

RETHINK RAILWAY STATIONS IN AFRICA :

WHY AND HOW ?

African Railway Thursdays

8th webinar

28 April 2022

100 YEARS
ANNIVERSARY





**AFRICAN
RAILWAY
THURSDAYS**

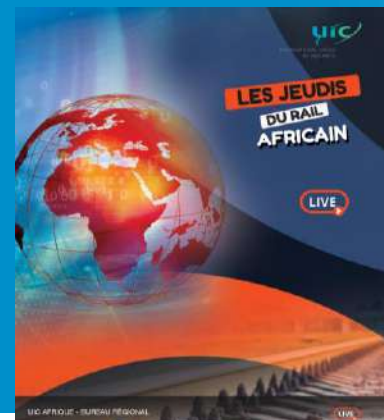
**"RETHINK RAILWAY STATIONS IN AFRICA :
WHY AND HOW ? "**



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- Turn off your mic when not speaking / **Coupez votre micro si vous ne parlez pas** 
- Speakers : to advance to the next slide please say “next slide” / **Orateurs : pour passer à la diapositive suivante merci de dire “diapositive suivante”**
- Please use the chat functionality to write a message to everyone (for example to ask a question after a presentation). / **Veillez utiliser le chat pour envoyer un message à tous ou poser une question.**
- Click on the language button located at the bottom right of your screen, and select the language you want to listen to during the meeting / **Cliquez sur le bouton ‘traduction’ en bas à droite de l’écran pour sélectionner une langue** 
- You can mute the “original language” to listen only to English, French, etc. / **Vous pouvez couper l’audio original pour écouter seulement en français ou en anglaise**
- This meeting will be recorded / **Cette réunion sera enregistrée.**



PROGRAMME

OPENING

13h-13h20

- Mr Mohamed Rabie Khlie, Chairman UIC Africa, UIC Vice-Chairman
- Mr François Davenne, UIC Director General

PANEL N°1

13h20-14h00

Development of Railway stations: from place of transit to place to live

Moderator: Marc Guigon

- *Global overview of the development of innovative and commercial activities within the railway stations*
- Speaker: Clément GAUTIER, UIC
- *Railway stations at the heart of the cities: example of Poland*
- Speaker: Paweł WRÓBLEWSKI, PKP
- *Model of transformation of Railway Stations in Morocco: overview and perspectives*
- Speaker: Mohamed CHAHID, ONCF
- Débats

PANEL N°2

14h00-14h40

Railway Station as cradle of intermodality, its crucial role in the sustainable mobility

Moderator: Said Nassiri

- *Management of intermodality within the railway stations, challenges of partnerships*
- Speaker: Paul VAN DONINCK, Jernhusen
- *Intermodal railway stations, prerogatives and international success stories*
- Speaker: Clément GAUTIER, UIC
- *Redevelopment project of Agha Station (center of Algiers) into an urban pole*
- Speaker: Abdelkader Nessab, SNTF
- *African metropolises and the challenges of intermobility: a look at some experiences*
- Speakers: Aziz Diop, SEN-TER, Hédi DHAOU, SNCFT
- Débat

PANEL N°3

14h55-15h50

Railway stations : what place in urban reconfiguration?

Moderator: Isabelle De Keyzer

- *Railway Stations as a driver of sustainable territorial development*
- Speaker: Maha Soltaniehha, AFRY Switzerland Ltd
- *The strategic positioning of railway stations in urban and rural development*
- Speaker: David HUGHES, Irish Rail
- *The development of railway station environment, a factor of attractiveness and usefulness*
- Speaker: Christophe CHEVALIER, AREP
- Débat

CONCLUSIONS

15h50-16h00

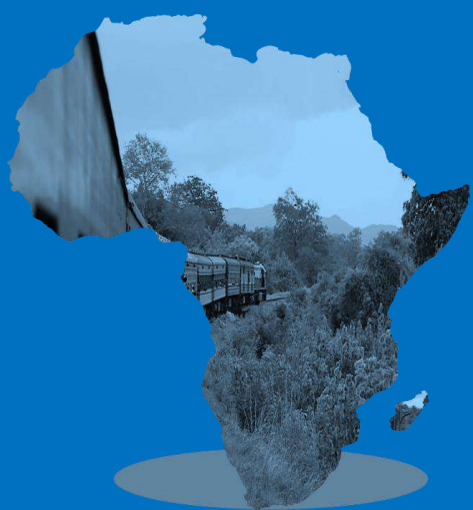
- *Closing remarks*
- Marc GUIGON, UIC Director of Passenger Department

OFFICIAL OPENING



Mohamed Rabie Khlie

WELCOME MESSAGE
OF THE CHAIRMAN OF THE UIC AFRICAN
REGION AND UIC VICE CHAIRMAN



Railway stations around **the world**, **multidimensional transformations...**

From a **monofunctional** place for arriving and departing to a **multifunctional** place...

- an **eiconic infrastructure** of the city
- a **living** and intermodal space
- a **multimodal hub**

- a place for **consumption** and **services**
- an **architectural** and **urban reinvention**
- a **territorial balancing** tool

- a new **passenger experience**
- a variety of **management models**
- **NICTs** at the service of users



1

**SUSTAINABLE AND
VOLUNTARY
NETWORKS**



Awareness of the challenge of developing stations and the **transformation process** partially initiated within the continent's networks

2

**SUSTAINABLE
NETWORKS**



Issues related to catching up on the accumulated **delay** in terms of rehabilitation and upgrading of networks and rolling stock

3

**MAJOR
PROJECTS**



Consideration of the 'new generation station' construction component as a strategic element of the rail system



Railway stations in Morocco, An innovative model deployed...



Marrakech



Casablanca Voyageurs



Rabat Agdal



Casa Port



Kenitra



Tanger

4 new stations with
the 'Al Boraq' high-
speed train: some
fallout



200

million euros of
investments

2

million working
days

2500

jobs
created

56300

m² of passenger
building area

1700

parking spaces available

Three UIC support initiatives for *the African stations of tomorrow...*

1

**Toolkit
development guide**



Sharing best practices and the optimal process for the construction, enhancement and management of railway stations: key steps



2

**Immersion and
training**



Inquire on site about success stories and master the process relating to 'new generation' station projects



3

**Stations
awards**



Propose to set up a workspace for promoting and showcasing the performance of stations and related services



100 YEARS
ANNIVERSARY



**AFRICAN
RAILWAY
THURSDAYS**

THANK YOU FOR YOUR KIND ATTENTION





François Davenne

UIC Director General

Panel 1: Development of Railway stations : from place of transit to place to live

Moderator: Marc Guigon, UIC Director of Passenger Department



Clément GAUTIER
UIC



Paweł Wróblewski
PKP



Mohamed CHAHID
ONCF





INTERNATIONAL UNION
OF RAILWAYS

OVERVIEW OF INNOVATIVE ACTIVITIES IN STATIONS

PANEL 1: Development of Railway Stations: From
place of transit to place to live

Clément GAUTIER

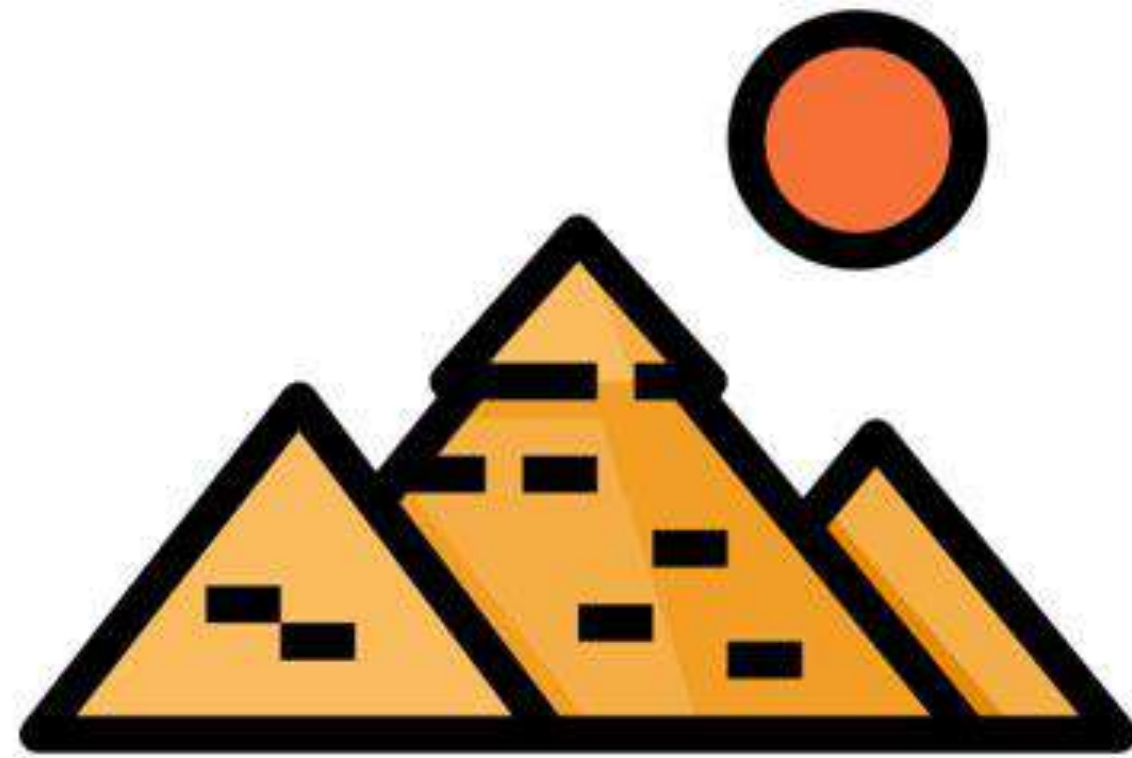
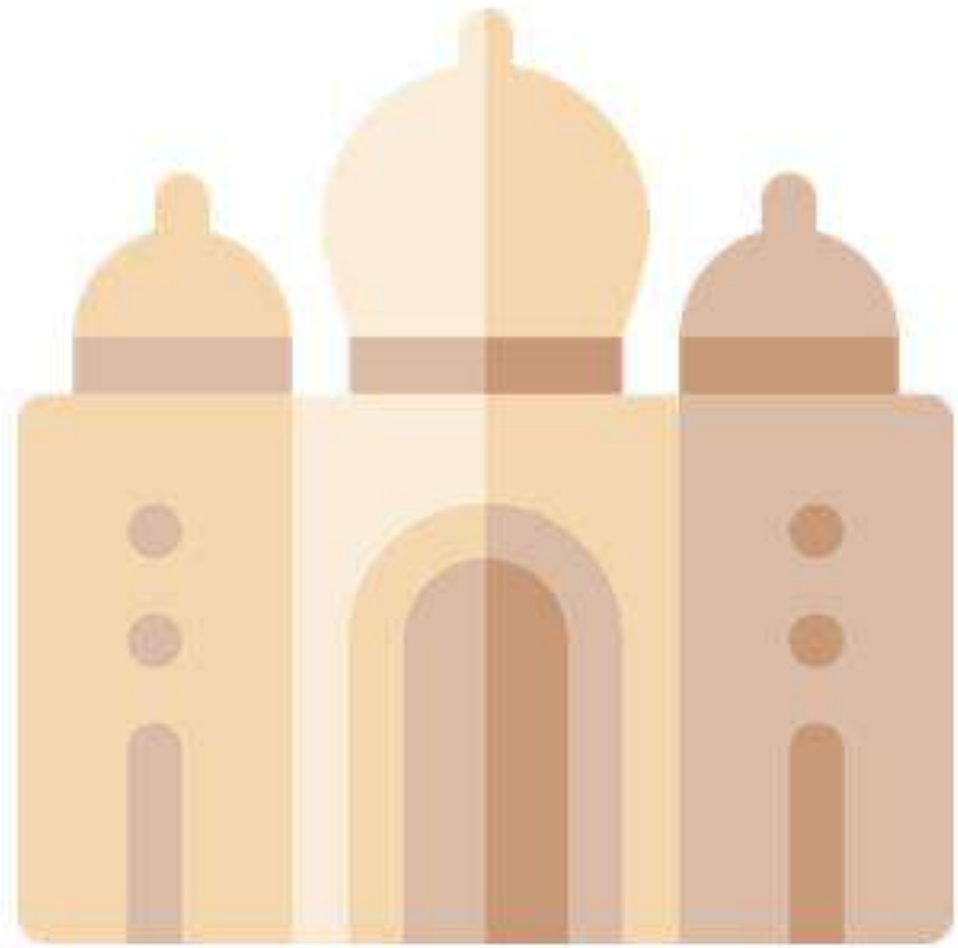
UIC Station Project Manager

Why do we need to develop new activities?

- Improvement of the business model of the station:
 - Make it more attractive
 - More traffic
 - More profitable
- Pursuit of a better passenger experience journey
 - Environnement is changing
 - C-19
 - New urban mobility
 - Digitalisation
 - Climate
 - New Context
 - New opportunities
 - New needs

From transit to destination

- As infrastructure open to public, station (may) catch & attract people
- Extend the vision: from Financial value to Value capture:
 - Initially: value means profit and retail centric
 - Then: commercial activities appears (more city centric) but still oriented on financial capture
 - Now: two vectors
 - Social values as motor of benefit generator
 - Commitment of local partners (and potentially different source of investment)
 - New retail & commercial offers.
- Find a way to keep them in the station by developing activities which will be their reasons to stay.
 - Network Rail, from ThinkStation to Explore station. Network Rail's community and eco station concept hits the public consultations road once again. Experience the station virtually and talk to the projects team in workshops & events at several locations around the country.
 - St Pancras station to become an opera hall for international women's day (The Guardian 17 feb 2022)





Taj Mahal - India



Giza Pyramid - Egypt



Eiffel Tower - France



Opera House - Australia

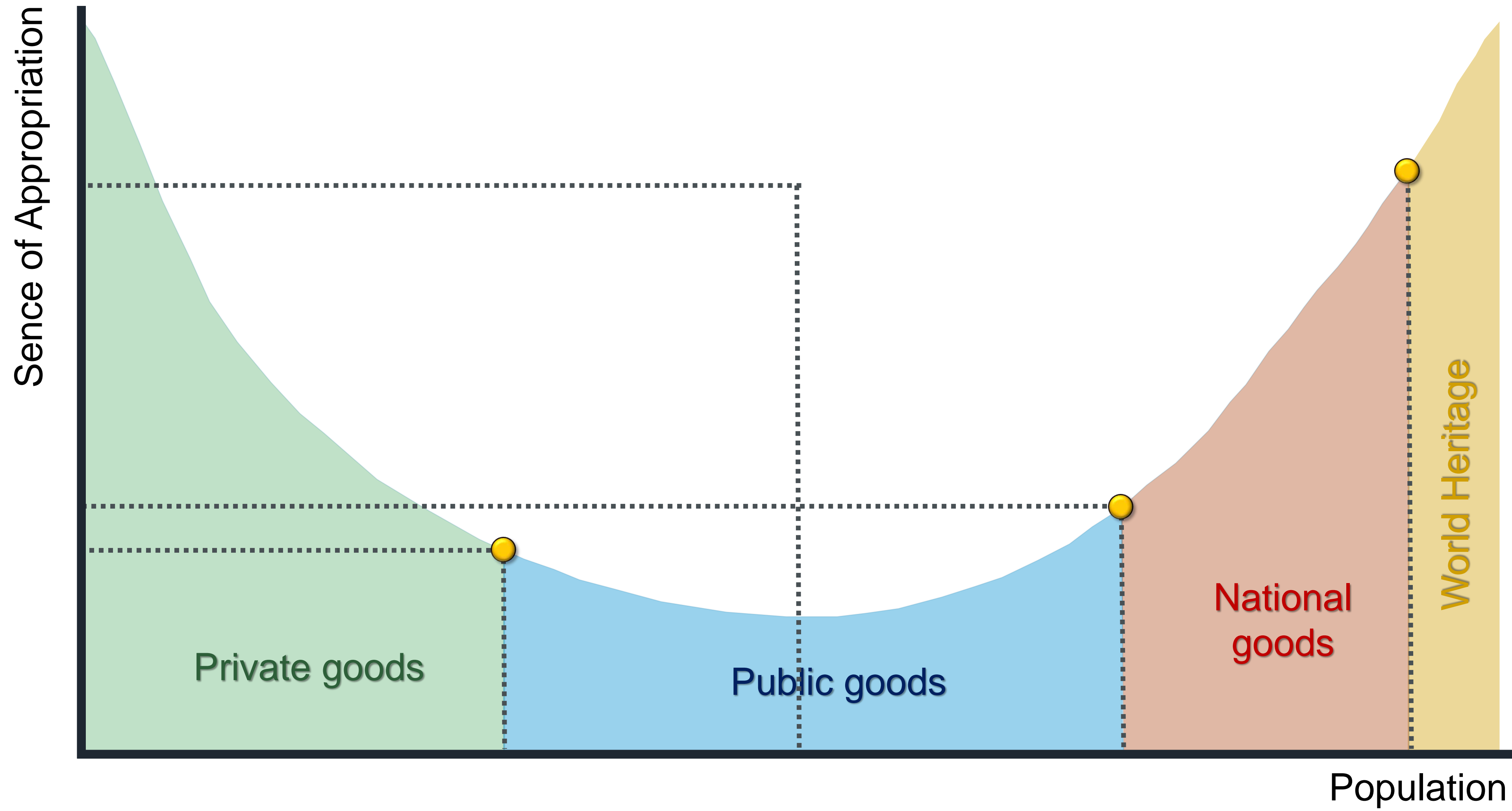


Big Ben - England



Sagrada Familia - Spain

Where is Vs where the station should be



flylaxairport Follow

2,042 posts 179k followers 1,416 following

LAX Airport
Welcome to LAX! This account is not monitored 24/7. For immediate assistance call (855) 463-5252 or visit flylax.com #FlyLAX flylax.com

DenimDay NationalPe... NationalPe... NationalPe... NationalPe... NationalPe... NationalPe...

pdxairport S'abonner

314 publications 7 179 abonnés 94 abonnements

Portland International Airport
The official Instagram account of Portland International Airport (PDX). Share your photos with #flypdx. Tweet us @flypdx. flypdx.com

Feast Frida... Feast Frida... Feast Frida... Feast Frida... Summer Ba... Donut Tasti... PDX Brewf...

grandcentralnyc S'abonner

1 533 publications 119k abonnés 304 abonnements

Grand Central Terminal
Introducing \$2 Tuesdays this June at Grand Central Market! 🍌🥗🥤 6/4, 6/11, 6/18, 6/25
www.grandcentralterminal.com/event/taste-of-grand-central-market-3

Dining Shopping Events Holiday Fair #ShareGCT History #GCTCeleb...

stpancrasinternational S'abonner

1 096 publications 10,8k abonnés 235 abonnements





St Pancras International
Where dining, shopping & culture meet travel, all under one iconic roof. 📍#london | #travel | #shopping | #architecture | #music
bit.ly/2WHbwT1

kingscross_n1c S'abonner

124 publications 393 abonnés 280 abonnements

@Kingscross_N1C
#Kingscross_N1C #Exploringkingscross



74 J'aime

stpancrasinternational TODAY: Join our perfume connoisseurs @jomalonelondon for their in-store event...

Some examples

- New retail concepts
 - Unmanned stores https://www.linkedin.com/posts/dennis-wiberg-393469173_copenhagenairport-ugcPost-6925034409377021952-Hzo5?utm_source=linkedin_share&utm_medium=member_desktop_web
 - New restaurant concept
- Online ordering:
 - Food :
 - delivery services
 - Take away (shadow restaurant / dark kitchen)
 - Items: E-commerce storages
- As a working places:
 - Co working spaces
 - Shared office business (station booth)
- Place for social life:
 - Place to welcome sport & city association
 - Place to share culture, leisure & services
 - Bowling
 - Night club
 - Haircut
 - Restaurant & hotel
 - Living room
 - Place to share common vision (public debate meetings)
- Administration services:
 - Post office
 - City hall annexe
 - Passport / ID card offices

Interactive dining table

The interactive dining table

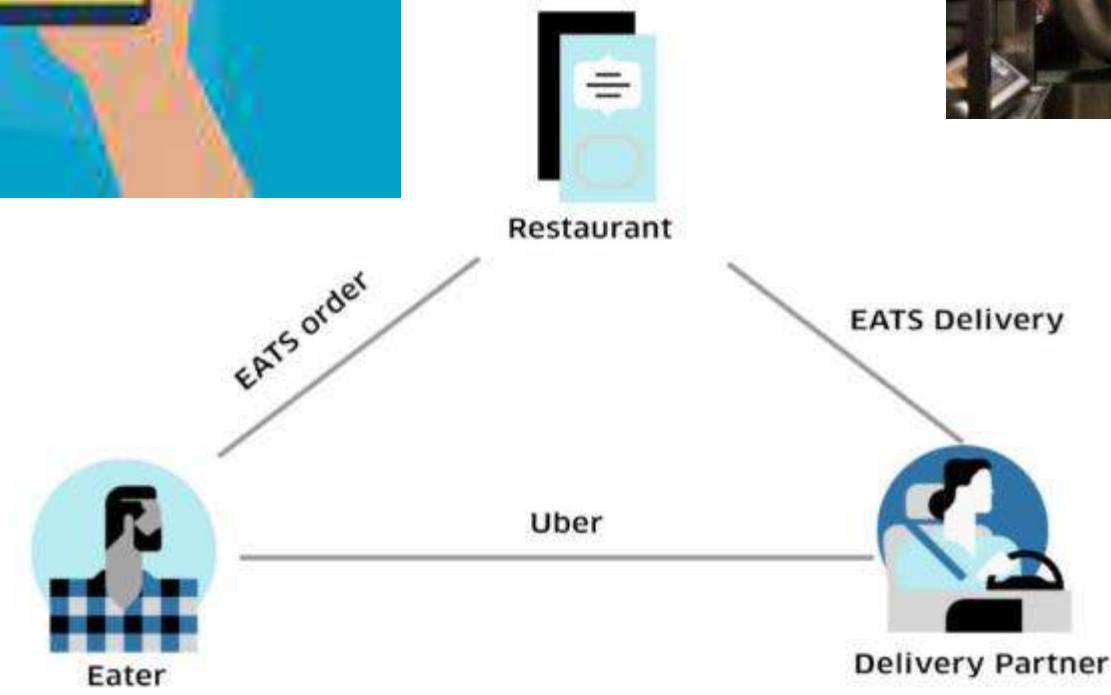
The IRT Table – an interactive table for HoReCa, malls, and airports – offers customers a state-of-the-art ordering system, entertainment and a new way of communication.



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Virtual restaurant / dark kitchen



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JR EAST: in-station working booth



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Stationsstuen in Denmark



Some examples

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Commercial business (not passenger related)

JR East	VIA RAIL	RFI
<ul style="list-style-type: none"> • Shopping Centers • Hotels • Museum • Dormitory • In-station working booth • Fitness club • Post office • Share cycling • Hydrogen station • Office buildings • Wholesale business • Freight transportation business • Advertising agency business • Nursery 	<ul style="list-style-type: none"> • Design/Architectural Firms • Engineering Firms • Dentist Office • Lawyer's Office • Mining Company Offices • Train Museum • Train Associations • Tech company Offices • Language School • Government/public works offices • Telecom Towers • Server Rooms • Lofts/Hotels • Pottery Studio • Upholstery Store • Shared Office rental services • Osteopathic College • Psychologist Office • Art studio and exhibit (working on this one) 	<ul style="list-style-type: none"> • Agencies (insurance, real estate, travel and tourist, multiservices) • Copy shops • Money transfer and money change • Banks • Post offices • Hotels and B&B • Offices (accounting, unions, associations, ...) • Mobility services (parking, car rental, public transport offices and ticket offices, ...) • Schools (language, driving, training, ...) • Personal care (barber shops, hairdressers) • Phone shops • Medical offices • kindergarten • Innovation Hub/Start up laboratories • Art events and exhibitions, Museums • Engagement Activities and Advertising • Parking • Antennas/Telecom towers

AMTRAK	DSB	CIE	SNCF
<ul style="list-style-type: none"> • Retail • Advertising • Pipe/wire • Telecom, • Parking • Retail-restaurant • Shoeshine service • Drug store • Travel agency • Car rental • Fitness club • food trucks • Taxi service • Engineering flagging service • Car cleaning services 	<ul style="list-style-type: none"> • Hairdressers • VR gaming • Library's • Stationsstuen (Station "Livingroom") • Social-economic Café (local staff with disadvantaged's) • Campus Café • Music School • Art exhibitions • Lecture • Local community events 	<ul style="list-style-type: none"> • Offices • Cycle rentals • Electric car charging stations • Bulk storage • Equestrian centre • Freight transportation • Advertising • Pharmacy • Shoe repair/key cutting service • Mobile coffee carts • Micro brewery • Telecoms towers • Telecoms cable runs 	<ul style="list-style-type: none"> • Hotels • Museum • Fitness Club • Medical centers • Coworking spaces • Gastronomic restaurants developed by well-known French Michelin Chefs • Nurseries • Different commercial services (banks, post offices, pharmacies) • Mobility services (for example, bicycle repair shops) • Flower shops • Public services agencies • As well as development of multiple local concepts via our special program called "1001 gares" that aims at developing commercial activities in the small stations according to the local needs • Bonus: we organize exhibitions in the stations and on the forecourts. We are teaming up with the leading museums and cultural festival in France (for example, Arles Photojournalism festival, Angouleme Comics festival)



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Thank you for your attention.





POLSKIE KOLEJE PAŃSTWOWE
Spółka Akcyjna

RETHINK RAILWAY STATIONS IN AFRICA: WHY AND HOW ?”
CASE: Public dialogue in the process of modernisation
Polish State Railways (PKP) stations


www.pkpsa.pl

Pawel Wroblewski PKP S.A.
Research, Development and
Digitisation Office

About PKP

PKP SA - a company managing railway assets, excluding active railway lines, among others - railway stations (580 working, fulfilling their role, more than 40% are heritage sites).

At this time, the PKP is modernising almost 200 facilities of various sizes, located along modernised railway lines. As part of the UIC discussion we found that 68% of the railway stations in Poland and most European countries are small buildings - without commercial potential.

**The largest
of the facilities:
Gdańsk Gł., Białystok,
Łódź Kaliska i
Rzeszów Gł.**



Reasons for modernisation and objectives to be achieved (for RAILWAYS in general)

Historically, stations were, among other things, **places of residence** for railwaymen. Today we avoid combining these functions with passenger services and technical functions. Railways fulfilled additional functions such as the **transport of mail and luggage, as well as telegraphic communication.**

Last years technological advances, e.g. in ticket distribution, are reasons why **historic buildings are usually too large for current needs.**

Sometimes the reasons are changes in borders, legislation (e.g. housing, wooden staircases and structures) and...

...cultural changes (e.g. 4 separate waiting rooms in the building on the picture by design: for 3rd and 4th class passengers; 1st and 2nd class; for „Ladies”; for „Upper class people”).

The modernisation programmes pursue the objectives of several strategies at European level: increasing the attractiveness of rail transport, its accessibility, as well as reducing energy consumption and environmental impact.



Creative workshops: 71 meetings in Poland, for more than 80 sites plus 31 meetings for PRM

The use of large historic buildings in places without commercial potential can be rescued by new functions, different locally, especially for local government units. The aim of creative workshops or meetings with a simpler formula, mainly concerning the availability of facilities for PRM, is **first of all to define new functions - ...buildings should not be empty after modernisation.**



Public participation - continuation

The ideas and postulates of the participants regarding the station were **usually very rational and did not increase the costs** of the planned modernisations. If the ideas were not implemented - the main reason was a temporary lack of an entity that would assess the activity as profitable (e.g. a café in the premises) and undertake it at the station.

In cases where old station buildings have no commercial potential and are not heritage ones, the PKP replaces it with a small modular station with much lower operating costs and functions serving only travellers. Of the 200 stations undergoing modernisation, 38 are currently in the (LTE) **modular technology**. **Detailed design and construction standards** are also important - this reduces the costs of small buildings.



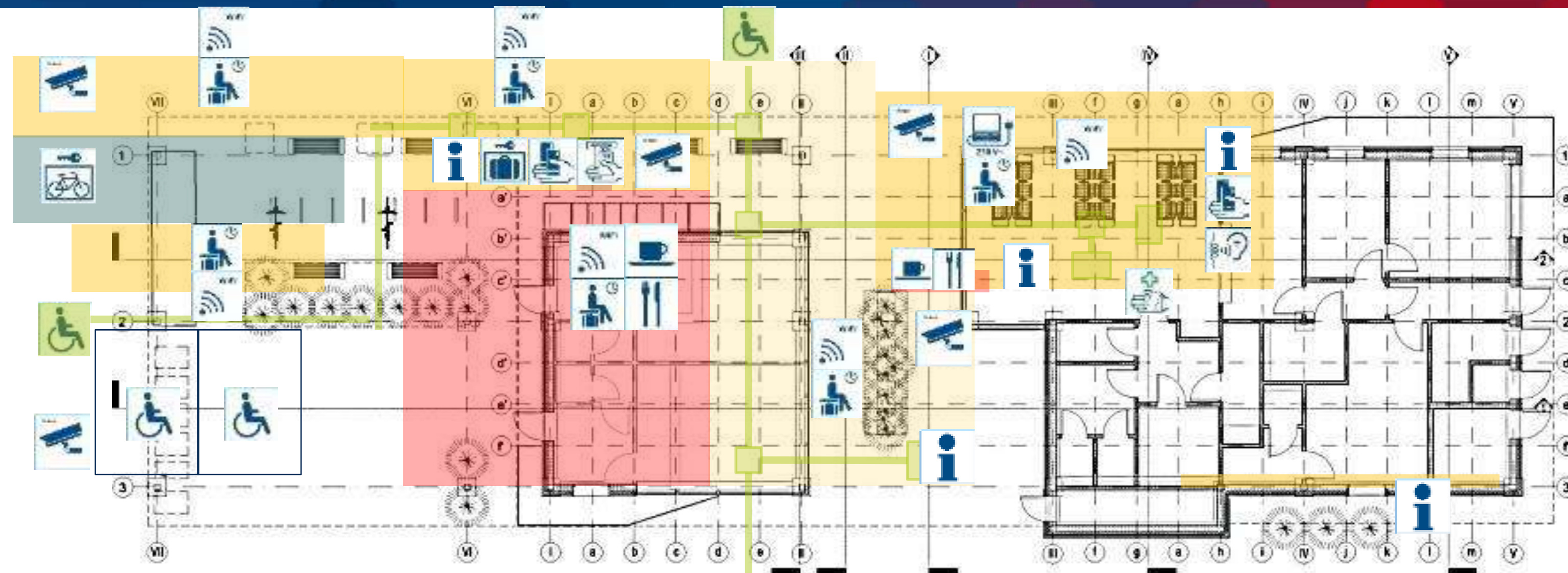
Rokiciny (central Poland) 2018: „for rent”, after modernisation (2023) - library, dance club, municipal offices



Modular construction and standardisation

Modular buildings can be of **different sizes**, such as an open waiting room, or from 27 to 300m2 and additional rooms for children.

Everything is on one level and accessible for people with reduced mobility (PRM). **Detailed standardisation of design and construction reduces the cost of small stations. The UIC good practice catalogues are very helpful.**



Public participation – conclusions for PKP

Thanks to the consultations carried out PKP SA obtained local knowledge, directly from local communities, about local problems and preferences, which may affect the investment process even before it starts. **Modernisation becomes not only a railway project but a joint project.**

Social inclusion is also very important for all public purpose investments because of the assessment of the advisability of spending public money and PKP's PR relations with the environment and customers. **Better use of the buildings after their modernisation and better subjective feeling of safety for travellers in stations with low traffic**, where other functions result in higher station use, are also important.



Premises rented by Municipalities or Cities in station buildings for the purposes of:

- common rooms, clubs, lecture halls for NGOs (seniors, childrens, scouts, fishermen, etc.) - over 40 cases;
- municipal services for residents - over 30;
- libraries (including audio, video materials, etc.) - over 20;
- police, municipal guards - over 10;
- temporary housing - over 10;
- cinemas and exhibition halls - over 10;
- concert halls with backstage - 3;
- other - over 10.





POLSKIE KOLEJE PAŃSTWOWE
Spółka Akcyjna

Thank you for your attention





Le modèle de transformation des gares au Maroc: bilan et perspectives

Par Mohamed CHAHID, Directeur Valorisation
du patrimoine. ONCF



I- CONCEPT GLOBAL

II- BILAN

III- PERSPECTIVES

I- CONCEPT GLOBAL

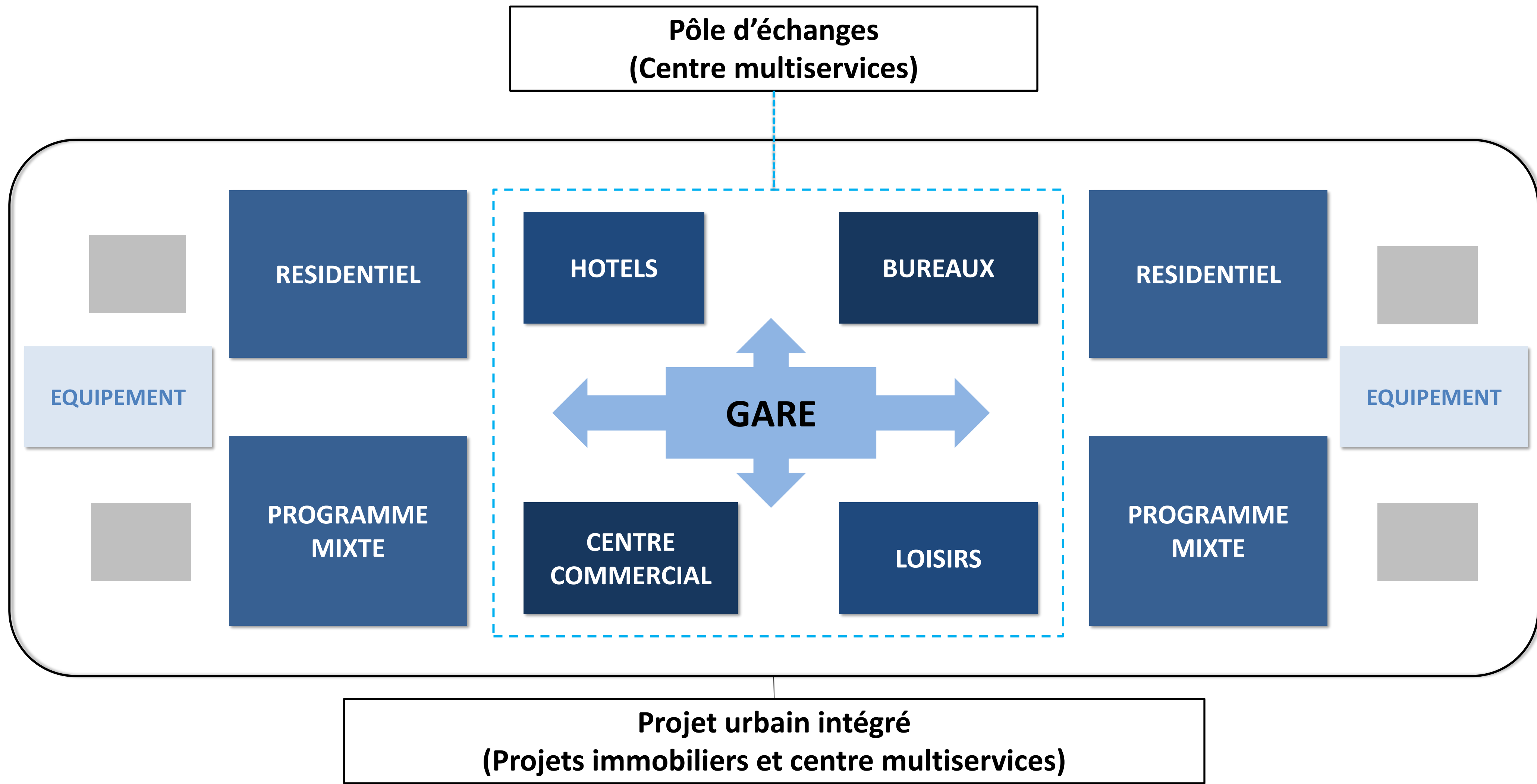
II- BILAN

III- PERSPECTIVES

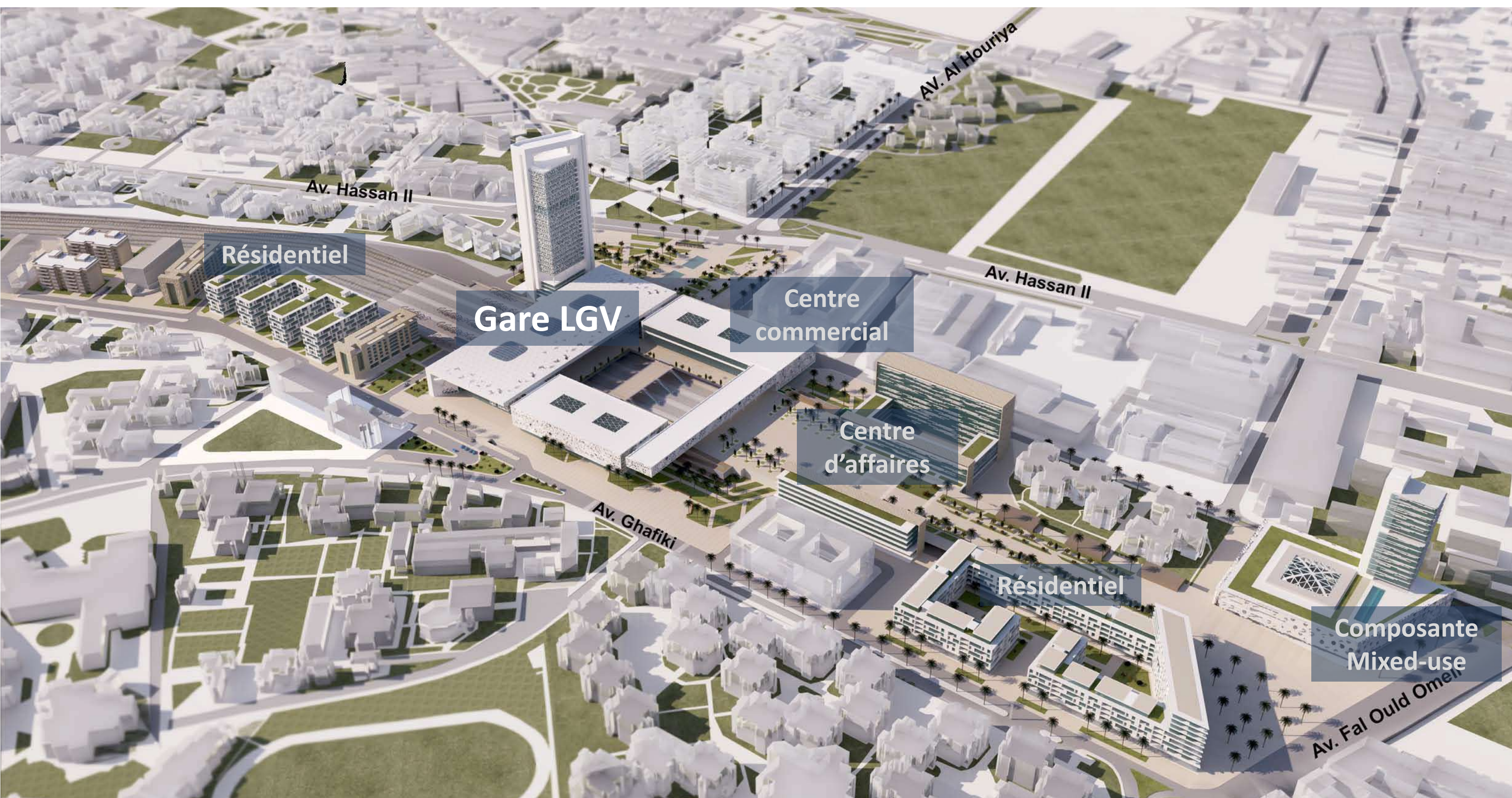
VISION STRATÉGIQUE

- Optimiser l'outil ferroviaire pour répondre à la progression du trafic voyageurs ;
- Délocaliser les activités ferroviaires à caractère industriel (fret et maintenance) à l'extérieur du périmètre urbain ;
- Créer des pôles d'échange pour améliorer et diversifier les conditions d'accès et de confort des voyageurs :
 - Nouvelle gare ;
 - Centre multiservices;
- Accompagner le développement urbain des villes et créer une nouvelle dynamique urbaine autour des gares à travers le développement de projets structurants sur le foncier libéré.
- Générer un chiffre d'affaire hors trafic, dans le but de financer les projets de développement de l'ONCF.

