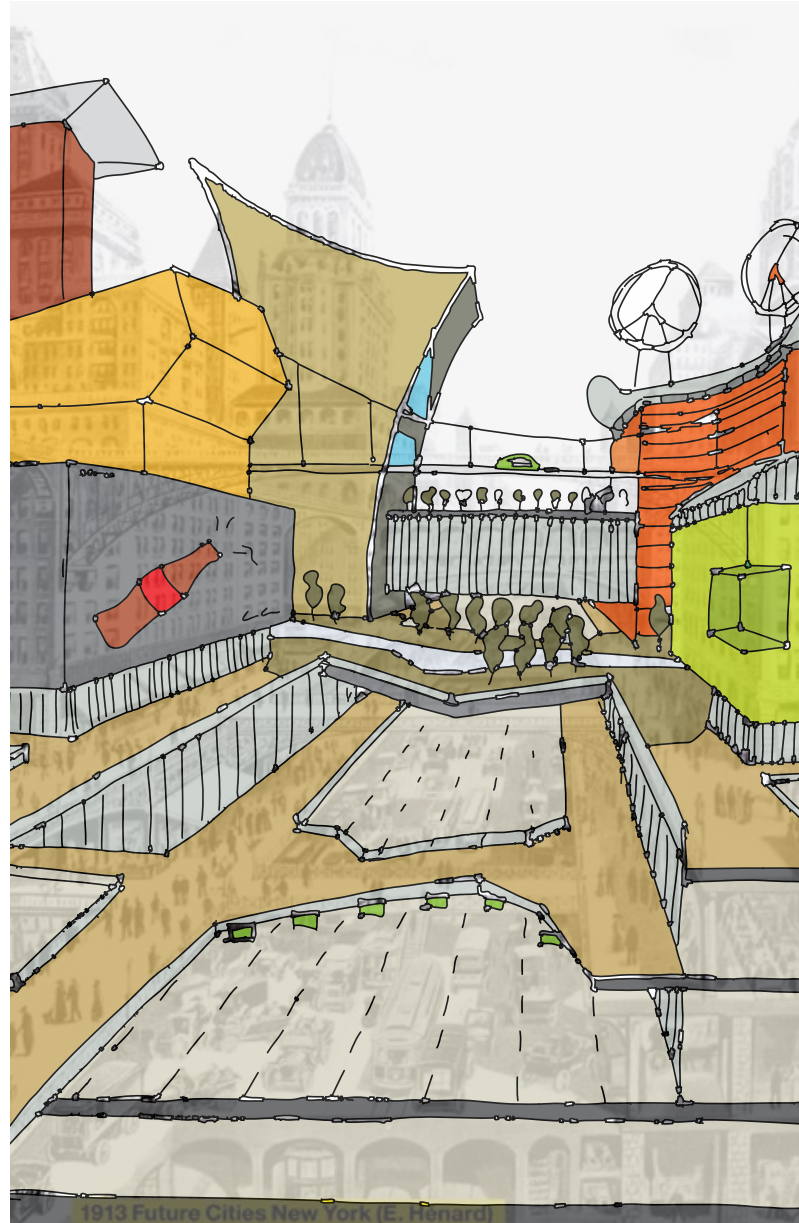


# P4 REFLECTION

CEDERICK INGEN-HOUSZ

26-09-14



HIGHWAY AS URBAN CENTRE



Future cities New York, E. Henard. (Source: Mensink, 2006)

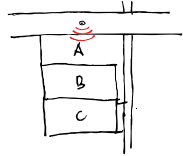
## INTRODUCTION

This report is a reflection on the design process of my master thesis at the studio Architectural Engineering at the Technical University Delft. It is meant to give a short overview of the process that led to the final design of the Highway as Urban Centre including some of the most important considerations and arguments for the major design aspects.

## FASCINATION, DESIGN AND SUBSEQUENT RESEARCH

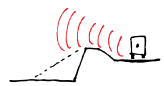
Unused building space, in particular close to highway locations, future mobility trends and the existing 'A12 zone' location were the key elements for me to start a design process in which I tried to use existing engineering solutions and existing and future mobility schemes to come to an efficient and multi-functional urban and transport hub centre. This centre should not only host extensive transport hub facilities (parking and all sorts of modern highway-city connections) but at the same time connect and support the city area's it will tie together with comfortable walkways and well equipped bike roads. The rest of the space will be used to realize sport, housing, office and catering facilities that will emphasise its 'city-centre-like' function. The highway no longer as an ugly scar in the city but the highway as a more integrated 'city-boulevard' connecting rather than dividing the adjacent city areas and facilitating the easy and natural transfer from highway to city transport systems.

