

HOME IN THE 'VALLEY'

A LANDSCAPE WITH ELONGINGNESS

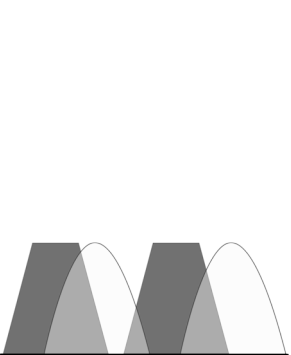


A STUDY ON BUILDING BELONGINGNESS THROUGH THE DESIGN  
OF OUTDOOR PUBLIC SPACES IN THE EXPATRIATE COMMUNITY  
MEERHOVEN, EINDHOVEN

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It is a chance to talk to myself.

Through the process of interpreting, researching and rebuilding belongingness in my design, I gradually understand my unsafety and doubt, and the understanding comfort myself in turn.

This booklet is also for all of you who are traveling on the foreign land and do not feel belonged. Hope you enjoy this booklet.

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## 1 Introduction

在九月  
潮湿的车厢 你看着车窗  
窗外他 水管在开花  
椅子在异乡 树叶有翅膀  
上海的街道 雪山在边上  
你靠着车窗 我心脏一旁  
我们去哪  
你看那 九点钟方向  
日内瓦湖的房子 贵吗  
世界上 七千个地方  
我们定居哪

September  
In our damp car cabin, you look out of the window  
Out of it, water pipe is blooming  
Chair in the foreign land, leaves grow wings  
Shanghai's street, snowy mountain right at the corner  
You leaned against the window, where my heart is sitting  
Where are we going?  
Look, 9 o'clock direction  
Houses by Lake Geneva, would it be expensive?  
Around the world, seven thousands places  
Where shall we reside?

Song: *Reactions of My Heart*  
Singer: Cheer Chen  
Lyricist: Han han

*Impression of Dutch landscape, drew by author*

## 1.1 The sense of belongingness in the foreign community

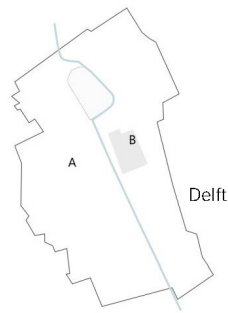
As an expatriate in general concept, I leave the environment where I stayed for more than twenty years and come to a country where the environment is totally different. In the beginning, I felt lost more than once in Dutch endless flat field and found it hard to do things such as hanging out in parks at night as I usually did before. Luckily, after several months, I got a sense of belonging to the first community, Roland Holstlaan. By walking around, I built my relationship with the site. I remembered there was a giant willow by the road, which is an important part of my daily routine. Willow had a strong Chinese cultural meaning, giving me a continuous hint that I was live somewhere I belong to. However, when I moved to another place Stieltjesweg, I found that I had less communication with neighbors and did not have such a daily routine anymore. The sense of belonging disappeared and I found it difficult to re-built attachment to the new community although these two sites are both in Delft.

The sense of belonging means the extent to which an individual or group agree with a thing or a phenomenon, and how close do they relate to the thing or phenomenon.<sup>1</sup> It is an internal subjective consciousness generated by the influence of the external environment. The result of the influence further changes people's behavior in the environment. Besides, there are also more specific definitions about belongingness of a place. According to Yifu Tuan, place belongingness is considered to be an emotional connection between people and the area in which they live.<sup>2</sup> The sense of community refers to the residents' identities, appreciations, attachments, and other psychological sensations of the community region and people.<sup>3</sup> It is an individual's commitment to its neighbors and surrounding neighborhoods. This commitment can be explained by the willingness of residents to live in a community for a long time, and they are willing to contribute to the development and improvement of the community and are willing to participate in community activities.<sup>4</sup>

Considering my personal experience, I felt my personal sense of community belonging is tightly related to the environment around me. I started to think about what are the elements in the environment that influence my belongingness? How to build belongingness by changing the environment? This report shows my research on these

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1. Shan, Jingjing. "Community belongingness and community satisfactory." *Urban problem* 3 (2008): 58-64.  
 2. Tuan, Y. topophilid. Columbia University Press, 1974.  
 3. Qiu, Haixiong. "Community belongingness— — Comparison study of the case of Hongkong and Guangzhou." *Journal of Sun Yat-Sen University: Social Science Edition* 2 (1989): 59-63.  
 4. Gerson, Kathleen, Ann Stueve, and Claude S. Fischer. "Attachment to place." *Networks and places: Social relations in the urban setting*. The Free Press, 1977.



## 1.2 A lack of belongingness of expatriates and their community public space

Expatriates are exactly the people who meet the similar situation with me.

As we come to the era of globalization, the international economic, scientific and technological cooperation become more and more frequent, many enterprises have set up branches in foreign countries to develop the overseas market and enhance the cooperation with overseas upstream and downstream enterprises to obtain more profits, thus many highly-educated workers are asked to go abroad from domestic country. These workers are called expatriates.

The accurate number of global expatriates is uncertain, but according to a report from the market research and financial consultancy company Finaccord in 2014, the number of worldwide international expatriate was estimated to be 56.8million, occupying 0.77% population of the total.<sup>5</sup> The number will keep the increase in the following decades.

When talking about expatriates, people always relate them to high social status and high living quality. In typical expatriate communities such as Amstelveen, Wassenaar, and Blijdorp, people normally live in villas, and the average income of them is more or less the highest in the Netherlands. However, their living quality is not the same as their wealth.

According to a survey from ASML, 50% of expatriates hired by them do not feel at home in their new communities.<sup>6</sup> Compared to locals, a lower rate of community participation, a lower rate of having hobbies, a lower rate of being in an association<sup>7</sup>, a higher rate of depressive disorder or anxiety disorder can be found.<sup>8</sup> All the above indicate that when moving from their original country to the new environment, they suffered a loss of belongingness.<sup>9</sup>

Moreover, expatriates' unhealthy mental condition is harmful to the community in turn. When expatriates fail to rebuild belongingness and social network, they will be

5. Data from the report Global Expatriates: Size, Segmentation and Forecast for the Worldwide Market, published by Finaccord in Jan 2014

6. Data from the Expatriates Satisfaction Survey that commissioned by ASML, surveyed by Renmmatrix in 2015

7. Data from <http://kaart.edugis.nl/>

8. Foyle, Marjory F., M. D. Beer, and J. P. Watson. "Expatriate mental health." Acta Psychiatrica Scandinavica 97.4 (1998): 278-283.

more transient, which means that they regard their living environment as transfer stop and tend to have less sense of responsibility and participatory to their community. Communities full of this kind of people are indifferent and lifeless, creating a perfect chance for theft and crime.



In conclusion, when expatriates move from home to place different from their home, they lose the original mental bond with the environment and the original social network. Such lost increase their risk of getting mental diseases and result in the community lost in turn.

By 2020, there is likely to be a shortage of approximately 40 million high-skilled workers around the world.<sup>10</sup> At the moment when many governments are taking various measures to attract expatriates, it is necessary for us to make a humanized residential outdoor space to meet expatriates' social and psychological needs.

Among all the environment expatriates might use, community outdoor public spaces construct the nearest and most common foreign world for expatriates. Expatriates live in the community and work in the community as well. They spend more than 70% of their time in their community (including time at home and work). The community outdoor public spaces are the places where they see foreign people, foreign culture, and foreign landscape beyond the working place for the highest frequency and the longest time during their overseas experience. They influence people's perception all the time even by a glimpse outside the window. In this case, the community outdoor public spaces can be an obstacle for them to conquer the culture shock and get a sense of belonging, but also can have a promoting effect.

10. Data from McKinsey Global Institute

### 1.3 The design of public space as support for belongingness

Considering the importance of community public space for expatriates, I hope that through the design of community public space, we can create an environment where all expatriates can feel comfortable, free, and attached, and the establishment of their sense of belonging to the new community could be accelerated, and then by this process, we can resolve the psychological problems of expatriates and also the social problems. Thus, my main research question is:

**How can the design of outdoor public spaces in the expatriate communities be used as a tool to help expatriates build a feeling of being at home abroad?**

To realize this research, I chose Eindhoven's expatriate community Meerhoven as my design site to explore the design method.

The first thing I need to know is **what I can do**.

On the one hand, my design object is the expatriate community. As a special group of people, expatriates must have special preferences and needs for their living environment. To build their sense of belonging, I need to understand the concept and characteristics of them, what kind of community environment is the most suitable one for expatriates.

On the other hand, I need to understand what the relationship between the sense of belonging and outdoor public space is. I need to know how people's sense of belonging to a place is formed, what factors in the environment determine and influence people's sense of belonging, and how people's sense of belonging lose, and what methods can be used to regain.

After understanding the forming mechanism of the sense of belonging, I then need to know how to use the mechanism of the sense of belonging to establish a new sense of belonging in the new setting.

The second thing I need to know is **how I should do**.

After obtaining the above two aspects of information, I can use the design for further study. But first of all, I need to know the current situation of Meerhoven. What is the current condition of Meerhoven? What is the problem and what is the possibility? After understanding the site, I need to know how can I combine the strategy expatriate-friendly community and the strategy of belongingness establishment together, and how to apply them on the site based on the existing condition.

Finally, I hope that this research on the expatriate community will not only be useful to Meerhoven. It can also be promoted to the public space design of other expatriate communities in Eindhoven, and even to the community design of other high-technology cities around the world, such as China, India, and America, etc. So I need to know how can the design approach of Meerhoven be applied to other public spaces in expatriate communities?

## 1.4 Methodology

To answer the research questions listed above, I used different methods to get the information I need. There are theories and case studies, image analysis, field trip, site analysis and design.

### □ Theories and case studies

To answer the 'what I can do' question, I studied different theories and cases. Theories provide the foothold of design. By theory studies and cases, spatial principles solving the research question can be figured out.

Along with the two different research questions about understanding of expatriates and belongingness, two aspects of theories and cases were used.

#### Understanding of expatriates

Expatriates are mainly highly-educated people who are sent abroad, they normally have a heavy workload and require high technique. The theory about the trend of function-mixing layout in the history of high-tech industry parks indicates that for an expatriate community, the landscape that concerning both functional-convergence and multi-time usage is the ideal one in the future. The case Midtown Detroit Techtown District and the scenario Plan of West Zhongguan village provide two methods of functional convergence. One makes physical connections through all the functions; another one is merging indoor function with outdoor space. The cases of Beijing Lixiang Park and Sihai Park indicate the main principles for designing an all-day park. The input from this part will direct the site analysis about existing condition for mixing use, and it will guide the design of the physical structure of the community and the future program underneath as well.

#### Establishment of belongingness

Belongingness to a place has multiple meanings, including the physical aspect, psychological aspect, and social aspect. The first means that people regard the physical space as their own, then they feel belonged to the place. The second means that people feel attached, related to the place, they have special emotion and love to the place. The third means that people feel belong to the place because of the social network related to the place. In my thesis, I will focus on the psychological aspect but consider the other two as well. According to Christian Norberg-Schulz, people build their perceptual schemata when they are very young, these schemata are built by the landscape elements surround people and will determine a kind of specific landscape that people can easily understand and feel belong to. Except the real nature people live in, the use of national symbolic landscape in the postcolonial renovation process of Shanghai Fuxing Park demonstrates that the symbolic landscape is also a kind of environment



that people belong to. Consequently, to establish a new sense of belonging abroad, the environment in the homes of expatriates should be analyzed, and the analysis of hometown landscapes could be done through the analysis of symbolic landscape icons.

After the original landscape people attached to, the way of translation and abstraction need to be studied to make a balance between being perceived easily. Keller Fountain Park and Fold's Childhood Park proposed an approach of visual abstraction, which is using modern language and urban material. The weather project from Olafur Eliasson and the Open-Ended from Richard Serra indicated that texture, color, smell, sound and other sensory elements could remind people of certain scenes. Clare Rishbeth & Mark Powell discovered that a space that can evoke previous rituals enable immigrants to rebuild belongingness by themselves. The design principles got from cases and theories will be the guidance of design-oriented analysis and design.

In short, the theories and cases about future expatriate community tell how expatriates use the site and what are their future needs, which is the base of the design about belongingness establishment. Meanwhile, the design for belongingness will give a chance to new programs. These two topics will work together to lead the design analysis and design.

Except for working along with theories, the case study is also used individually. To get the information about senses, I studied cases of several smell maps and artwork about sound. The result of this leads to the detailed design.

#### □ Image analysis

In the study of the establishment of belonging, it is found that people's sense of belonging is inseparable from the environment in which people are growing. So, I need to understand and analyze the environment in which people grow, and the landscape paintings of various countries are used as research objects because they are the representative of most dominant, the most popular, the ideal landscape in every country.

Top 30 images of a certain national landscape showing on the searching engine are analyzed. According to the theory study about parameters of the sense of place, the landscape can be understood in many aspects. In this case, the image analysis was done in the same aspects, including the characteristic of water, plants, surface relief, horizon, and also the angles of the drawings.

By comparing the images from different countries, I get a general idea about the differences between landscape elements and the different value of nature between countries. Because the different aspects used in the analysis, it guides. The method of image analysis guides the aspects that should be analyzed in the site analysis. The design can be done according to the same aspects as well. Besides, the result of image analysis will be the input for the node design.

#### □ Poem analysis

During the study of belongingness establishment, I learned that there are three ways to translate hometown landscape, and one of them is sensation stimulation. To collect the information of sound, I read poems to collect the important sounds that mentioned a lot. Some of the sounds were used in the detailed design of my site.

#### □ Study trip

When translating hometown landscape and putting them on my site, the way how to translate is a difficulty. In order to understand the living environment of immigrant and get one hand information about the effect of the landscape which adapted to the multi-cultural background, the study trips to New York and Copenhagen were done.

New York is one of the most complex areas in the world, with people from the countless different background. People from different cultures gradually influence the urban landscape in New York. The Superkilen in Copenhagen is a landscape adaptation to a multicultural background. I want to know what these landscape transformations are and what their effects are.

The real conditions of the multi-cultural environment provide me standards and directions. My design consequences are likely to be the same as those seen in the study trip. Therefore, by examining the actual effects, I know the which direction of the design should I go.

Besides, in the study of belongingness establishment, the typical landscape elements have to be learned. Study trip is also used for one-hand information collection, and the result guides the detailed design in my project.

#### □ Site analysis

According to the theory of belongingness establishment, people need to feel at home in the new environment. Therefore, the basic conditions, possibilities, and weakness of the new environment need to be analyzed.

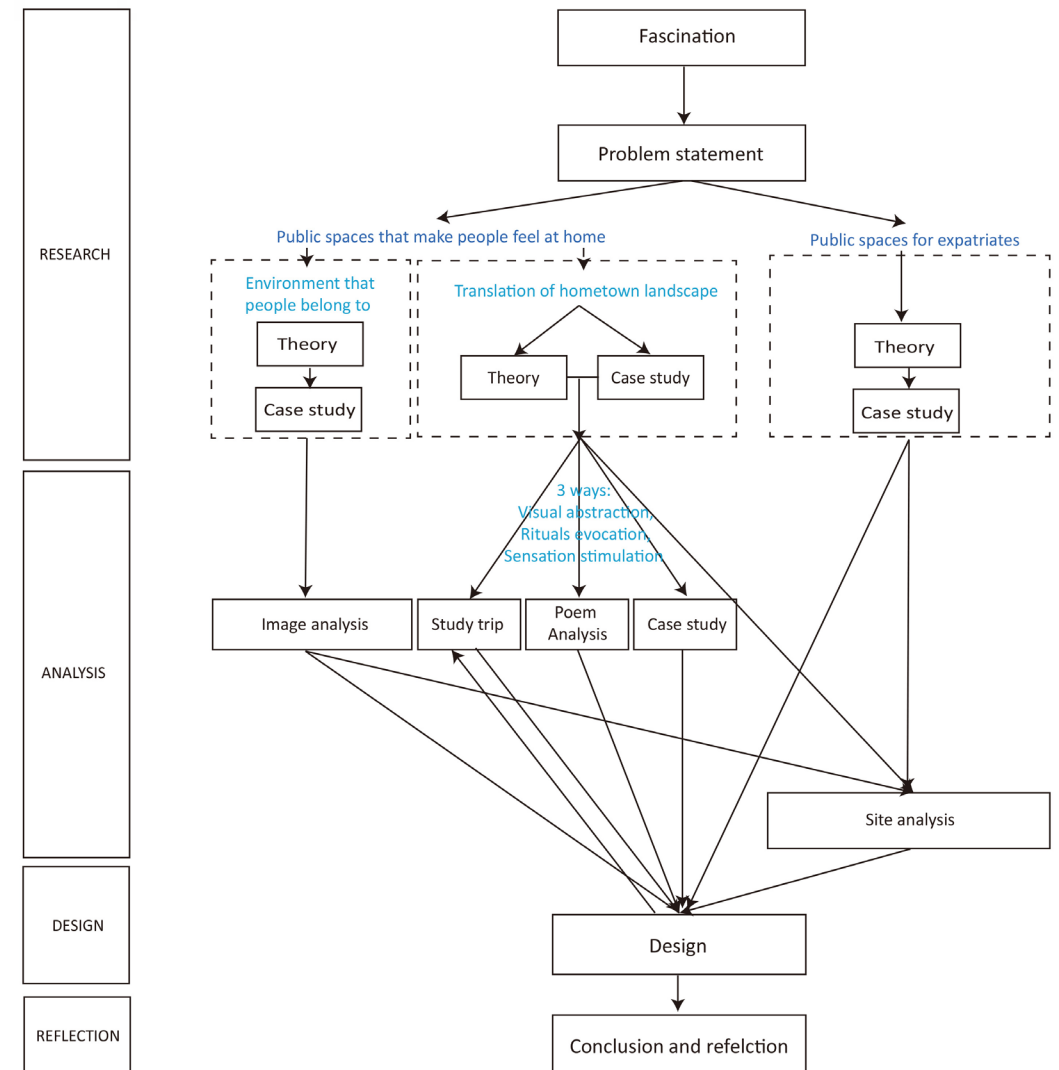
Site analysis includes spatial structure analysis, programmatic analysis, analysis of history, and transportation analysis. At the same time, landform analysis, material analysis, vegetation analysis, and water analysis corresponding to image analysis are done to compare with the landscape in which people originally lived. Besides, according to the needs of expatriates, an environment can be used both during day and night is required, so, the current condition during the night should be analyzed. Last, according to the three ways of landscape translation, senses and rituals were highlighted, before putting outer sound, smell and rituals inside, the site analysis about existing sound, smell and rituals were done.

## □ Design

After analysis and theory studies, it is possible for us to imply the theories on the site and hypothesize a vision. The design is a spatial reflection of theories, and a possible elaboration of the design principles got from theories studies.

I will design from various scales and aspects, including community green structure planning, public space design, node design, pavement, planting, lighting and detail design to achieve a sense of belonging. Give people a sense of belonging in every dimension and every aspect. The design concept will be gained through theory and case studies, image analysis, poem analysis, study trip and site analysis.

This research will follow traditional way from theory to design. Input from theories and case studies will be used as a guide for different types of analysis and design principles. The design will be a combination of both principles and the challenge and possibilities on site. During the design, study trip was taken as an input for further design. After finish the design, it will be evaluated and reflected to provide a guide for later generic application and further research.





## 1.5 Scope and relevance

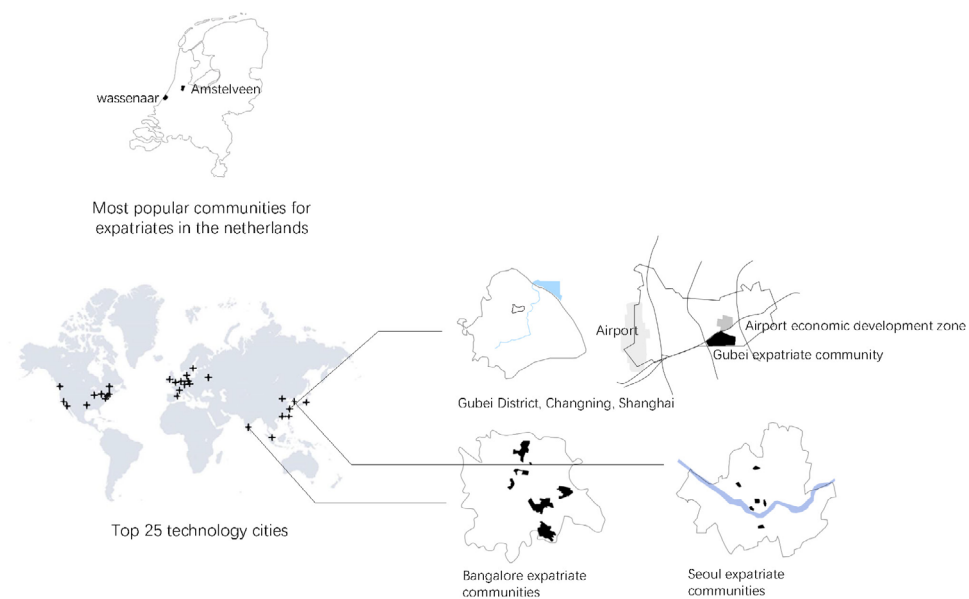
### 1.5.1 Scope

In this research, I will go from the perspective of landscape as spatial-visual structure, focusing on the construction of three-dimension space. The relationship between spatial elements and people's behavior, people movement through route and narratives will be focused on.