CONCEPT URBAIN INTÉGRÉ



CONCEPT URBAIN INTÉGRÉ



Cas Rabat Agdal

- Programme :
 - Superficie (hors voie ferrée) : 11,3 ha
 - Résidentiel : 90.000m² ≈ 3.600 Résidents
 - Commercial et tertiaire : 170.000m²
 - Hôtels : 3 unités hôtelières
 - Espaces publiques : 25%
 - Surface plancher ≈ 280.000 m²
- Stratégie de développement : PPP

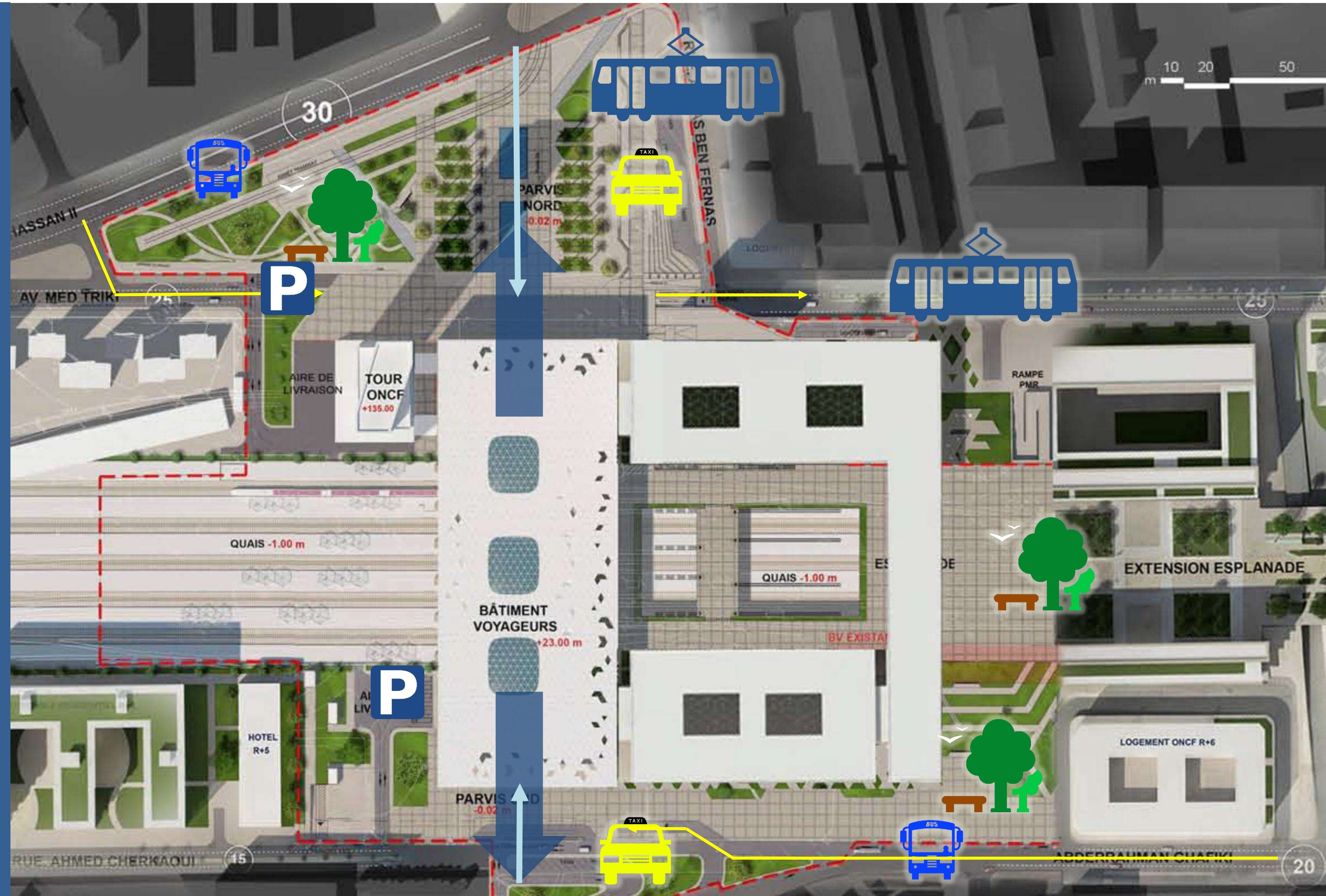
INTEGRATION URBAINE DE LA GARE

Cas Rabat Agdal

Capacité d'accueil : 30 millions de voyageurs

Surface plancher ≈ 22 000 m²

- Accessibilité et circulation
- Espaces publics : 70 000 m²
- Intermodalité : (Trains, bus, tramway, taxis...) ; Parking sous terrain : 1000 places
- Connexion urbaine via la gare pont



GARES LIEUX DE VIE

Transformation des gares en des espaces de vie à travers l'intégration d'une offre commerciale diversifiée et des nouveaux concepts et services aux voyageurs et riverains

Espaces publics conviviaux



Accès et assistance aux PMR



Wi-Fi Gratuit



Salle de prière



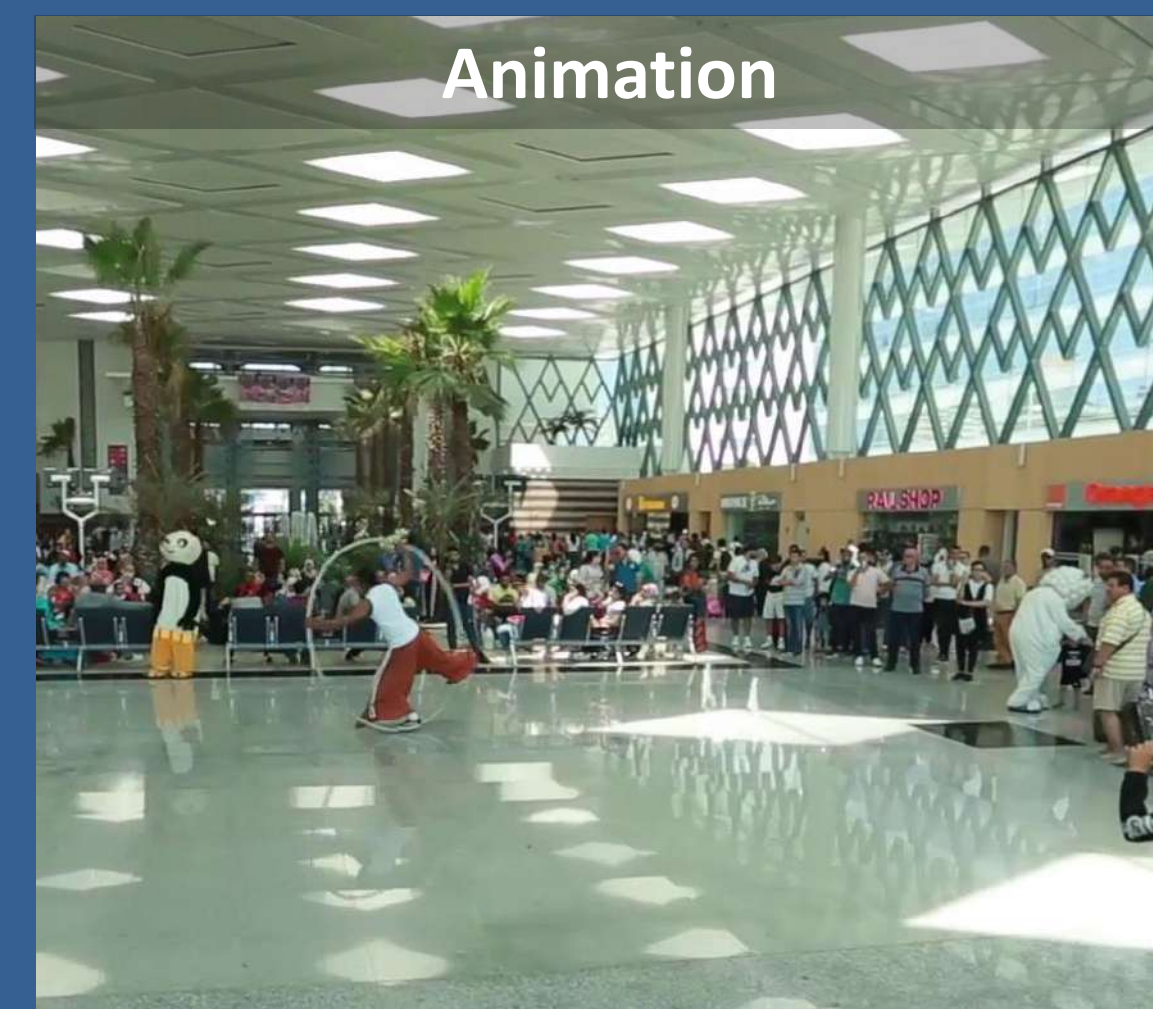
Shopping



Restauration



Animation



Sécurité et sûreté



I- CONCEPT GLOBAL

II- BILAN

III- PERSPECTIVES



BILAN

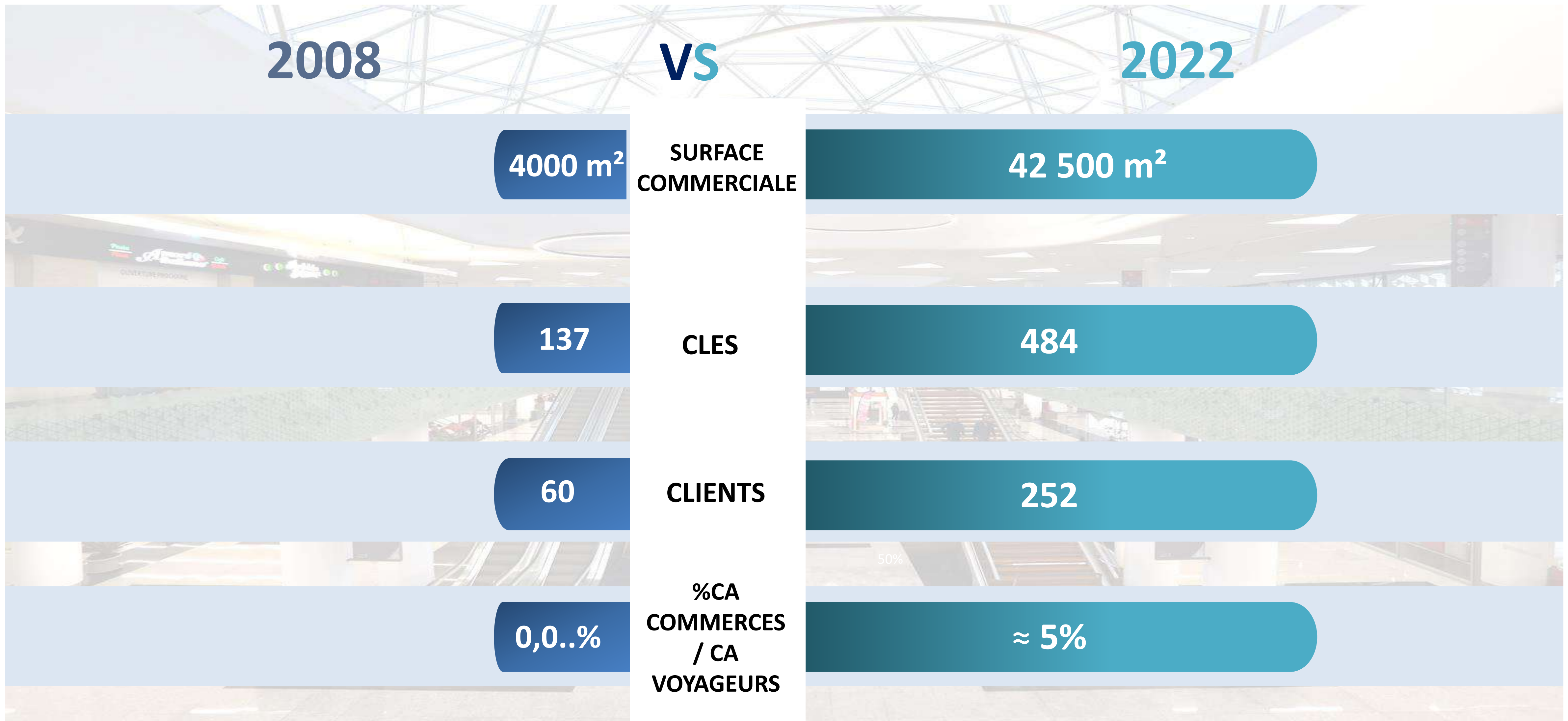
Plusieurs gares rénovées depuis 2008 pour un investissement de plus **300 Millions €**





BILAN

11 Gares à fort potentiel commercial



I- CONCEPT GLOBAL

II- BILAN

III- PERSPECTIVES



PERSPECTIVES

DESIGN

S'adapter aux nouvelles habitudes de consommation

S'adapter aux éventuelles crises sanitaires

E-commerce



Billetterie



Points de collectes



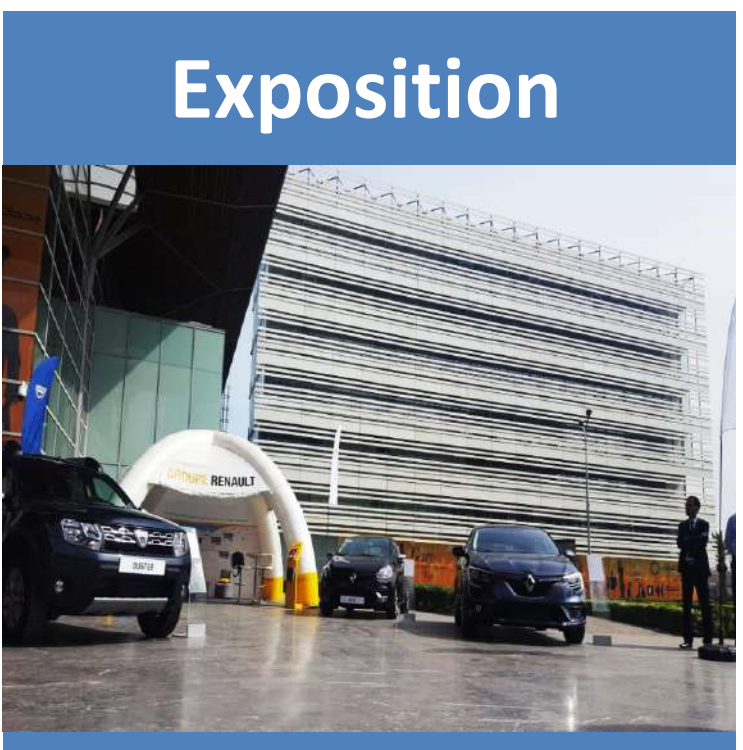
Livraison

Repenser le lay-out des commerces par rapport aux flux visiteurs de la gare

COMMERCIAL

Diversification des activités et optimisation des espaces

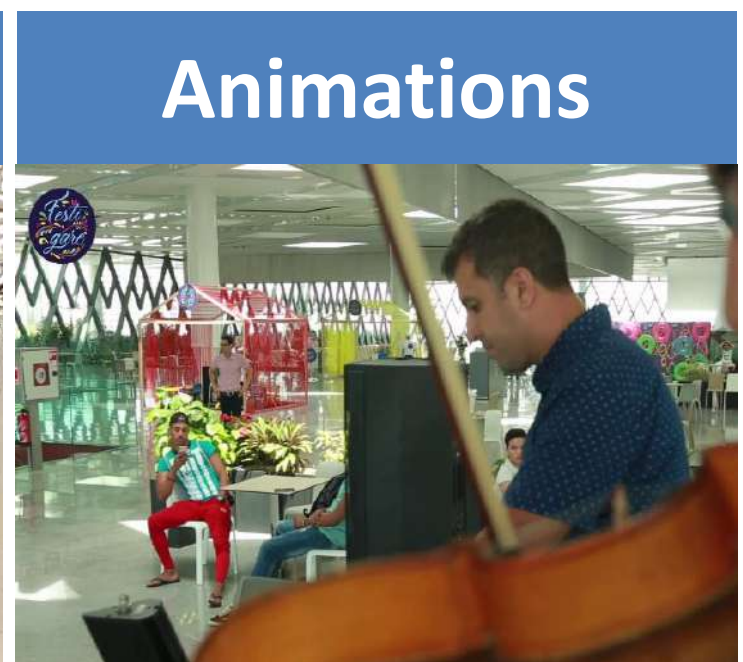
Projets urbains autour des gares



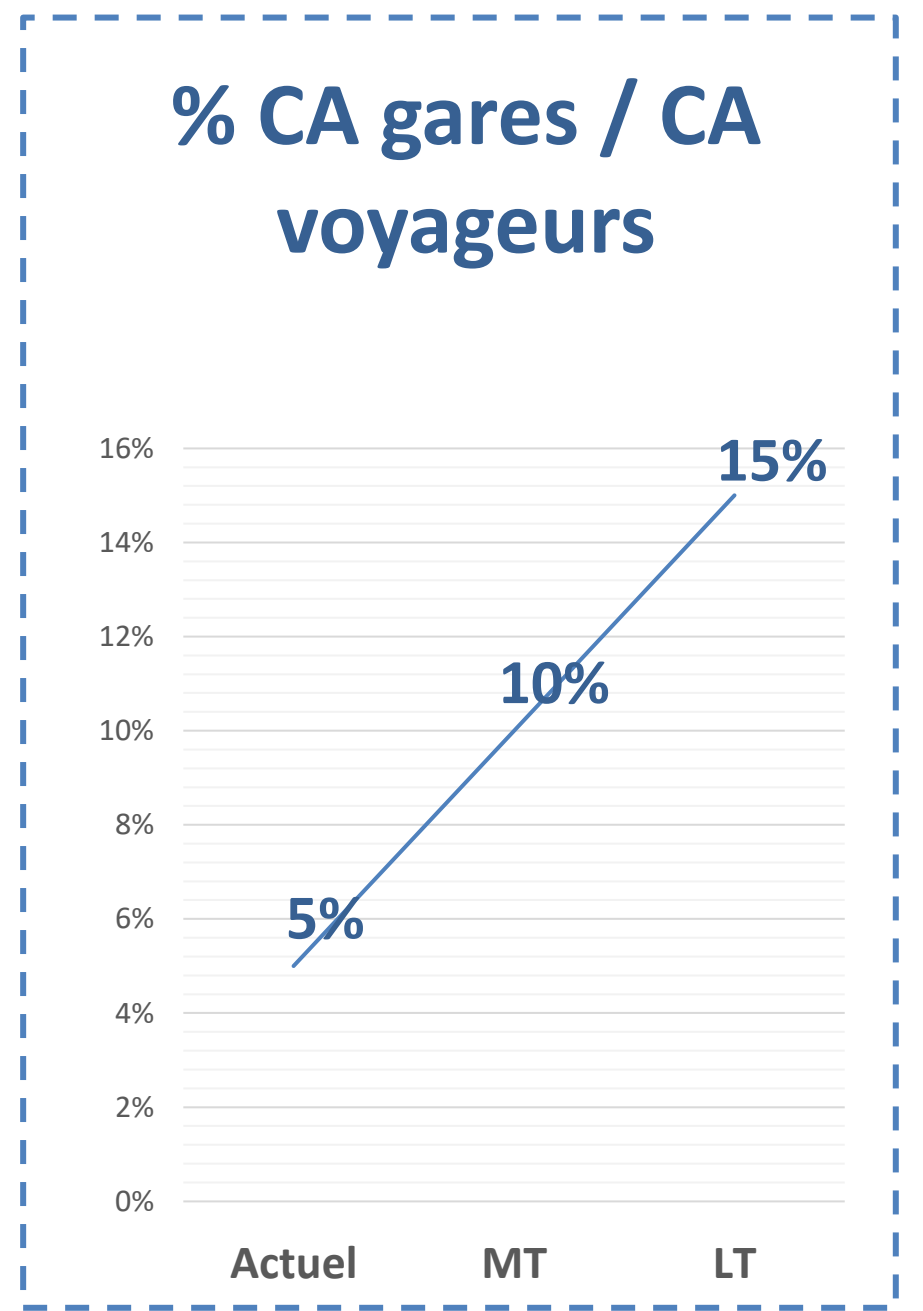
Exposition



Nouveaux services



Animations





**MERCI POUR VOTRE
ATTENTION**



Panel 2: Railway Station as cradle of intermodality, its crucial role in the sustainable mobility

Moderator: Said Nassiri, ONCF



Paul VAN DONINCK
Jernhusen



Clément GAUTIER
UIC



Abdelkader Nessab
SNTF



Aziz Diop
SEN-TER

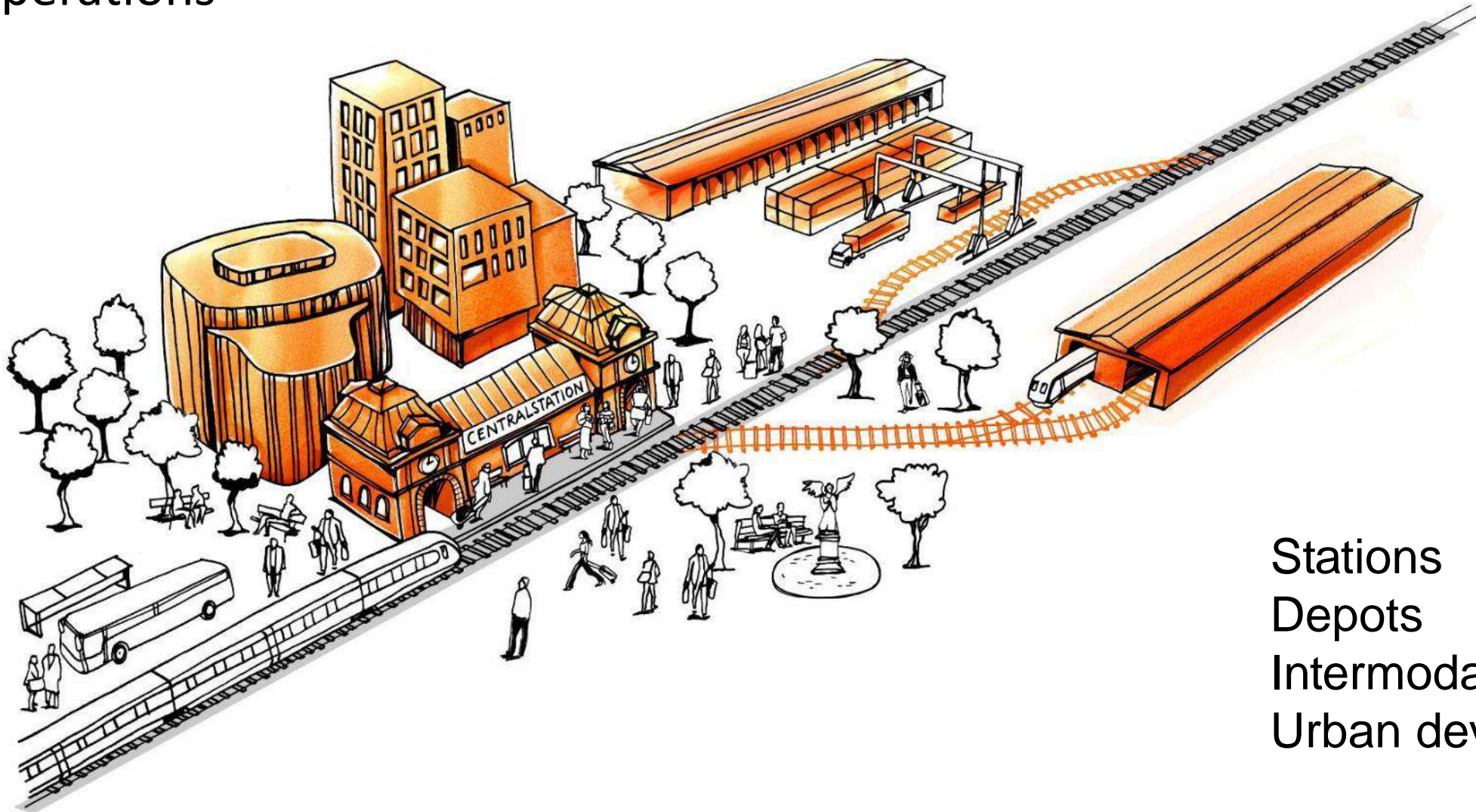


Hédi DHAOU
SNCFT

Multimodal stations in Sweden's liberalized railway market

Paul Van Doninck
Business Strategist, Jernhusen AB
Sweden

Our operations



Stations
Depots
Intermodal terminals
Urban development

Three forces that influence the attractiveness of public transport



The station area

Multimodal mobility offering

Station design and service offering

The station area is a well-functioning transport node



The station is a safe, clean and secure place that's accessible to all



The station area is well integrated into the city



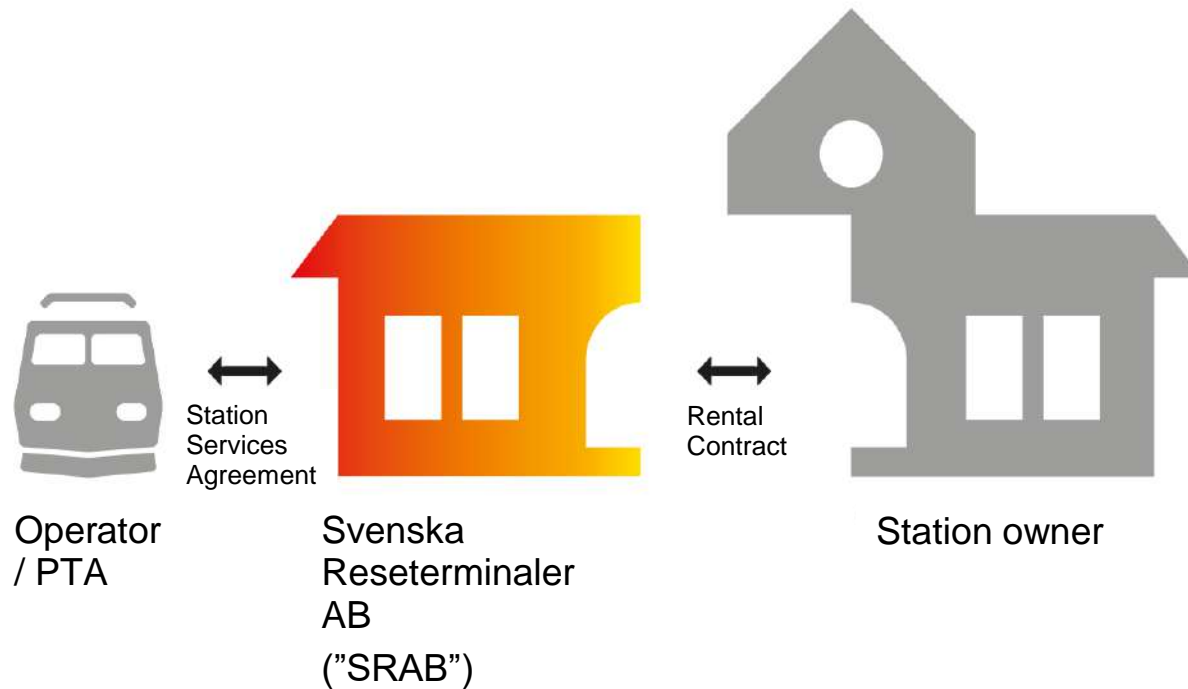
The station's interior is functional and attractive



The station has an attractive service offering that supports the visitors in their daily life



Svenska Reseterminaler AB,
a specialized and neutral agent
that manages basic station functions



140 stations
38 transport operators

Station owner has 1 contract with SRAB covering all operators

Operator has 1 contract with SRAB covering all stations

Would you like to know more?

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INTERNATIONAL UNION
OF RAILWAYS

INTERMODAL RAILWAY STATIONS, PREROGATIVES AND INTERNATIONAL SUCCESS STORIES

**Panel 2: Railway Station as cradle of intermodality,
its crucial rôle in the sustainable mobility**

Clément GAUTIER

UIC Station Project Manager

1980 – Intermodality in Japan

Honda City: 1981 – 1983 car + mini bike (motocompo) (« trunk bike »)



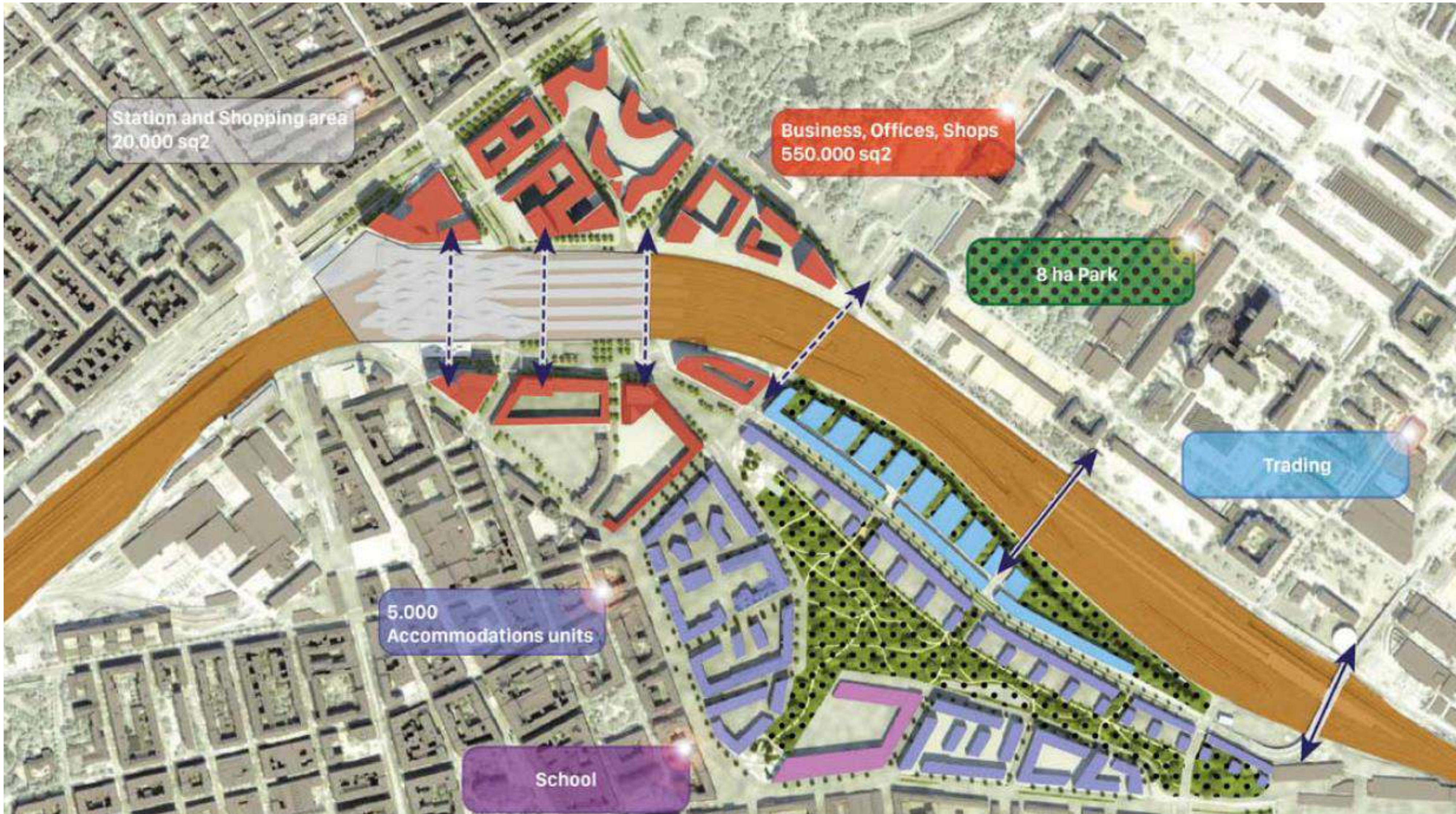


Challenges

By connecting the station to the city centre through the transport network, the city provides access to the facility. Furthermore, it promotes the construction of residential and commercial centres around it.

Ultimately, the concept of a reciprocal benefit relationship between the station and the city is established through collaboration between the station management & the local authorities.

Vienna – Austria (OBB)



Vienna – Austria (OBB)



International journey – South Korea

Since 2010, KORAIL has been working in association with Incheon International Airport to handle passenger luggage. The service is managed by a Korail subsidiary, Korail Airport Railroad. Passenger only have to drop their luggage off in a station before taking the shuttle service to the airport, where they can collect their luggage.



Micro mobility – The Netherlands

A new study has found [NS](#) OV-fiets rental bicycle is the most commonly used form of shared transport in the Netherlands.

According to researchers, this is an indication of the strong reputation the rail operator has in the field of shared mobility.

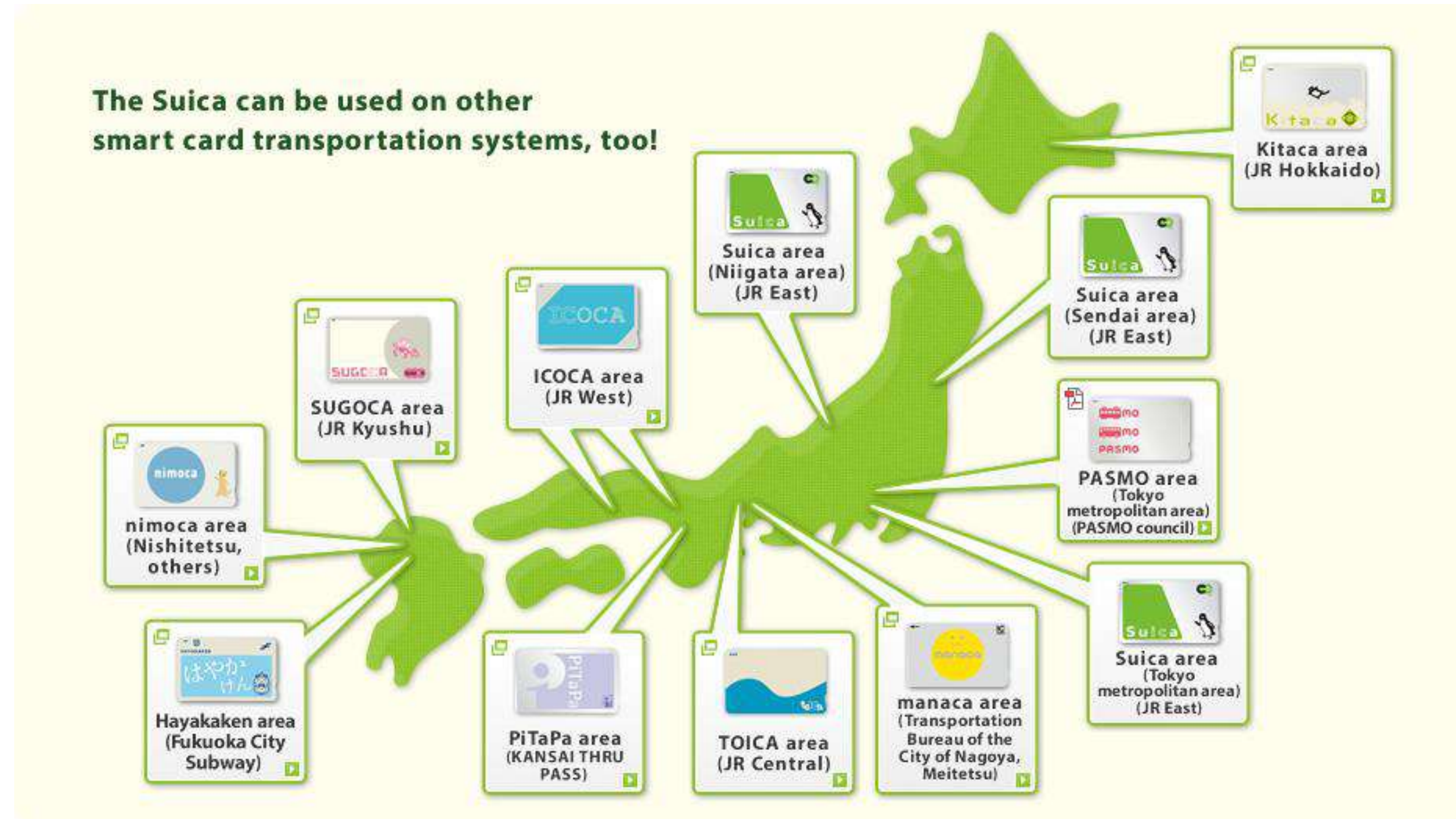
You can rent OV Fiets shared bikes at lots of stations, for just € 4,15 per bike per 24 hours. What's more, you can rent two bikes with just one (free) subscription. With the NS app, you can check beforehand how many bikes are still available at your station of choice. Experience true freedom and take an OV Fiets shared bike for the last leg of your journey.



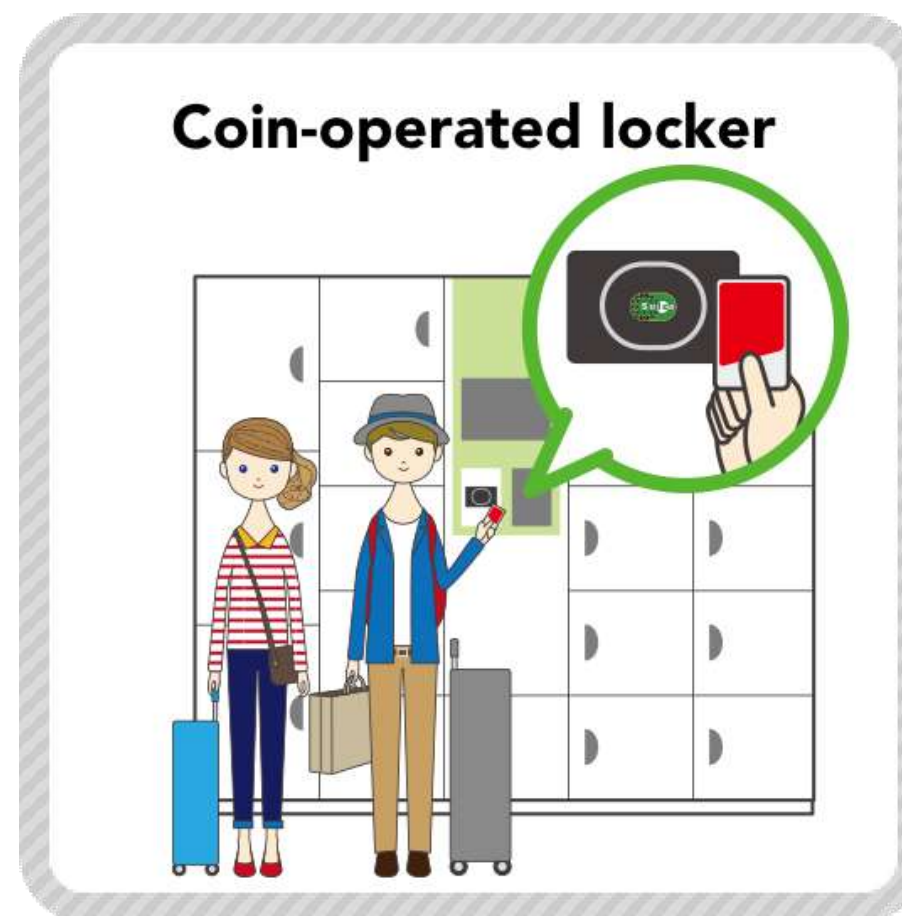
International journey – JR EAST & WEST

Suica is a prepaid rechargeable contactless smart card, electronic money used as a fare card on train lines in Japan, launched on November 18, 2001.

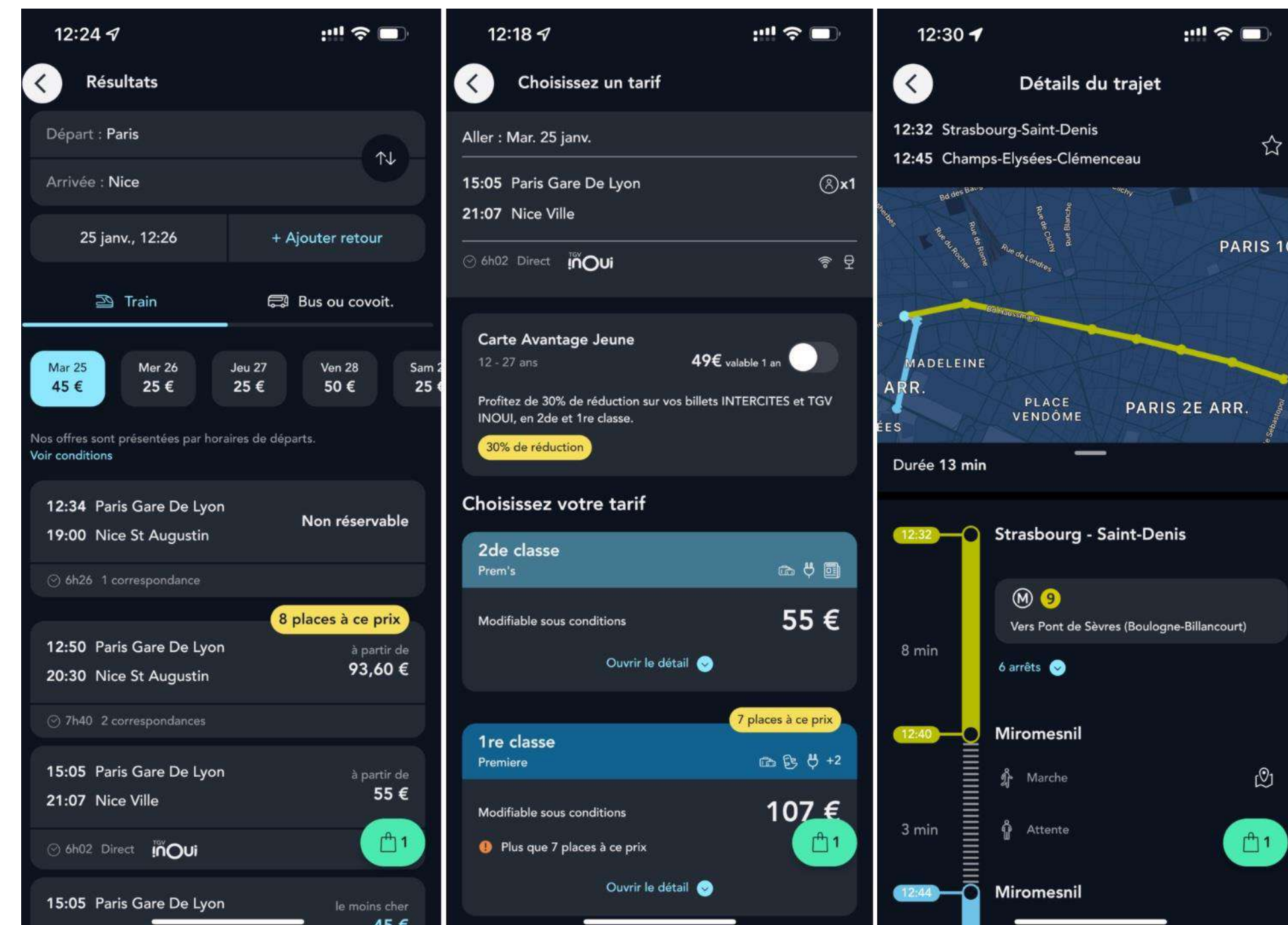
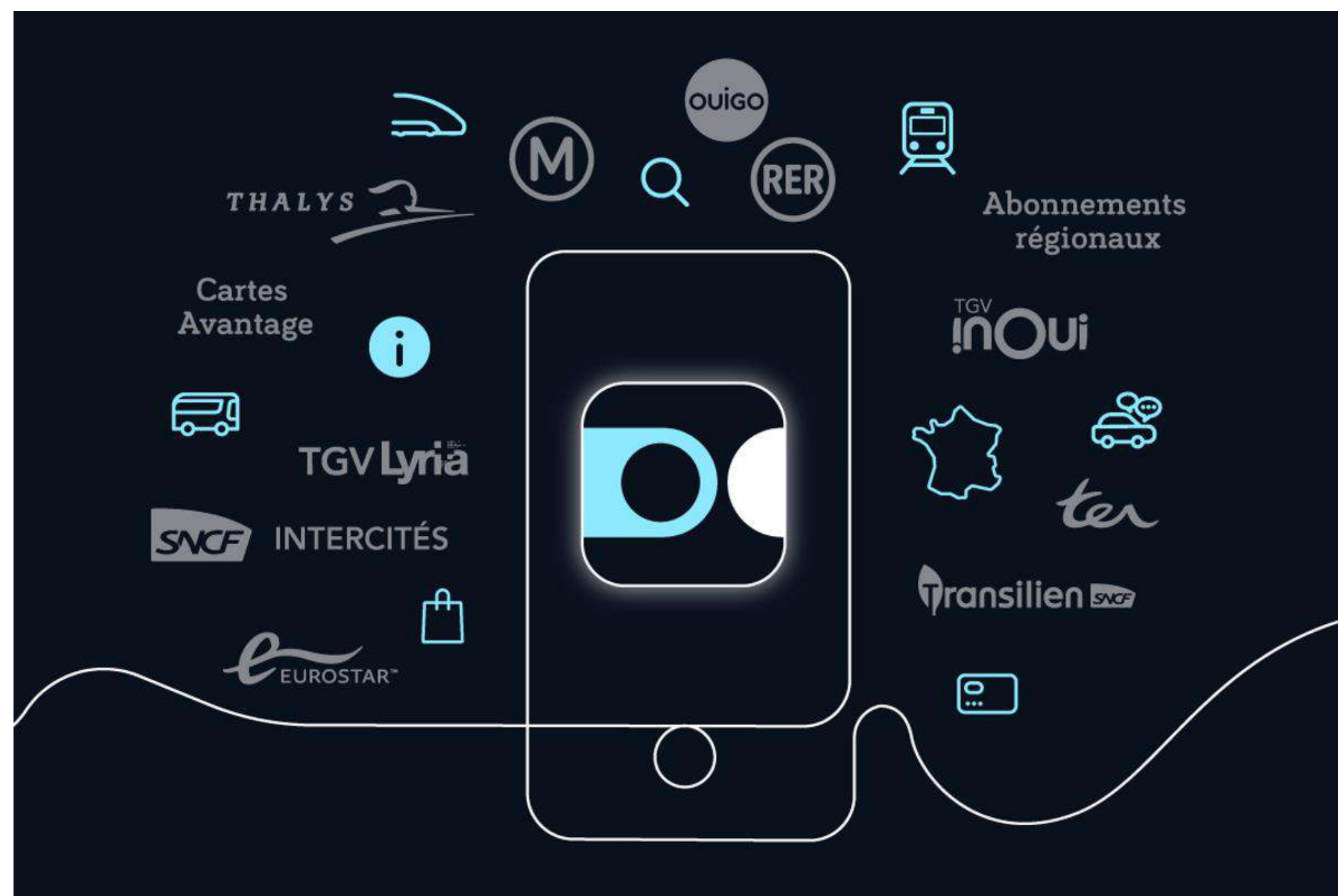
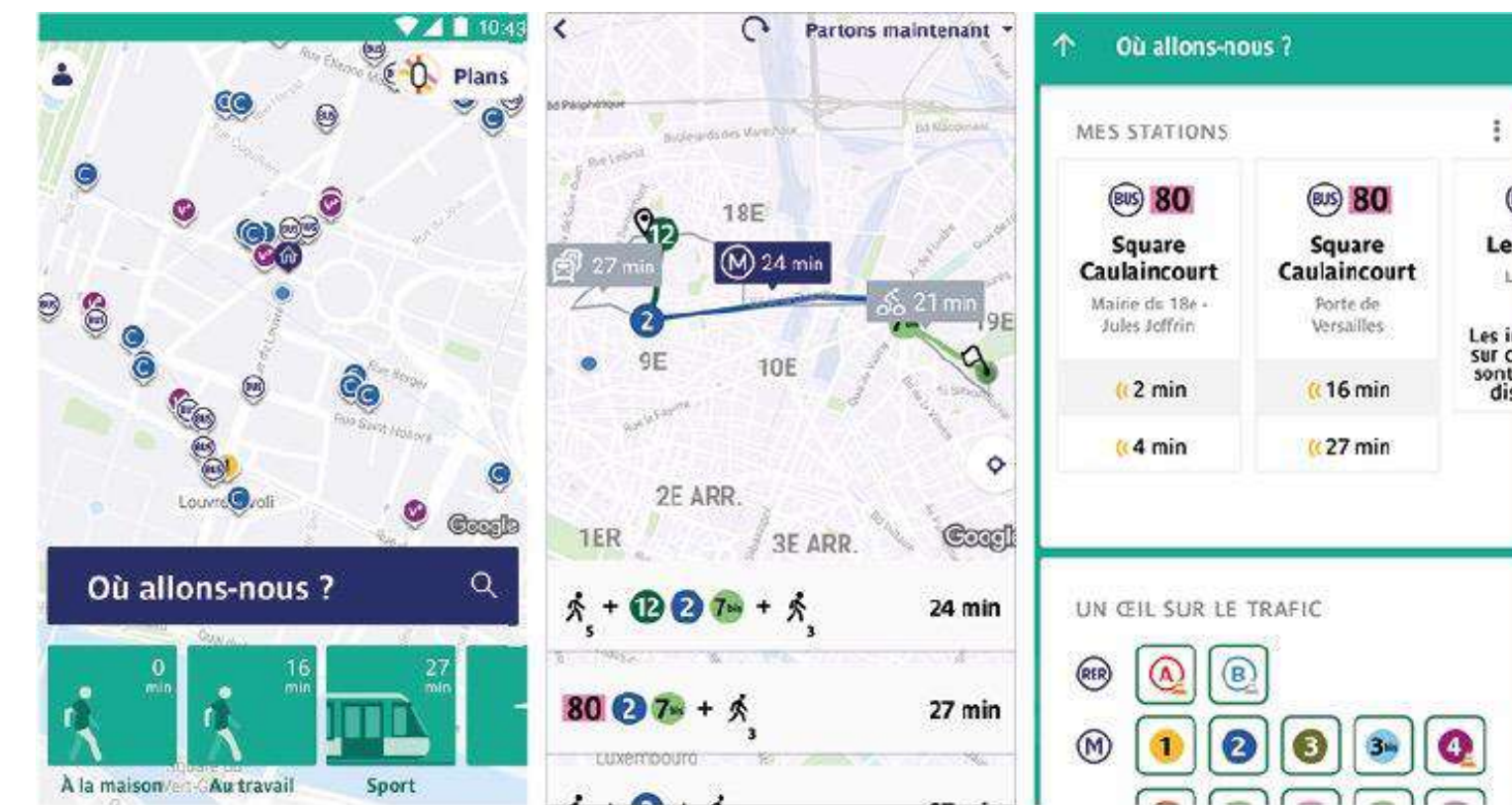
The card can be used interchangeably with JR West's ICOCA in the Kansai region and San'yō region in Okayama, Hiroshima, and Yamaguchi prefectures, and also with JR Central's TOICA, JR Kyushu's SUGOCA, Nishitetsu's Nimoca, and Fukuoka City Subway's Hayakaken area in Fukuoka City and its suburb areas. The card is also increasingly being accepted as a form of electronic money for purchases at stores and kiosks, especially within train stations. As of 2018, JR East reports 69.4 million Suica UID's have been issued, usable at 476,300 point of sale locations, with 6.6 million daily transactions.



