



Parallel Session 1 – Station Design 1

Transit Oriented Development Case Study - Mechelen, Belgium



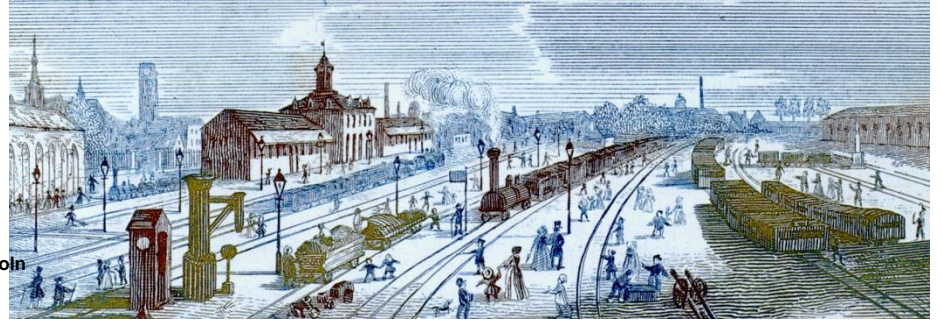
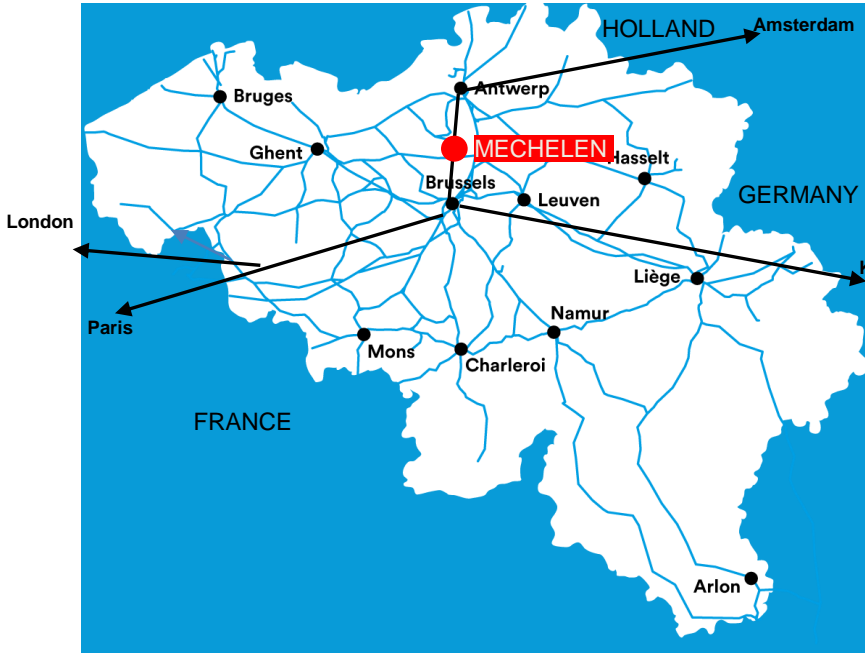
UIC next station
TEHRAN 2019

Jean-Claude Thirionet

SNCB / NMBS Stations

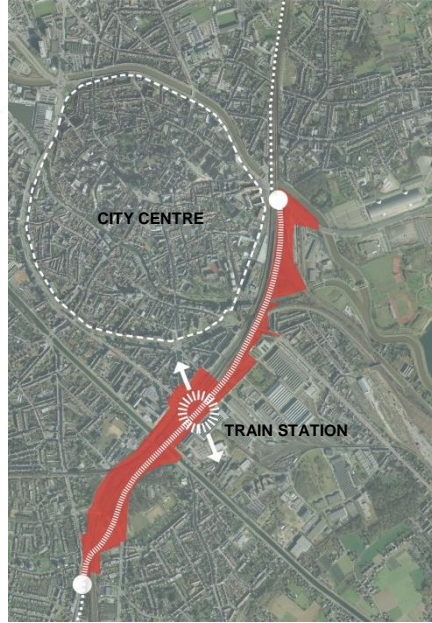
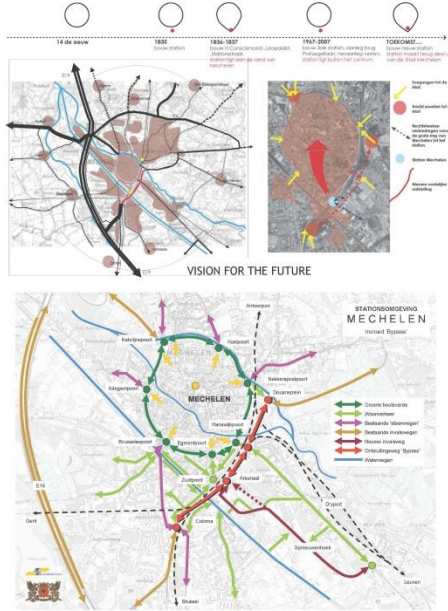
Senior Expert

