

PNEUMATIC WASTE COLLECTION IN VITRY-SUR-SEINE

The image shows an industrial interior with two large, white, conical storage silos in the background. In the foreground, a large, white, rectangular metal grate or conveyor system is visible, with a yellow crane hook suspended above it. The floor is made of concrete, and the walls are light-colored. The overall scene is dimly lit, with some light coming from a window on the left.

BARCELONA – NOVEMBER 16th 2016



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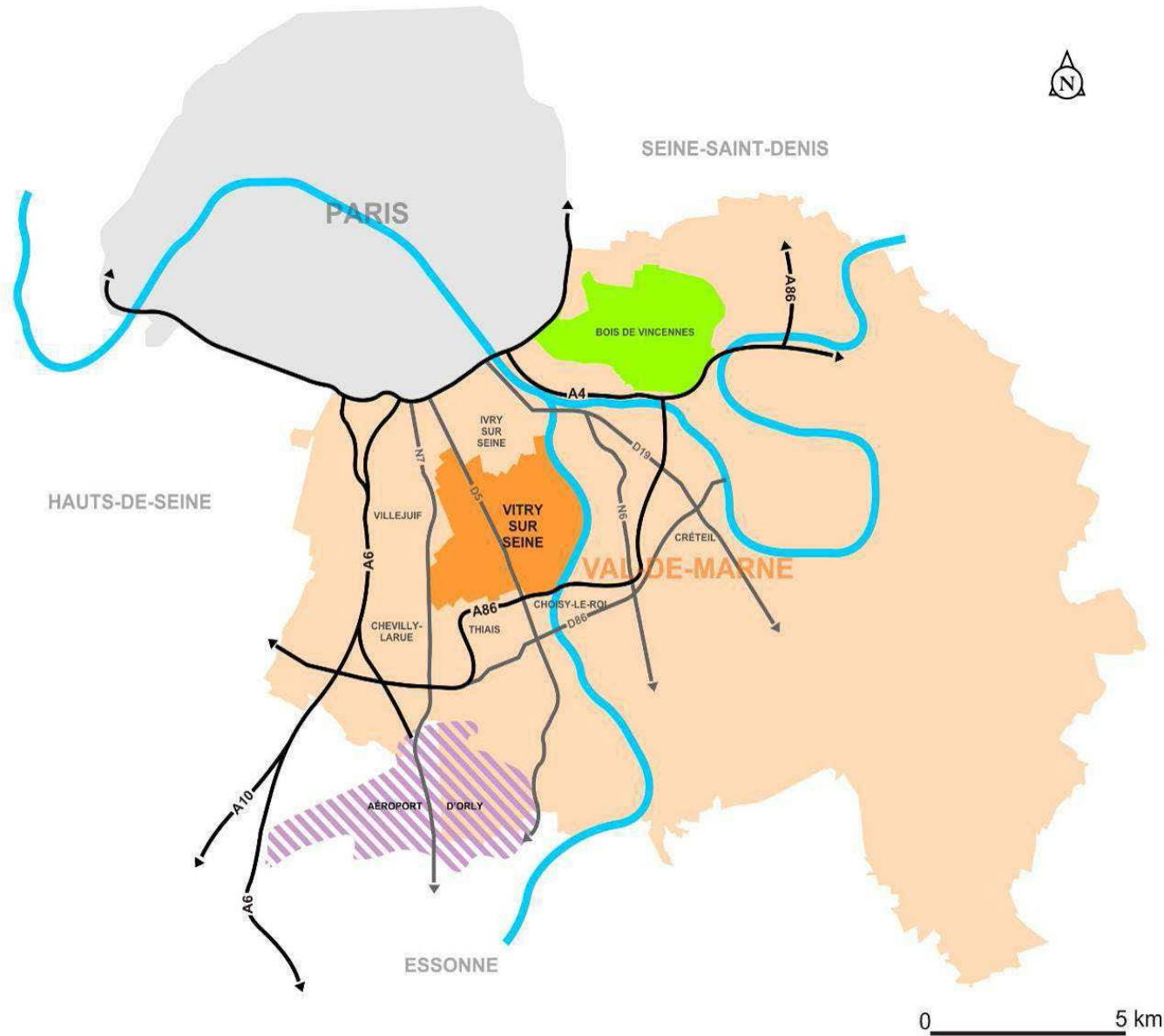