Since Suica is completely interchangeable with Pasma (see Interoperation for the complete listing of companies and lines that accept Suica) in the greater Tokyo area, it is supported on virtually any train, tramway, and bus system (excluding various limited and shinkansen trains, as well as a few local buses as the system is still in the process of being extended to all routes)



Integrated journey - France



Prerogative

- Transport organising authorities
 - run public transport services itself or contract them out other bodies as private sector
 - Control, coordinate in the same local area for the public benefit & quality of public service
- One interface: unique Tickets
 - Requirements: timetable (open access?), standardisation of tickets, layout of the tickets (avoid fraud), devise to read the ticket
- Information mobility
 - Effective information, real time information in order to take the right and quick decision
 - E.g.
 - Before Google
 - Then SNCF or RATP
 - Then city mapper
 - Now SNCF connect
- As cities faces new challenges, it's important to ensure that mobility and urban planning goals are met to achieve economic, social & environmental sustainability= station as the potential to kick start development in urban areas
- If you dont have local solution, then develop it yourself:
 - Cab companies,
 - New self-service bicycle services (Netherlands NS)



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#UICrail

Thank you for your attention.



Réaménagement de la gare ferroviaire d'Agha- Alger Centre

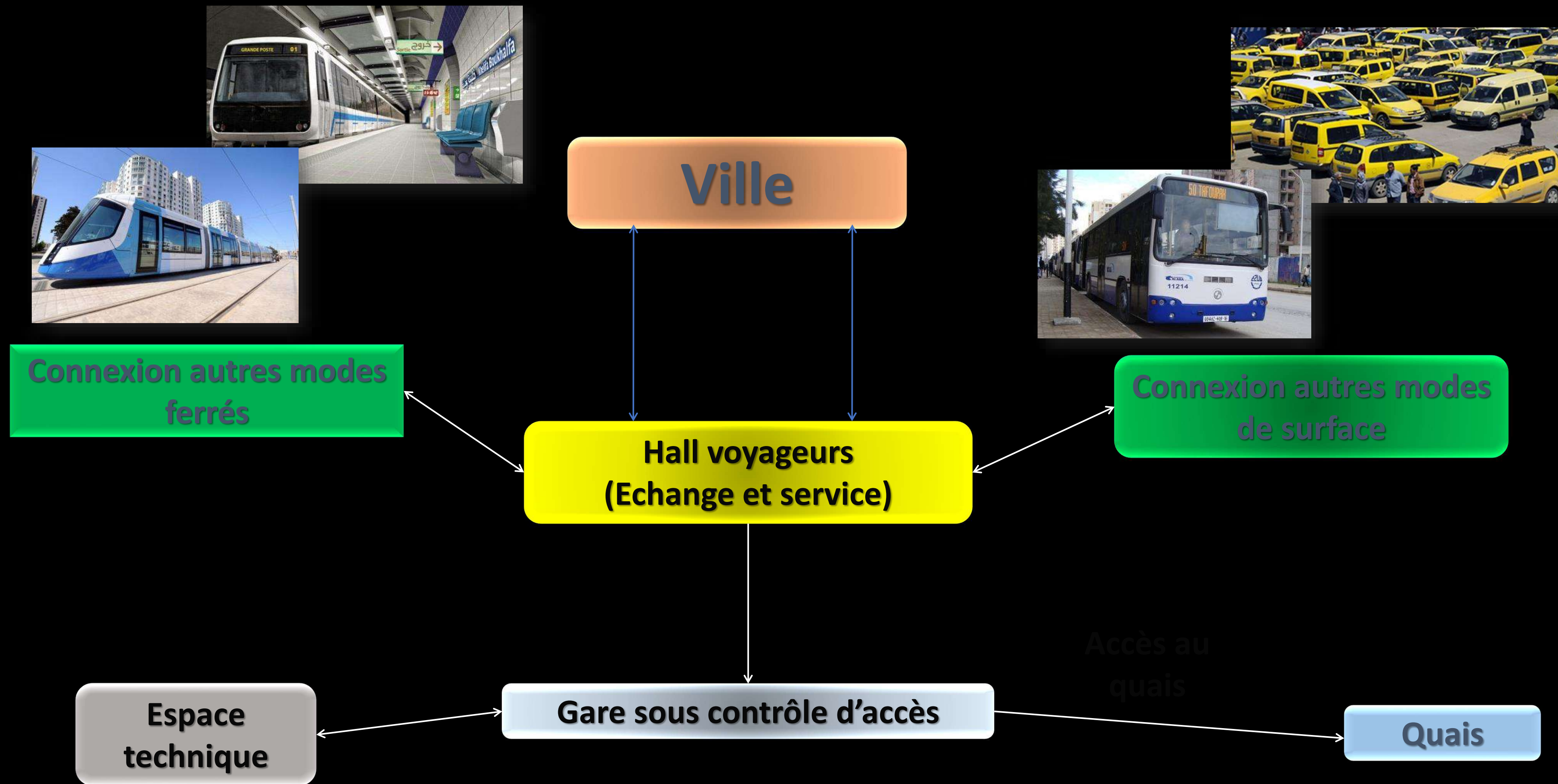
« La gare des chemins de fer n'est pas un monument définitif, construit à un moment, précis et intangible jusqu'à sa démolition... Sa particularité est de devoir s'adapter continuellement à des besoins en évolution constante ». BOWIE, Karen

SOMMAIRE :

- **LES GARES.....**
- **LE SITE DE L'AGHA : une position privilégiée dans la ville**
 - **MORPHOLOGIE**
 - **FONCTIONNALITES**
- **Ce qui est préconisé par LES INSTRUMENTS d'urbanisme ...**
- **Les servitudes et vulnérabilités du site.....**
- **ANALYSE : l'Agha dans le Grand Alger**
- **A RETENIR DE L'ANALYSE DES DONNEES ET ORIENTATIONS.....**
- **LES ENJEUX.....**
- **SCHEMAS DE PRINCIPES**
- **LE FONCIER SUPERIEUR**
- **LE PROJET URBAIN : Variantes Urbaines.....**
- **LE PROJET : Développement de la variante**
- **SURFACES DU PROJET**

LES GARES

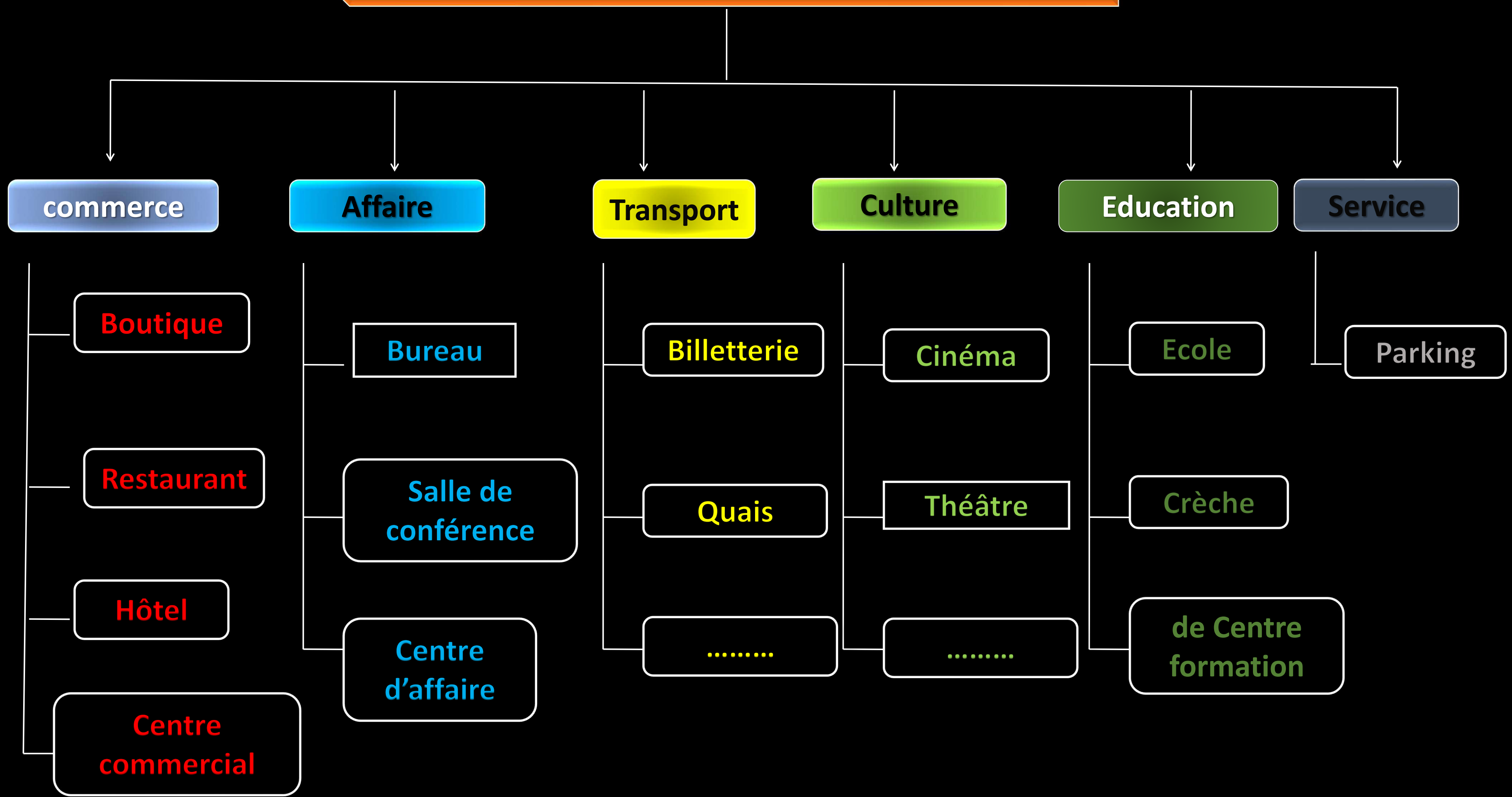
Schémas traditionnel "monofonctionnel":



« Moyen de transport »

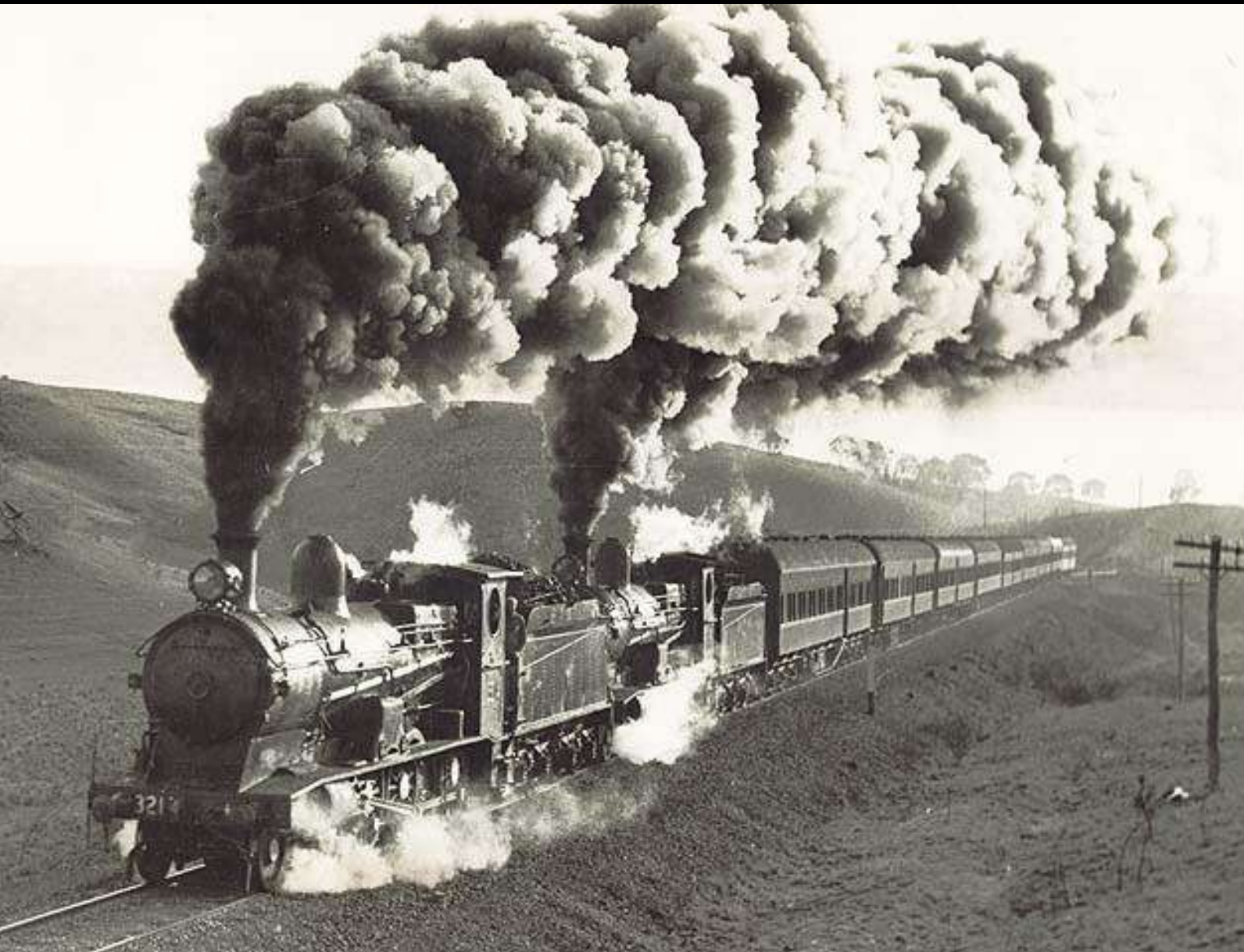
Schémas Moderne "multifonctionnel":

Gare ferroviaire « Pôle d'échange »



Les cathédrales du début de l'ère industrielle

19^{eme} siècle



Gare de Tours, 19^{eme} siècle, France



Gare d'Oran, 19^{eme} siècle, Algérie

Les gares en mode « terminaux d'aéroports »

20^{eme} siècle



Gare de Munich ,1960, Allemagne



Gare de Sants ,1979, Barcelone

Quelle est l'approche contemporaine ?

21^{eme} siècle

Des gares « malls commerciaux »; aux gares « espaces urbains »



Gare du Nord projet de renovation, Paris



Gare du Nord projet de renovation, Paris

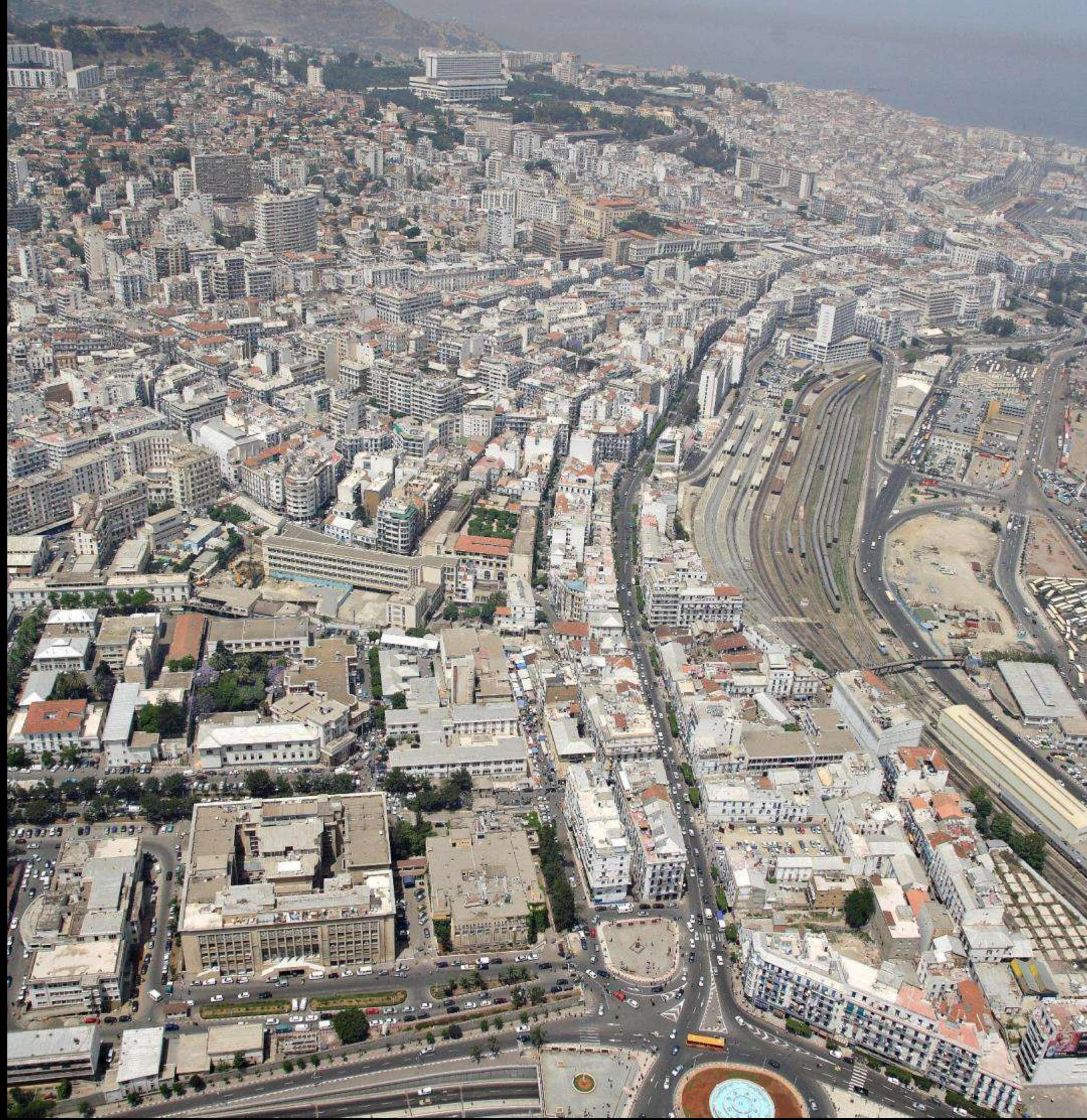
L'ambition d'un cœur battant au rythme de la ville

- Innovation.
- Satisfaction du client.
- Rentabilité.

LE SITE DE L'AGHA : une position privilégiée dans la ville

MORPHOLOGIE :

- La ville sur l'amphithéâtre
- Les rues et bâtiments en gradins
- Les percées et ruptures vers la mer
- L'Agha : la scène dans l'amphithéâtre



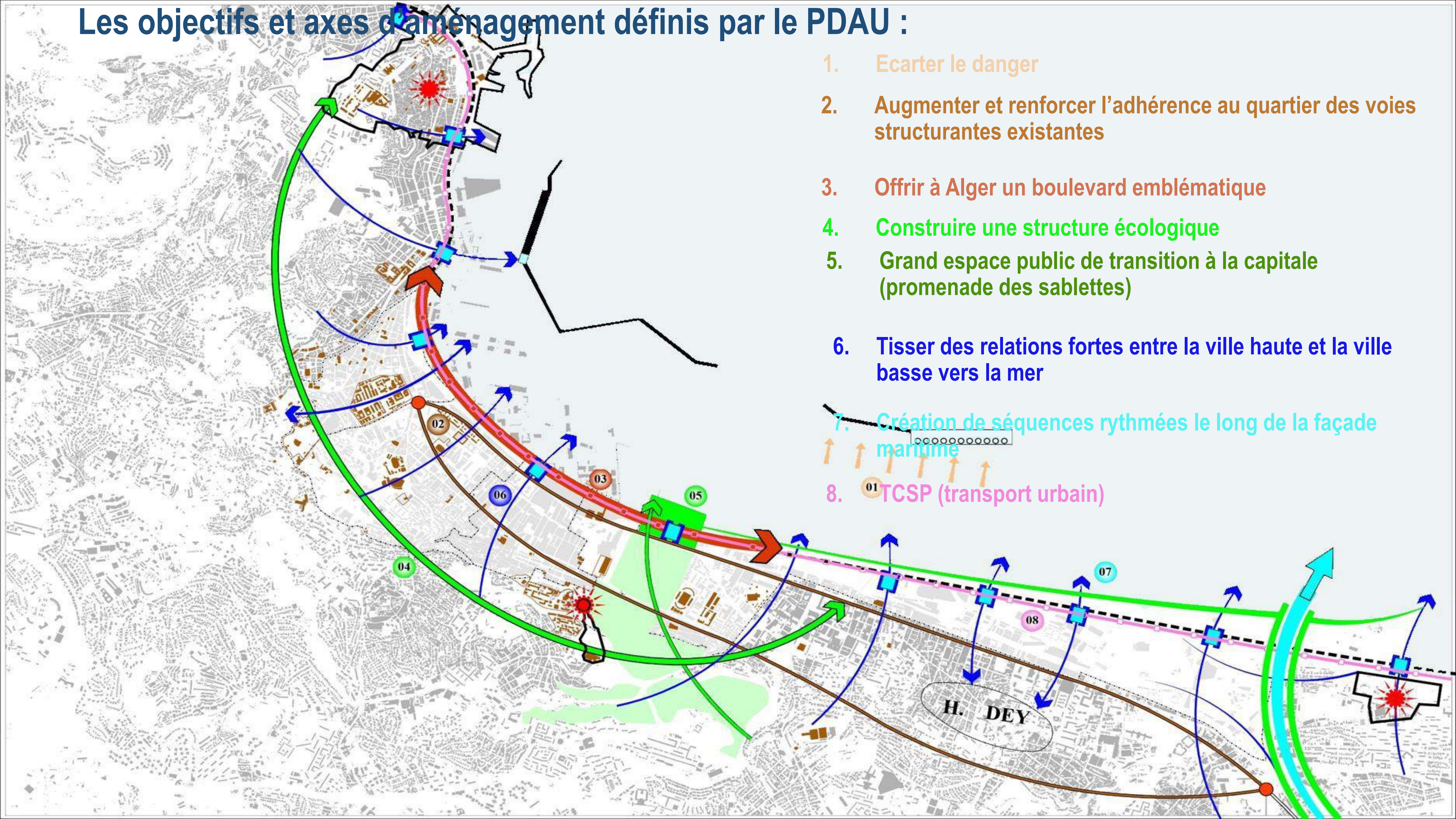
FONCTIONNALITES :

- Entrée/sortie de la ville
- Centralité
- Mobilités diverses
- Rupture-couture Ville-Mer
- Un site aux potentialités multiples :
 - foncières (emprises ferroviaires et friches portuaires)
 - positions (polarisation urbaine)



Les objectifs et axes d'aménagement définis par le PDAU :

1. **Ecarter le danger**
2. **Augmenter et renforcer l'adhérence au quartier des voies structurantes existantes**
3. **Offrir à Alger un boulevard emblématique**
4. **Construire une structure écologique**
5. **Grand espace public de transition à la capitale (promenade des sablettes)**
6. **Tisser des relations fortes entre la ville haute et la ville basse vers la mer**
7. **Création de séquences rythmées le long de la façade maritime**
8. **TCSP (transport urbain)**



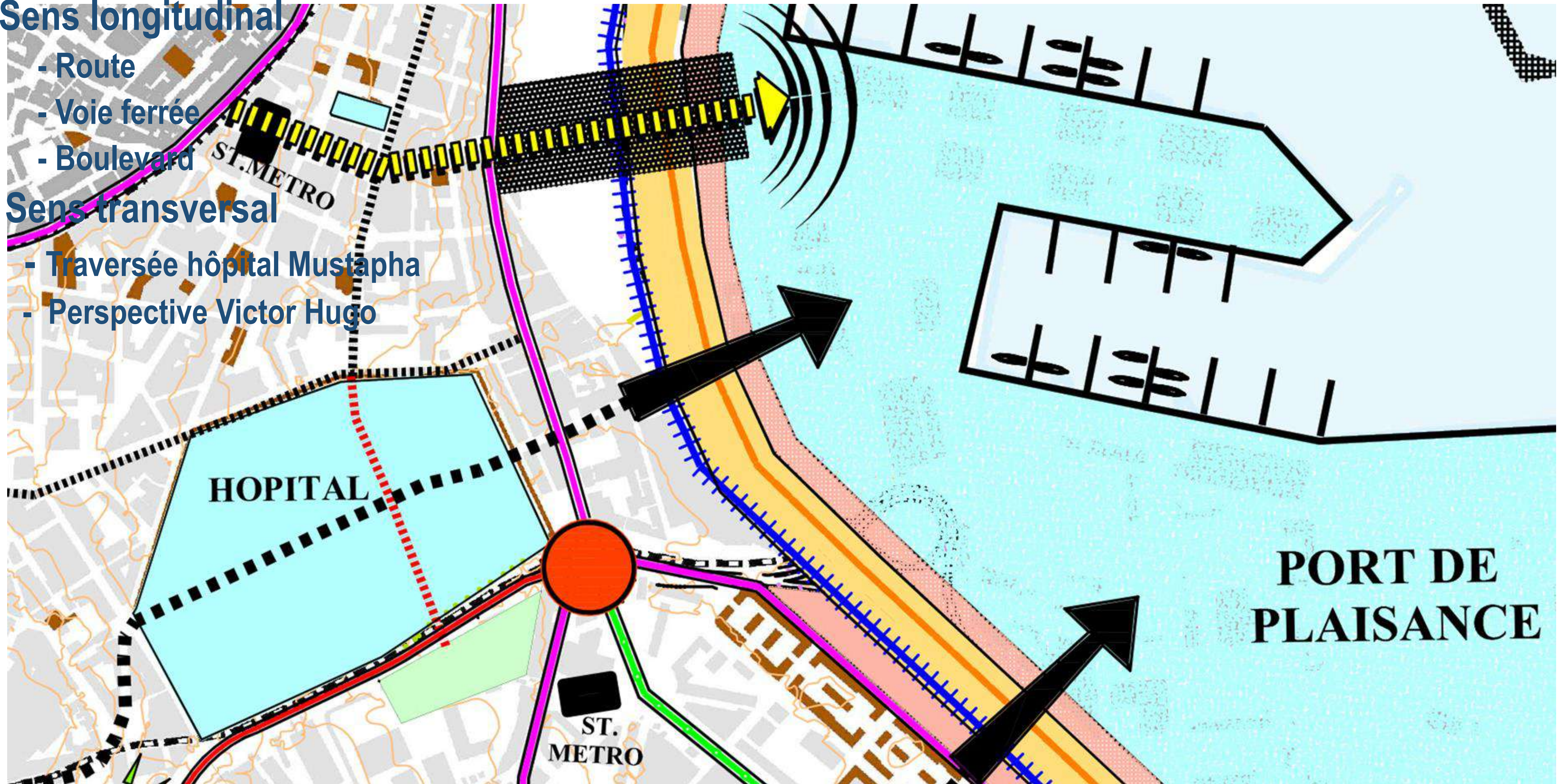
Les préconisations du PDAU dans la zone de l'Agha :

- **Sens longitudinal**

- Route
- Voie ferrée
- Boulevard

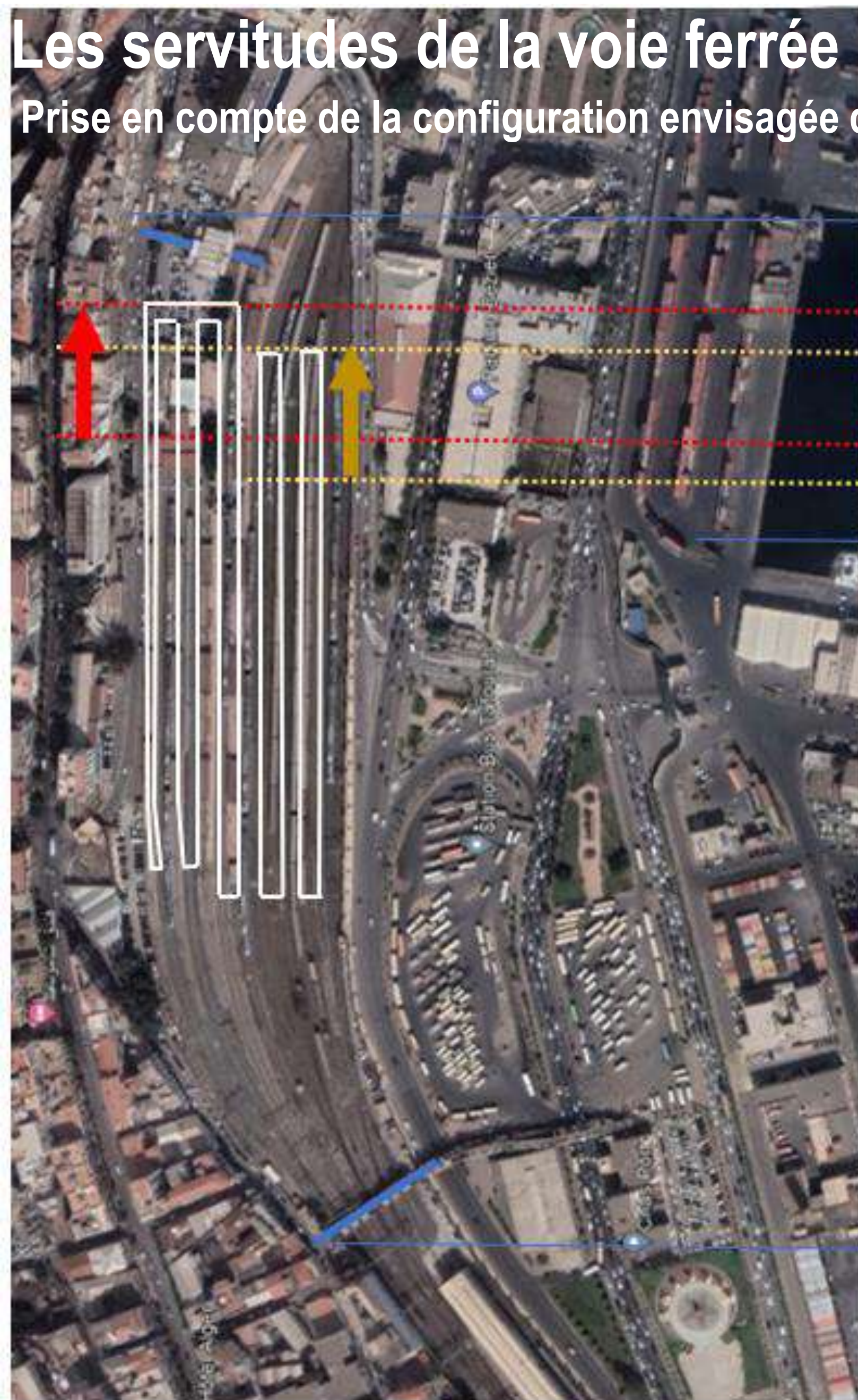
- **Sens transversal**

- Traversée hôpital Mustapha
- Perspective Victor Hugo



Les servitudes de la voie ferrée

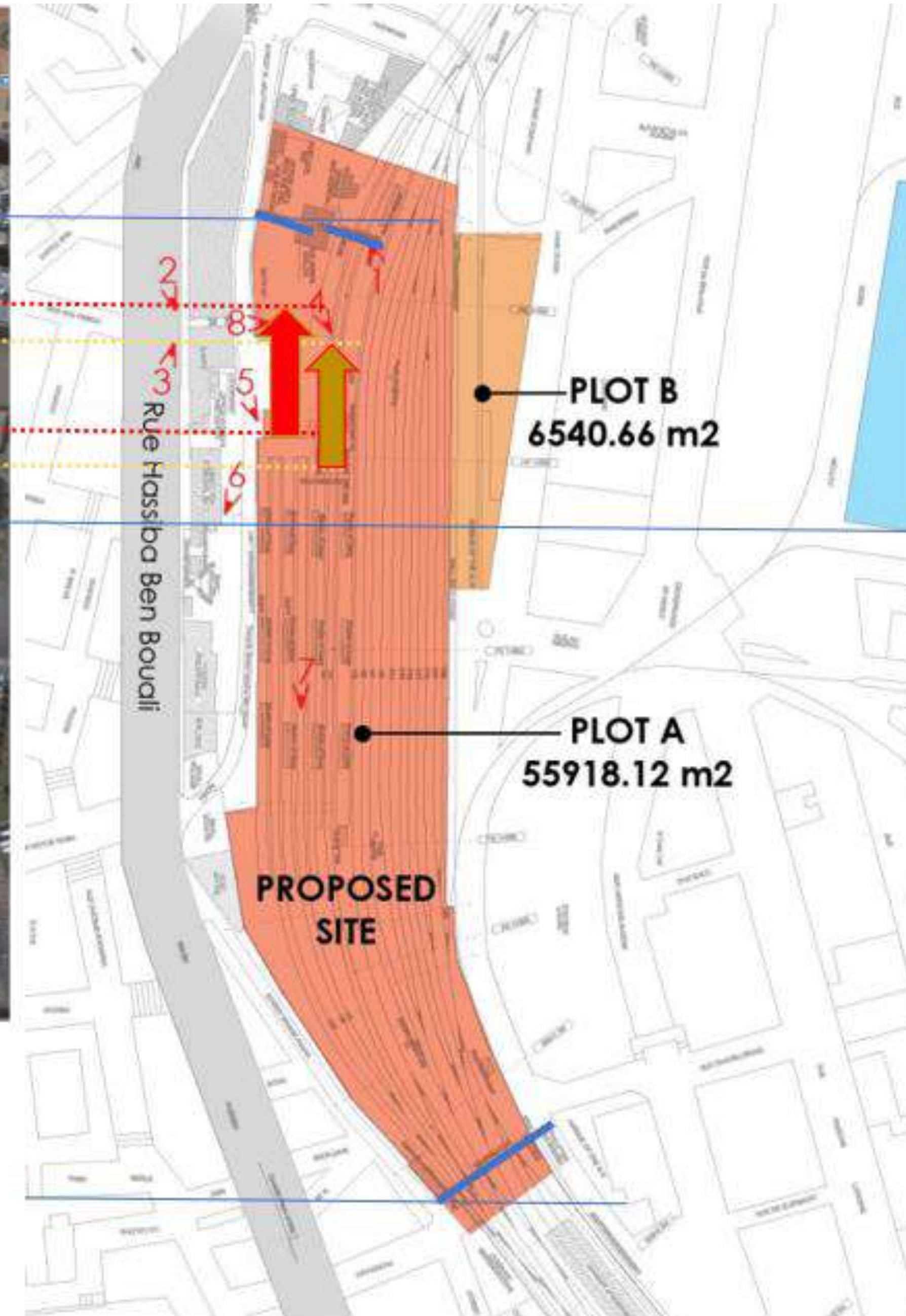
Prise en compte de la configuration envisagée des quais et voies (prolongement)



Superposition du faisceau projeté sur photo satellite



Emprise du faisceau et des quais projetés
(Document SETI-RAIL)



Emprise du faisceau et des quais existants et prolongements envisagés

ANALYSE : Agha dans le Grand Alger

Agha dans le réseau Grand Alger

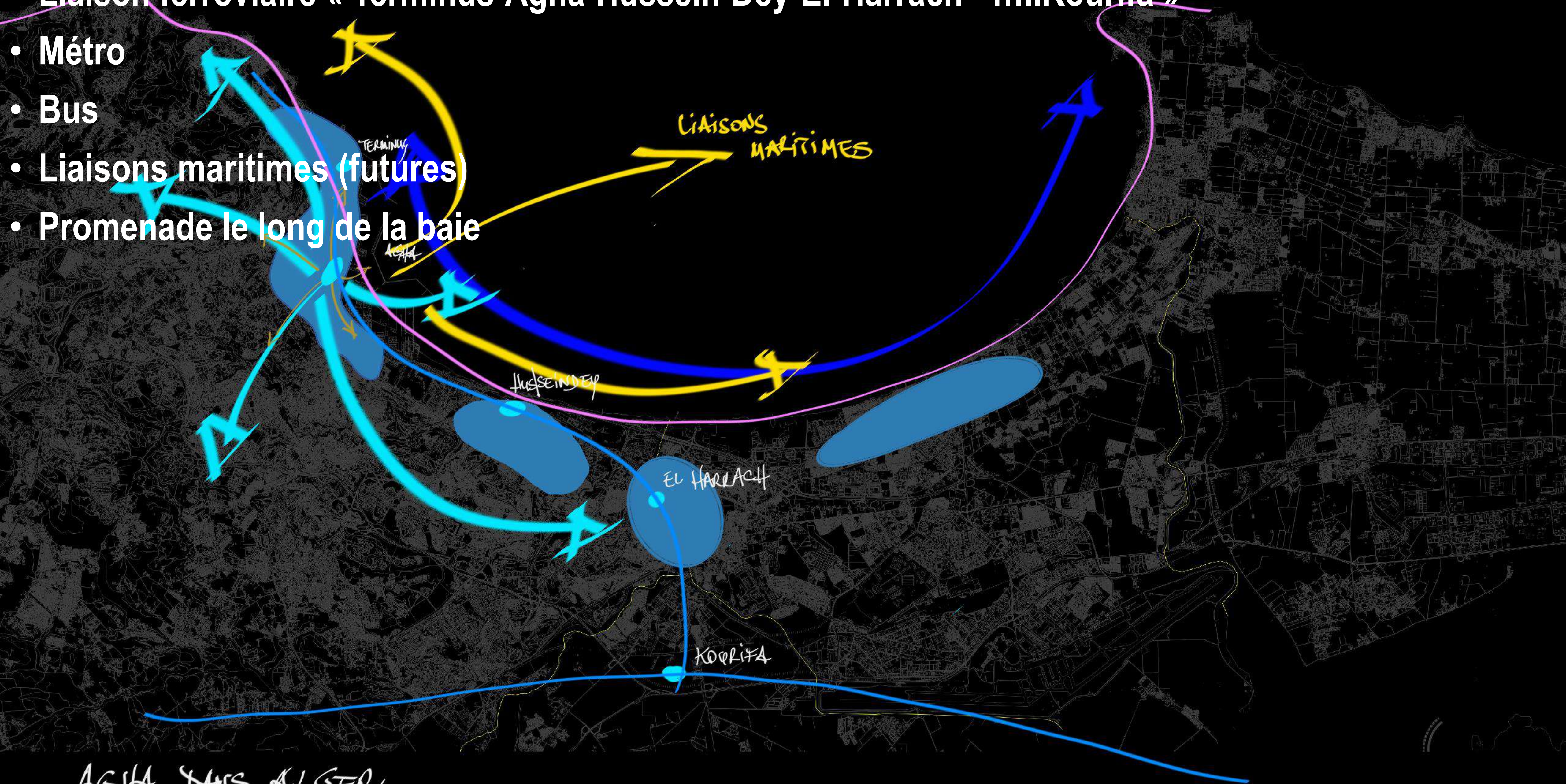
- Liaison ferroviaire « Terminus-Agha-Hussein-Dey-El-Harrach -Kourifa »

- Métro

- Bus

- Liaisons maritimes (futures)

- Promenade le long de la baie



LIAISONS
MARITIMES

TERMINUS
AGHA

HUSSEIN DEY

EL HARRACH

KOURIFA

AGHA DANS ALGER

Plan d'aménagement global

Esquisse ville/port



Google Earth

0 250m

A RETENIR DE L'ANALYSE DES DONNEES ET ORIENTATIONS

L'Agha et son environnement immédiat :

- Entrée principale vers le centre historique d'Alger.
- Accès actuellement chaotique
- Impression d'inachevé
- Rupture entre le centre-ville d'Alger et la mer.
- Potentiel de mobilité, d'accessibilité et d'inter-modalité de premier ordre : Trains, Bus, Parking, bateaux, TCSP.

