

NEXTSTATION

MARRAKECH 2015



5TH INTERNATIONAL CONFERENCE ON RAILWAY STATIONS



Palmeraie Palace

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Rail Stations & Efficacity

**Design and implantation of Rail Stations in the future
sustainable cities**

Design et implantation des gares dans
les futures villes durables

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Content

- ❑ Context of Efficacy
- ❑ Objectives
- ❑ Methodology and general approach
- ❑ First results





Context

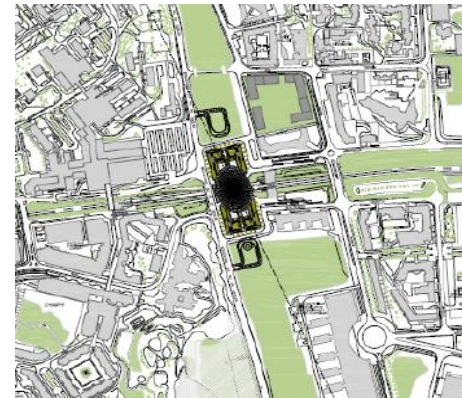
- EFFICACITY:
 - Research Program for durable energetic transition focused on the city design
 - Provide to public and private sector new tools and methods
 - Focus on neighborhoods, infrastructures and networks
 - Aiming at reducing energy consumption and increasing efficiency
 - Enlarging the scale: from the building efficiency to the city efficiency





Objectives

- 3 Main research programs
 - **Design of urban systems**
 - Energy efficiency of technologies for a district
 - Evaluation of impacts & monetarization
- Role of rail station in urban systems
 - Urban nodes, multimodal and energy hubs
 - Develop methods for new hubs currently under design in new French projects





Design of Rail Station in Efficacy

- Building a station at positive energy
 - Geothermic, re-use of braking train energy or heat of technical rooms
 - Optimize accessibility and passenger flows
 - Optimize services in the station and outside
- Design of the urban district
 - Design of the district and the insertion of the rail station (intermodality)
 - Ensure mix uses and efficient space allocation (working area, housing, mix of use to optimize passenger commuting and flows.





Rail City and districts

- Rail station & sustainable mobility :
 - Efficiency based on rail station districts, for low energy consumption.
 - Optimal transport network, intermodality: Rail, metro and slow/active modes
 - Urbanism and planning: a key role
 - TOD
 - Transport supply quality to support modal transfer (schedules, frequency, NTIC)





Outputs and case studies

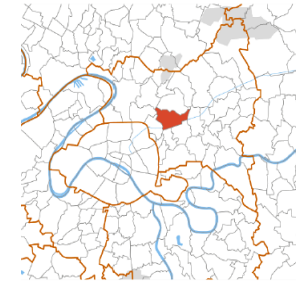
- Current focus and outputs:
 - Scientific works on the approach through the transport supply
 - Quality criteria to encourage active modes
 - Case studies on critical cases to work on a tool box
 - Experiment of the tool box on case studies: Station of the Grand Paris Express Project.



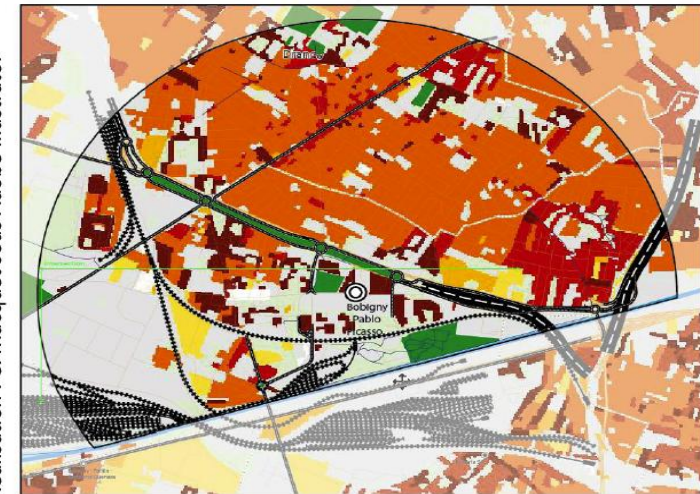
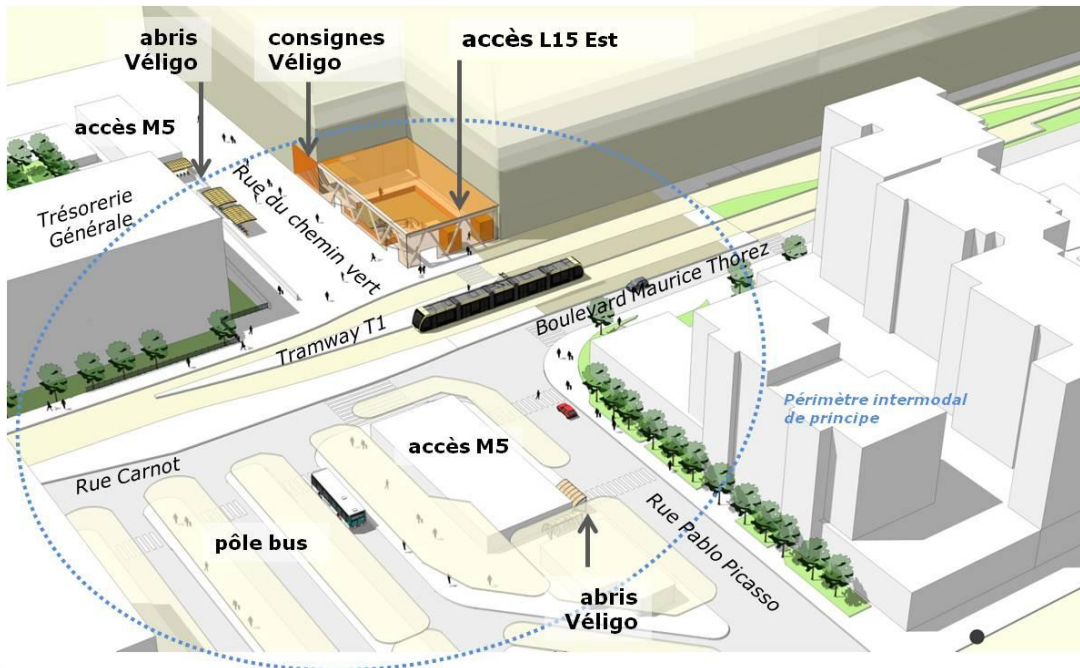


