Interiors Buildings Cities Graduation Project Research plan

Siteng Liu
5084962
Dec.18, 2020

Introduction: hospitality in a Doughnut city

By 2020, Amsterdam has declared that the city will adopt the doughnut model as its economic strategy, meaning that Amsterdam aims to be a 'thriving and equitable city' which 'ensure a good life for everyone within the Earth's natural boundaries'(2020). This goal concluded the essential idea of Kate Raworth's doughnut economy. The doughnut model has two circular boundaries: the inner circle represents the social boundary, which indicates that everybody's basic social needs should be fulfilled, while the outer circle represents the ecological boundary, which means that the impact of our activity shouldn't exceed the capacity of the earth. All our actions concerning sustainability aim to help our human society getting into the doughnut. Based on this starting point, a series of research is conducted to find specific architectural translations fitting in Amsterdam's urban context.

Problem statement

When talking about the hospitality of a city, a direct understanding can be catering services for tourists. However, with millions of tourists arriving annually, Amsterdam is facing the problem of over-tourism, which makes the city less livable for its residents (Quest, 2019). As a result, the Netherlands government has already decided to stop promoting tourism growth.

A more direct change in tourism comes from the pandemic. Because of the unpredicted outbreak of Covid-19 from early 2020, moving across borders decreased rapidly. According to the data, passengers traveling by plane in June 2020 are 93 percent less than last year. (Statistics Netherlands, 2020) To cope with the crisis caused by the pandemic to the tourism industry, it is a good time for the city to change the focus from tourist to local people and their needs.

According to the doughnut report, loneliness has become one of the most serious problems of Amsterdam's residents. Especially in the post-Covid time, when long-distance travel becomes difficult, the communication and interaction between different families, generations, and groups happened on a community scale can be powerful tools to help people get connected and supported.

The elderly and children are first considered. One reason is that these groups are more vulnerable and should be taken care of by the public. Amsterdam has the largest percentage of over-70s living independently(52%) in the Netherlands (Statistics Netherlands, 2020a), which tells that the city should pay attention to the physical and mental health of elderly people living alone in Amsterdam. Another reason is that considering the elderly and children usually have a smaller range of activities in daily life, they are more dependent on the public facilities in the community. Also, the widening generational gap between the elderly and children worths concerning.

But the intention of fostering interaction in the community is not limited to the elderly and children. These two special groups in my proposal will be viewed as a catalyst for inviting all ages to get involved, and the possibility of sharing space by different generations will be further researched.

Research question

The City Hotel project concerns about the sustainability and hospitality of Amsterdam, and the general research question of the studio can be concluded as: how can Amsterdam provide generosity and hospitality within the doughnut model? Base on my interest discussed before, my research will focus on how to promote interaction and communication between different ages and groups in Amsterdam?

Concerning the urban context of Amsterdam and the topic of city hotel, this question could be further elaborated with several sub-questions. Firstly, considering the high density of Amsterdam, what kind of space can be reclaimed as space for public interaction? Also, the relationship between the function of a city hotel and the activities of children and elderlies should be considered. Besides, the feature of intergenerational space should also be researched.

Methodology

1. Study of historical context

Historical context not only explains how current situations were shaped in the past which leads to certain requirements for design, but also hints on potential opportunities and alternatives, thus historical study happens through the whole research-design process on different scales.

The whole research process started from city-scale research of Amsterdam, which provides a basic understanding of the city in which interventions may happen. Amsterdam's expansion was divided into 7 periods and each of them was studied by collecting and analyzing historical maps, social events, and policies. Representative neighborhoods, streets, and buildings are studied carefully by retracing historical drawings.

Since city hotel is a type of temporary living, our group paid special attention to the changing living conditions of the mid to late 19th century by comparing different housing types. My interpretation is that the wellbeing of the public couldn't be depended only on the market, which was proved by the poor living condition of workers' slum housing in Jordaan. The law of housing and social housing like Het Schip proved that effective intervention of policies, municipality, and social groups are always needed to protect the rights of the vulnerable groups. This conclusion has driven me to pay attention to vulnerable people in society including children and the elderly. If architecture has a certain kind of agency, we as architects should take care of these people through spatial design.

2. Study of the hotel typology

Though the temporary understanding of city hotel is always quite limited to commercial ones mainly for tourists, there are different building types concerning hospitality in history which is an important source of inspiration. Our group studied modern healthcare facilities including hospitals, sanatorium, and health centers. We took Royal Herbert hospital, Pamio sanatorium, and the pioneer health center as representatives.