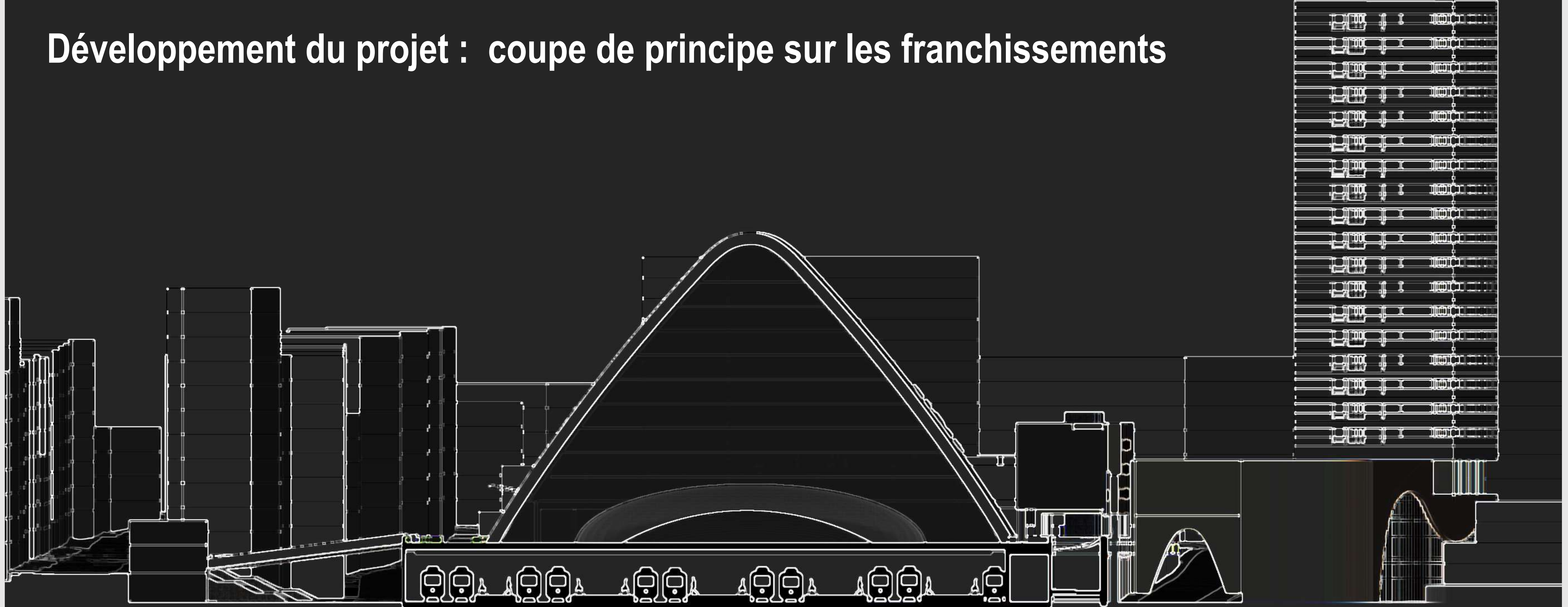
Inscription de la Gare dans l'hypercentre :

- 06 hectares du faisceau de rail
- Réparer et recoudre le tissu urbain notamment par le franchissement - perméabilité – Ville / Mer
- Examiner les modalités de faisabilité des franchissements le long d'axes structurants (suggérés par le PDAU)

Le projet immobilier de la Gare SNTF devient à fortiori « LE » projet structurant par excellence

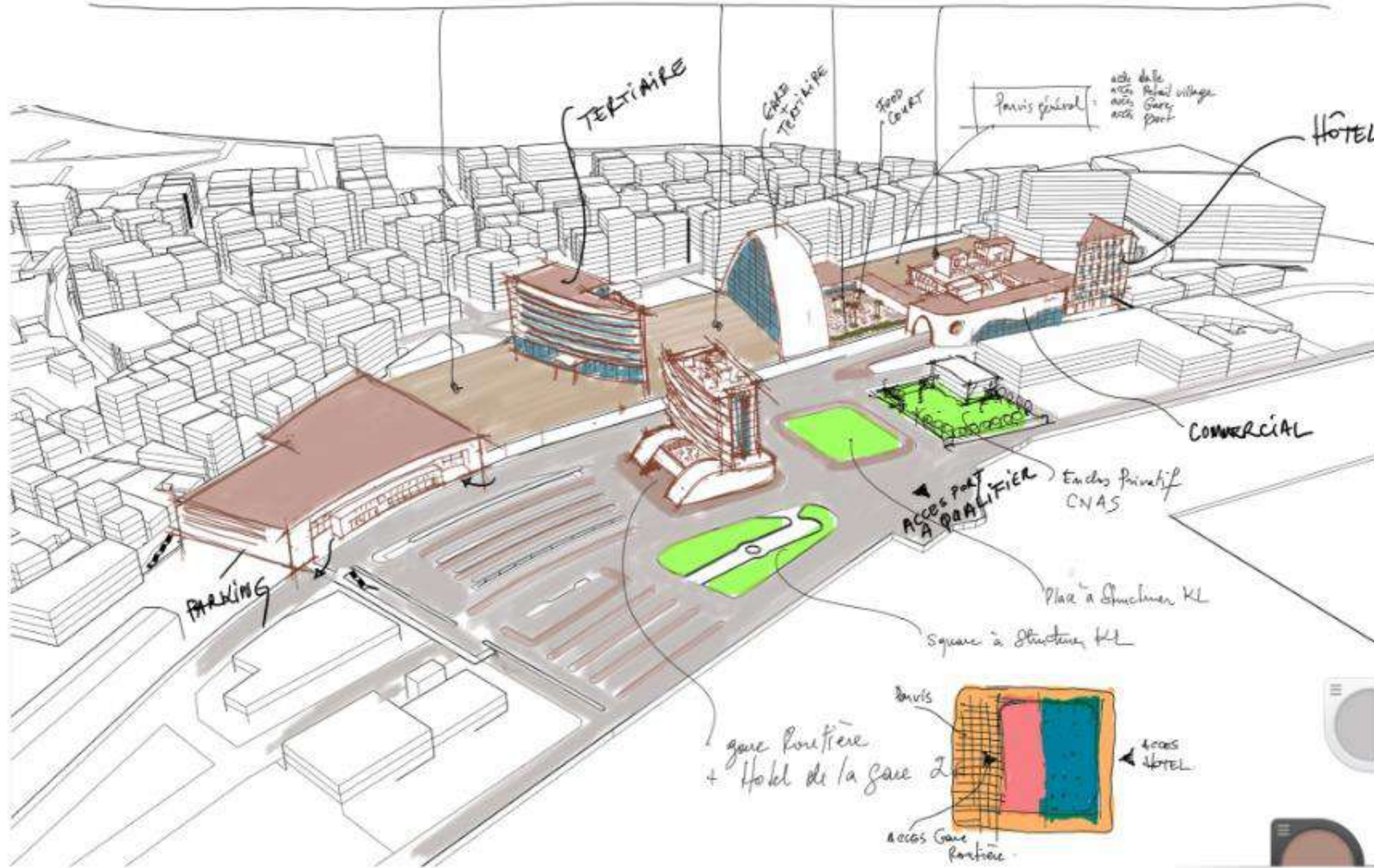


Développement du projet : coupe de principe sur les franchissements



Schémas de principes du projet : gabarits et fonctions

4 SEQUENCES
A QUALIFIER



la ville = la scène
l'architecture = le spectacle
le Paysage = le décor

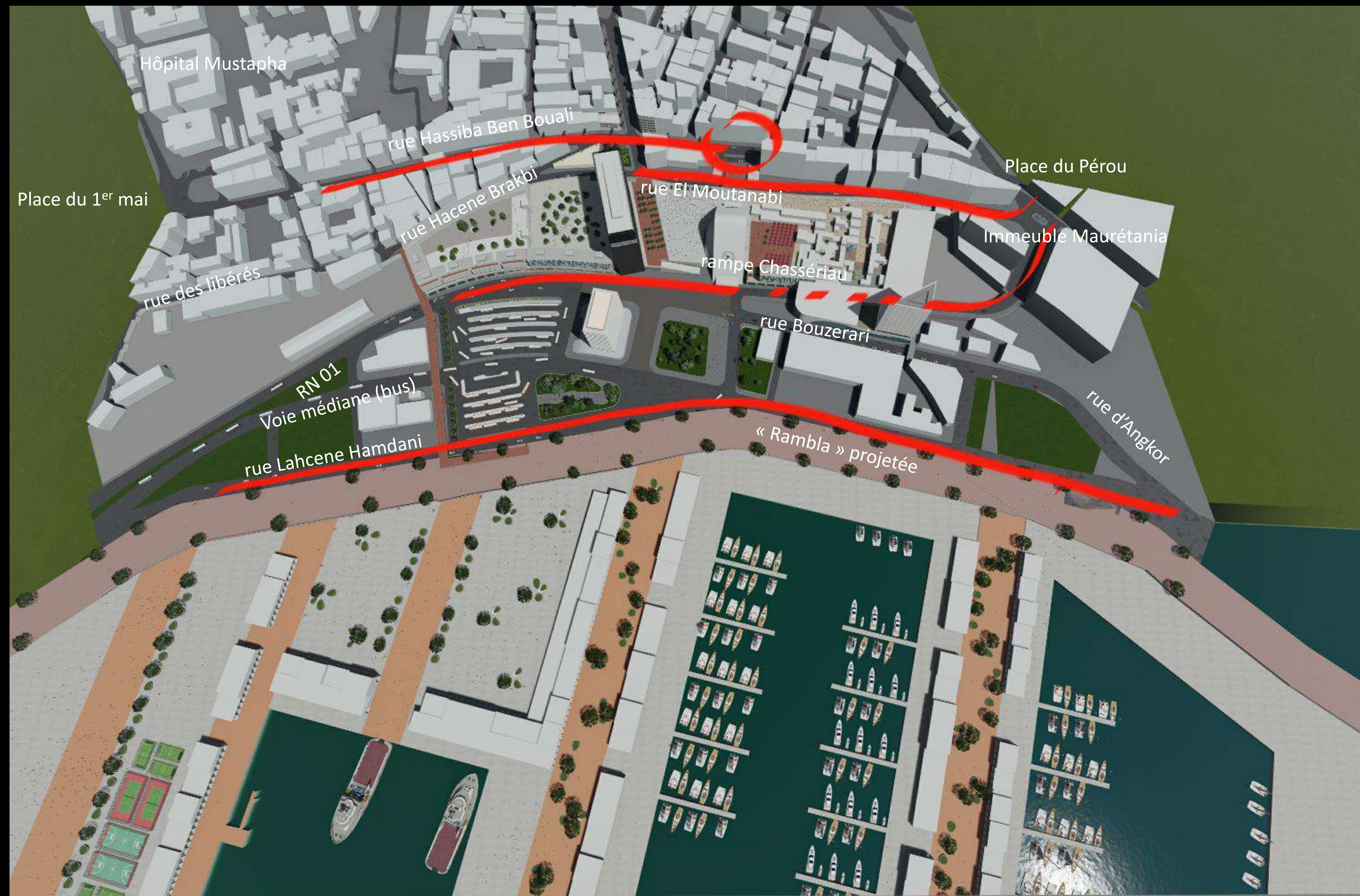
LE PROJET URBAIN :

SNTF, UN GRAND AMÉNAGEUR.

VARIANTE URBAINE

VARIANTE URBA 02 :

- Pas de modification de la voirie et des ouvrages existants :
- Aménagement d'une dépose à l'entrée de la gare sur la rue Hassiba Ben Bouali
- Raccordement de la rue El Moutanabi à la rue Hacene Brakbi
- Couverture partielle de la rampe Chassériaux par un bâtiment à créer
- Réaménagement / regroupement des stations de bus Tafourah en une gare routière et affectation de la voie médiane aux bus,



Cette variante – souple en terme de circulation mécanique – n'implique aucune interventions significative hors du périmètre appartenant à la SNTF ce qui représente une garantie de faisabilité du projet en terme de montage et de planning.

LE PROJET

DÉVELOPPEMENT DE LA VARIANTE URBA 02 :

Proposition : adressage côté mer de la gare et du bâtiment tertiaire supérieur

Proposition : adressage côté mer de la gare et du bâtiment tertiaire supérieur



Proposition : vue côté ville (ouest--> est)



Proposition : vue côté mer (ouest--> est)



Proposition 2: vue perspective côté mer (est--> ouest)



Proposition : vue perspective côté ville (ouest--> est)

Vue sur la rue El Moutanebi et accès vers la dalle supérieure depuis Maurétania :
- Escalier urbain monumental et voie piétonne/pompier



Vue perspective côté ville (ouest--> est)

Vue sur le retail mall



Vue perspective d'ambiance sur le parvis du retail mall



Proposition

La gare côté mer

Vue vers l'entrée de la gare sur « le boulevard urbain emblématique »



Vue générale sur le projet et la marina

La nouvelle façade d'Alger





MERCI

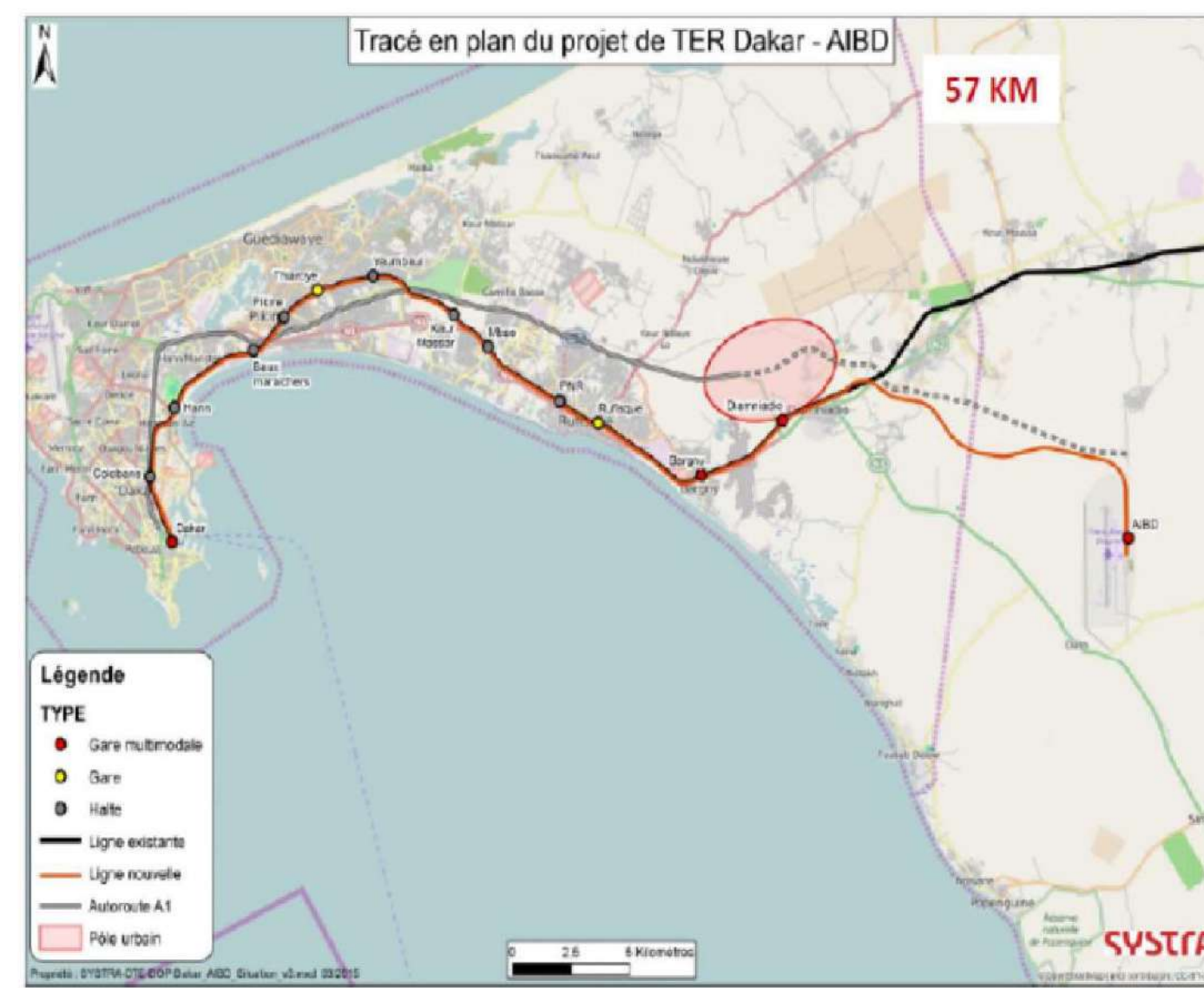


SENTER

TRAIN EXPRESS REGIONAL

PRESENTATION DE LA GARE DE DAKAR

PRESENTATION DU PROJET



-AIBD

illes de Dakar et Diamniadio dans un premier
relier l’Aéroport International Blaise Diagne,
ionner Dakar et ses environs, à réduire les
offrant une alternative de transport durable.
rer l’urbanisation dans les zones traversées,
on d’activités génératrices.

Objectifs du Projet

- Répondre aux besoins d’un aménagement équilibré du territoire pour une meilleure répartition des richesses ;
- Poursuivre la politique de mise à niveau des infrastructures ferroviaires afin de renforcer le réseau ferroviaire du Sénégal ;
- Avoir un rôle croissant dans la résolution des problèmes de mobilité urbaine et interurbaine entre Dakar et les capitales régionales ;
- Relier Dakar à d’importants pôles de développement tels que la nouvelle zone économique de Diamniadio, le nouvel Aéroport International Blaise Diagne, le pôle urbain de Diamniadio, le centre touristique de Mbour, ainsi que l’intérieur du pays ;
- Contribuer à la croissance économique du pays selon les axes définis dans le PSE (création d’emploi, ouverture du corridor régional, développement de nouvelles métropoles...)

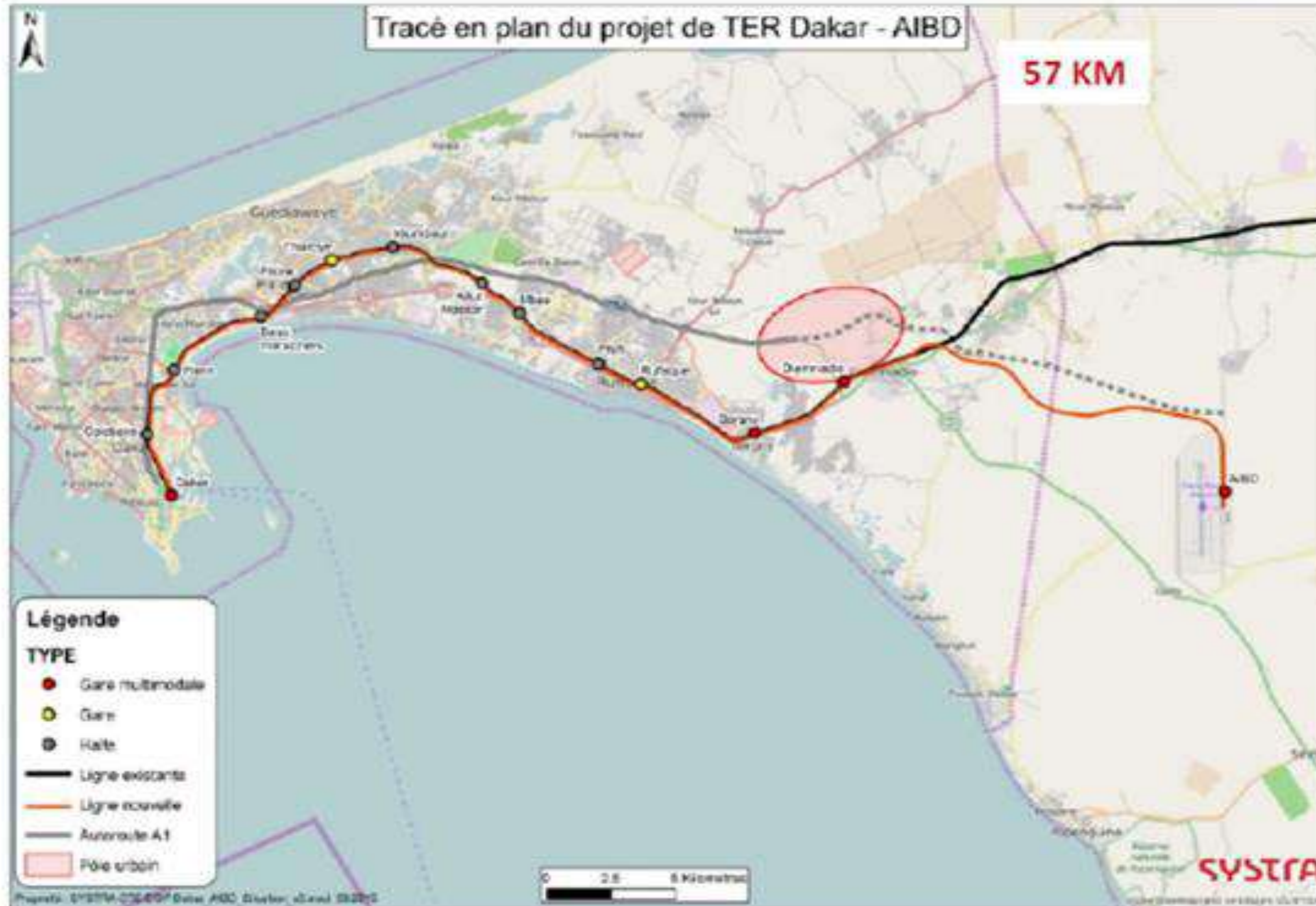
Caractéristiques techniques

Localisation : Axe Ouest – Centre
Longueur : 57 km de voies ferrées
Dessertes et gares

- _ Desserte en 45 min DKR – AIBD
- _ 14 gares (rénovation des bâtiments voyageurs de Dakar Rufisque)
- _ Création d’une gare emblématique à Diamniadio
- _ Gare AIBD en tranchée ouverte

Caractéristiques techniques

- _ vitesse : 160 km/h
- _ Création double voies à écartement standards UIC 1435 pour voyageurs + une voie métrique pour fret
- _ Ligne ferroviaire électrifiée (25 kV)
- _ Un (1) dépôt de maintenance
- _ Une emprise totalement sécurisée / clôturée
- _ Systèmes de signalisation et de télécommunication ferroviaires aux standards internationaux



HISTORIQUE DE LA GARE DE DAKAR







HISTORIQUE DE LA GARE DE DAKAR





La gare de DAKAR fait parti des 14 points d'arrêt que constitue ce projet.

Les locaux du bâtiment de la gare étaient constitués de:

- ✓ Un bâtiment principal construit sur (03) niveaux avec une structure porteuse mixte (murs porteurs en terre cuite–Poteaux BA –Poteaux Métalliques enrobés de béton –Poutres en BA) .
- ✓ Un bâtiment annexe construit sur un seul niveau, servant de bureaux, chambres cuisines.
- ✓ Un bâtiment construit sur un seul niveau servant d'ateliers,
- ✓ Une toilette constitué de plusieurs boxes située entre le bâtiment annexe et le bâtiment central.
- ✓ La desserte entre le rez-de-chaussée et l'étage du bâtiment principal est assurée par deux escaliers en structure métallique situés de part et d'autre du Hall central.
- ✓ La desserte de l'étage 1 et l'étage 2 était assurée , a vu d'œil, par des escaliers qui ne sont plus sur place.

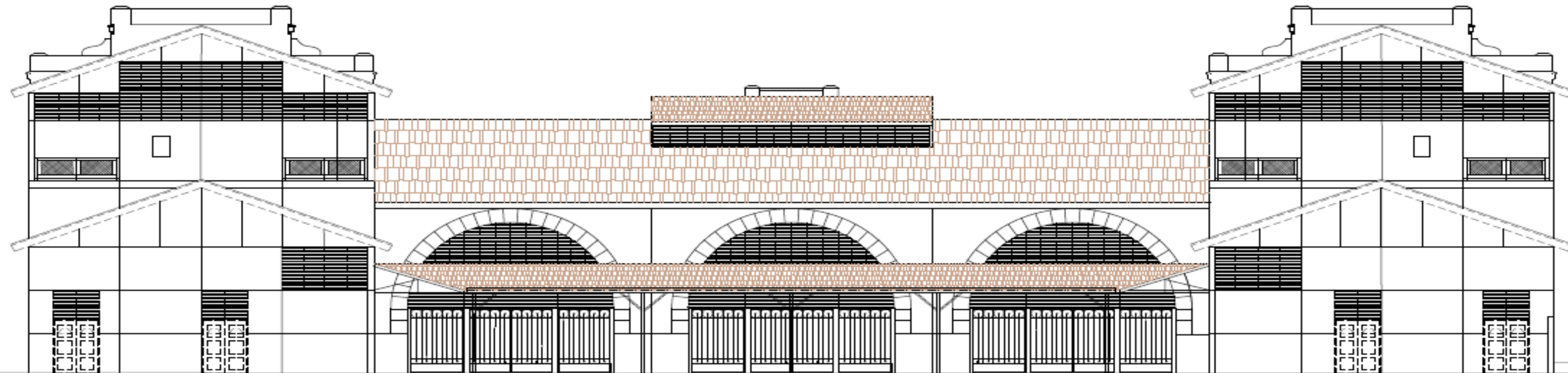
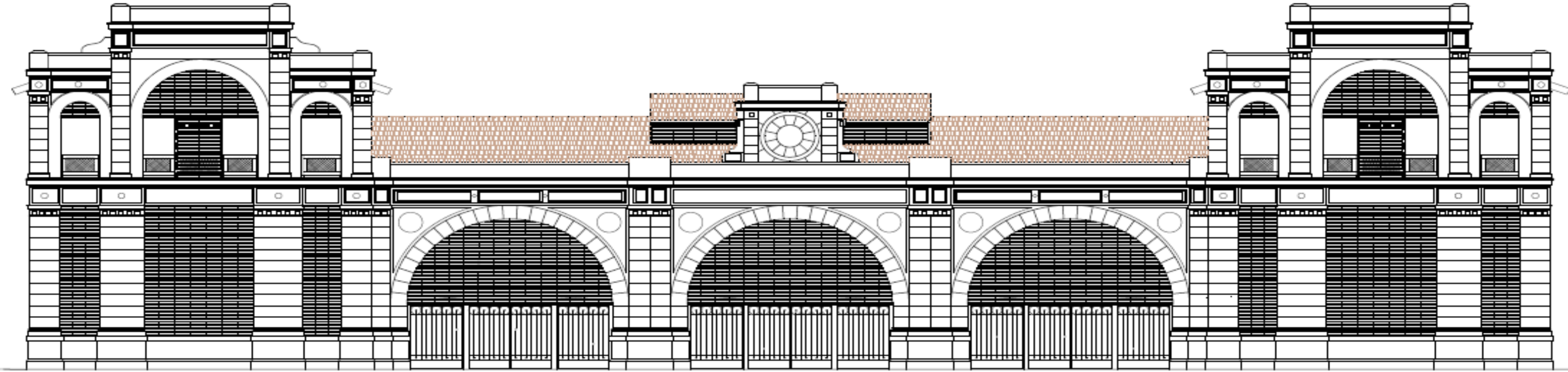
Analyse du secteur de la Gare Ferroviaire

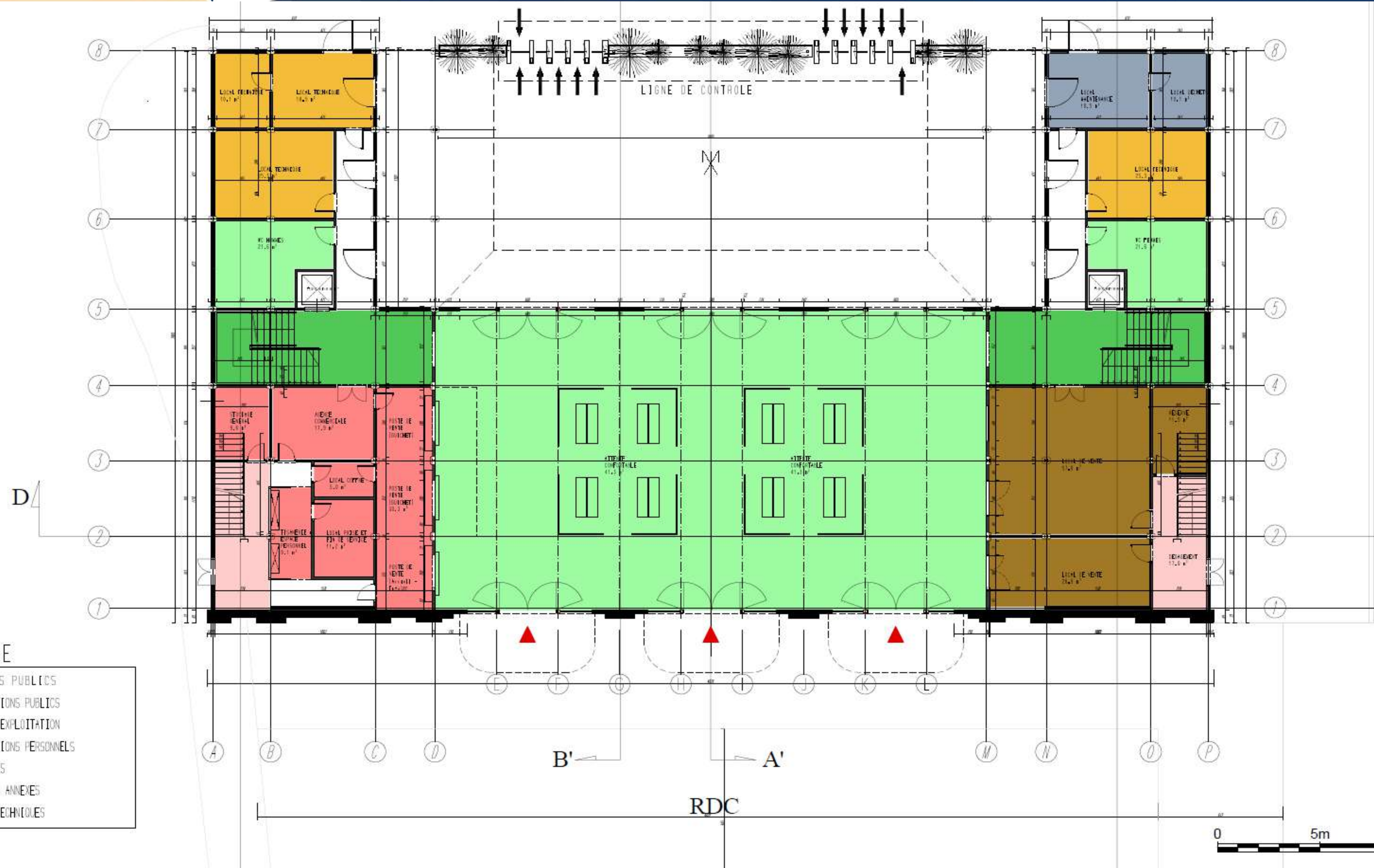
Les éléments de diagnostic de cette zone montre que :

- C'est le secteur où convergent tous les modes transport de l'agglomération dakaroise : rail, route et mer. Ce qui en fait une zone de multi et d'inter modalité majeure dans le cœur de ville et devra mériter, à ce titre, un traitement adapté.
- Il n'existe aucune coordination entre ces modes de transport en termes de réalisation de pôles d'échanges regroupant aussi bien des activités de commerces et de transport comme pouvant constituer des lieux de sociabilité.
- Le bâtiment historique inoccupé, est dans un état de délabrement avancé. Un début de rénovation y a été entamé à l'occasion du FESMAN mais les travaux sont à l'arrêt.
- Les rails ont été déposés le long du secteur (Cyrnos-Gare Ferroviaire) à la suite de la décision des anciennes autorités de délocaliser les fonctions voyageurs à CYRNOS avec en perspective un transfert définitif à Colobane.

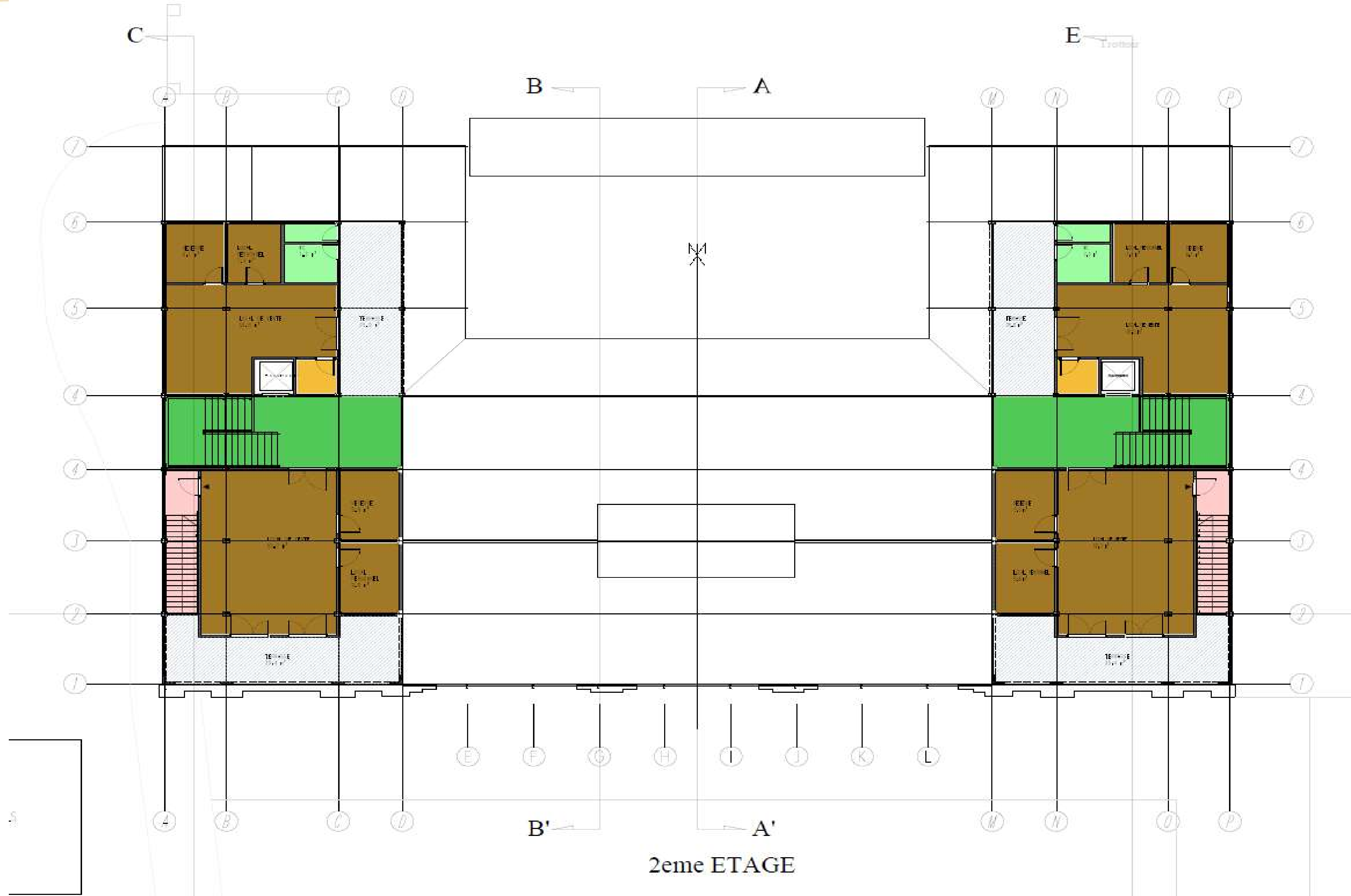
Développement du trafic ferroviaire entre Dakar et la Banlieue

L'actuel gare de Dakar était jusqu'à une date récente le terminal urbain du Petit Train de Banlieue (PTB), axe majeur de l'organisation des déplacements avec un trafic maximum atteint de 25 000 personnes transportées par jour. Selon les projections du PDUD (Plan de Déplacement Urbain de Dakar), ce chiffre devrait passer à 200 000 voyageurs par jours avec les aménagements de modernisation des infrastructures et de sécurisation des emprises en cours, lui offrant ainsi des conditions d'exploitation normales









Composition des bâtiments

Les bâtiments seront composés de :

- Hall :
- L'espace de Vente-Accueil : modules standard de guichets et d'automates de vente de titres.
- Systèmes d'information :
- Contrôle et validation :
- Equipements lié au confort : Pose de mobilier urbain, Bornes d'appel et caméras de surveillance, alarmes, grilles ou rideaux métalliques seront implantés au droit des accès.
- Toilettes publiques :

Toilettes publiques hommes/femmes distinctes, toilettes accessibles aux PMR.

- Des concessions : Des espaces dédiés aux commerces/boutiques seront prévus, livrés "à blanc", libre d'aménagement.
- Des espaces de l'Exploitation :
- Les locaux annexes : Différents locaux pour assurer l'entretien et le nettoyage, la maintenance, le stockage provisoire des déchets.
- Les locaux techniques : Locaux techniques nécessaires (selon les cas, climatisation, ventilation, télécommunications,...)

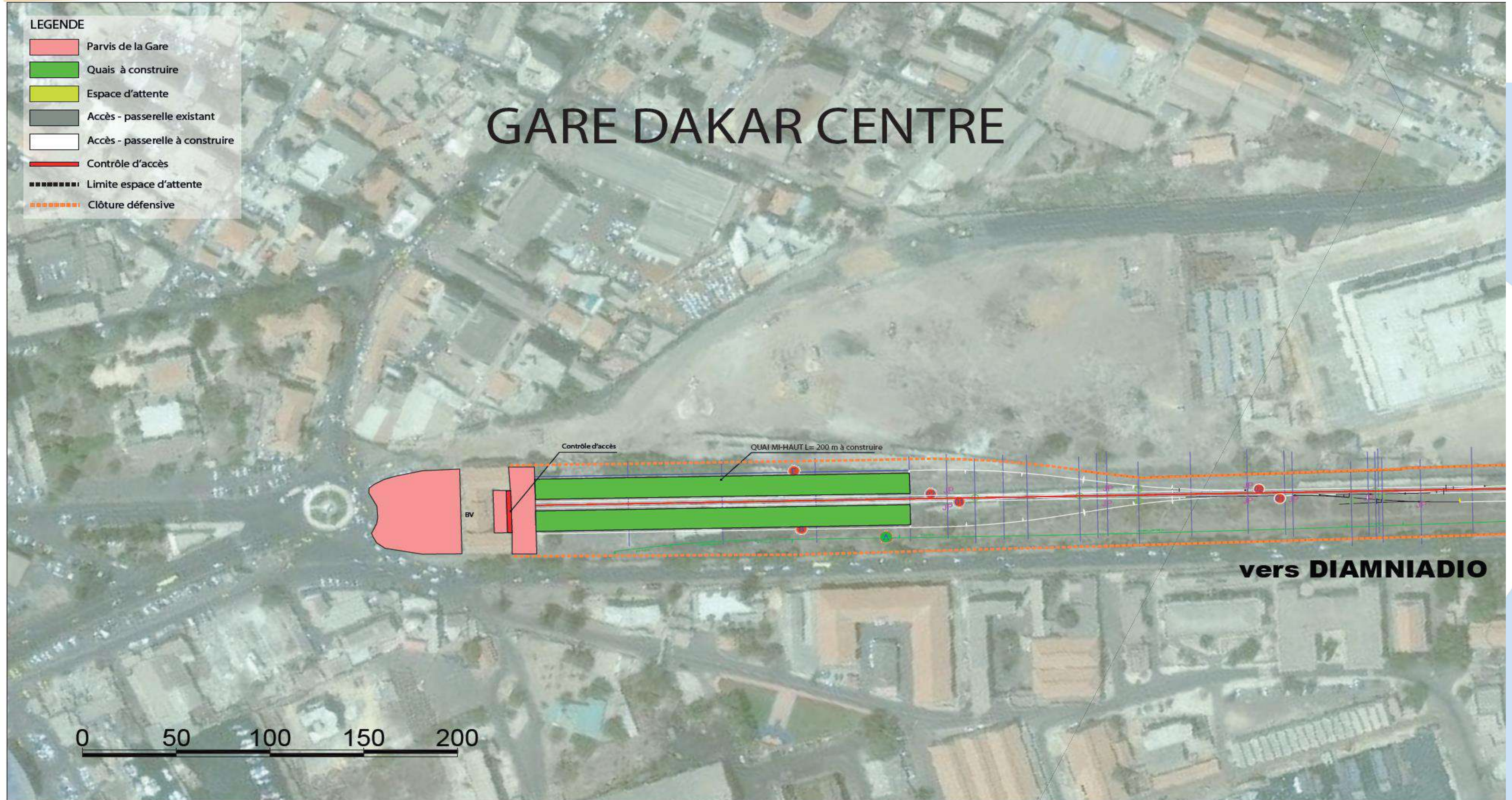
Composition des quais

Les quais seront composés de :

- Gare de Dakar : quai mi-haut de 550 mm, longueur 200 m, 2 quais

Composition extérieure

- Parvis
- parking











- L'insertion de la gare dans le tissu urbain
- Distribution des voyageurs pour accéder à la gare
- Flux d'intermodal contraint par la non disponibilité d'espace
- Insuffisance de parking
- Zone de la gare non requalifiée



Autoroute avec 3 voies par sens et trottoir



Rond point du Tirailleur

Accessibilité multimodale

- Conditions déficitaires pour la marche à pied. Pour rejoindre la gare, les piétons doivent franchir plusieurs voies et parfois marcher sur la voirie.
- Proximité du rond point du Tirailleur, qui présente des problèmes au niveau de l'aménagement et de son utilisation par les véhicules motorisés.
- Stationnement illicite dans les zones environnantes.
- Risque pour les piétons qui veulent rejoindre la gare: plusieurs voies à franchir.

Pôles d'attractivité économique et pôles générateurs de flux

- Eloignement relatif des pôles d'attractivité économique, vu que la gare de Dakar n'est pas située dans l'actuel cœur économique de la ville.
- Proximité du terminal des ferries à destination de l'Île de Gorée (l'un des lieux les plus touristiques de Dakar).
- Plusieurs petits marchés dans les zones environnantes : marché malien, marché de l'embarcadere du Joola, marché informel au niveau de l'entrée du parking à l'arrière de la gare.
- Le Grand Théâtre National et le Musée des Civilisations Noires (pour le second ouverture prévue courant 2017) : deux édifices avec des capacités d'accueil très importantes mais pour l'instant fréquentation faible.

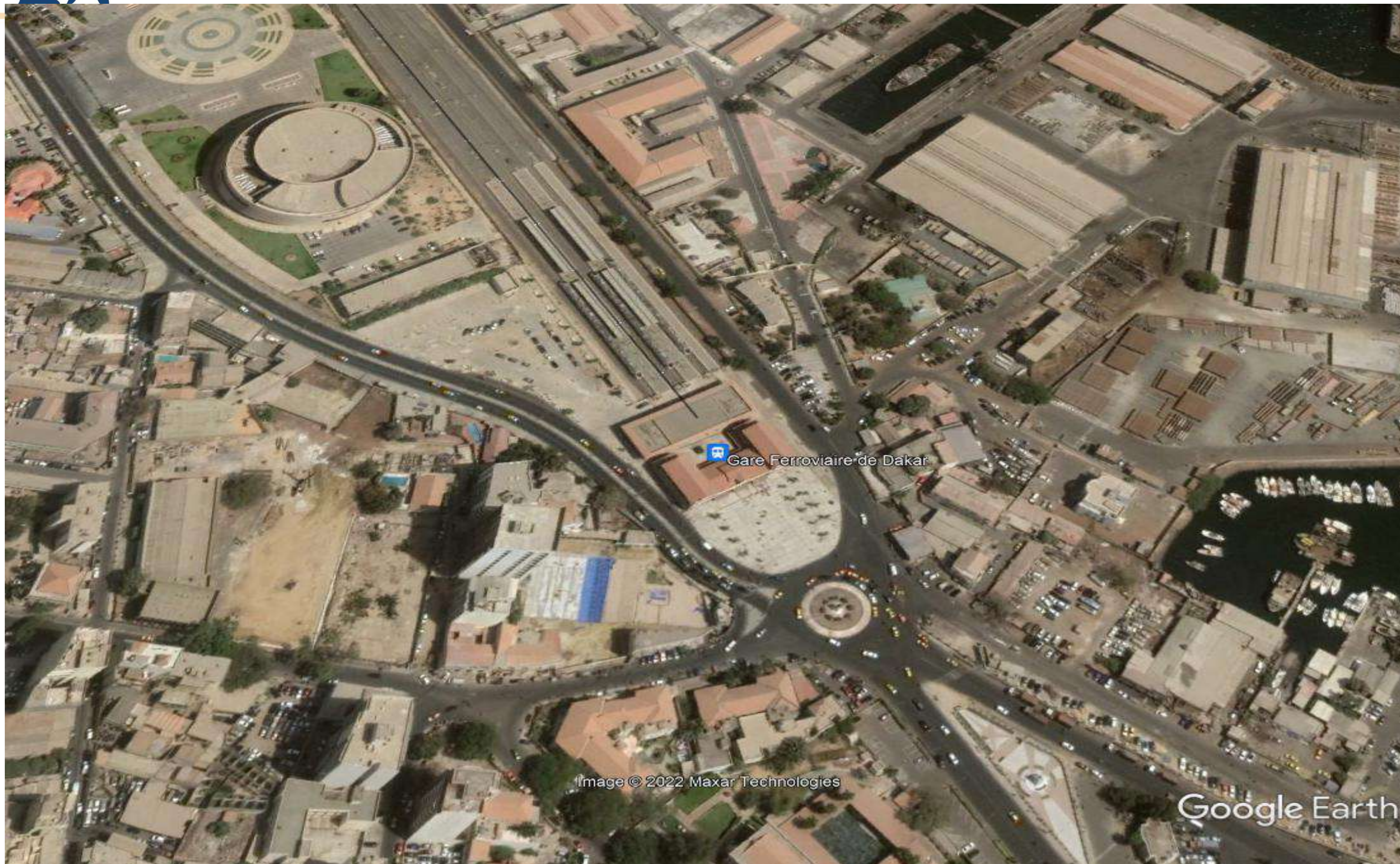
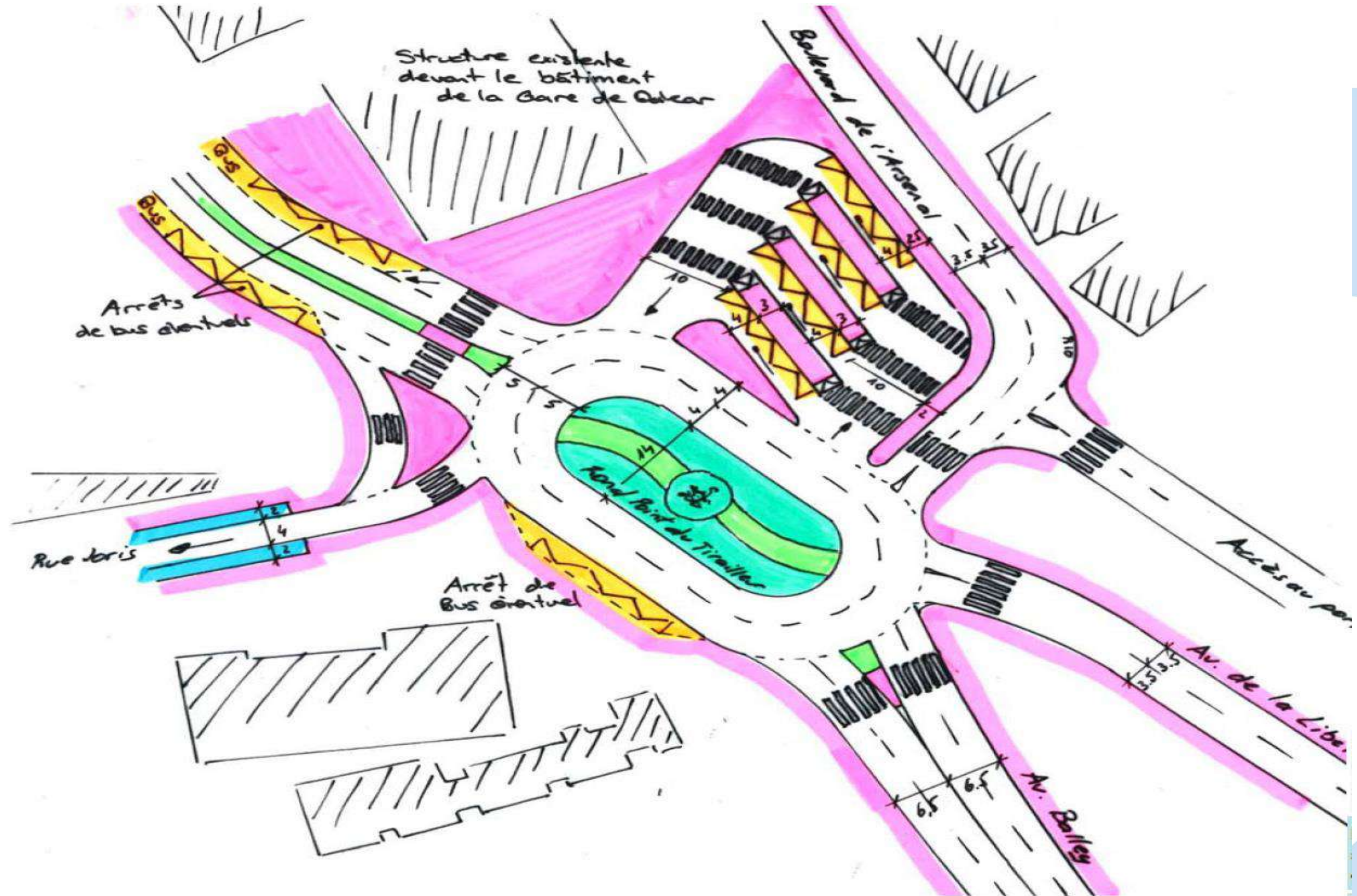