### 1.5.2 Relevance

The results of the study can be applied to many countries. Many countries are equally attractive in attracting international high-tech workers. Many cities or regions build special high-tech industrial area to attract factories and enterprises, for example, Shenzhen high-tech campus and Beijing Zhongguan village, this kind of districts form a multi-cultural neighborhood nearby, which is the same with Meerhoven. My findings provide a community design guidance for these areas to attract more workers.

Besides, as the global mobility increased, the design of public spaces that respect different ethnic cultures and promote the integration of multi-cultural society has become a trend. My findings are helpful to these designs of the multi-cultural landscape.



## 1.6 Reading itinerary

This report can be divided into two parts, the first part including concept interpretation, theory and site analysis and the second part includes design and reflection.

The first part includes chapter 2,3,4, the theoretical answer to the research question will be showed in this section. In the beginning, the main concepts used in this thesis will be demonstrated. Social issues of expatriates will be focused and interpreted in landscape scope, combining with the community environment. Afterward, how to make people feel at home and how expatriates use landscape will be answered separately.

Part two includes chapter 5,6. A design will be down as a combination of concrete site and theories. How to imply the theories on site, what is the result going and what is the shortage of this research and future research direction will be stated explicitly.



## 2 Establishment of belongingness

### 《宣城见杜鹃花》

蜀国曾闻子规鸟，  
宣城还见杜鹃花。  
一叫一回肠一断，  
三春三月忆三巴。

In my hometown,  
I once heard the sound of Dujuan bird.  
Now in the foreign land,  
I see the flower called Dujuan.  
The sound of Dujuan in my memory make me feel a deep pang of sorrow  
The season of Dujuan flower reminds me of my hometown.

Poet: Bai Lee

Written in Tang dynasty, 756 AD

People's sense of belonging in a foreign land seems to be vague, but the actual is traceable. Everything from the hometown is always deeply imprinted in the minds of people. When people wander outside hometown, there will always be some moments when they think of their hometown. Just as the poet Bai Lee's association with his hometown in 1200 years ago. There are too many such examples. How should such a mechanism be applied to the design of the community environment?

## 2.1 The relationship between a sense of belonging and the living environment

Christian Norberg Schulz proposed his understanding about belongingness in his book *Genius Loci, towards a phenomenology of architecture* that, one's sense of belonging including two kinds of contents, one is orientation, which means that people know where he is physically, and another is identification, which means that people see the relationship between the environment and themselves.<sup>11</sup>

The objects of identification are concrete environmental properties, and that man's relationship to these is usually developed during childhood. The child grows up in green, brown or white spaces, it walks or plays on the sand, earth, stone or moss, under a cloudy or serene sky. Thus the child gets acquainted with the environment and develops perceptual schemata which determine the world which is accessible.<sup>12</sup>

Expatriates are people who are mostly above 20 years old, which means that most of them spent their childhood in their own country and built their perceptual schemata there. In this case, when they go to a place where the landscape is totally different from their home, they will be confused and mentally lost because they cannot understand the new landscape easily according to their rooted perceptual schemata.

By this theory, my personal experience could be understood. I grow up in a subtropical hilly city. Mountain, river, evergreen trees compose all my understanding of nature. This understanding tells me the marshland, and the polder is dangerous because I had no experience with them. Besides, my memory and rituals are tightly related to hometown landscape elements, when moving to temperate flat land, all my rituals lose their environmental objective.

Go forward from above, to re-build a sense of belonging, the first thing I have to know is to understand people's previous living environment.

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11. Norberg-Schulz, Christian. *Genius loci: Towards a phenomenology of architecture*. Rizzoli, 1980.

12. Norberg-Schulz, Christian. *Genius loci: Towards a phenomenology of architecture*. Rizzoli, 1980.





People build their initial sense of belonging  
by playing in the nearby nature

( Picture from book Genius loci: Towards a phenomenology of architecture )

## 2.2 Two layers of environment that people belong to

We already know that people's sense of belonging come from the understanding of the relationship between environment and human. People from different places will have a specific sense of belonging to a specific landscape. Except for this kind of belonging that differ from person to person because of their different background, there is also some symbolic representations of the natural landscape that everyone from the same country can feel belong to. The renewal of the Fuxing Park in Shanghai can be used as a proof.

In 1909, when the central part of Shanghai was under the colonization of several western countries, Fuxing park was built by the French Concession Municipal council. In the beginning, it was totally in a western style. From 1918 to 2002, Fuxing Park experienced many expansions and transformations and transformed from a completely Western-style park to a Chinese park featuring French style.

In the beginning, Fuxing park is designed, built in the mode of a park in Lyon, Parc de la Tête d'Or. It was composed by a formal French garden in the north and an English lawn in the south. Fuxing park was only accessible for westerners at that time.

In the extension of the park from 1918 to 1926, the park was expanded in the north, east and south. At that time, Fuxing Park was still a belonging of French concession, and Chinese people were not allowed to go inside. In the north, two formal French gardens were added adjacent to the existing one. In the east, a new English Lawn was constructed beside the existing lawn. In the south, Chinese designer Xiqi Yu was asked to make a Chinese garden. What he did was introducing a fake mountain, creek with a rock edge and lotus lake to the park.<sup>13</sup>

After 1928, Chinese people started to be allowed to use Fuxing Park, and they keep changing the elements of the park from then on. From 1928 to 1965, tea houses, culture center, aquarium, zoo were added to the park, and the east English lawn was gradually occupied by these buildings. From 1978 to 1992, a restaurant and a garden of peculiar stones were constructed, and French rational gardens were used to exhibit flowers which had Chinese cultural meaning.<sup>14</sup>

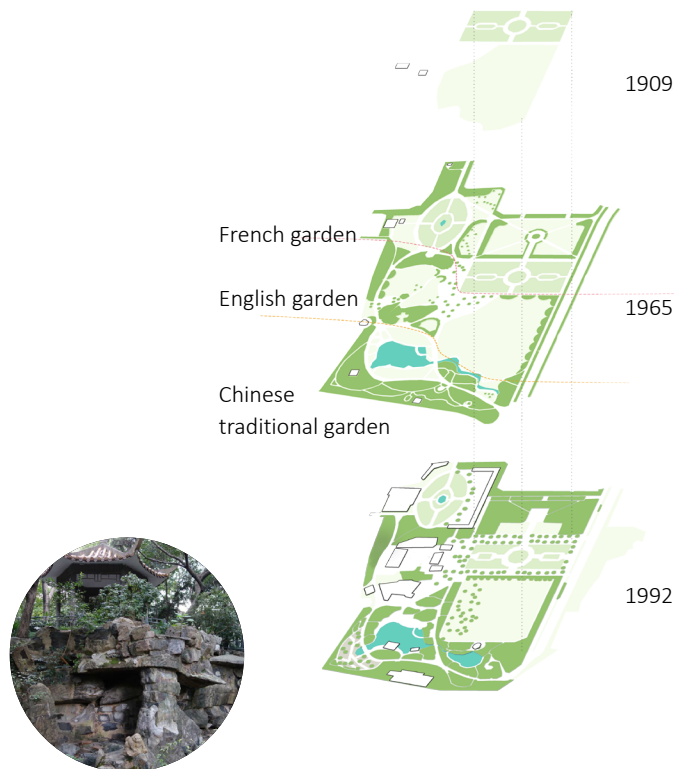
13. Zhang, AN. "A Comparative Study on the Transformation Process of Spatial Composition in Fuxing Park and Zhongshan Park, Shanghai." *Chinese Landscape Architecture* 29.5 (2013): 70-75.

14. Zhang, AN. "A Comparative Study on the Transformation Process of Spatial Composition in Fuxing Park

The transformation of Fuxing Park is an existing example of building belongingness by the landscape. Although some French elements left, no one feels awkward or out of place. Looking at the way people used, the strange thing is that they didn't introduce the landscape we see every day to the park, but they chose some specific elements. The mountains, the creeks, the stones, the specific flowers and the buildings.

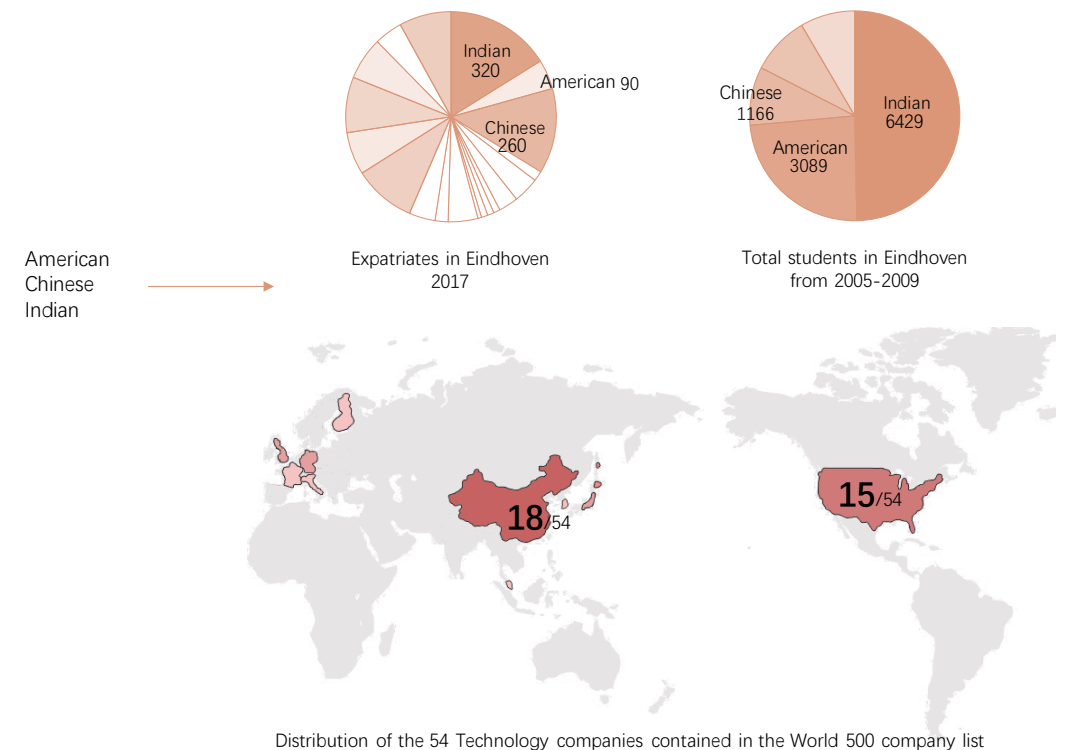
Shanghai situated at a riverside plain, where mountains, winding creeks, stones are not typical local landscape elements. However, these elements can be seen everywhere in China, in poems and paintings. Even the Chinese term of the landscape (山水) is composed of mountain and water. Although people cannot see mountains and creeks in daily life, they all know the famous mountains and rivers and regard them as the symbol of the Chinese landscape.

Considering all the above, I realized that people not only have a tight relationship with the landscape around them but also have a deep attachment to national icon.



As I cannot analyze all the landscape around the world, I select three countries that have high possibilities to dominant the origin of Eindhoven expatriates. The three countries are America, China, and India.

Firstly, looking at the countries where current expatriates in Eindhoven come from, China and India are the top two, America also rank highly.<sup>15</sup> Secondly, 33 of 54 high-technique companies in the Fortune Global 500 List are from China and America. Therefore, there is a higher possibility for the companies in China and America to set branches in Eindhoven and send expatriates here. Thirdly, Eindhoven brainport is a systematic structure which has a wonderful connection between universities and companies. According to the number of international students from 2005 to 2009, more than 70% of students are mostly from these three countries<sup>16</sup>, which means that Eindhoven is very popular among them. In this case, there is a higher possibility to have new employees from these three countries in the future as well.



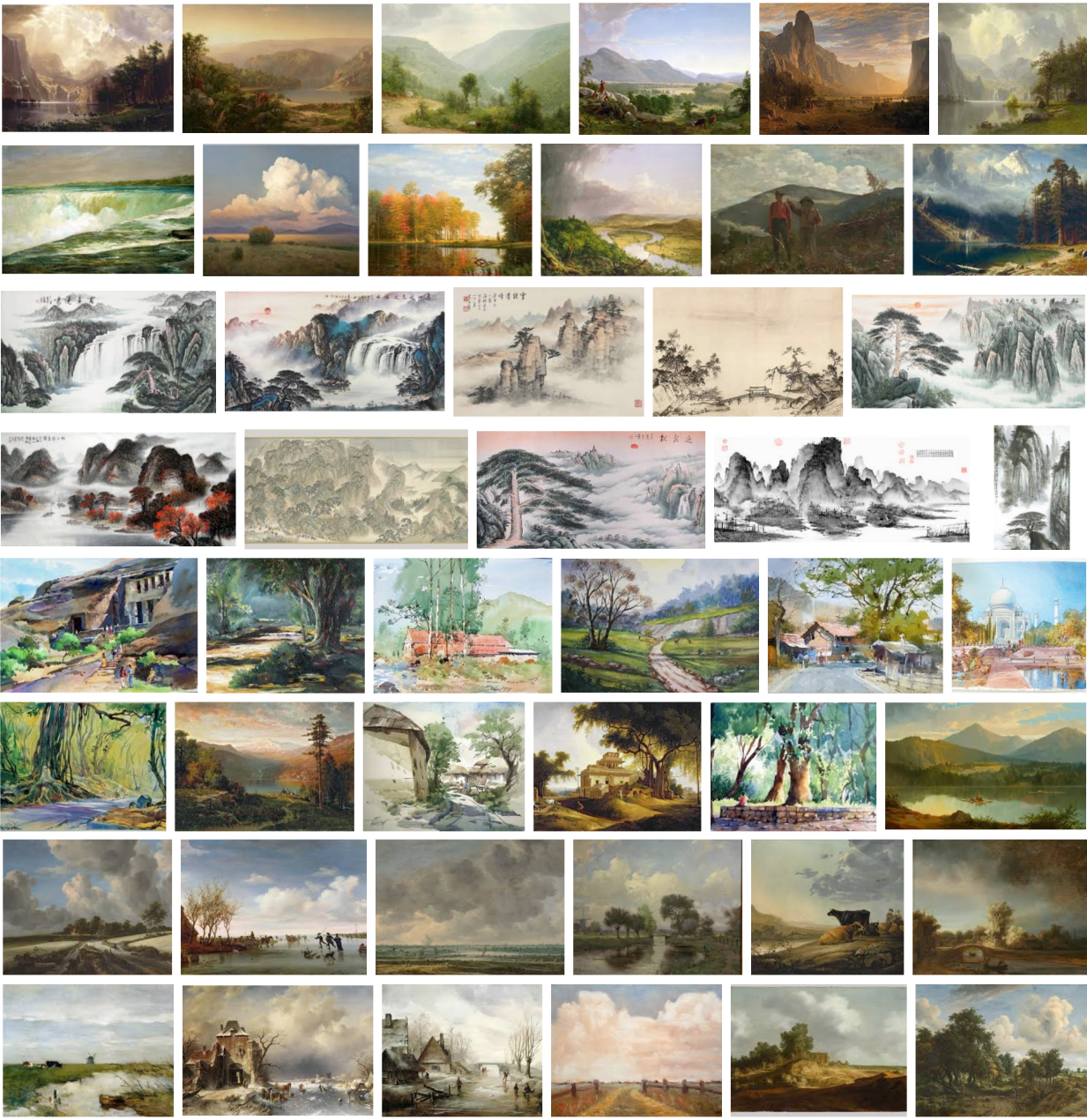
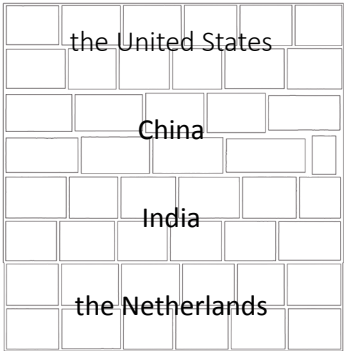
15. <https://www.nrc.nl/>

16. Jennissen, RPW The Dutch migration map . Boom Legal publishers, 2011.

These three countries are all expansive countries where there are a lot of different landscape types. In this case, I choose to analyze the national symbolic landscape instead of studying all the landscape types in every country, and in this way, people from the same country will all feel belonged to. Landscape paintings from these three countries were analyzed because they represent the most famous and popular sceneries.

After select and analyze the top 15 drawings showed in the searching engine, I find that there are a unified theme and unique angle in paintings for each country. American paintings are always depicting gorgeous valleys and sharp cliffs from a high platform. Chinese paintings are mostly a bird view towards layered mountains and wide-spread river. Indian paintings are magically commonly focusing on small space under the crown of huge trees. For comparison, Dutch paintings are also analyzed, they mostly depict the scenery of canals and flat field.

The landscapes of these three countries and the landscape of the Netherlands are vastly different. As a result, a new problem has arisen. How do I make people feel atmosphere of the vast landscape of the other three countries in the small community in the Netherlands? A trip to New York gave me the guide and inspiration.





## 2.3 The necessity of localization, a study trip in New York

After knowing what kind of landscape do people have in their hometowns, the new question for me is how to introduce them to Meerhoven. How should I do that? I went to New York for a study trip, and the trip gave me some inspirations.

In New York, I went to two Chinatowns. One is in Flushing, and the other is in Manhattan. The former's first immigrants were Mandarin-speaking Chinese from Taiwan, so they attracted a lot of Mandarin speaking people from the mainland of China. Flushing developed rapidly, and now It is the largest Chinese settlement in the world outside Asia. More than 69% of residents are Asians. The latter was based on Cantonese working-class immigrants and used Cantonese and traditional characters. Due to its geographical location, it was more similar to the Chinatowns in the Netherlands and more commercialized than the former.

In Flushing, almost all the advertisements use Chinese characters as the first language, alongside simplified Chinese characters and traditional Chinese characters. English become not necessary, even a bit abrupt. Many famous restaurants in China also set up branches here. Internet cafes and Karaoke are very common. People there can keep pace with the trend of China, instead of being out of date as normal Chinatowns, so this is a complete China on the land of the United States. When communicating with residents, I learned that many of them do not speak English. Chinese people can complete all their lives there in Chinese. They do not need to contact the outside world.

Through the environment provided by Flushing, new immigrants don't have much trouble in adaptation. They can build their belongingness easily in the new setting because almost everything is familiar. But at the same time, the problem with such an environment is that, **people living inside actually are seperated with the United States' society. Besides, as an area on the land of the United States, the land has become a private zone for minority, and Americans or people from other countries are out of place there.**

In my site Meerhoven, there is not only Chinese, or Indians living. The Dutch people are important users of the park currently, and also in the future. At the same time, as an area where expatriates live in, there may be people from countless different countries. If I create a paradise for only a few people, like Chinese, Indians or Americans, how do Dutch and other people use this community? Creating a place like Flushing is not my goal.



Flushing, Photo by author



Flushing, Photo by author



Manhattan China Town is more integrated with surroundings, and it reflects on the design of park as well. On the edge of Manhattan Chinatown, Columbus Park were built. The park was designed with Chinese elements but more temperately.

Basketball courts and a playground were built in the south of the park. A large hard square planted with sycamore was designed in the northern region. The situation that the designer may not think about is that the origins of users are different from north to south.

The Southern part is very lively, and there are people from all countries playing all together, while the northern part is basically full of only Chinese. The design of the north part is particularly similar to the design of modern Chinese parks. Although these tables and chairs do not look like typical Chinese elements, such spaces are popular among old Chinese people as they do in China but hard to be widely used by Americans and people from other countries.

In this case, if I want to create spaces that can be used by all the people, I indeed have to make the hometown landscape elements abstract.

Basketball court in the south,  
with people of multiple origins



Picture from <https://www.cpc-nyc.org/>



Chinese people gathered in the north, Photo by author



Chinese people gathered in the north, Photo by author



Whether in Flushing or in Manhattan, Chinese elements are always related with their original function. Teardrop Park provides a different relationship between function and form.

It was designed by Michael Van Valkenburgh Associates. It acts as a community park and sits in between several high buildings. There are a lot of natural elements being used to imitate the scenery of the Hudson Valley. In the middle of the park, there is a huge stone wall called ice wall. The wall is designed to show an image of icicles in the winter, but in spring, it is also a nice place to stay. Many people just sit toward the wall and chat. A daddy and his child throw their ball towards the wall, and then the wall becomes a perfect construction for ball playing. On the back side of the wall, there is a playground composed of a lot of stones. It looks like Chinese fake mountain with stones in a different level. Children gathered in this area, climbed on the stones and slide down.

A stone wall could be used as a backboard; a fake mountain could be used as a playground. Teardrop park is a perfect example of combining specific landscape with local activities.

To put outer landscape elements into Meerhoven, I can also do something similar. I have to think about functions that everyone can feel happy with. It is not only about the original function. The landscape elements from the three countries should be hidden behind and be the support of the new function. I call this process as [localization](#).