Belgium network

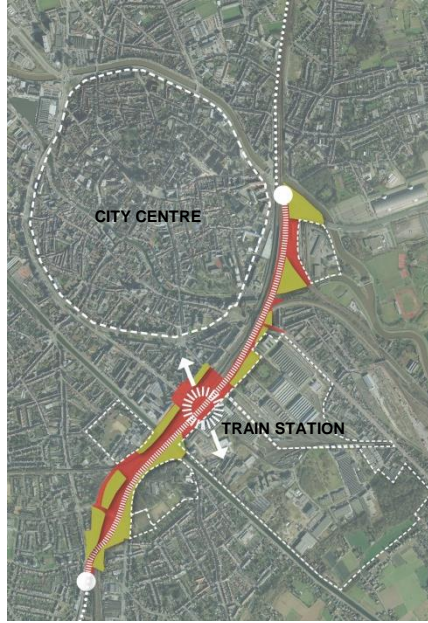


3.607 km lines (314 km high speed)
6.515 km tracks
5.851 km electrified
554 stations

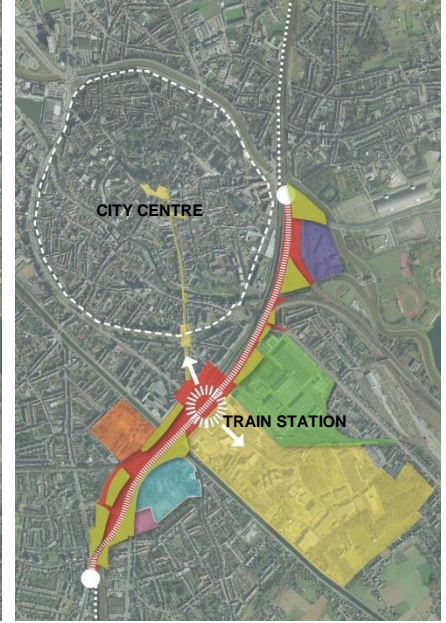
Infrastructure as a Motor for Urban Development



