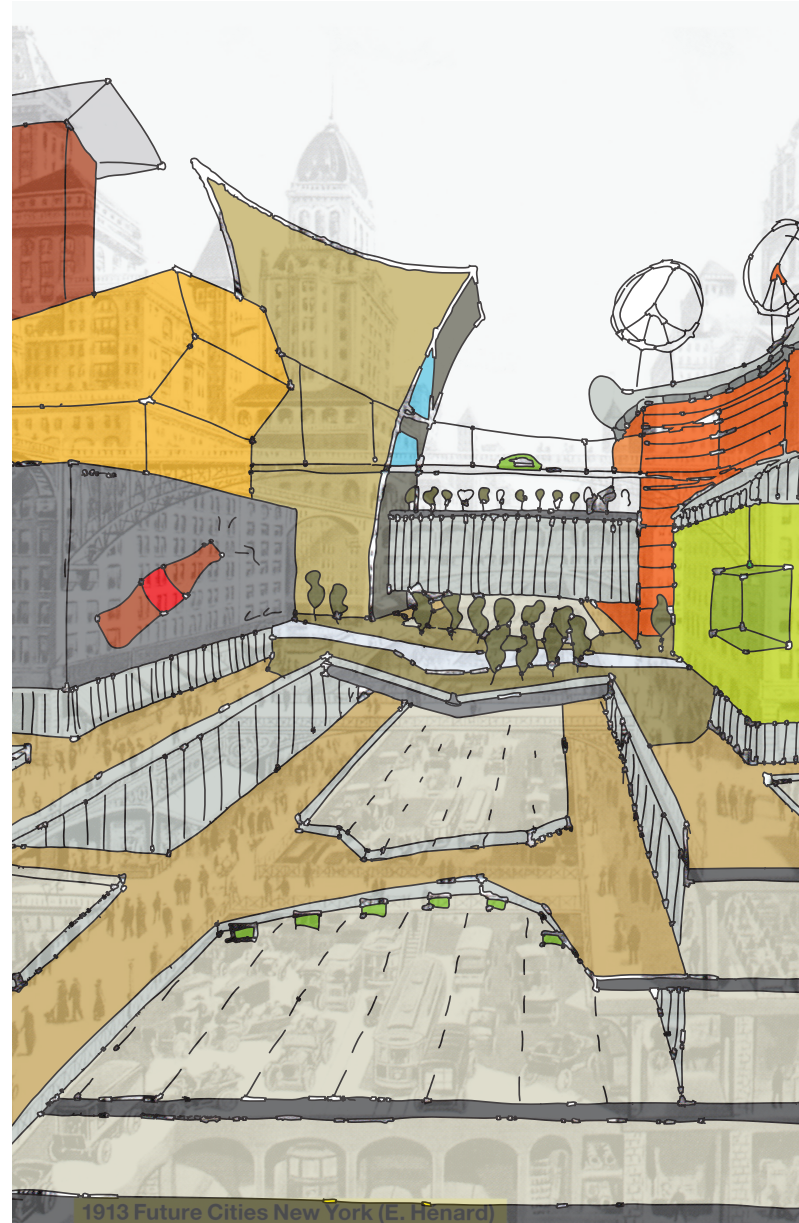


P5 PRESENTATION

CEDERICK INGEN-HOUSZ

07-11-14



1913 Future Cities New York (E. Henard)

HIGHWAY AS URBAN CENTRE

INTRODUCTION

INTRODUCTION

FASCINATION

DREAM

FUTURE

LOCATION

PROJECT AIM

RESEARCH

AREA

SOUND

MOBILITY

DESIGN

PROGRAM

ORGANISATION

STRUCTURE

EXPERIENCE

FASCINATION



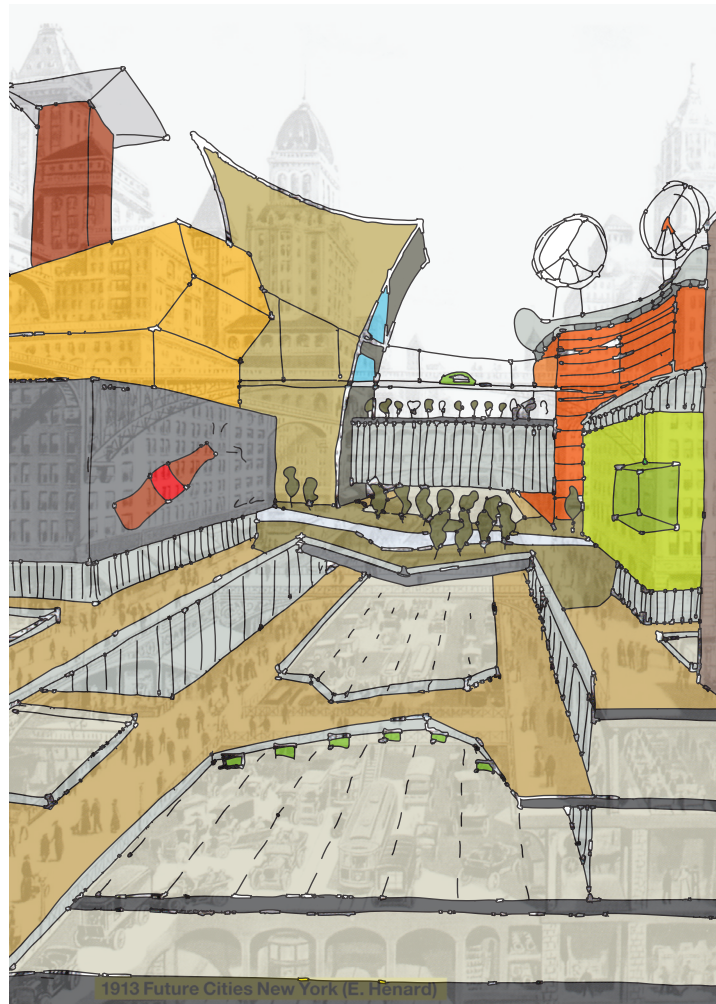
Prins Claus plein, A12 close to The Hague. (source: www.panoramio.com, M. Demirdögen, 22-11-13)

FASCINATION



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

DREAM



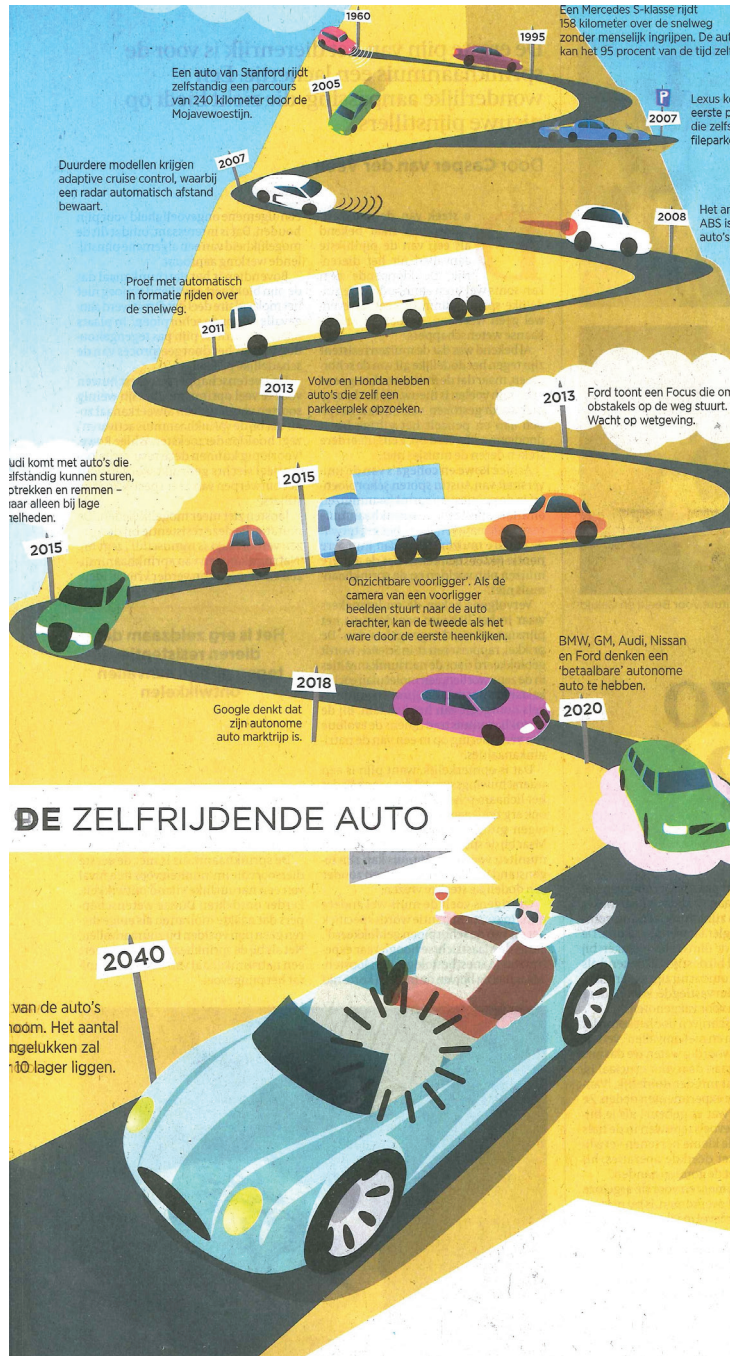
High way as urban centre. (Source: combination of: own work, 2013. and Mensink, 2006)

PROJECT LOCATION



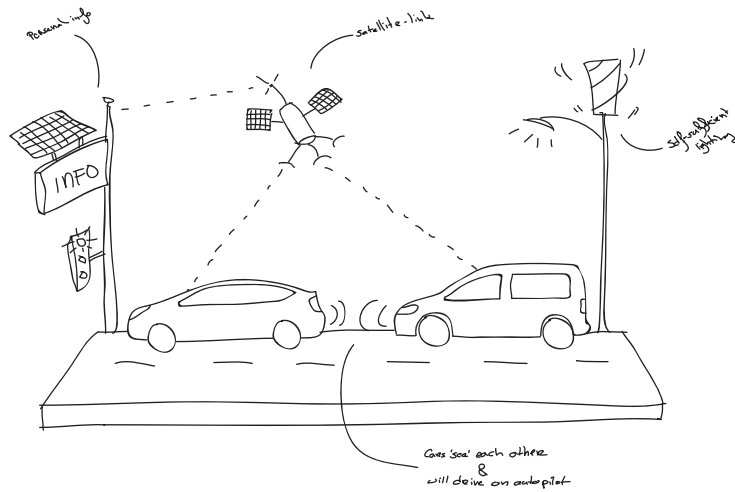
Location of the design, A12 intersection Westraven, Utrecht.

FUTURE OF CARS



CHANGING HIGHWAY

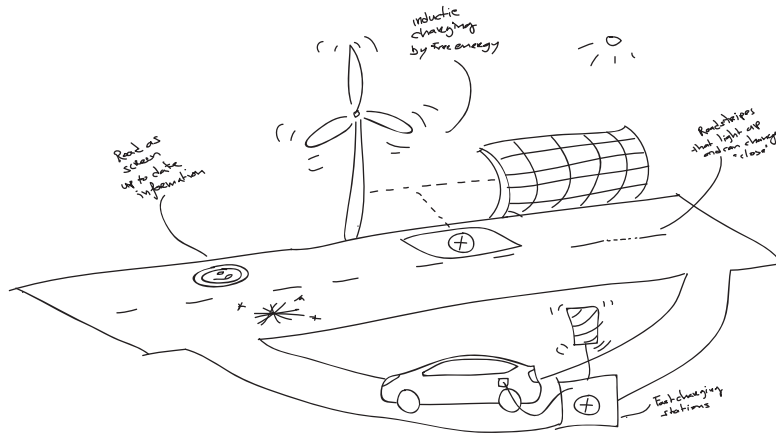
trends in mobility



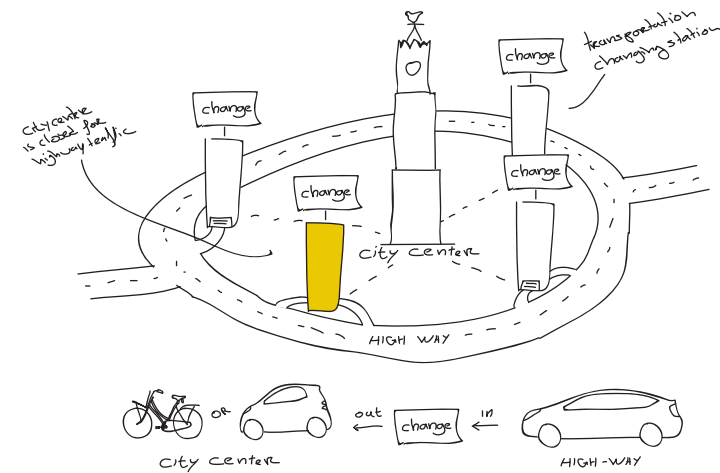
High-way as an all-connected system.



More sharing programs, and more specific vehicles.



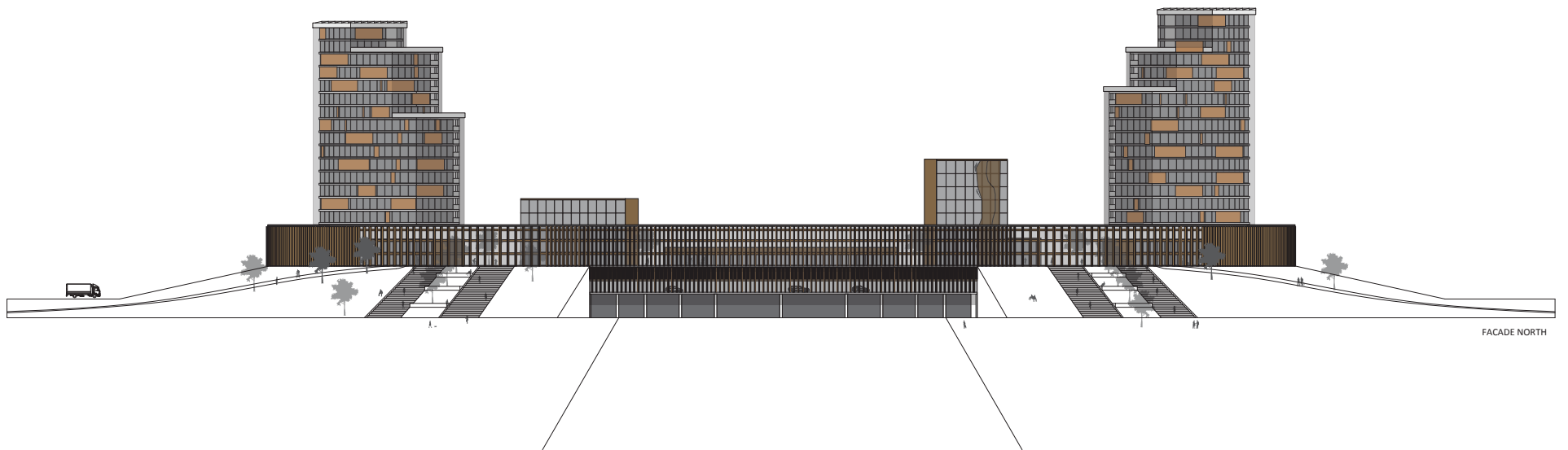
Interactive road surface (loading cars) that will be energy neutral.



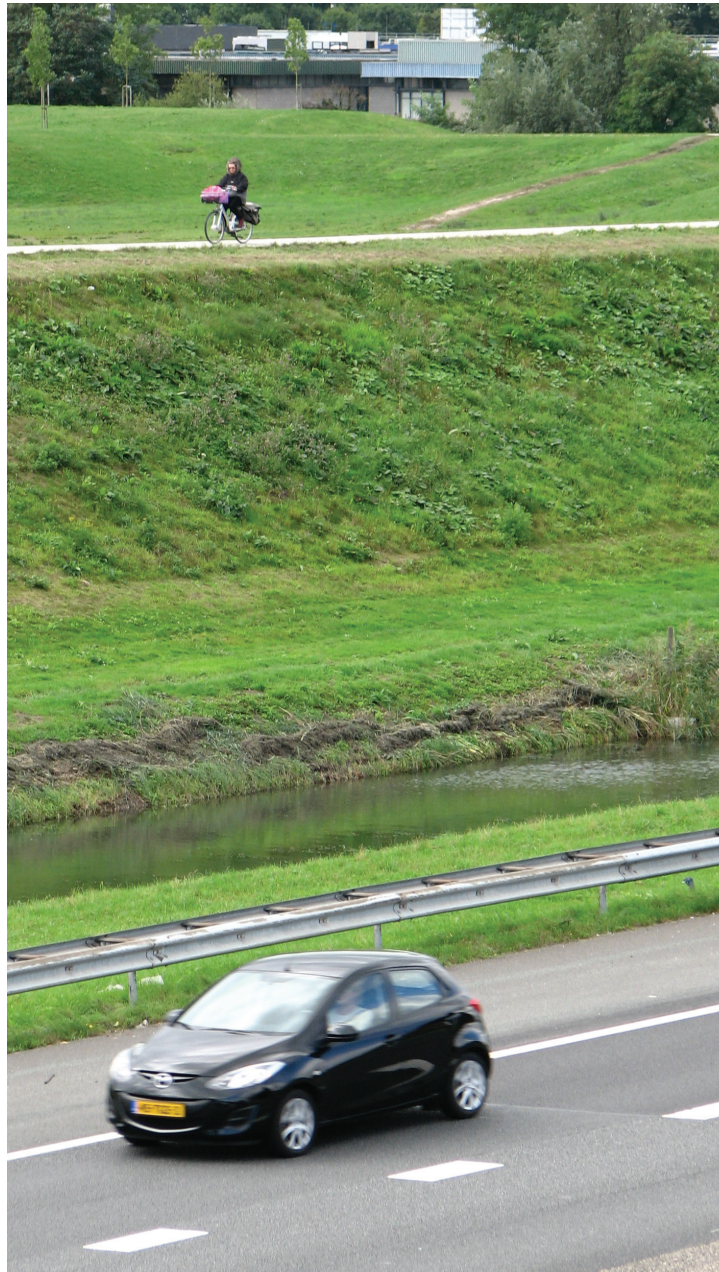
City centers will become disconnected from the high-way and only reachable when changing mode of transportation.

PROJECT AIM

NEW TRANSIT HUB



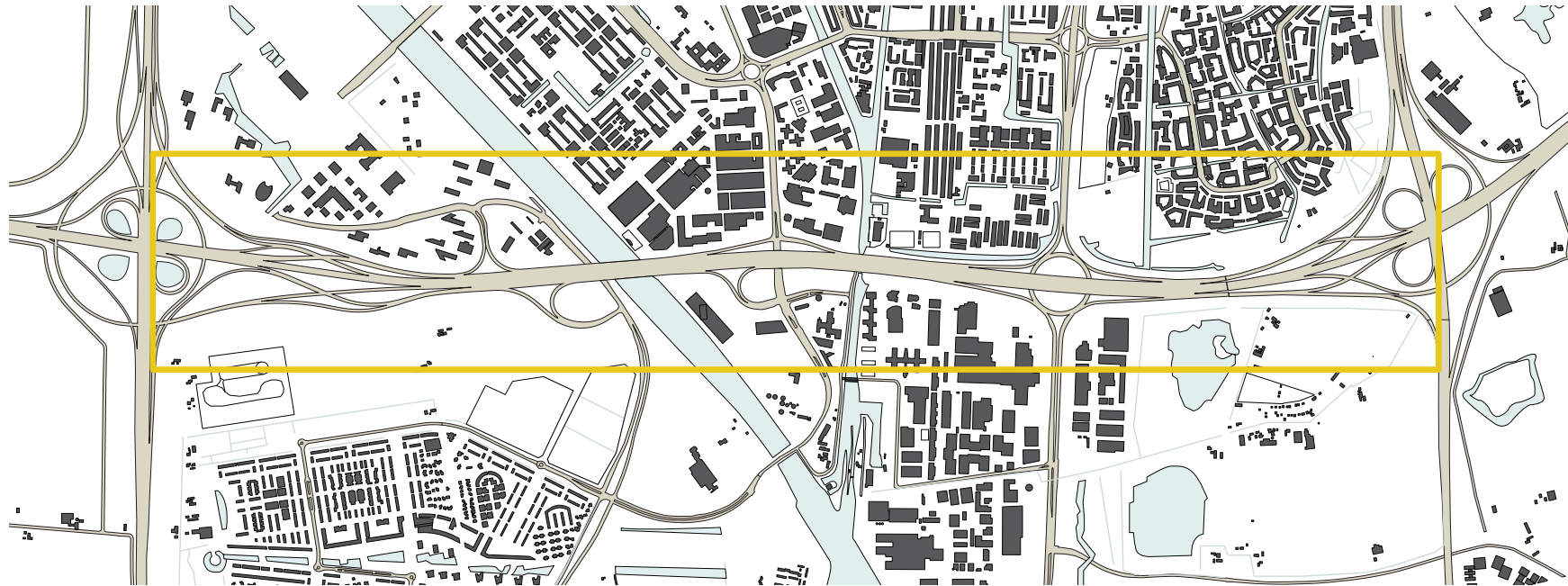
AREA



The location of my project is a stretch of high-way between intersection of Utrecht- Lunetten and Ouderijn

AREA

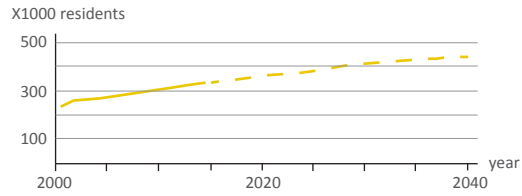
MAP OF THE A12-ZONE



(source: own work, 2013, based on top10 vector map, TuDelft Kaartenkamer, 2006)

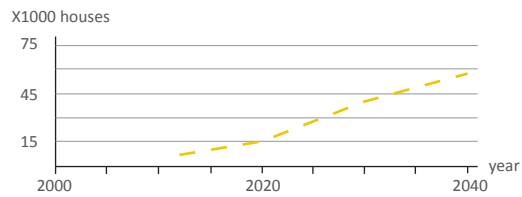
AREA UTRECHT INFRASTRUCTURE & GROWTH

Resident growth of Utrecht



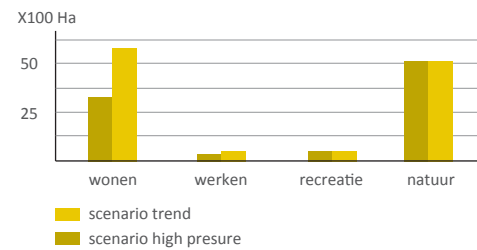
(source: CBS, 04-01-13, edited: own work)

Housing shortage Utrecht

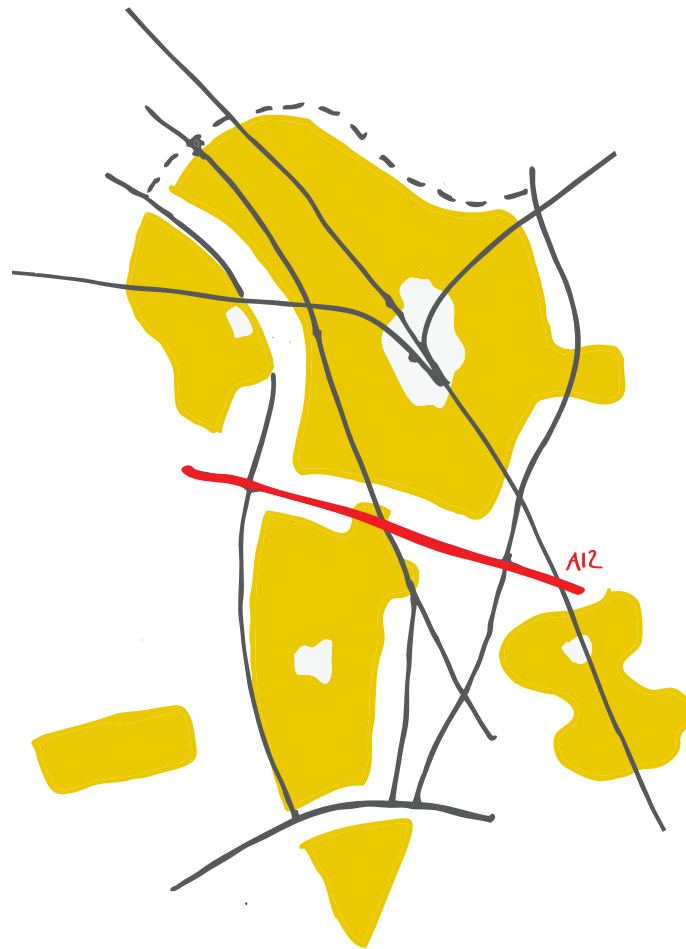


(source: University Utrecht, Randstad 2040, 01-11-08, edited: own work)

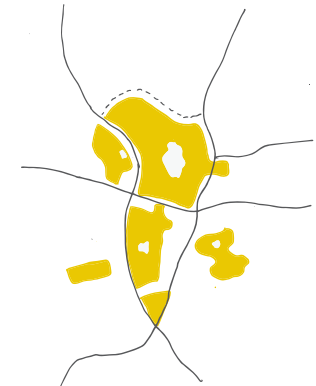
Space need in the province of Utrecht 2010-2040



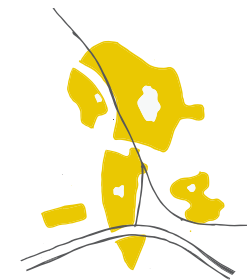
(source: verkade et al, 2007, edited: own work)



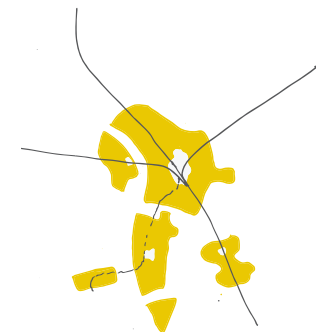
Utrecht and his infrastructural borders, in red the A12.