Two steps of localization will be done. The first step is to extract the hometown landscape to make the landscape elements can be enjoyed by every resident, just to avoid the situation in Manhattan China town. The second step is to recombine the local life with the extractions, just as what has been done in the Teardrop park.



Ice wall, Photo by author



Back side of the ice wall, Photo by author



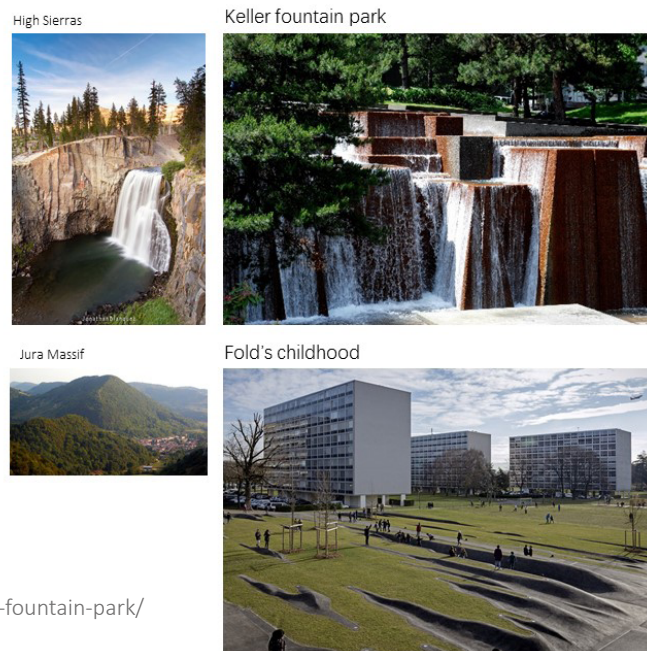
## 2.4 Multiple ways of extraction

To extract from hometown landscape, three ways were found from case studies and theories.

### 2.4.1 Visual abstraction

Keller Fountain Park and Fold's Childhood show the first way of interpretation, visual abstraction. Keller fountain park sits in Portland, America, and it is designed by Lawrence Halprin and Angela Danadjieva. The central part of the park is a 25-foot high concrete waterfall, which is a geometrical abstraction of slime natural scene. 10,000 gallons of water per minute cascade through the concrete terraces and platforms, at once suggesting the tall mountain ranges of the and the powerful waterfall cascades of the Northwest.<sup>17</sup> Fold's Childhood Park, a Swiss park built in 2017, is designed by Gilles Brusset. The form of it is also an abstraction of real nature of the Jura massif in Switzerland, but black asphalt is used as the main material to give the park a better relationship with the surroundings.

These two projects both use modern language and urban material, in the end, they all achieve a balance between natural properties imitation and contextual harmony.



17. <http://landscapevoice.com/ira-keller-fountain-park/>

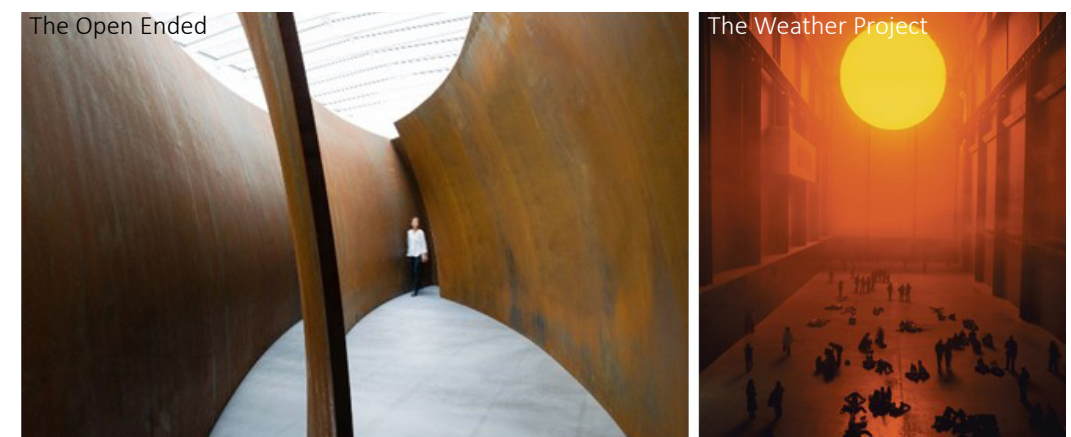
### 2.4.2 Ritual evocation and sensation stimulation

Except having visual nature translations, there are also other ways for people to get a relationship with new settings.

Clare Rishbeth & Mark Powell found that doing rituals is regarded as an approach to see connections between people and new environment. A girl from Jamaica finds the experience of climbing up to a peak in Sheffield and looking down towards the city gives her strong familiarity although the bird view of Sheffield is entirely different with the one in her hometown. She used to climb red hill frequently in her hometown, so doing similar rituals can link her with memories with the current environment, giving her a foothold to live in new settings.<sup>18</sup>

Moreover, the Open Ended of Richard Serra and the Weather Project of Olafur Eliasson provide a new approach. Richard Serra creates a narrow passage enclosed by 4-meters high Corten steel walls. The deeper you go inside, the louder echo you can hear. The echo along with the red and rusty material remind people of experience in the valleys. The Weather Project utilized a sweet fruit fragrance, strictly-controlled humidity, light, temperature and color to create a feeling of being around coast area at dusk. Although the ground is hard and cold, a lot of people are moved by the atmosphere and lie down on the floor. These two projects tell us that to remind people of some landscape; visual similarity is not the only way, texture, smell, color and other sensation can also be the trigger of visual images.

In conclusion, to keep a consistent relationship with surroundings and to work as a prompt for expatriates to re-build belongingness, there are entirely three ways of landscape translation: **spatial abstraction, ritual evocation and sensation stimulation**.



18. Rishbeth, Clare, and Mark Powell. "Place attachment and memory: Landscapes of belonging as experienced post-migration." *Landscape Research* 38.2 (2013): 160-178.

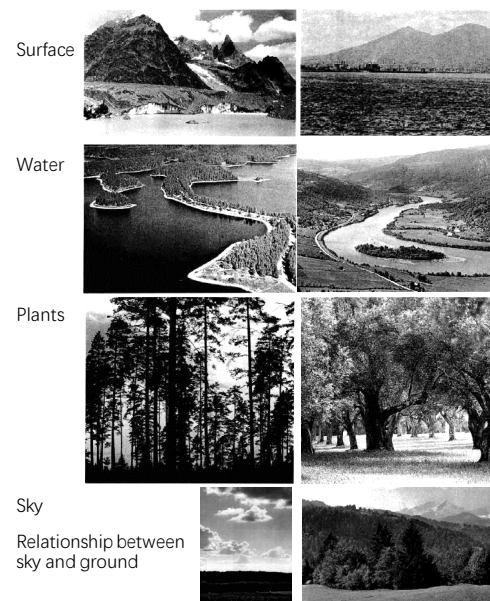
## 2.5 Analysis of landscape extractions

After finding three ways of extraction, I started to collect the landscape fragments from these three aspects.

### 2.5.1 Visual Abstractions

On the basis of Norberg's theory, the landscape elements constructing a sense of place are a surface relief, vegetation, water, sky and the relationship between surface and sky.<sup>19</sup> In this case, I analyzed the landscape paintings from these aspects and made some comparison among these drawings.

'The landscape elements constructing a sense of place are surface relief, vegetation, water, sky and the relationship between surface and sky.'



### □ Surface relief

In the Dutch paintings, the land is always flat, and the texture is always brushy because of the widespread grassland. In the Indian paintings, mild slopes with stones, lush bushes, and trees are common. In American and Chinese paintings, stone mountains and intermontane wide river are common among them. The difference between them is that American mountains are sharp and inaccessible, but Chinese mountains are mild, which can be seen from the pavilions and gates on the Chinese mountains.

### □ Water

The depiction of water body varies from country to country. It is an eternal theme for America, China, and the Netherlands, but can seldom to be seen in Indian paintings.

The form of water in Dutch paintings is simple, and 11 of the 15 Dutch paintings all depicted the scene of a canal leading to the sky. In China and the United States, the form of water is more dynamic, including rivers, streams, waterfalls, etc. The difference is that in the American drawings, the rivers are normally in clear S-shape and with smooth boundaries, while in the Chinese pictures, the water body spread like a spider web, and the edges are uncertain. Water is rarely found in Indian paintings. There are only two paintings depicting partial water body.

### □ Plantation

The characteristics of the plants in the Netherlands and India are distinct. The vegetation in the Netherlands is small, and the overall appearance of the trees is shown. In the Indian paintings, almost all the trees were only painted partly. Normally only the bottoms of canopies and the trunks were painted. The paintings emphasize the space under the trees. These trees are very large and can cover people's heads and produce an entirely different spatial effect compare to Dutch trees.

### □ Angle and scale

Besides surface relief, an obvious difference is the angle of drawings. In every country, people have their specific preference on the angle. Dutch and Indian paintings are drawn from normal eye level while American and Chinese paintings are drawn from the bird's view. Although both drawn from eye level, Dutch and Indian paintings show the different value of beauty. The angle of Dutch paintings is usually extended along the direction of the canal, and the expansive ground can be visible at a glance. On the contrary, the scale of Indian paintings is always small, and only the nearby space was painted.

19. Norberg-Schulz, Christian. *Genius loci: Towards a phenomenology of architecture*. Rizzoli, 1980.

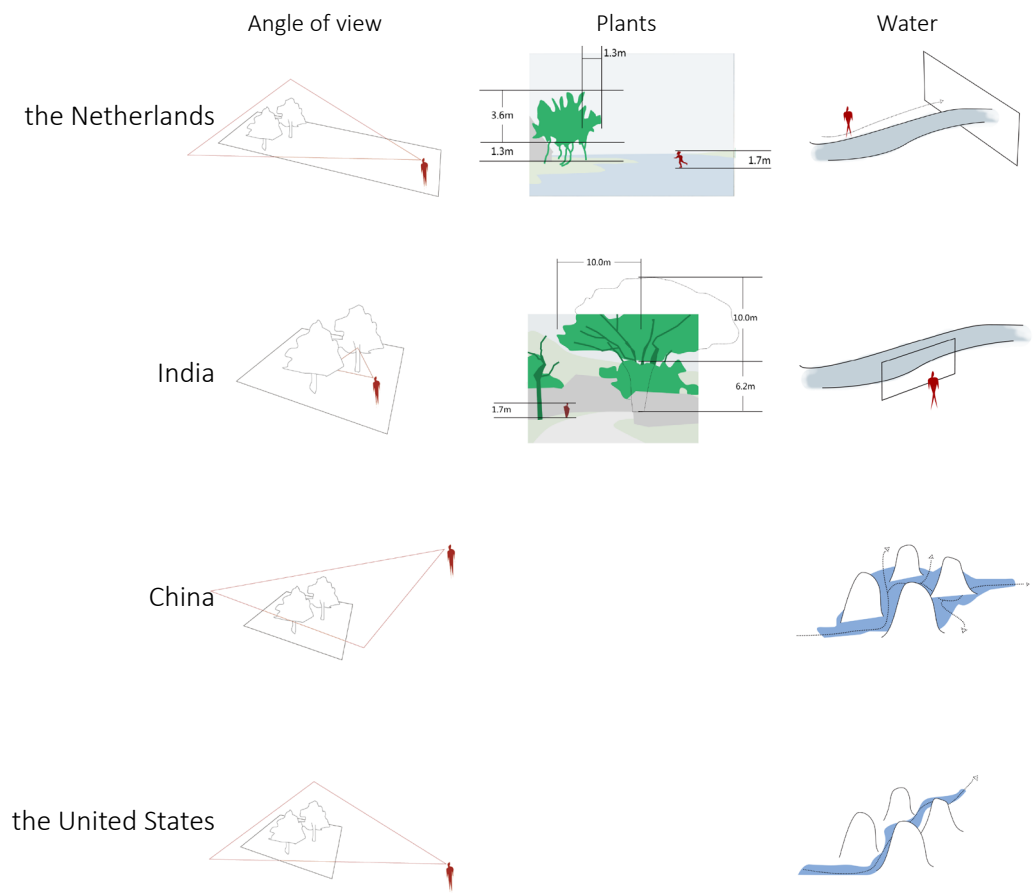


## □ Skyline

Comparing the depiction of the sky in the paintings of four countries, I found different features. In the Dutch paintings, the horizon is always low and straight. There is only a few ups and downs around the horizon, and the appearance of the sky is always clearly depicted. The sky in the United States has also been clearly portrayed, but in contrast to Dutch paintings, the sky is often squeezed by high mountains. In the Indian and Chinese paintings, the sky is generally merely a background and is barely depicted. The interesting thing is that in the Chinese paintings, the boundary of the sky is not clear. The sky and the river are always intertwined, which also represents the aesthetic preferences of the Chinese people.

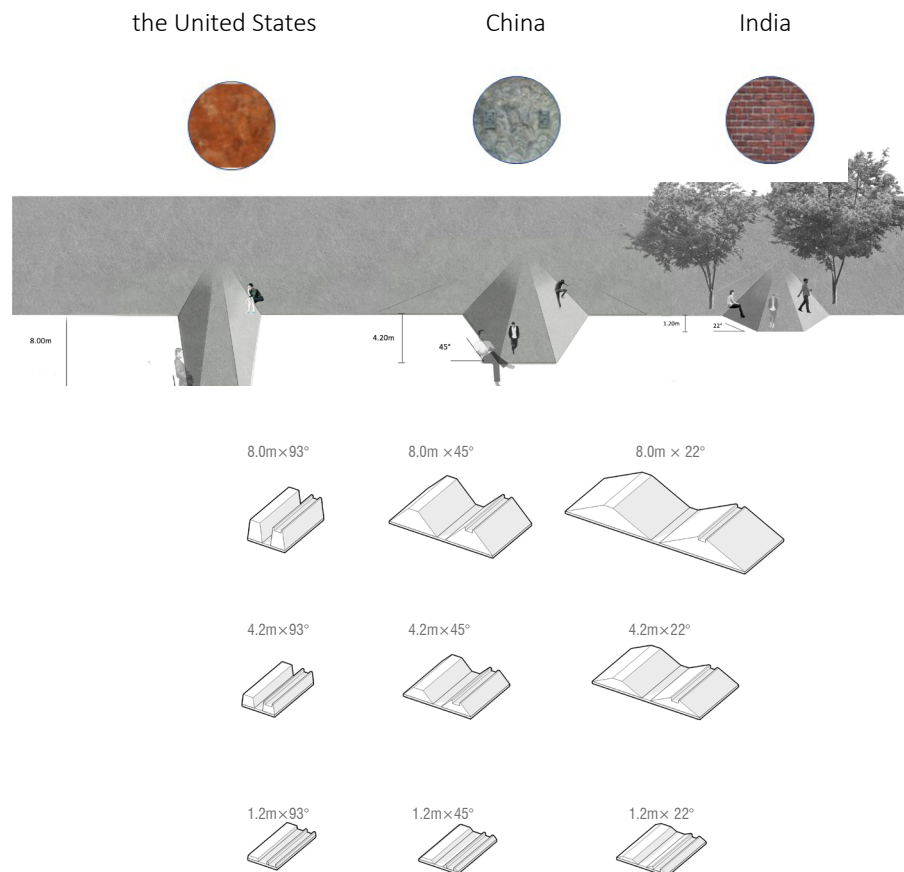
Looking at all the elements together, we can get four different atmospheres of the four countries. They are the flat and vast land and the straight and endless canals in the Netherlands, the small spaces with diverse surface relief and lush trees in India, grand canyons, river and waterfalls in American, and ethereal Chinese hills and intertwined water in between the mountains.

Relationship between sky and ground



By the analysis done from multiple aspects, I proposed three material to represent the different atmosphere. The materials I choose are corten steel, pantile, and brick. The rough texture, hardness and the ability to create echoes of corten steel make it a representation of the magnificent giant American valleys. The crispy sound of pantiles and the material itself can release abundant associations with Chinese landscape. Bricks are common material in India, which can be seen everywhere, the rough and soft surface also give people a similar emotion with the feeling of being in a luxuriant Indian landscape.

Besides, according to the different spatial atmosphere of three landscapes, three 'valleys' were extracted from the paintings. Three different angles, three different heights and three kinds of activities aroused by the spaces interpret the different atmosphere. To make it even more abstract, I recombined the three angles with the three heights, and finally get 9 prototypes.



## 2.5.2 Rituals analysis

China has 24 solar terms and many traditional festivals. In India, different religions and different regions have different customs and habits. Here I only chose the most common ones, which are related to the public space and the outdoor environment.

### □ Chinese rituals

Traditional Chinese festivals are generally based on lunar calendars. At the time of the full moon of the lunar January and the full moon of the lunar August, Chinese people celebrate the Lantern Festival and the Mid-Autumn Festival respectively. Lantern Festival is the last celebration of new year, at that time, people will go out to watch the lanterns hanging all over the park and will release paper lantern on the waterfront. In the Mid-Autumn Festival, the family members will come together from all over China to have dinner and watch the moon. The moon is the representative of the hometown. From ancient times to the present, people have always used the morphological changes of the moon to imply the joys and sorrows of real life and express their homesickness. Therefore, the full moon is very important in Chinese traditional culture, symbolizing reunion and joy.

In addition to the moon, the stars are given meaning as well. In the seventh day of the lunar July, people celebrate Qi Qiao Festival, which is China's Valentine's Day. There is a legend that in ancient times, a man fell in love with a fairy, they were not allowed to be together, so they can only meet each other through a "magpies bridge" once a year at Qi Qiao Festival. The bridge indicates the Milky Way and the two lovers the Vega and Arltai. In the summer of the northern hemispheres, Vega and Arltai are two bright stars visible to the naked eye. Every year in Qixi Festival, people will look for these two stars in the sky.

Besides festivals related to astronomical phenomena, there are many festivals where people use wild plants. On the third day of the lunar March, people eat *Capsella bursa-pastoris* to remove the humidity get in winter. During the Chingming Festival in spring when people usually visit the graves of family members, people collect *Artemisia argyi* and reeds to ward off evil spirits and use *Artemisia argyi* to make desserts. On the Dragon Boat Festival in the summer, people will use the Common *Aspidistra* to wrap the rice and steam it, and they will perform dragon boat competitions on the water. In the Chung Yeung Festival, people will climb mountains with *Cornus*, and also drink *Chrysanthemum* wine. In addition to these holiday meals, people also have many other foods that use wild plants, including *Herba Allii Schoenoprasii*, *Sophorajaponica* Linn blossom, the fruit of *Ulmus pumila* L., sweet chestnuts and so on.

Many vegetables that people often eat cannot be bought in Dutch supermarkets. Therefore, Chinese people in the Netherlands will share their experience of picking up wild vegetables in the Chinese online forum. They found that *Allium ursinum* in

the Netherlands can be used to replace *A. tuberosum* Rottl. ex Spreng. used in China. *Artemisia vulgaris* can replace *Artemisia argyi*. *Castanea sativa* can replace the *Castanea mollissima* BL. *Phragmites australis* in the Netherlands can replace Common *Aspidistra*. This alternative became the secret between Chinese people and was shared with other Chinese on the web and mobile apps.

Such a search for alternatives on the new land is a spontaneous process of establishing a sense of belonging. They have established their sense of belonging through the Dutch landscape. This is what I hope to achieve, so I hope that I can use this behavior so that more people can participate in this belonging building process.

In addition, popular activities in China now include square dances, night running, playing chess in parks, practicing songs in parks, etc. However, except for night running, other activities are mainly performed by retired old people but the users of Meerhoven are normally young people. Therefore, I do not consider these activities.

|                 |                      |                                |                         |                      |
|-----------------|----------------------|--------------------------------|-------------------------|----------------------|
|                 |                      |                                |                         |                      |
| Lunar March 3rd | March Festival       | Capsella bursa-pastoris        | Remove humidity in body | /                    |
| Lunar April 5th | Chingming Festival   | Artemisia argyi                | Eat& Decoration         | Artemisia vulgaris   |
|                 |                      | reeds                          | Decoration              | /                    |
| Lunar May 5th   | Dragon Boat Festival | Common Aspidistra              | Wrap rice               | Phragmites australis |
| Lunar Sep 9th   | Chung Yeung          | Cornus                         | Decoration              | /                    |
|                 |                      | A. tuberosum Rottl. ex Spreng. | Eat                     | Allium ursinum       |
|                 |                      | Castanea mollissima BL.        | Eat                     | Castanea sativa      |

Allium ursinum



*A. tuberosum* Rottl. ex Spreng



- Indian rituals

The Hindu calendar is a calendar that combines the changes of the sun and the moon. Therefore, many Indian festivals are also related to changes in the sky. Diwali and Holi are two festivals that honor the victory of good over evil and brightness over darkness. Diwali is celebrated at the time of new moon on October or November according to Hindu calendar. It's known as the "Festival of Lights" for all the fireworks, small clay lamps, and candles that are lit. Holi is celebrated at the time of full moon in March. It's commonly referred to as the "Festival of Colors." People exuberantly throw colored powder and water all over each other, have parties, and dance under water sprinklers. In the night, people will light the campfire and dance together. Also, many major festivals in India are related to water. In the GANES festival which honors the birth of the beloved Hindu elephant-headed god, people will appreciate the statue on a high platform, and at the end of the festival, the statutes will be paraded through the streets, accompanied by singing and dancing, and then submerged in the ocean. In the Navaratri, Dussehra, and Durga Puja, huge statues of the Goddess are made and immersed in the river in eastern India.

