

New light rails In Paris Transportation system

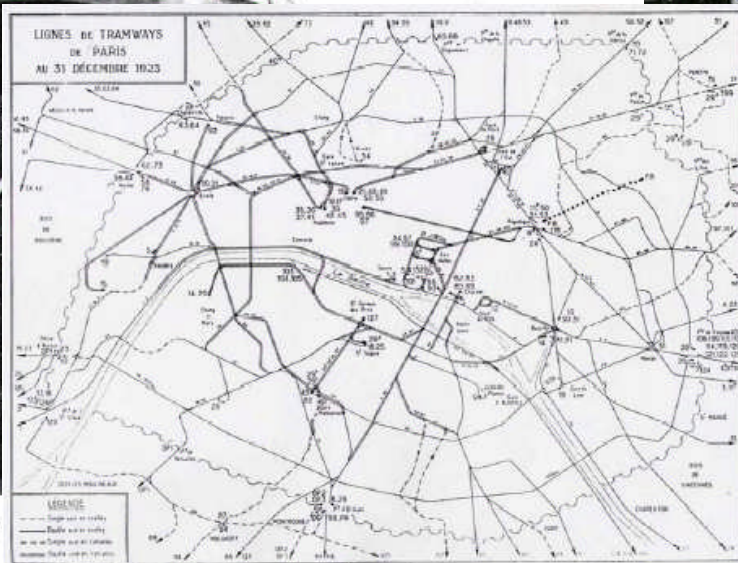


RATP Direction Générale Développement Groupe - Mission Marchés & Coopération
Octobre 2009

history of tramways in Paris : since 1873

from 1873 to 1938

- ◆ First parisian tram in 1873
- ◆ Network extended and modernised until 1929
- ◆ Progressively dismantled between 1929 and 1938



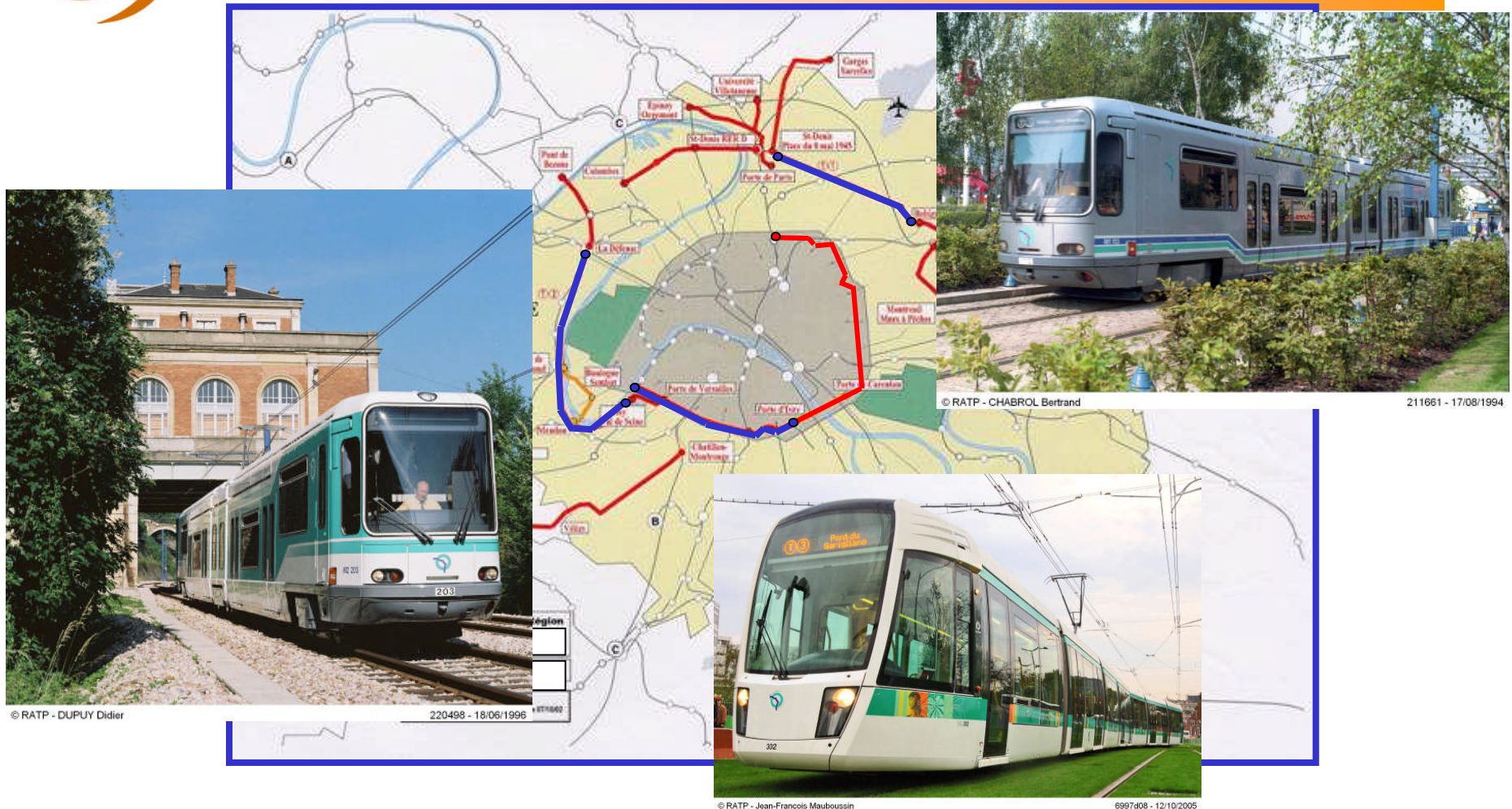
Lignes de tramway à Paris intra muros en 1923