Roads



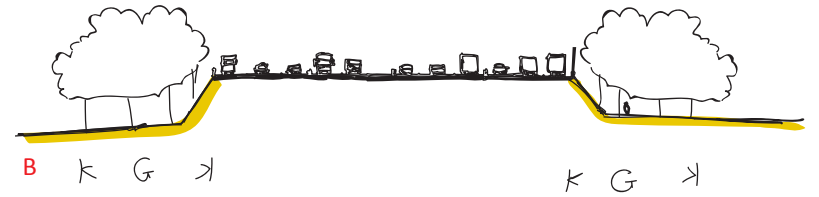
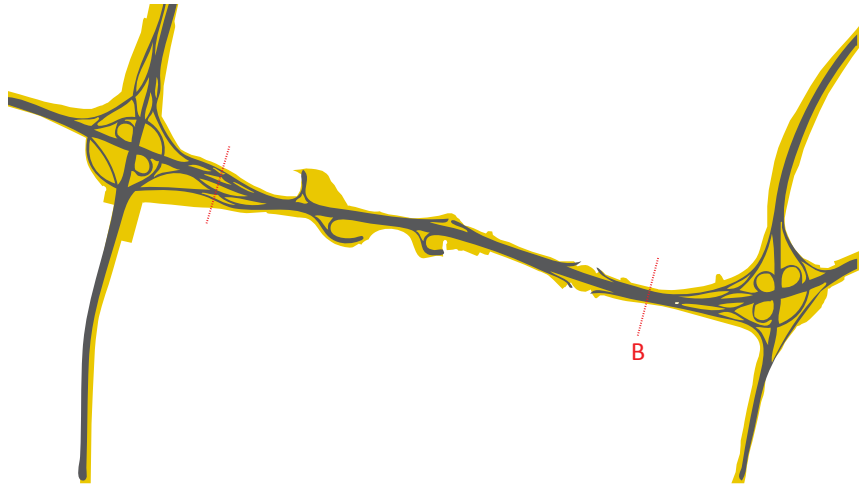
Water-ways



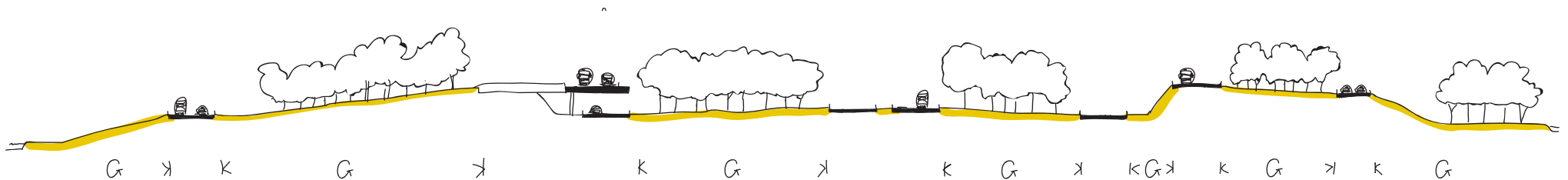
Traintracks

AREA

POTENTIAL : LOT'S OF EMPTY SPACE



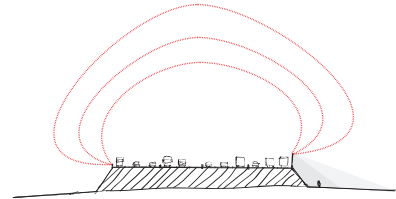
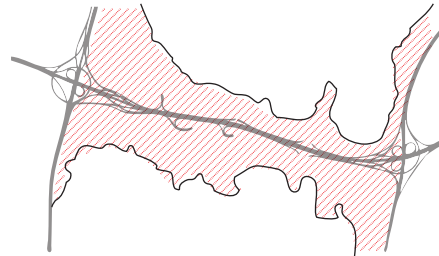
The empty spaces of the high-way are mostly owned by the government.



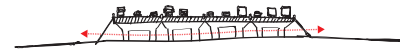
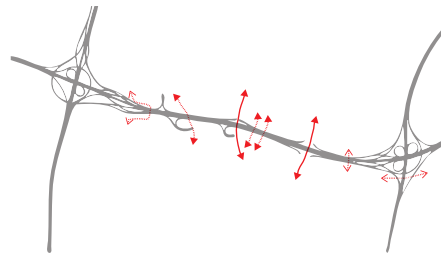
G = Green empty zones

AREA

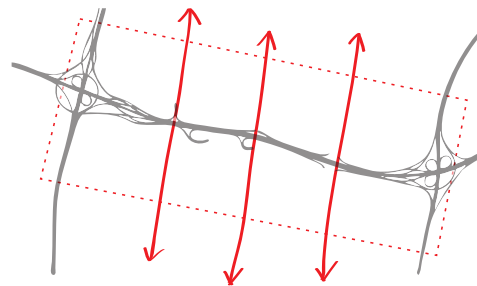
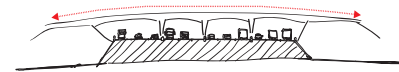
HIGHWAY AS BARRIER



SOUND



HEIGHT



++



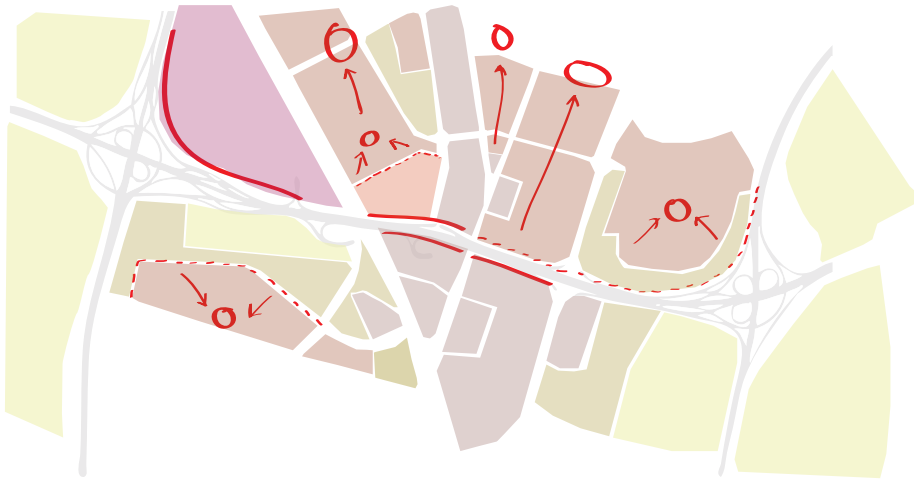
-



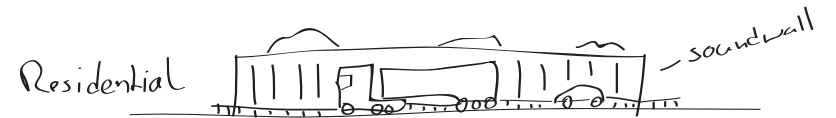
FREEDOM OF MOVEMENT

AREA

HIGH-WAY AS BACKSIDE OF THE CITY



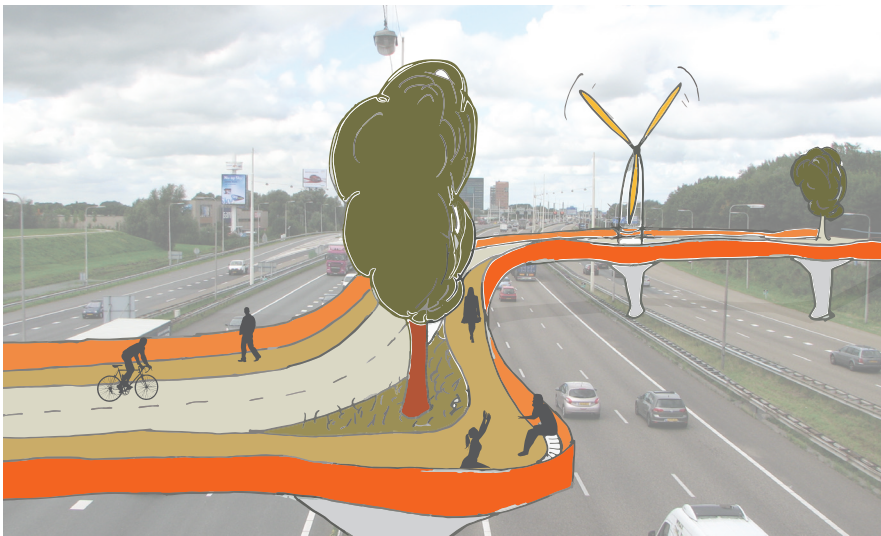
The infrastructure divides the area in to islands, all residential areas are focused on a centre away from the high-way, business areas only use the high-way as advertisement possibility.



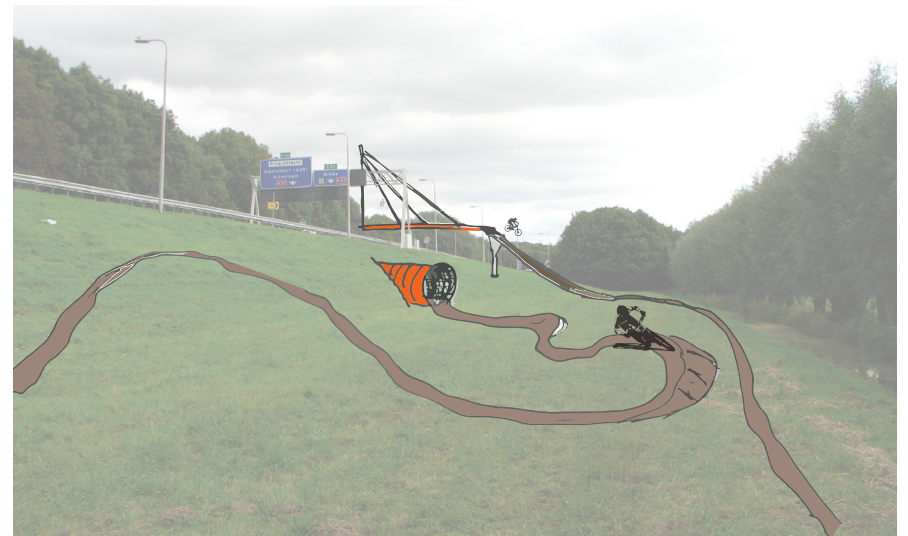
The two main typologies of the borders of the A12 high-way zone.

AREA

POTENTIAL : SPORTS



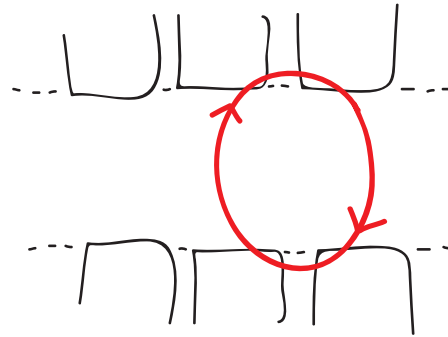
Impression of the slow traffic route through the area.



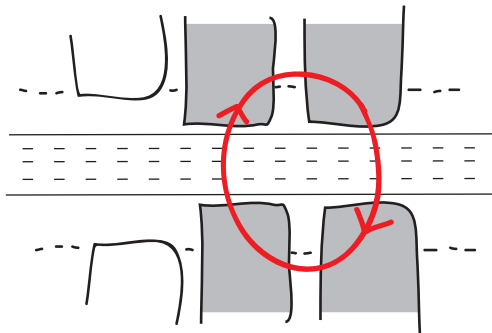
Impression of sport activities in the empty spaces of the highway

AREA

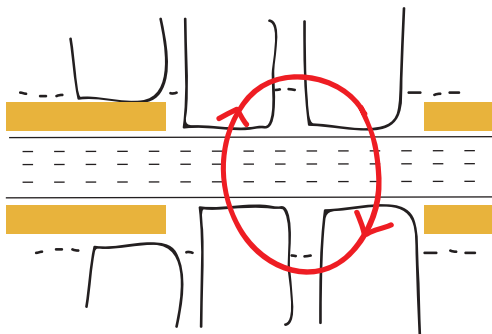
DESIGN PRINCIPLES



improve quality of connections and break the island effect



densify a specific area in the empty highway zone, and introduce sharp boundaries

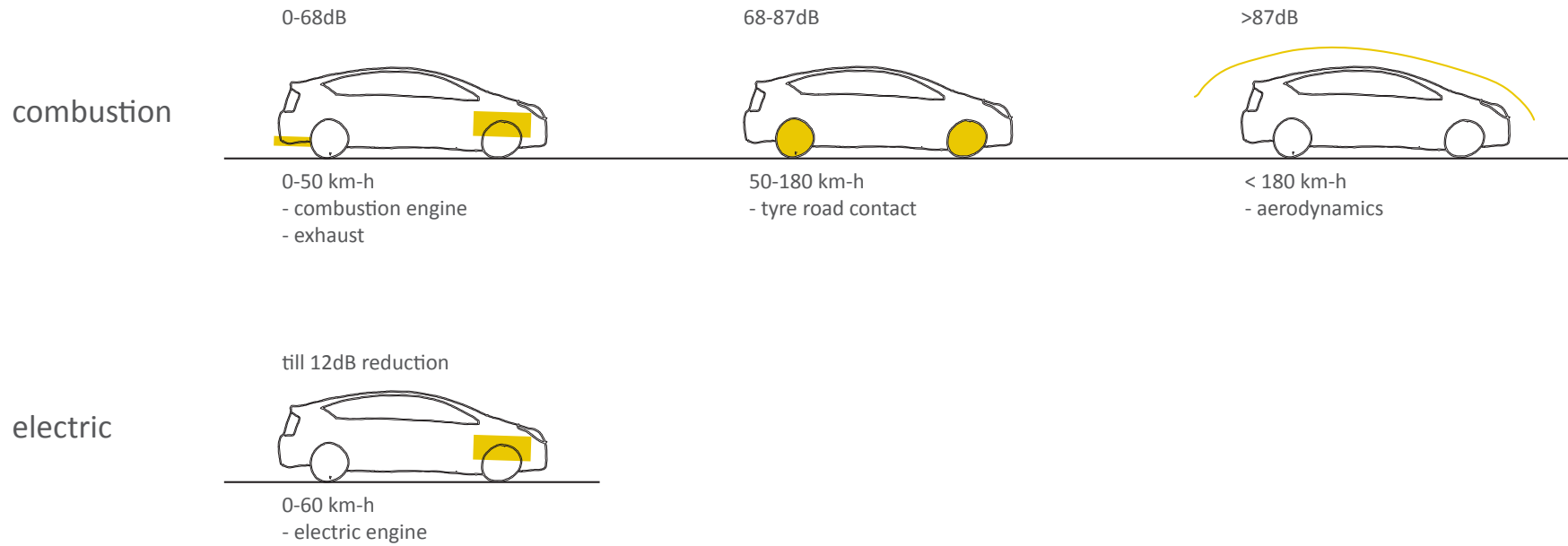


sports as connecting activity that will give a positive impulse to the area

TRAFFIC NOISE

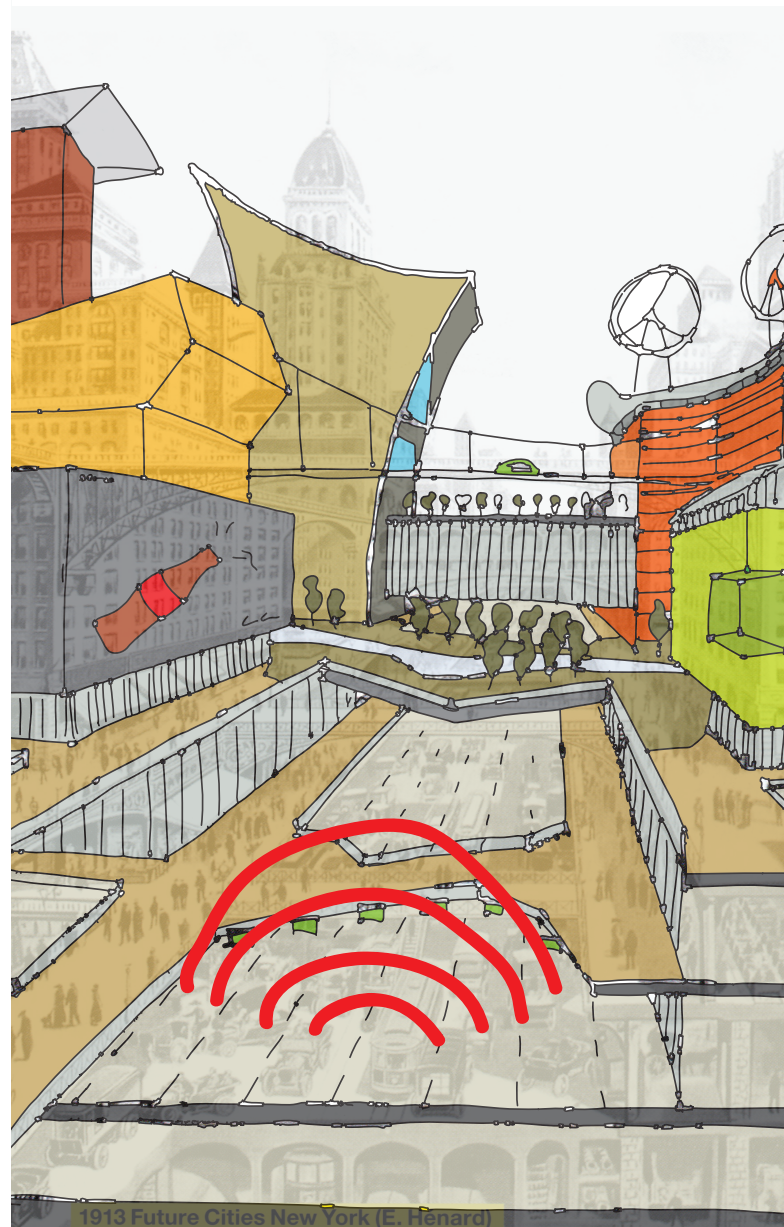


TRAFFIC NOISE SOURCE



TRAFFIC NOISE

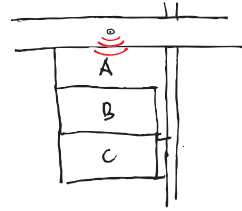
BROKEN DREAM?