BUNDLING OF INFRASTRUCTURE



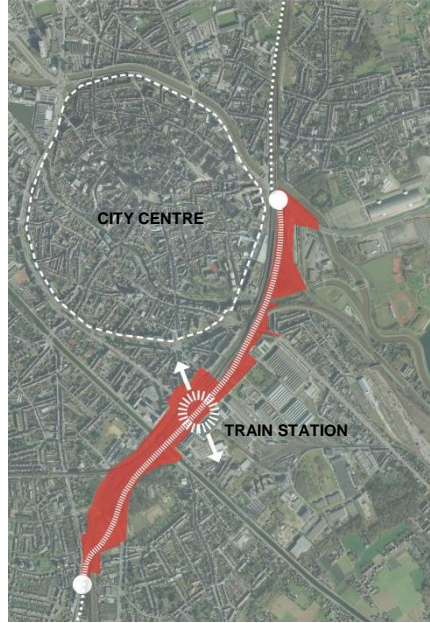
THE CREATION OF PUBLIC SPACE



URBAN DEVELOPMENT

Infrastructure as a Motor for Urban Development

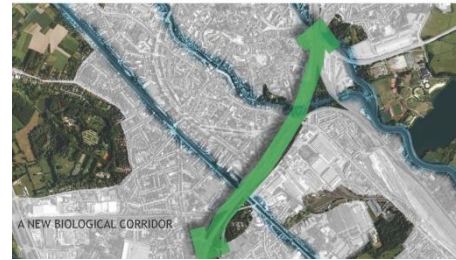
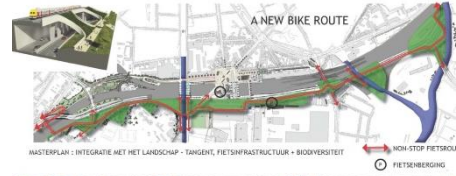
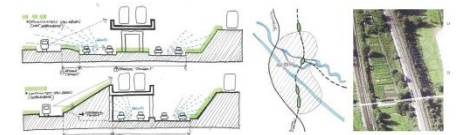
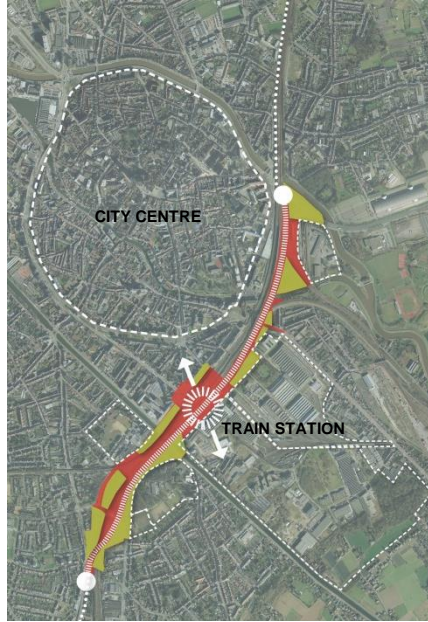
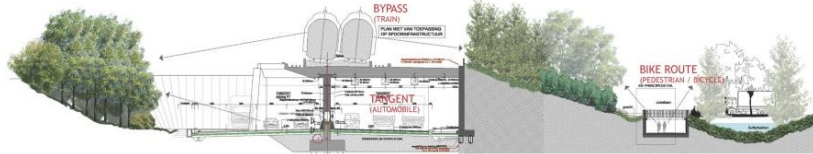
THE COMPRESSION OF 3 TRAFFIC INFRASTRUCTURES INTO A SINGLE INTERWOVEN 'ORGANISM'.



BUNDLING OF INFRASTRUCTURE

Infrastructure as a Motor for Urban Development

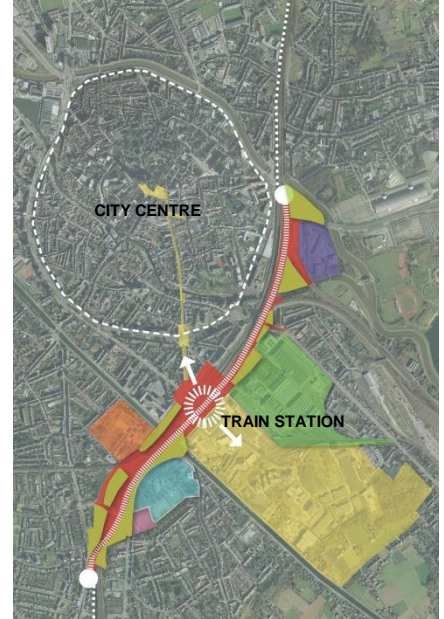
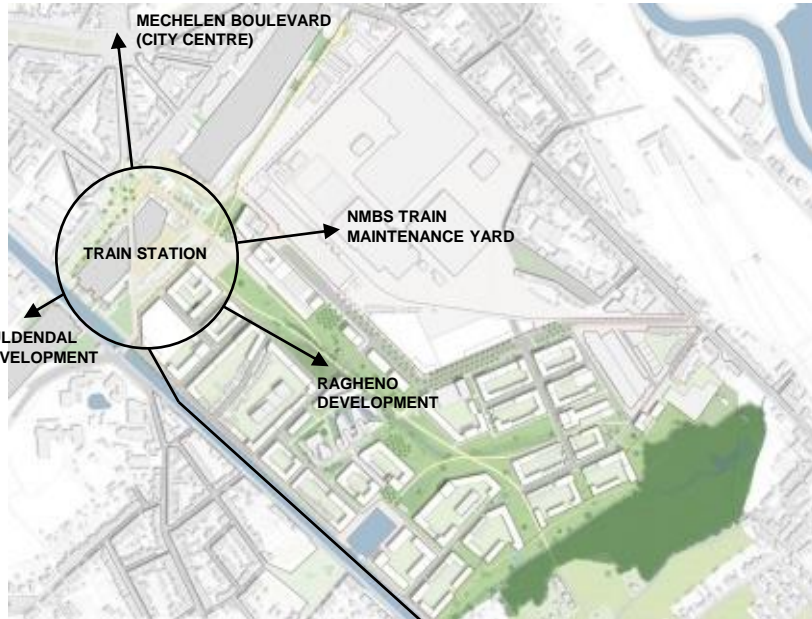
RECLAIMED URBAN SPACE > A NEW BIOLOGICAL CORRIDOR THROUGH THE CITY VALORIZED AS A BICYCLE ROUTE AND PUBLIC PARK LANDSCAPE.