Two important findings in this research directly shaped by the design proposal. Firstly, we found that compared with medieval hospitals, a significant change that took place in modern healthcare is that the openness towards nature for fresh air and sunlight replaced the gesture of enclosure. The close relation between care

and nature-inspired me to combine them in my proposal, which is to provide care in a way that nature gets more involved.

Another reflection is that through rational development, the healthcare building has become more specialized, making patients isolated from society, which could be proved by Pamio sanatorium. When considering elderly people, the same thing also happens: those elderly homes are exclusive for one generation. Though they have collective life on a small scale, the interaction with young people and other social groups is limited. The case of the pioneer health center already tells that healthcare facilities can be closely connected to the community and function as a community center. These findings arouse my interest in providing a temporary stay with healthcare in the community.

3. Study of sustainable materials

Since currently a large quantity of CO_2 is produced in the building process, while interviewing doughnut initiatives, I paid special attention to companies producing or using building materials in sustainable ways, including Van Plastik, an innovative company 3D-print furniture and sculptures with recycled plastic, Superuse, an architecture firm reusing building elements like windows and doors, and MOSO International BV, a company making bamboo building products in China and selling them worldwide.

MOSO inspired me to do a comparison of different bamboo buildings. The way MOSO processing bamboo is high-tech: bamboos are elaborately processed into standard solid elements in China and transported overseas. This whole process caused additional CO_2 emission, but since bamboo captured more carbon in its growth, it is still carbon-neutral. Their method reminds me of low-tech ways of bamboo buildings back in China: bamboo stems are kept in their original form and simply tied by ropes. A more radical case is the bamboo theater. By weaving the top of the living bamboo trees, the building is alive which captured more CO_2 after construction. These case study leads me to rethink how plants can get involved in architecture and the possibility to make carbon positive buildings.

Since bamboos are not native plants in Amsterdam, I also researched similar living buildings in the European context. Bureau Baubotanik in Germany is an important reference because they use willow trees to make living structures and develop feasible construction details to connect plants and man-made elements. The notion of tamed nature is learned from the cases of bamboo theater and willow structures and used in the test design.

A small scale design is made to clarify my argument towards my research question. My intervention is a living playground not only for children but to make it more inclusive-shared by all groups and even other species. This position is developed based on my research on Aldo van Eyck. His playgrounds are closely connected to the urban context because he used existing and ignored space in the city, which means that he accepted and made use of all the constraints of the existing situation. I learned this 'infill' strategy and used it in my proposal. By designing a playground in the triangle square in de Pijp, I made a similar argument to Aldo van Eyck, which is creating a playful space for the community and keep it open to different users. But the difference is that Aldo van Eyck mainly criticized the undefined space created by functionalist urban planning, so playgrounds were designed to connect the building and city again, while in today's urban context, the problem is that some infrastructure like parking began to ruin public spaces by making them single functional, thus in my proposal I consider the playground to be a statement of inclusive possibilities of public spaces.

The notion of play in public space is also addressed in my proposal. Aldo van Eyck made simple pieces of equipment like sandpits, climbing arches, and tumbling bars to stimulate creativity. By analyzing them, I concluded some essences of play: one is changeable materials like sand which provides children the freedom to make things, another one is offering different positions of the body. The critical part is that Aldo van Eyck made these pieces of equipment out of steel and concrete, which is not sustainable according to today's standards. In my proposal, I tried to translate them into a more sustainable version with living materials.

Through my research, two possible prototypes I developed are the rain garden and treehouse. The rain garden is a green infrastructure but it also provides kids changeable materials to play with. The treehouse is about the special experience of playing in the tree. The project The Bridge designed by Baubotanik provides a clue to combine the two prototypes. On the one hand, willow trees support a tree deck for playing, on the other hand, willow trees absorb a large amount of water during their growth, making them an ideal species of a rain garden. As my small scale design suggests, the combination of tree deck and rain garden addresses my argument that the infrastructure and the collective space for interaction, nature, and architecture could be combined as one through the careful design of living materials in architecture.

sand
gravel
native soil

overflow   providing water for willow trees

rain water from street

5. site study

The triangle site next to the Nieuwmarkt metro station is chosen as my site for the design proposal. Based on my on-site investigation and online research, this triangle space is the in-between buffer zone between public and community: the northwest side of the site is the square of Nieuwmarkt with Waag building standing in the middle, making it an important tourist attraction. Other buildings surrounded the site are residences with a close community atmosphere. It is worth noticing that two of its adjacent buildings are residential healthcare buildings for elderlies. Since currently the triangle is used as a basket court, when young people playing outside elderlies can view them from the window, so intergenerational communication already exists. These situations provide requirements for the design: the community atmosphere should be protected, and the intergenerational communication should be enhanced by new interventions.