1913 Future Cities New York (E. Henard)

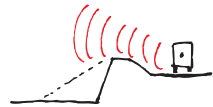
RESEARCH

TOOLBOX AS SOLUTION



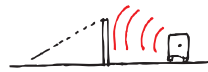
Landuse & zoning

Sound Principles: energy loss through air over distance



Topography

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



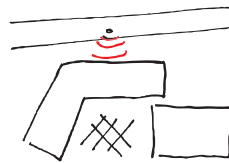
Barriers

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



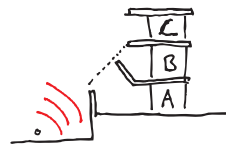
Planting

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

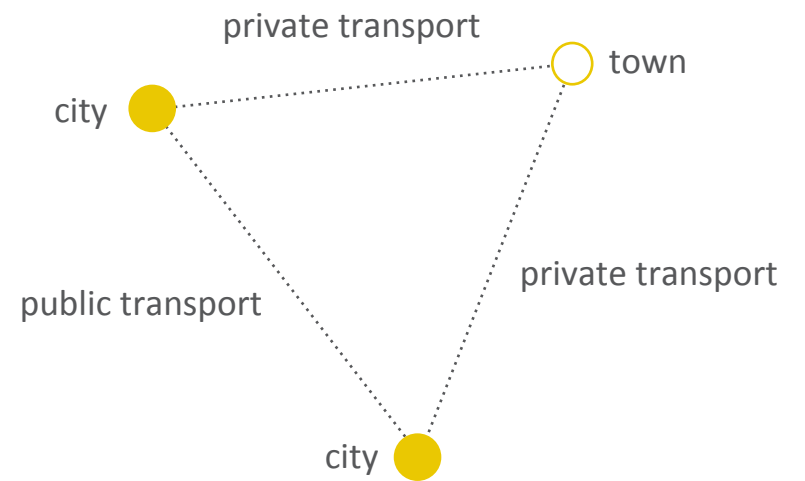
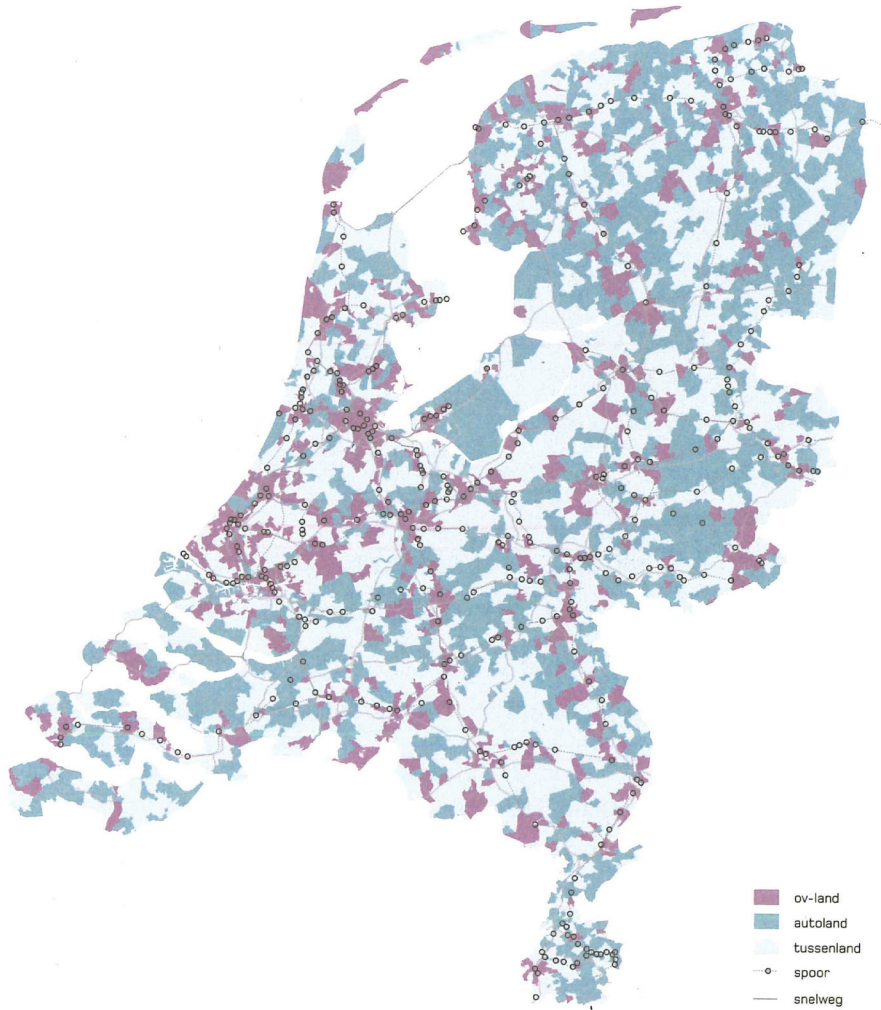
Sound Principles: Addition of pleasant and natural sound to overule the noise.

MOBILITY



MOBILITY

OBSERVATION: FRAGMENTED SYSTEM



city ●

○ town



Dominant way of transport. (Source: Goudappel Coffing, *De mobiele stad*, 2012)

MOBILITY

OBSERVATION: AVERT SPECIFIC TRANSPORT



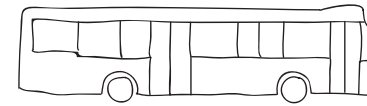
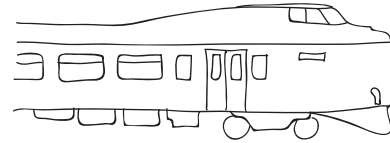
MOBILITY

OBSERVATION: TRANSFER

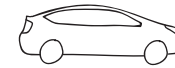
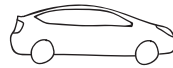
A

B

public transport



private transport



combination



MOBILITY

TRANSFER PROBLEM WESTRAVEN



MOBILITY

FUTURE TREND

car as part of public transport

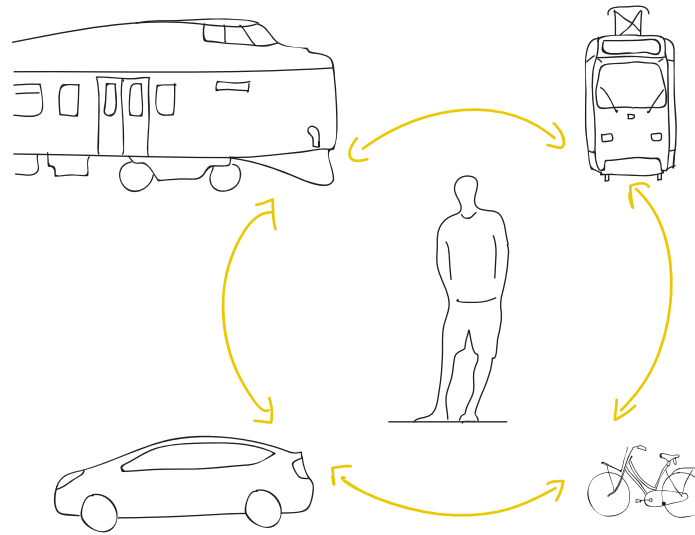


VALIDATION



MOBILITY

MOBILITY AS ONE SYSTEM



no ownership, but flexible lease

A $\xrightarrow{5/100}$ B

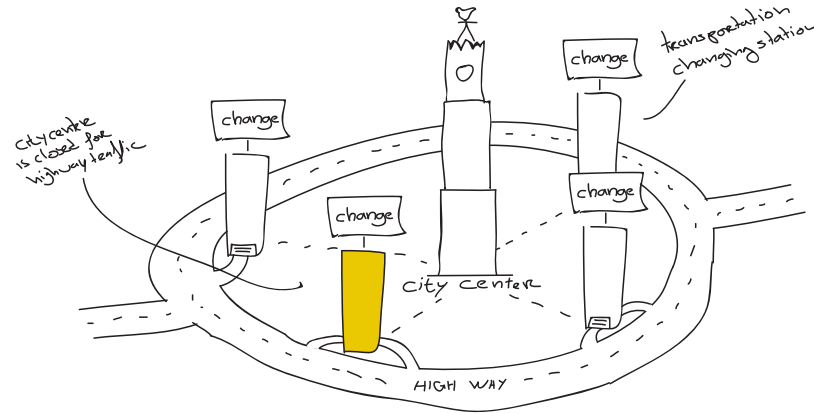


€/km



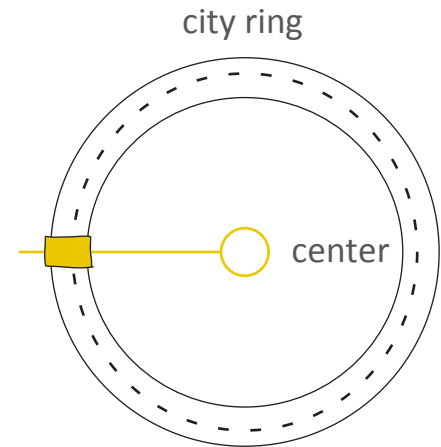
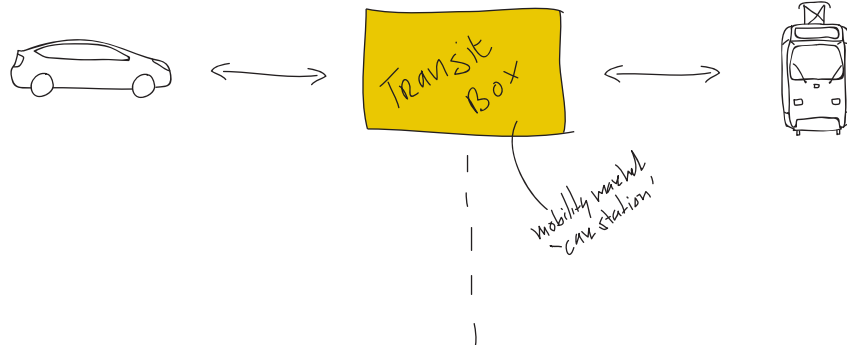
MOBILITY

A NEW TYPE OF TRANSIT HUB, P&R +



outside area
car dominant area

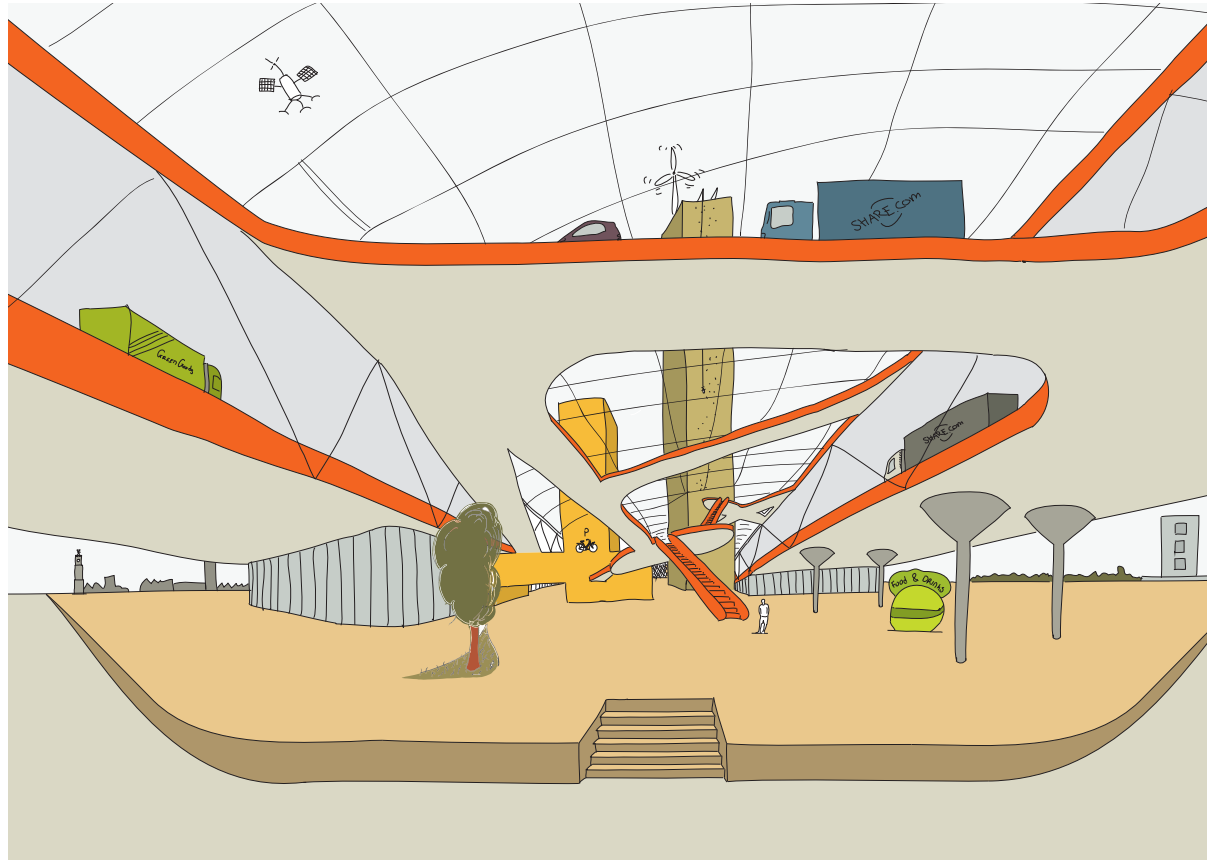
city
ov dominant area



fast ov corridor to center

MOBILITY

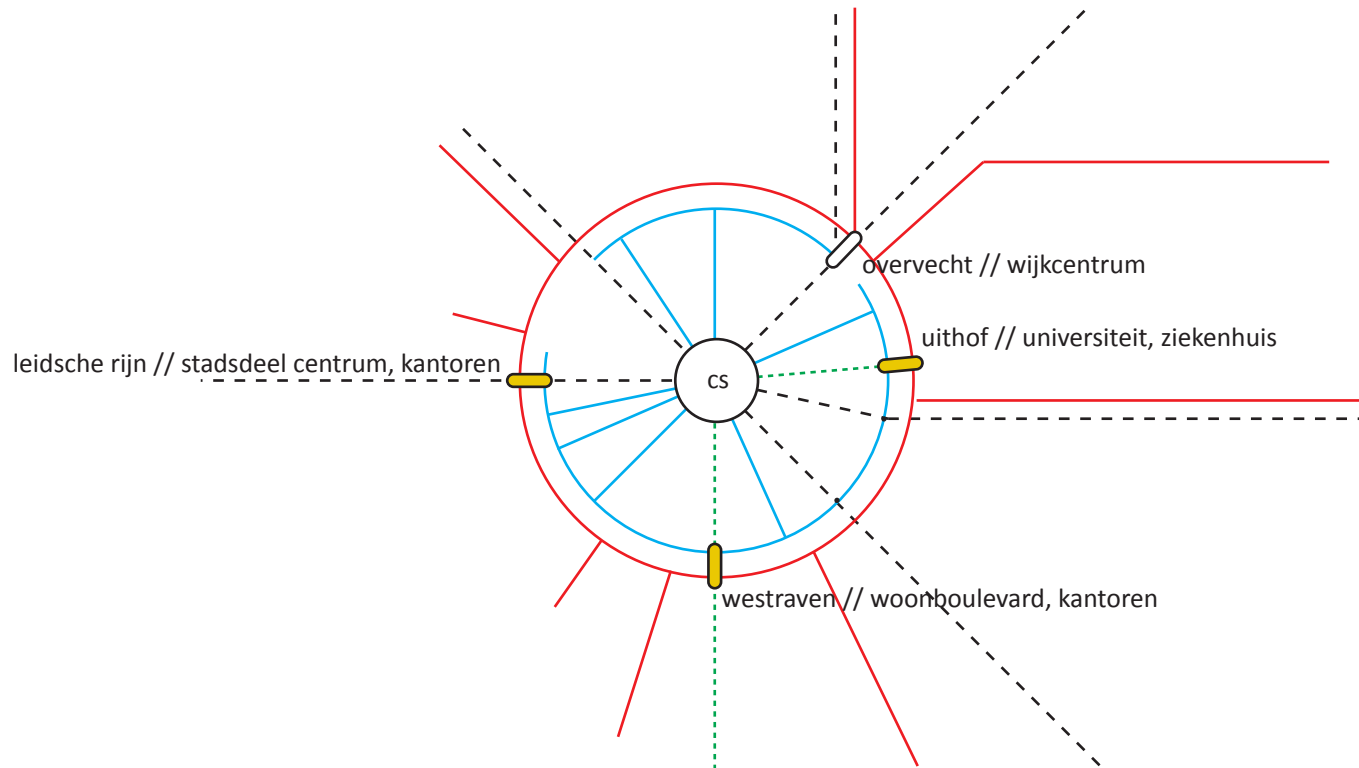
NEW TRANSIT HUB SKETCH



the new hub will have direct connections between the highway and public transport

MOBILITY

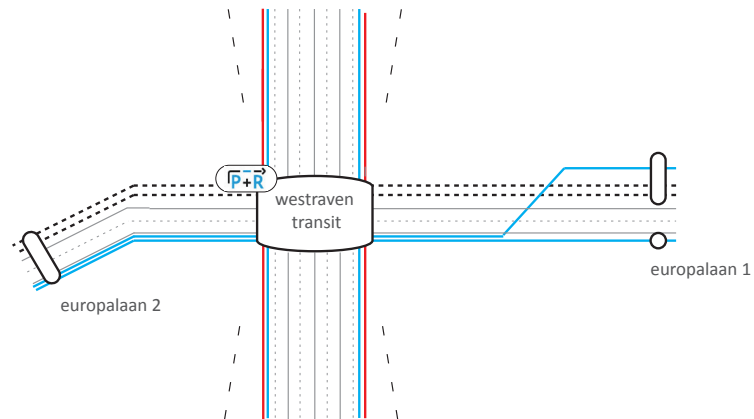
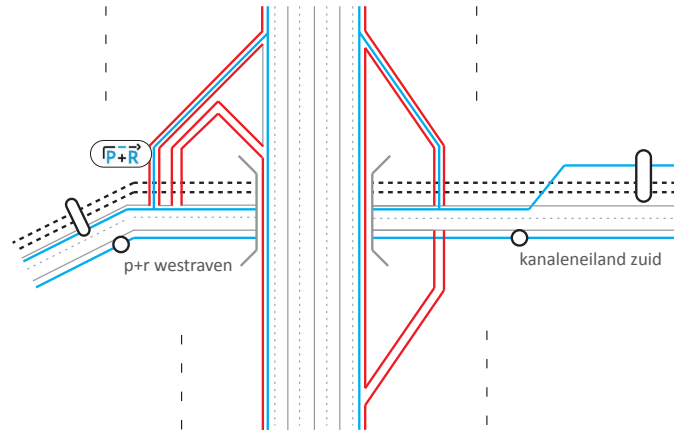
WESTRAVEN



- important gateway to and from utrecht
- acces to lightrail connection
- part of the beforehand chosen A12 zone

MOBILITY

JUNCTION WESTRAVEN

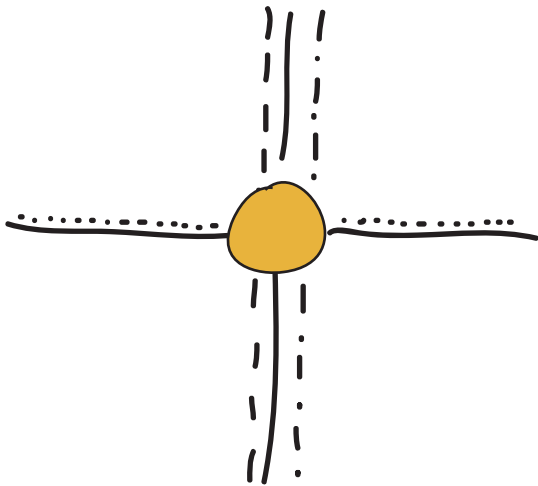


simplefy the junction to make easy transfer possible

SUMMARY

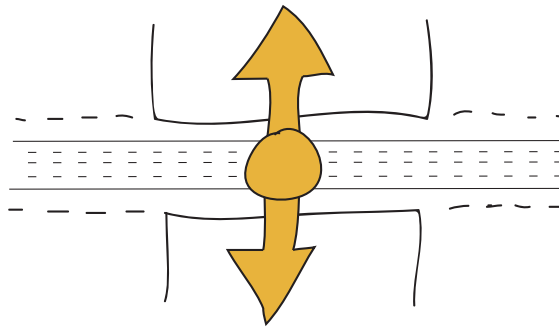
MOBILITY // AREA // SOUND

MOBILITY



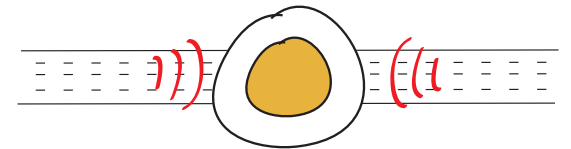
Connect all traffic flows

AREA



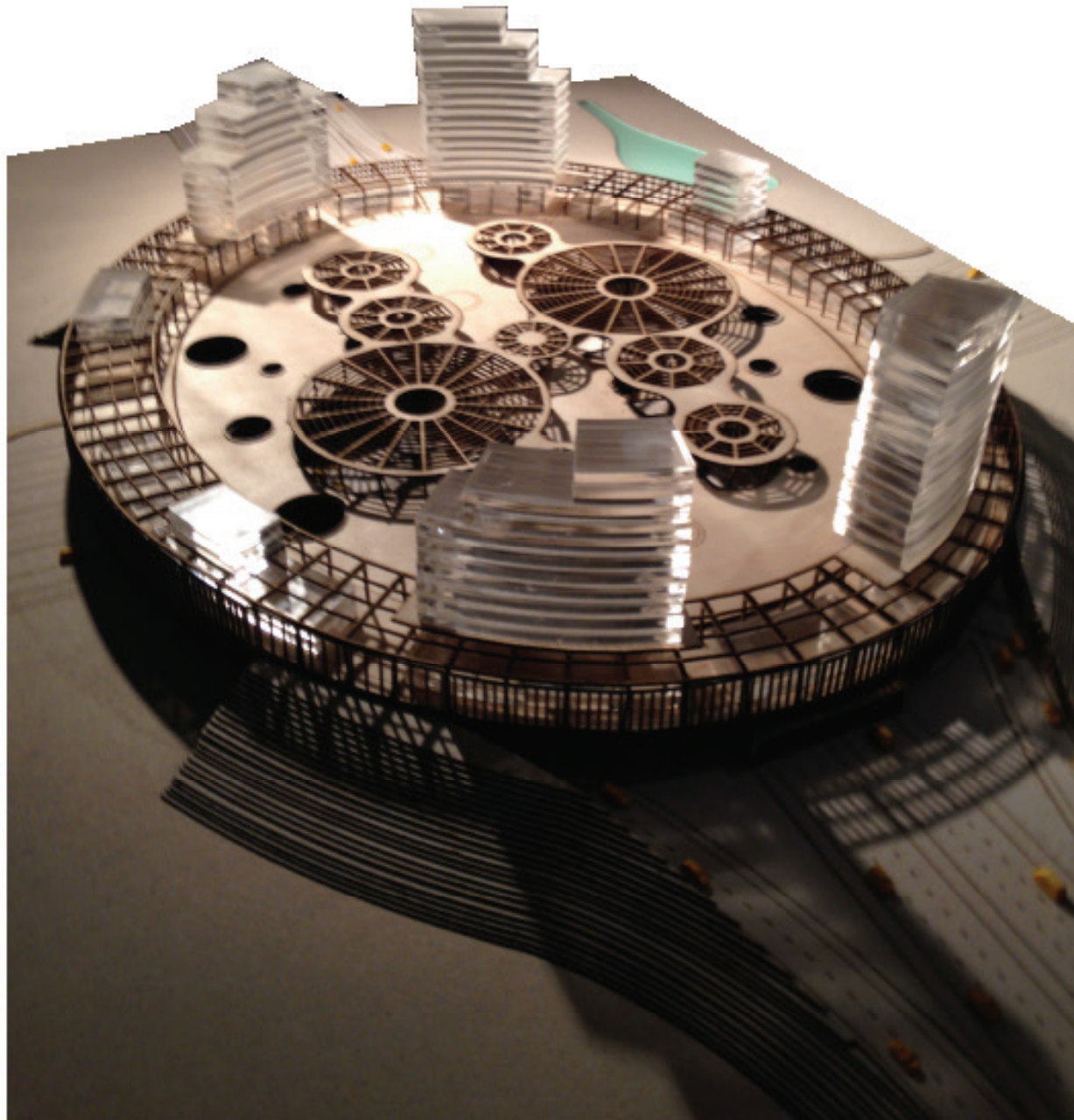
Create a high quality connection for all users.