Source : J. Robert



In 1928 :
727 millions passengers
(1907)
Cliché RATP

New projects of tramways in the parisian area



75 kms of new lines to be built within next 5 years



The tram of « les maréchaux »

- ◆ Built along the avenues dedicated to Napoleon field marshals: first section opened in december 2006
- ◆ **8 kms long** with **17 stations**.
- ◆ Desserves areas of 167 000 inhabitants and 89 000 jobs.
- ◆ **100 000 passengers** per day, from the beginning.
- ◆ Commercial speed : 18 km/h
- ◆ One tram every **4 minutes** at peak hours.
- ◆ Works from **5:00am to 12:30 pm**



Improving the whole system of public transportation

connected with :

**5 metro lines, 2 RER(express regional train) lines,
37 bus lines**





Integration within urban environment

- ◆ Respect of the environment: preserving trees, lawns, green spaces around the stations...
- ◆ Improving urban environment: wider sidewalks, pedestrian areas, security reinforced at crossroads.
- ◆ Creation of continuous cycling lanes.
- ◆ reorganisation of unloading areas.
- ◆ Easy access to other transportation means.





Financing the project

total: 214.11 M€

◆ City of Paris	49.30 M€
◆ Regional council	81.32 M€
◆ State	50.76 M€
◆ RATP	32.73 M€

RATP also financed **53 M€** for the rolling stock.

The City of Paris financed street development : **44 M€**.

Contracting firms financed works on their own networks
(estimated cost: **80 M€**).

