire page.

On the home page a general explanation is given about the graduation project. First the location and the current state of the area is explained. Next the problem is stated for the area, followed by an introduction for the questionnaire. At the bottom of the page there is a link which, when clicked upon, directs the reader to the questionnaire. In figure 62 an explaining map is shown which is placed on the home page to explain where the case study area is located.

On the monument page a map is shown to explain which monuments are part of the graduation project. In figure 63 this map is shown. Separate links of each monuments are also put on the page. These links direct the reader to other pages which contain additional information about a monument.

The last page is the questionnaire page, which contains the matrix. The next chapter gives a further explanation about the questionnaire. In chapter 7.2 the results can be found.

The next step of the campaign was to promote the website. This was mainly done by personally contacting residents of Delft and promoting the graduation project and website on the multimedia Facebook.

The QR codes at the bottom of this page can be scanned for a direct connection to the website. The left QR code is a link to the home page, the middle QR code is a link to the monument page and the right QR code is a link to the questionnaire.
7.1 Website

Questionnaire

The questionnaire or matrix, consists out of 4 two choice questions. These 4 questions are questions about the 4 variables of the matrix; Rules, Stakeholders, Duration and Buildings (Building envelope or monuments).

For each question a choice has to be made between the two parameters of the variable:
- **Rules:** Follow rules / Don’t follow rules
- **Stakeholder:** Top down / Bottom up
- **Duration:** Permanent / Temporary
- **Buildings:** No buildings / Buildings

Each question starts with a short explanation about the variable and its parameters. After the explanation a choice has to be made between the two parameters. The reader can make a choice by clicking on the parameter he or she prefers.

After clicking on the chosen parameter, the reader is directed to a next page with the following question. This will go on until each question is answered. After the last question is answered, the reader ends up at the design page, corresponding to the combination of the chosen parameters. The designs and the corresponding combination of parameters have been discussed in the previous chapter.

The matrix functions in this way like a tree, where the reader starts at the beginning and ends up at one of the 16 designs. The lay-out of this tree is shown in figure 67.

On the final design pages, the reader is first explained what the design is all about. The effect of each parameter on the design is explained and after that the design is shown in several figures. The explanation and figures of each design are shown in the previous chapter.

After the explanation, the reader can decide if he or she chooses the design. If the reader decides not to choose a design, he or she is able to go back to the beginning of the questionnaire and start all over. The reader can then make other decisions at every question, to end up at a different design.

If the reader chooses the design, he or she submits the choice after (voluntarily) giving his or her sex, age and origin. The reader can also leave a comment.
### 7.2 Results

**Results**

The website was launched on 11-04-2013 and closed after two weeks on 26-04-2013.

In this period 74 people voted on one of the 16 designs. The winning design is design number 8 with 21 votes, the second design is design number 6 with 13 votes and the third most voted design is design number 16 with 12 votes (figure 68).

The parameters of design number 8 are shown in red at the bottom of figure 66. Overall ‘Rules’ has 46 votes, ‘Bottom Up’ has 54 votes, ‘Temporary’ has 44 votes and ‘Buildings’ has 69 votes.

Buildings vs No Buildings has the most difference in votes and Temporary vs Permanent has the least difference in votes. This last fact is also the reason why design 6 is the second winner. This because design 8 and 6 differ in duration.

Design 8 is the absolute winner with more than 1/3 of the votes. The corresponding explanation for design 8 is the following:

A temporary creative industry design, executed bottom up, with the use of monuments.

In the next chapter the design for winning design number 8 is explained.

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|       | 46    | 28      | 20       | 54        | 30        | 44         | 5           | 69        | 74    |

Figure 68: Results
8. Winning design
8.1 Principles for winning design 8

Rules
The first parameter of design 8 says the rules should be followed. For the case study area this means the determined zoning plan for the area should be followed. In the right figure a part of the plan is shown. The most important feature from this zoning plan is the (red) building line. On the east side of this line, structures are ruled out. Other features are a 80 % maximum build up in the hatched area, a maximum building height of 8 meters from the water to the light green line, 15 meters till the dark green line and 25 meters for the rest of the area.

Stakeholders
The second parameter of design 8 says the plan will be executed ’bottom up’. This means other parties then the ‘big stakeholders’ (DSM, Unilever, Municipality of Delft) will design and execute a plan. Initiatives of external stakeholders are possible. But because the zoning plan is followed, these initiatives should follow certain rules. The main rules are described to the left side of this page. From these rules ’creative industry’ is determined as a function for the area. With this very broad function description, quite a lot of initiatives are possible.