PRESENTATION OF VITRY-SUR-SEINE



- Town with a population of 90 000 inhabitants
- Town in the great ring forming Paris agglomeration (3 km south-east of Paris)





PRESENTATION OF VITRY-SUR-SEINE

- Densely populated town (more than 7 000 inhabitants/km²)
- 75% live in flats, a third in social housing



The town centre with large blocks

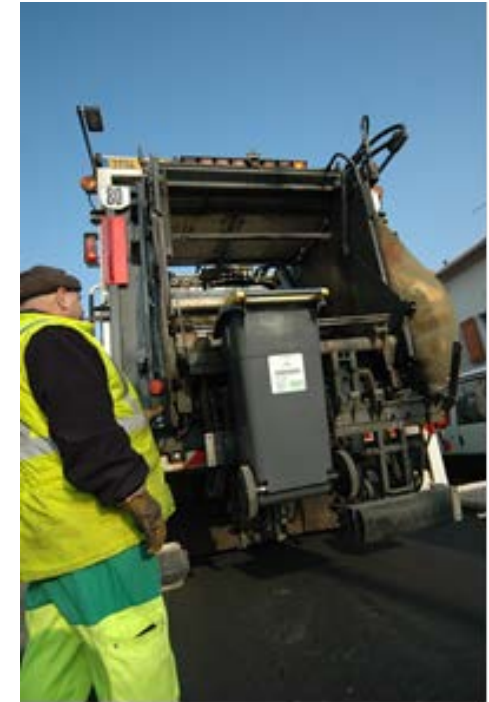




PRESENTATION OF VITRY-SUR-SEINE

➤ Waste management

- Household waste collection carried out by the town council using packer vehicles and wheeled bins
- Treatment delegated to an inter-municipal organisation (Syctom)
- Characteristics:
 - Weak performance with selective collection.
In 2015: 37.5 kg of selected waste per inhabitant (*51 kg per inhabitant in all Syctom's territory*).
 - A comparatively low quantity of residual household waste.
In 2015: 281 kg/inhab/year (*329 kg per inhabitant in all Syctom's territory*).
 - Many illegal dumps on public land



THE REASONS FOR THE PROJECT AND ITS ORIGINS



- A poorly performing form of household waste collection causing nuisance to the town residents
 - Weak performance with selective collection
 - Lack of space for putting bins inside homes
 - Selective bins not always offered to residents by site managers
 - Degraded public spaces (overflowing bins, bin fires, proliferation of rats ...)



THE REASONS FOR THE PROJECT AND ITS ORIGINS



➤ An urban renewal operation begun in 2007 in the Balzac district

- Demolition of 660 homes
- Construction of 470 homes
- Renovation of 530 social homes
- Creation of public facilities (2 nurseries, 1 square, 1 social centre)
- Opening up of the district with the creation of 5 new streets



➤ A visit to Barcelona by the previous mayor of Vitry-sur-Seine in 2008 with the French Mayors' Association (discovery of the PWC)

➤ A technical and financial feasibility study for the development of the PWC in Vitry-sur-Seine



THE REASONS FOR THE PROJECT AND ITS ORIGINS



- Following the results of the feasibility study, integration of the PWC development project into the town's cleaning plan

This multi-annual action programme includes 5 themes

Waste collection

Cleaning

Communication

Projects, studies and prospects

Waste reduction

And 5 main lines

Service level development

Strengthening communication

Innovation through pneumatic collection

Carrying out an overall study to optimise the collection operation (*done in 2010*)