Tramway line disposal

Central lanes



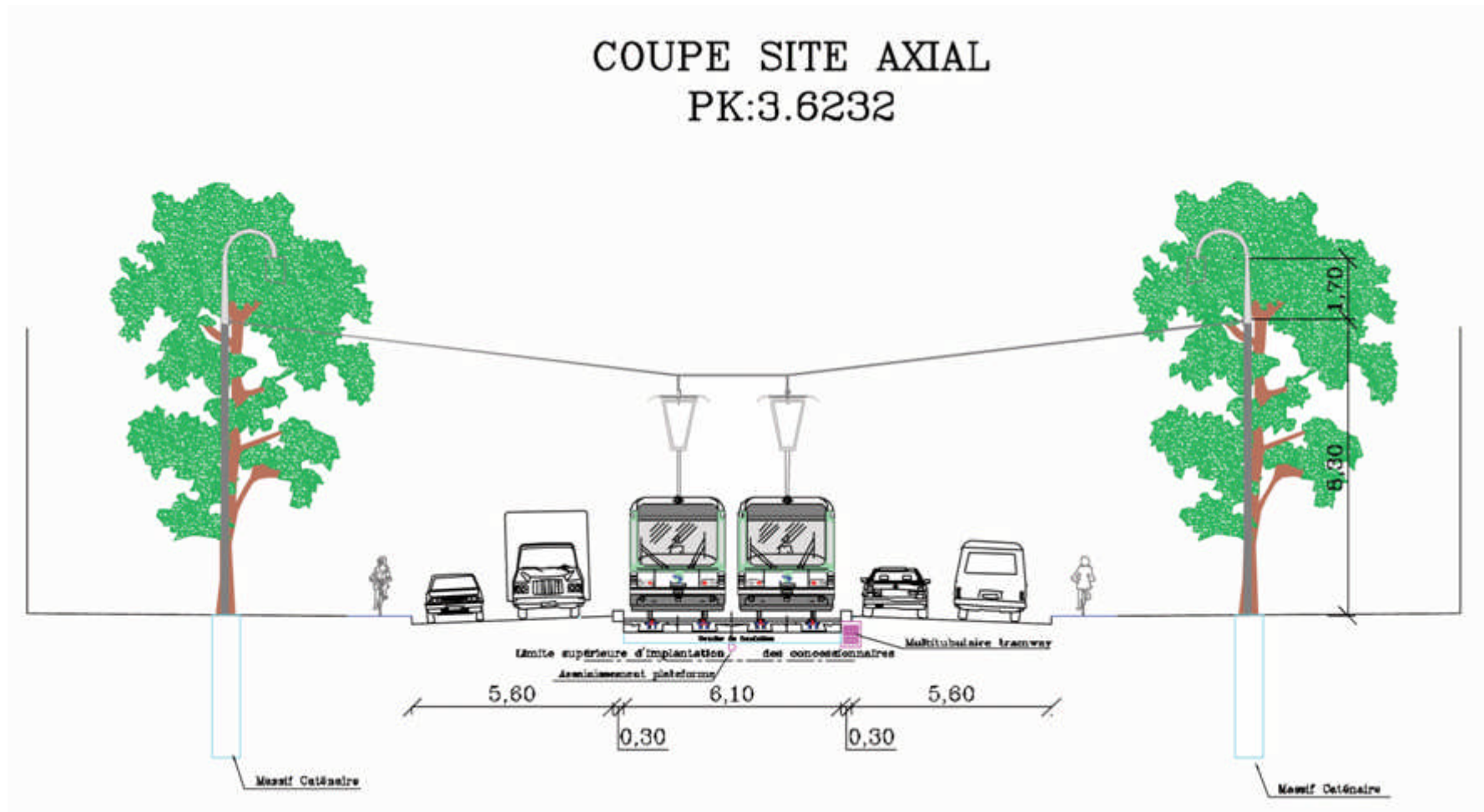
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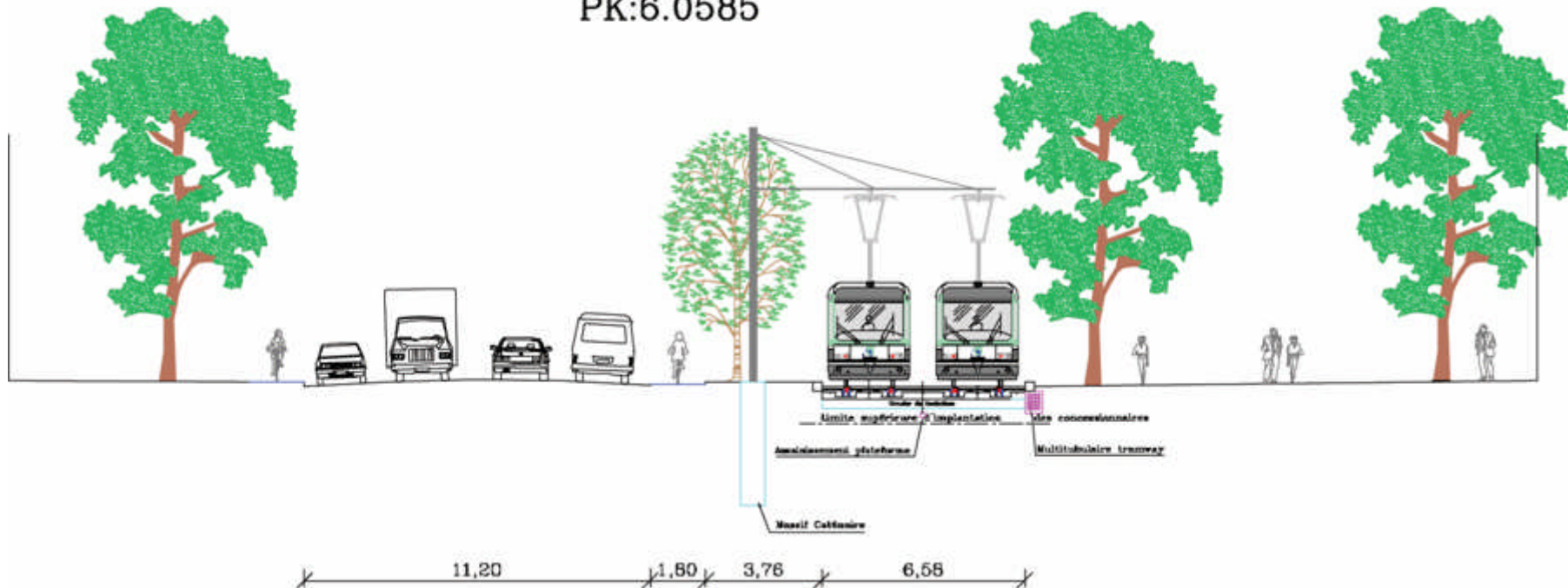
Side lanes