The common way of celebration I found interesting is that the festivals are always with dance and parties.

- American rituals

The United States is an immigrant country, and it is hard to say what the American traditions and customs are. However, through my field trip to New York (detailed travel discovery will be introduced in the next chapter), I found that there are a large number of food trucks on the streets. At lunchtime, the food trucks are quite popular, and according to the food sellers I met in New York, once every month there is a street chosen to be blocked and become food truck street, attracting loads of people in the surrounding. In addition, I found that there is a large number of outdoor basketball courts. Each basketball court is filled with people. So, I see these two as Americans' rituals.

20. V&S Editorial Board. (2008). General Knowledge. Retrieved from <https://books.google.nl/books?id=caE3DwAAQBAJ&pg=PA191&lpg=PA191&dq=honor+the+vitroty+of+good+over+evil+and+brightness+over+darkness&source=bl&ots=i12m7A5NMX&sig=CN8Vt5WDSaDInzyN-UMKX4hUO4&hl=zhCN&sa=X&ved=0ahUKWjE3LHY1JvbAhUI66QKHcw6DOYQ6AEInJAF#v=onepage&q=honor%20the%20victory%20of%20good%20>



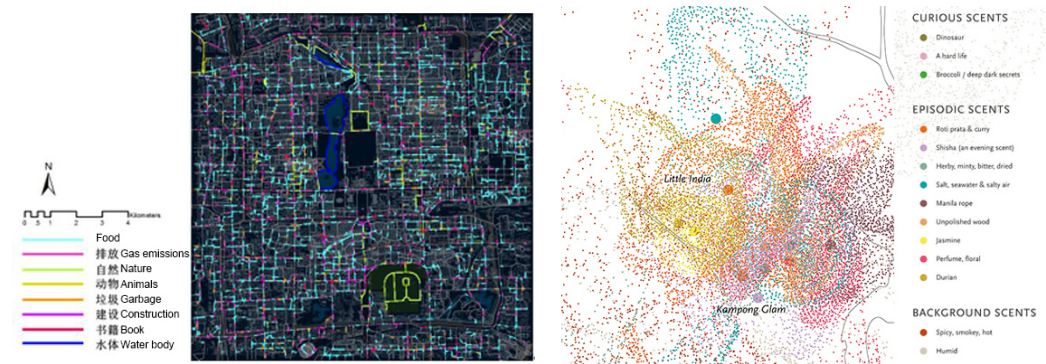
2.5.3 Sensation analysis

□ Smell

According to the smell map of Beijing's old city made by Lu Feng, Lu Liu, Daxiang Ma and Qingyi Cheng in Tsinghua University's big data and urban planning course, we got that the most typical scent in Beijing is the taste of food. This is mainly due to the many open snack bars and street food stalls. According to their investigations, the smell of food, nature, water bodies and books are Beijing people's favorite.<sup>21</sup> In addition, there was another investigation about the smell of a famous street in Beijing. In the online report, the smell of food was detailed to seven types. Fried food, Roasted food, haslet cuisine, steamed food, coffee, tea, and bread.<sup>22</sup>

For the smell of India, the information about the Little India region on the Singapore smell map can be a reference. The map was made by Kate McLean. From the map, the main smell of the small Indian region is durian, jasmine, and roci prata & curry.<sup>23</sup>

There is no suitable existing smell map about American cities, so I use my personal experience as a reference. Through a field trip to New York, firstly, the smell of food from food trucks gave me strong impressions. Besides, the smell of a blossoming white tree is also special. It is a *Pyrus calleryana*. Its dense flowers produce a sweet smell similar to rotten fish and semen mixed, so the tree is known by the Americans as the semen tree. According to the New York city street treemap<sup>24</sup>, *Pyrus calleryana* is the largest number of tree species in New York State. It has been extensively planted in the eastern United States since 1950. So, I use this smell as a representative of the American smell.



21. <http://m.thepaper.cn/>  
22. [https://www.thepaper.cn/newsDetail\\_forward\\_1558886](https://www.thepaper.cn/newsDetail_forward_1558886)  
23. <http://sensorymaps.com/>  
24. <https://tree-map.nycgovparks.org/>

□ Sound

The artist Colin Chinnery made a sound museum in Beijing in 2015 and collected many disappearing sounds of Beijing. One of them was the sound of the pigeon whistle. The pigeon whistle is a kind of whistle that is tied to the tail of pigeons. When the pigeon is released, the wind produced by its wings will go through the whistle and make a sound. The sound of pigeon whistle is very common in the morning of old Beijing. Now it is less and less, but the sound of it always appear in the movies related to old Beijing, and It is also the sound that Beijing youth are now missing.

In addition, I also collected important sounds by looking at traditional Chinese poetry. I discovered that the sound of birds, water, rain, and bells are the most common sounds in ancient poetry.

As same as the value shown in Chinese paintings, Chinese people appreciate hazy landscape with water, sky, mountains all merging together and hide behind moisture. Rain provides the possibility, and there are a lot of descriptions about rain in poems. Many of them describe the sounds that the rain hits on plants such as lotus, pear and Phoenix Tree, and the sound of rain falling down the eaves and falling on the stone steps. For example, there is a poem written by Wen Tingyun in the Tang Dynasty. 梧桐树，三更雨，不道离情正苦。一叶叶，一声声，空阶滴到明。 It means that the phoenix tree outside the window is showering cold rain, regardless of her sorrow for separation. The rain hit the leaves of the phoenix tree drop by drop, and then keep dripping on the stone steps until the dawn.<sup>25</sup> Besides, the description of the sound of water is also very diverse, including the sound of springs, streams, rivers, and waterfalls. The bell originated in Buddhism, but later its image slowly transformed into a representative of the passage of time. In this case, the sound of the bell is often associated with the description of the dawn or twilight. In addition, the bell is often accompanied by rain and the image of the moon as well because its sound can transmit over a large distance and give a tranquil atmosphere.<sup>26</sup>

As the country of origin of Buddhism, bells are also very typical in India. In India, the bells can be heard in every city, town and village, and both day and night. It is believed that God will appear in the temple with bells. In the Hindu tradition, the bell is usually hung in the porch or the inner sanctuary. Believers regard the bells as representatives of god, and they believe they can receive blessings by listening to the sounds. Young children like to jump and ring the bell. This rituals from childhood still exist in adulthood.<sup>27</sup>

25. Ai, Zhiping, ed. Dictionary of poems from Tang and Song dynasties. Tang dynasty: the Five dynasties. Northern Song dynasty volume. Shanghai: Shanghai lexicographic publishing house. 1988. 55-56  
26. Xu, Kexin. "The evolution of the image of bell sound in classical poems." Young Writer 12X (2016): 70-71.print



The typical sound of the United States is as ambiguous as rituals, but I got some when I visited New York City, I discovered that the elements of the waterfall were widely used in the modern garden design. The use of waterfalls was seen both in the 9/11 Memorial designed by Peter Walker in 2012 and the Paley park designed by Zion Breen Richardson Associates in 1967. In addition to the Keller fountain park analyzed in the previous section, Lawrence Halprin has also done a lot of projects featuring natural waterfall elements in Portland. At the same time, the waterfall is also an important element in American drawings. So, I think that the sound of the waterfall is an object that can arouse an association of Americans.



The pigeon whistle







## 2.6 Recombination

After we collect all the extractions, the next step is to integrate the hometown elements with local life, elements should be recombined with local functions. To provide the functions Meerhoven residents can enjoy and appreciate, the theory about what environment do expatriates need is necessary, and it will be shown in the next chapter.





### 3 Establishmewwnt of an expatriate-friendly outdoor environment

她住在七月的洪流上  
天台倾倒理想一万丈  
她午睡在北风仓皇途经的芦苇荡  
她梦中的草原白茫茫  
列车搭上悲欢去辗转  
她尝遍了每个异乡限时赠送的糖  
若我站在朝阳上 能否脱去昨日的惆怅  
单薄语言能否传达我所有的牵挂  
若有天我不复勇往 能否坚持走完这一场  
踏遍万水千山总有一地故乡

She lives at the flood of July  
The dream fell from the sky  
She took a nap at a reed bush where the north wind passes by  
The prairie in her dream is white as snows  
took trains to roam with joys and sorrows  
She has tasted all sweets gifted by every foreign lands  
Whether I can get rid of yesterday's melancholy if I face the sun and open my eyes  
Whether simple words can deliver all of my yearning  
Whether I can still finish the journey if one day I am not as brave as now  
Although I traveled around the world, there is always a place called home

Song: 历历万乡  
Singer: Li Chen  
Lyricist: Nanxi Chen

Knowledge workers between 9am to 5pm and between 5pm to 9 am,  
picture from STUDIOMARCOVERMEULEN



As all the people who wander on a foreign land, the expatriates also have a harder life.

Home is always a warm word with happiness and familiarities, but for expatriates, home is perhaps another unknown place. What should I do to bring them a better home?

### 3.1 Introduction of expatriates

Oxford dictionary defines an expatriate as a person who lives outside their native country.<sup>28</sup> A similar definition can be found on Wikipedia that an expatriate is a person temporarily or permanently residing in a country other than that of their citizenship.<sup>29</sup> However, in common sense, the word 'expatriate' is not general. Koeleman and J. Janneke specified the term as both international knowledge workers and international students that follow higher education.<sup>30</sup> In this report, I will focus on workers who sent abroad by their boss.

Different from general immigrants, they are considered educated people who are not motivated by basic needs, but rather for professional reasons or because they seek an experience abroad.<sup>31</sup> Besides, they stay in a foreign country for merely several months or several years, only a few of them will spend their rest of life abroad.

According to a survey made by Janneke Koeleman in 2014, Eindhoven expatriates normally intend to stay only 3-5 years. They are around 30-35 years old on average, and more than 50% of them are married.<sup>32</sup> In this case, their transient status and their age need to be taken into account. Moreover, not only expatriates themselves but also their couples need to be considered.

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28. Dictionary, O. E. (1989). Oxford english dictionary. Simpson, JA & Weiner, ESC.

29. wikipedia

30. Koeleman, J. Janneke. "Expatriates housing choice behavior: mapping the housing careers of international knowledge workers and students in Brainport Eindhoven." (2014).

31. Gatti, Emanuele. "Defining the Expat: the case of high-skilled migrants in Brussels." Brussels Studies. La revue scientifique électronique pour les recherches sur Bruxelles/Het elektronisch wetenschappelijk tijdschrift voor onderzoek over Brussel/The e-journal for academic research on Brussels(2009).

32. Koeleman, J. Janneke. "Expatriates housing choice behavior: mapping the housing careers of international



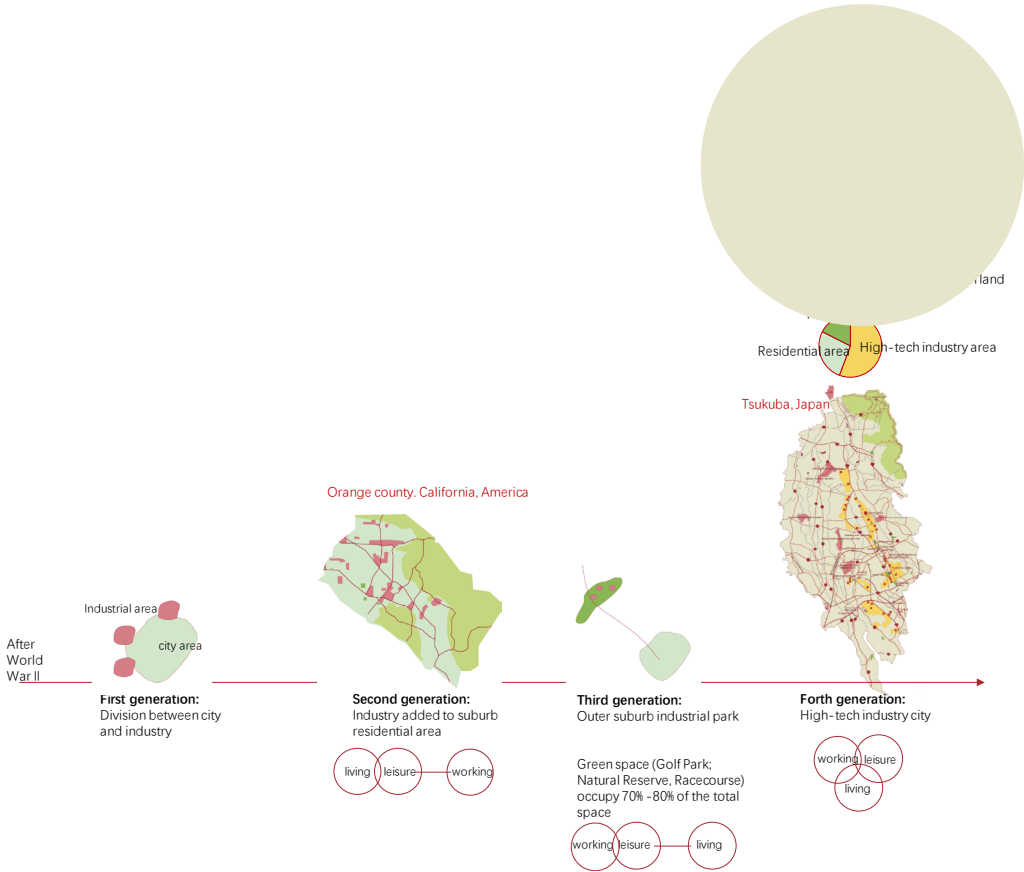
3.2 High-tech workers’ requirement on the outdoor environment

Eindhoven is the center of high-tech industry, and the expatriates coming to Eindhoven will normally be high-tech workers as well. To understand the special need of these expatriates, I made a research on the development of high-tech industry, and the constant trend of the development indicates their requirement on ‘mixing.’

After world war II, Industry developed at an unexpected speed. Industry parks went through four generations’ change. In the early years, industry areas concentrated around the boundary of cities owing to the increasing land price in the urban area. Later, convenient transportation becomes the core competitiveness of the industry, so they mostly situated at the exits of highways, far away from residence and leisure. The popularization of private cars makes the third generation of industry parks located in outer suburbs, although there are large areas of green space for people to relax during work, they are far away from urban lives. At the beginning of this century, the fourth generation of industry park become popular, they are called high-tech industry cities. In these cities, nature, scientific research laboratories, industrial areas and residential areas are integrated with each other, turning industrial parks a place only for production to a complex of life, work, communication, and leisure.<sup>33</sup>

From normal industry to high-tech industry, intelligence and innovation become more and more important. At the same time, nature becomes more and more close to people’s life. According to Kongjian Yu, nature provides people with a perfect environment for innovation.<sup>34</sup> When people work in nature, the natural area becomes an informal working space, and this informal feature can stimulate ideas.

In this case, an integrated structure that provides more opportunity for people to work informally in nature is needed.



33. Yu Kongjian. "Landscape design for high-tech parks, from Silicon Valley to Zhongguancun." China Building Industry Press (2001).  
34. Yu Kongjian. "Landscape design for high-tech parks, from Silicon Valley to Zhongguancun." China Building Industry Press (2001).

### 3.3 Design for usage during both day and night

As said before, Eindhoven is the center of the high-tech industry, and the expatriates coming to Eindhoven are normally high-tech workers as well. They work under stress during the day and often work overtime. Normally they only have time to go out and walk or do sports at night. Also, according to Yu Kongjian's research, through the development of the internet, high-tech workers have a tendency of mixing their work and life. They can work and be active in outdoor space during daytime but also can be active at night. Therefore, to provide expatriates with the outdoor space they need, I need to enhance the nighttime landscape design based on the normal use during the day.

Then the question is that how do a nighttime outdoor public space look like? Currently, landscape theories are mostly about the usage during the day, and there is no complete theory about night usage. In this case, several theses and articles were studied.

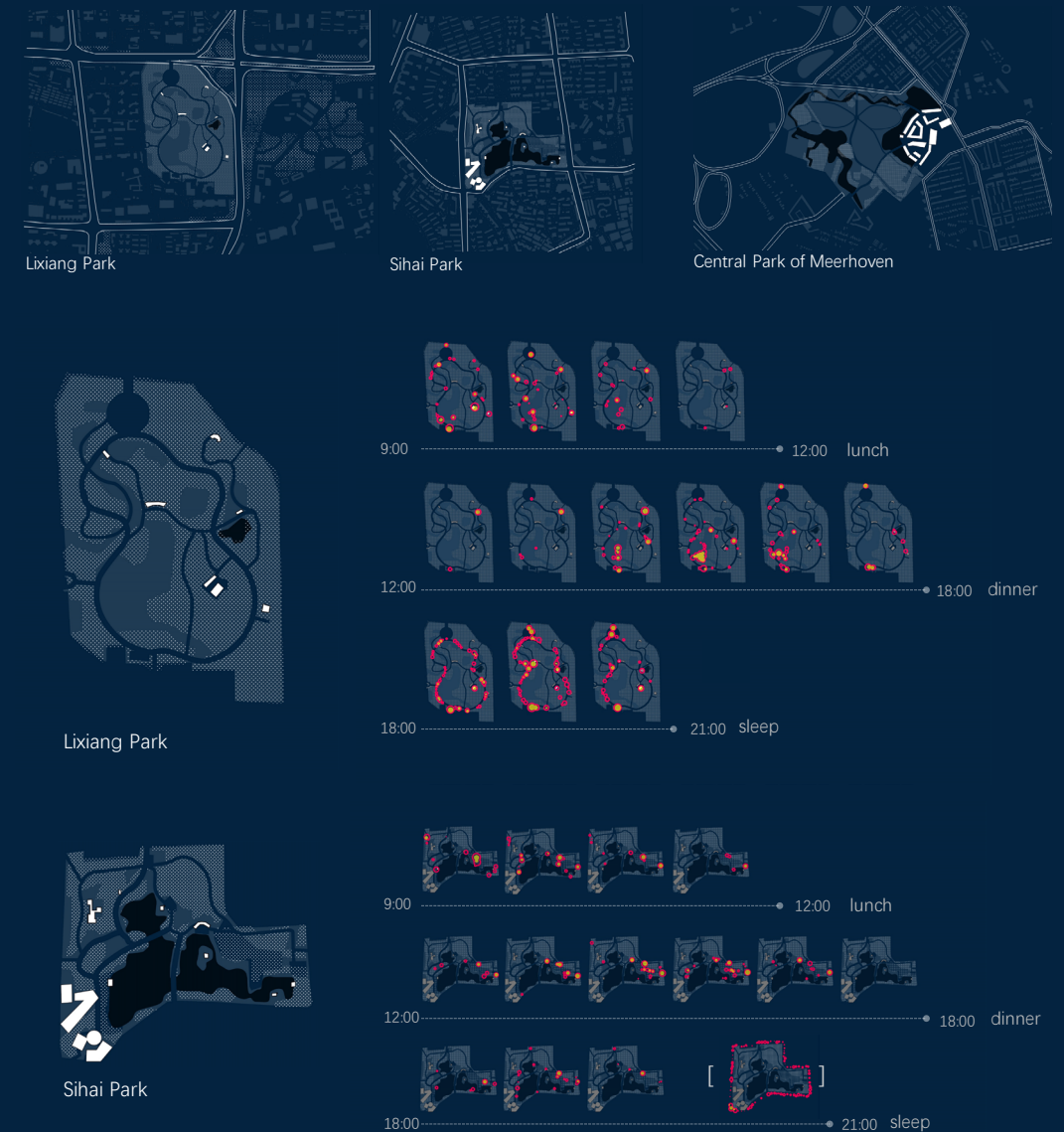
#### 3.3.1 Spatial quality for nighttime usage

A thesis from Ruan Qing discussing the spatial qualities of good night parks was studied.<sup>35</sup> In the thesis, three urban parks in Shenzhen, China were studied, and I chose two of them to make the comparison because they are in more similar size with Meerhoven central park compared to the third one, besides, these two parks were designed in opposite ways, so the comparison tells more. The two parks I chose are Lixiang Park and Sihai Park.

Ruan Qing recorded the distribution of crowds in each park once an hour from 9 a.m to 21 p.m. From the change of distributions, we can find the different preference of space for people during a different time, and we can find the different acting mode in these two parks according to their difference in design.

Lixiang Park is a trendy park built in 2000. It is mainly composed of a wide lawn in the middle and woods around the lawn. From the map, a 1200-meter circular continuous road can be recognized easily.

Sihai Park is an old-fashioned park built in 1987. Winding narrow roads, frondent trees and irregular big water body are the main features, giving people a feeling of being in traditional Chinese gardens.