Pablo-Picasso Station

- Analysis Grid for :
 - Energy diagnostic of Station district
 - Promote low energy transport practices (slow modes)



- Terminus Metro 5
- Tram1, 20 bus lines
- Metro: 20'000 passengers/day (2014)
- Transport Pole: 60'000 passengers/day (2014)



Densités de population (hab/ha)

- De 1 à 10
- De 10 à 50
- De 51 à 100
- De 101 à 200
- Plus de 200

- Espace vert
- Voie ferrée
- Voie impraticable en vélo sans aménagement cyclable (2x2 voies)








Réalisation : C. Macquet sous Adobe Illustrator






Criteria: safe mobility for slow modes






Type of network

-  Green line
-  Separate Bicycle line
-  Bicycle Line on street
-  Separate Bus line
-  Mixed traffic lines



Trafic sur le tronçon

-  0 – 5'000 veh/day
-  5000 – 10'000 veh/day
-  More than 10'000 veh/day

Buses and Trucks movements

-  More than 300 per day
-  100 to 300 per day
-  Less than 100 per day

Divers

-  Light network
-  Intersections without right priority

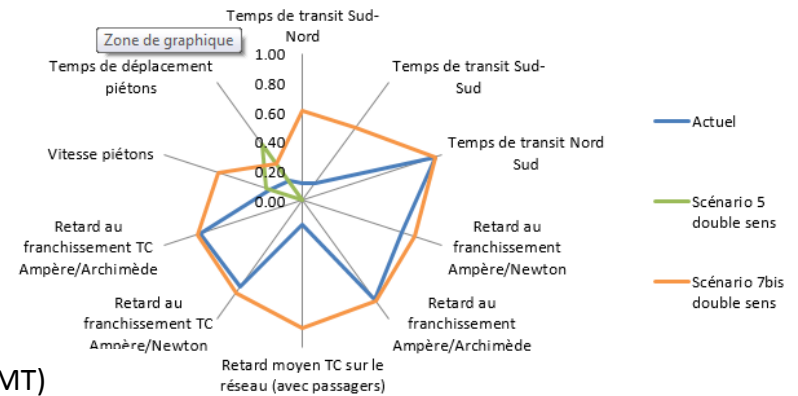
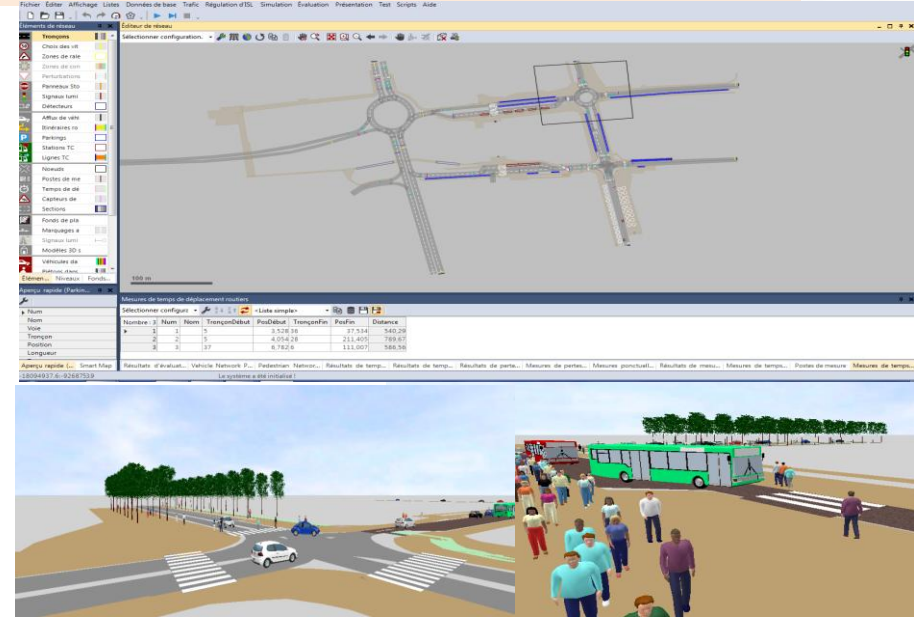


500 m





Case of Noisy Champ: Design of the station area



Simulation & assessment: Clotilde MUNIER / supervision: Alexis POULHES (LVMT)



Conclusion

- Approach oriented toward solutions and actions
- Implementation on projects
- Tools and solutions proposed in Efficacity are under assessment through ongoing studies



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THANK YOU

MERCI