Duration
The third parameter of design 8 says the design for the case study area should be temporary. Developments for the case study area can be initiated quickly but can stay there till 2020. Temporary structures like containers, wooden constructions, halls or even open flexible areas are an example of this development. In combination with the previous two parameters, creative industry will be developed in the area in temporary structures, executed by a ’bottom up’ approach. Temporary creativity, innovation and entrepreneurship are the focal points.

Building envelope
The fourth parameter of design 8 says the unused monuments in the case study area should be part of the design. This means a possible new route from the formal Calvé-area to the inner city can be established (orange line). In addition, (some) of these monuments can directly be used, which should accelerate the development of the area.
The first focus point for the design is creating a barrier to the west and south side of the formal Calvé-area, as shown in figure 69. In the west this barrier is over the full length of the area and in the south the barrier runs until the monuments. This barrier will be created to protect the users of the formal Calvé-area from the still functioning DSM factories in the south and west.

The second point is the continuing building line which comes directly from the zoning plan. As shown in figure 70, this line runs from north to south, aligned with the eastern monuments. As mentioned in the previous chapter, no structures are allowed at the east side of this line.

The next principle is about the interaction between the formal Calvé-area and the present water. The area should have an interaction with the harbor in the north and the river in the east. On figure 71 this is indicated with blue lines. This interaction should be there because the water on these two sides is seen as valuable (questionnaire). The building line in the east strengthens this interaction.
Along side the two remaining Calvé monuments, a west-east axis will be created. Perpendicular to this west-east axis another axis will be created. This axis starts at the harbor in the north and runs down to the south where it ends between two factory buildings. If DSM closes its factories to the south of the formal Calvé-area, this axis will be the first connection between the north and south. The axis are shown on figure 72.

The monumental street in the south ends at the south-eastern corner of the formal Calvé-area. From this point another north-south axis is created which follows the building line. In the north this axis ends at the harbor and will than run parallel to the harbor to the north-western corner of the formal Calvé-area. This north-western corner will be the future link to the north. This connection is shown on figure 73.

On figure 74 is shown that the Calvé monuments should be the core of the formal Calvé-area. Beside this a new landmark in the south-west corner is created along the train tracks, as an awareness point for the area from the train tracks. The landmark also functions as a northern train entrance for Delft. The west-east axis ends at this landmark. The southern monumental street is continued in function along the water.
8.3 Layout plan

Figure 75 shows the six layout principles combined. On figure 76 the concluding layout plan is shown. The core of the plan is to sort three kinds of temporary function: allotments for temporary structures, halls to provide room for temporary functions and a free space. On figure 74 the position are shown on the layout plan.

The yellow rectangles are big plots with allotments for temporary structures at the edge and a communal space in the middle. Because of the broad quay along the harbor in the north and the park in the east, these plots will have a direct interaction with the water. The park holds a north-south connection.

The mid western rectangle hatched as free space, is meant to be unbuild. This area can be used for example as a market place.

In the south a rectangle is hatched as halls. These halls will provide as mentioned, room for temporary indoor functions or use.

In the south-western corner a rectangle is hatched as landmark. This landmark will hold a general function.

The Calvé monuments will hold functions that perform a central role in the area. For example a museum, a bar, a restaurant or a meeting place.

The grey areas are the central axes.
8.4 Allotment study

On figure 77 a part of the layout plan is shown. The yellow rectangles are as mentioned in the previous chapter, big plots with allotments for temporary structures.

For the final design one sort of temporary structure is chosen. This is done to create a building coherence in the area. This building coherence will make the design more acceptable for all the stakeholders. If the design would consist out of a wide variety of temporary structures, the design might be rejected by some of the stakeholders. The design could become a slum like area because of the lack of rules and unity.

Sea containers have been chosen as temporary structures for this design. The flexibility and variety of these sea containers ensures a big freedom in the use of the allotments, but also preserves a certain amount of coherence.

An example of a sea container is shown in figure 79. The footprint measurements of an average sea container is approximately 2,5 by 6 meters and they are 2,6 meter in height. The footprint is used as a basis for the allotment sizes. This is further explained on the next page.

The use of the sea containers on the allotments is free. No strict rules have been established for them. The sea containers could for example be placed in the middle of an allotment or on its side, pointing 6 meters in the air. The amount of allotments in use by a one user is also free. The rules on the amount of allotments rent or bought by a person is a next step in the design process, which is not taken into account in this graduation project.

The only real rule for the three plots with allotments are the height regulations, shown in figure 78. In the red area there is a maximum of 4 containers, in the orange area 3 containers and in the yellow area 2 container.
The footprint of a sea container is used for the allotment sizes, as mentioned on the previous page.