Besides, since the current situation of the site was largely shaped by the construction of the metro station, closer historical and spatial research of the neighborhood and the metro station is needed.
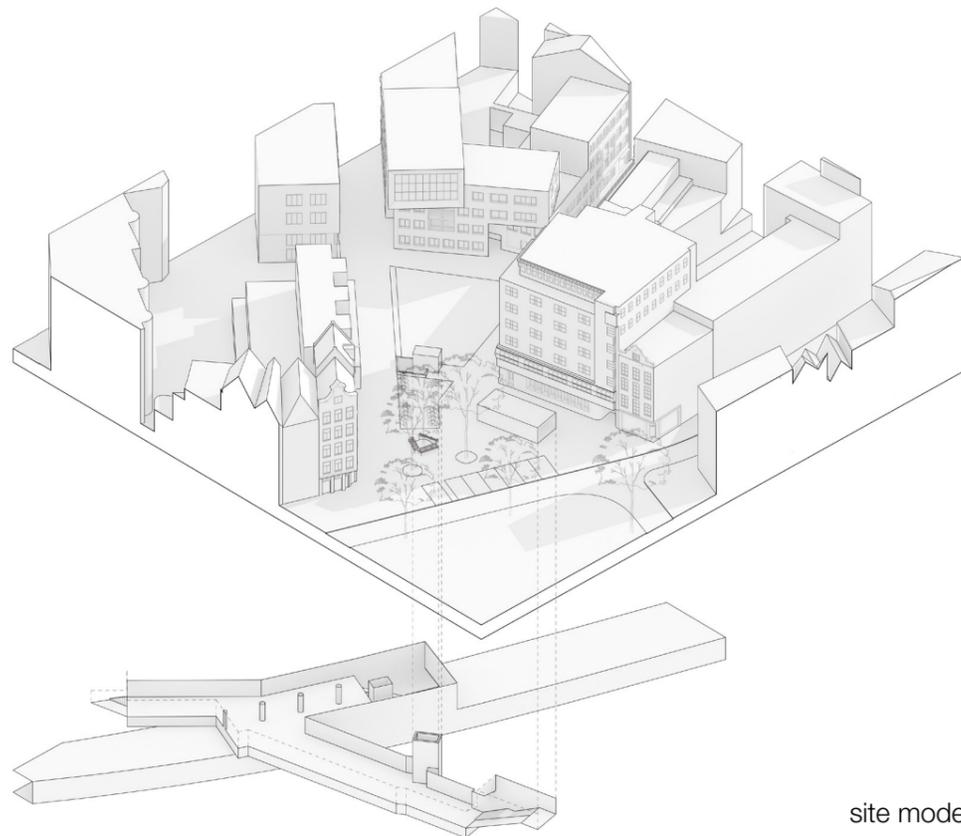
site model

Research References

Books
1. Raworth, K. (2017). Doughnut economics: Seven ways to think like a 21st century economist. White River Junction, VT: Chelsea Green Publishing.
2. Ward, C., & Golzen, A. (1978). The child in the city. Architectural Press.
3. Vanderbeck, R. M. (2015). Intergenerational space. Abingdon, UK: Routledge.

Reports and articles
1. Withagen, R., & Caljouw, S. R. (2017). Aldo van eyck's playgrounds: aesthetics, affordances, and creativity. Frontiers in Psychology, 8.
2. A. (2020, December 4). Policy: Circular economy [Press release]. https://www.amsterdam.nl/en/policy/sustainability/circular-economy/
3. Kim, W. (2018). The Importance of Playing in the City (Unpublished master's thesis). Erasmus Mundus.
4. Quest, B. T. R. H. A. L. A. (2019, May 23). How Amsterdam is fighting back against mass tourism. CNN. https://edition.cnn.com/travel/article/amsterdam-overtourism/index.html
5.Statistics Netherlands. (2020, August 5). Air travel at less than one-tenth in June 2020. https://www.cbs.nl/en-gb/news/2020/31/air-travel-at-less-than-one-tenth-in-june-2020
6. Statistics Netherlands. (2020a, May 29). What is the living situation of the elderly in the Netherlands? https://www.cbs.nl/en-gb/background/2020/19/what-is-the-living-situation-of-the-elderly-in-the-netherlands-

Cases
1. Paimio sanatorium, 1932, Alvar Aalto
2. Pioneer Health Centre, 1932, Sir Owen Williams
3. the Bridge, 2005, Bureau Baubotanik
4. Aldo van Eyck's playground in Amsterdam, 1947-1978
5. Bamboo theater, 2015, DnA_Design and Architecture
6. Alzheimer's Respite Centre, 2009, Niall McLaughlin Architects