section of the street



Section of the street

COUPE SITE LATERAL
PK:6.0585







Urban project

Using specific materials

PAVEMENT
CYCLING LANE
IRON GRATE



DARK ASPHALT
CLEAR ASPHALT
GRANIT KERB
GRANIT KERB
DARK COATING

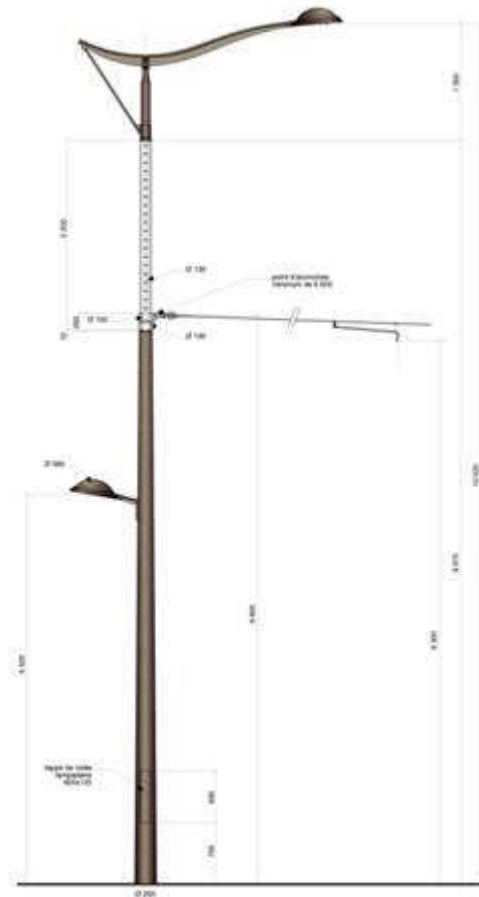


station design

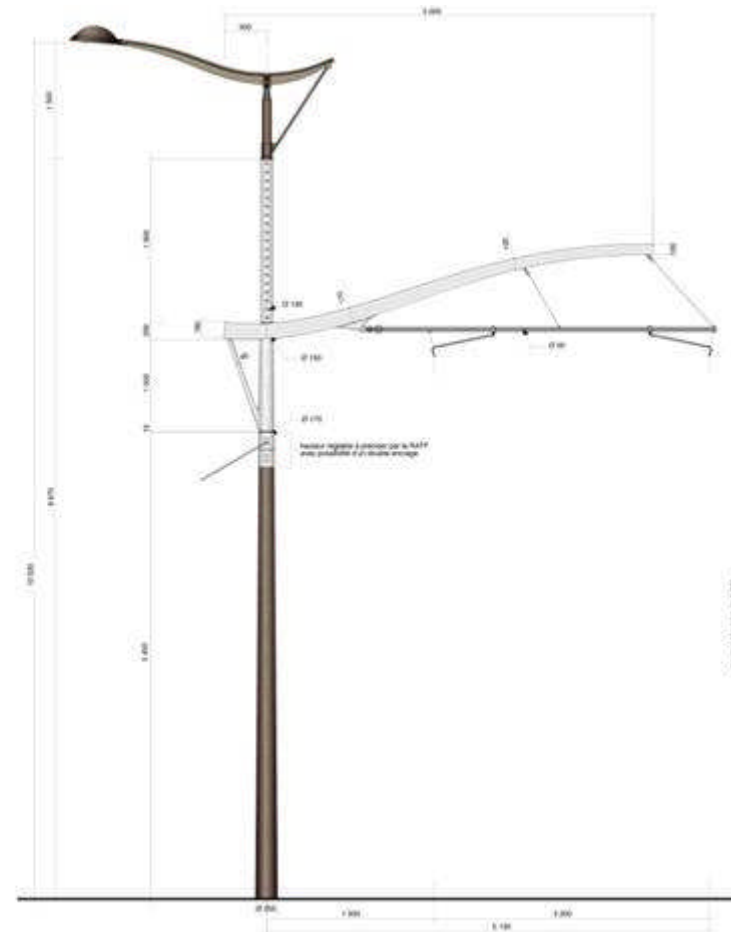


By Atelier Wilmotte

Design of rail catenaries



SUPPORT DE LAC
PORTIQUE SOUPLE