THE CREATION OF PUBLIC SPACE

Infrastructure as a Motor for Urban Development

OPPORTUNITY BREEDS OPPORTUNITY > THE COMPRESSION OF TRAFFIC INFRASTRUCTURE AND THE VALORIZATION OF RECLAIMED URBAN SPACE TOGETHER STIMULATE LOCALISED URBAN DEVELOPMENT.



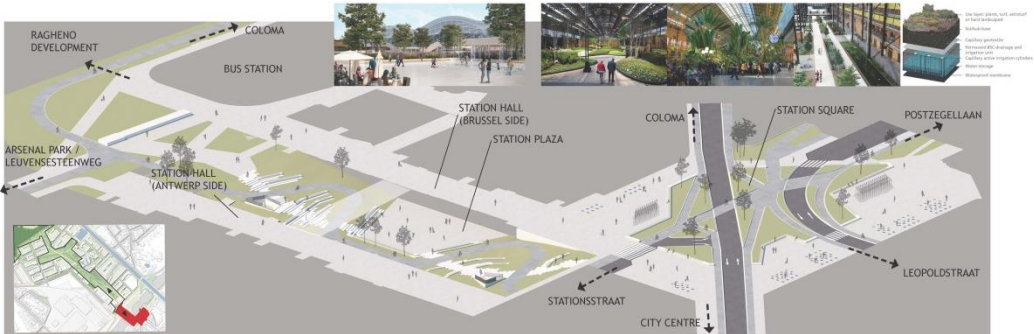
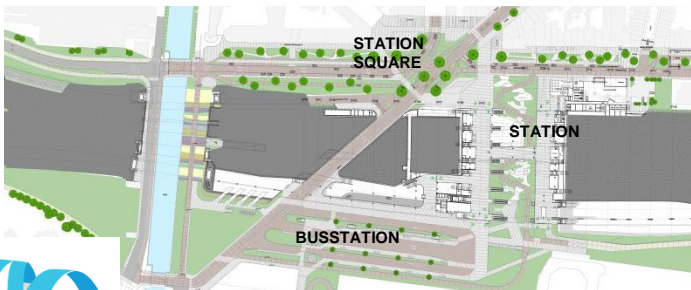
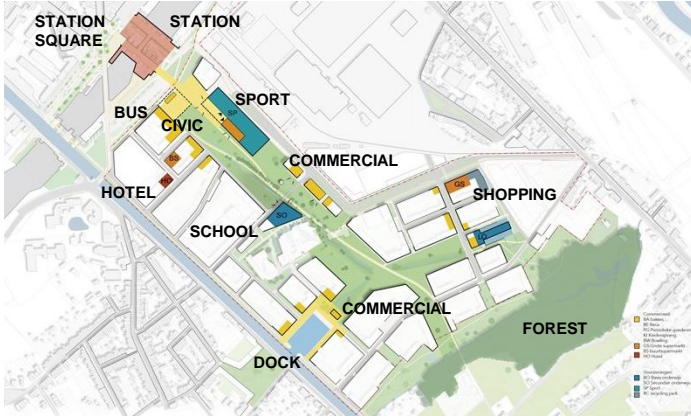
THE TRAIN STATION AS BOTH A MULTI MODAL TRANSPORTATION HUB + AN URBAN GENERATOR > A NEW 'CENTRE' WITHIN THE FABRIC OF A NEW URBAN DISTRICT.