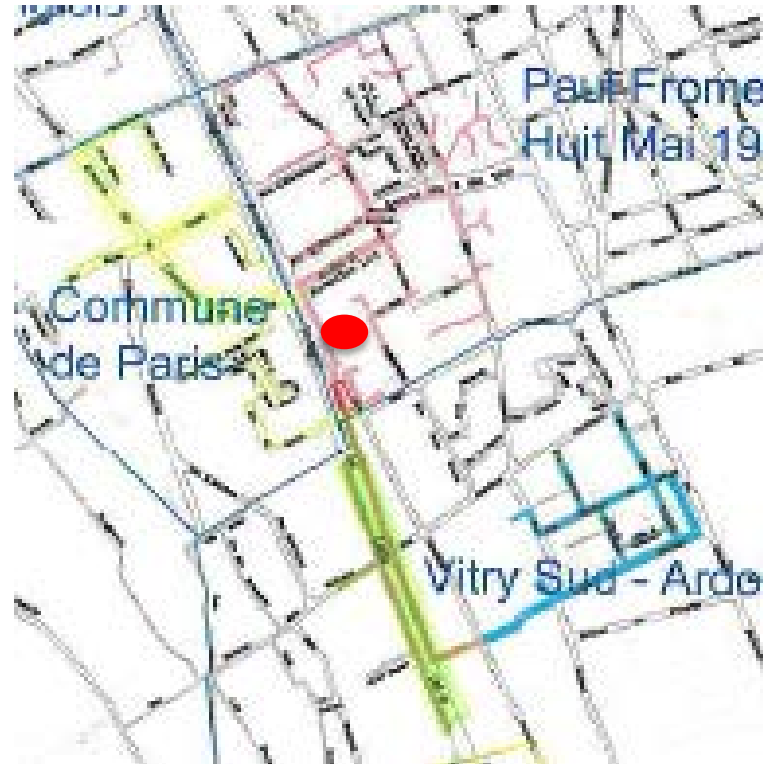
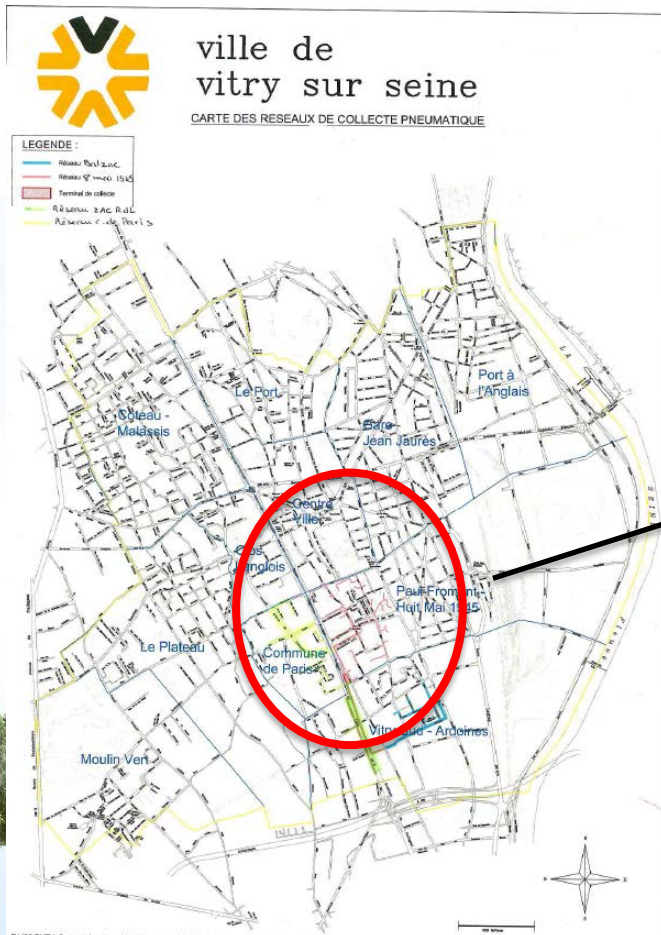
Feasibility study for a recycling centre in the municipality (*in progress*)





THE MAIN STAGES OF THE PROJECT

1. **1st quarter 2008**: technical and financial feasibility study
2. **2nd quarter 2008**: approval of the project by councillors and integration into the cleaning plan
3. **Beginning of 2009**: finalisation of the project's scope and the site of the collection terminal