POSSIBILITE D'ECLAIRAGE

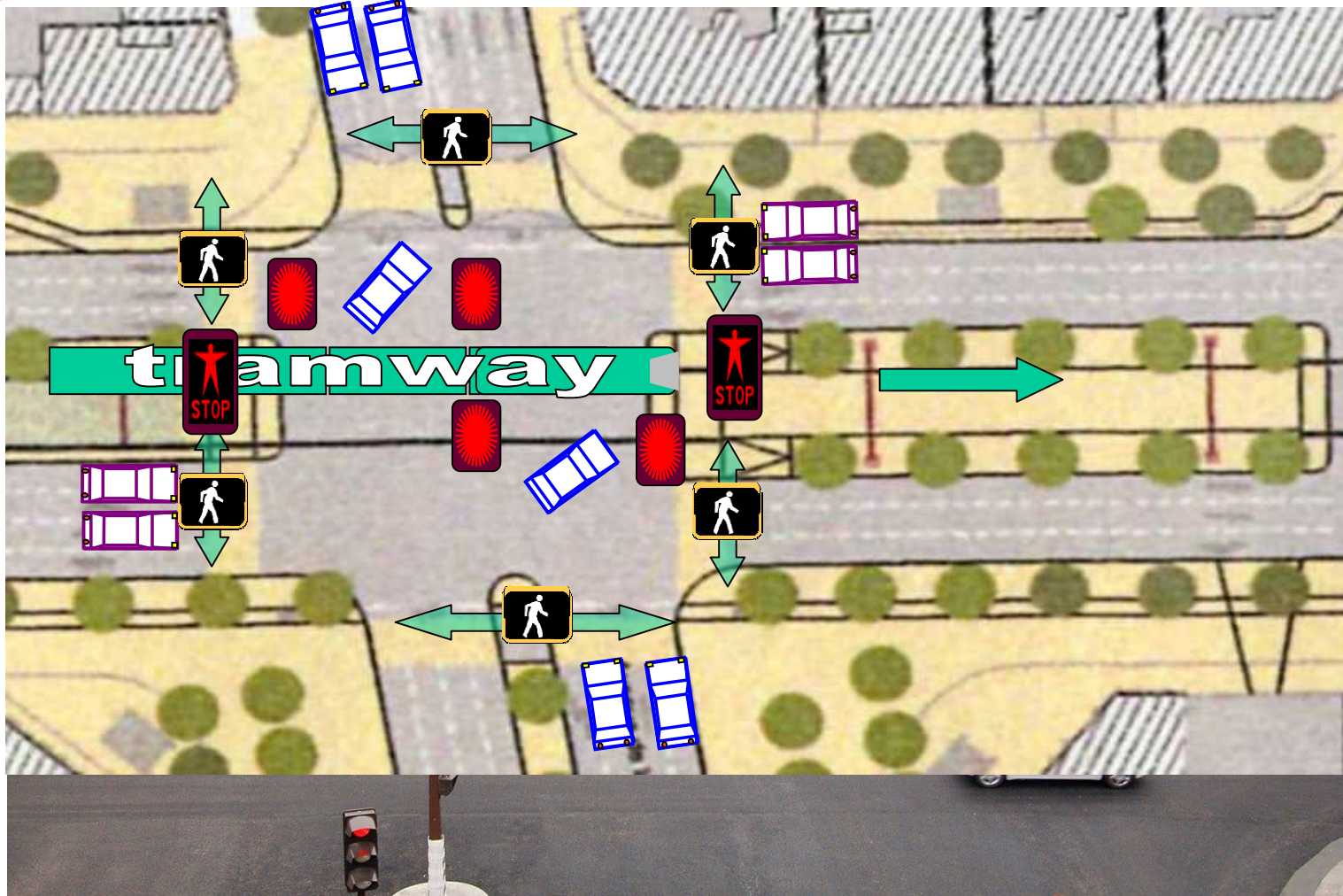


SUPPORT DE LAC
CONSOLE 2 VOIES
NON-REGULARISEE
POSSIBILITE D'ECLAIRAGE

Stations at night

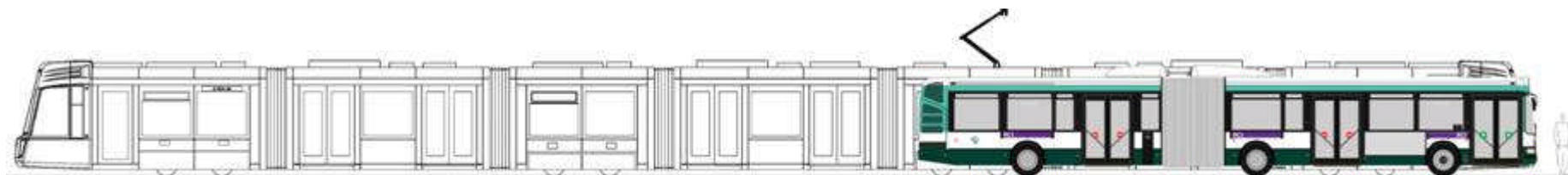


Priorité aux feux





the rolling stock





The rolling stock

modern, comfortable, silent and easily accessible:

Citadis 402 by Alstom

- ◆ 45 m long, 2.65 m wide. 304 passengers
- ◆ low floor