SOUND



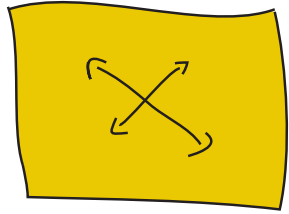
Protect user from traffic noise

DESIGN



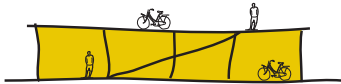
DESIGN

NEW URBAN CENTRE PROGRAM



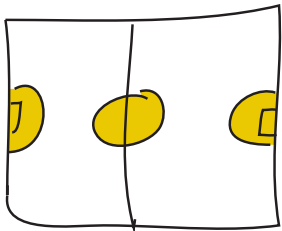
LINK

station



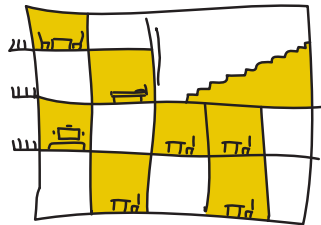
CONNECTION

pathways, cycle tracks



IMPULS

sports facilities

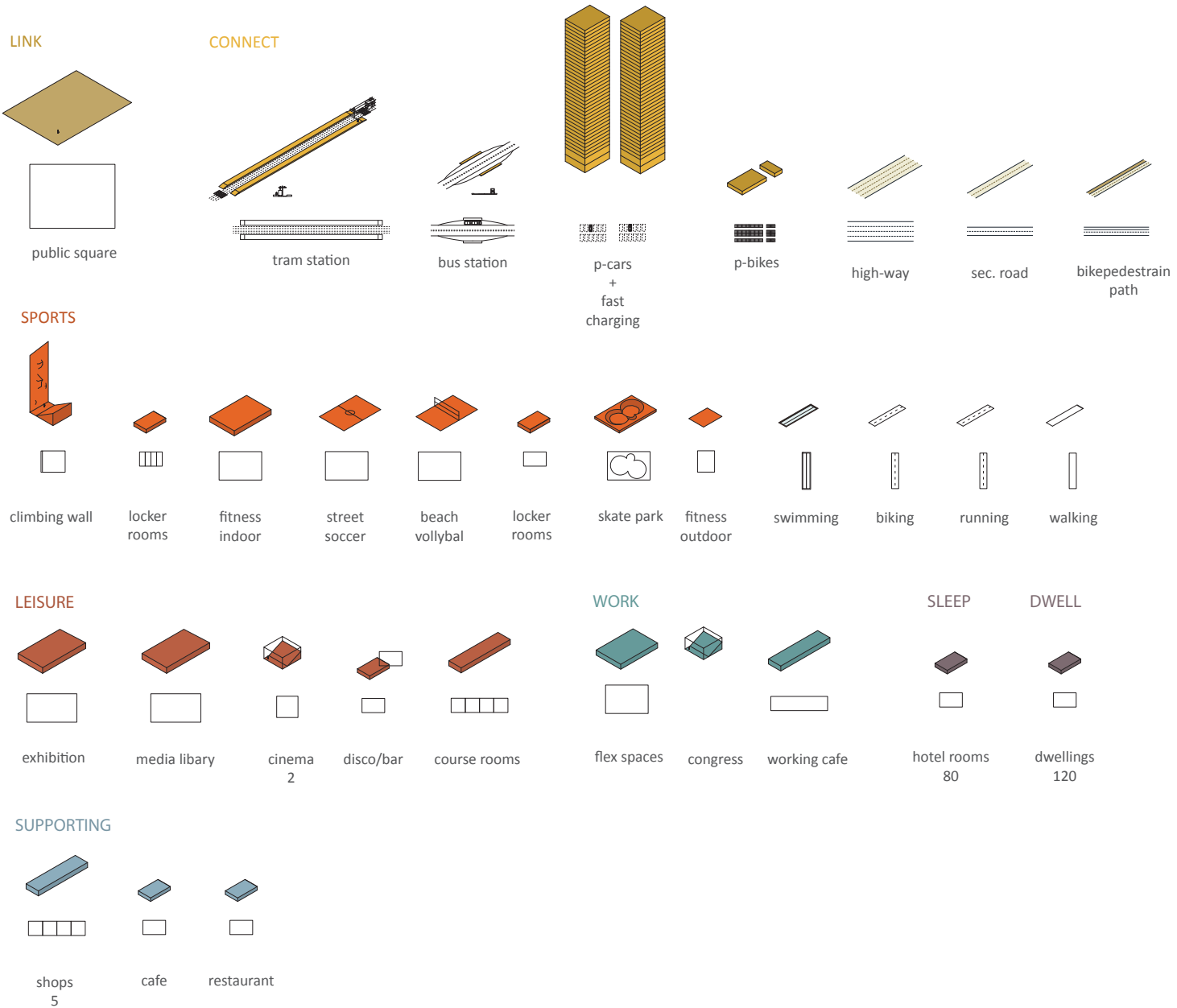


VIABLE

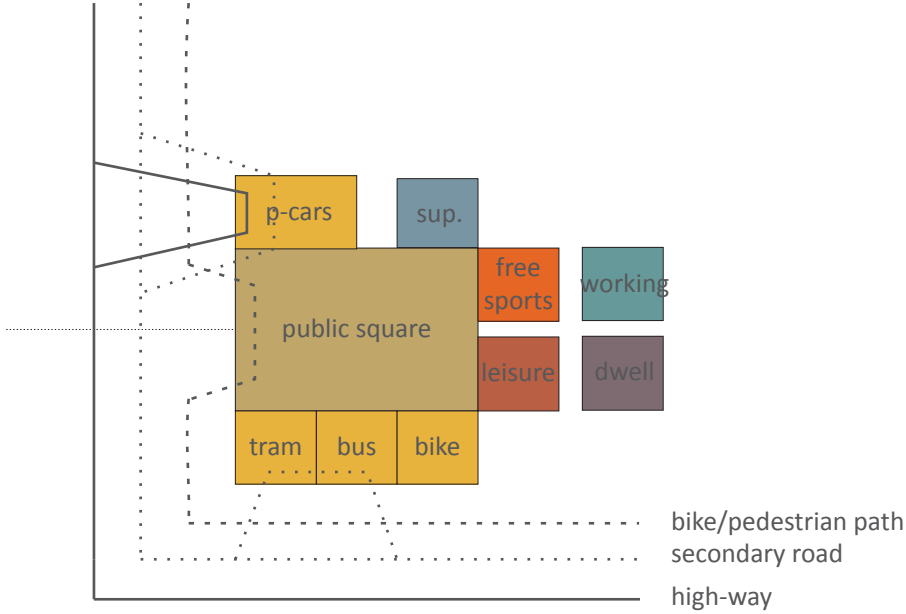
working, dwell, leisure

DESIGN

NEW URBAN CENTRE PROGRAM

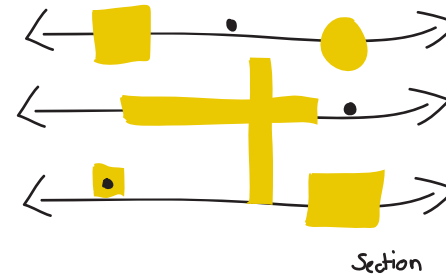
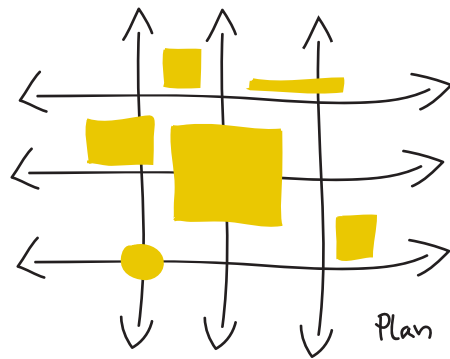


DESIGN PROGRAM



DESIGN

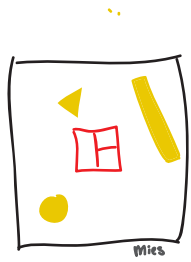
DESIGN COMPLEXITY



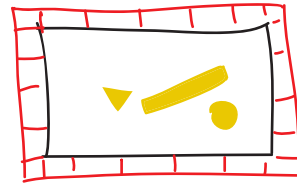
complexity of all program and infracture in mutiple levels

DESIGN

STRUCTURE AS SOLUTION

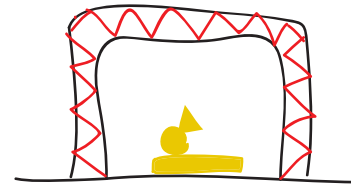


Mies



Reges

Plans



Fedea



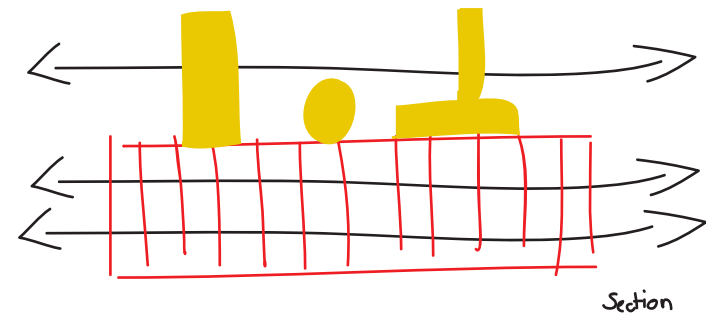
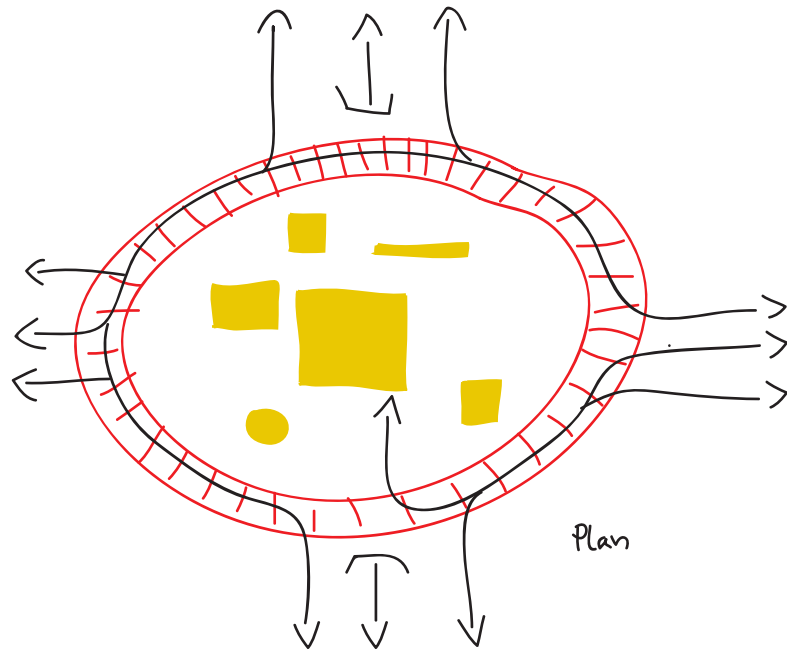
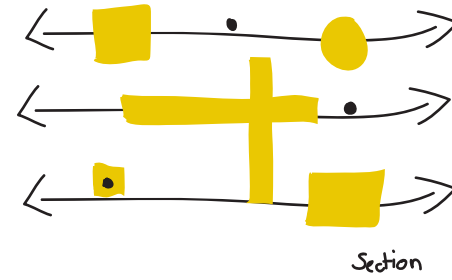
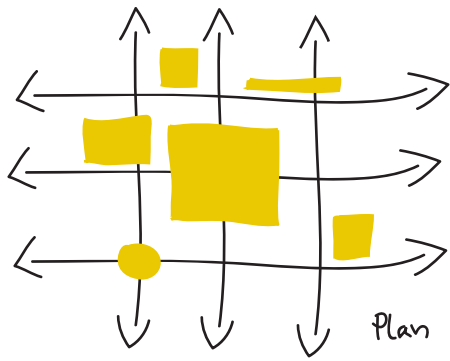
Kolha

Sections

use of structure to create freedom and accommodate logistics

DESIGN

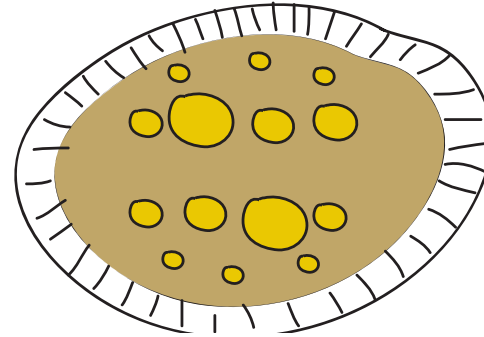
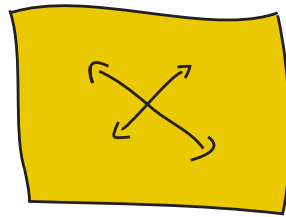
STRUCTURE AS SOLUTION



DESIGN

PROGRAM IMPLEMENTATION

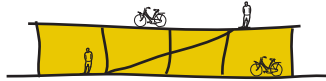
LINK



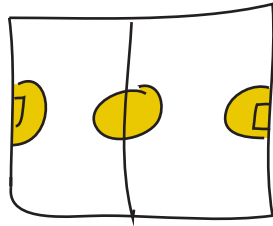
DESIGN

PROGRAM IMPLEMENTATION

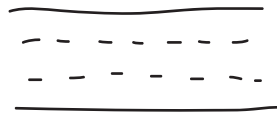
CONNECTION



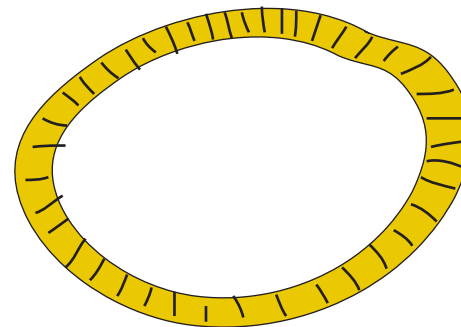
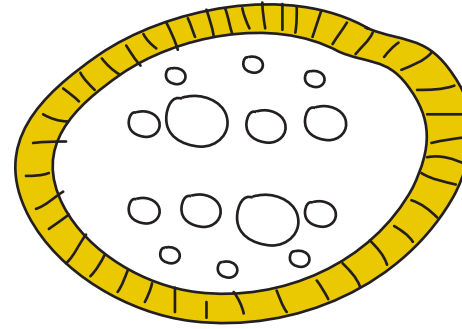
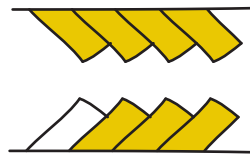
IMPULS



TRAFFIC



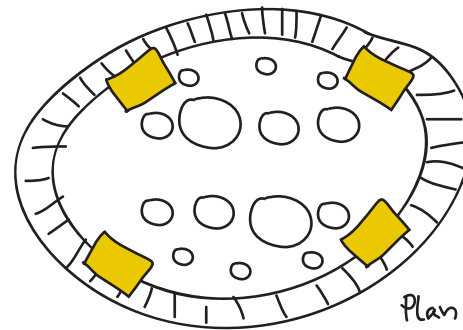
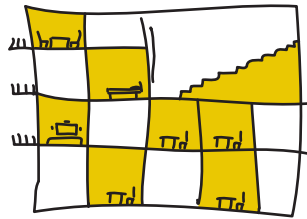
STORAGE



DESIGN

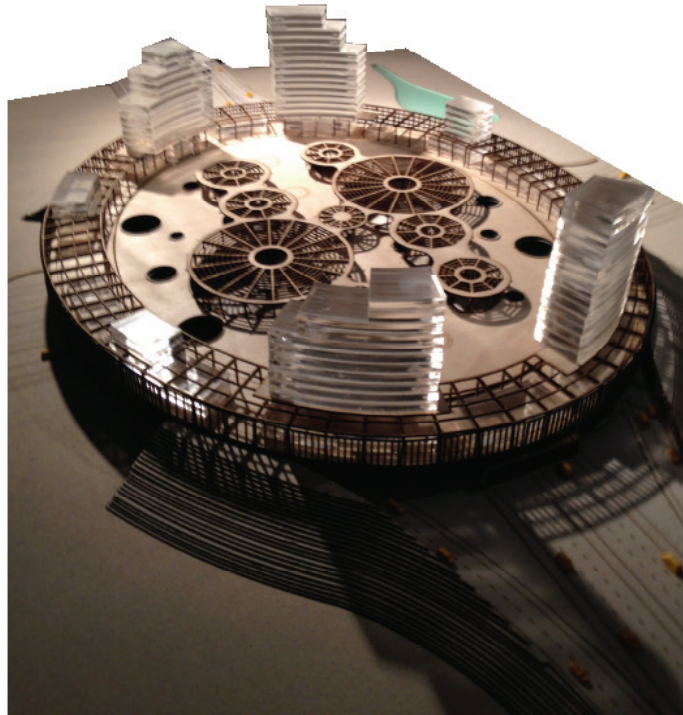
PROGRAM IMPLEMENTATION

VIABLE



DESIGN

IMPRESSION

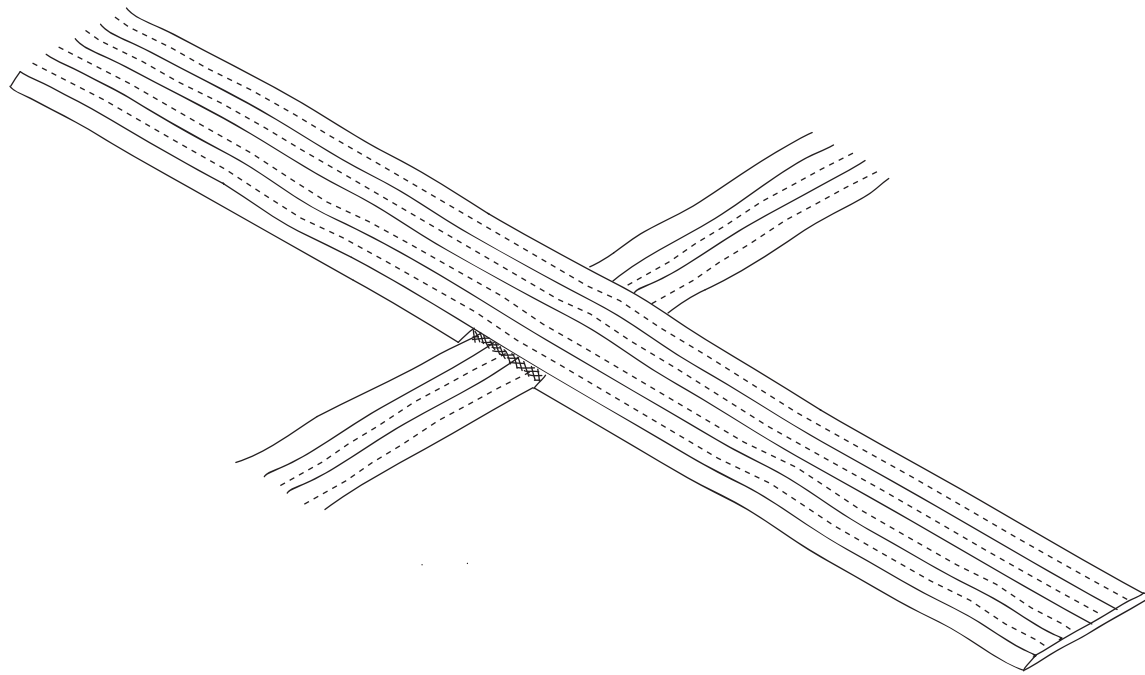


The square has a open character with visual connections with all functions and by the 3 main elements becomes a lively and attractive square.

The building manifests its self as a whole by the closed ring facade, the 4 towers with their own identity make the ensemble to a urban center.

