SHIFTING URBANITY

URBAN EXPERIMENT ON WALKABILITY AND TRAFFIC EFFICIENCY | ENLARGED AMSTERDAM CENTRUM IN THE AUTOMATED ERA

RESEARCH QUESTION

If the automated vehicles (AVs) were fully applied, what kinds of relationship between walkability and traffic efficiency can maximize the viability and vitality of Amsterdam Centrum?

THESIS INTRODUCTION

Amsterdam Centrum has been suffering from the spatial competition between overcrowded pedestrian visitors and busy vehicular flows. Application of automated vehicles (AVs) is a historic opportunity to reclaim the streets for people and change the predicament of the downtown. The thesis focuses on the relationship between walkability and traffic efficiency in Amsterdam Centrum, aiming to maximize the viability and vitality of the city center in the automated era. I would like to claim the whole project, from research to design, as an urban experiment on walkable and efficient-functional city centers. Scenario building is the core approach that has linked research with design. Also, it is a bridge to connect the existing reality with future reality. First, the theoretical study of walkability and traffic efficiency provides the objects for analytical research of Amsterdam. It also helps to select the driving forces for scenario building. Second, theories about viability and vitality provide the evaluation materials for scenario assessment. And the urban design is the continuation of selected scenarios.

FINAL PROPOSAL

The key idea of the final design is the movable programme, which means urban functions/human activities can travel in the city like automated vehicles. At the industrial design level with the consideration of automated technology, I proposed a circle-structure to replace trams and buses. This new vehicle makes collective mobility and individual mobility can transfer to each other (Diagram 1&2). Also, I designed a ball-structure in different sizes as the movable programme units to contain diversified human activities (Diagram 3). In the regional scale, Amsterdam will work in a multiple-center system. There will be four pedestrian centers, among which efficient human transportation and programme transportation will work as strong connections (Diagram 4). In the local level, I applied the idea of shared space in the city center. Take Rokin as an example; the shared space will replace different lanes. Besides, I extended the meaning of the public street to the water surface, which means canals can support human activities (Figure 2). Moreover, the streetscape is dynamic. During the daytime, pedestrians and programme units will share the street space (Figure 3). However, the programme units can move to water and leave space for commuting flows in the evening peak hours (Figure 4).

An external possibility, what if the center would be under the sea level? The floating programme units can still support human activities there (Figure 1)!

Figure 1. Water Centrum

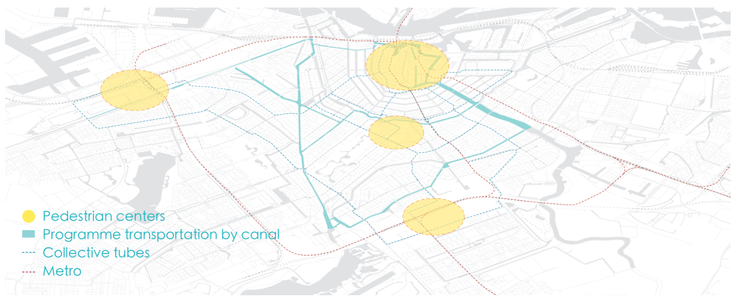

Diagram 4. Multiple-centers system, Amsterdam city

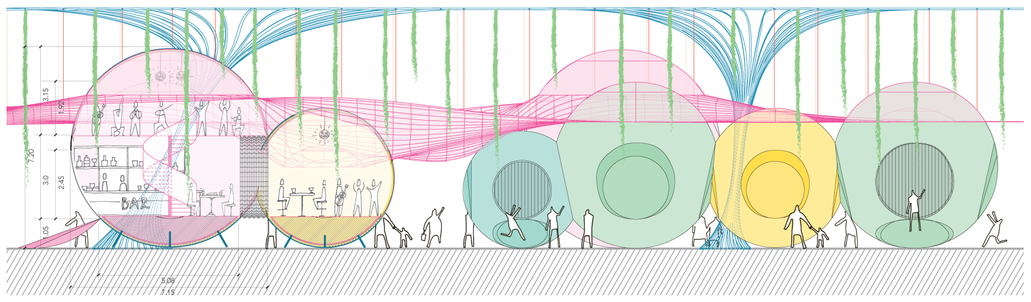

Diagram 3. Parking landscape of movable programme balls

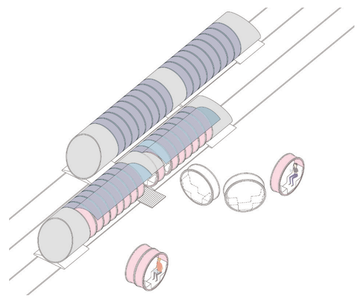

Diagram 2. Collective-individual tubes

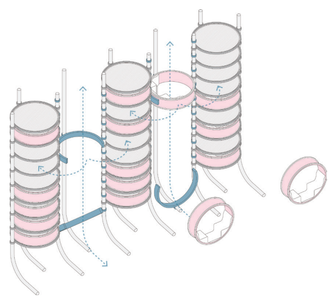

Diagram 1. Vertical parking of tubes

Figure 3. Daytime, Rokin

Figure 4. Evening peak hours, Rokin

Figure 2. Rokin streetscape

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