- ◆ Electric powered
- ◆ Air conditionning

First train delivered in october 2005

Total accessibility



Design



Parisian symbols

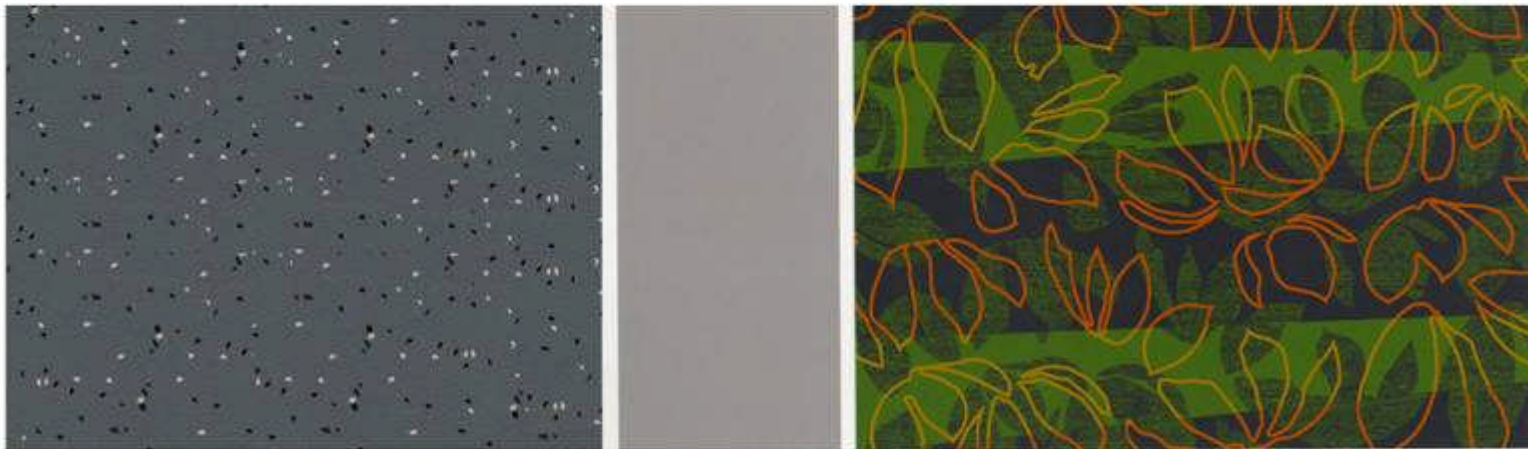
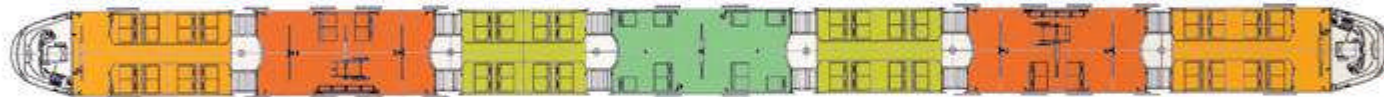




Soft colors



Inside design



Large scape windows

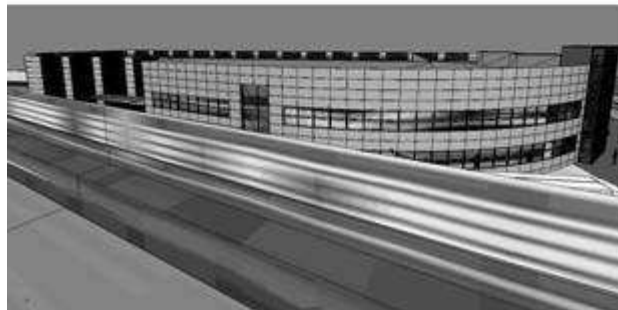


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The depot and maintenance site