DESIGN

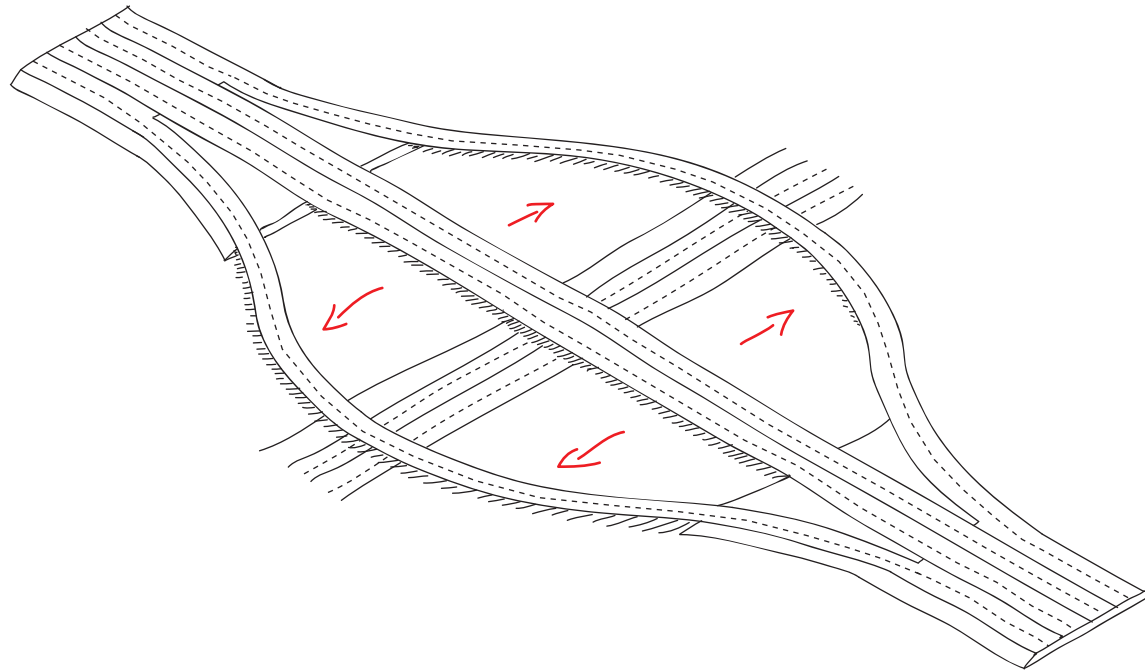
BUILDING STRUCTURE



BASIC INTERSECTION

DESIGN

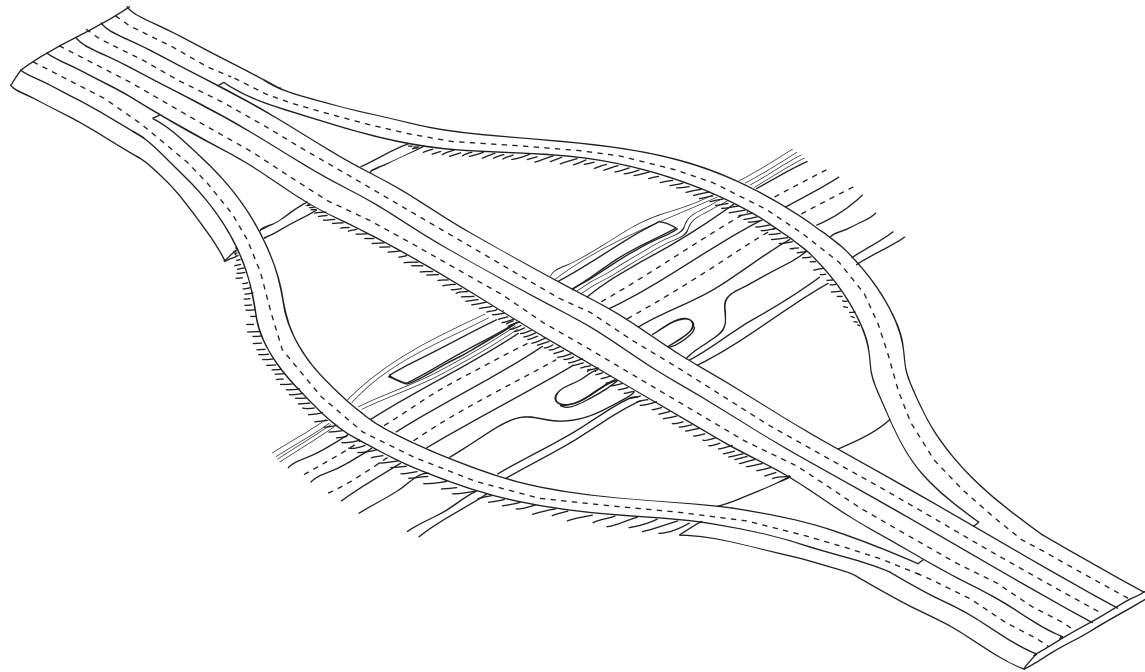
BUILDING STRUCTURE



MAKE ROOM INSIDE HIGHWAY

DESIGN

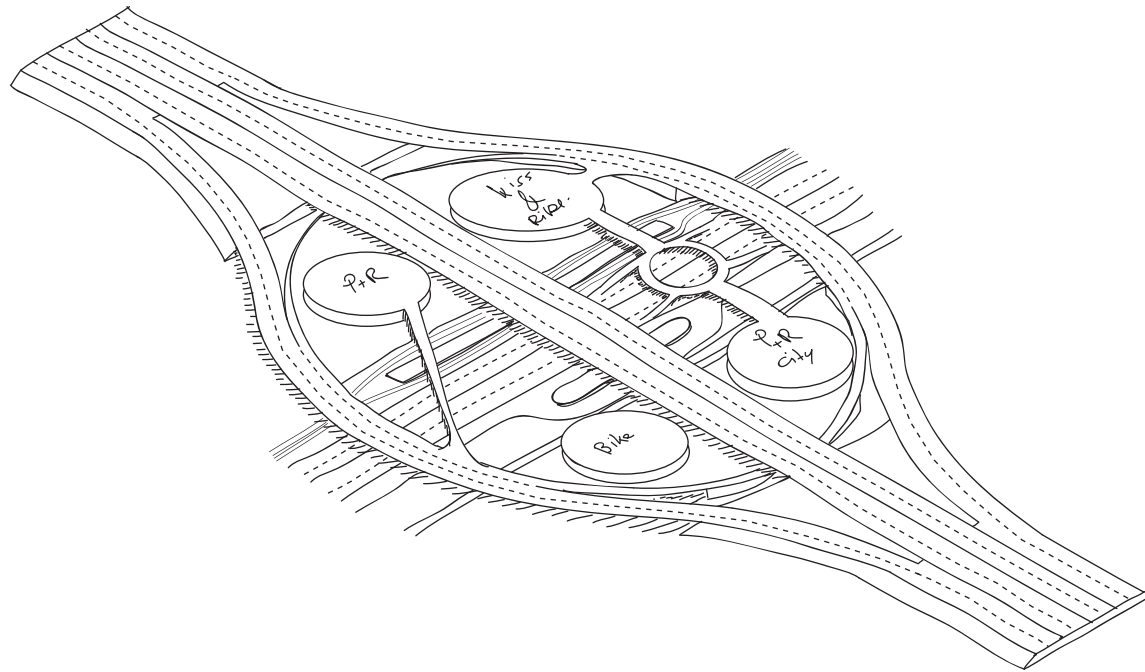
BUILDING STRUCTURE



PLACE STATIONS INSIDE NEW SPACE

DESIGN

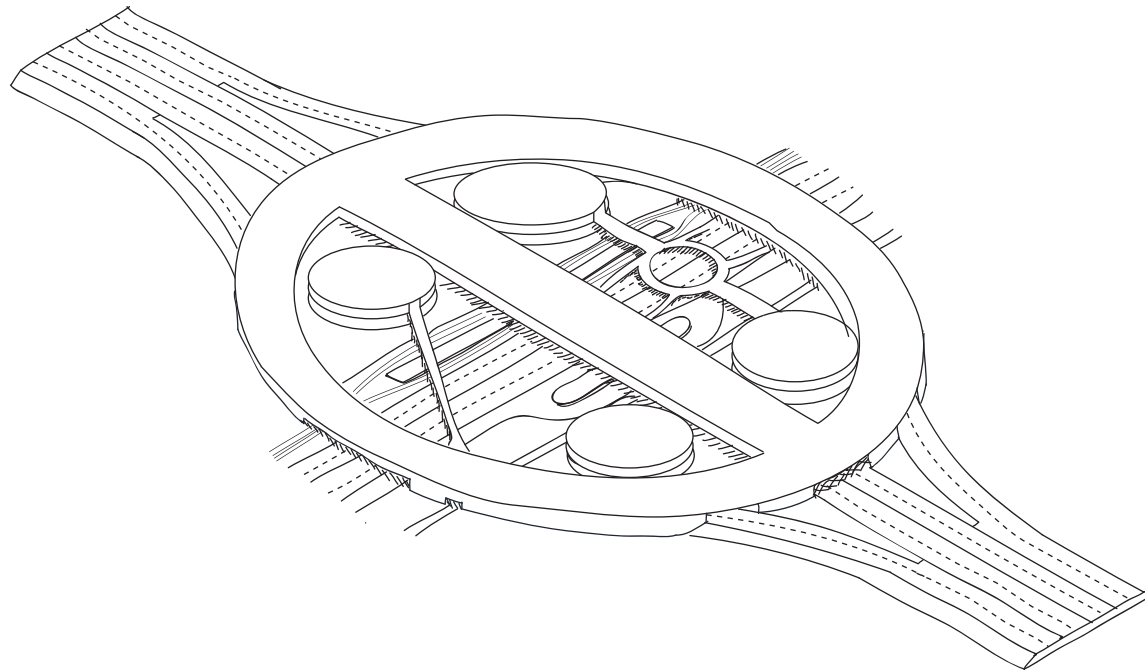
BUILDING STRUCTURE



PLACE AUTOMATED CAR PARKING SYSTEM

DESIGN

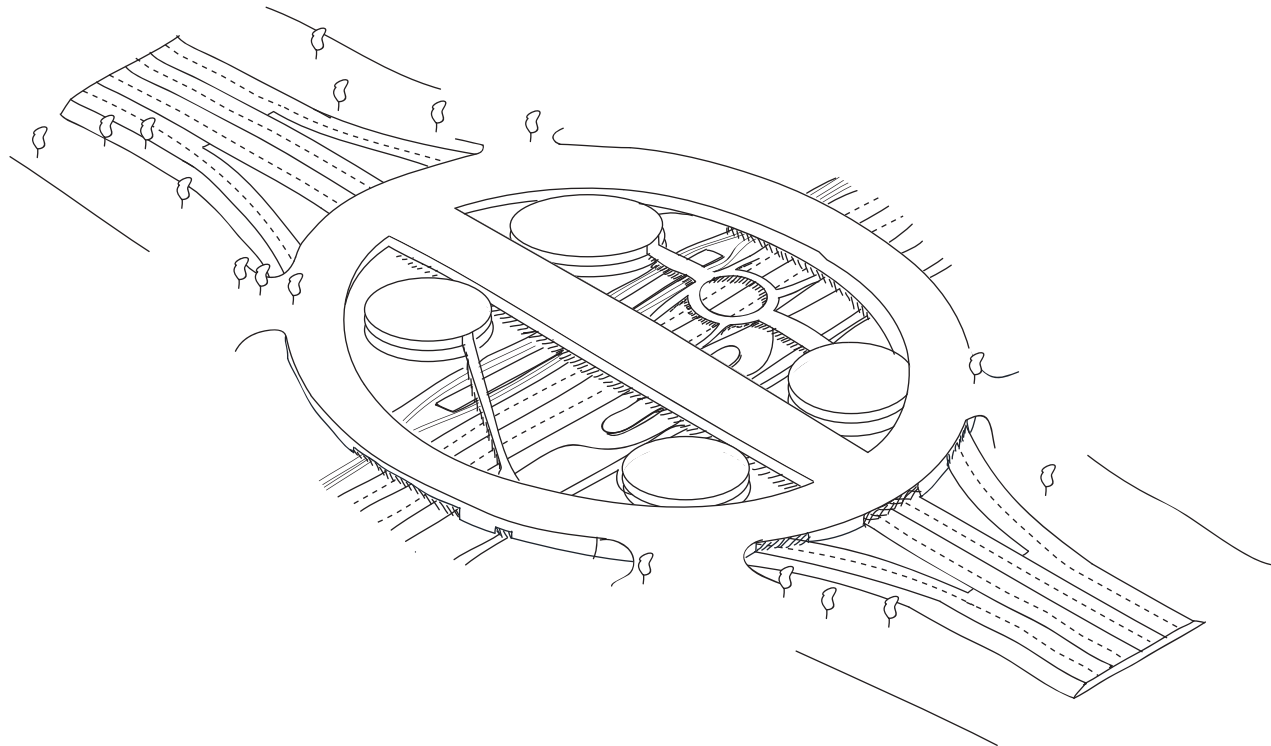
BUILDING STRUCTURE



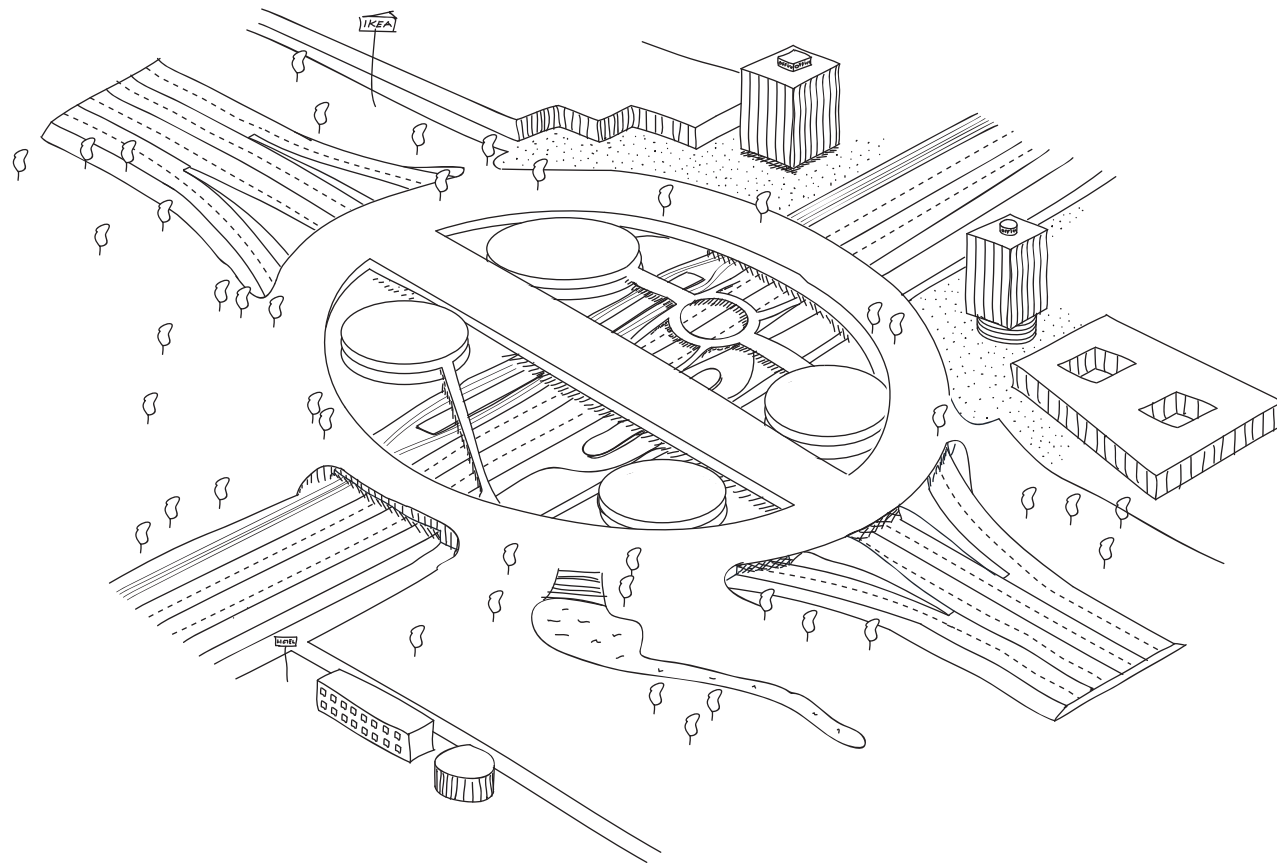
COVER THE MAIN ROAD

DESIGN

BUILDING STRUCTURE



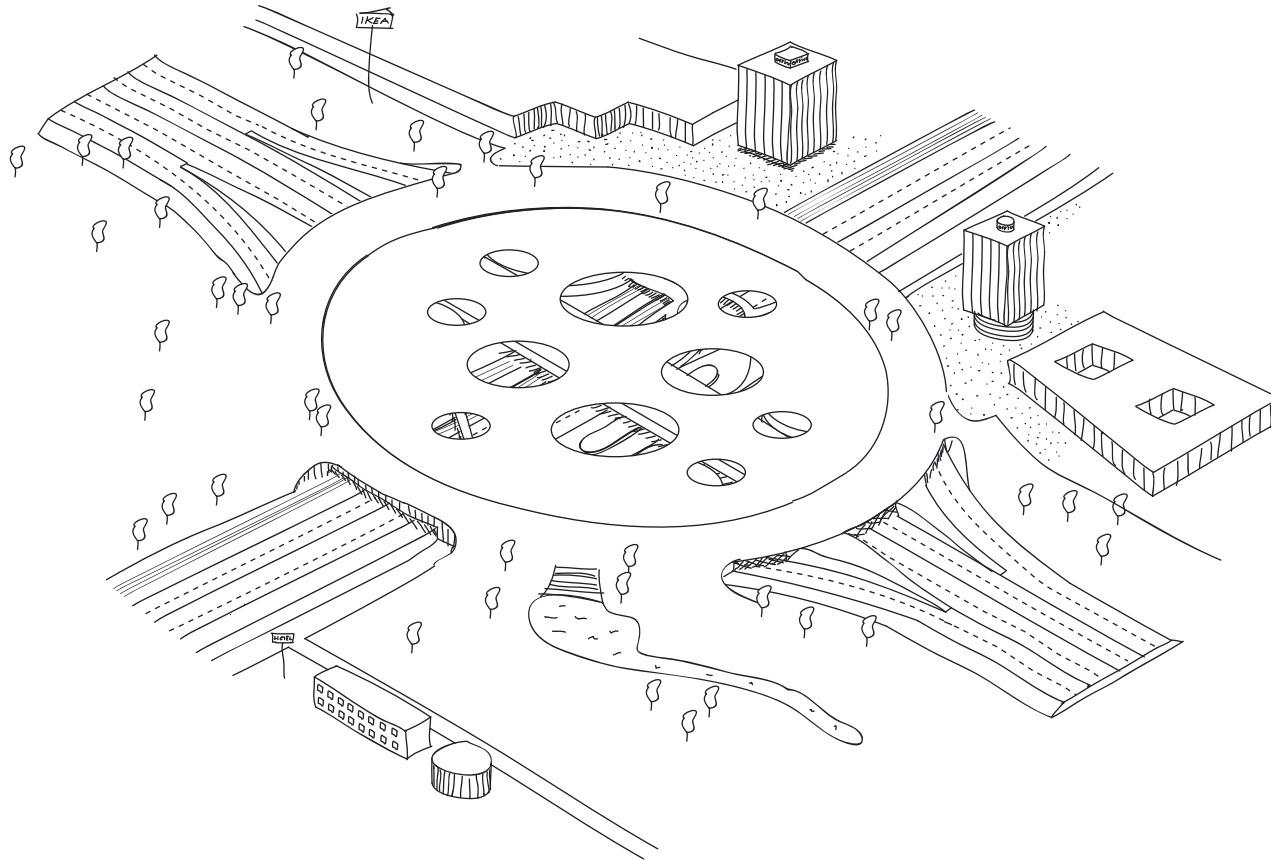
CONNECTION GROUND FLOOR WITH SLOPE



TRANSFORMING DUE TO LOCATION

DESIGN

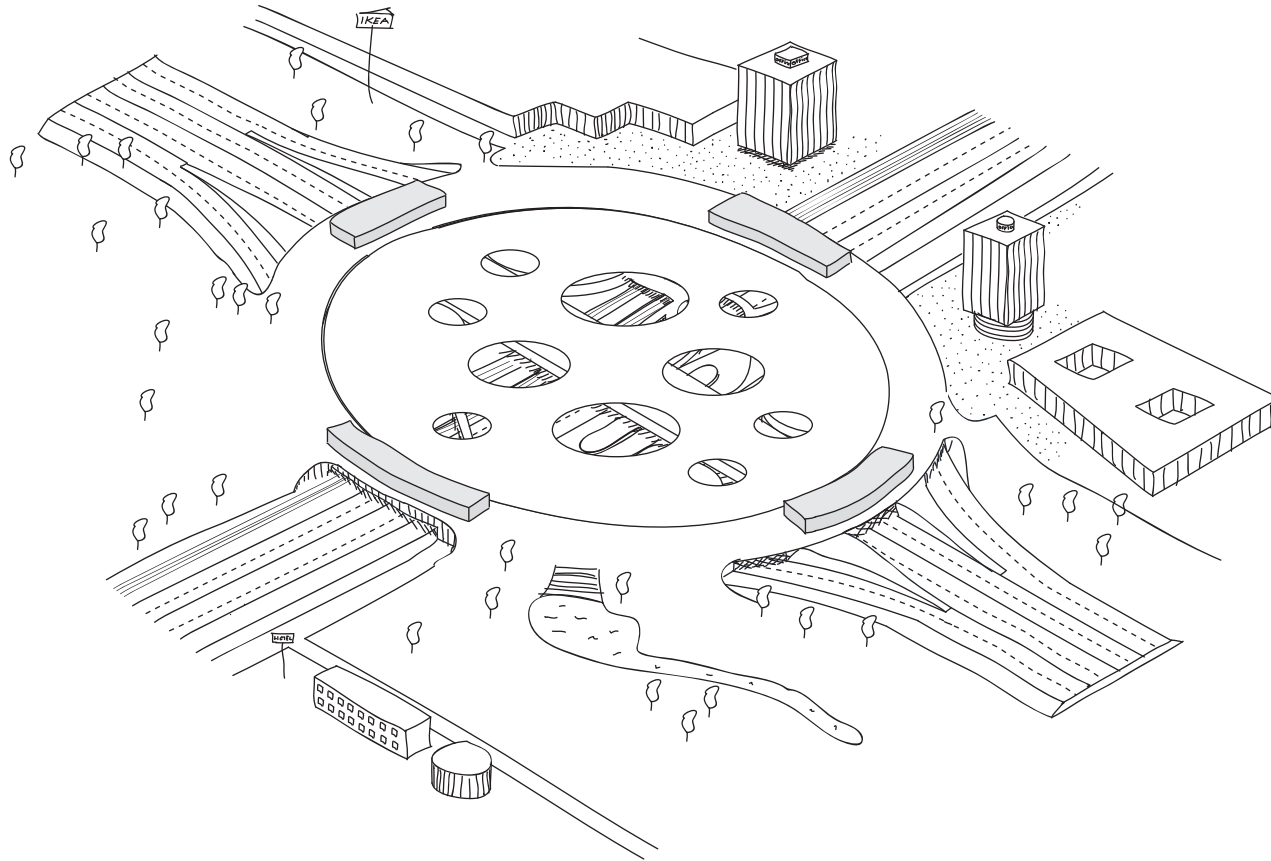
BUILDING STRUCTURE



A SQUARE FILLS UP THE MIDDLE SPACE

DESIGN

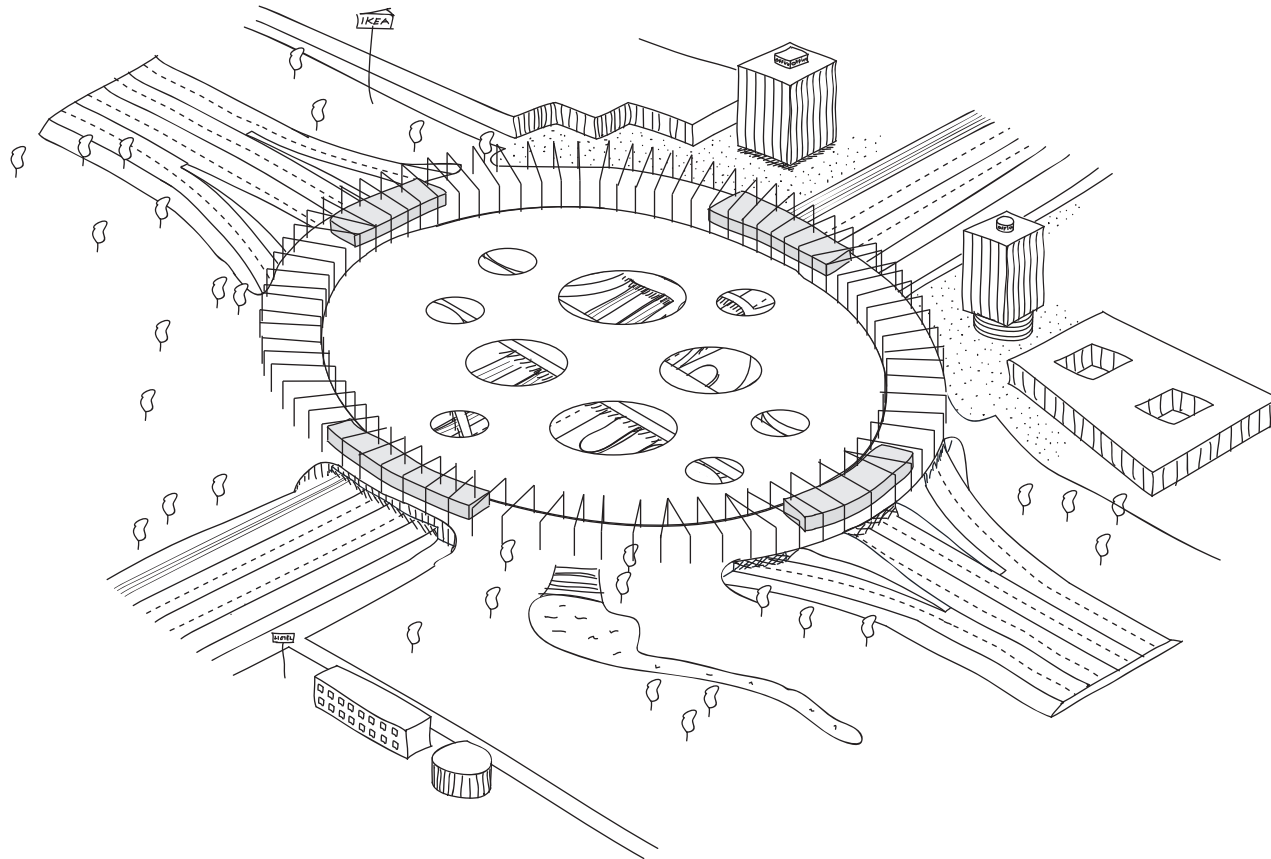
BUILDING STRUCTURE



PROGRAM IS PLACED ON THE NEW DECK