As a width for the allotments 5 and 6 meters is used. This corresponds with either 2 containers in width or 1 container in length. As a depth for the build up area, 6 and 12 meters is used, respectively 1 and 2 containers in length. To the center behind the build up area, there is a garden for each allotment. The gardens can vary in depth. In the middle of the plots there is a communal space.

Figure 81 shows 4 test allotments for the red circled south western plot from figure 79. The chosen allotment, that is also used as principle for the other 2 northern plots, is shown in figure 80. It has a closed edge which gives room for as much allotments as possible. Furthermore there is a big communal space in the centre, which can be used for example as an exhibition area or for sports. But it can also just be used as an meeting place. The communal space can be reached by 2 west-eastern paths.

The concluding allotment design as shown in figure 80 can later be used as an allotment principle for more permanent structures.
8.5 Design

Phasing

The design consists out of a final plan with preceding phased steps. Because the underlying design idea is a temporary creative industrial area executed bottom up, these steps are an import part of the design.

The phasing begins with the current situation, shown in figure 82 and figure 83. The further steps follow the layout principles and the allotment division. By gradually implementing facilities and new infrastructure, the design dynamically grows to a final plan. The implemented facilities provide the new settled creative industry with basic needs. Two basic facilities have been taken into account; sewage and electricity. Both facilities are put above the ground level.

The southern monuments along the monumental street will also gradually be used again. The two Calvé monuments will be one of the first to hold new functions. They hold a central and important role on the formal Calvé-area.

The layout plan is meant as implementation aim for the area. The infrastructure and allotment from the layout plan should be followed, because they give a necessary order and structure for the area. The phasing plan and the eventual design is meant as an example interpretation for this layout plan. The period in which the phasing plan should be carried out, depends on the willingness or popularity for people to settle their creative industry business in the area. The next pages show the phasing plan in 2D and 3D.

Figure 82 shows the current situation of the case study area. The main part of the area is overgrown by vegetation. Only around the quay and between the Calvé monuments pavement is still visible. In the south-western corner old foundations from formal Calvé factories are present. Furthermore there are still two remaining streets. Other possible structures underground are unknown.

The first step would be to create the barrier. Then the first allotments alongside the present pavements and streets will be created for temporary structures. Basic facilities will be put near or on the allotments to provide the first needs. In the south-western corner a big hall will be placed for temporary indoor functions. The barrier in the south and west is also created during this step.
The second step would be the actual settling of the first users on the allotments. These users place their temporary structure on the allotments. The Calvé monuments and the southern monument are now also (partly) used. For the big hall in the south-west this is the same. The available empty space to the north of these halls can be used freely.

The third step is to create two new north-south streets. Along these streets new allotments will be created. Earlier or new planted trees might now also appear in the area.

At the fourth step the second set of allotments will now also be used by new settlers. The other allotments which were already in use, might in the meantime have made use of their gardens. The western Calvé monument possibly now needs more space and therefore a hall is built against the eastern facade. The southern plot with allotments has made use of their communal space.
In this next step central west-east axis is extended to the west. The west-east street to the north of the monuments is also extended to the west. Alongside this street new allotments and facilities are placed. The allotments already in use continue to grow, following the previous described principles.

The new created allotments are during this step in use. In addition an extra hall is created in the south-west, alongside the first hall. Meeting places are now also build in the communal spaces of the northern plots.

A last north-south connection is made in the north western corner. It provides an infrastructural connection and room for new allotments. In the south-western corner room is created for a future landmark. The area might now be very popular in use and therefore a parking lot is made next to the halls.
The first part of the landmark is created. It should hold a central function for the whole area. Furthermore are the new allotments now being used. Further growth takes place on the other allotments. The western Calvé monument also continues to grow with a new hall on the north side.

A harbor function is placed in the north-west. New meeting places are created in the west by the harbor and the central free plot. The landmark is extended to the south. An extra hall is placed in the south-western corner, to the west of the previous two halls. The central square might now also hold a meeting area and some greenery.

The whole area is now being used. The landmark is even further extended to the south-western corner. Paths might now also appear in the centres of the plots for a better organised routing at the backsides of the allotments.
The final design on figures 104 and 105 show the last stage of the phasing plan. The whole area and all the monuments are now being used. Three different kinds of temporary uses can be found in the dynamically grown area. As a last extra feature, paths have been made in the eastern park.

The formal Calvé-area now functions as a structured temporary creative industry area, with a southern monumental route to the inner city.