Image © 2022 Maxar Technologies

Google Earth



MERCI POUR VOTRE ATTENTION

SENER

Société Nationale de Gestion du Patrimoine du Train Express Régional
Rue Mohamed X Jules Ferry Immeuble Tamaro 1^{er} étage
Dakar - Sénégal
Tel : 33 824 74 74 - Fax : 33 824 00 00 - Email : contact@sener.sn





الشركة الوطنية للسكك الحديدية التونسية
SOCIETE NATIONALE DES CHEMINS DE FER TUNISIENS

REPENSER LES GARES FERROVIAIRES AFRICAINES: EXPERIENCE TUNISIENNE

PRESENTE PAR HEDI DHAOU

AVRIL 2022

PLAN



LE RÉSEAU FERROVIAIRE TUNISIEN



LES GARES FERROVIAIRES



LA GARE CENTRALE TUNIS VILLE



CONCLUSION

1. LE RÉSEAU FERROVIAIRE TUNISIEN



1. LE RÉSEAU FERROVIAIRE TUNISIEN

2165 km

23 lignes

**Seulement
1777 km
exploités**

**4 liaisons de
transport combiné
rail-route**



2. LES GARES FERROVIAIRES

Le réseau ferré tunisien comporte 267 gares, stations et haltes dont 74 gares principales

GARE DE TOZEUR

Ils constituent des monuments hautement symbolique:
Héritage culturel et historique



A travers la gare se lit l'histoire architecturale de la ville

2. LES GARES FERROVIAIRES

NOUVELLE GARE GAAFOUR



Certaines sont des icônes du passé et incarnent une valeur historique



Historiquement tout autour de cette Gare s'est construit toute une ville

2. LES GARES FERROVIAIRES

Nouvelle GARE DAHMANI



La revitalisation de petites gares

- Redonner vie
- Développer des services
- Revitaliser des villes

2. LES GARES FERROVIAIRES

Nouvelle GARE DE BEJA

La gare est au cœur de la ville :
pièce maîtresse du
tissu urbain



PERSPECTIVE GENERALE



3. GARE CENTRALE DE TUNIS VILLE

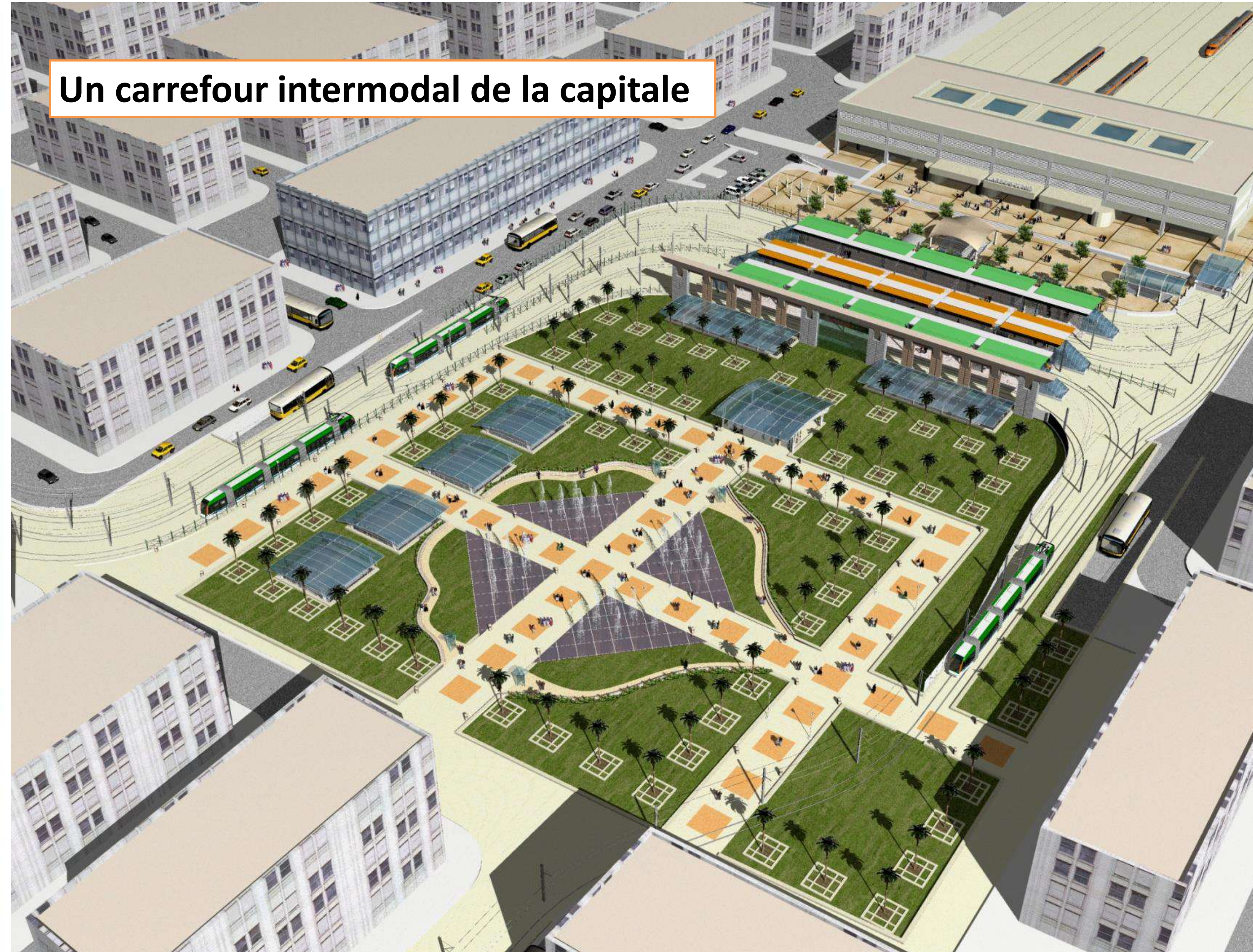
- La gare de Tunis est la gare principale du réseau située au centre de la capitale
- Fait partie du pôle d'échange de la place Barcelone
- Elle constitue le maillon central de la chaîne de mobilité au centre ville



3. GARE CENTRALE DE TUNIS VILLE

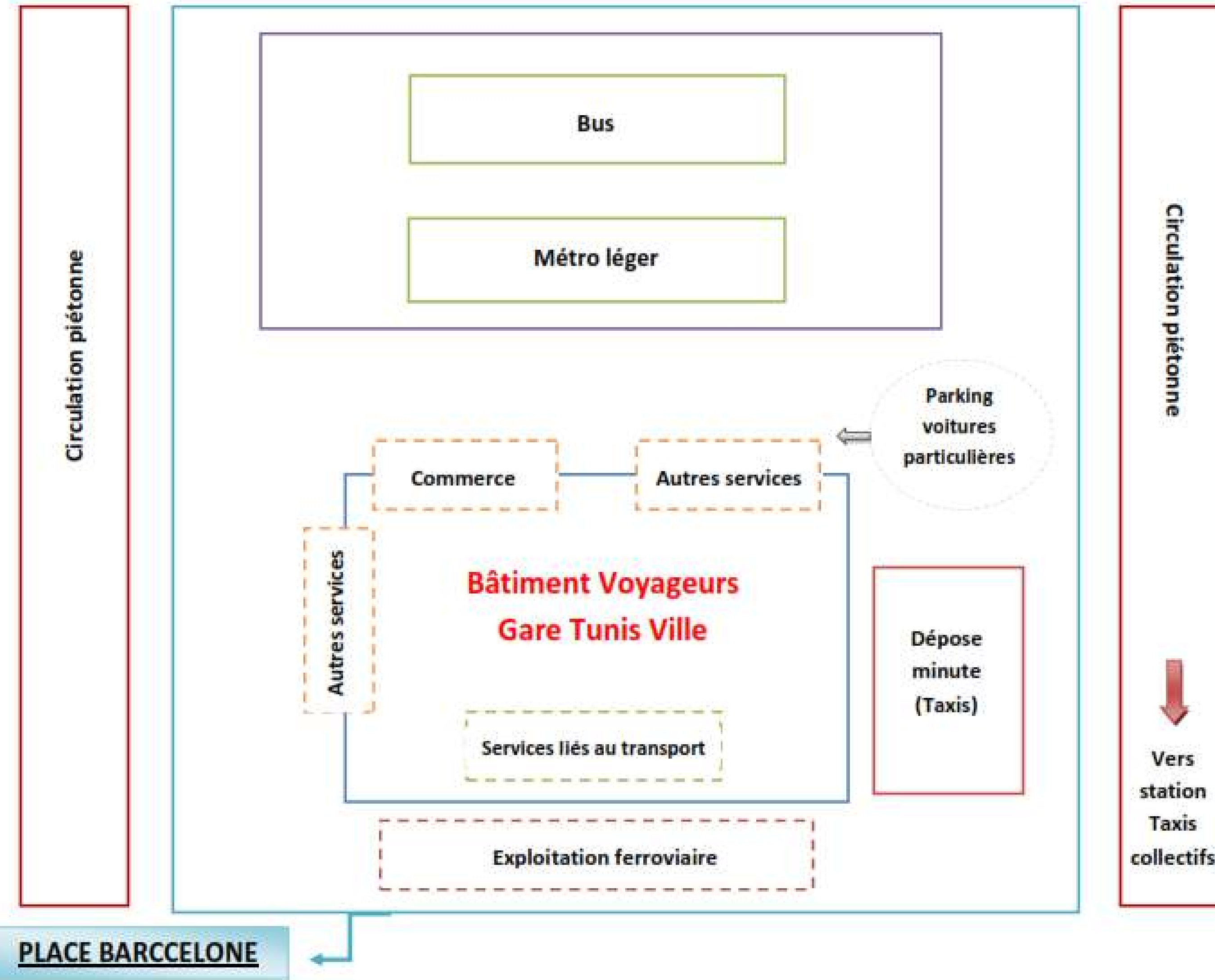
PÔLE D'ÉCHANGE PLACE BARCELONE

Un carrefour intermodal de la capitale



3. GARE CENTRALE DE TUNIS VILLE

PÔLE D'ÉCHANGE PLACE BARCELONE



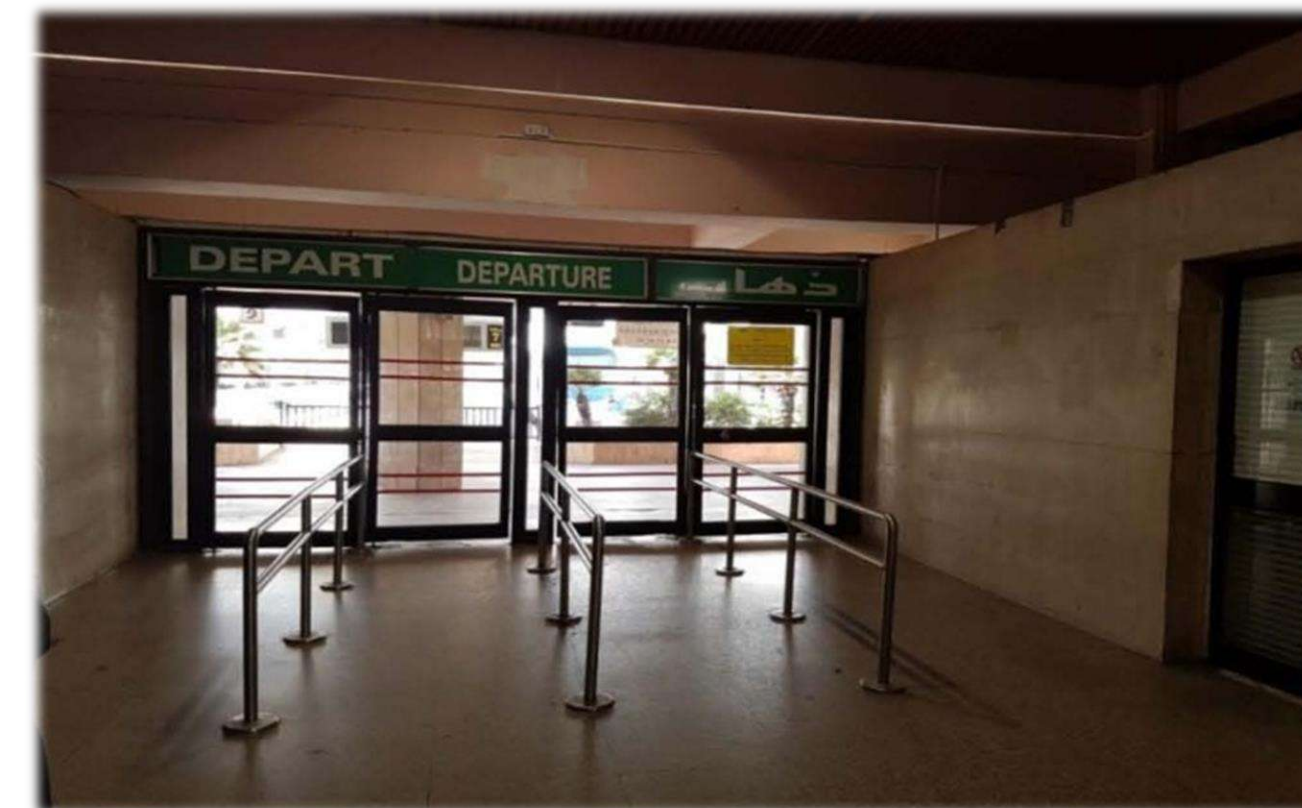
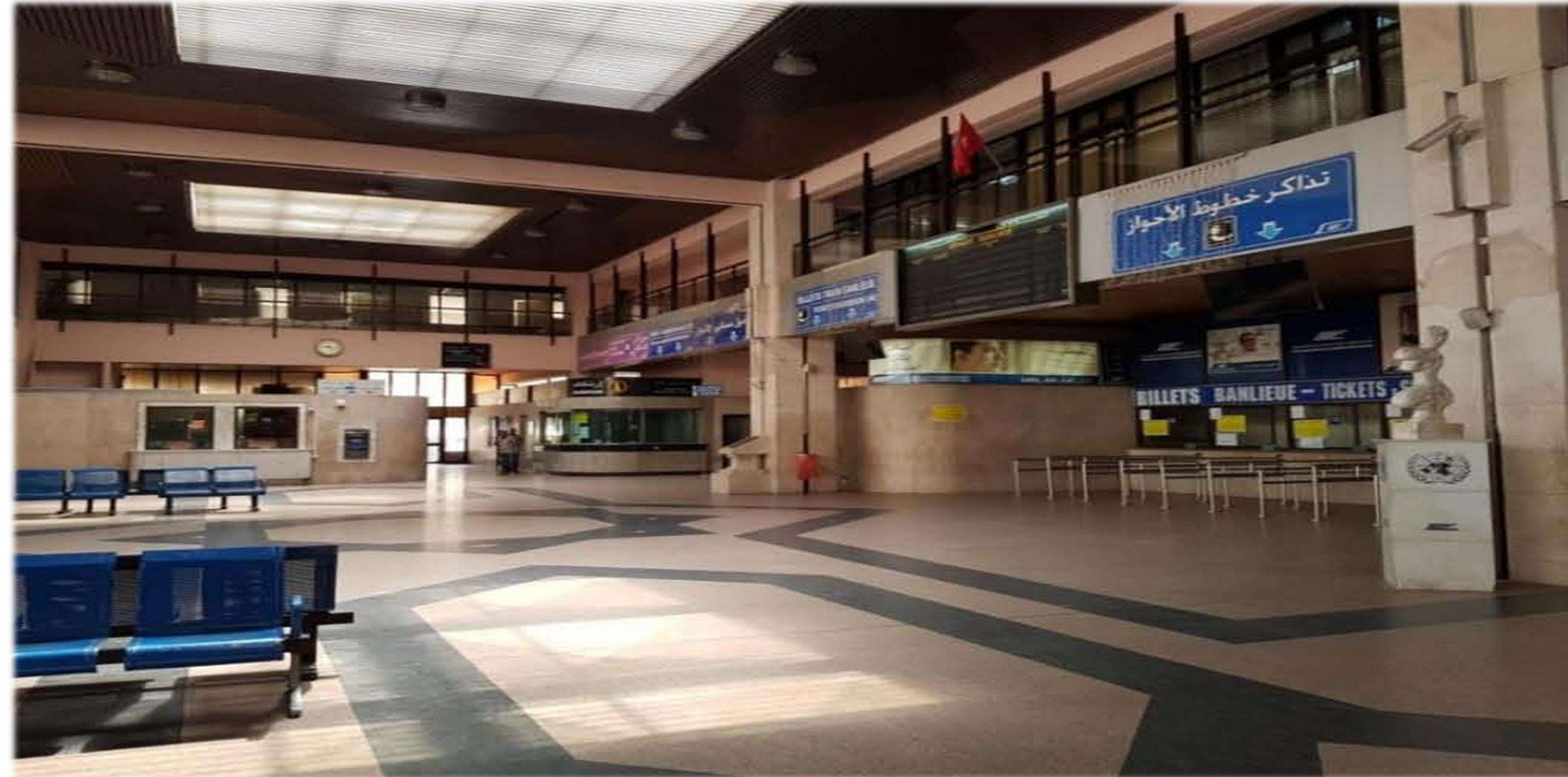
3. GARE CENTRALE DE TUNIS VILLE

- Le bâtiment existant de la gare est composé d'un RDC et deux étages
- RDC : locaux commerciaux + espace de services d'exploitation + circulation des flux voyageurs.
- 1^{er} et 2^{ème} étage : Bureaux de la Direction Générale = administration
- Superficie totale de 4000 m² avec seulement un espace libre de 3000 m²



3. GARE CENTRALE DE TUNIS VILLE

Un RDC encombré avec des accès voyageurs étroits



3. GARE CENTRALE DE TUNIS VILLE

- Avec la mise en service des deux premières lignes du réseau ferroviaire rapide (Lignes E et D), la gare est appelée à s'adapter aux flux grandissants de voyageurs, à l'arrivée, à la sortie et à l'intérieur.
- Un nombre de voyageurs pouvant atteindre 50 mille voyageurs en heure de pointe.

L'aménagement de la Gare est en cours d'étude et a pour objectifs:

- Assure une bonne gestion des flux voyageurs en toute fluidité et sécurité
- Transformer la gare en un espace de vie
- Assurer une séparation des flux voyageurs grandes lignes (voie métrique et voie normale) et flux voyageurs banlieue et RFR
- Installer un nouveau système billettique assurant l'intermodalité entre les différents modes de transport : train, métro et Bus

3. GARE CENTRALE DE TUNIS VILLE

- Nécessité d'instaurer une bonne qualité de l'information voyageurs avec l'intégration tarifaire ou la possibilité de combiner les titres de transport, (SNCFT, RFR et TRANSTU)



**✓ LES USAGERS DE LA GARE NE SONT PAS QUE
DES VOYAGEURS, ILS SONT ÉGALEMENT DE
POTENTIELS CONSOMMATEURS.**

**UN MARCHÉ PUISSE SE CRÉER DANS ET AUTOUR
DE LA GARE**

4. CONCLUSION

- LA GARE N'EST PLUS UN POINT D'ACCÈS AU RÉSEAU FERRÉ MAIS UN ESPACE DE PLUS EN PLUS COMPLEXE QUI ASSURE DE NOUVEAUX SERVICES AUX VOYAGEURS.

- REPENSER LES GARES FERROVIAIRES PERMET DE:
 - REMETTRE LE TRAIN AU DEVANT DE LA SCÈNE
 - DEMONTRER LA PERTINENCE DU FERROVIAIRE POUR SE MAINTENIR FACE AUX CONCURRENTS COMME UN MOYEN DE TRANSPORT ÉCOLOGIQUE ET FIABLE



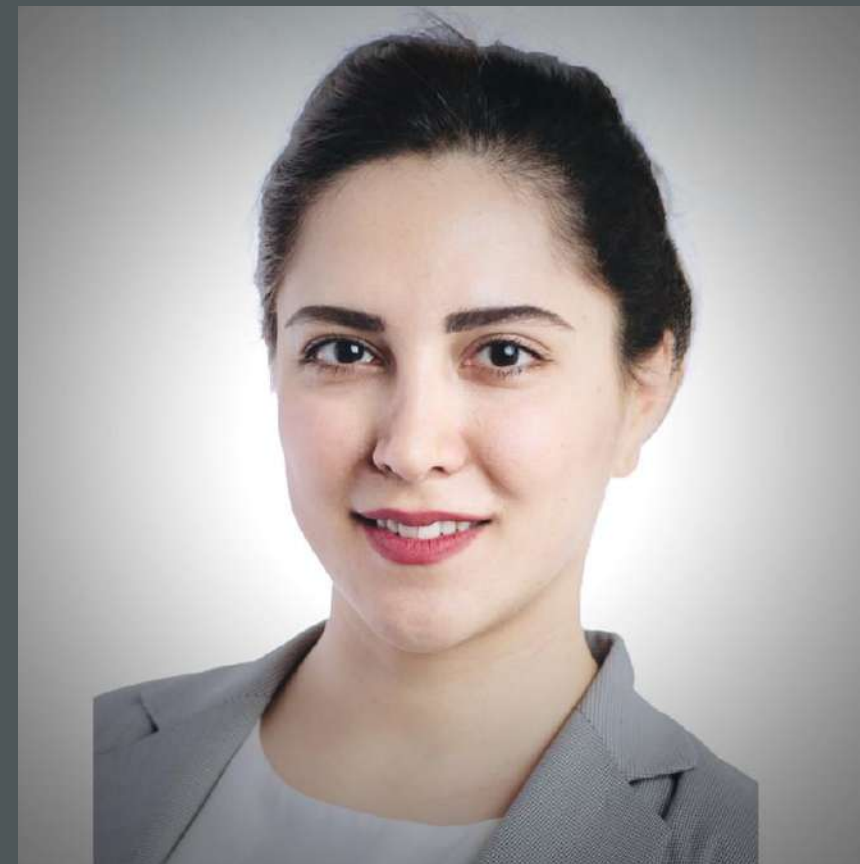
Merci pour Votre Attention



Webinar Break

Panel 3: Railway stations : what place in urban reconfiguration ?

Moderator: Isabelle De Keyzer, UIC Sustainable Unit



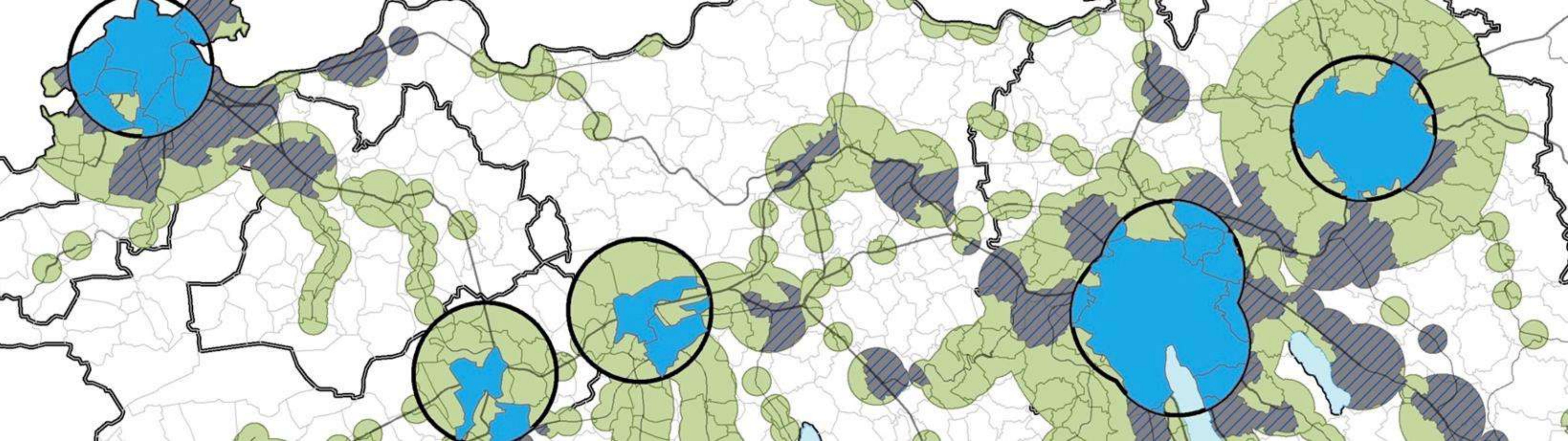
Maha Soltaniehha
AFRY Switzerland Ltd



David HUGHES
Irish Rail



Christophe CHEVALIER
AREP



Railway Stations as a driver of sustainable territorial development

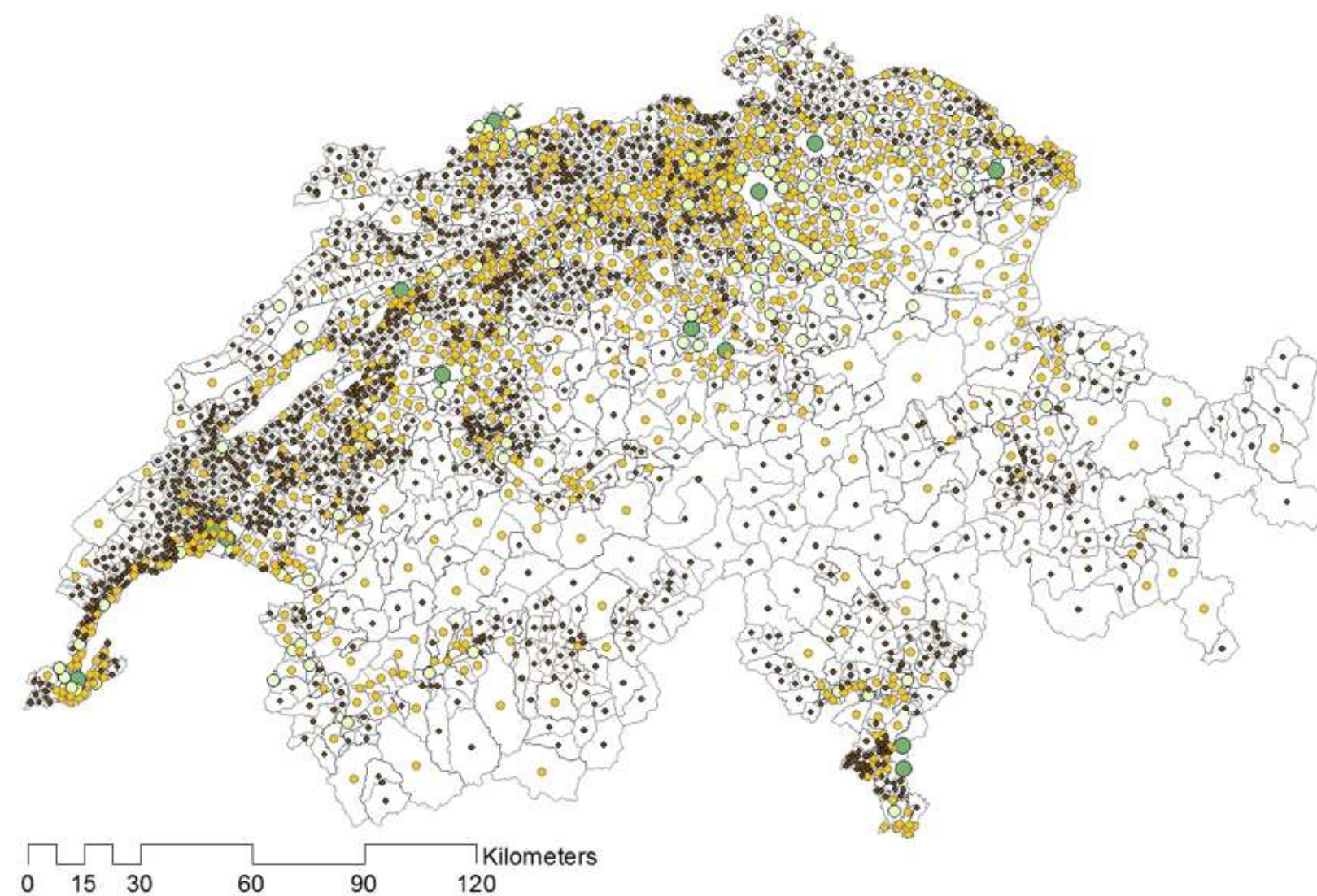
Dr. Maha Soltaniehha

AFRY SCHWEIZ AG

Where does the population grow fastest in Switzerland?

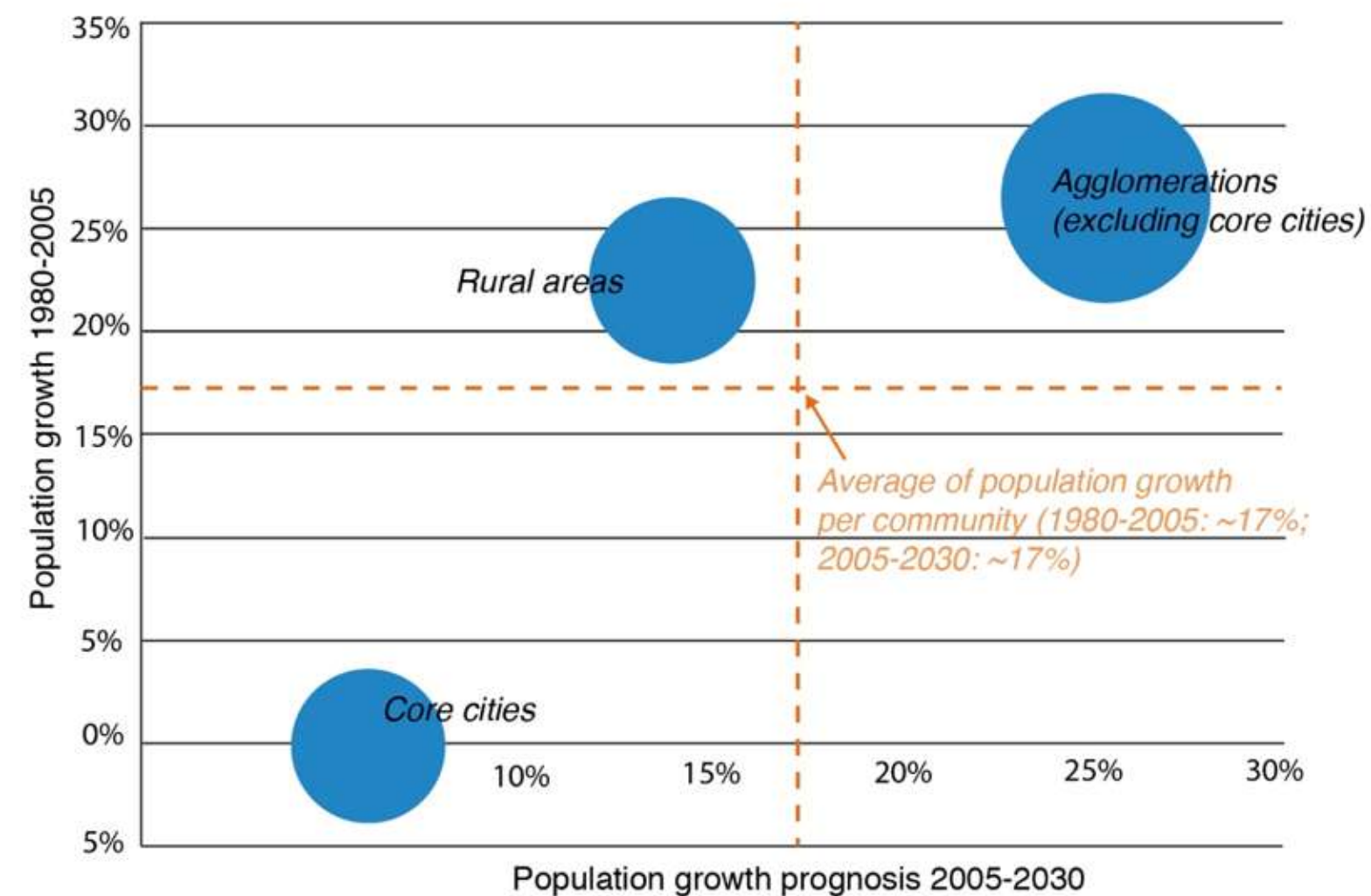
Importance of small and mid-sized communities

- *Small communities = population < 2,000*
- *Mid-sized communities = population 2,000 - 13,000*
- *Large communities = population 13,000 – 50,000*
- *Very large communities = population > 50,000*



Absolute population growth

1980 - 2005		2005 - 2030	
Core cities	-5,554	Core cities	+117,095
Agglomerations (w/o core cities)	+721,107	Agglomerations (w/o core cities)	+875,343
Rural areas	+376,381	Rural areas	+288,139



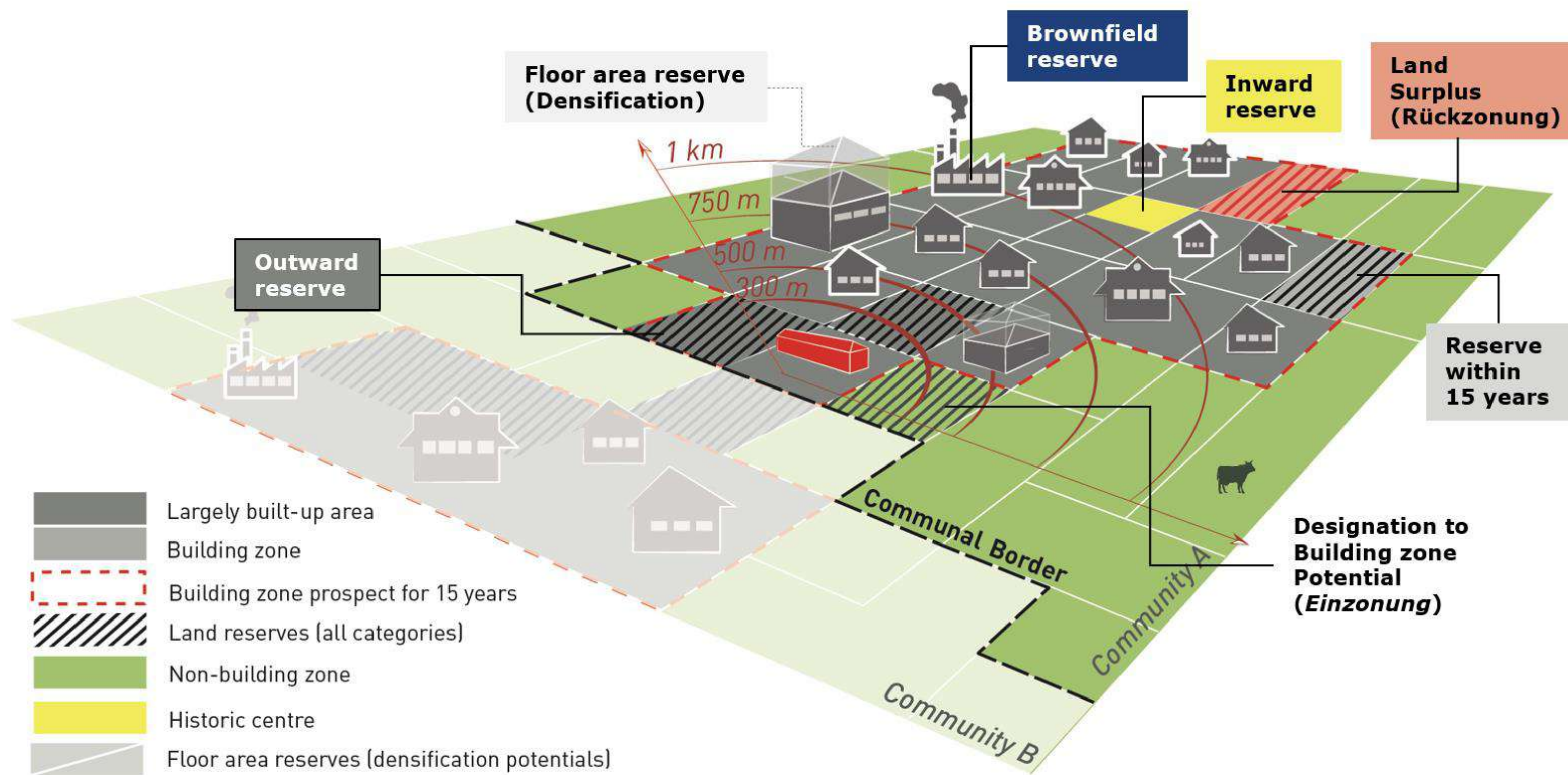
Comment

- 95.6% of all communities in Switzerland have less than 13,000 inhabitants.
- More than 58.9% of the Swiss population are living in small and mid-sized communities.
- 81% of the communal councils in CH are volunteers (Militia System), 17% part-time and only 2% full-time.
- Federal and Cantonal planning instruments are authority-binding, whereas Communal planning instruments are landowner-binding.

Source: left) own representation; data: geo.admin.ch, 2013; right) Source: Swiss Federal Council, 2015; based on the population growth prognosis of BFS, reference Scenario 2010; translated by the author

Switzerland establishes strict land use regulations to address the problem of sprawl and patchwork development in many regions.

Zoning concept in Switzerland



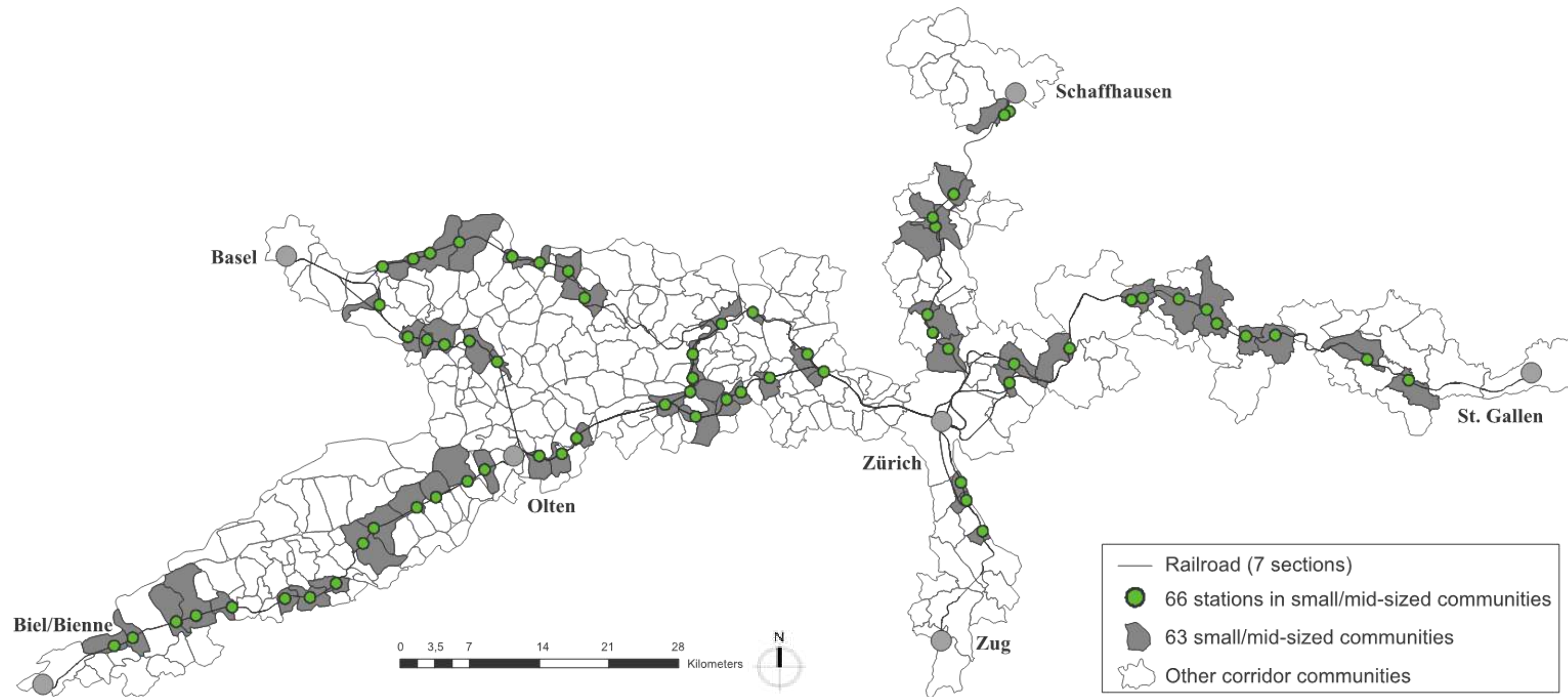
Comment

- “Inward development before outward development” was officially established in the revision of the Swiss Spatial Planning Act (RPG) of 2014.
- A coordinated spatial and transportation policy-making is missing as a requirement for a principal strategy of “inward development before outward development”, and as preparation for a new strategy of “Railway-Oriented Spatial Development”
- Due to the “demand-oriented” approach for dimensioning of the future building zone, many small and mid-sized communities will have to rezone some of their land reserves to non-building land (*Rückzonung*).

Source: own representation; based on Scholl, 2016

How could existing infrastructure support dense developments around railway station?