DESIGN

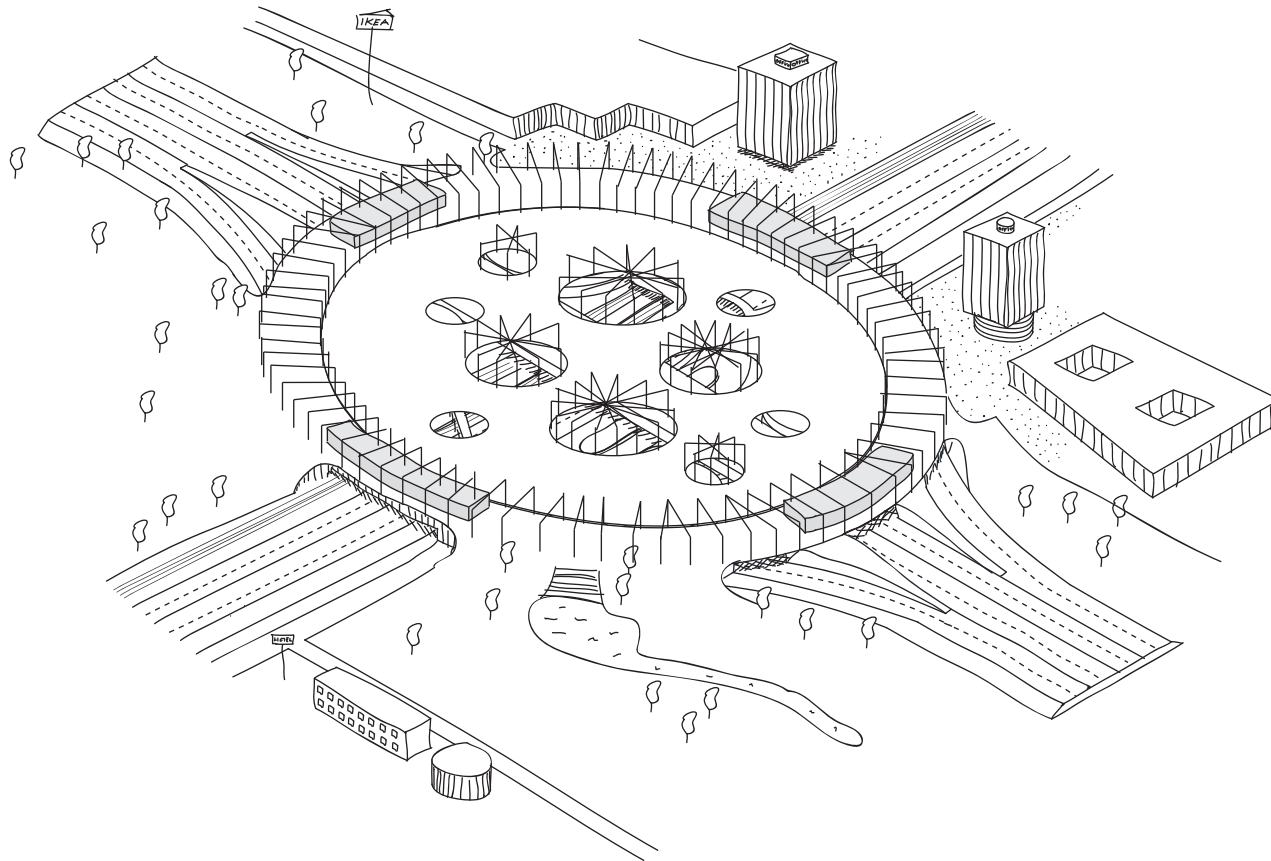
BUILDING STRUCTURE



PORTALS SHELTER PEOPLE AND PROGRAM

DESIGN

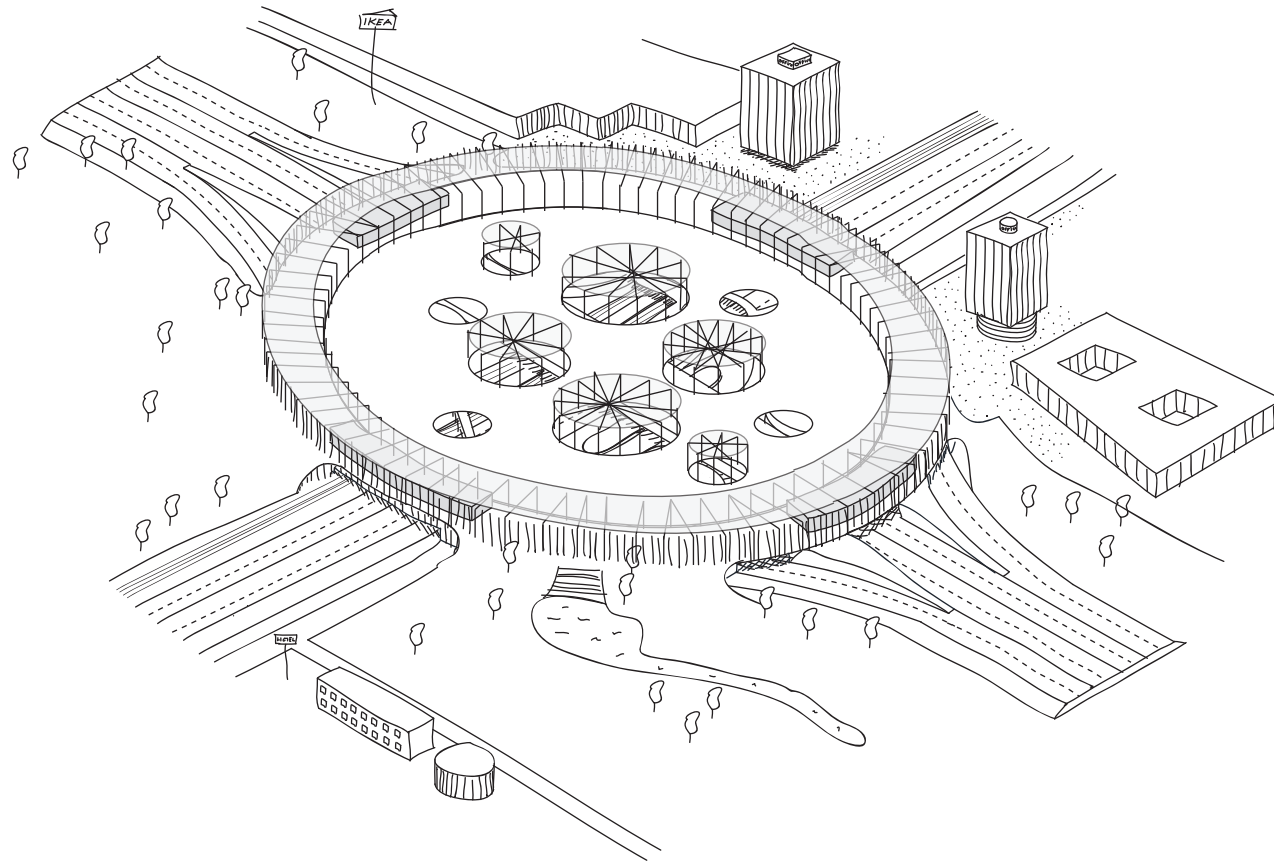
BUILDING STRUCTURE



THE STATION WITH ROOFS ARE ADDED TO THE
SQAURE

DESIGN

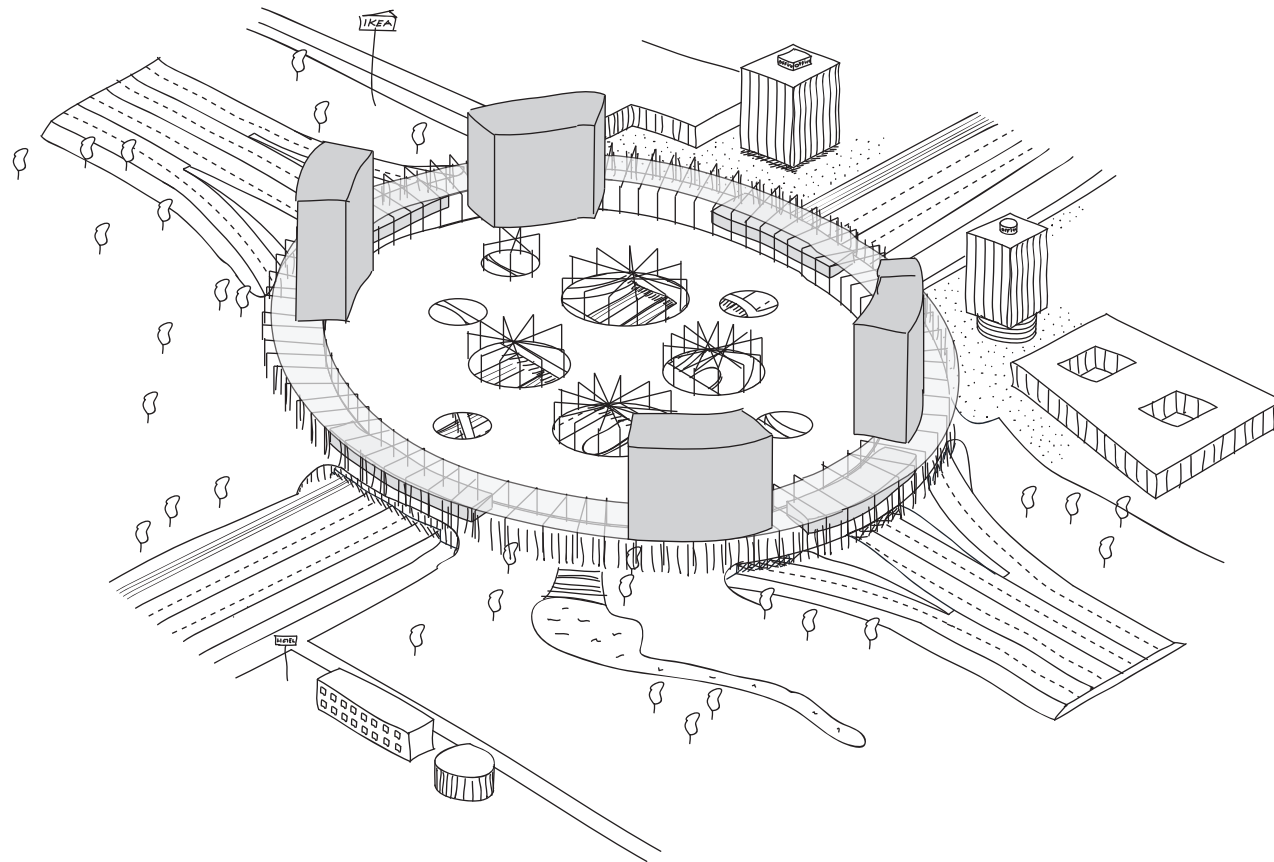
BUILDING STRUCTURE



SOUND ABSORBENT FACADE AND GLASS ROOF
ADDED

DESIGN

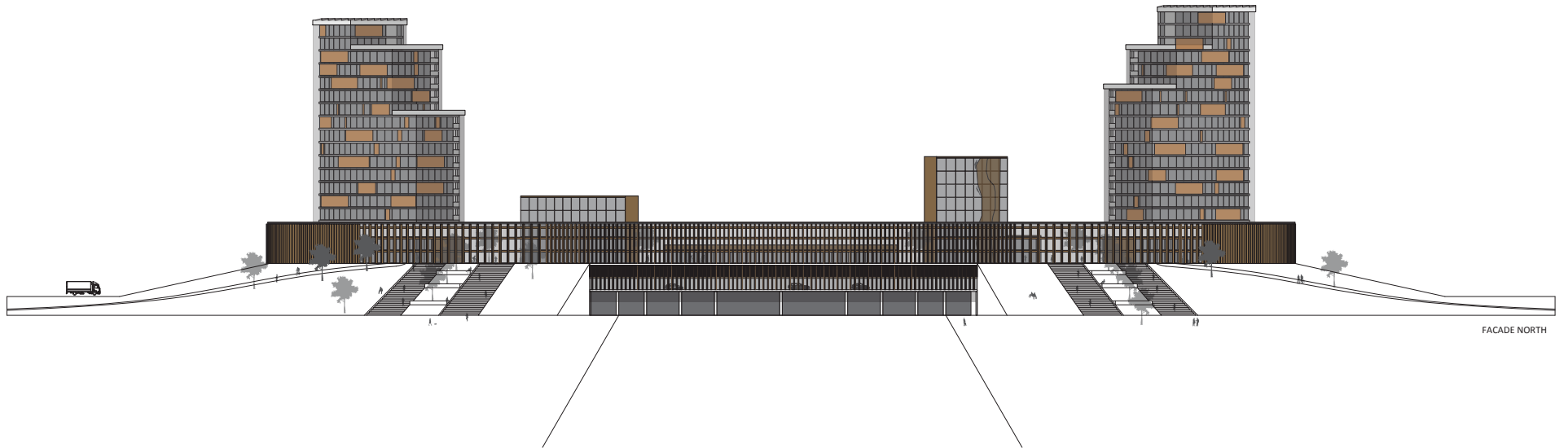
BUILDING STRUCTURE



THE ADDITIONAL PROGRAM FORMS TOWERS

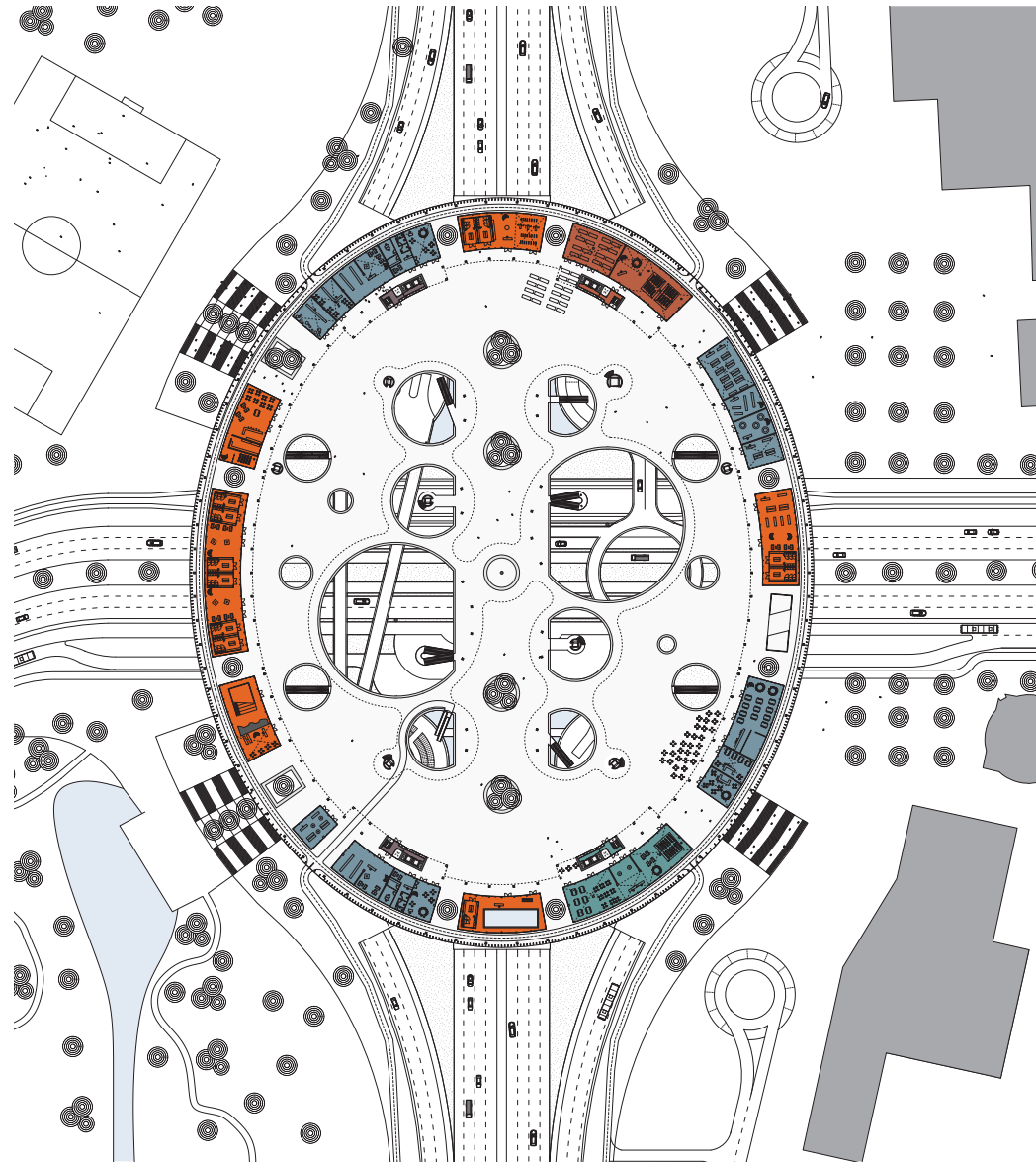
DESIGN

OUTSIDE IMPRESSION

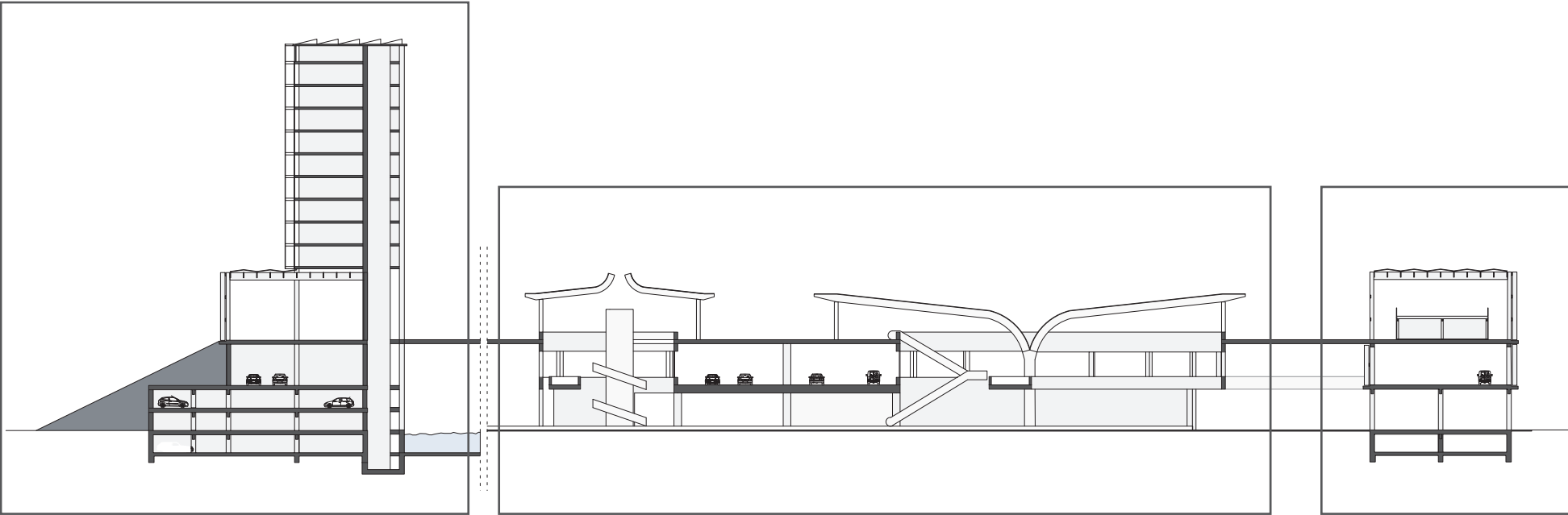


DESIGN

INSIDE CONFIGURATION



DESIGN SECTION



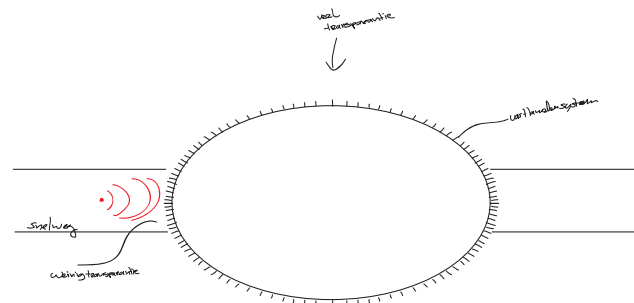
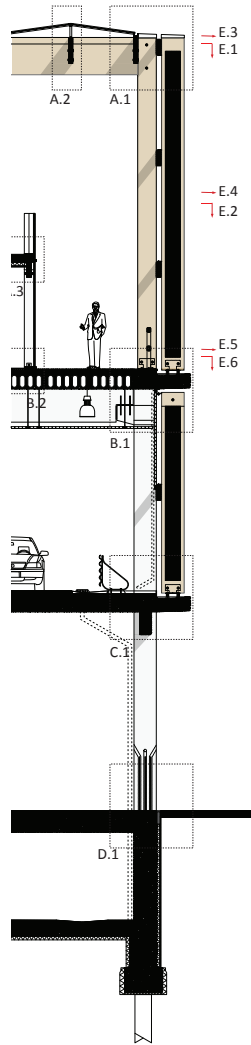
VIABLE

LINK

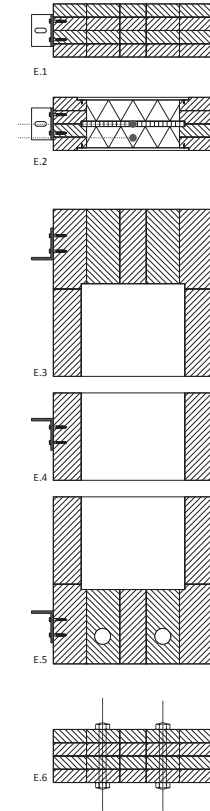
CONNECTION
IMPULS

DESIGN

SOUND

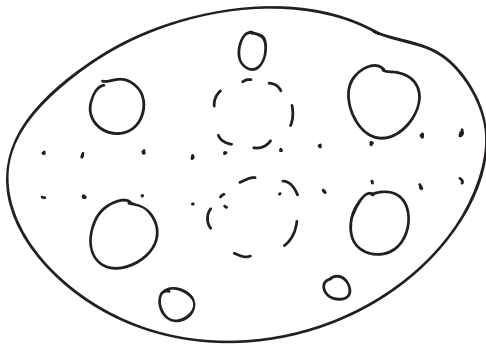
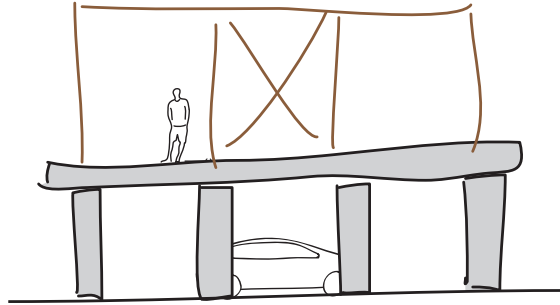