PLANCKENDAEL ANIMAL PARK

Infrastructure as a Motor for Urban Development

MASTERPLANNING > INTEGRATION OF TRAIN STATION + URBAN DEVELOPMENT (FUNCTIONAL SYNERGY & THE STRUCTURING OF PUBLIC OPEN SPACE).



The Train Station as a Machine for Mobility

THE 'STATIONSPLAZA' AS AN EXTENSION OF THE PUBLIC URBAN REALM > THE INTEGRATION OF PUBLIC OPEN SPACE AT THE HEART OF THE TRAIN STATION.



THE 'STATIONSPLAZA' AS BOTH CIVIC SPACE AND POINT OF PASSAGE THROUGH THE TRAIN STATION.

PROGRAMMED ANIMATION AND SPATIAL QUALITY WITHOUT HINDERING STATION FUNCTIONALITY.

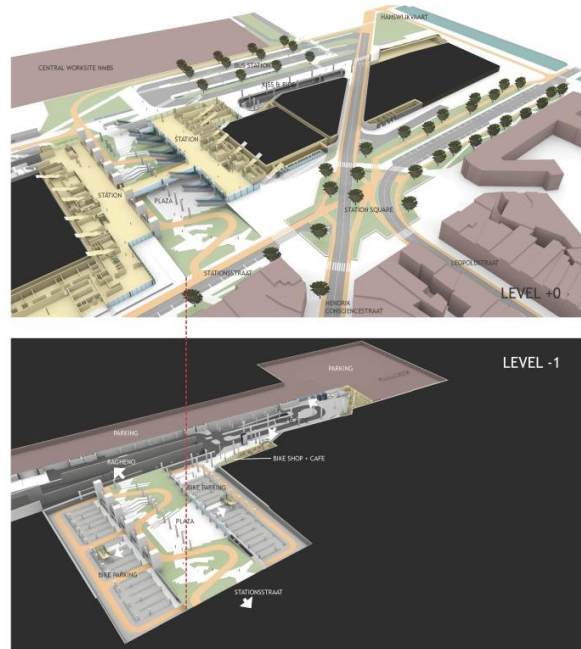


The Train Station as a Machine for Mobility

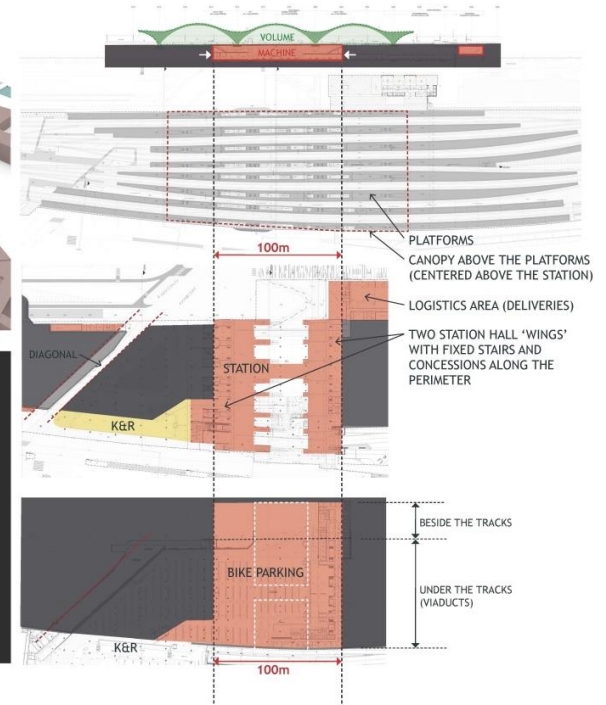
THE IMPORTANCE OF A COMPACT STATION > THE STACKING OF FUNCTIONS IN ORDER TO LIMIT TRANSIT TIMES BETWEEN MODI AND FACILITATE VISUAL CONTACT BETWEEN USER GROUPS.



SPATIAL CONTINUUM > SERVICES AND SHOPS LOCATED AT THE PERIMETER OF THE PLAN IN ORDER TO AVOID VISUAL OBSTRUCTIONS.