## TOOLS



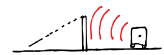
### Landuse & zoning

*Sound Principles: energy loss through air over distance*



### Topography

*Sound Principles: Absorption by mass and reflection due to height differences of the embankment*



### Barriers

*Sound Principles: Reflection due to height barrier, and possible absorption.*



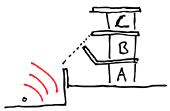
### Planting

*Sound Principles: Absorption and reflection, planting will increase reflections and therefore have absorbing capabilities.*



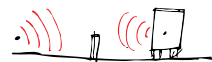
### Building orientation and shapes

*Sound Principles: Reflection (controlled), the buildings will guide noise away from certain places.*



### Building Features

*Sound Principles: Reflection and absorption, facade elements balconies that will reflect and absorb sound.*



### New source

*Sound Principles: Addition of pleasant and natural sound to overule the noise.*

Principle sketches, toolbox on sound. Own work. ( 05-01-14 )

The initial research phase was aimed at the possibilities in the reduction of the noise- and air pollution levels close to the highways of today (restricting legal legislation in place) in relation with recent and future developments of new technologies in car design (e.g. electric and hybrid power). I soon found out that at even moderate highway speeds (80 km/h) the sound produced by the tire-road contact is the determining noise factor, rather than the engine. Since it is uncertain when we can and will solve this tyre-road contact noise problem with for example new low-noise tarmac or other solutions, I had to revert to the various conventional techniques that we use today and I developed a toolbox for that specific purpose. In my design I considered the air-pollution problem as solvable and therefore not really relevant since even today modern petrol and diesel car engines show a remarkable decrease in fine-particle pollution, the biggest threat to public health in this context.

## RELATION TO STUDIO

In my view the project starting points fit well into the challenges that are addressed by our Studio Architectural Engineering . The urge to build in unconventional places because of the lack of space , the challenge of integrating mobility into our designs and the final goal to optimize our living environment are all decisive aspects that form the underlying challenges that I try to solve and answer in my project. The A12 location as an well-known unused building space, the extensive transport hub function as an answer to more flexible mobility solutions and the 'city areas connecting' aspect of the centre with its walkways and bicycle paths all serve those particular challenges that are part of the work field of our Studio. Solutions for real problems using smart engineering as an effective tool and the other way around use engineering possibilities and developments to come to unconventional and new solutions for existing problems.

powered by innovation  
**INTECTURE** 



Infrastructure Los Angeles. Illustration Ae graduation studio (2013).

## METHOD STATEMENT

The methodical line of approach of our Studio is aimed at a process sequence in which the framework of the project is ideally determined in a fast process of multiple short presentations (posters) to the complete group of students and teachers in order to get fruitful discussions and feedback about the different subjects brought forward by the individual students. The groups that later in the process were formed around the possible locations given by the Studio (like A12) were the next step in the process sequence that lead to a series of joint meetings with the local stake holders of that particular location. The final step is to enter into the individual projects and to come up with your own specific research results and subsequent design that is finalized in all aspects in the master 4 term.

I followed the same joint process approach but in the final more individual design phase it took me too much time before I was able to pinpoint myself to the necessary restrictions and limitations of such a broad project scope. I lost myself a bit in the endless possibilities of such a project and struggled to regain control over my own specifications as the 'client' to the project. It was too easy and tempting to add rather than to limit myself thus losing time in the process. This lack of time showed up in the P4 go-no go meeting of July this year where my project lacked sufficient detail in some of the engineering and in the functional scheme of the design. I used the extra time until October to specifically work on these shortcomings but fell almost in the same trap again of expanding the project specifications not being corrected in time by the absence of tutoring in the summer period. Although I knew in advance that the relative freedom of the master 3/4 design project of my Studio was a real challenge to me and although I tried to prepare myself for that threat, I must conclude that the necessary discipline to restrict and focus myself enough was not always present during the project. The wide and broad project scope and my enthusiasm for the plan plus the extra time I could put into the design were all threats to the timely finish of my design.



Segway PUMA (Source: [www.conceptcarz.com](http://www.conceptcarz.com) 21-09-2014 )

### WIDER SOCIAL CONTEXT

I feel that my proposed solution for a Highway as Urban centre or even individual aspects of the design I made, like the transport hub function as such, could be copied to serve as example for other highway locations under consideration for building projects. It will help introducing new ways of transportation, that are more flexible to the individual, that will cause less environmental impact on our society and will give an impulse to new transport techniques and solutions by the automatic exposure such techniques and solutions will get on such busy locations. Seen by many, followed by the crowd, lowering barriers, shifting our thoughts about ownership versus usage of means of transport. It might just contribute. The specific 'social-centre' function of my design is an example of how unused space can be exploited by making use of the natural break of an individual traveller while changing transport systems (e.g. sport, snack, magazine) and by having the clear social function in connecting the adjacent city areas that were divided by the highway and often became less attractive areas in unfriendly corner locations of the city, causing dead-end situations and unwanted rubbish dumps!

Office locations close to both public transport and highway locations with flexible transport solutions will attract business that needs such facilities and the studio's and smaller apartments that are planned in its housing function will make sure that the centre is not completely deserted after office hours and will attract young professionals that need quick access to our highway system, want full service close to their living quarters and want to be able to shoot into town!



Design sketch. Own work. (2014)

## Colofon

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