Five main railway corridors from Zürich to Basel, Biel, Zug, St. Gallen and Schaffhausen



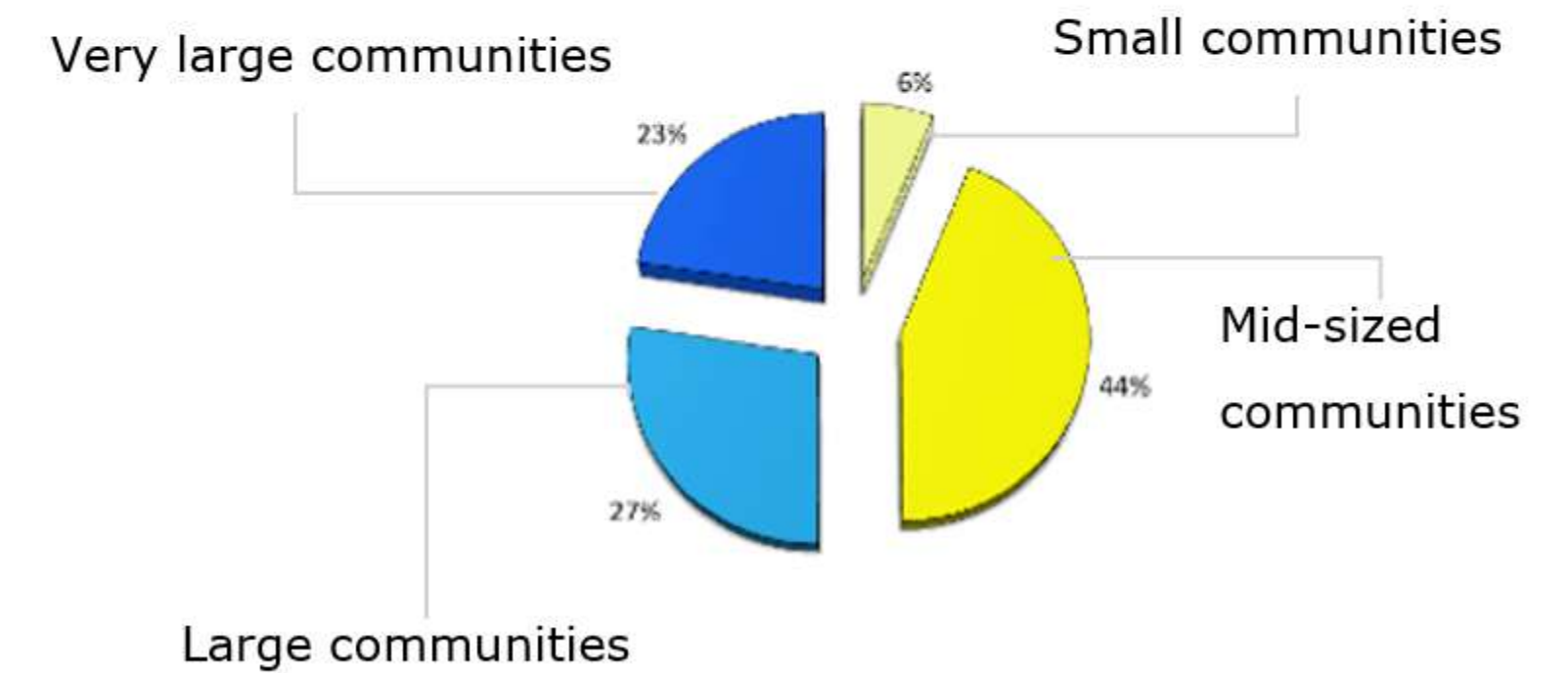
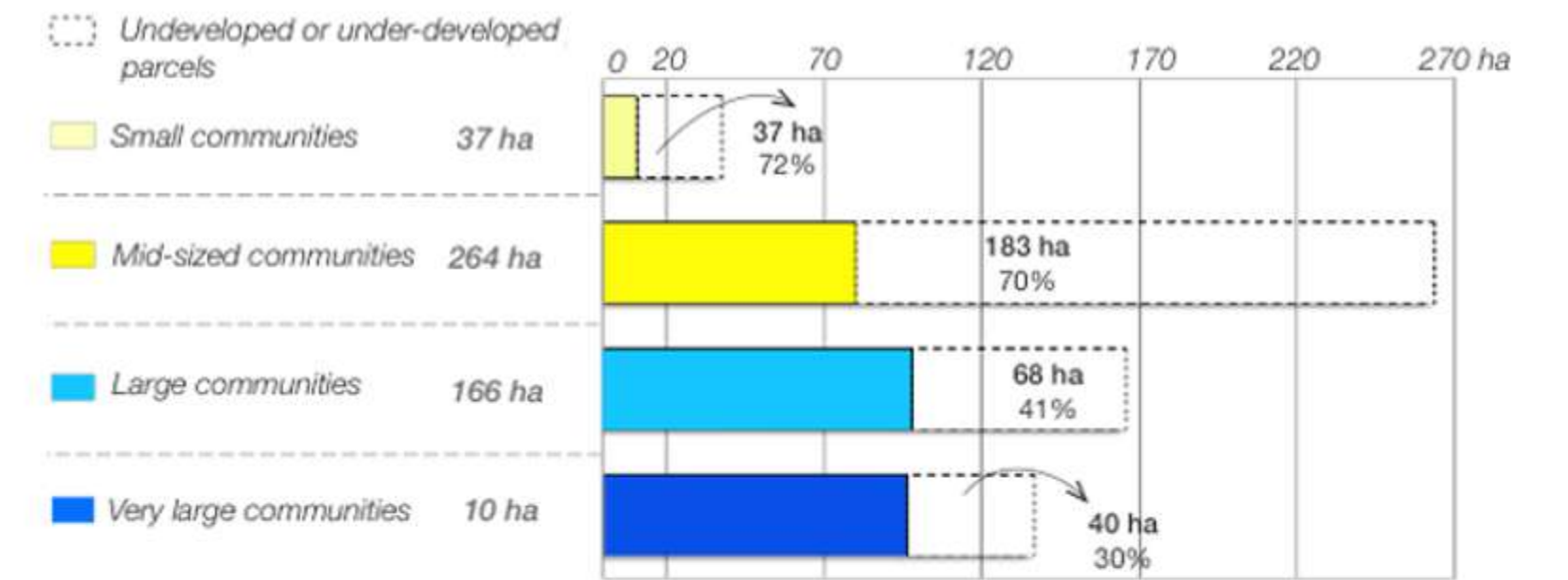
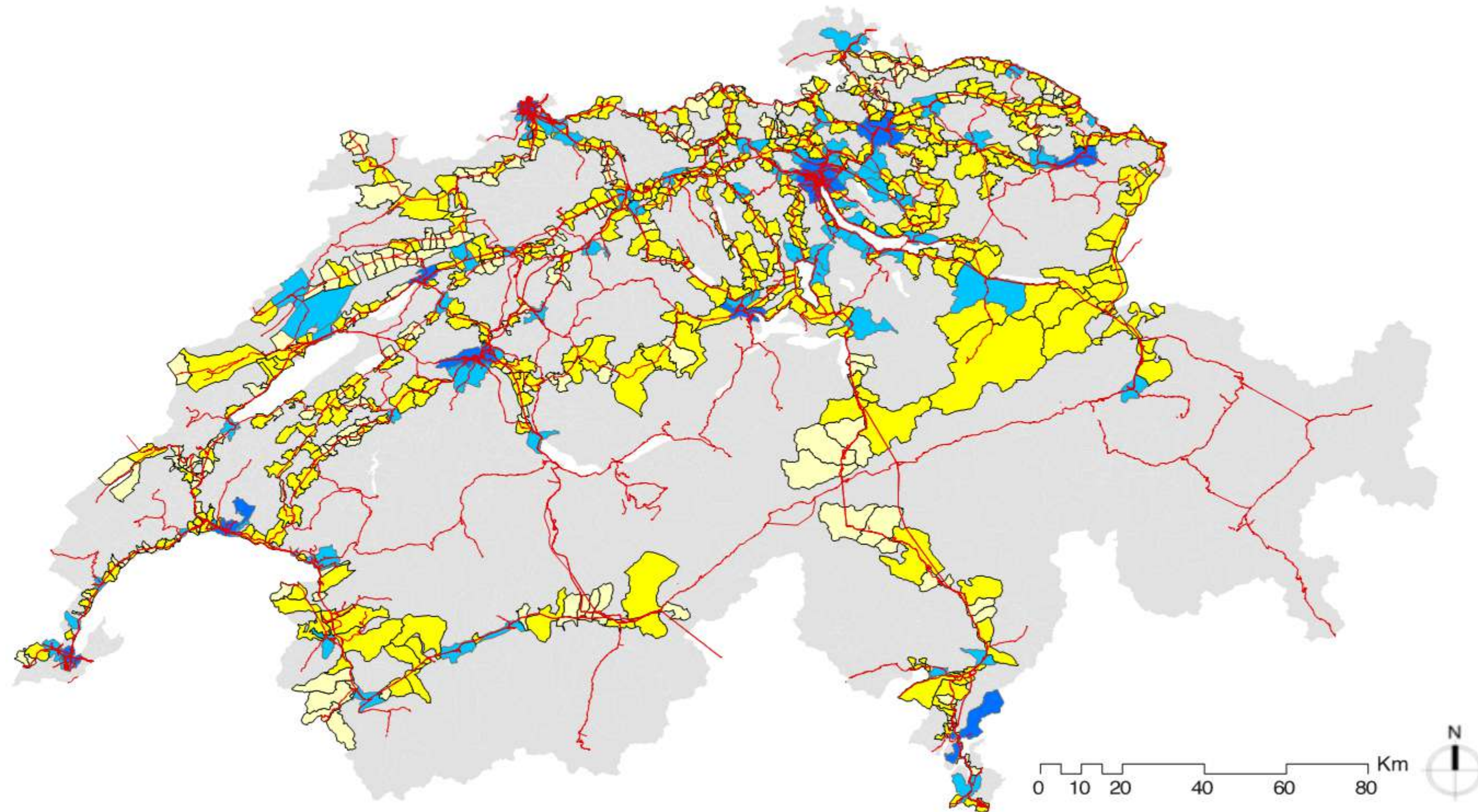
Comment

- The selected case studies are 5 major corridors from Zürich to Basel, Biel, Zug, St. Gallen and Schaffhausen with a focus on small and mid-sized communities.
- Sectoral approaches do not affect different regions equally. Due to lower speed and more stops, regional railways have limits for the capacity of their corridor (especially for long-distance and freight trains).
- A closer coordination between communities and SBB can promote the multi-modality aspects of the station, as well as more compact developments.

Source: own representation

It is estimated by 2030 SBB Real Estate will have all of their land reserves around large stations completely built up. Where is the potential next?

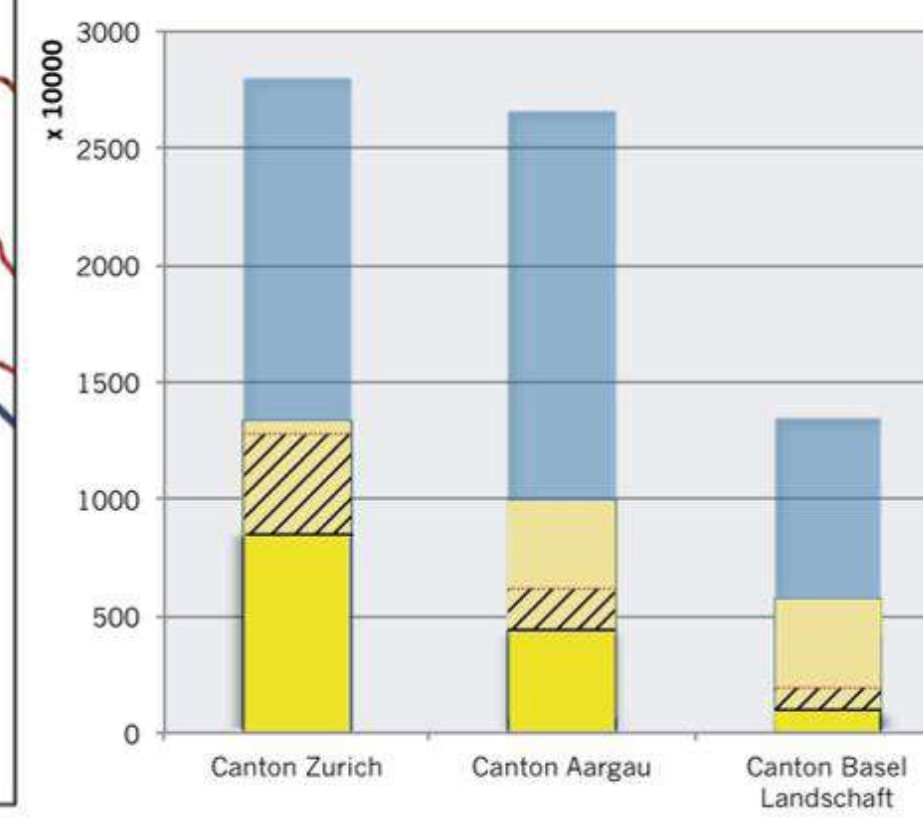
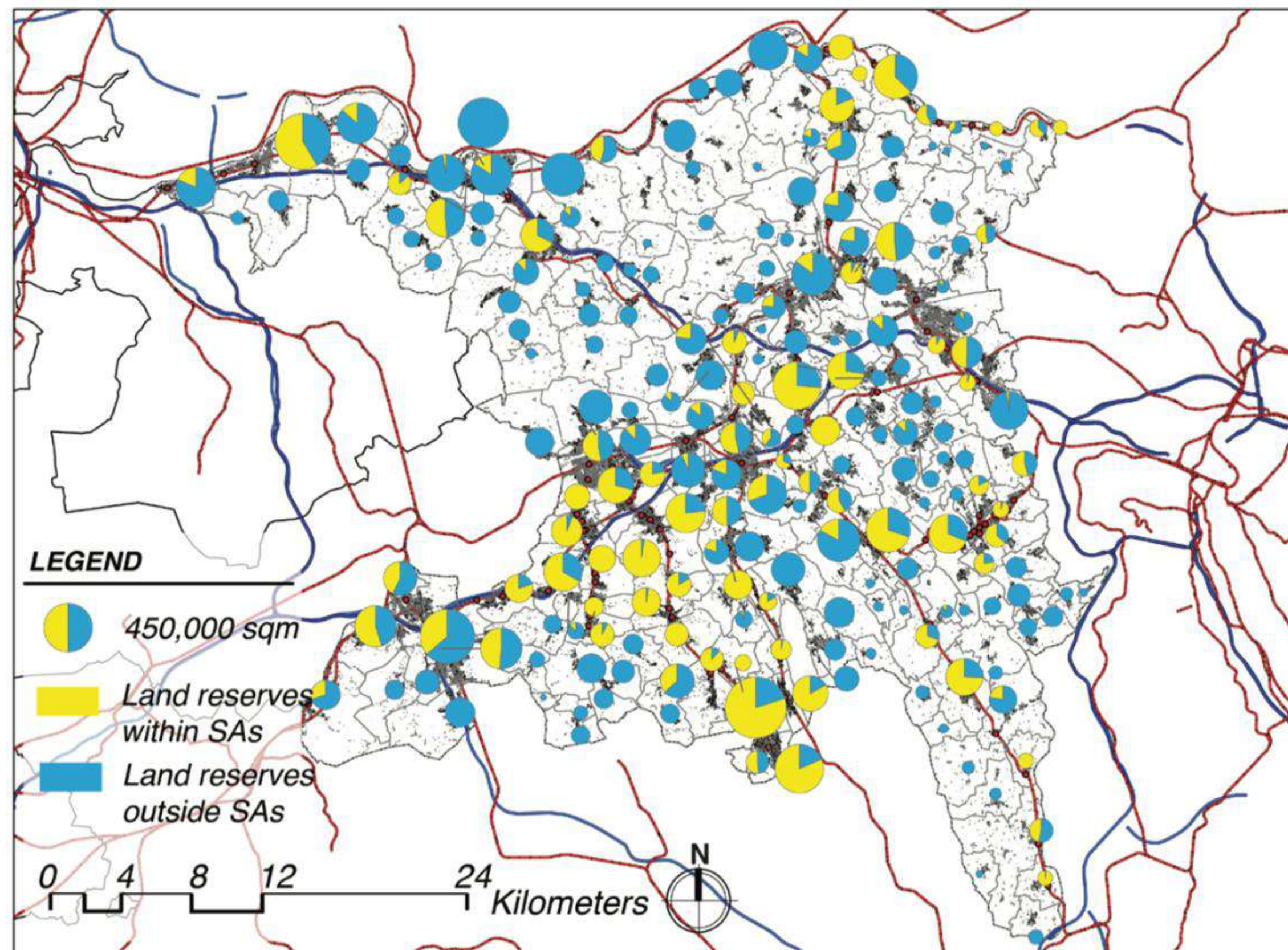
SBB Real Estates built-up and reserve land parcels



Source: own representation; data: SBB Real Estate 2015

“We have land reserves but in the wrong places!”

Canton Aargau’s land reserve



Comment

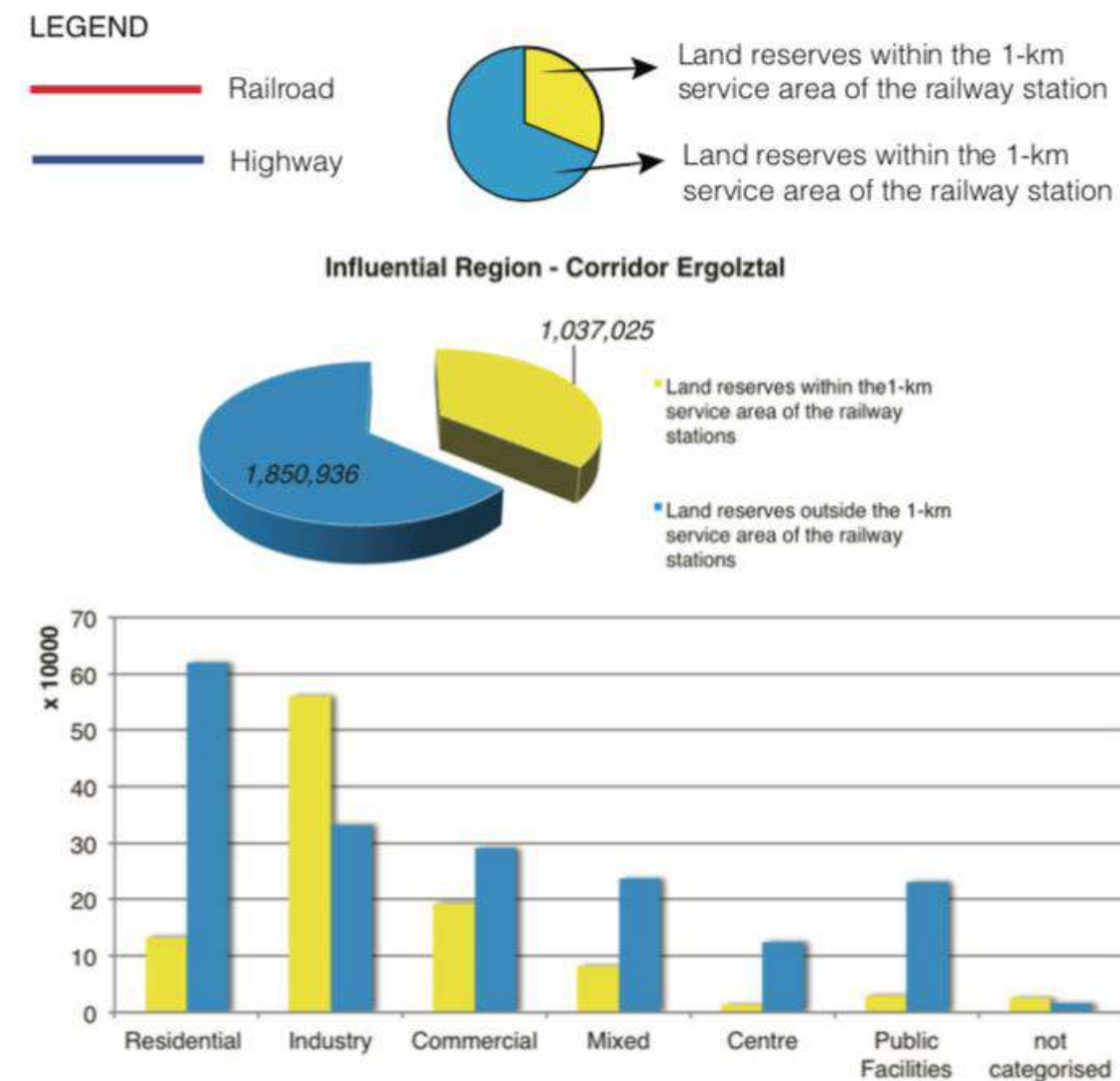
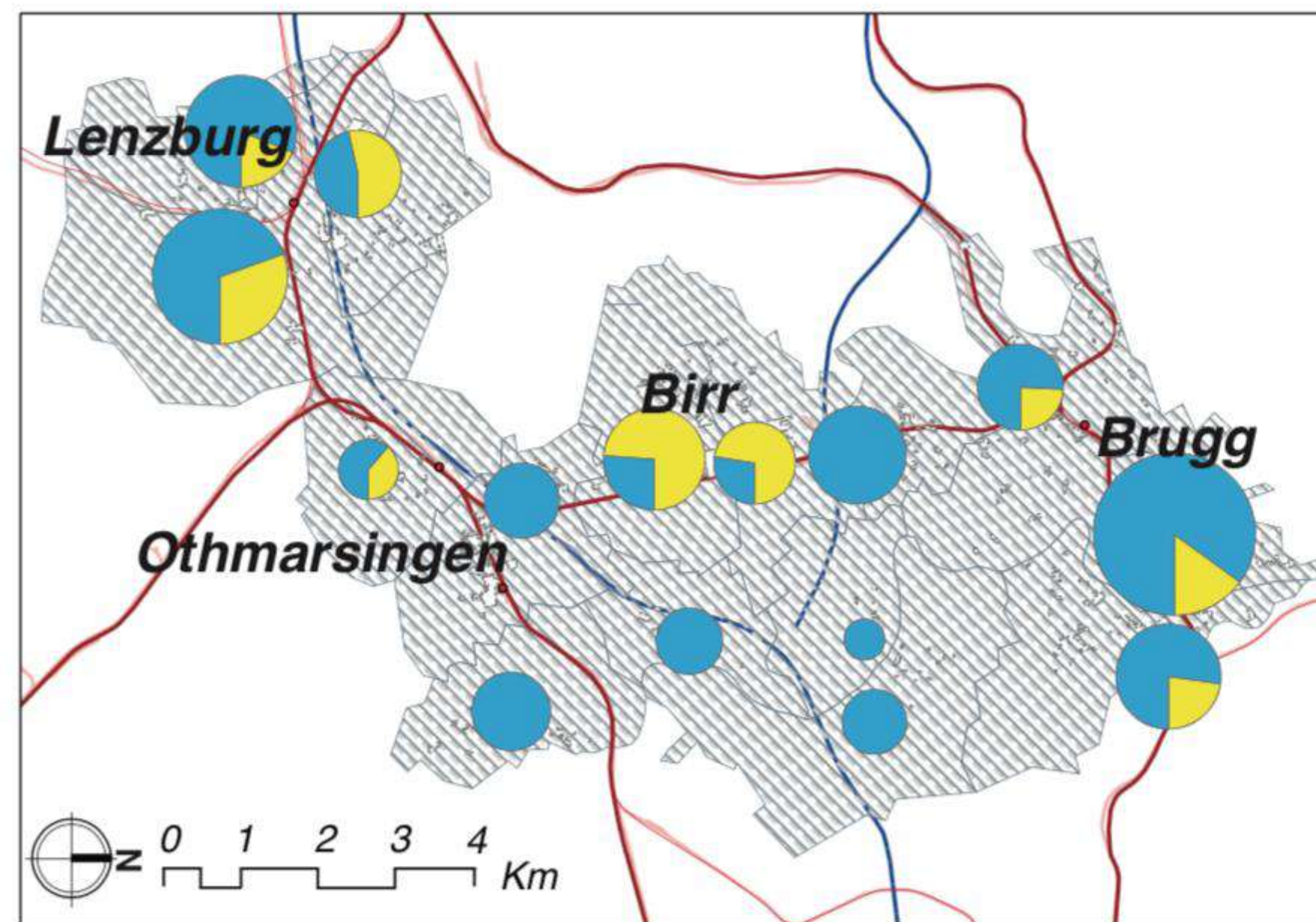
In Canton Aargau the distribution of land reserves across the Canton follows a more heterogeneous pattern. Unlike existing land reserves in Cantons of Zurich and Basel Landschaft are mostly accumulated either in large centres (Winterthur or Zurich) or alongside the railway corridors (Liestal, Sissach).

In spite of the different measurement methodologies of measuring land reserves, all three exploratory analyses show that the existing land reserves in the service areas of the railway station (1km-radius) are capable of accommodating the population increase forecast for the Cantons.

Source: own representation; data: Canton Aargau, 2015

Expensive underused infrastructure are large cost burden to both railway companies and local communities and are in danger of decommissioning.

Potentials at underused stations within corridors

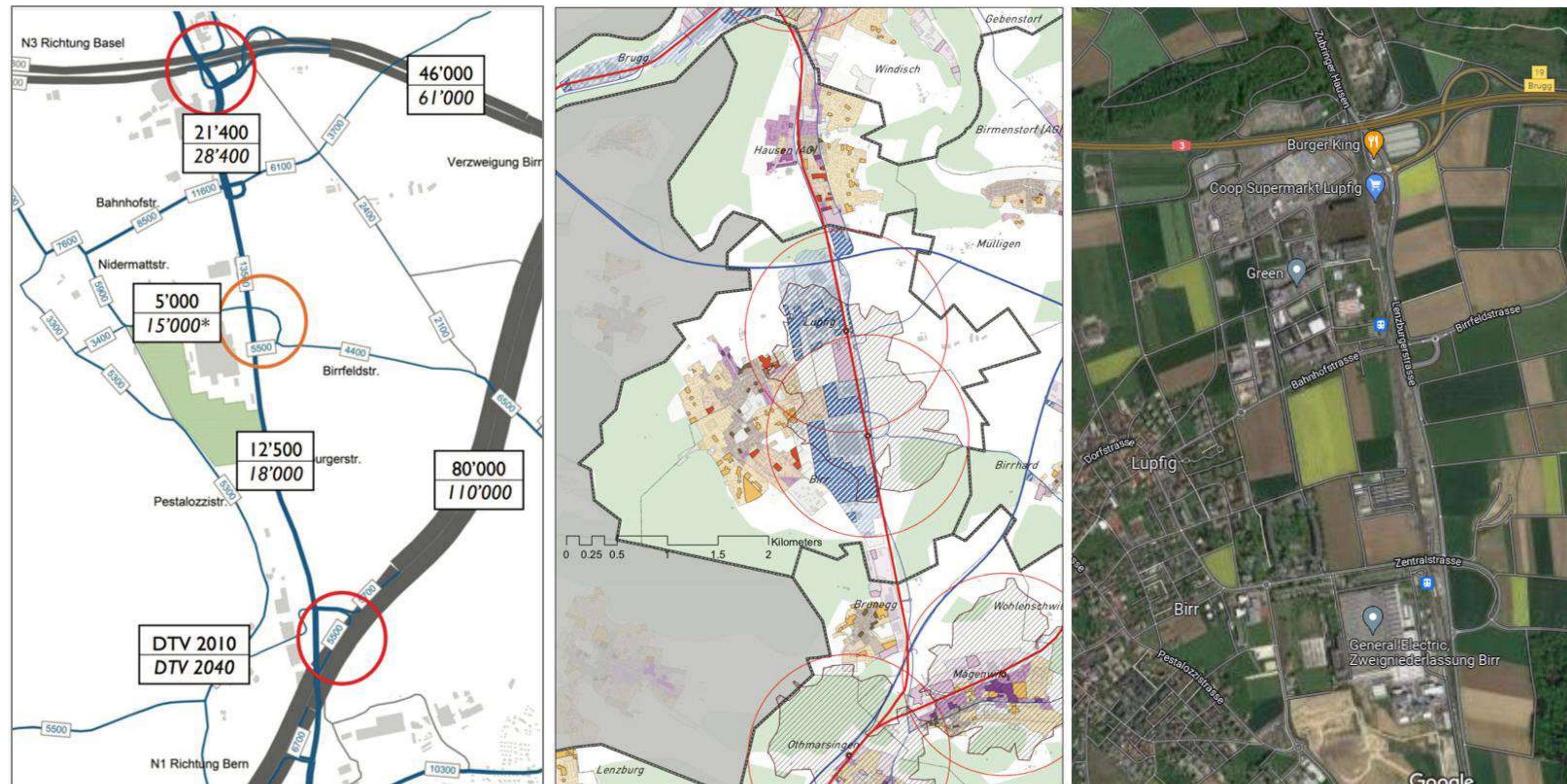


Comment

- The results of preliminary study shows that the land reserves exists even in good, accessible locations. A crucial question then how to activate these land reserves and how to make them more attractive?
- Our main proposal is to think in form of corridors. While railway stations in small and mid-sized communities are less attractive for retails and commerce, they are connected to other railway stations with compacter service areas.

Example of Birr and Lupfig: the the tendency of large industrial companies to develop large mono-functional office and factory areas.

Potentials at underused stations



Comment

Birr:

- +4,300 new workplaces in ABB Areal; No housing (aiming 60% share of private car increase)
- Current passenger frequency at Birr (2016): 720

Lupfig:

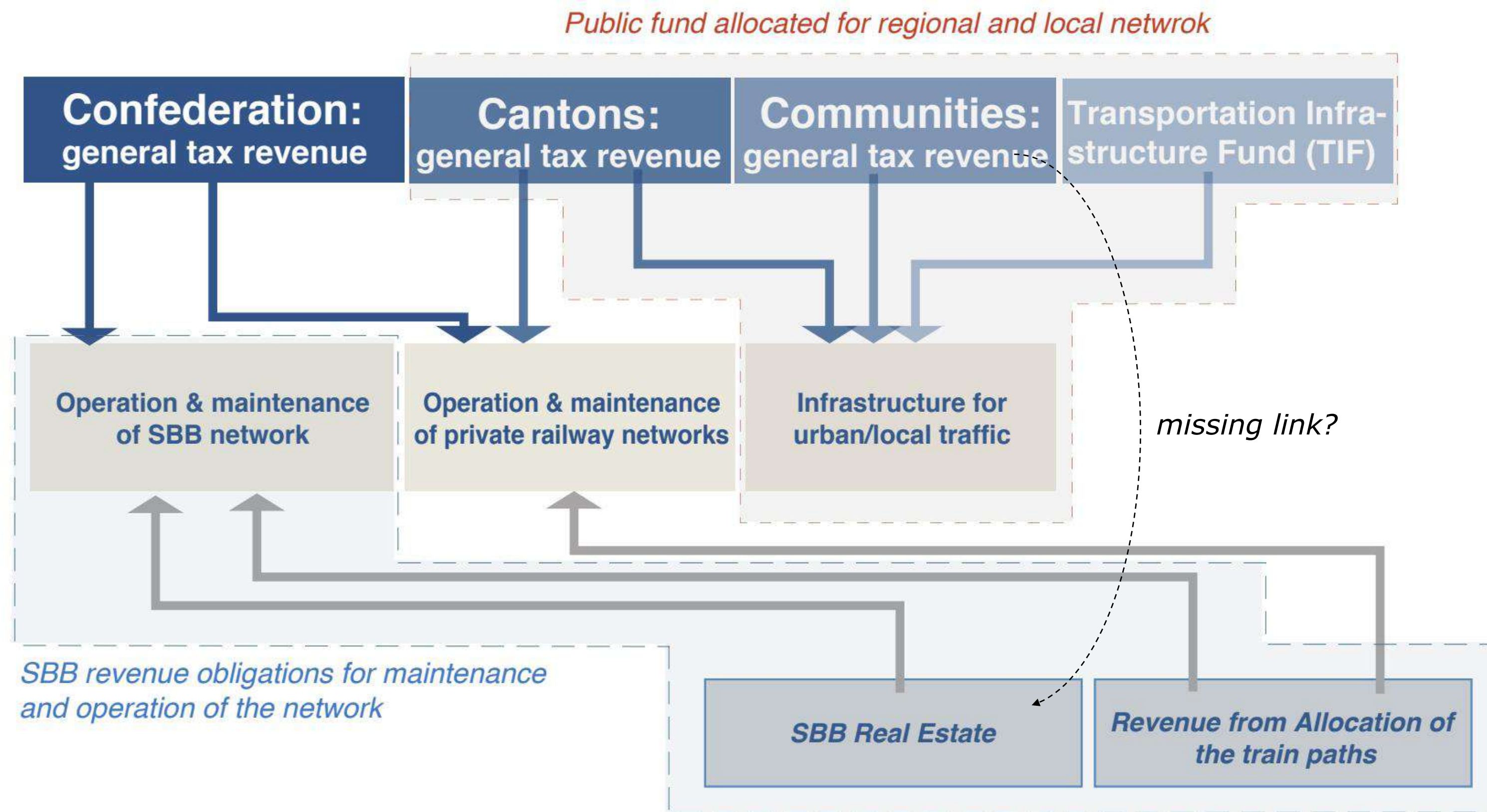
- +1,900 new workplaces (600 in Hausen + 1,300 in Lupfig) (aiming 80% share of private car increase)
- Current passenger frequency at Lupfig (2016): 290
- Land reserve in the SA: ca. 54ha; New apartments in Neymatt, Bachtalen areas: 700

Source: left) GEMEINDE BIRR, 2018; middle) author; data: CANTON AARGAU 2018; right) Google Maps 2022

While large communities could afford project-based planning procedures and coordination, smaller communities are left behind with no know-how.

Regional Railway Development and Public Funds

Comment

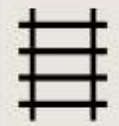








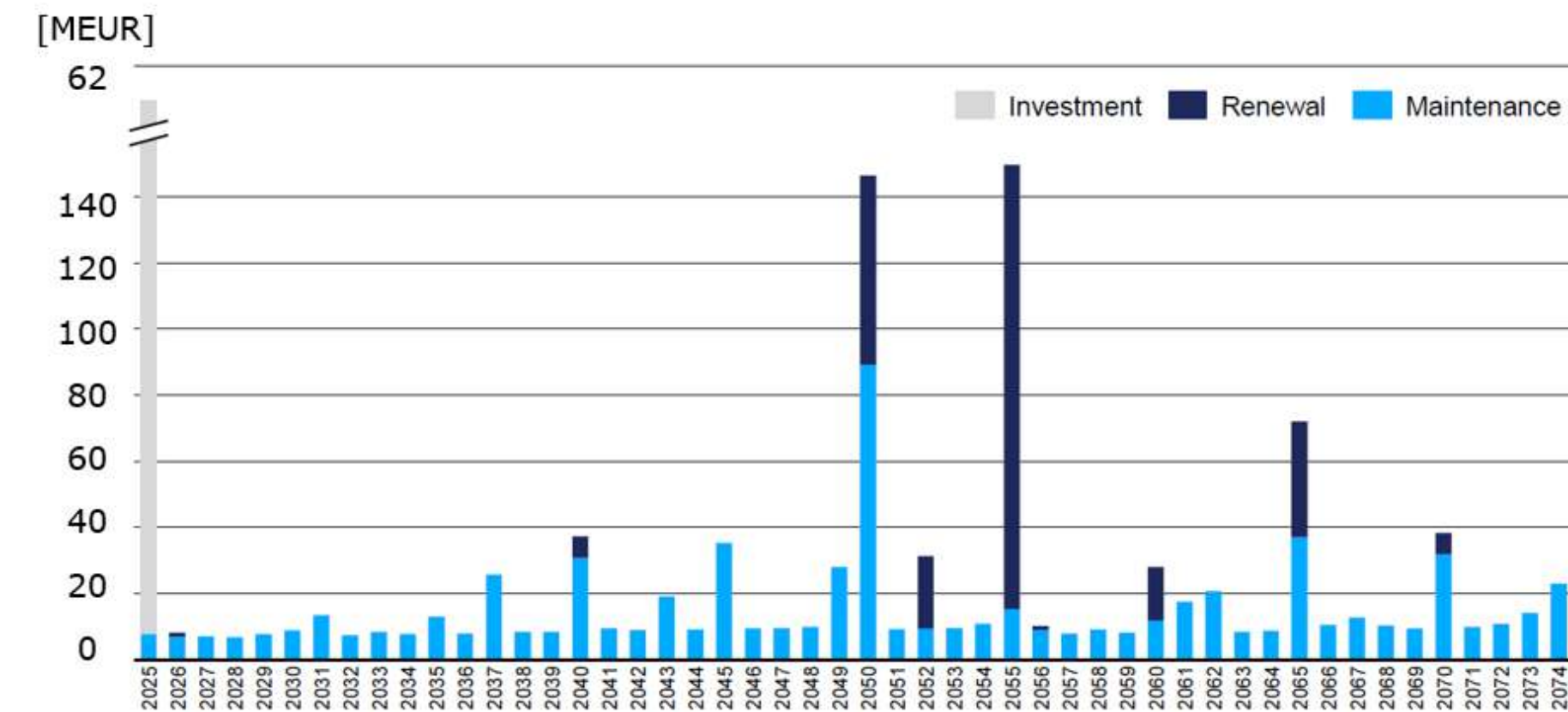
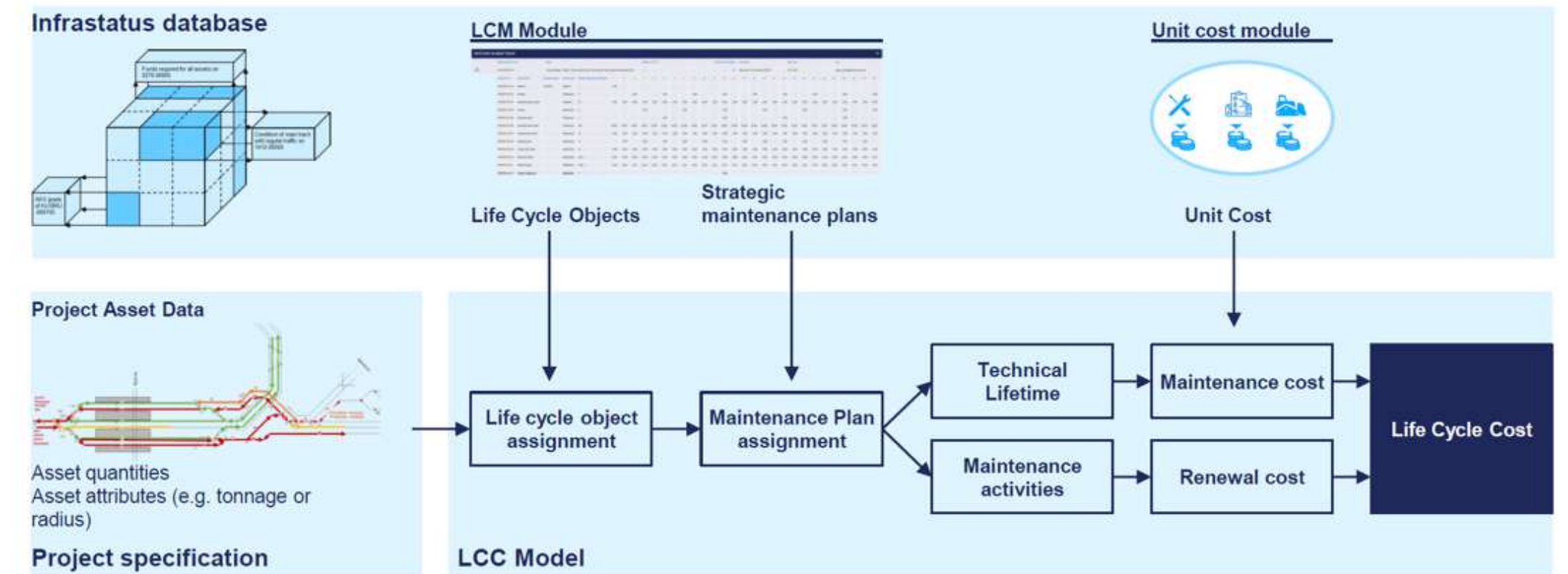
- Urban and regional transportation infrastructure is funded by Cantonal and Communal funds from the tax revenues, as well as the transportation infrastructure fund (TIF).
- Most of the revenues from SBB Real Estate as well as the revenues from allocation of train routes are received by SBB Infrastructure for maintenance and operation of the network.
- Most of SBB Real Estate land properties in mid-sized communities are left underdeveloped or empty.

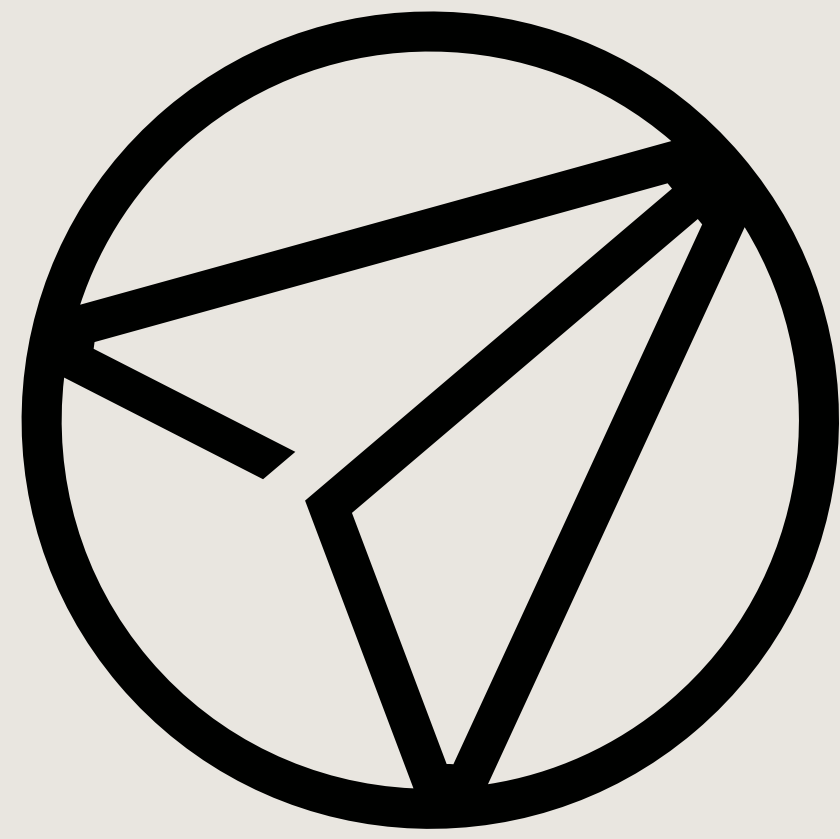
Source: own representation

Strategic maintenance and renewal plans could forecast what is the cost of keeping a railway station in operation.

Forecasted lifecycle costs of the infrastructure assets of a railway station for the next 50 years

Asset type	Asset quantity	LCOs	Technical lifetime	Total renewal costs
 Track	? km	?	40 – 80	?
 Switches	? pieces	?	25 – 35	?
 Catenaries	? km	?	50	?
 Power switches	? pieces	?	25	?
 Transformers	? pieces	?	15	?
 Axle counters	? pieces	?	27 – 30	?
 Signals	? pieces	?	30	?
 Switch heating devices	? pieces	?	25	?





AFRY

ÅF PÖYRY



Strategic Positioning of Railway Stations

David HUGHES, Iarnród Éireann/Irish Rail

Panel 3 : Railway stations : what place in urban reconfiguration

The strategic positioning of railway stations in urban and rural development



INTERNATIONAL UNION
OF RAILWAYS

Learn from History but don't repeat it!



Secretary – David Hughes, Senior Architect and Project Manager at Iarnrod Éireann



David Hughes is a specialist low energy and historic conservation architect practicing with Iarnród Éireann. He has designed the first non residential 'passivhaus' for Iarnród Éireann or indeed for any railway company worldwide. He has won many national and international awards with two international awards for low energy and environmental design in particular.

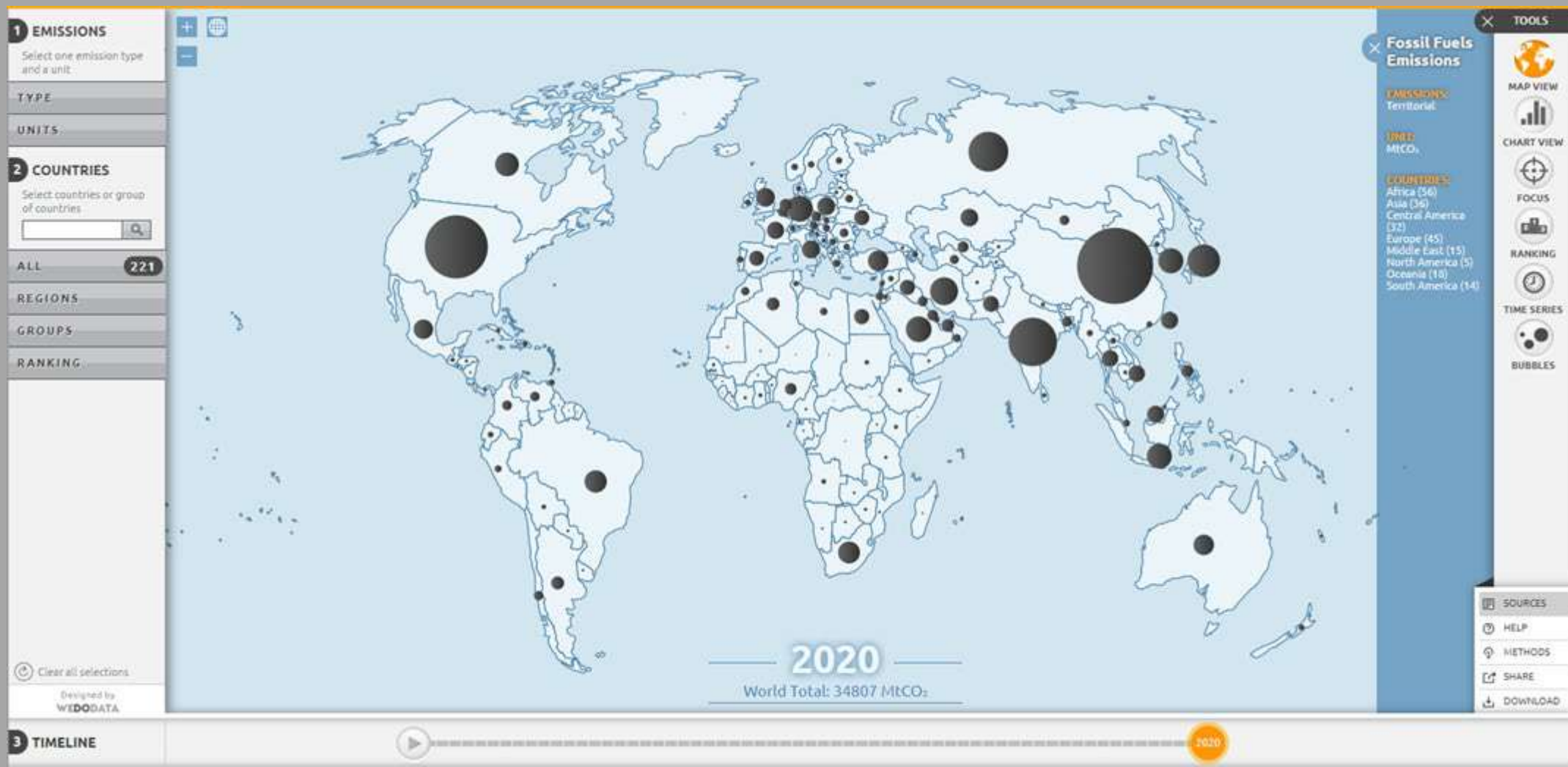
He has been selected at the Passivhaus Institut's own conference in Hannover in 2012 as well as the See The Light Passivhaus conferences in Ireland. Apart from an interest in energy he has a strong design background having worked for high profile practices in Paris and Dublin. Since May 2014 he has been secretary of the PHAI.