THE MAIN STAGES OF THE PROJECT

3. **November 2009**: launch of a European tender process to appoint the designer/constructor of the system as part of a design/implementation contract:

- 4 candidates registered an interest, 3 were retained and 2 submitted a bid (Véolia-Envac group and Sita-Ros Roca group)
- November 2010: after analysis of the 2 bids, the tender committee declared the process void (technical deficiencies in one bid, too high cost for the other)
- Following this decision, the group decided to organise a negotiated contract procedure in accordance with the public contracts code and to negotiate with the two candidates that had sent a bid in the original tender process.

4. **January 2011**: adjustment of the Business Consultation Pack which is then sent to the 2 candidates

5. **Between January and May 2011**: negotiation meetings with the 2 candidates

6. **July 2011**: award of the contract to design and carry out the works for pneumatic waste collection (terminal, network and inlets) to the Sita-Ros Roca group for a total sum of 26 000 000 € (not including VAT)





THE DESIGN-IMPLEMENTATION CONTRACT

➤ **Composition of the contract:**

- A confirmed part consisting of 5 phases:
 1. Stage 1: creation of the file for authorisation to build the terminal
 2. Stage 2: design studies (terminal, network and inlets)
 3. Stage 3: construction of the terminal and installing the network and inlets in the Balzac district (39 collection points including 5 indoor ones and 2 km of network)
 4. Stage 4: linking the Rouget de Lisle new district to the system (1,5 km of network and 25 collection points including 4 outdoor ones)
 5. Stage 5: linking the 8 Mai 1945 district to the system (4 km of network and 75 collection points including 7 indoor ones)

In total: around 22 000 inhabitant-equivalents served (households + activities)

- A conditional part: linking the south of the Commune de Paris district to the system (2,4 km of network and 39 outdoor collection points)

In total: 7 800 inhabitant-equivalents served (households + activities)





THE DESIGN-IMPLEMENTATION CONTRACT

➤ Technical elements of the contract

- 29 000 inhabitant-equivalents served (households + activities)
- A terminal and collection points dimensioned for the collection of 2 streams of waste (residual household waste and selective collection) and pre-equipped for the collection of a 3rd stream: fermentable fraction of household waste (large producers only)
- 178 collection points (2 or 3 inlets)
- About 10 km of networks

➤ Principal technical constraints imposed by the contracting authority

- Collection points on private land
- Bins accepting sacks with a volume of 50 litres (110 litres for commercial users)
- Outdoor collection points located 50 metres from property entrance halls
- New buildings serving more than 20 homes: indoor collection points
- Main network on public land





PROJECT DEVELOPMENT

✓ **Start of work at the beginning of 2012** in the Balzac district as part of the urban renewal operation then in progress.

- Constraints: insertion into the organisation of various works in the area (building constructions, roadworks, various networks)
- Difficulties:
 - many agents working in the area: many worksite interfaces to manage
 - Significant additional cost of works due to a large amount of polluted land
 - Adaptation of the network layout due to "surprises" in the subsoil