35. Ruan Qing , A Study on Planning and Design of Parks Basing on Time Dimension and Activities, the Cases Study on Lixiang Park, Wenxin Park, Sihai Park In Shenzhen , 2017



Looking at the activity maps, the first thing we can recognize is that the distribution of crowds is spotted during the daytime and become linear and focused at night. People tend to play chess, dance or sit and look around in the pavilions during the day. When it gets dark, people get difficulty to do those activities because they cannot see clearly. In this circumstance, the whole park was overwhelmed by people who do activities that do not need much eyesight, such as jogging and strolling. Comparing maps from Lixiang Park and Sihai Park, the interesting thing is that people all run inside Lixiang Park but outside the boundary of Sihai Park. The difference indicates that runners prefer open and continuous space. The circular road in Lixiang Park provide open views, and the shape of itself is easy to be remembered and followed, which is perfect for runners. On the contrary, spaces in Sihai Park are always dark and narrow, and roads are always curves. Therefore, people gather outside Sihai instead of being active inside.

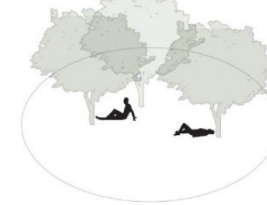
The second change happens on the lawn of Lixiang Park. In the daytime, people all choose to sit in the middle of the lawn and keep a distance from other people because there they can have nice views but also private space. At night, there are no people sitting in the middle of the lawn anymore, they all choose to sit at the boundary of lawn where they can have eye contact with people who pass through in the front. The distance that people tend to keep from strangers is also shorter because people cannot see each other clearly and their defenses are lower down naturally. A similar result can be found in the pavilion area in both parks. Pavillions that hide in the woods are popular spots for people to gather or meditate when it is bright, but at night such private places are unwanted because you cannot have eye contact with other people there. Eye contact is important for night parks.

The importance of eye contact makes entrance a special place as well. People all want to escape from the urban environment in the daytime, so the noisy entrances are just a place that everyone passes by. Things get different at night because open view towards outer main roads and the eye contact with passing passengers provide a sense of safety. Among entrances, the plaza-like one is most successful. Some people sit or do activities around the boundary, some people walk into the park just by the side, and some people pass by the main road. Such entrance acts as stages, and different people are each other's actor and audience as well.

In a word, the function of park changes during a day. During the day, people prefer quiet and private spaces which are far beyond urban noise. In the darkness, people normally prefer to stay in open space that they can observe their surroundings easily and are more active. People watch natural spaces during the day and watch other human beings at night. For a park that works both day and night, light, continuous and imageable path, open space where people can have clear eye contact with each other are important, besides, entrances can be special active place as well if being nicely designed.

## Activities

daytime



nighttime



## Eye contact

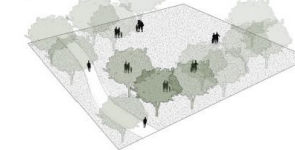
The whole day activities on the lawn



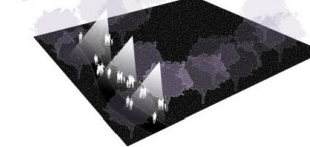
Activities on the edge of the lawn



Daytime



Night time

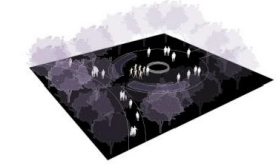


Activities in the pavilion

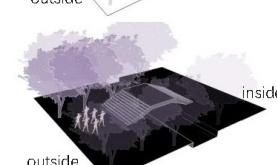
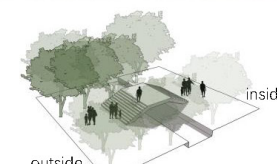


## Entrances

North entrance of Lixiang Park



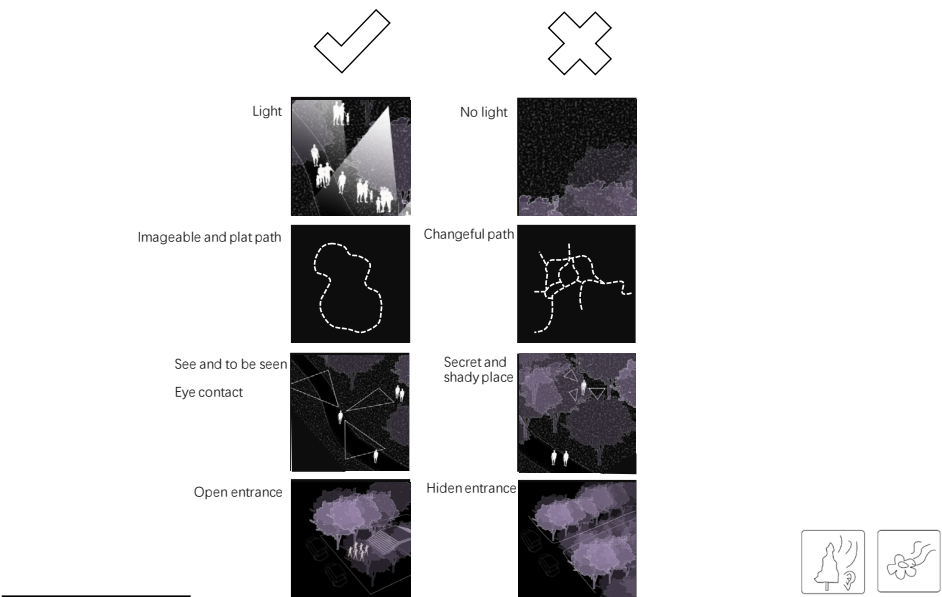
North entrance of Sihai Park



3.3.2 The light arrangement and the enhancement of soundscape and smellscape

Besides spatial quality, there are also other theses about the light arrangement and usage of other senses except for visions. Jie Lian proposed that a good nighttime-active space doesn't mean that it is as bright as possible. It is necessary to guide the different types of activities through brightness grading, and the amount of lighting should be carried out in correspond to different periods to save energy and protect the ecology. The design of the light should be consistent with the physical functions, the material, and the shape.<sup>36</sup> Chaoyang Zhang proposed that the olfactory and auditory landscapes can be enhanced

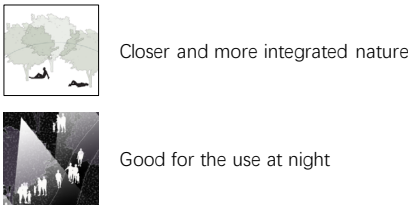
during the night. Aromatic plants should be planted rationally. The plant's aroma and spatial functions should be reasonably combined, and auditory landscapes such as underwater sound can be used to enhance the experience.<sup>37</sup> Shanshan Xu and Yuehua Chen proposed that we could make full use of the unique sound of a pine tree and bamboo blown by the wind. The sound of the lotus and plantain being beaten by the rain is also nice, and we can also introduce sound into gardens by providing a special ecological environment for birds, quails and other animals that can produce nice sounds.<sup>38</sup>



36. Jie Lian, Study on Landscape Architecture Night-active Space Design based on Recreation Behaviour, 2010  
37. Chaoyang Zhang, Study on Environment Recreational Facilities Design in Night, taking Changsha City as an example,2007

3.4 Conclusion

To sum up the above research and analysis, in order to establish an expatriates-friendly outdoor environment, first of all, we should consider the age of expatriates, their staying time and marital status, provide them with activities that suit their age, and consider the lives of their spouses. Also, we need to create informal outdoor workplaces through closer and more integrated green space, and we can create a nighttime outdoor environment through smooth and recognizable paths, open space that can interact with other people, moderate and graded lighting, and emphasis on smell and hearing landscapes.



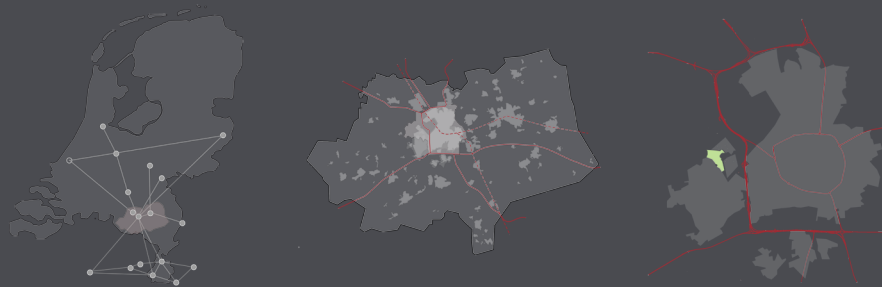


An aerial photograph of a large water treatment facility. The facility features several large, circular sedimentation tanks arranged in a cluster. Winding paths and roads crisscross the site, connecting different areas. There are patches of trees and some industrial buildings in the background. The overall scene depicts a complex engineering project integrated with a natural landscape.

4 Meerhoven, a place embracing both challenges and possibilities



A integrated green structure and a suitable environment for night time activities are needed. Then, is the site, Meerhoven good enough to meet all the requirements?



## 4.1 Background: Brainport and Eindhoven

For Meerhoven, the context that cannot be ignored is the Brainport region and also Eindhoven.

Brainport is home to many of the world's leading companies, such as Philips and ASML, it is also the place where many of the most widely used innovations are born and grown, such as electron microscopes. It is selected as the most intelligent community in the world by the Intelligent Community Forum and has a prosperous future in high technique trades, attracting many highly-educated people from all over the world. The number of expatriates has been increasing in the past few decades. The current number of expatriates in the central city of Brainport, Eindhoven is around 8,266 people (3.64% of total Eindhoven inhabitants)<sup>39</sup>, counting 14.5% of total amount in the Netherlands (total amount of expatriates is 57,000).<sup>40</sup>

However, the living quality of expatriates in Eindhoven is not as good as expected. According to a survey towards expatriates from ASML, around 50% of expatriates and their partners do not feel at home. The rate is even higher in non-western born staff. Besides, they seem to be not satisfied with their communities. 50% of people are not happy with their social network outside work, 70% of people are not satisfied with the open hours and varieties of activities provided by their communities, 65% of people are not satisfied with the cultural activities provided by their communities. As a result, 61% of people state their attitude that if having a similar working opportunity in other places, they will leave Eindhoven.<sup>41</sup>

According to a report from ING, If the Netherlands want to keep the current pace of high-tech industry development, 15,400 more highly-educated people will be needed before 2030<sup>42</sup>, which is a big challenge according to current workforce shortage. As one of the three main technique ports (other two are Amsterdam and Rotterdam) in the Netherlands, Eindhoven needs to attract a lot of expatriates. The contradiction between workforce need and life dissatisfaction of expatriates require Eindhoven to improve expatriates' living environment quality as quickly as possible.

39. <https://www.nrc.nl>

40. <https://www.nrc.nl>

41. Data from the Expatriates Satisfaction Survey that commissioned by ASML, surveyed by Renmmatrix in 2015



## 4.2 Meerhoven

In Eindhoven domain, there are many communities established near industrial parks; I choose Meerhoven as my test site.

Meerhoven is located south of the Eindhoven Airport, surrounded by three industrial parks, one is the Flight Forum, and the other two are under construction, which named Land Forum and Park Forum. The east of Meerhoven is bordered by the Beatrix canal and the A2/N2 motorway.

Here I will first introduce the history of Meerhoven and discuss the current condition there.



### 4.2.1 History of Meerhoven

#### □ Farming period

The history of the settlement in Meerhoven started at the end of the last century. Meerhoven witnessed a long period of farming history.<sup>43</sup>

Meerhoven sits in the North Brabant sandy soil area. The sandy soil is naturally infertile for the agriculture. For thousands of years, farmers broke pieces of the original primeval forest for the construction of fields. By extracting nutrients from the soil, these fields became barren after a few years, and another piece of forest was cut down again. In the course of time the forest disappeared, and more and more the bare-cut landscape finally made way for vast heathland.<sup>44</sup>

In fourteenth-century an important agrarian renewal was applied: the sludge fertilization. Through centuries of fertilization, fields were raised with its dark soil. Later in the nineteenth century, the soil was considerably increased by intensive fertilization to twice as thick as in 1832. Rye, oats, buckwheat, potatoes, and clover were grown, and on a smaller scale flax and rapeseed. Sheep was also raised in Meerhoven.<sup>45</sup>

The stuff in the old times was discovered by a large-scale archaeological discovery made in 2000-2012. 11 sites were excavated, and from the deep soil, bones of animals, golden coins, pieces of porcelains were discovered, making the history hidden underground transparent to the public.<sup>46</sup>

#### □ The dark time during Second World War

In the twentieth century, the landscape of Meerhoven has changed dramatically. In the year of 1930-1932 and 1938-1939, a new canal digging project started, and the canal was named Beatrix since 1938. The channel is currently the east boundary of Meerhoven. Besides, a large area around today's Meerhoven was already leveled in 1931 for the construction of the airport Welschap. The airport was considerably expanded in the Second World War with three paved runways in the characteristic shape of an A so that that planes could land in every wind direction.<sup>47</sup>

43. Arts, Nico, ed. New people on old land. Woudrichem: Uitgeverij Pictures Publishers, 2017.Print.

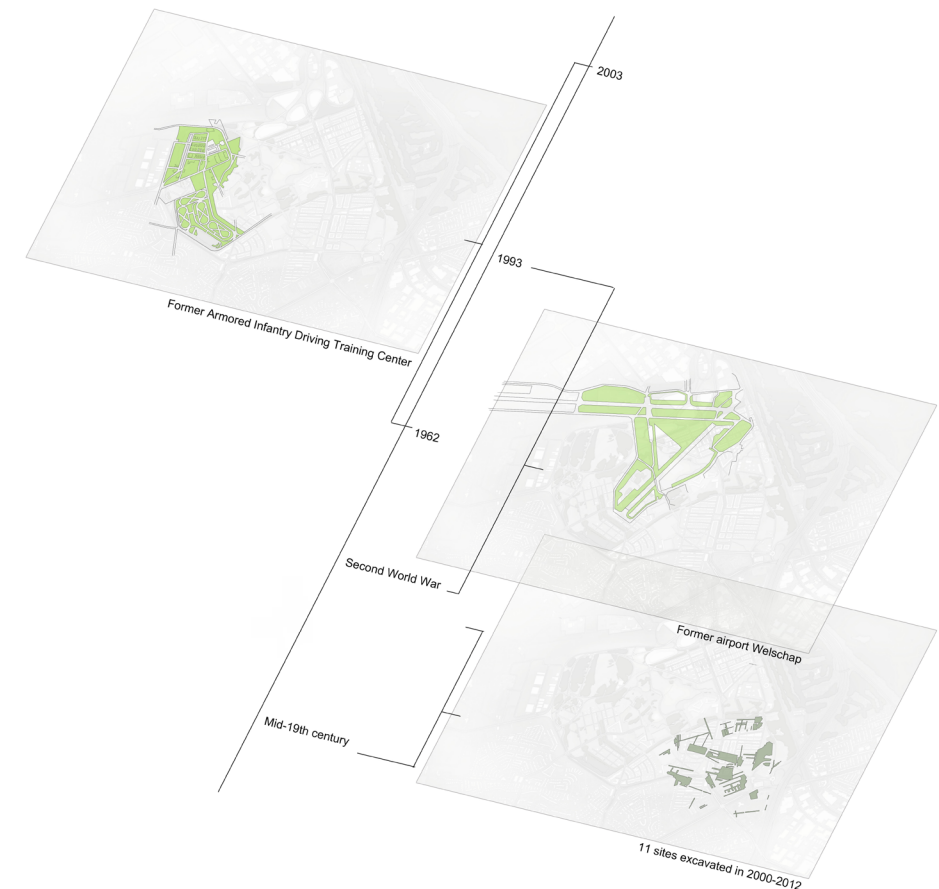
44. Arts, Nico, ed. New people on old land. Woudrichem: Uitgeverij Pictures Publishers, 2017.Print.

45. Arts, Nico, ed. New people on old land. Woudrichem: Uitgeverij Pictures Publishers, 2017.Print.

46. Arts, Nico, ed. New people on old land. Woudrichem: Uitgeverij Pictures Publishers, 2017.Print.

47. Arts, Nico, ed. New people on old land. Woudrichem: Uitgeverij Pictures Publishers, 2017.Print.

During the Second World War, 1459 tons of bombs were thrown at the airport Welschap by the British Royal Air Force and the United States Army Air Force in 1943 and 1944. Most bombs exploded on the spot, but at an average of 10% bombs did not. Many of them ended up elsewhere and remained in the soil at different depths. In Meerhoven, intact bombs have been detected in more than 150 places, unearthed and usually dismantled on site.<sup>48</sup>



48. Arts, Nico, ed. New people on old land. Woudrichem: Uitgeverij Pictures Publishers, 2017.Print.



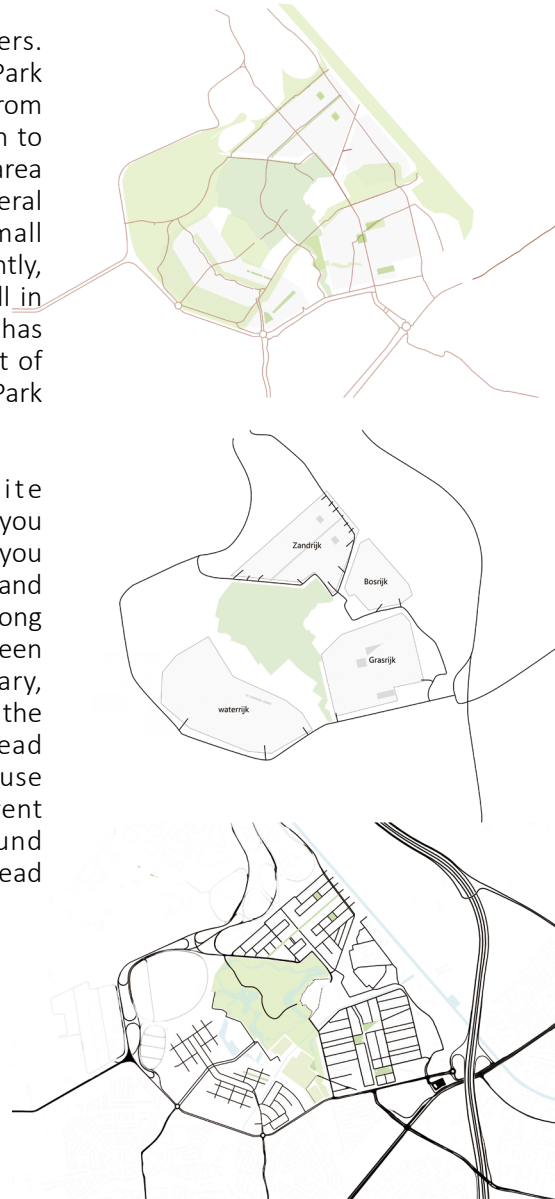


## 4.2.2 Challenges of Meerhoven

### □ Seperate green structure

Meerhoven is composed of three layers. In the middle, the huge park is called Park Meerland, which is around 840 meters from east to west and 740 meters from north to south. Outside Park Meerland, housing area is divided by canals and roads into several small plots. In each plot, there are small parks with facilities for children. Currently, the outer three industrial parks are still in development. Half of the Flight Forum has been built and already in use, but most of the space planned for Land Forum and Park Forum are still woods and grassland.

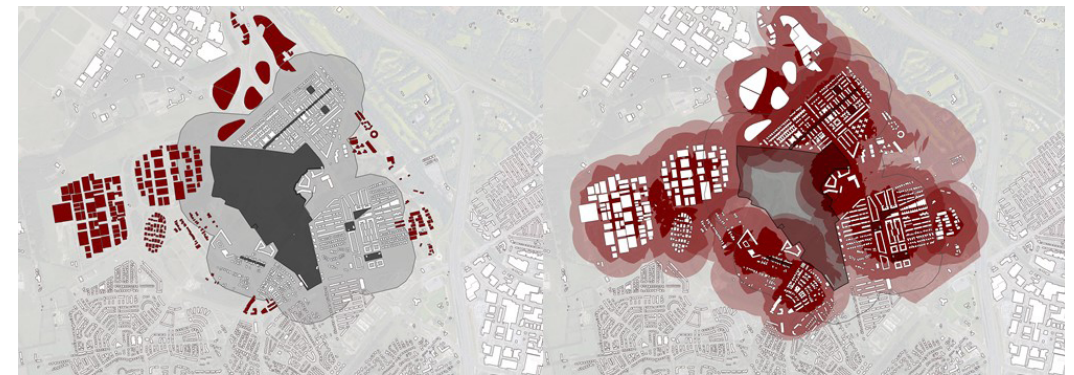
The plots of Meerhoven are quite introversive and surrounded by roads. If you want to drive from one plot to another, you have to first go out of the current plot, and then you can enter another through a long way. There is no direct connection between plots with fast vehicles. On the contrary, nice condition for low-speed vehicles is the characteristic of Meerhoven. Many dead roads can be found on the map because space is left for a cycling path. Different from driving cars, you can cycle around Meerhoven easily through the widespread cycling paths.



### □ Inaccessibility of green spaces

Because of its size, it is not only a community park for Meerhoven residents but also a public park for surrounding citizens as well as people living in Veldhoven. It is also a spot on the route of the Brainport Avenue, which is a low-speed circular path connecting all the industrial parks and universities. Again because of its size and shape, the central park is difficult to be used in daily life. People normally do not walk for such a long distance if they just want to stroll for a while after dinner.