NSCES+CC

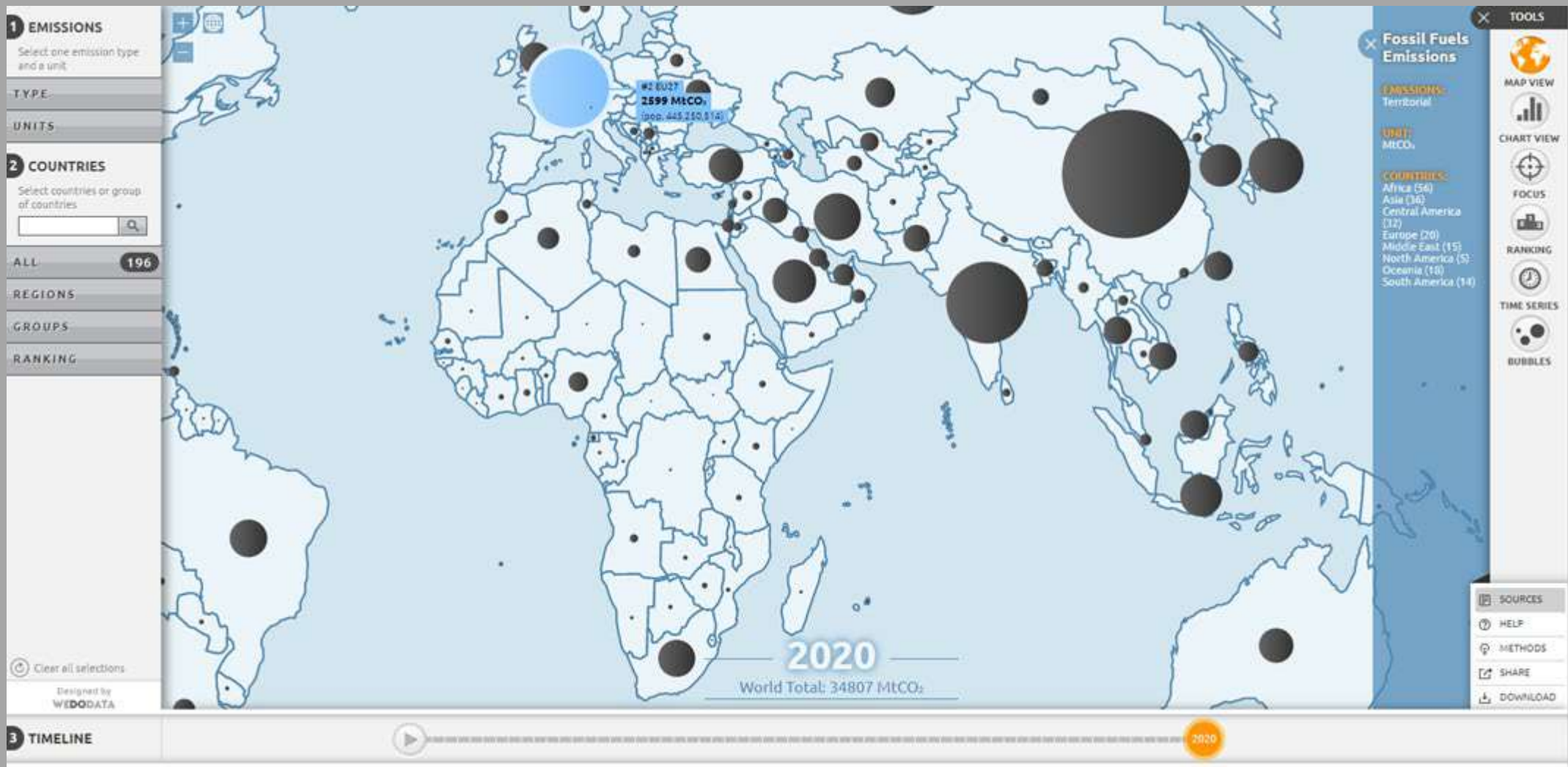
National Scientific Committee on Energy Sustainability + Climate Change



Carbon Atlas Emission Graphically Shown



EU as a block 2399 MtCO₂e 445M pop



Ireland 32 MtCO₂e 5M pop



Panel 3 – The strategic positioning of railway stations in urban and rural development

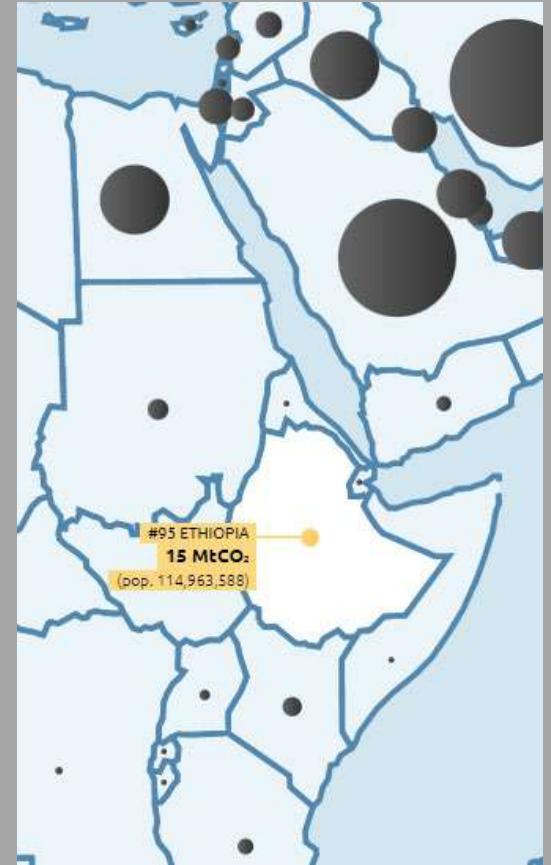
Ireland 5M pop 33 MtCO₂e
6.6 MtCO₂e/M pop



Morocco 36.9 M pop 155 MtCO₂e
4.2 MtCO₂e/M pop



Ethiopia 114.9 M pop 15 MtCO₂e
0.13 MtCO₂e/M pop



But time is against us 6 years since Paris!



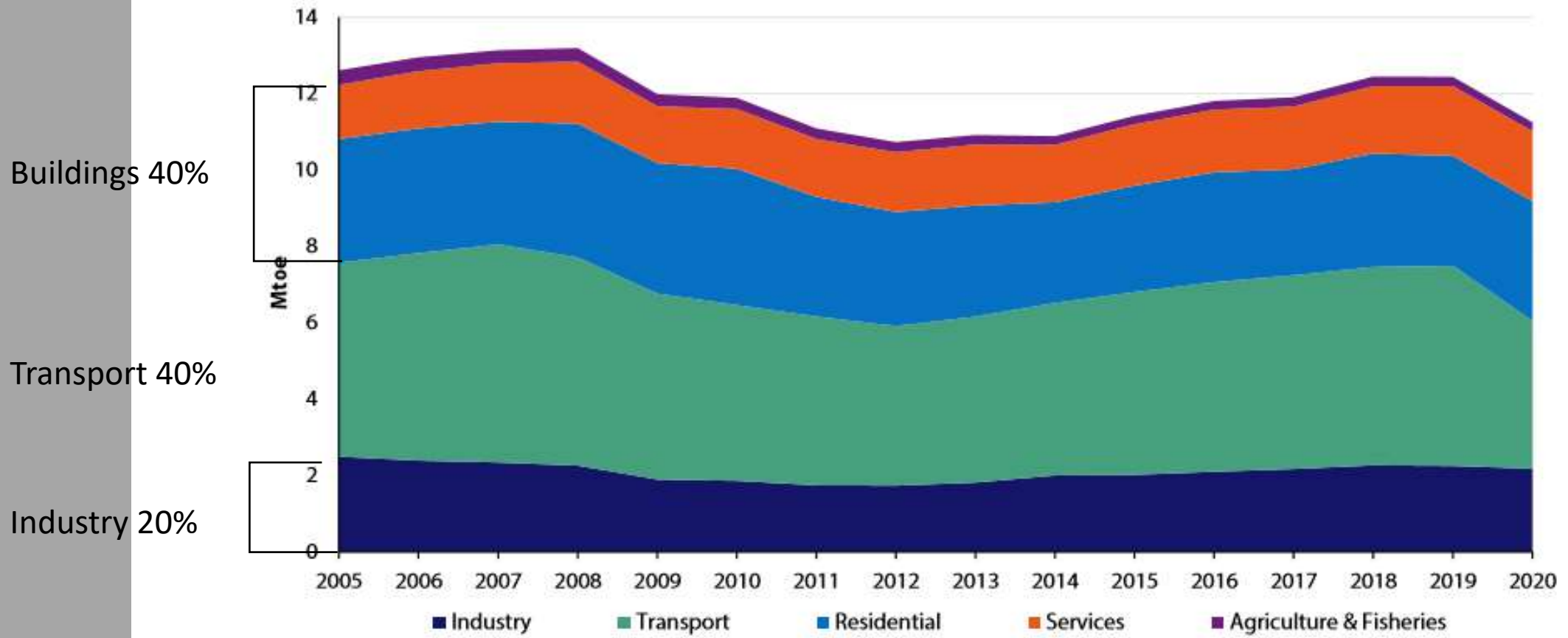
	(Current INDC)	Improvement for 2030	2030-2050
EU	40% below 1990 levels by 2030 (45% below 2005)	47% below 1990 levels by 2030	80% below 2005 by 2050
U.S.	26% below 2005 levels by 2025	45% below 2005 levels by 2030	80% below 2005 by 2050
Other Developed	3.5% decrease below 2005 emissions by 2030*	45% below 2005 levels by 2030 (or 50% below 1990 levels)	80% below 2005 by 2050
China	Peak CO2 by 2030	Peak by 2025	Reduce 2% per year through 2040 and 4% per year after
Other Developing	10% below BAU by 2030*	Peak by 2027	Reduce 2% per year through 2040 and 4% per year after

*Level of ambition of the aggregate of individual INDCs within this group

(Sterman et al, 2015)

Ireland's Energy Usage Breakdown

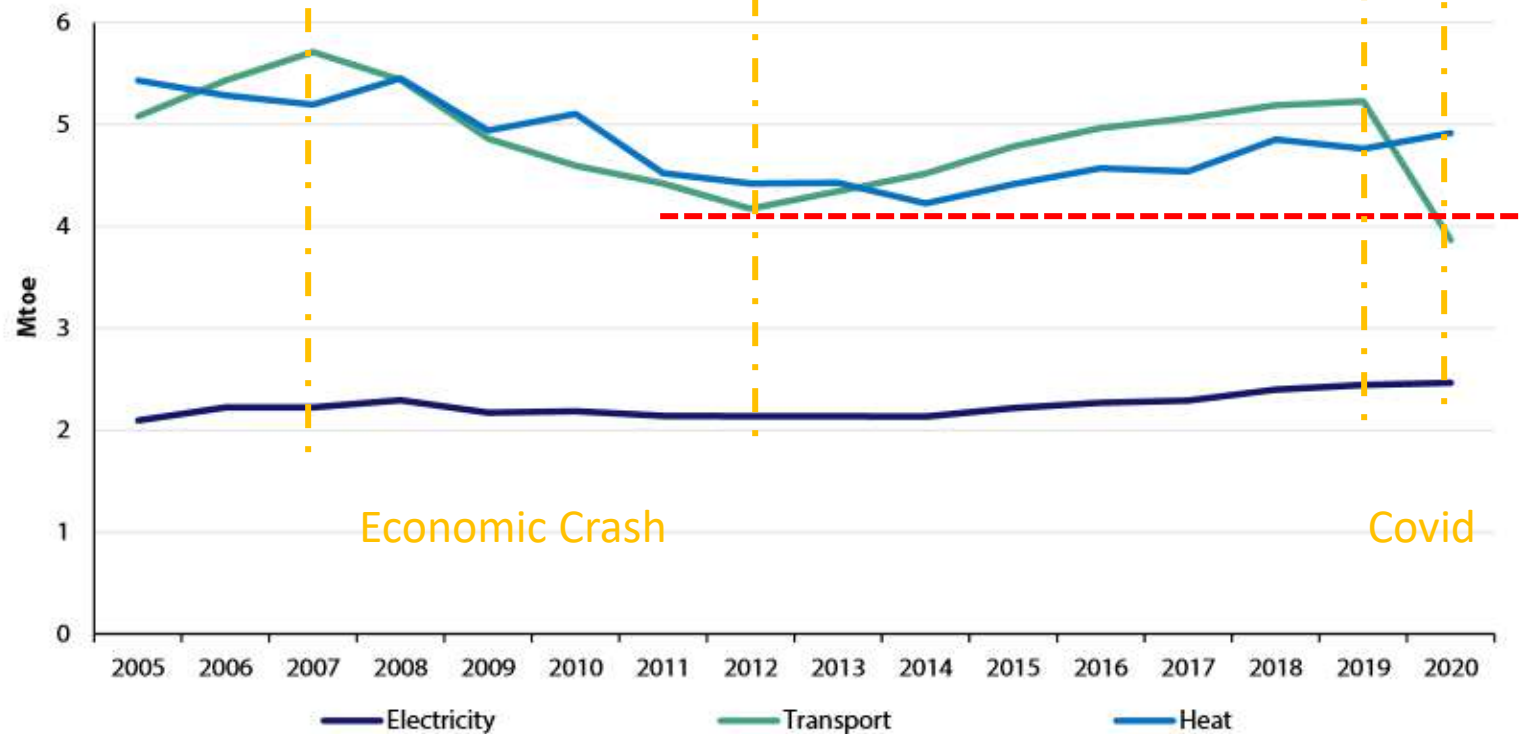
Figure 7: Total final consumption by sector



Source: SEAI

Ireland's final energy use fell by 9.6% in 2020, largely due to the impact of COVID-19, with almost all of the reduction localised to the transport sector.

Figure 8: Final energy in heat, transport and electricity




Source: SEAI

Even with the most draconian restrictions of movement under COVID energy use only dropped by 9.6 %.

This is because unsustainable transport patterns are 'baked' into the lifestyle.

Most trips are only 10km and these continued during COVID for shopping.

Panel 3 – The strategic positioning of railway stations in urban and rural development



The energy Africa needs to develop – and fight climate change | Rose M. Mutiso

41,544 views · Nov 9, 2020

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Take action on climate change at <http://countdown.ted.com>.

In this perspective-shifting talk, energy researcher Rose M. Mutiso makes the case for prioritizing

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This is what traffic congestion looks like with the Internal Combustion Engine or ICE



This is what traffic congestion looks like with the Electric Vehicle or EV



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Pressrelease | 2019-12-04

New report on climate impact of electric car batteries

Tesla car battery production releases as much CO2 as 8 years of gasoline driving
4 years ago Anthony Watts


<https://www.ivl.se/download/18.34244ba71728fcb3f3faf9/1591706083170/C444.pdf>

THE TIMES

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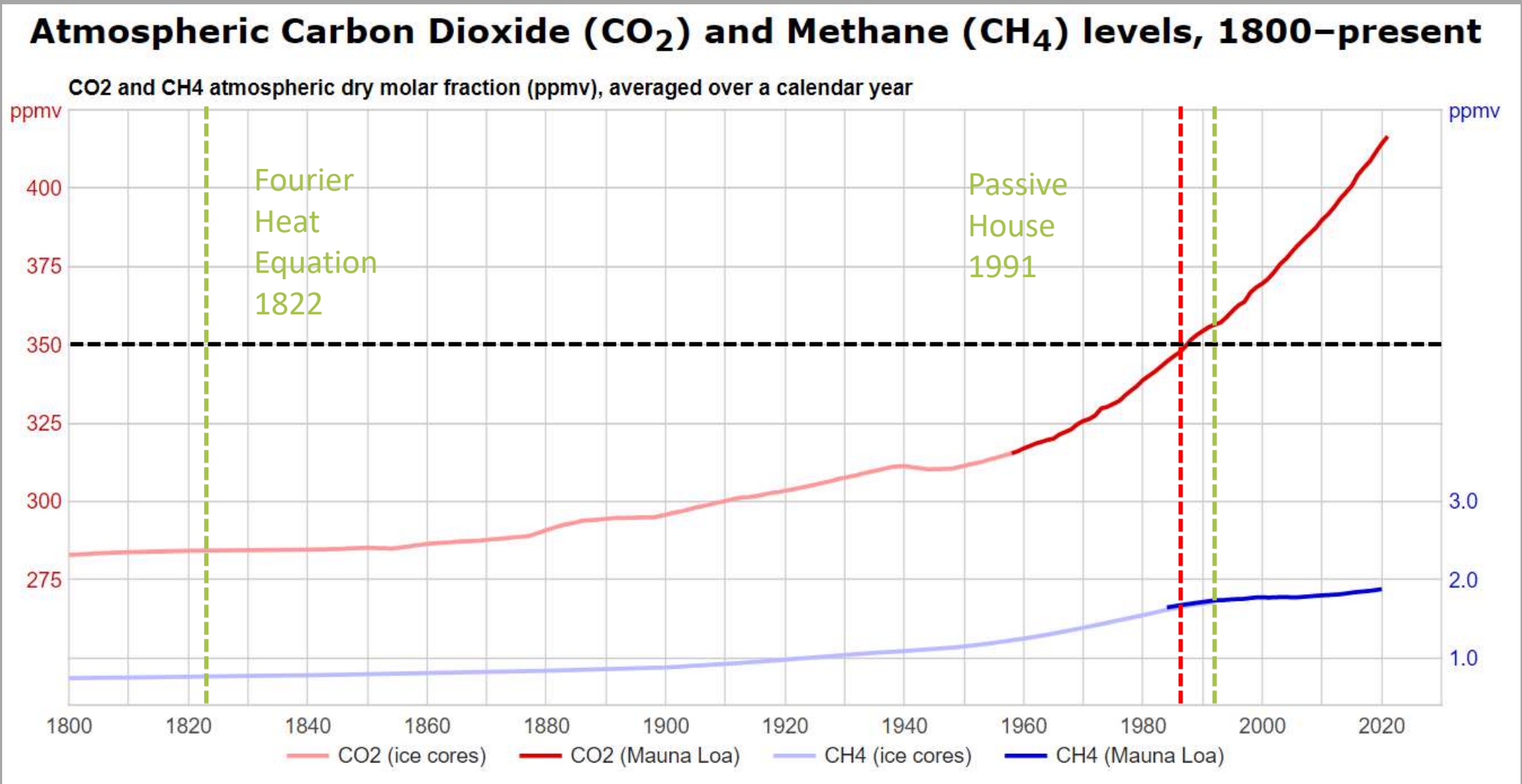
Congo's miners dying to feed world's hunger for electric cars

Exploited by Chinese firms, workers as young as nine risk their lives to feed the world's growing hunger for cobalt. Christina Lamb reports from Kolwezi

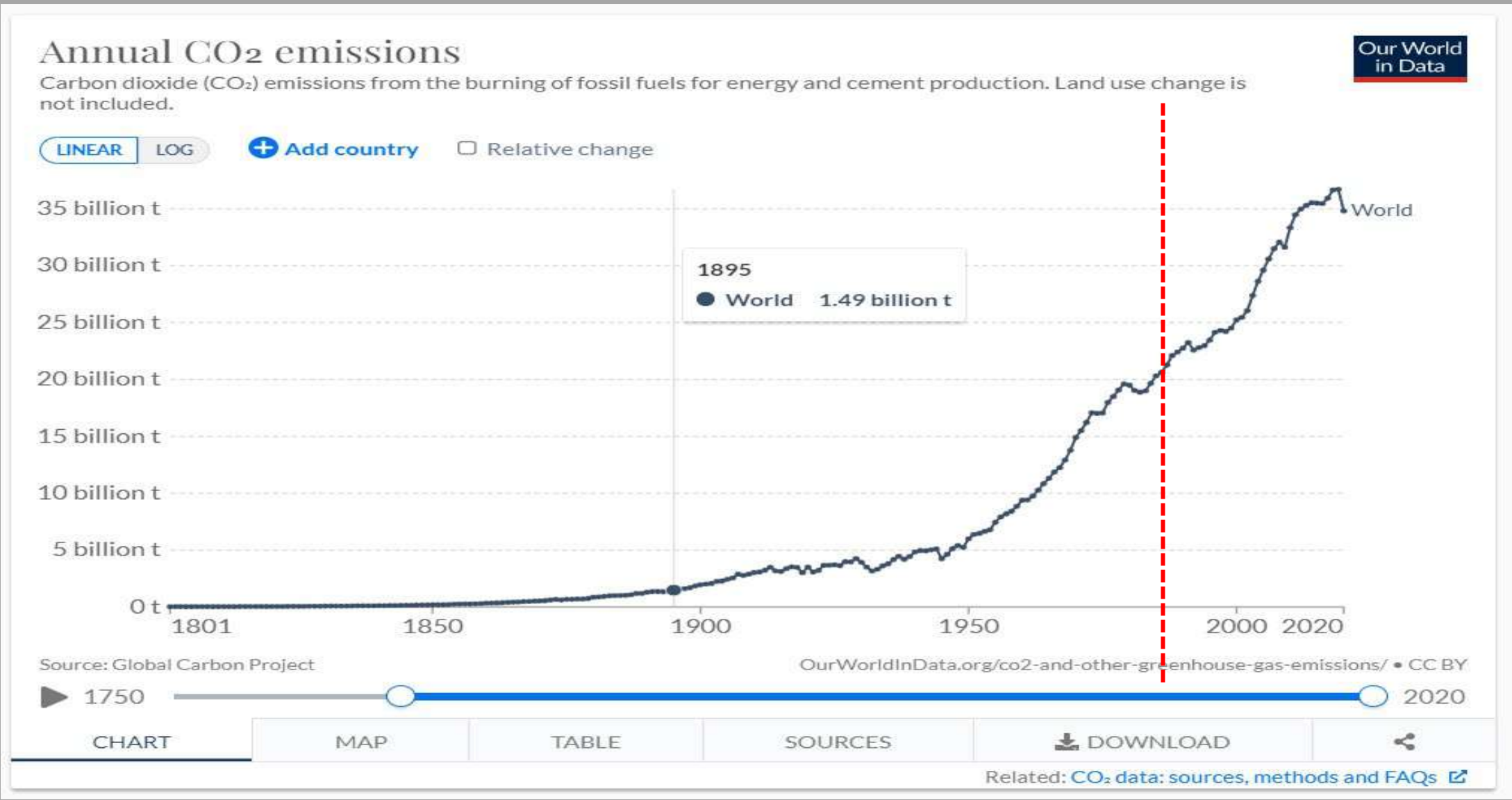


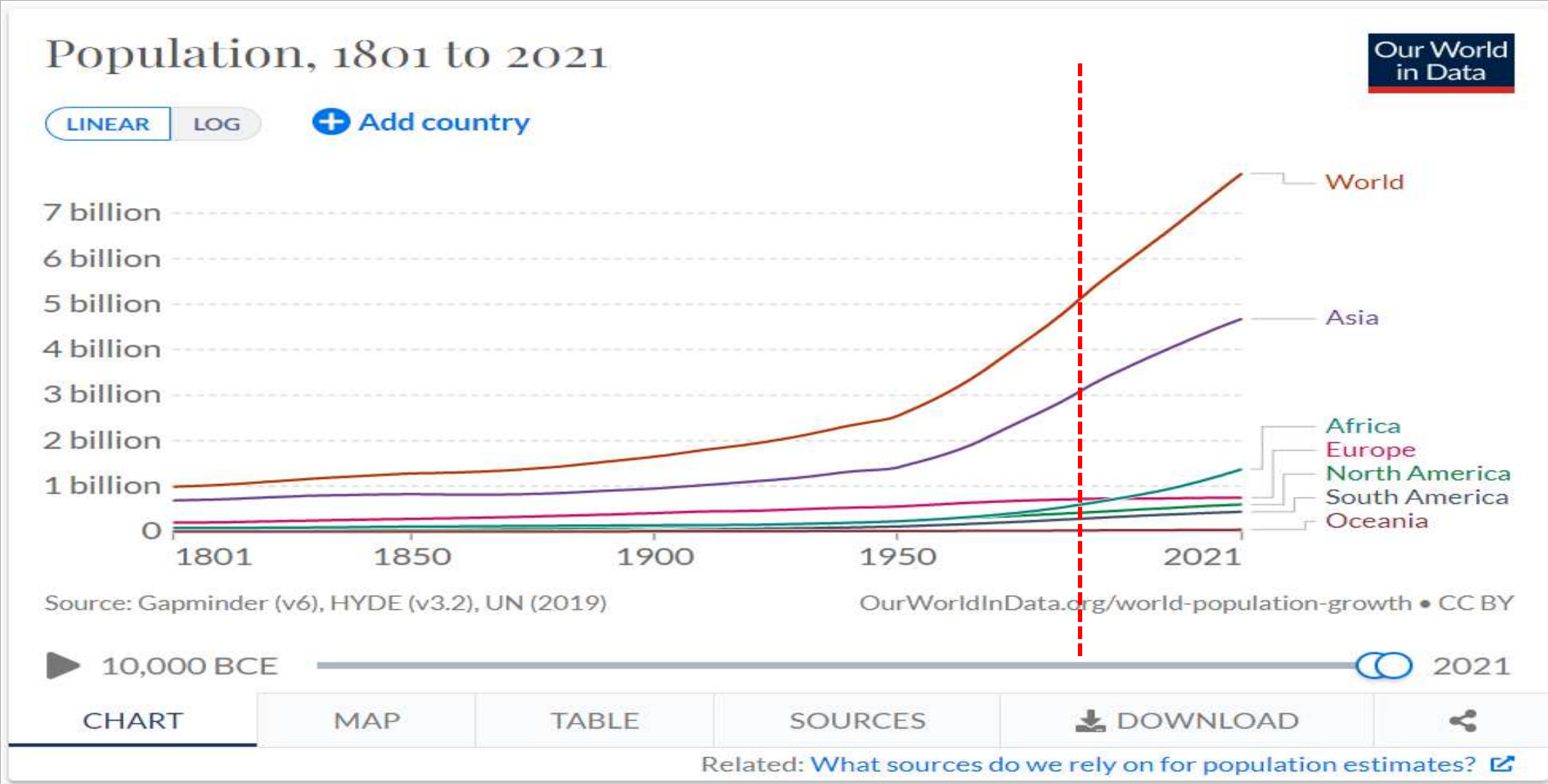
Patrick, a 26-year-old Congolese miner, uses hand tools to dig for cobalt

The Sunday Times, March 10 2019, 12:01am



Panel 3 – The strategic positioning of railway stations in urban and rural development

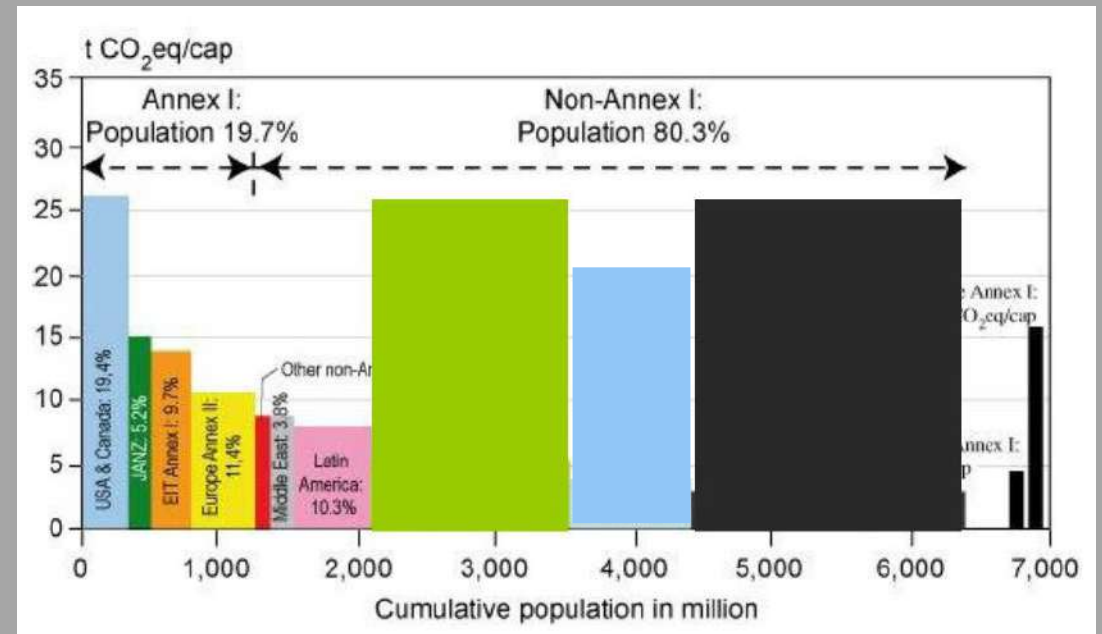
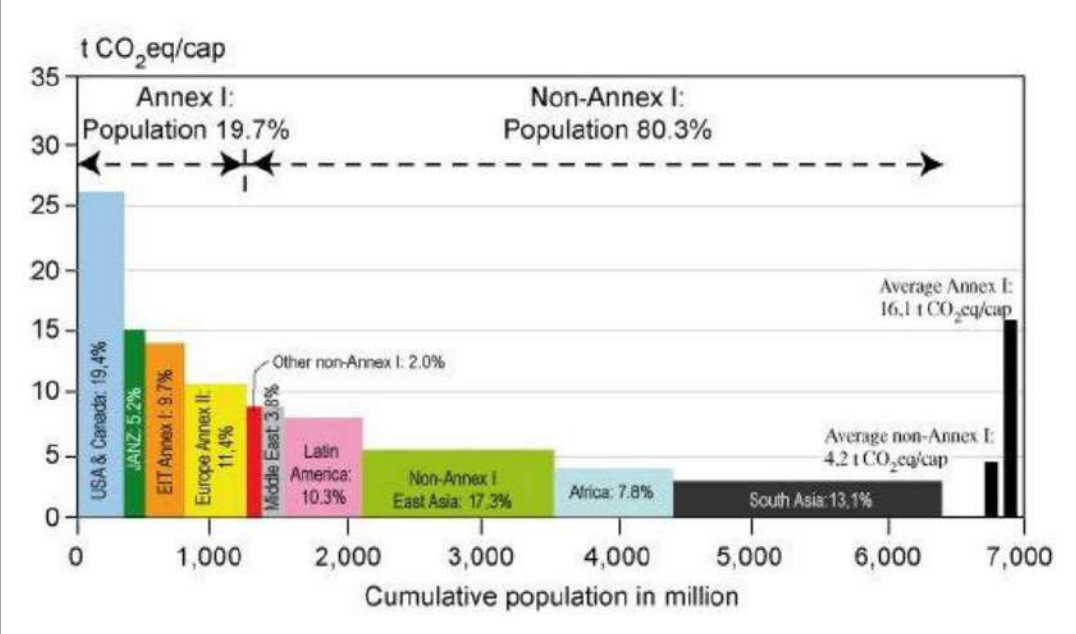




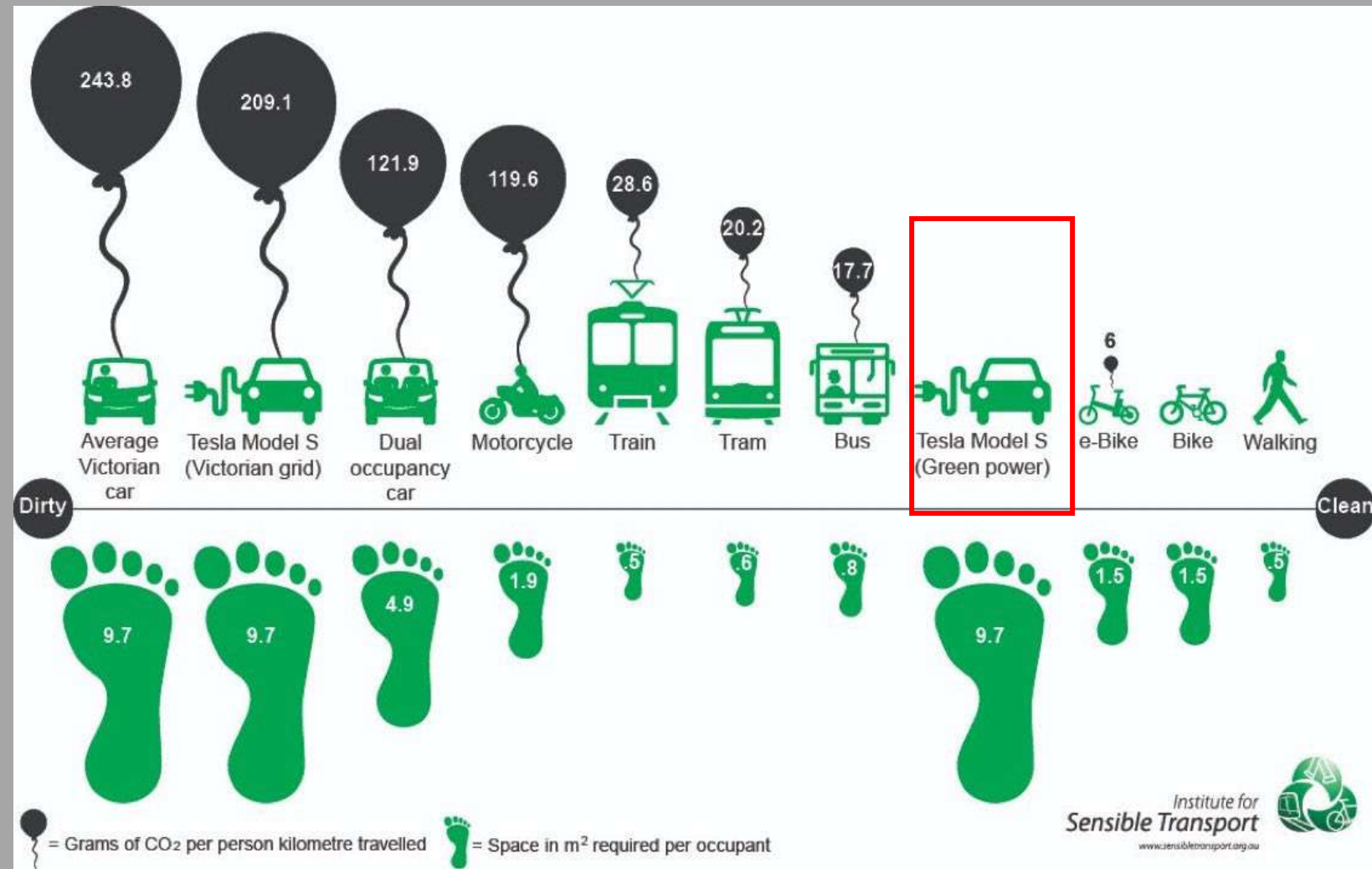
Climate Justice is avoiding repeating Mistakes

- Existing Emissions

- Future Emissions if Developing Countries 'match' Developed World Emissions



What the car lobby wants the public to believe



Some Times change can be in reverse.

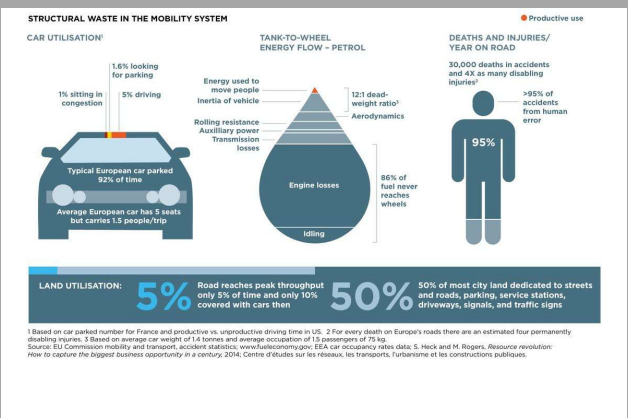


Henry Ford said it best...

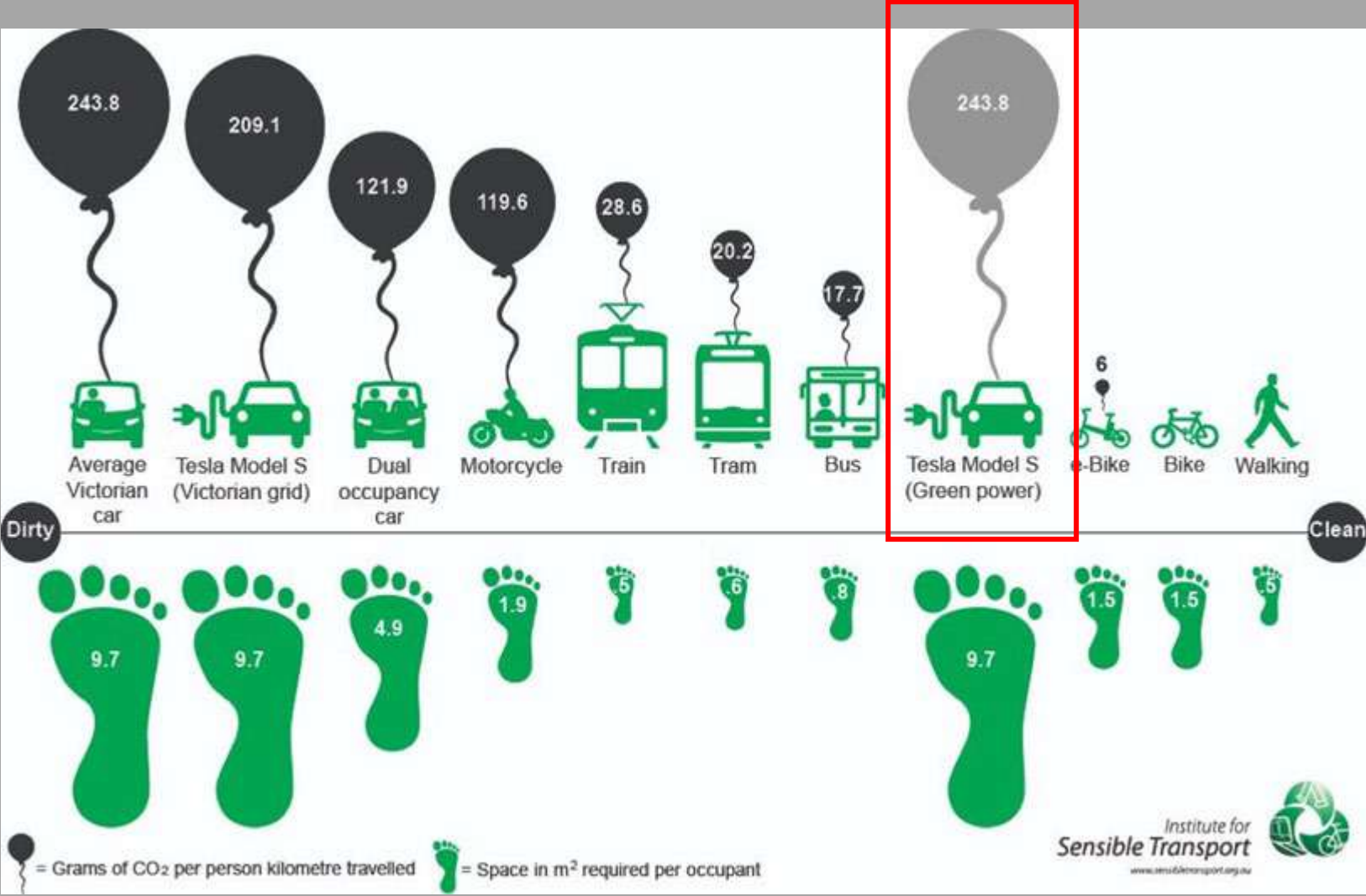
"I had been experimenting principally upon the cutting down of weight. Excess weight kills any self-propelled vehicle... Weight may be desirable in a steam roller but nowhere else.

The most beautiful things in the world are those from which all excess weight has been eliminated ...Whenever any one suggests to me that I might increase weight or add a part, I look into decreasing weight and eliminating a part!"

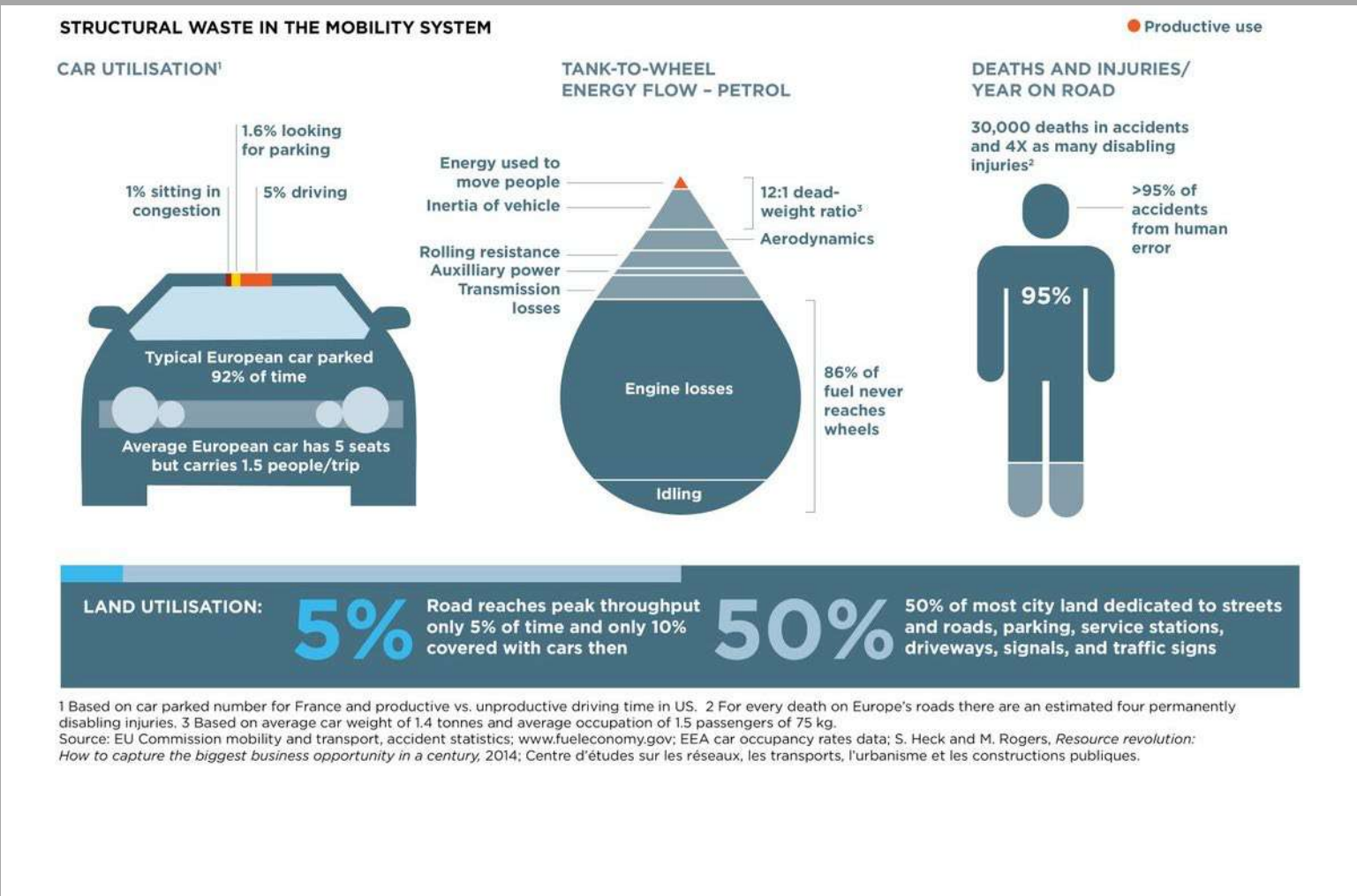
— Henry Ford, *My Life and Work*



What the laws of physics tell us the truth is!



A private car is expensive but only used 5% of time!



The image is a screenshot of a website article. At the top left, there is a blue box with the number '350'. To its right are navigation links: 'ABOUT', 'RESOURCES', and 'GET INVOLVED'. Further right are social media icons for Twitter, Facebook, and Instagram, and a 'Donate' button. The main headline is a quote: "IF THEIR BUSINESS PLAN WOULD BREAK THE PLANET, THEN WE NEED TO BREAK TIES WITH THEM." Below the quote, the author's name 'Bill McKibben' and the date 'February 16, 2016' are visible. The article title is 'Why We Need to Keep 80% of Fossil Fuels in the Ground'. At the bottom of the article, there is a dark banner with the text 'BREAK FREE FROM FOSSIL FUELS #KEEPITINTHEGROUND'. The background of the article is a dark, textured image of a coal mine with a yellow excavator in the foreground.