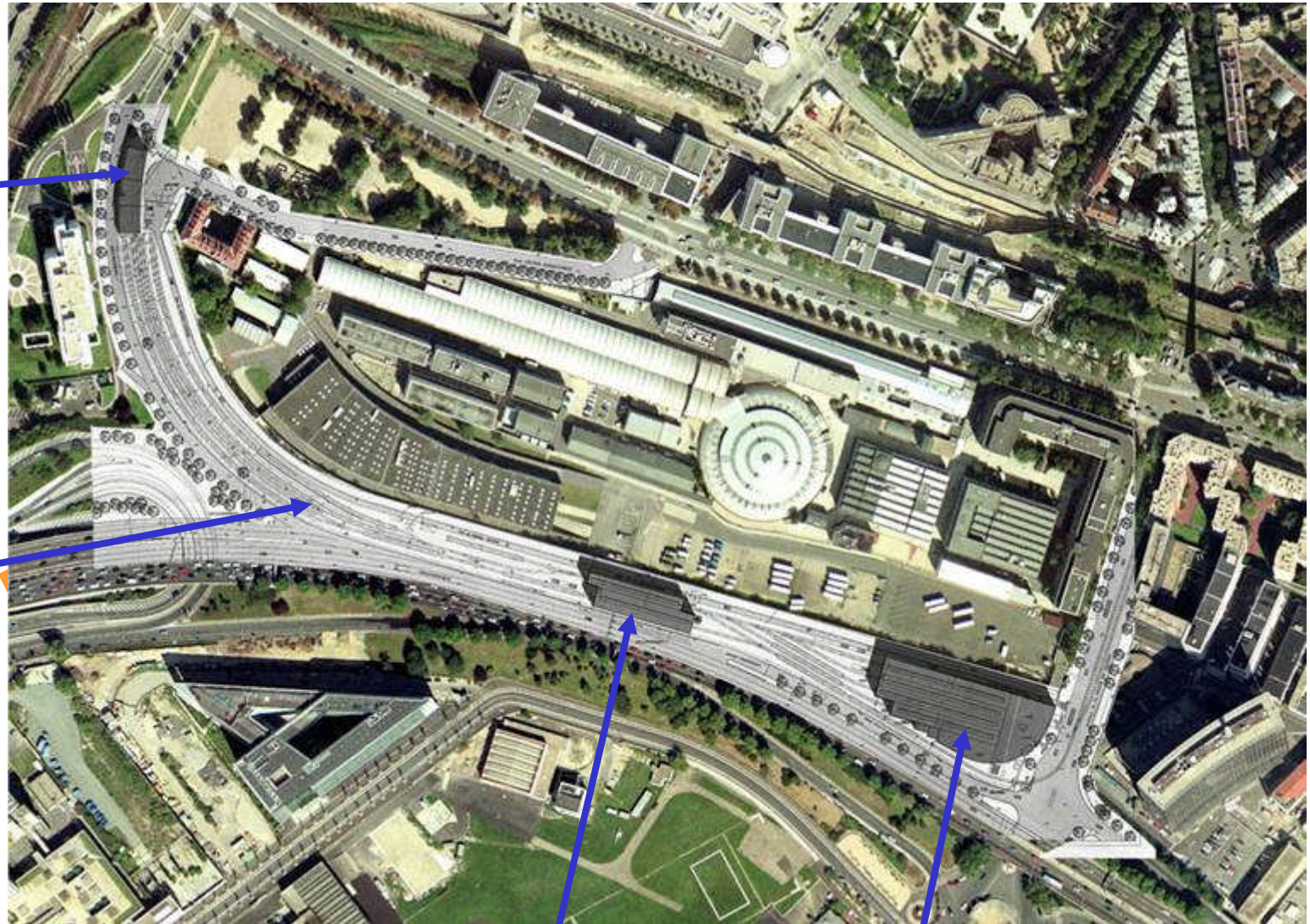
inside of south Paris area





**Control traffic
room
+
power
station**

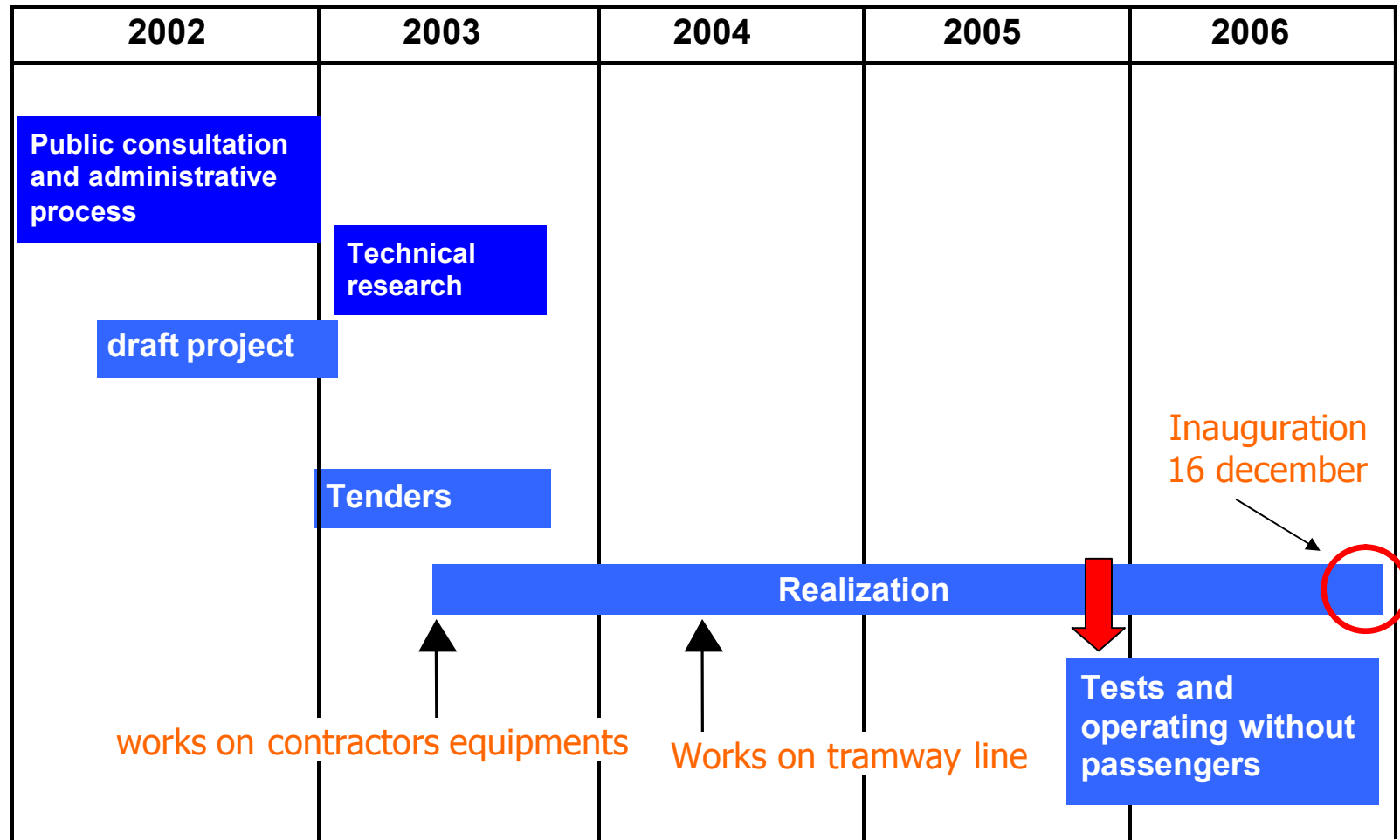
depot



Washing machine

**maintenance
workshops
and staff rooms**

Realization planning





Works at contractors networks

summer 2003 – summer 2004

largest
pipelines
beam =
1.20 m



RATP works



Porte de Sèvres, Paris 15e - August 2004



Communication

- ◆ A graphic identity and logo: A tram for everyone





Communication

Different medias



Local information panels



Communication



Magazine



Leaflet for neighbour residents

Leaflet for local companies and shops





Communication

Coordinated and exhaustive information :

by the team composed with RATP and Paris cityhall employees







STEEM: A research work for energy saving

(Système de Tramway à Efficacité Energétique Maximisée)

- Based on a convention between **RATP, Alstom and INRETS**.
- Financed by PREDIT and ADEME.
- This **experimentation aims to reduce energy consumption on light rail trains**, by recuperating energy from the stages of speed reducing, and directly store it locally on the train, using new technologies of super condensators.
- Between the stations, a total autonomy of the train will become possible.
- The experimentation will consist in plugging down the rail pantograph in both directions between « **Porte de Choisy** » and « **Porte d'Italie** » stations, on a specially designed train on line T3 in 2009 and 2010.
- **We are expecting 30% energy savings from this new technology**

•STEEM project received the agreement by CERTIFER, the French agency for trains certification.



Thank you for your attention



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6997d02 - 12/10/2005