I draw the areas which are most likely to be accessed by people walking from the company or home for five minutes, the boundaries of the big central park, the small plot gardens, and the forest areas at the junction of communities and industrial areas are the areas being high lightened. In turn, if the residential areas that can be served by the central park and the small gardens are counted, it will be found that some current and potential future residences, as well as people who work in industrial areas, will have difficulty accessing these greeneries. Therefore, more green spaces that available for activities and more suitable park locations need to be considered.

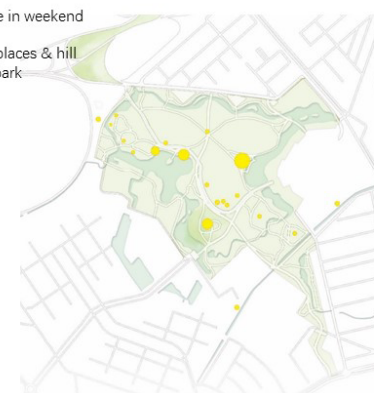


The area where people cannot get to park easily

The area where there is high accessibility  
(the area where people can approach in 5 minutes-walk)

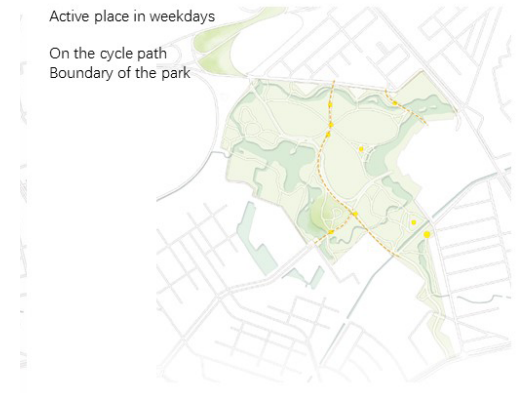
Active place in weekend

Waterside places & hill  
Inside the park



Active place in weekdays

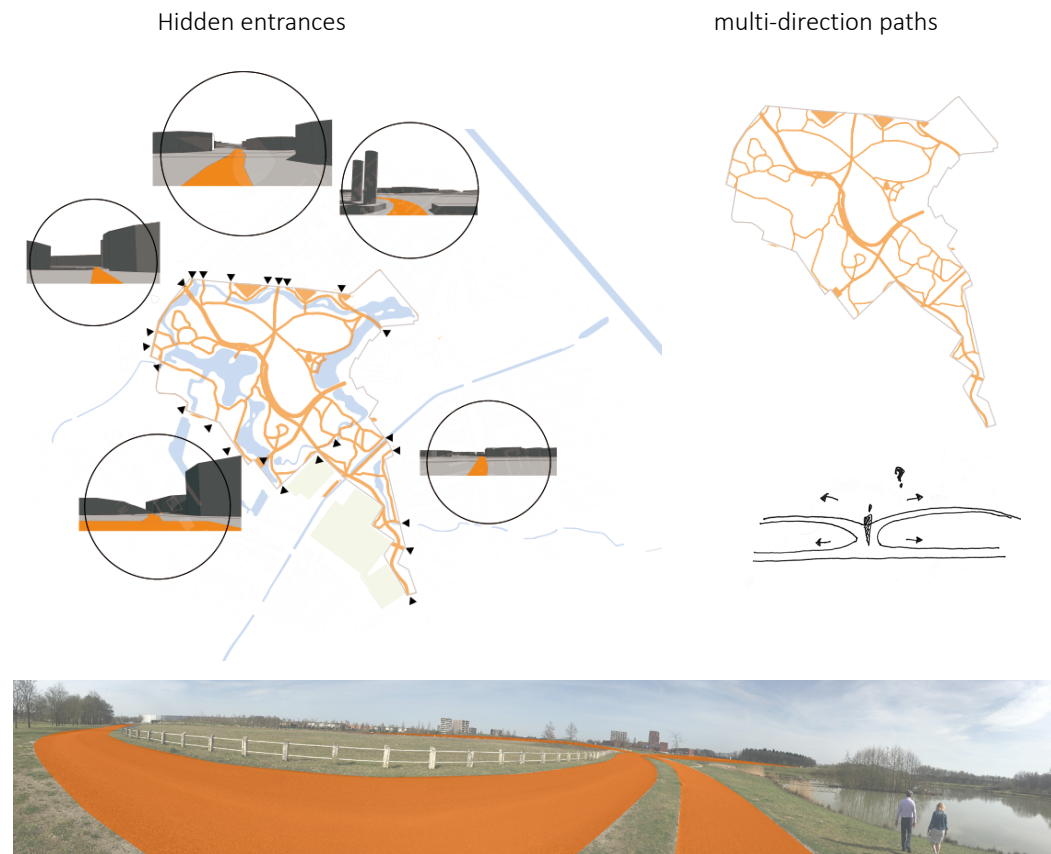
On the cycle path  
Boundary of the park





### □ Insufficient conditions for nighttime usage

As we already know, expatriates always have intensive work during the day and only have free time at night. However, currently, the outdoor public space is not designed for night usage. There is almost no light in the park at night, and only the cycleways are lightened. In addition, the entrances in Park Meerland are all narrow and unimpressive, and the paths are curves with a lot of branches. They make the park even more secret and nature, but also more dangerous at night. The darkness, hidden entrances and unimaginable paths make the park an unfriendly place for night activity. When it gets dark, people only cycle through the park quickly. The runners all showed along the main road where you can run under the road lamps and have eye contact with car drivers.



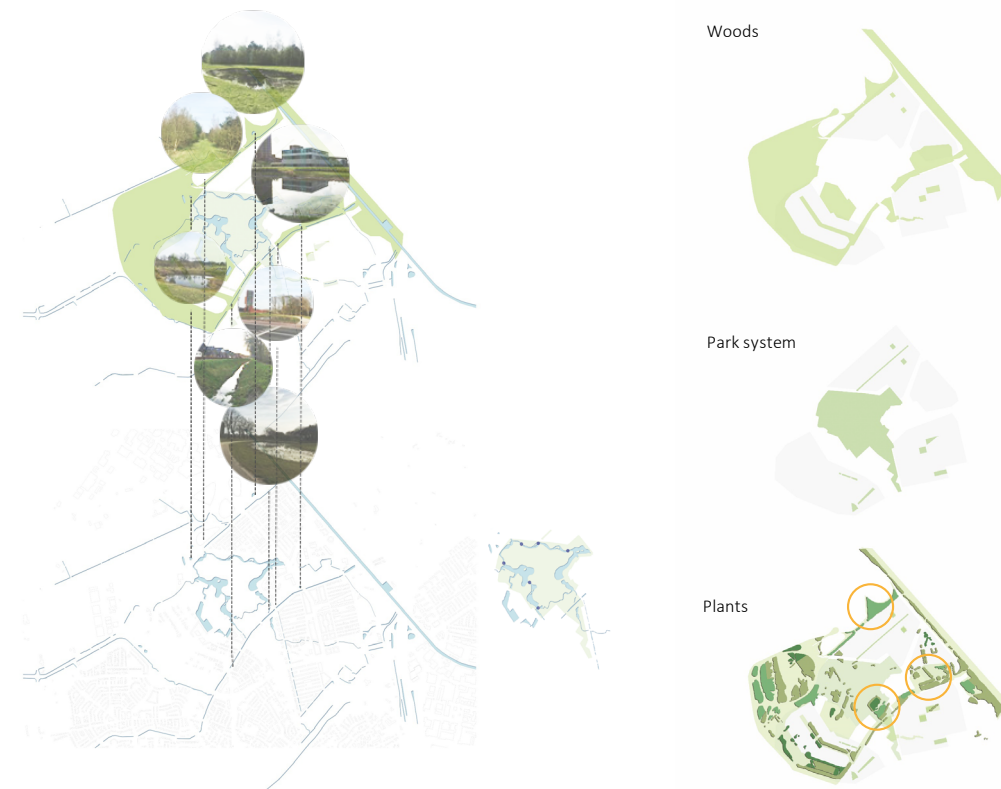
Limited light and limited activities at night

### 4.2.3 Possibilities of Meerhoven

#### □ Hidden beauty

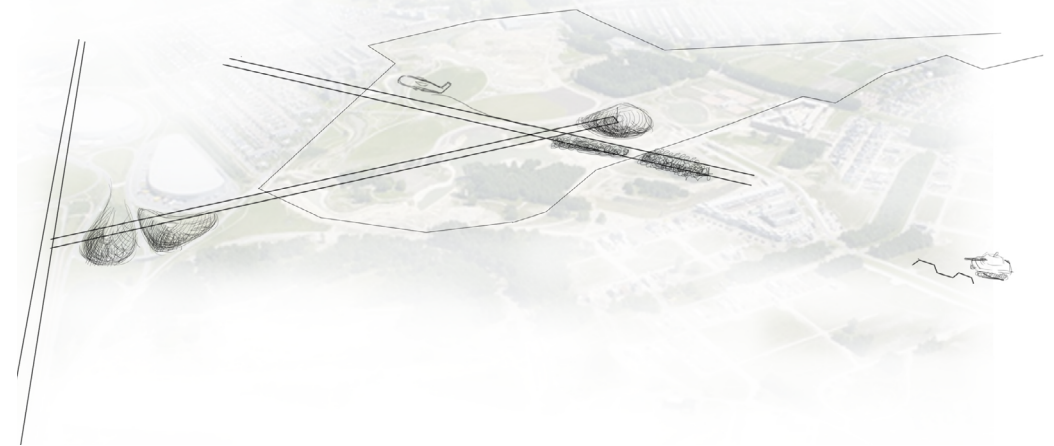
Although the middle park is concentrated and hard to reach, there are a large area of woods distributed around residences, providing a lot of possible recreational sites. The interesting thing is that according to the different trees planted, different birds distribute as well. In the woods, three dominant sounds of bird can be recognized.

Besides, there are many small ponds and small drains hidden in the site, in the forest or the shadow of buildings. Many of them happen to be areas where people can walk to in five minutes, but they normally cannot find them. Therefore, these small areas can be used.



#### □ Hidden history

Park Meerland is designed by Atelier Dutch in an English landscape style with hills, vast lawns, and especially lots of water. The landscape in the park is very diverse. The three most prominent hills are all about 15 meters high. They line up in a straight line and basically coincide with one of the original A-shaped aircraft runways. In addition to this one, there is another historical runway located in the central park, but now the runway has disappeared, leaving only a hint of the woods left over from that year.



#### □ Sport tradition

Meerhoven has been nicely designed, and there is no doubt that it has perfect greenery. Because of its big central park, it has become the spot for the Meerhoven 24 running event. Every year in September, competitors will run for 24 hours in Meerhoven, the big lawn in Park Meerland will be used for food trucks and other activities.

During normal days, the interest in sports can be seen from the large number of sport clubs. There are an outdoor soccer ball club, an outdoor tennis club, several indoor sports centers, and many dancing, fitness clubs for children.



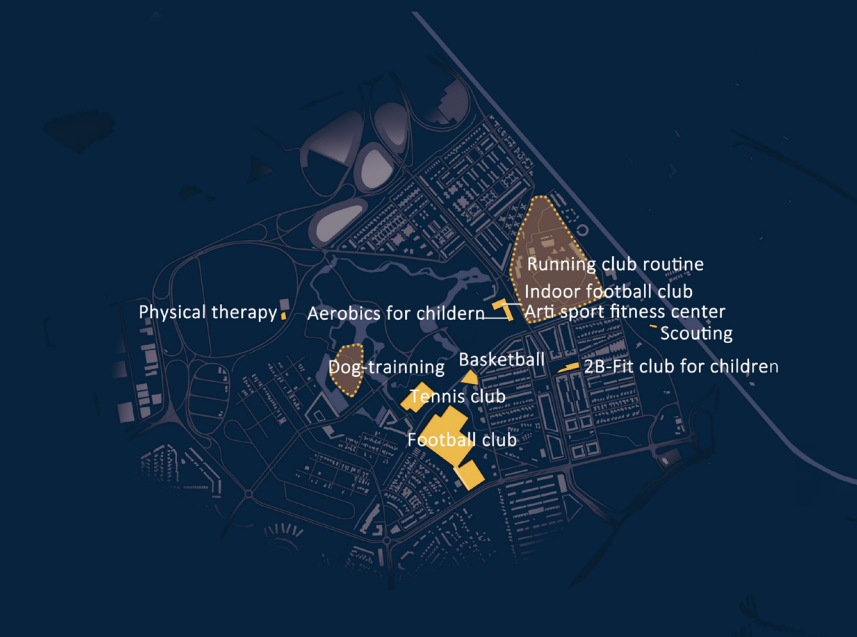
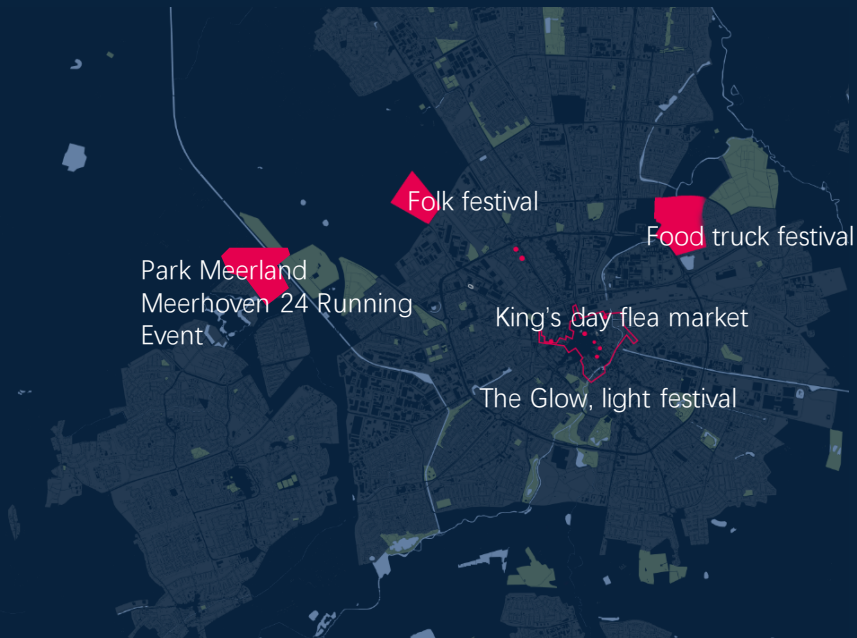
## 4.3 Conclusion

Meerhoven is a place full of challenges and possibilities.

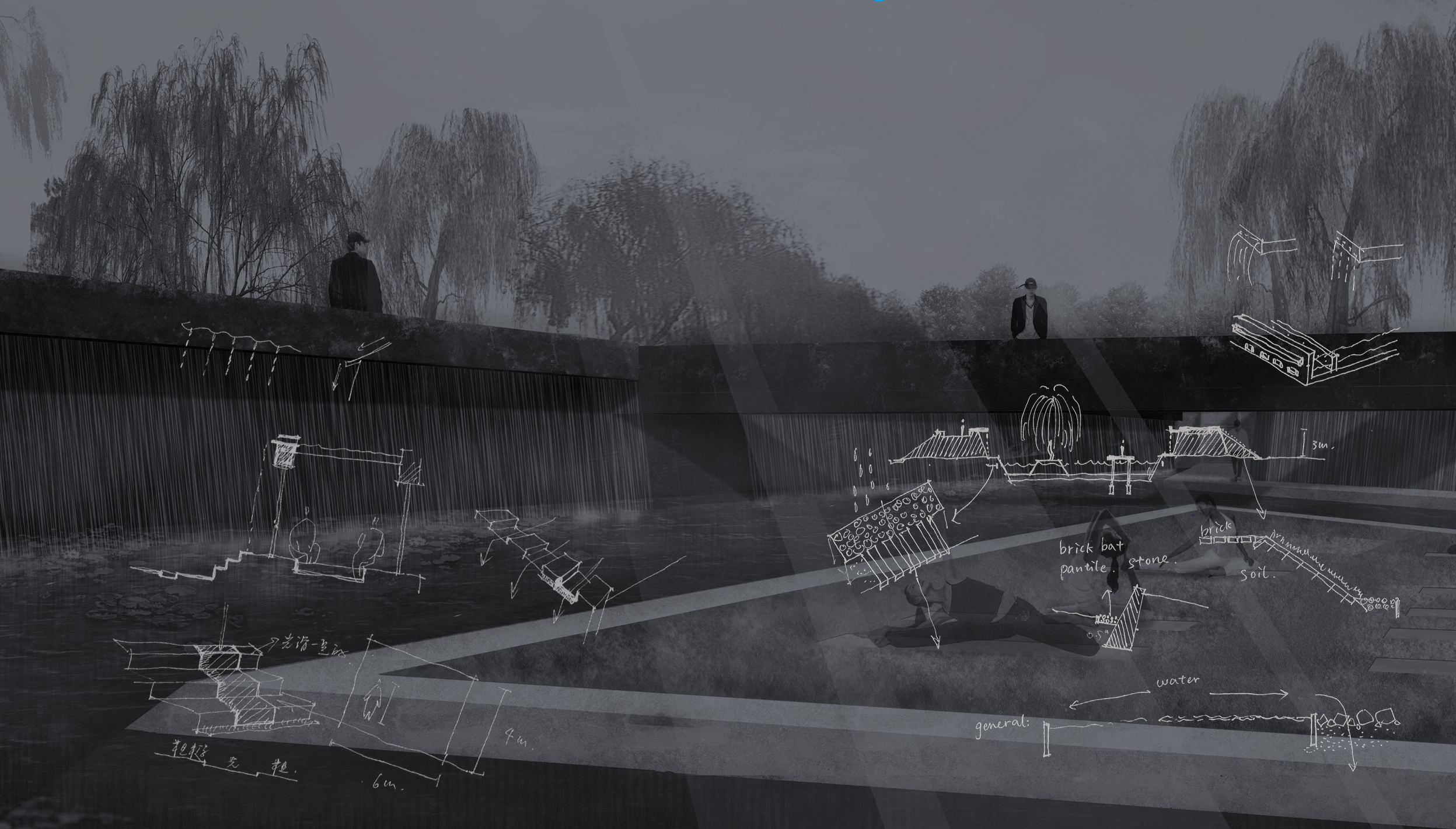
Eindhoven faces the crisis of the loss of expatriates. A large proportion of current expatriates are not satisfied with the living environment of Eindhoven. At the same time, to maintain the pace of development of high-tech industries, Eindhoven must attract more expatriates. As a core area for the development of the Eindhoven high-tech industry, Meerhoven naturally faces the same problem.

Although the Meerhoven community has a good outdoor environment, people rarely go outside and interact with their neighbors in outdoor space. The concentration of green spaces, the structure of the community result in the low rate of usage, and are also the opposite condition from what expatriates need.

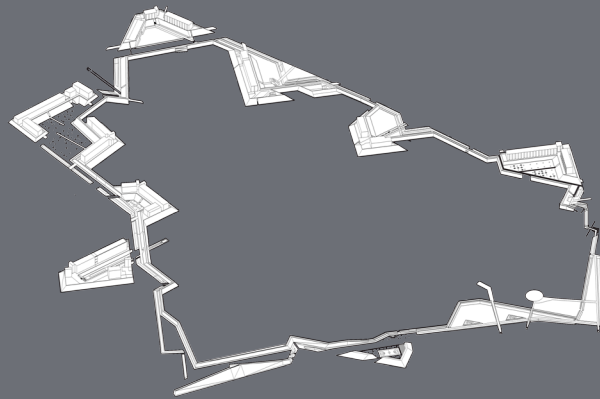
The advantages of Meerhoven is that there is interesting history hidden behind, and the existing good nature and infrastructure conditions can provide many possibilities to meet expatriates' need and create a nice base for belongingness building.











After knowing the environmental need of expatriates and the way how to build belongingness, I started the design of Meerhoven.

With the new design of Meerhoven, I hope the future expatriates can rebuild their belongingness easily. What I want to realize is not a Shangri-la that has no connection with outer context, but a park that still merges perfectly with surroundings. I hope expatriates not only can find their familiar elements in my design but also can establish their foothold in the new settings by those familiar elements. Meerhoven will become their springboard to search broader landscape in the Netherlands.

Features of Meerhoven current layout, history of Meerhoven and Dutch material and landscape typical elements are concerned seriously. The analysis of the site, as well as the researches about belongingness establishment and expatriates-friendly environment, will be combined together in the design, and be shown in multiple layer and scale.

## 5.1 New Community green structure, from concentrated to connected

### 5.1.1 Night activity tendency and requirement

As described in the last Chapter, there are only a few people in Meerhoven who are active during the day and night, and central park is not well utilized at night. There are many night-time activity organizations and sports clubs, but people do not use the current green space for activities, which indicates that people have this need, but the site does not provide this condition.