TRAIN STATION > ORGANIZATION, CONNECTIVITY + TRANSPARENCY

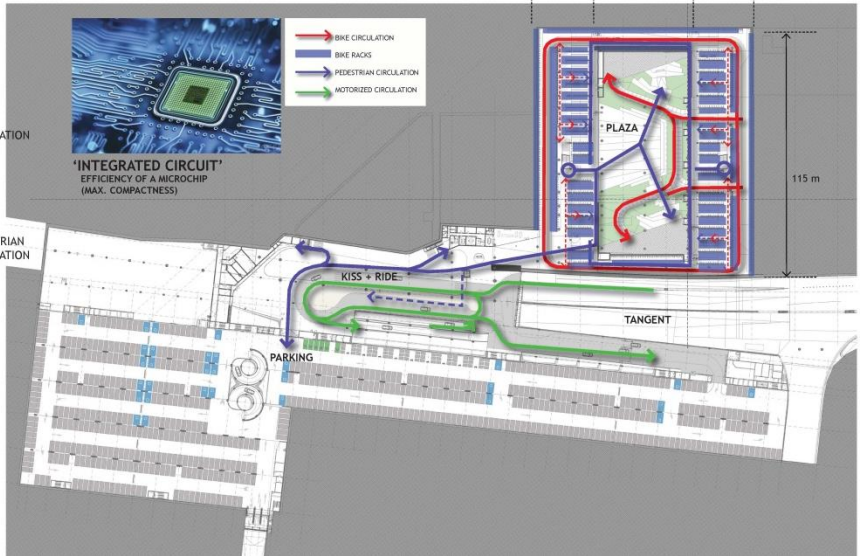
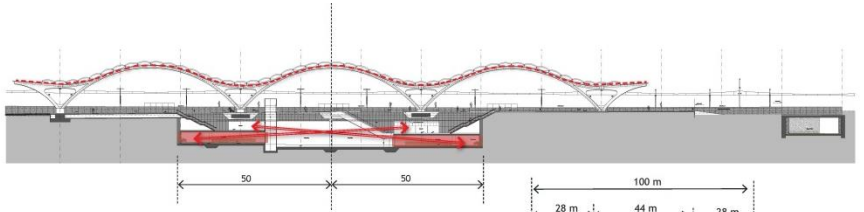
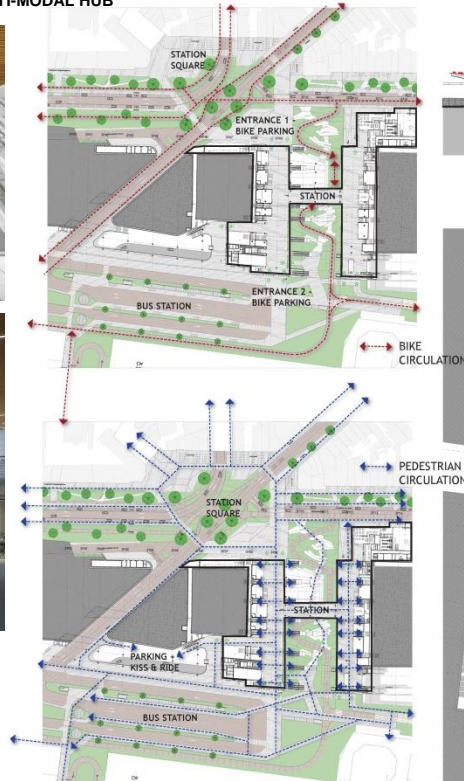


The Train Station as a Machine for Mobility

THE EFFICIENCY OF A COMPACT STATION > A MULTI-MODAL HUB



TRANSPARENCY > A STRONG VISUAL RELATIONSHIP (ORIENTATION AND SAFETY).