Energy Usage by Sector

	Present Use	Possible	Reduction
Buildings	40%	4%	90%
Transport	40%	10%	75%
Industry	20%	6%	70%
Totals	100%	20%	80%

Developed World Back to the Future

Network 1850

Network 2021



Lines were closed due to Car

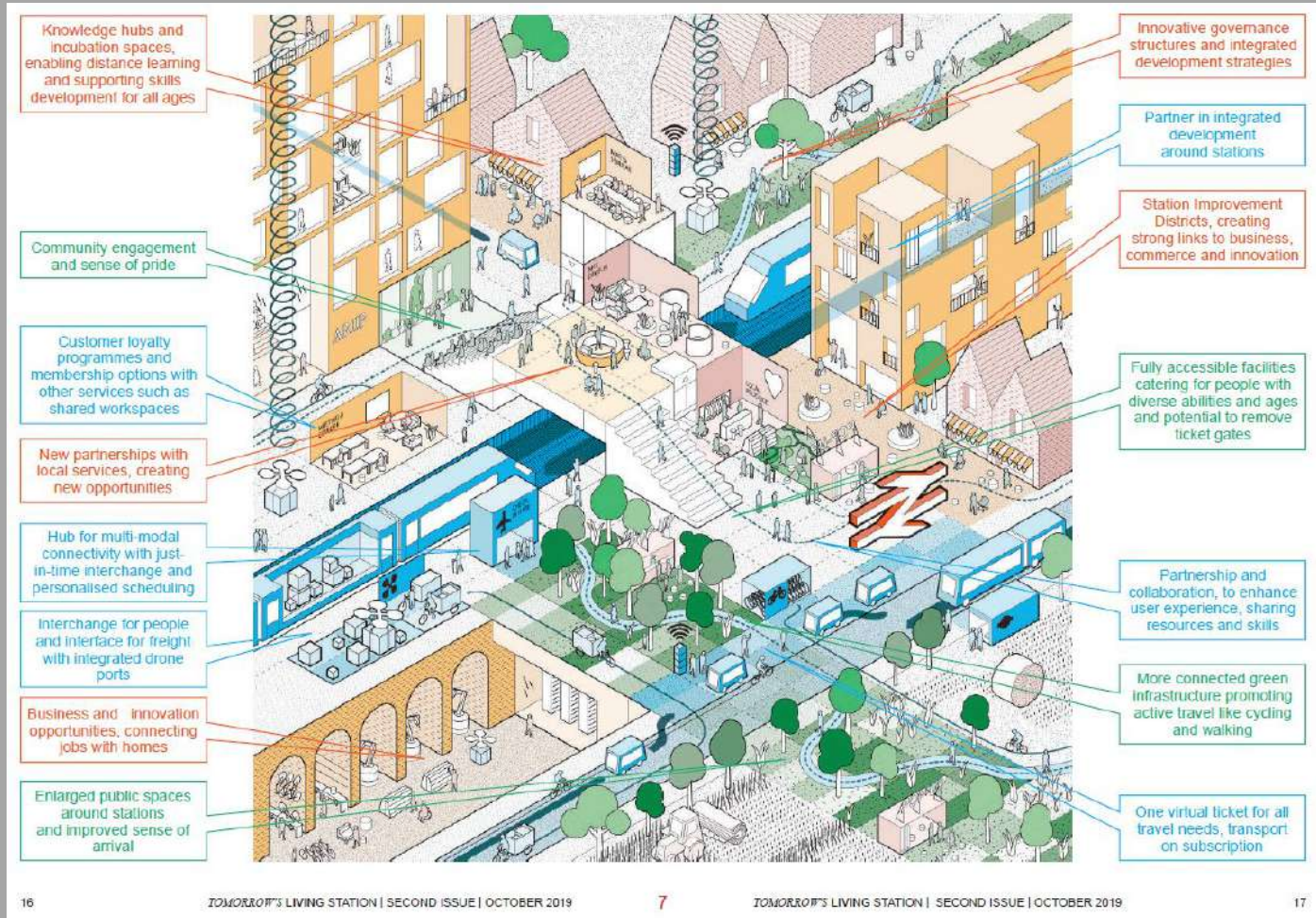
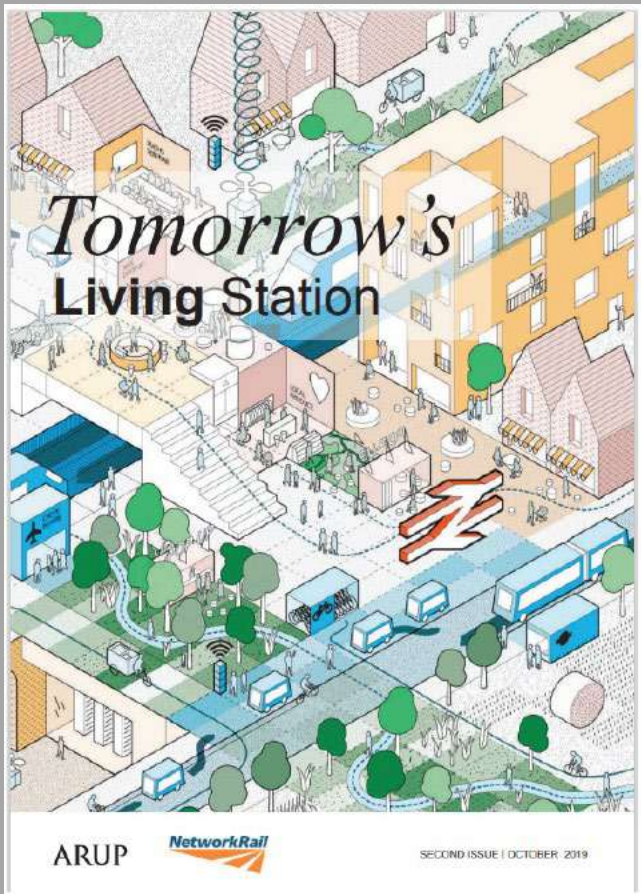
64% of Ireland's population lives less than a 30 minute bicycle/E-bike ride from a railway station.

Imagine what could happen if we took investment in safe cycle lanes and reliable train services seriously!

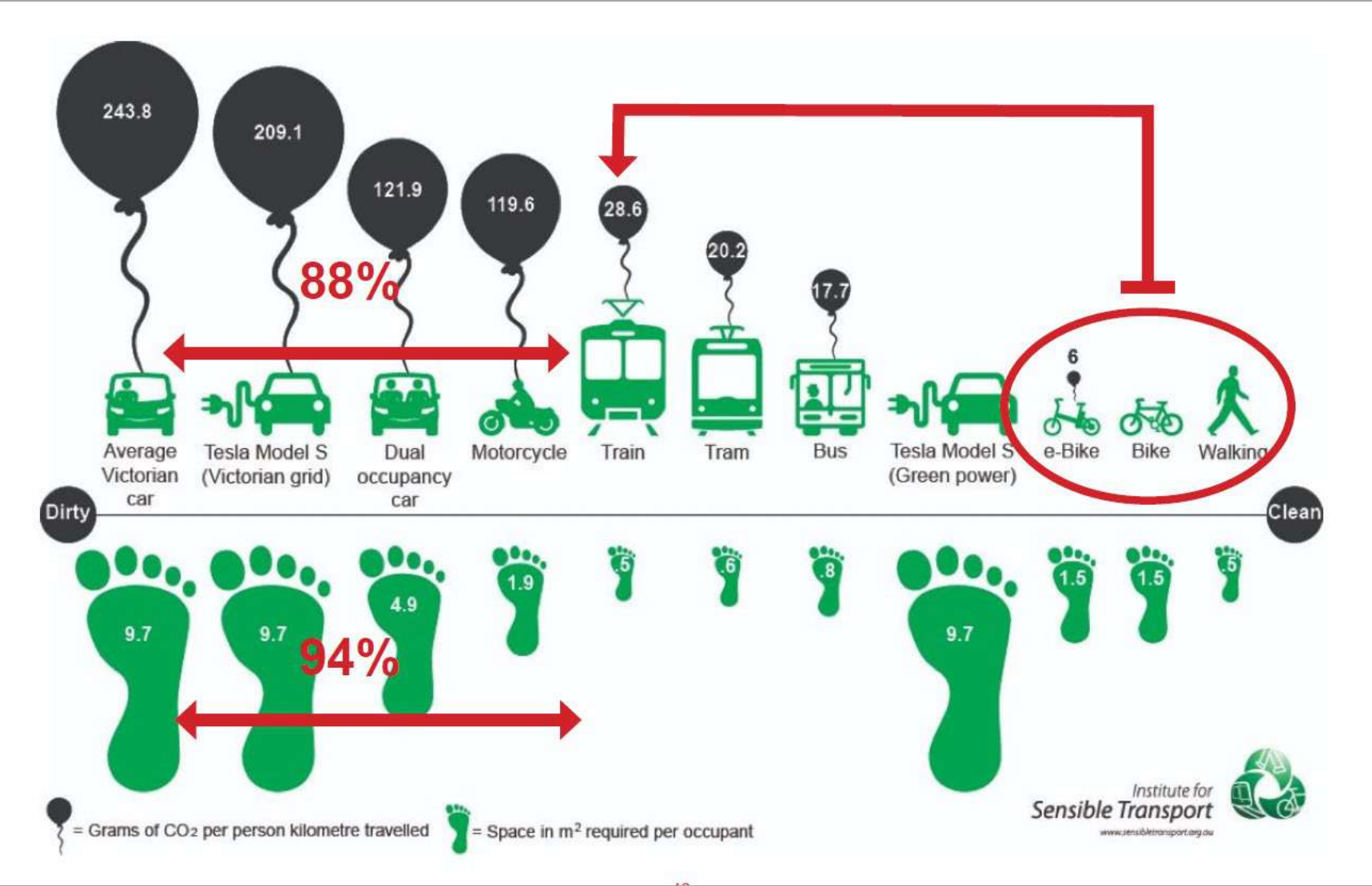


8:34 PM · Aug 10, 2021 · Twitter Web App

But with a new focus on connecting to community



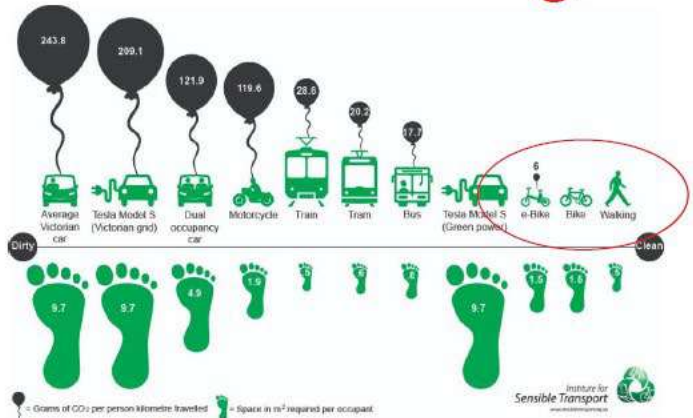
Panel 3 – The strategic positioning of railway stations in urban and rural development



Areas currently dedicated to parking can be re-purposed



Getting Small Stations right covers 80% of the Network



64% of Ireland's population lives less than a 30 minute bicycle/E-bike ride from a railway station.

Imagine what could happen if we took investment in safe cycle lanes and reliable train services seriously!



8:34 PM - Aug 10, 2021 - Twitter Web App

Don't look for shortest station to station journey time but look at first km and last km especially

The walking time from the station to the final destination combined with micro mobility is the key

Look at providing additional services at railway locations

Think of how out of town shopping malls have developed due to the car

Develop this model for the railway



Panel 3 – The strategic positioning of railway stations in urban and rural development

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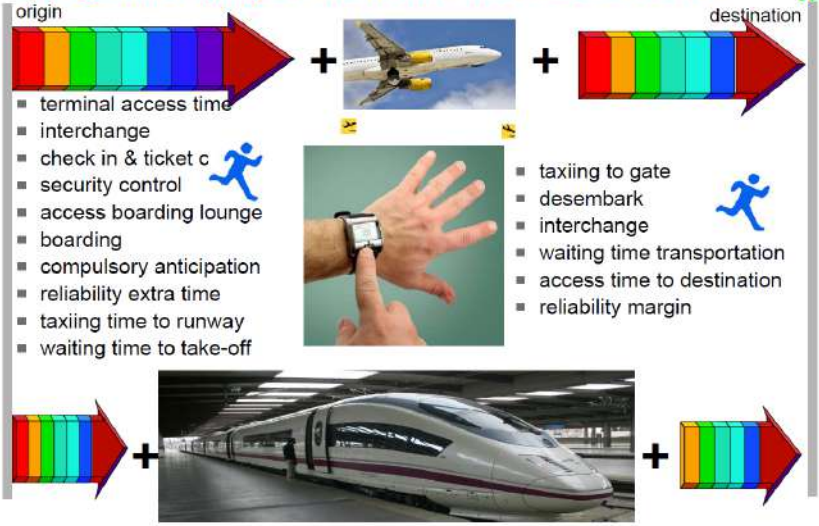
in the railway, the station is the battlefield



- station location
- connections / interchange regional / local transport
- the "trip" from mode to mode. capacity
- controls: tickets & security : capacity/queueing time
- pre-boarding space
- boarding control. again? platform ticket?
- the platform: a place to wait, or just walk through?
- finally, boarding the train

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the game is played in another field: door to door



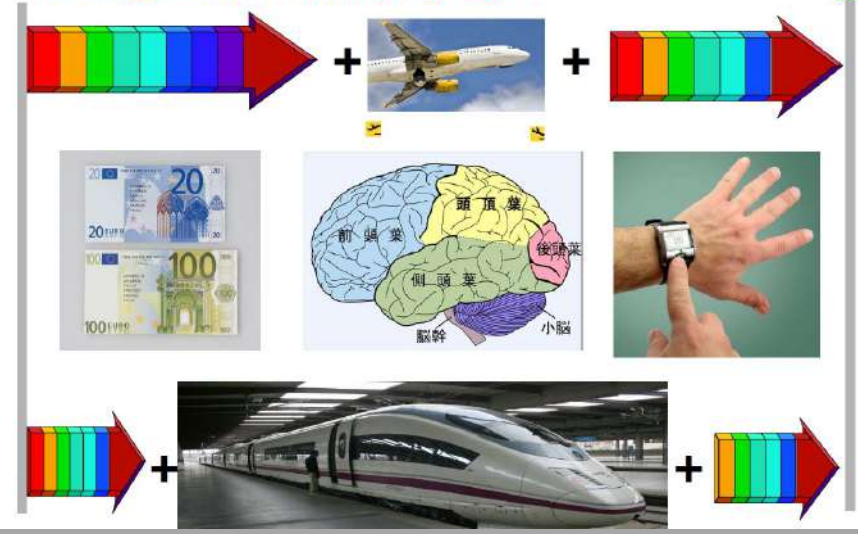
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can a train running at 300 km/h overpass a plane running at 900 km/h?



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no single winner: multiple judges



Panel 3 – The strategic positioning of railway stations in urban and rural development

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- huge HS line costs tend to relegate stations to a secondary level



- for a 500 km line, with trains every 15 min, and 3.000 pax/hr, capacity aprox:
 - line cost (infra+instal) $500 \times 20\text{M€} = 10.000 \text{ M€}$
 - rolling stock cost $20 \text{ units} \times 25\text{M€} = 500 \text{ M€}$
 - 4 "simple" stations cost $4 \times 20 \text{ m€} = 80 \text{ M€} < 1\%!!$
 - but a station as Sagrera(BCN) will cost $> 800 \text{ M€}$ (total)

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- stations are as important as the line
- stations are perceived by the customer



- location, accessibility
- functionality, aspect, approach
- services, comfort

- rolling stock is perceived as well, and more time



- aspect, comfort
- services on board

- line characteristics are not perceived

- only travel time



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- location "away" or "nearby" (9 km)?



do station designers arrive late at this process?

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- walking distances: 5 to 10 times smaller than at big airports: rail stations are more compact
- bigger capacity, but how about construction?



12 M pax año



16 M pax año

Panel 3 – The strategic positioning of railway stations in urban and rural development

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- location with respect to commuter/ regional rail "close" (600m) or "on top" ?



do station designers arrive late at this process?

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- location with respect to commuter/ regional rail "side by side" or "inside" ?



do station designers arrive late at this process?

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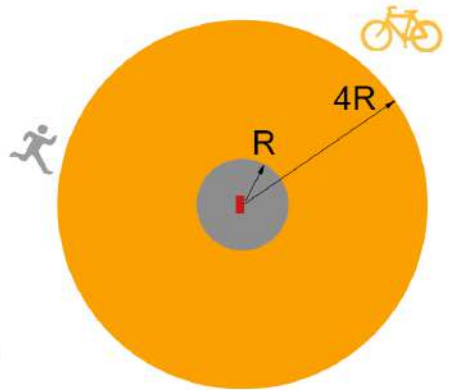
- station access mode (and its speed) is relevant for the hinterland extent. centrality is the big advantage of the train station

example: walking / bike
16 times bigger for the bike !

walking speed = 4 km/hr
biking speed = 16 km/hr
15 min walking: 1 km radius circle
15 min biking: 4km radius circle
surface walking area = 3,14 km²
surface biking area = 50,24 km²

ex: urban density barcelona 15.992 hab/km²

population 15 min walking = 50.214 hab
population 15 min biking = 803.438 hab



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- location

ex: barcelona HS stations biking 15 min access



Panel 3 – The strategic positioning of railway stations in urban and rural development

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- interchange with other modes at the rail station is essential, requires large thinking and investment, and has to be exhaustively analysed
 - pedestrians
 - bicycles
 - buses
 - tramways
 - subway
 - commuter rail
 - other railway lines
 - private car
 - taxis
 - rental cars
- clear, quick and comfortable access to the station

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- the station, key for the HS train advantages deciding customer choice
 - door to door travel time
 - origin and destination
 - location in the city / region
 - centered in the public transport network
 - accessible for private transport
 - multiplied hinterland
 - station configuration and functionality
 - interchange
 - accessible
 - minimal walking distance
 - no queueing
 - minimal time
 - additional services
 - punctuality, reliability
 - on board time use and comfort
 - frequency, price
 - energy and environmental sustainability

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- a delicate balance between different interests
 - rail infra manager:
 - track yards / interlocking / land occupation / depot connection
 - number of switches/ points
 - line capacity
 - station capacity: track side / city side when owned
 - business revenues / expenses
 - operator
 - space / track availability for preparing the train: cleaning / catering / personnel
 - boarding unboarding passengers
 - services for passengers / business
 - parking lots / business
 - interchanges with other urban/regional systems
 - city
 - station footprint / integration / barrier effect / land use
 - emblematic aspect of the building
 - effects on urban road congestion / parking
 - effects on city competitiveness
 - who cares for the passenger?

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- the UIC study on high speed and the city
 - analyse and understand impacts
 - location
 - configuration
 - capacity
 - congestion
 - from the points of view of
 - passenger
 - infrastructure manager
 - operator
 - city
 - worldwide benchmarking
 - study in progress

Strategic Urban Placement



For new railway lines....

Think of future expansion...

Think of how historically Terminus Stations have been converted to through stations at huge cost

Building new communities around new stations with public transport being the easiest option not the car

Conclusions

Urban and Rural Development has to be planned around the railway.

Because of the population growth in Africa it is more important than ever to avoid 'baking in' wasteful energy habits.

This will build resilience for external energy shocks.

Conclusions

Small Stations can and need to be at the heart of their community

Rail and Complementary Services Colocation will benefit both

Finally

Urban and Rural Masterplanning need to join with rail transport planning – we almost need a new profession or collaboration on this but who is our client?

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■ a delicate balance between different interests

- rail infra manager:
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- who cares for the passenger?



Thanks You

Questions/Discussion

AREP

agence
d'architecture
pluridisciplinaire

Train stations and urban design

Exploring intermodality solutions in France and abroad

Christophe Chevallier

Director of International Development Department – AREP

28th April 2022 – **UIC Africa**

AREP's design stands on 5 shared values

1. Compose in an iterative and collaborative spirit
2. Putting people at the center by encouraging soft and common mobility
3. Assimilate and continue the story. Invoking local and territorial cultures.
4. Imagine timeless and rational architectures and urban shapes
5. Inventing a Post-Carbon future dedicated to the "living"



AREP in data

Since
1997

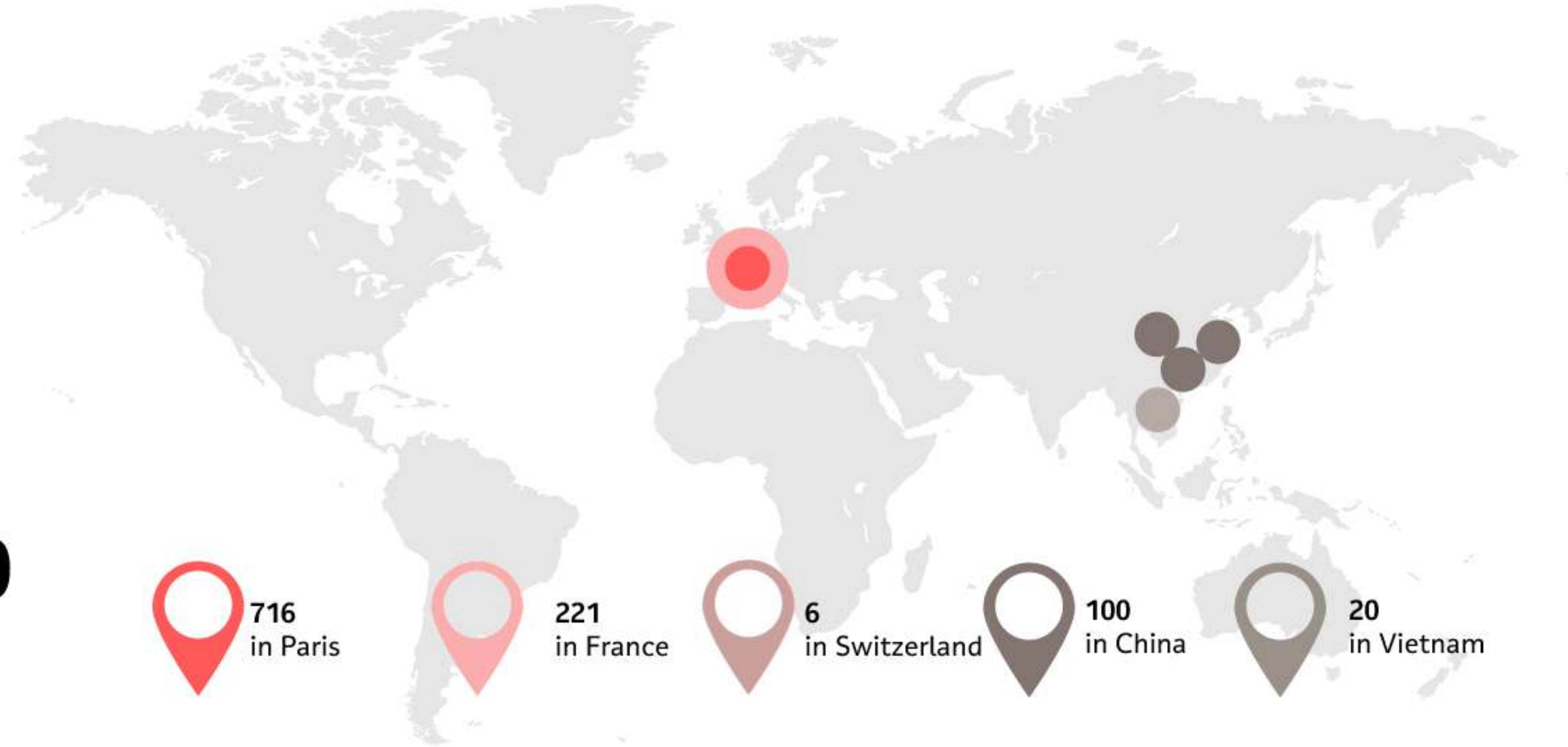


+ than **1 000**
employees



7 business
sectors

Architecture
Urban Studies and Regional Planning
Design
Engineering
Consulting and Programming
Project Management Assistance
Environment and Digital



716
in Paris

221
in France

6
in Switzerland

100
in China

20
in Vietnam

39 years
old
on average

28 nationalities

51 % women

49 % men

1 %
employee
recognized
as having a disability

Turnover
2021
117,3M€

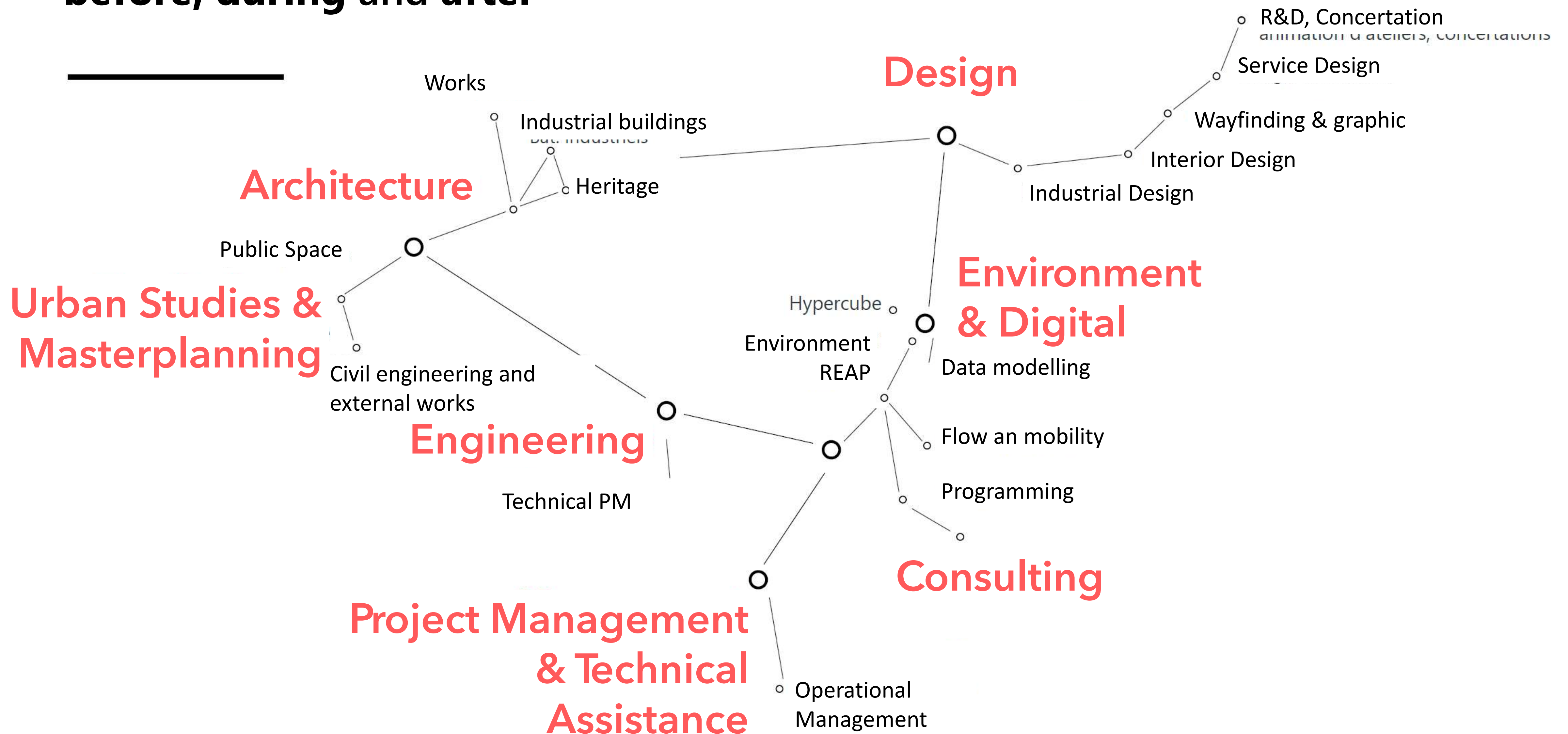


1st
French
architecture
agency 2021
« d'a » ranking



+ of **500**
on-going projects
each year

A variety of expertise: before, during and after



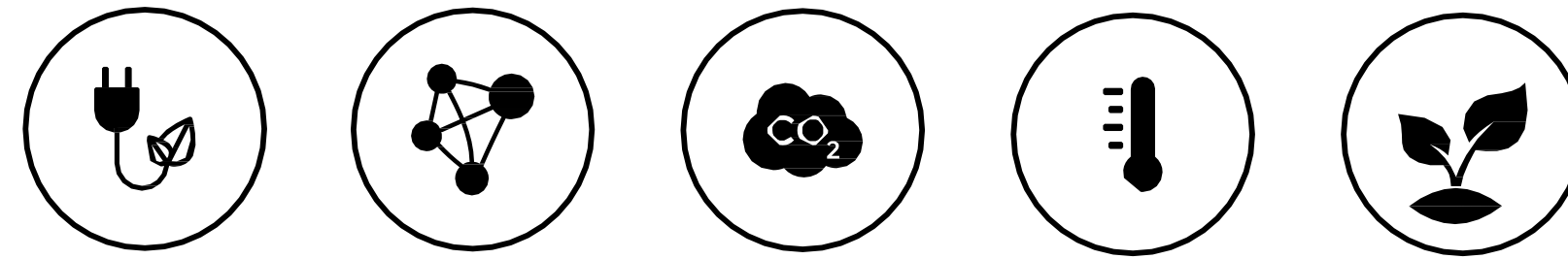
Nos implantations, nos missions

AREP



EMC2B

Our sustainable strategy



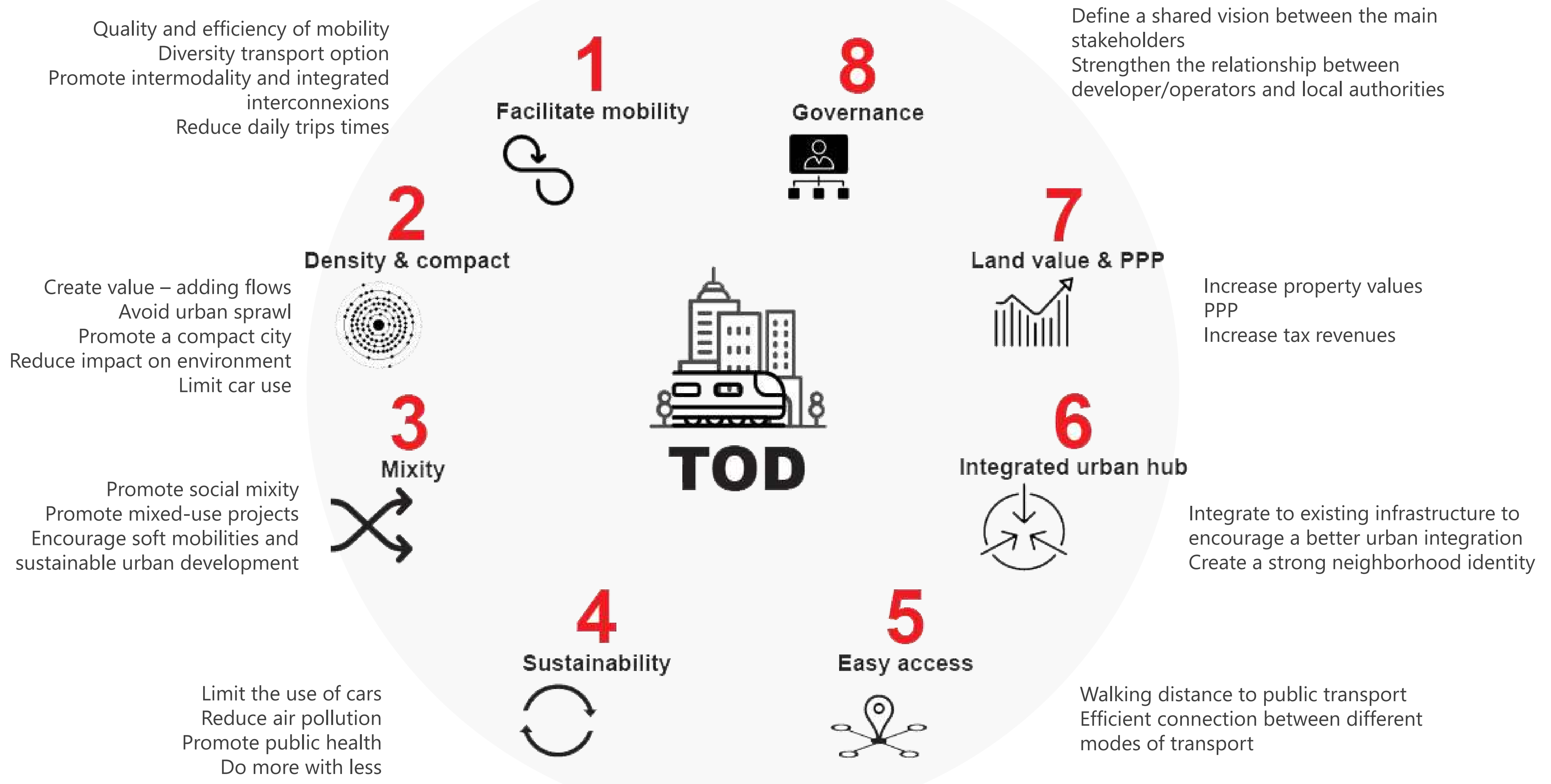
Over the past two years, we have developed and implemented our “EMC2B” comprehensive approach : **Energy, Materials, Carbon, Climate** and **Biodiversity**.

This method allows us to measure the impact we deliver in the society through our projects.

« By placing the ecological emergency at the heart of our agenda we question architectural and urban practices while incorporating resource depletion, climate change and demographic considerations in our projects »

Raphaël Ménard, Chairman

AREP's approach to intermodality



AREP's approach to intermodality

A contribution to the sustainable development of cities



POD

Pedestrian Oriented Development

*In AREP we create **user-oriented projects**, which demonstrate our commitment to the history, geography, culture and sustainable development of the sites we contribute to shaping.*

POD focuses on designing cities that satisfy the needs and desires of the urban dwellers:

- To be close to **work**
- To be close to interesting **things to see and do**
- To be close to **nature**
- To be close to **other people**
- To be **healthy** through good food, clean air and exercise
- To be intellectually **stimulated**
- To have a sense of **participating in society**

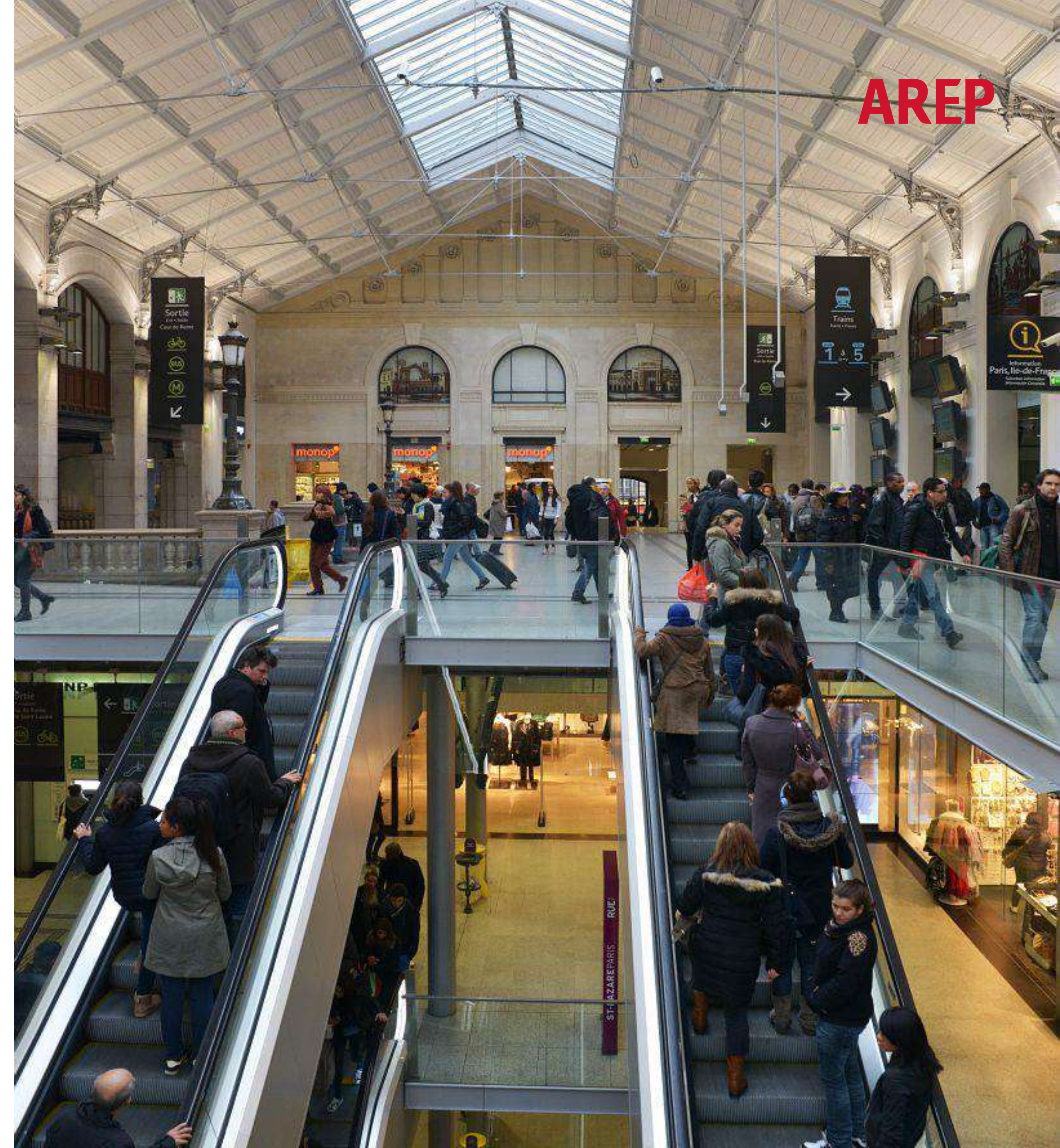
AREP



Flow Management

Tools to optimize traffic flows on the available urban transport infrastructure

- **Traffic modeling software** is used to estimate the flow of motorized transport and design solution to reduce the strain on existing road networks
- **Dynamic pedestrian simulation software** is used to estimate and analyse the diversity of pedestrians mobility from stations (metro, railways) and the coverage of transport services in the surroundings
- **Integrating new services (P+R, car sharing, car pooling...)** in the design of transport facilities to improve the global mobility in urban areas



Urban Intensification

- **Dense and compact urban development** or urban renewal
- Openness and accessibility of the urban frame
- **Functional diversity, mixed use and social inclusion** – affordable housing development
- Adapted programs in order to maximize the asset value on the long-term development

AREP



Integrated urban planning

Structure, Governance and Sustainability

- Stations and nodes conceived as **core strategic facilities** for metropolitan and local urban development
- Facilities well integrated in the urban fabric and **connected** to its surroundings and networks
- Integration of **multiple layers of governance** into projects
- **Co-construction** of strategies and projects and visions with stakeholders
- **Sustainable planning approach** to stations and station areas



.Case studies

Intermodality contributes to the sustainable development of cities

Paris St. Lazare Station and interchange hub

AREP

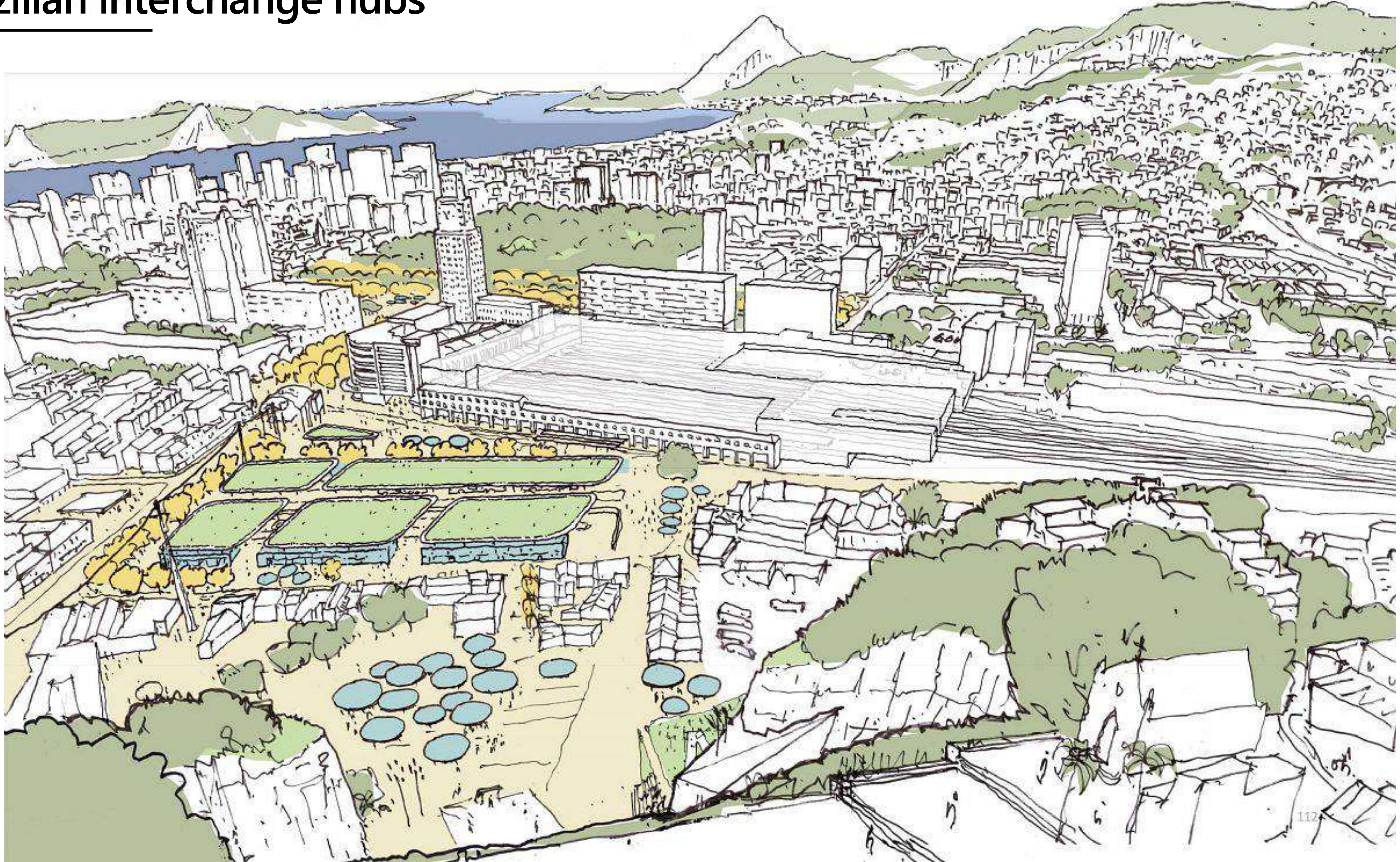


Paris St. Lazare Station and interchange hub

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Brazilian interchange hubs



Casa Port Station

AREP



Casa Port Station

AREP



Nîmes Pont-du-Gard High Speed Train Station

AREP



Gare TGV Nîmes Pont-du-Gard

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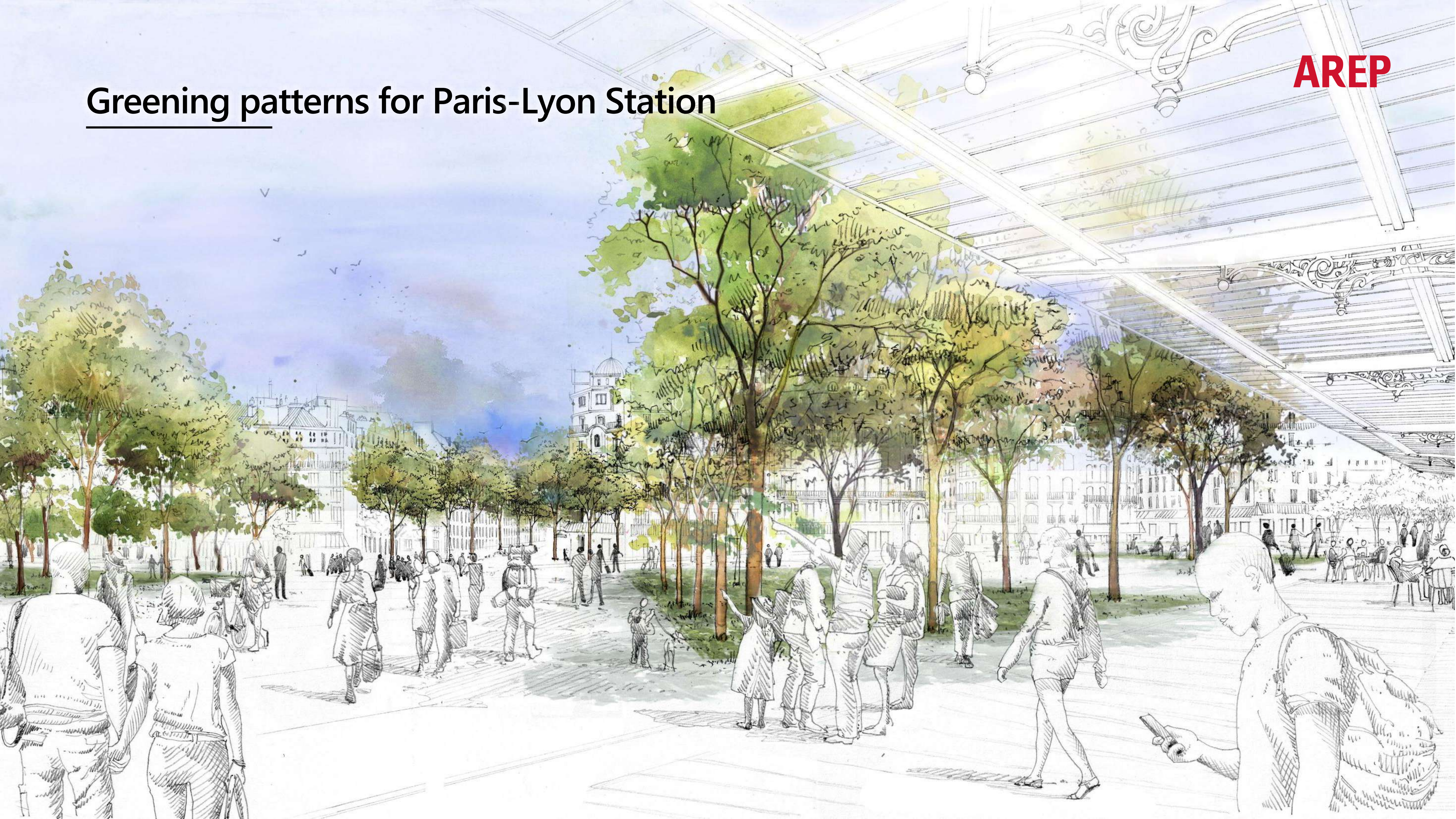
Greening patterns for Paris-Lyon Station

AREP



Greening patterns for Paris-Lyon Station

AREP



Dakar Regional Lines Station

AREP



Dakar Transit-Oriented Development in Petersen

AREP



.Budapest Nyugati

A case study

from the station to the city

From the station to the city

- 1. Station.**
Rehabilitation of an historical hall in the city centre, sustainable creation of new underground high speed tracks.
- 2. Public spaces and Intermodality.**
Green park and squares as a living pattern thriving from the station to the vibrant cores of the city.
- 3. Transit oriented development**
Urban shape reflecting the need to densify the former industrial area.



Budapest Nyugati

AREP



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central de l'administration du Jingu





Conclusions

Marc Guigon, UIC Director of Passenger Department

Stay in touch with UIC:

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#UICrail

Thank you for your attention.