In the previous night park case analysis in chapter 3, I found that there is a circular park road suitable for sports in the park. Lixiang park owns an open field of view, so it is very active during the night. Every day, there are a lot of people running in Lixiang park. Sihai park is relatively dark at night, and the winding roads of it scare people, people tend to run outside the park. This situation also happened in Meerhoven. People tend to move along the public transportation at night because there are more pedestrians and public transits, better vision, and continuous road. Besides, the research also shows that people tend to move around the edge of the park at night in order to have more eye contact with other people, and people tend to do dynamic activities such as dance, run, walk compared to static scenery-watching activities because of the weakened vision. People will not go to places that are too big at night because of the limited scope of vision. Smaller space that people feel they can control is more popular.

Therefore, to design a park that is suitable for expatriates to use during the day and night, a circular continuous slow space is necessary. The central park is too vast and difficult to be controlled for nighttime activities, so I started to think about using the outer boundary of the central park instead of creating a new circular road in the park.

### 5.1.2 Current green structure and people's need

As shown in chapter 4, the current green structure of Meerhoven is a large park in the middle and small gardens in the small plots next to it. The shape and the size of the central park make it difficult to be used in daily life. According to the picture of places –where people can reach by 5-minutes' walk, the boundaries of the big central park, the small plot gardens, and the forest areas at the junction of communities and industrial areas are the areas having most potential to be used. Also, there are some residents cannot get to green space easily in Meerhoven because the green spaces are too concentrated, and lots of green areas are not designed for use (the woods). Therefore,

I am thinking of utilizing the woods to create more recreational space and put more concerns on the boundary of the central park.

### 5.1.3 The unknown beauty in Meerhoven

Ditches, the important Dutch landscape elements can be seen everywhere in Meerhoven. As shown in the picture of Meerhoven water structure, except for the east-west ditch where people often walk dogs, there are many small ponds and small drains hidden in the site, in the forest or the shadow of buildings. Many of them happen to be areas where people can walk to in five minutes, but they normally cannot find them. As said in last chapter, there are still people cannot reach high-quality green space easily, so these small ditches and ponds could be used to for people to recreate.

### 5.1.4 Double-ring structure

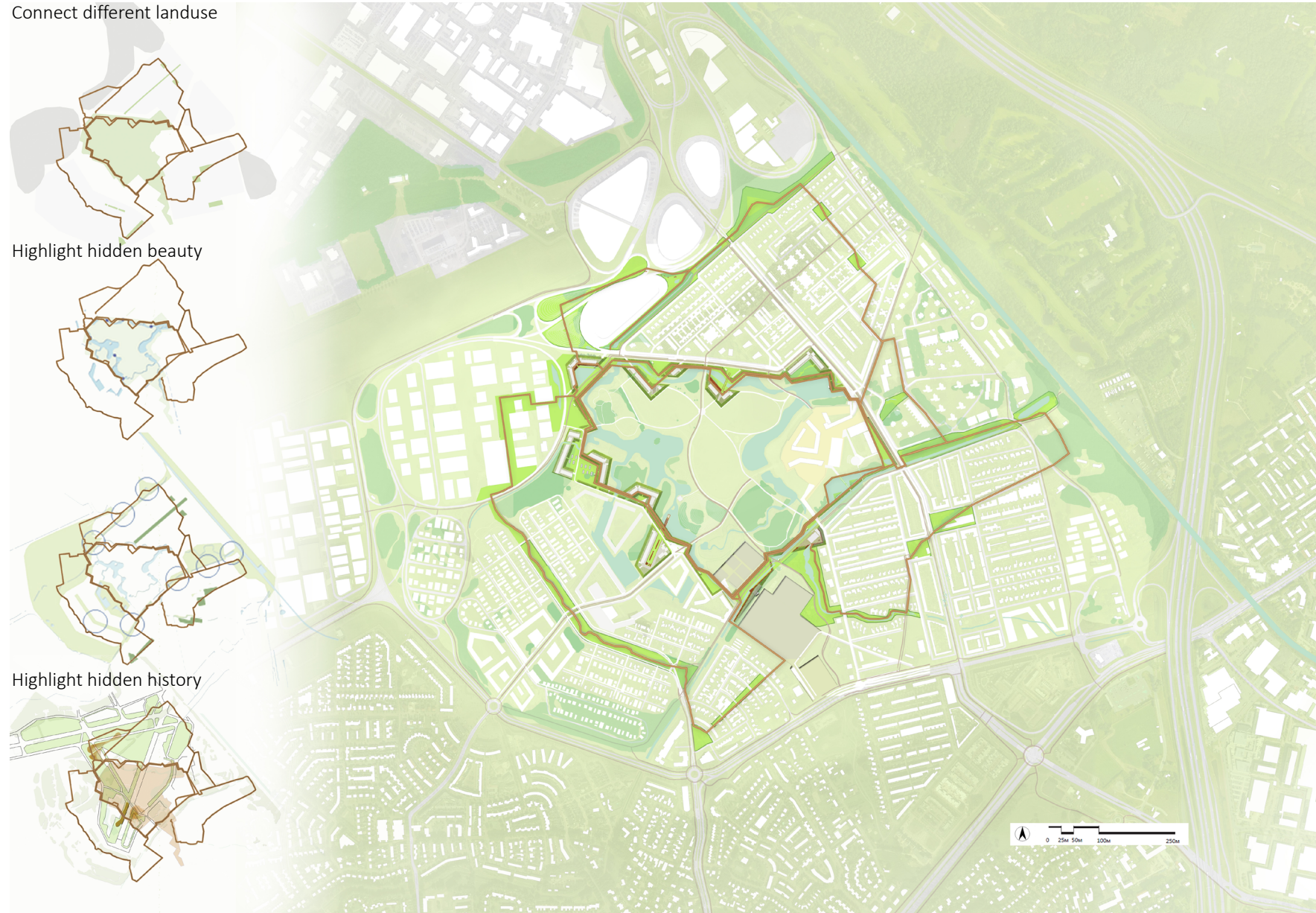
Based on the above analysis, the boundary of the Central Park is very important and easy to be approached. According to previous analysis of other night parks, we know that the park boundary has a high potential to be attractive nighttime activity area according to its openness. The problem of current park boundary is a lack of conditions for activities. Therefore, the boundary of the Central Park will be the focus of my design. Also, to provide more accessible and suitable nighttime environment for the residents of Meerhoven, I hope to make use of the current unutilized nature places. The ditches, forests, and ponds.

In the end, I made a double-ring structure. The unutilized areas are linked to existing small gardens and the central park by continuous running paths. The outer ring will be around 6,000 meters long. It will be suitable for people to walk to the nearby small parks or the central park through a nice experience. The inner circle will be approximately 3,000 meters. It is suitable for people to walk, exercise and jog.

Connect different landuse

Highlight hidden beauty

Highlight hidden history

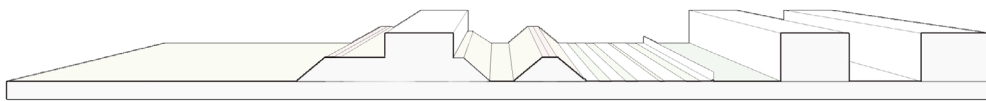




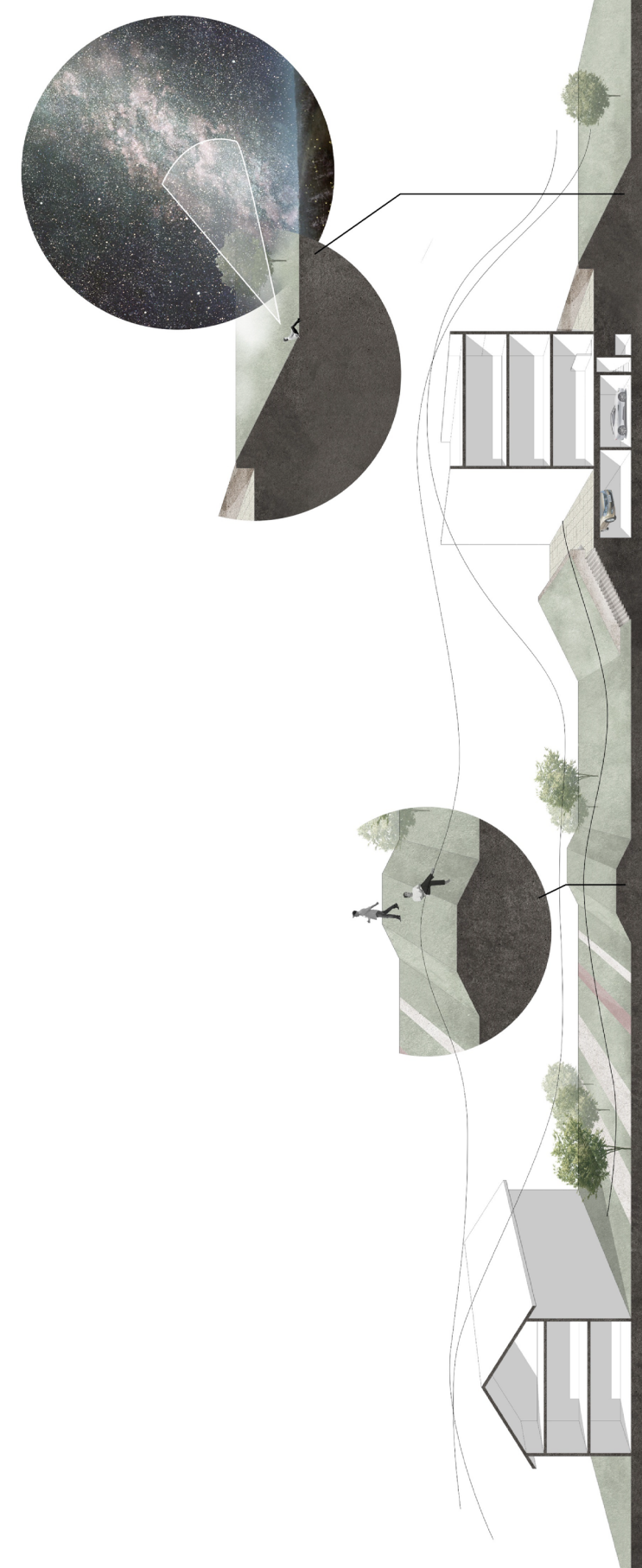
## 5.2 Second layer, boundary park—from division to integration

### 5.2.1 Boundary as a transition between green and grey

To vivify the boundary of the middle park, I introduced new housing projects **at the boundary of the middle park**. By these buildings, a sub park was created between the green and the grey, creating a transitional zone which ease the sharp division on the two sides of the boundary. However, the introducing of the housing is still a separation, making the large middle park a outsider from people's daily life. To solving this problem, valley-shaped landform was used to create a continuous section, integrating two sides of the main road together.

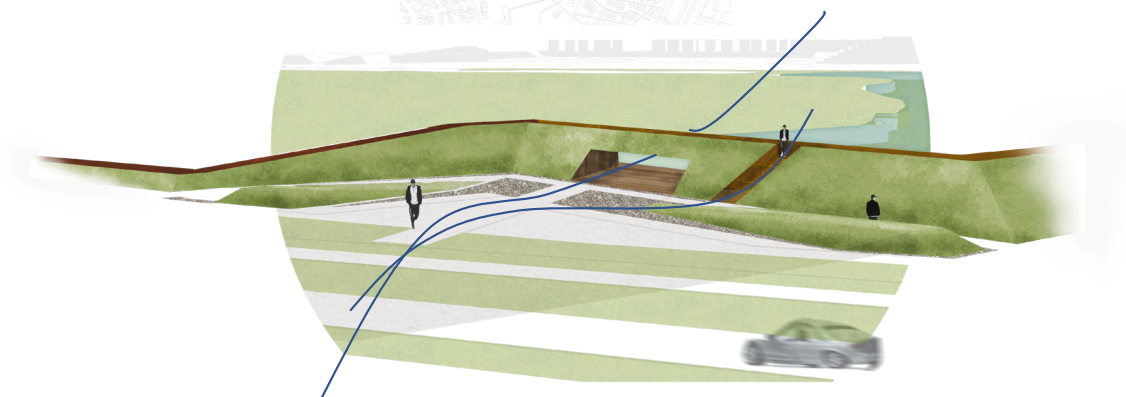
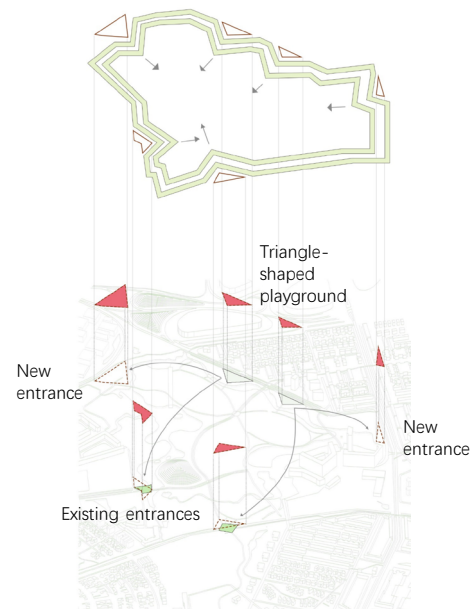


To avoid blocking people's view towards the middle park, the outer dike is set to be lower than people's eye. In this way, a continuous view across the valley could be maintained.

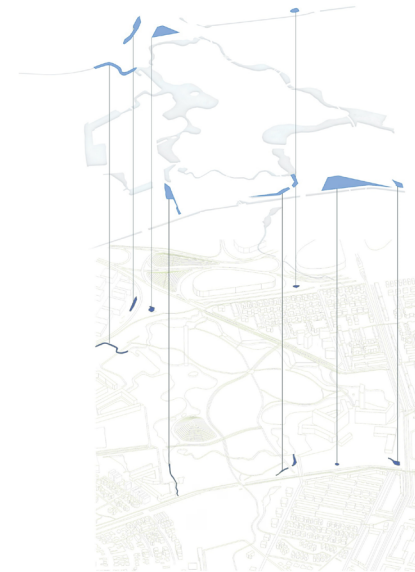


At important nodes, triangle entrances are created to lure people to go inside. Shape of triangle was from two existing playgrounds in the north. Although these two playgrounds never been used, the shape of triangle is perfect for entrances, guiding people to go inside. Moreover, as we know in chapter 3, open entrances are very important for a park used at night. The plenty of space left by the triangles can create a lot possibilities for nighttime activities.

Besides the two existing triangles, the existing main entrances of the middle park were transformed into triangles as well. New triangle entrances were added to make more connections between two sides of the boundary.



## 5.2.2 Formation of the boundary



Enlarge hidden ditches and ponds



The shape highlights the water



or

The shape squeezed by woods



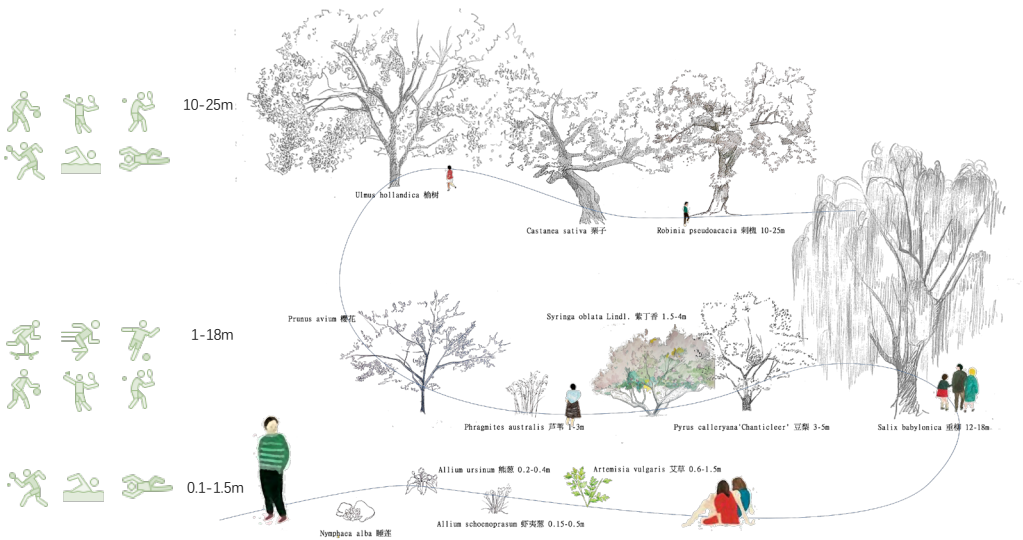
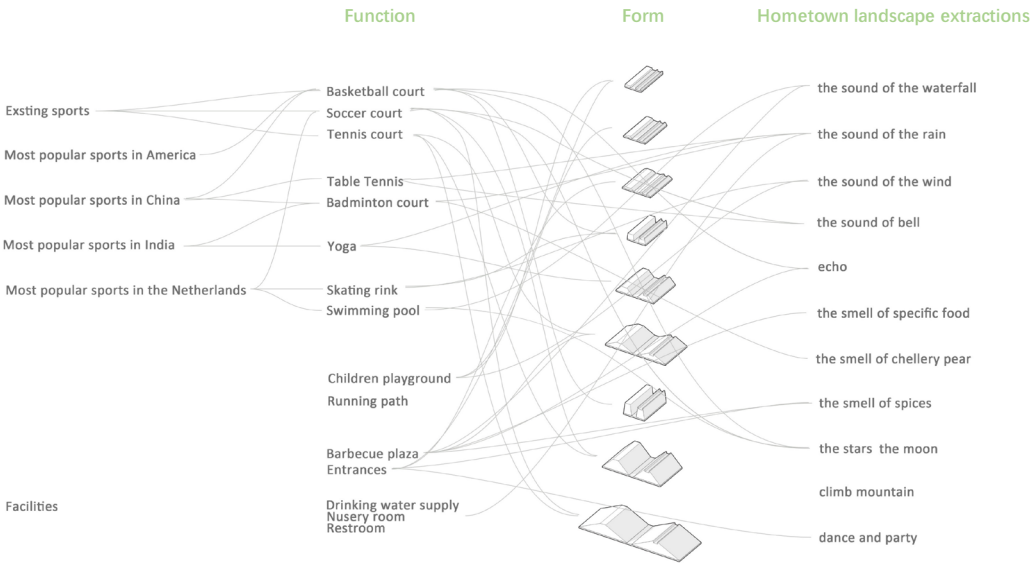
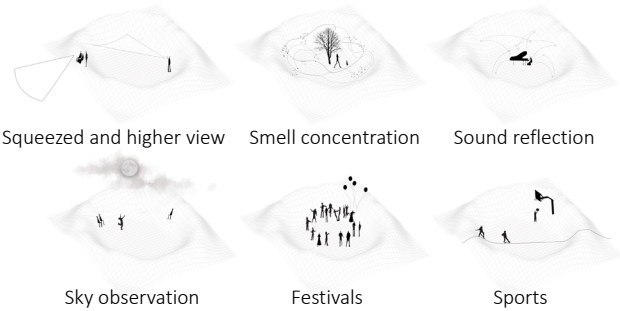
The shape follows existing pattern



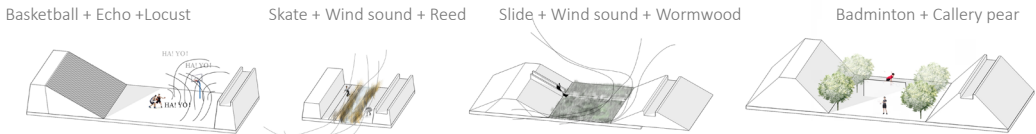
5.2.3 Functions and the localization of hometown elements

As said in chapter 2, localization is very important for belonging establishment, and the second step of localization is to recombine the local life with the extractions.

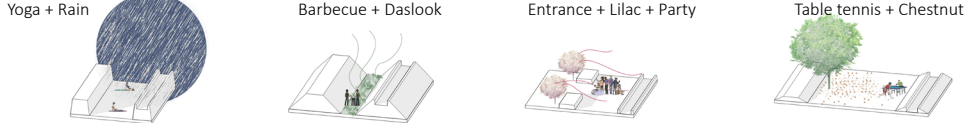
The visual abstraction of mountainous landscape, valley, has been recombined with the new green structure. There are still rituals and senses that can be combined with local functions. The valley is a perfect form for the rituals and senses. The 9 valley prototypes, the senses, and the rituals were recombined with sports and fundamental facilities of sport park. At the end, 10 different recombinations were selected as they have the most interesting effects.