POSSIBLE 13 dB REDUCTION

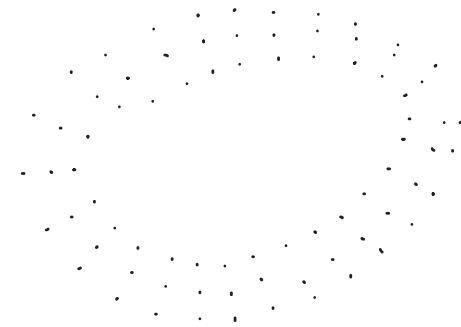


DESIGN

CONSTRUCTION PRINCIPLES



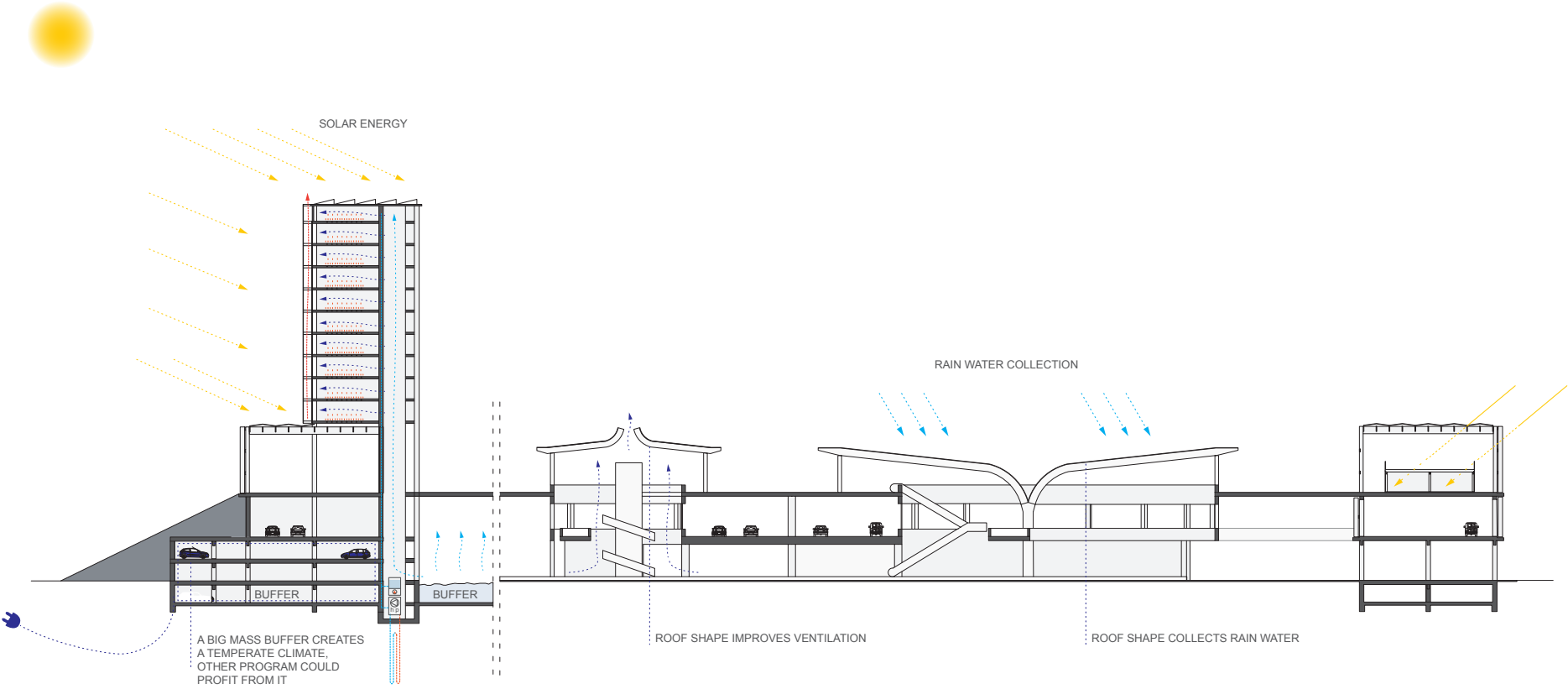
CONCRETE



WOOD

DESIGN

CLIMATE AND ENERGY PRINCIPLES



DESIGN

QUALITIES

IMPROVED CONNECTION ON MULTIPLE LEVELS

FROM LEFT OVER SPACE TO NEW COMPACT
CENTER

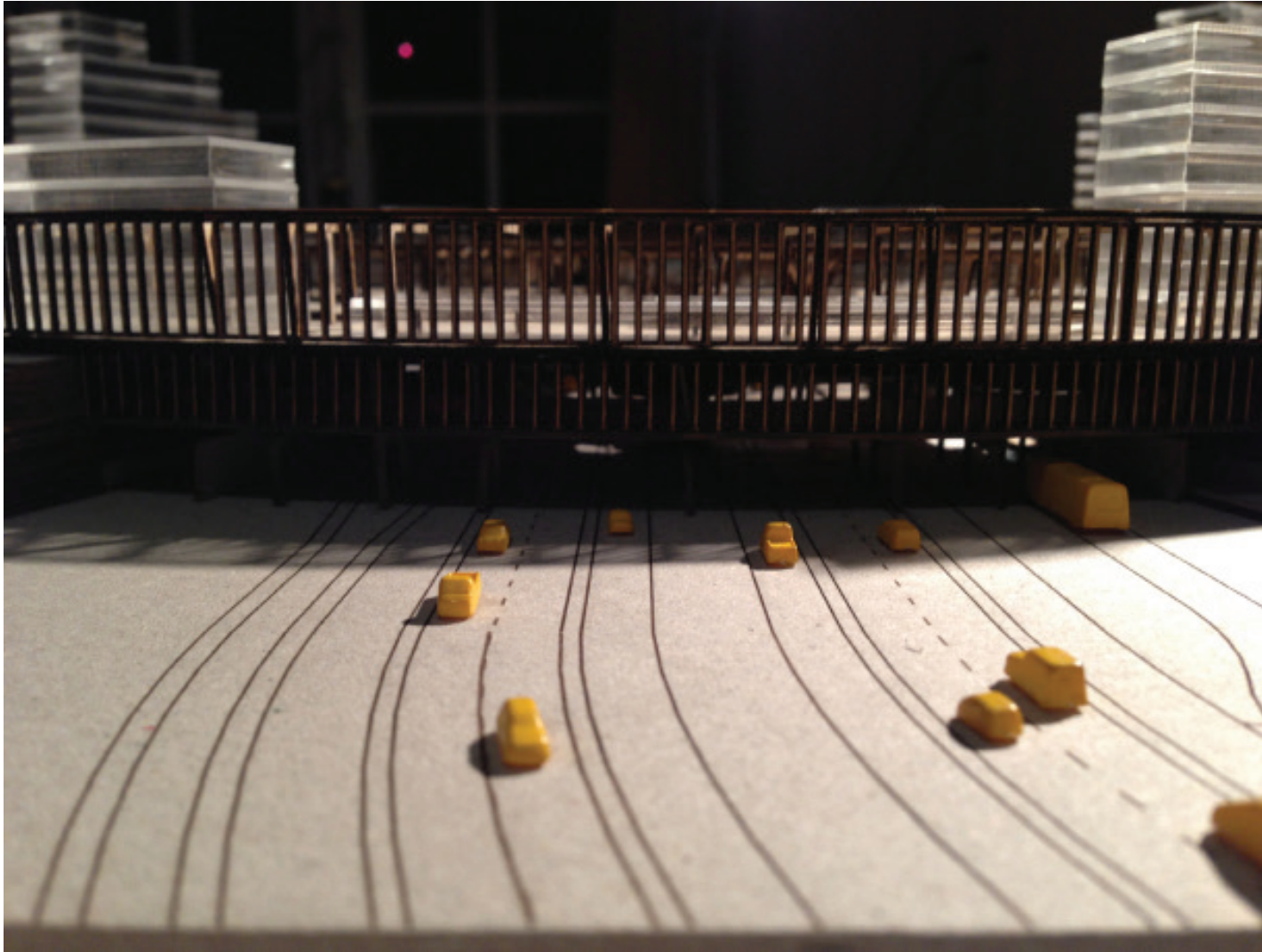
EASY ACCESS TRANSIT LOCATION

INCENTIVE TOWARDS NEW MOBILITY TRENDS

CITY MANIFESTS ITSELF ON THE HIGHWAY

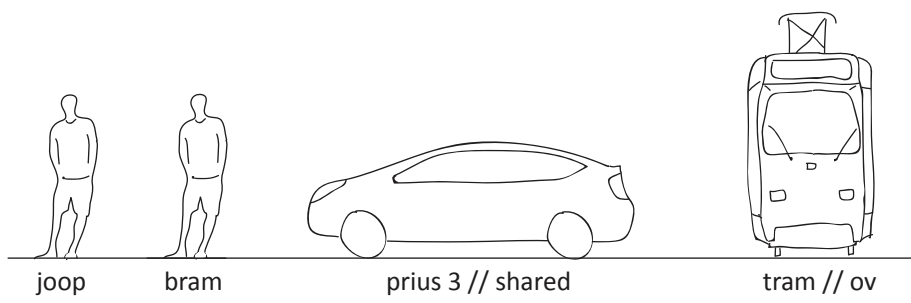
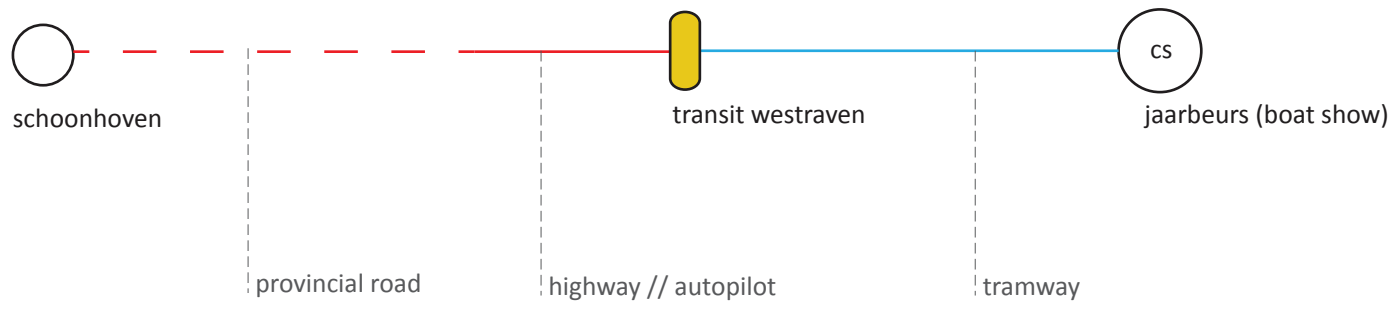
DESIGN

EXPERIENCE



DESIGN

USER AND ROUTE

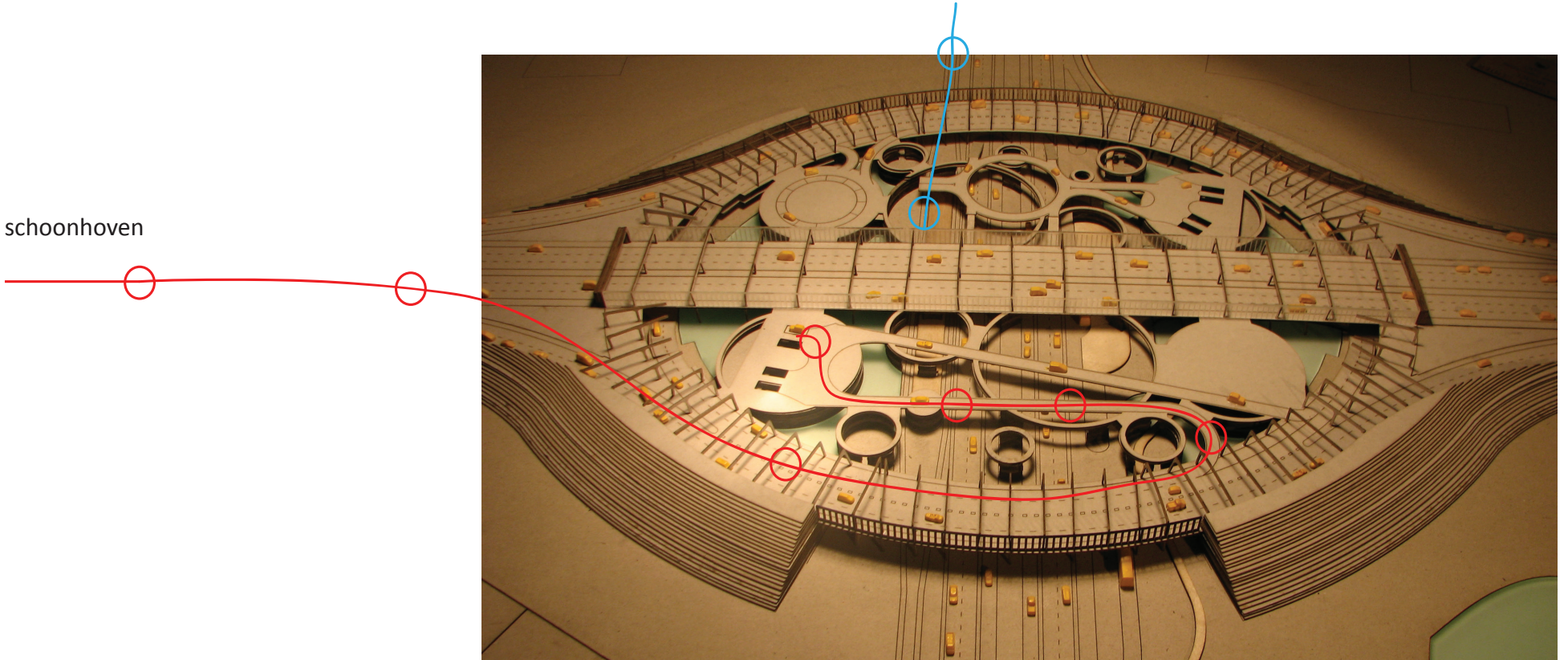


DESIGN

USER AND ROUTE

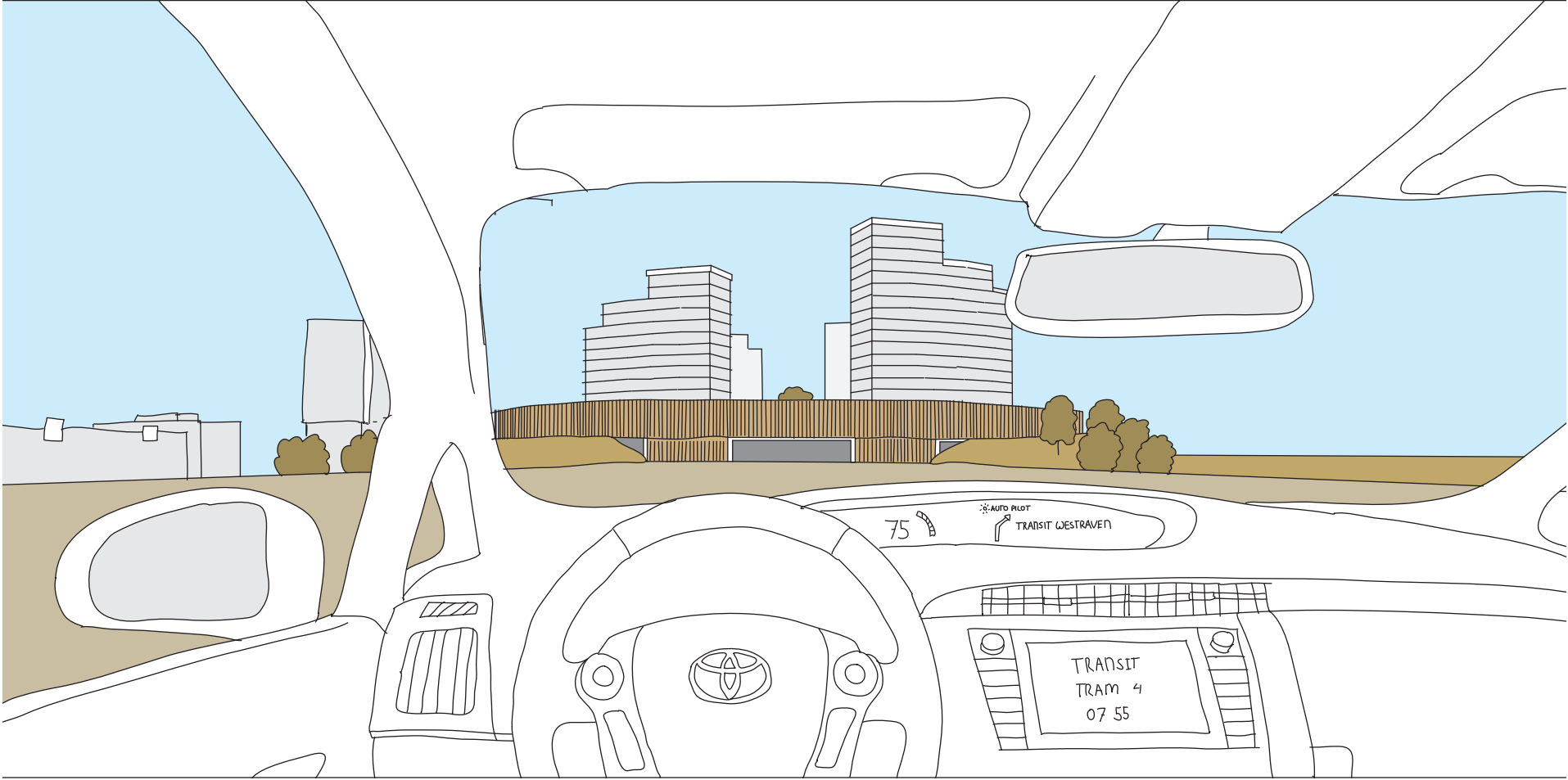
jaarbeurs (boat show)