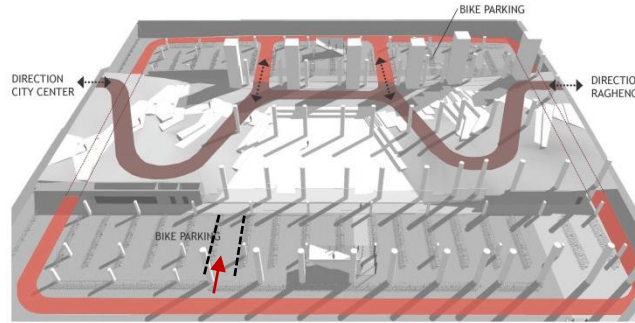


The Train Station as a Machine for Mobility

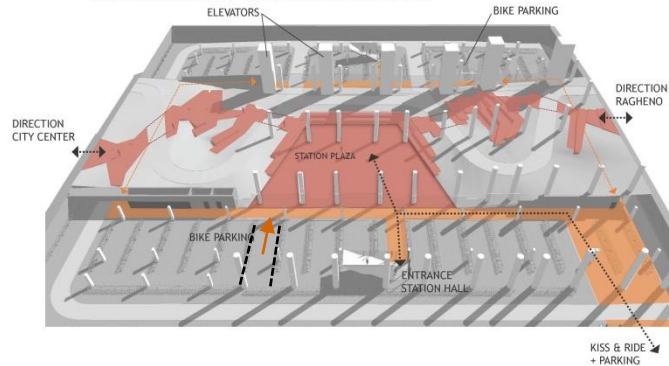
THE STATION AS A TRANSPARENT TRANSFERIUM WHERE CIRCULATION FLOWS BETWEEN PEDESTRIANS AND CYCLISTS ARE COORDINATED



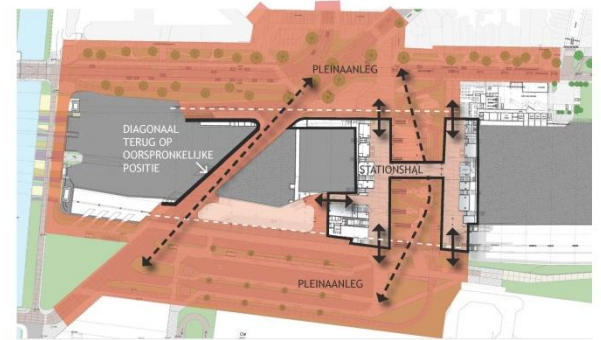
ORGANIZATION OF BIKE CIRCULATION



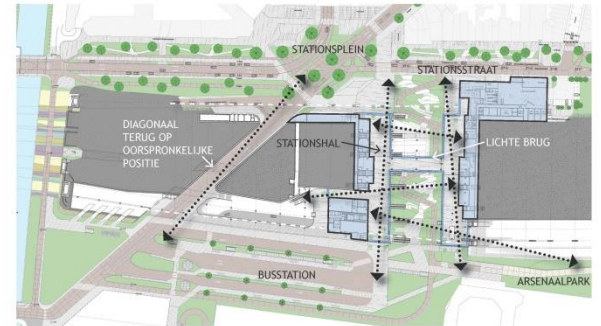
ORGANIZATION OF PEDESTRIAN CIRCULATION



URBAN CONNECTIVITY / PUBLIC SPACE



THE TRAIN STATION AS TRANSPARENT TRANSFERIUM



The Train Station as a Machine for Mobility

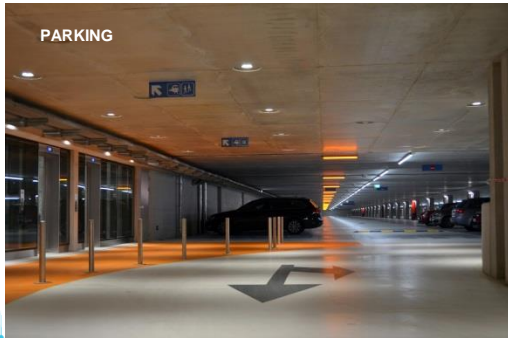
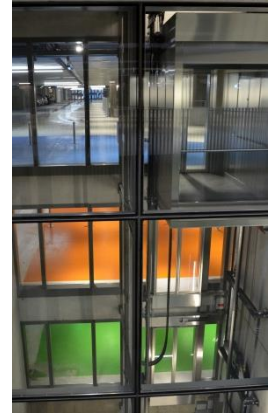
THE TRAIN STATION AS A DISTRIBUTION POINT FOR TRANSPORT MODI > THE INTEGRATION OF AN AUTOMOBILE 'TANGENT' AND AN UNDERGROUND PARKING (2,000 AUTO'S).



