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 re-imagine the streets for people and change the environment of the downtown. This thesis focuses on the relationship between walkability and traffic efficiency in Amsterdam Centrum, aiming to maximize the vitality and viability of the city center if AVs are fully applied. I would like to take the whole student’s research process as an urban experiment on walkable and efficient-functional city centers. Scenario building is the core approach that links research with design. Also, it is a bridge to connect the existing reality with future reality. I believe the combination of walkability and traffic efficiency provides the research for analytical research of Amsterdam. It also helps to develop the design process for urban research with design. This thesis will be different in the sense of the combination of data and design. The thesis includes viability and vitality models for future scenarios and the urban design 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 (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 replaces different lanes, and during this time, the canal is the main transportation route. During the daytime, human activities will be shared by the street. Besides, I extended the meaning of the public street to the water surface, which means canals can support functions, and during the evening, it will change to the waterway’s living area. Using the scenario building and programme units will make the whole process of research process and design process be able to move in a more efficient way. Also, the programme units can move in more efficient ways.

An interesting possibility: what if the center would be under the sea level? I think it would be possible to support human activities there.