Hometown extractions enhance the effect of sports



Hometown extractions stimulate sports



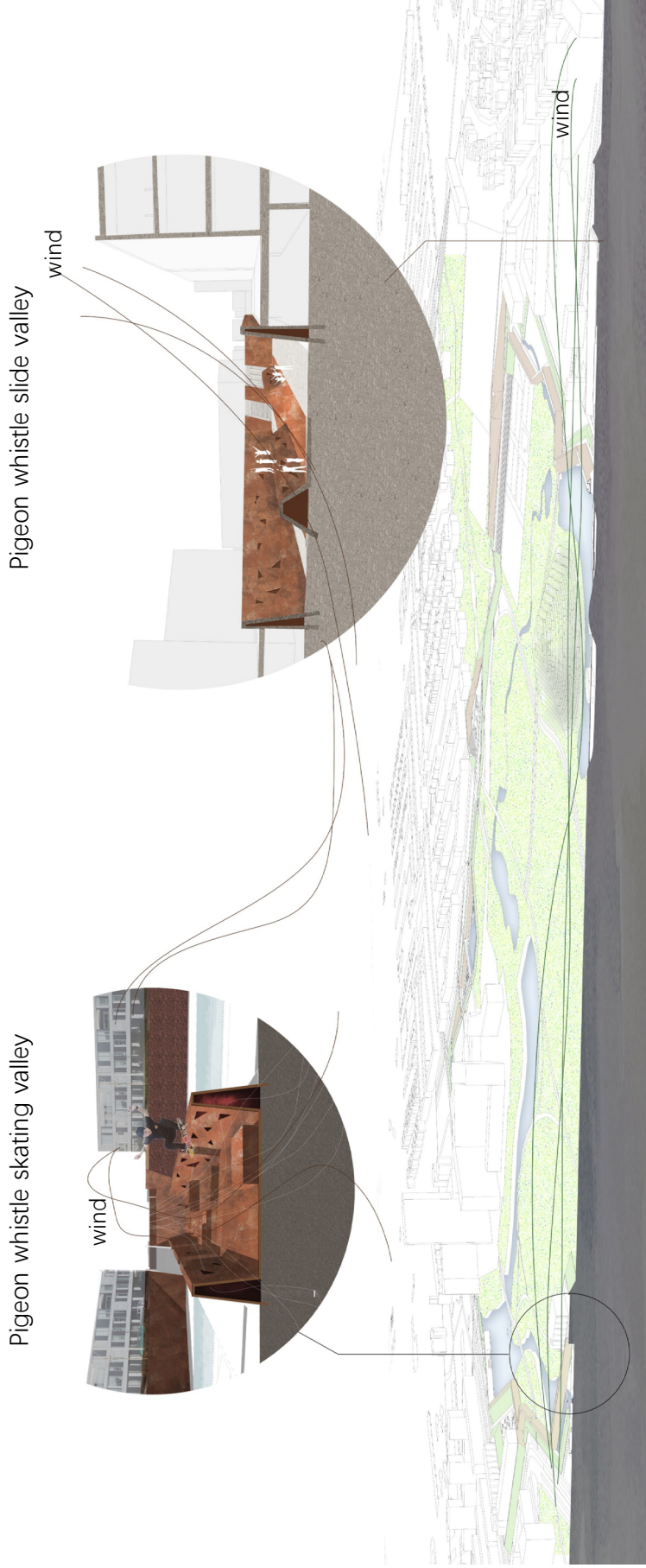
Sports or facility itself can provide conditions for hometown extractions



5.2.3 Axes

As analyzed in chapter 3, there are two axes in the park indicating the former airport Welschap. Since the history of Welschap has an important impact on Meerhoven, I hope that the two axes can be strengthened and can be recognized by more people. On the northeast-southwest axis, I made a long skating rink, a slide and an iump sandpit. I used these three kinds of movements to respond to the taxiing of planes in the same place. The three places will be connected by the lights that are similar to those used for the airport. On this axis, the point-like lights will be largely used to simulate the light of the real aircraft runway. Whenever there is a plane landing or taking off in the Eindhoven airport, the lights of the runways will move from north to south. In this case, people can hear the roar in the sky when they see the light flashing. The timetable at Eindhoven Airport is relatively fixed. Taking this quarter as an example, the lights will be blinking at the time of 21:10- 21:20, 21:40- 21:50, 22:00- 22:10, 22:45- 22:55, 23:00-23:10, 23:20- 23:30.

This axis is also on the direction of the most common direction of the wind. By the wind, a special sound that Chinese people are familiar with can be produced. A special structure was used in the slide and skating kit. The wall has two layers, and they create a voice box in between. When the wind below through, the wind will go into the voice box through the small holes on the first layer, kicking the mental appearance of the second layer, and making a similar sound with pigeon whistle. With the sound of wind, sliding , skating and jumping could be more interesting.

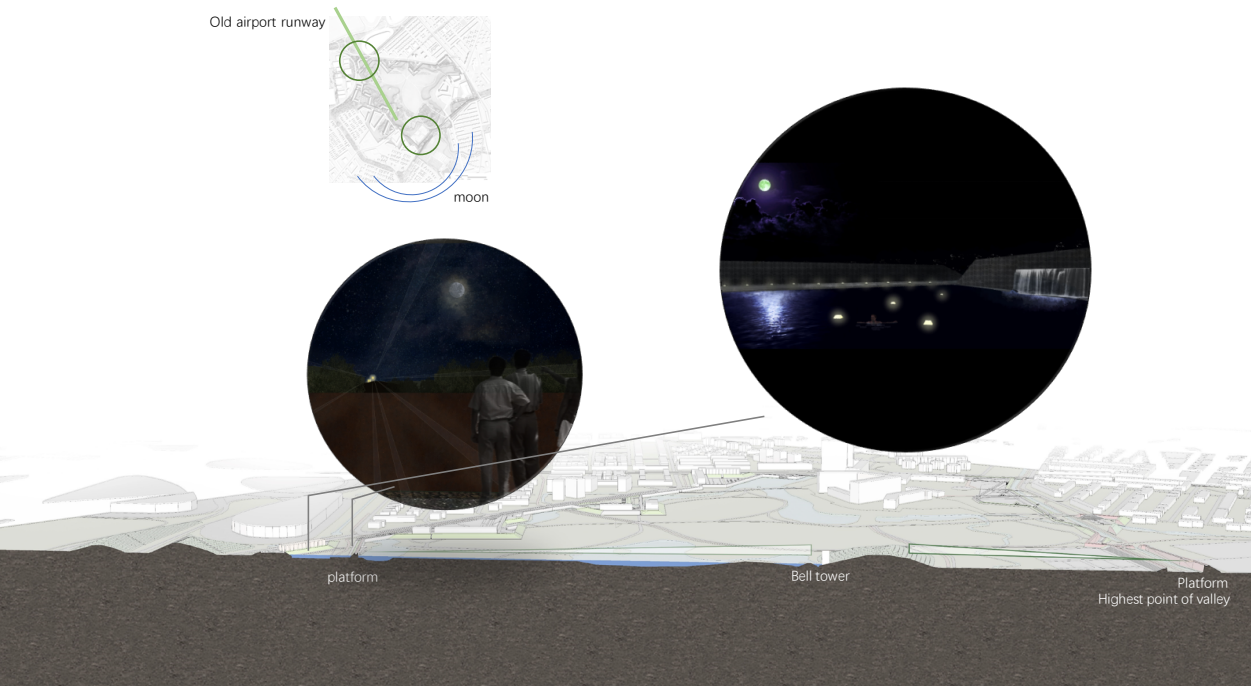




On the northwest-southeast axis, I added two platforms and a bell tower . The bell tower will emit ray-like lights. Also, the pavilions on the top of the hills will look like lanterns at night. They together indicate the direction of the axis.

Beside emphasize of the history, by these two axes, the vast central park can be felt in control. People can use them as the guide of direction. Moreover, the park is now too big to see the boundaries. By the axes, the two sides of the park can be connected to some extent and indicate the boundary, which will ensure a sense of safety, especially at night.

Through all the changes and designs mentioned in this section, I hope to make the separate regions of Meerhoven join together, the industrial parks, the residential areas, and the central park. Then, no matter which region do people stay in, they can feel they are connected with the boundary park and feel free to join in the activities.



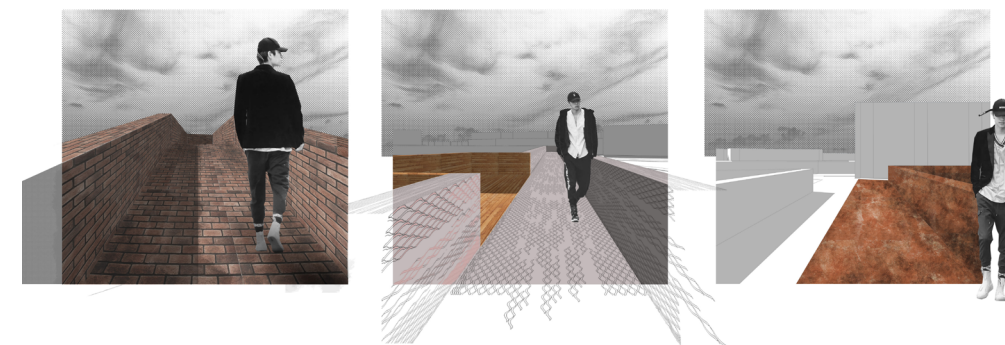




#### 5.2.4 Continuous running path

A continuous running path was created. It is normally 4.2 meter-high, so that it can across all the ditches, main roads to keep a safe environment for nighttime sport.

Three materials generated from the different atmosphere of landscape paintings were used for valleys and the running paths. These three materials can create three different sounds, giving people multiple experience when jogging. Wild grass will Slowly grow in the gaps of material. There will be different growing condition on different material according to their different gaps, and people will see the whole process of growing when they are run in the boundary park.

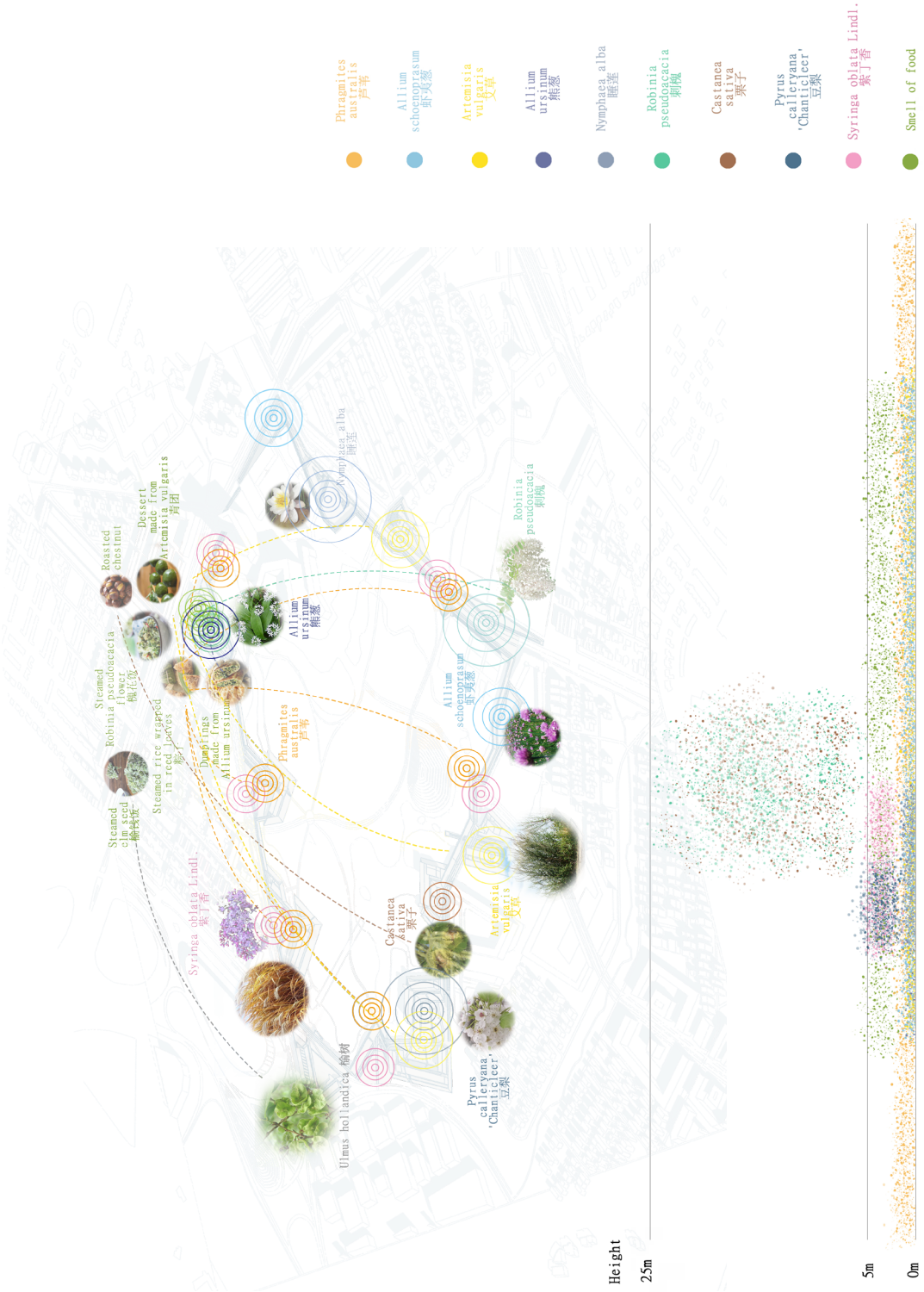
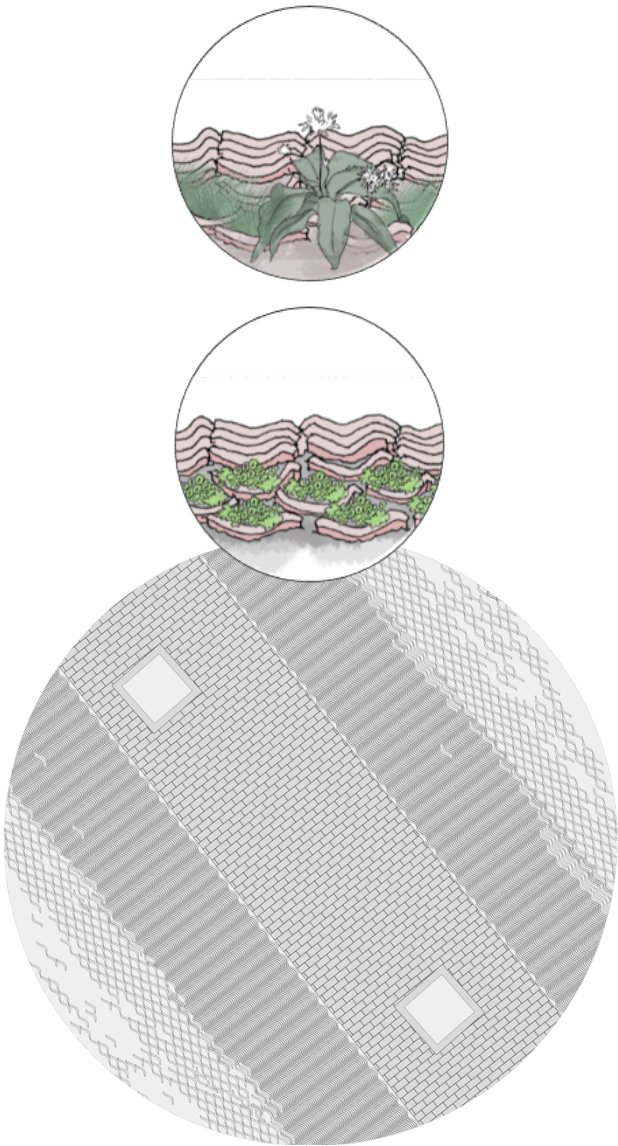




5.2.5 Time, people grow with the park

The gaps created by pantiles can make the growing process of wild plants more visible. From spring to winter, you can witness the growth of weeds.

Besides, the plants for creating rituals and smells were organized in a way that people can experience different smells and do different activities through a year, and anytime of a year, there is always some smells you can search for.





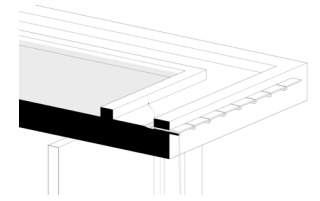
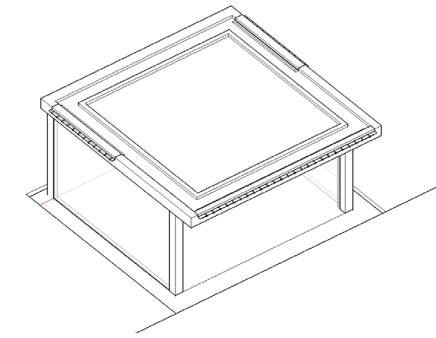
### 5.2.6 A day in Meerhoven

As mentioned in chapter 3, expatriates attracted by Eindhoven are engaged in high-tech industries. During the day, they are very busy, there is only time to take a rest outdoors in the evening, and with network technology the boundaries of work and life is obscure, whether it is day or night, they are likely to come to the outdoor and use facilities.

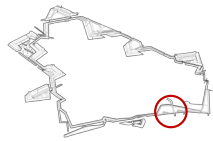
Thus, the design of the boundary park takes full account of the environmental changes of a day, and according to the changes of the day's sky and brightness, the corresponding layout and lighting design are carried out.

In the morning, you can go to Yoga Valley to refresh yourself. The wall there utilized a special structure that can collect rain and release slowly. In this way, you can enjoy the scene of raindrops and the sound of water everytime. The moisture created by the water drops can definitely give you refreshment and a nice beginning of a day.

Same structure was used for the water supply houses



sound of willow leaves



sound of water drops

smell of lotus



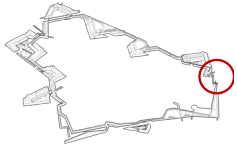


During the day, you can have a relax in the boundary park. Different sports, different sounds, different smells will be waiting for you.





At dusk, the location where you can see the widest field of vision is set as entrance and barbecue plaza, located next to the community's most important road, so that passing pedestrians and those who come to eat at night can enjoy the beauty of the sunset.





6 Reflection



BEIJING

1000m

BEIJING



SHANGHAI



GUANGZHOU

SHENZHEN

HONGKONG

● GUANGZHOU  
● SHENZHEN  
● HONGKONG

## Process

The sense of belonging contains a lot of different meaning, at the beginning of analysis and theory searching, I look for many different theories concerning belongingness, including social belonging, physical belonging, and environment belonging. I tried to solve all the problems at once by landscape methods but some of them are out of the role landscape architect can do. It is a problem of landscape heroism. Before I get to the core point, a lot of effort was made for meaningless analysis and theory readings, which is not an efficient way. Later, I put the social and physical belongingness aside and narrow down my interest in environment belongingness, focusing on rebuilding the relationship between environment and people by my design. The research becomes focused and meaningful after the topic is narrowed down and be specific.

As the concept of belongingness is so vague, the data collection process sometimes cannot continue as I planned. I know little about India and America and have never been to these two countries before, for the landscape atmosphere and people's rituals, there is little landscape literature as well. At first, I tried some interviews to get first-hand information, but it is difficult for people to say what makes them feel attached because normally they do not pay attention to, the answers I got are always meaningless for design. In this case, I tried other different ways to get the information I need, for example, image analysis.

## Evaluation of the project

By this project, I hope I can let American, Indian and Chinese expatriates feel happy and belonged, and at the same time allow all the residents to use this park. Look at the final design project, I already tried my best to collect hometown landscape elements, but for Indian and American, spatial experience and senses are still simple.

Besides, I use different elements in different areas, but as a whole park that will be mostly experienced during running, the boundary park could be elaborated more in the aspect of sequences. In this case, the experience will be continuous, and the feeling of familiarity could last longer.

## Generalization

My design is tightly related to the site of Meerhoven, so the design itself cannot be applied directly to other places.

For now, my design method is only applicable to countries with large numbers of immigrants such as North America and Europe. Although many Asian cities are committed to high-tech development, such as Seoul, Tokyo, Beijing, Guangzhou, Bangalore, and Taipei, they have few immigrants at this stage and may not adopt this design.



In many European cities, the birth rate of people is quite low. To maintain the development of science and technology, they need to attract more talents. Therefore, I think my research can be promoted in these countries, such as the Netherlands, Germany, Belgium, and France.

#### The conflict between different stakeholders

The starting point of my research are immigrants and the government. Through my design, expatriates can live in the Netherlands in a better way. The government can maintain economic growth by attracting a large number of high-tech workers. However, the crowd I may have overlooked is the native Dutch.

There are a few landscape projects designed specifically for immigrants. Although currently, more and more people express their positive attitude towards immigrants, there is no doubt that immigrants are still a minority and foreign group. Some local people will feel that it is unfair to give so many social resources to them and it is unfair to give priorities to them. They won't be willing to see their taxes be used for people who have no relationship with them.

Besides the concerns about social resources and money, there is also a kind of opinion that against the multi-cultural landscape. Some people may have the opinion that everything in the Netherlands should be originated from the land where they stand. They hope to keep the purity and holiness of the vast Dutch landscape. Immigrants should be adapted to the Dutch environment instead of Dutch landscape adapting to them.

My efforts in design were to transform the boundary into a park that locals would also enjoy. I tried to respect the history of the Netherlands, used Dutch materials and plants, and foreign elements were hidden. However, there is still space for improvement.

#### Next Step

For further research, firstly, I will consider producing clear benefits for natives with some approaches. I believe that if people can get profits from the new park, they will be more willing to accept it. Secondly, more studies focusing on Dutch native landscape will be done, if I can totally design the park in Dutch landscape language, then all the locals can feel happy, and there is no problem about the conflict of cultural preservation.

A lot of thanks to my two mentors Saskia de Wit and Marco Lub