KISS & RIDE



CIRCULATION PARKING



PARKING



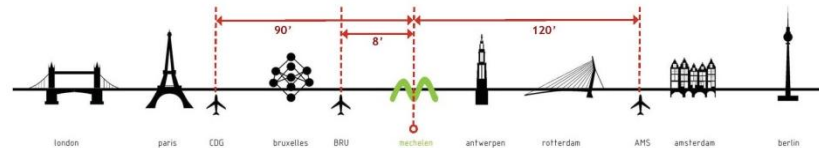
CIRCULATION & ENTRANCE PARKING



TANGENT TUNNEL

TRAFFIC-FREE STATION ENVIRONMENT

INTERCONNECTIVITY > TO MECHELEN CITY CENTRE, RAGHENO AND GULDENDAL DEVELOPMENTS AND BRUSSELS AIRPORT (IN ONLY 8 MINUTES).



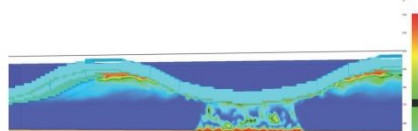
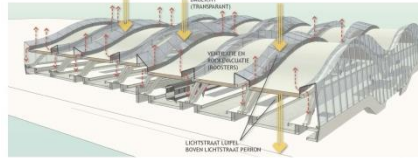
The Train Station as a Machine for Mobility

A CANOPY DESIGNED FOR COMFORT AND SAFETY



- ETFE CUSIONS INSTEAD OF GLASS
- COMPOSITE STEEL AND WOOD CONSTRUCTION
- WIND TUNNEL ANALYSIS FOR WIND EFFECTS
- CFD STUDIES FOR FIRE SAFETY

LIGHT STREETS > LIGHT, VENTILATION + FIRE SAFETY (SMOKE EVACUATION)



CFD STUDY > CHARACTERISTICS OF SMOKE (FSEC, BELGIUM)

FIRE ANALYSIS > STRUCTURAL INTEGRITY (DELTA, BELGIUM) :

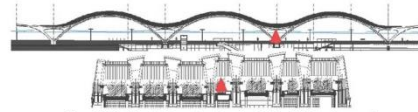


Figure 3 : Position du foyer dans le scénario étudié (triangle rouge).

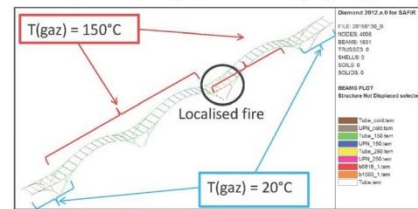
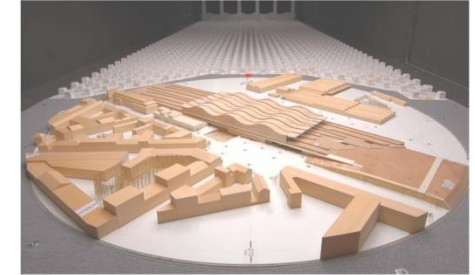
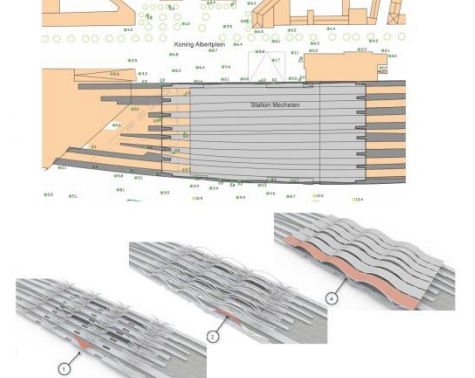


Figure 32 : Definition of the thermal zones

WIND ANALYSE > PASSENGER COMFORT (PEUTZ, NETHERLANDS) : > OPTIMAL AFTER 3 PHASES IN THE WINDTUNNEL (DESIGN, TEST + ADAPT)



E3.3 Hinderkans en beoordeling windklimaat opvallende bebouingssituatie, maaiveld niveau



MODULATION AND REPETITION OF STRUCTURAL ELEMENTS

Thank you
for your kind attention