schoonhoven



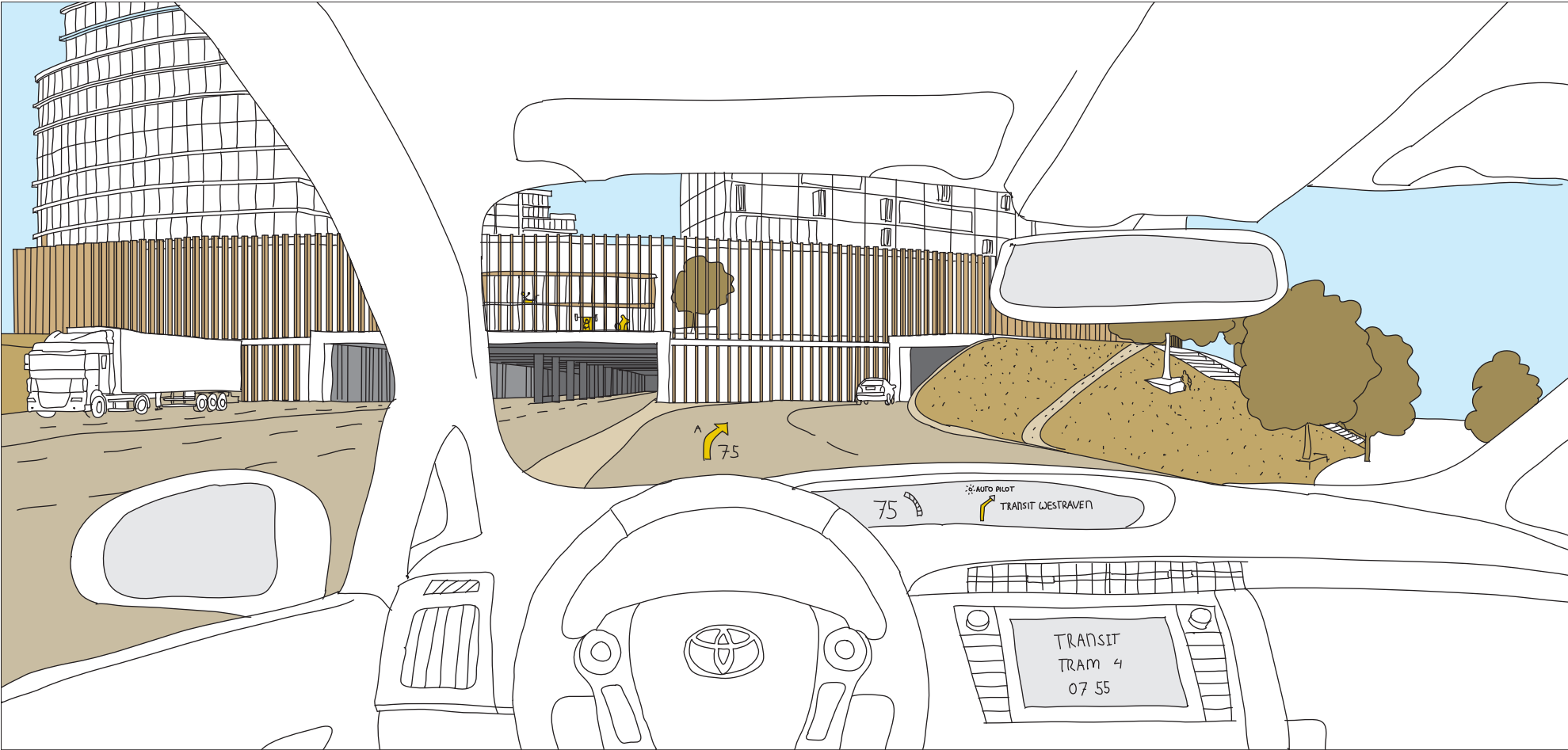
DESIGN

IMPRESSIONS



DESIGN

IMPRESSIONS



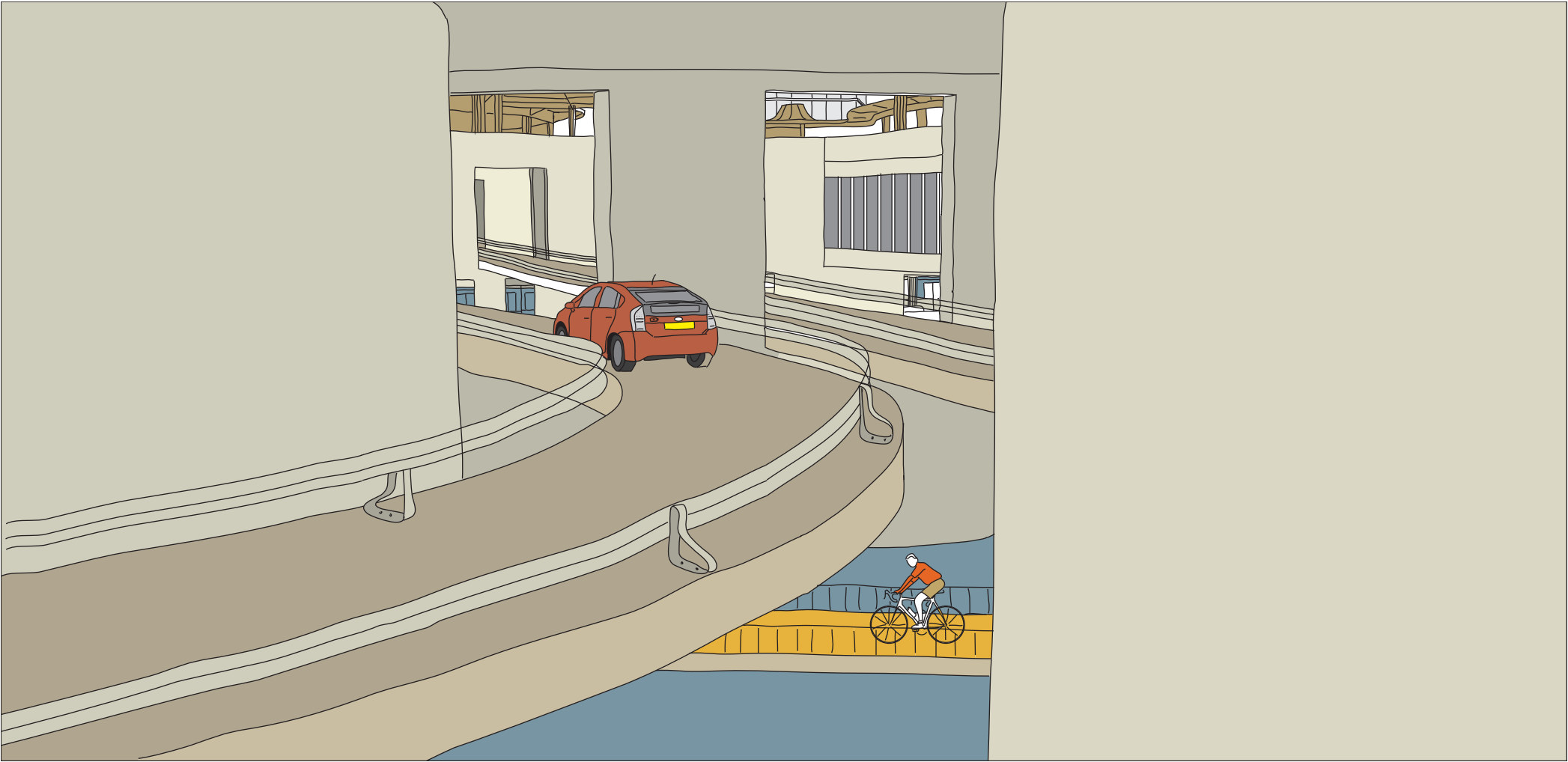
DESIGN

IMPRESSIONS



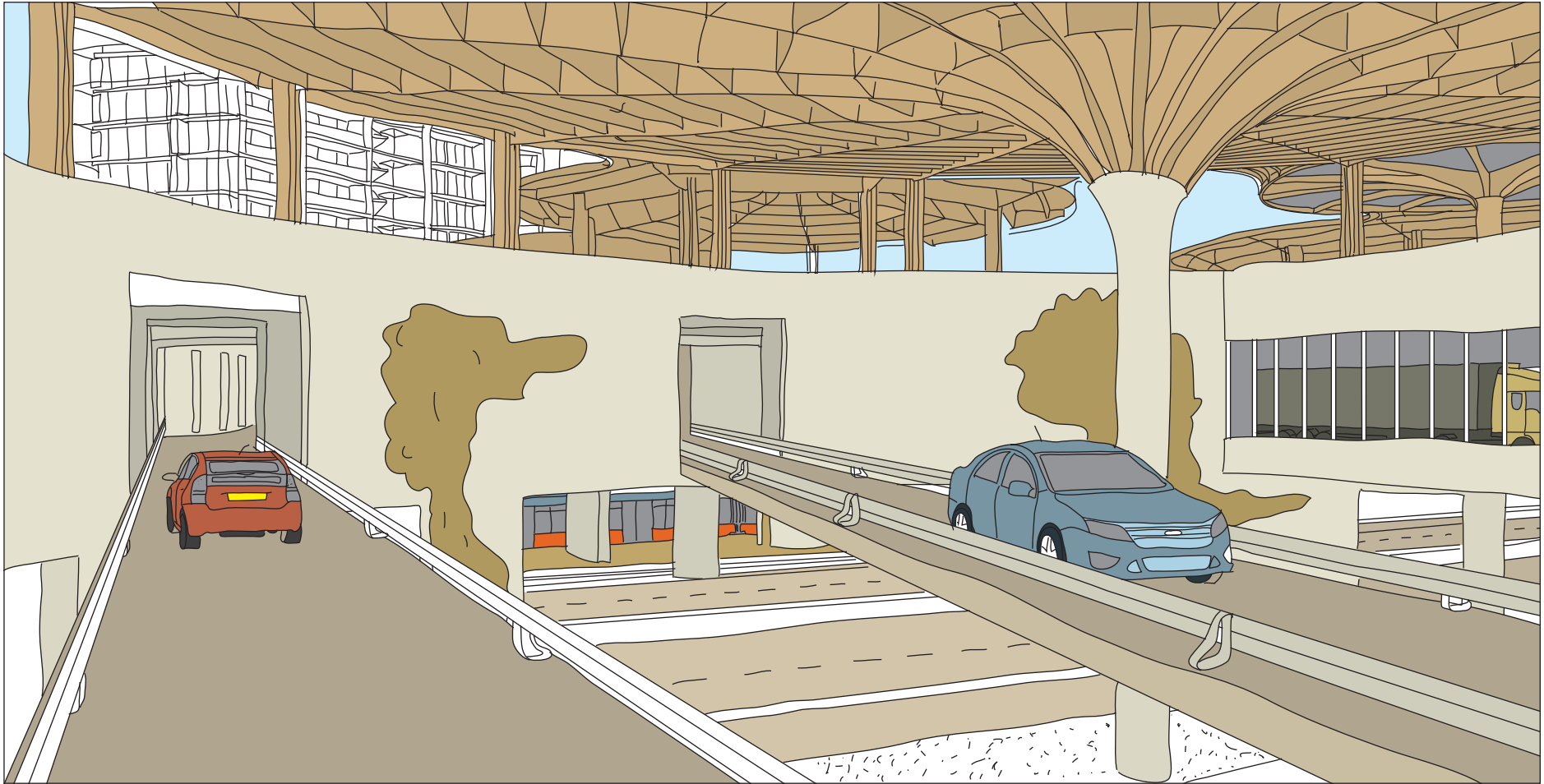
DESIGN

IMPRESSIONS



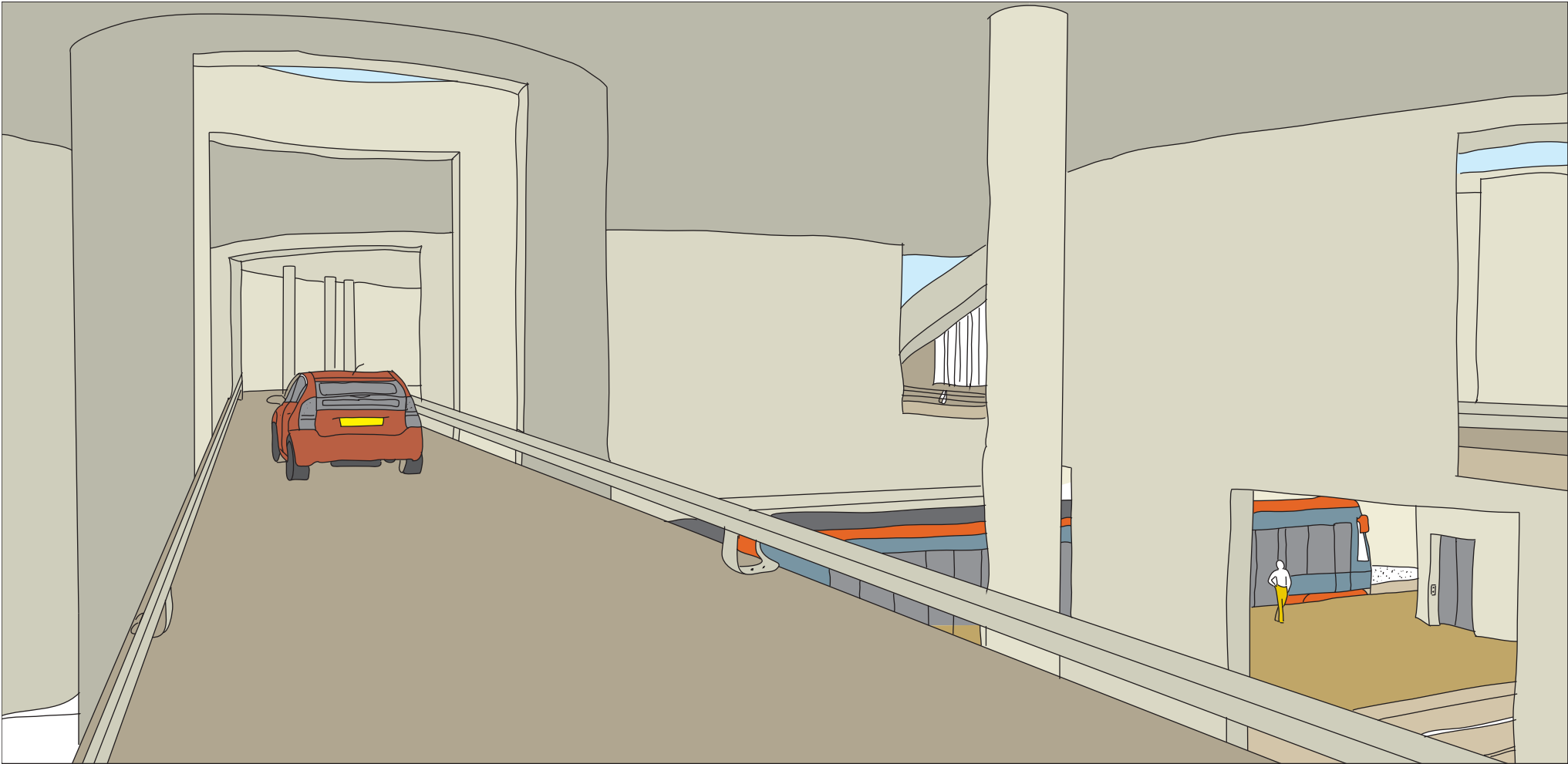
DESIGN

IMPRESSIONS



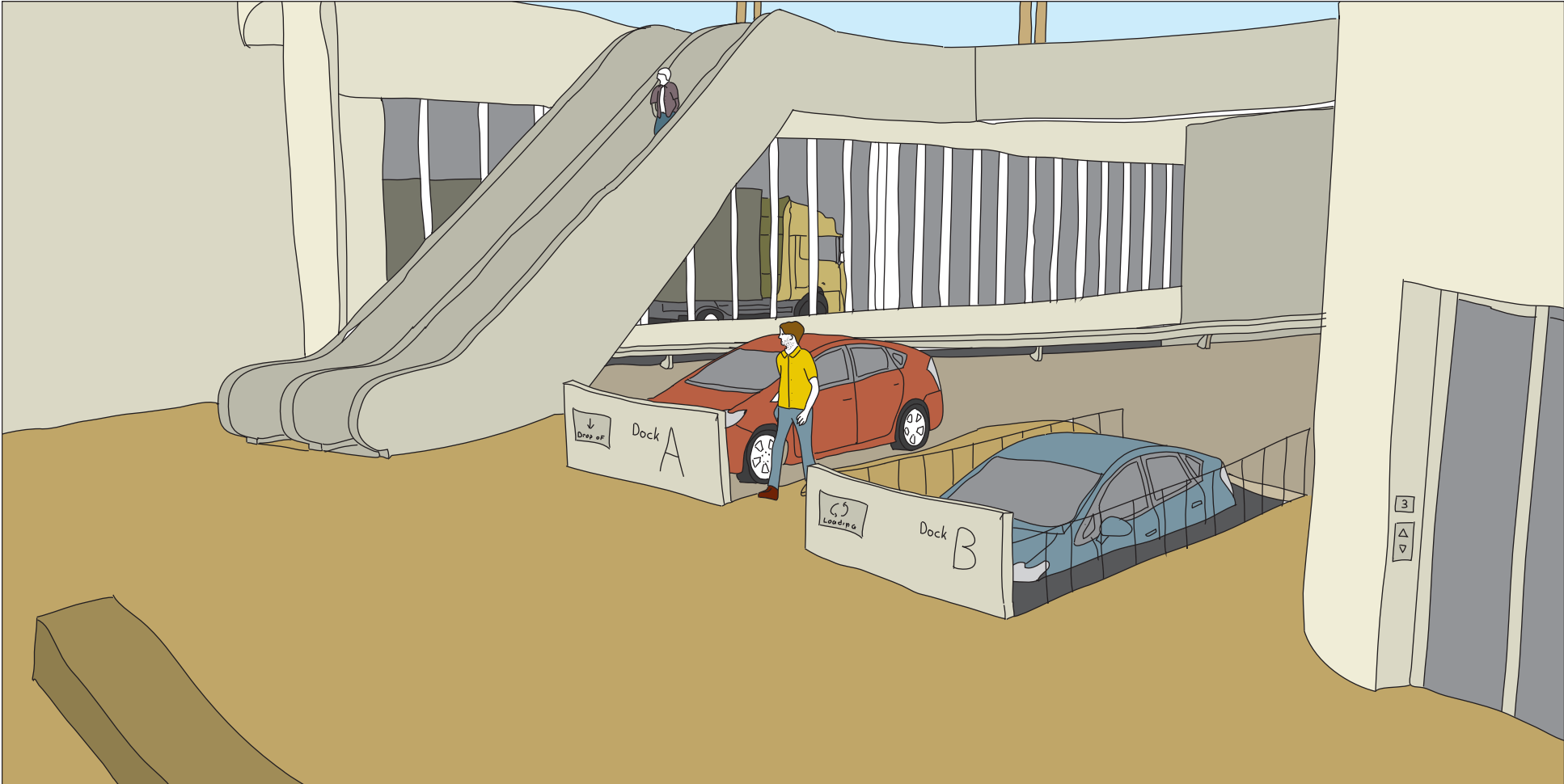
DESIGN

IMPRESSIONS



DESIGN

IMPRESSIONS



DESIGN IMPRESSIONS



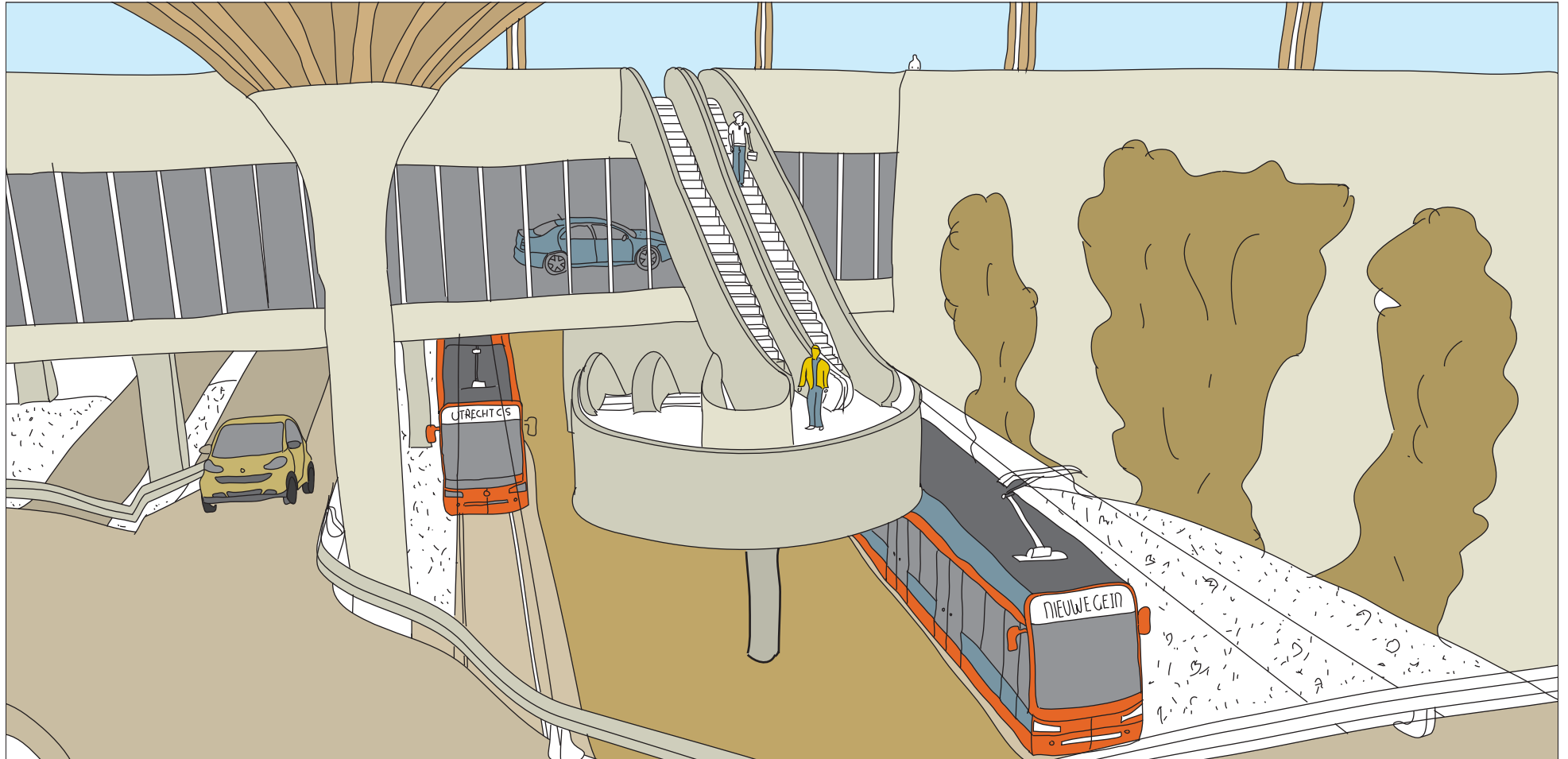
DESIGN

IMPRESSIONS



DESIGN

IMPRESSIONS



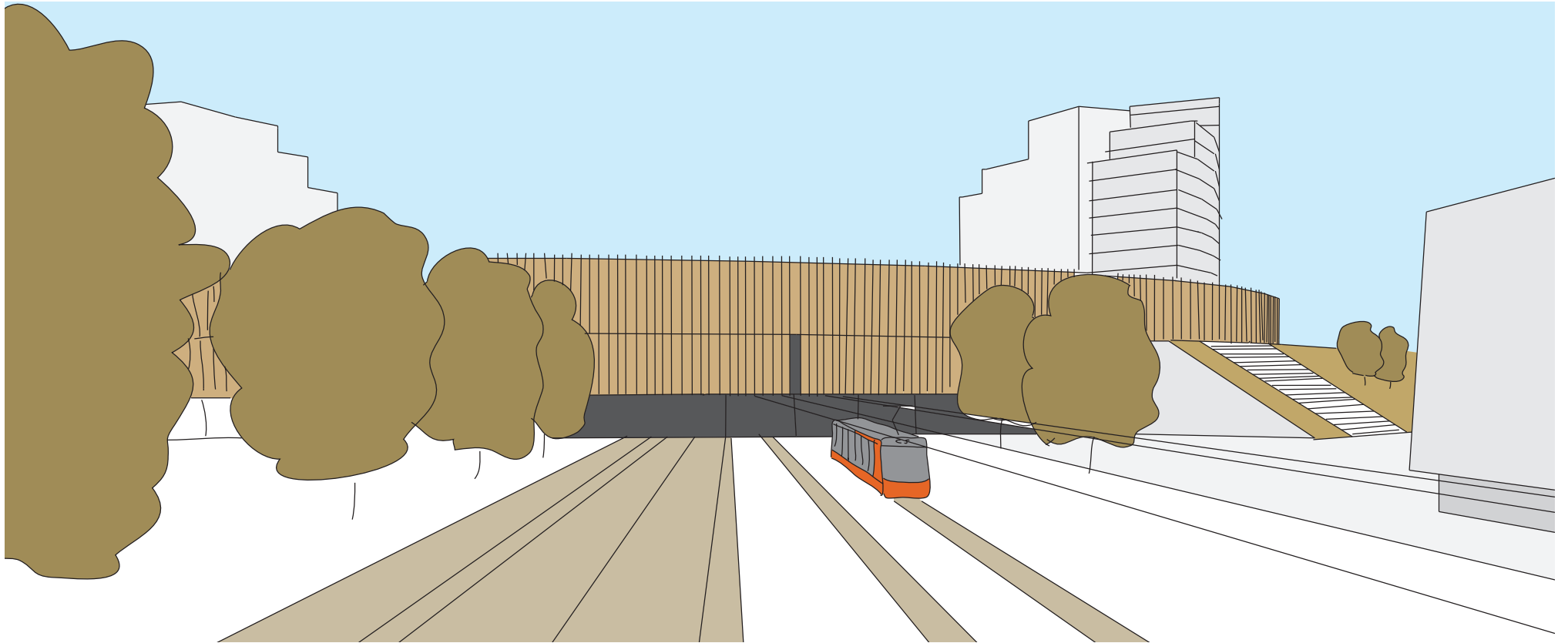
DESIGN

IMPRESSIONS

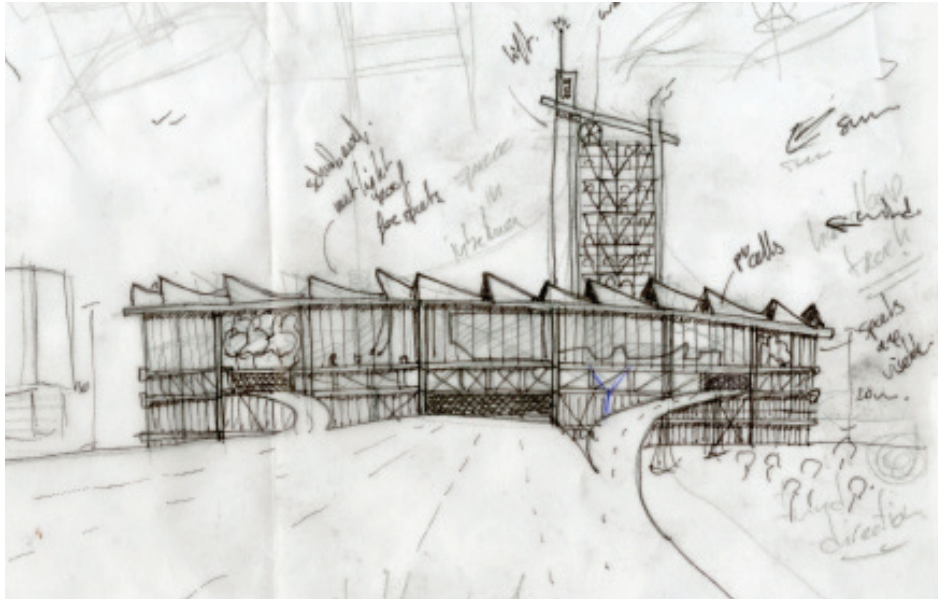


DESIGN

IMPRESSIONS



QUESTIONS?



Colofon

Cederick Ingen-Housz
Student number: 1371398

Graduation project: Highway as urban centre
Graduation studio: Architectural Engineering
Tutors: Monique Smit, Marcel Bilow,
Maarten Meijs
Commissioner: Remon Rooij / Peter Barendse

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