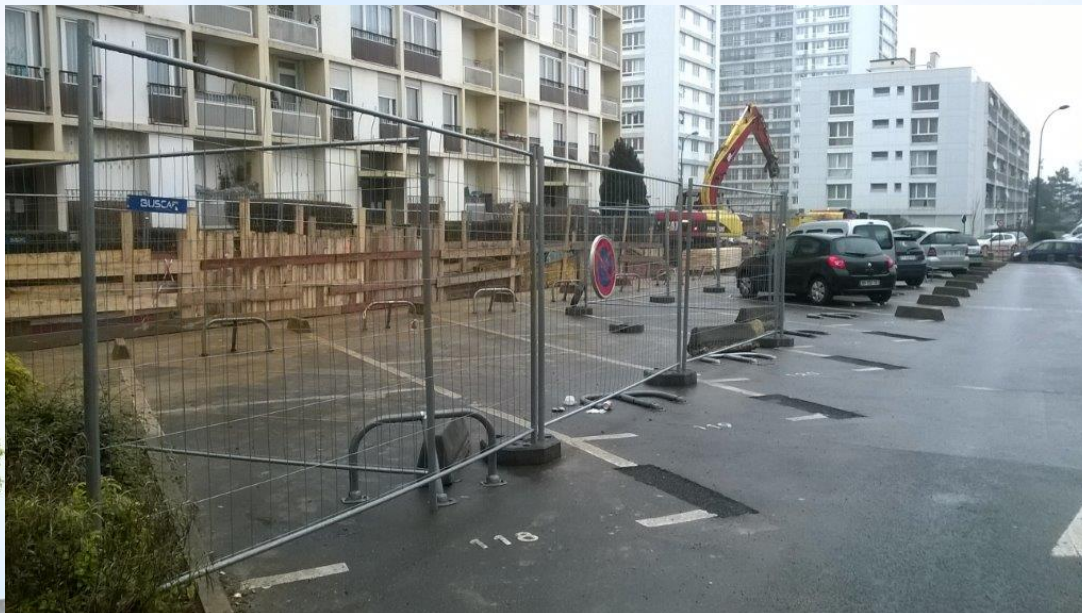
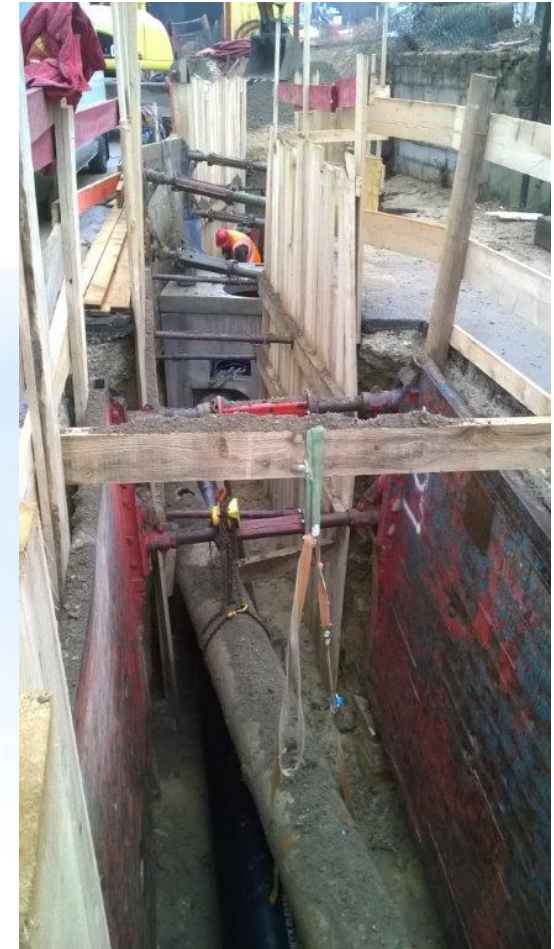




PROJECT DEVELOPMENT

✓ **End of 2014:** start of works installing networks in the 8 Mai 1945 district

- Constraints: existing housing and crowded subsoils
- Difficulties:
 - Significant additional cost of works due to utility networks being poorly drawn on the plans which required a general deepening of the network
 - Continual adaptation of the network layout due to "surprises" in the subsoil





PROJECT DEVELOPMENT

✓ **Final quarter 2015:** start of works installing the network in the Rouget de Lisle new district

✓ **March 2013 to March 2015:** construction of the collection terminal

- Very complicated works carried out
- Taking twice as long as planned

Main reasons: very difficult relationship between the project manager, the main contractor, the subcontractors and the instructing party (Ros Roca)



VdV-presentation Tvx Terminal.m4v

✓ **Summary:**

- The project needs to be continually adapted to the real situation on the ground and the schedules and constraints of partners (concession-holders, planners, developers, backers ...)
- Many additional civil engineering costs because of the crowded subsoil



IMPLEMENTATION OF THE SYSTEM





June 2015.

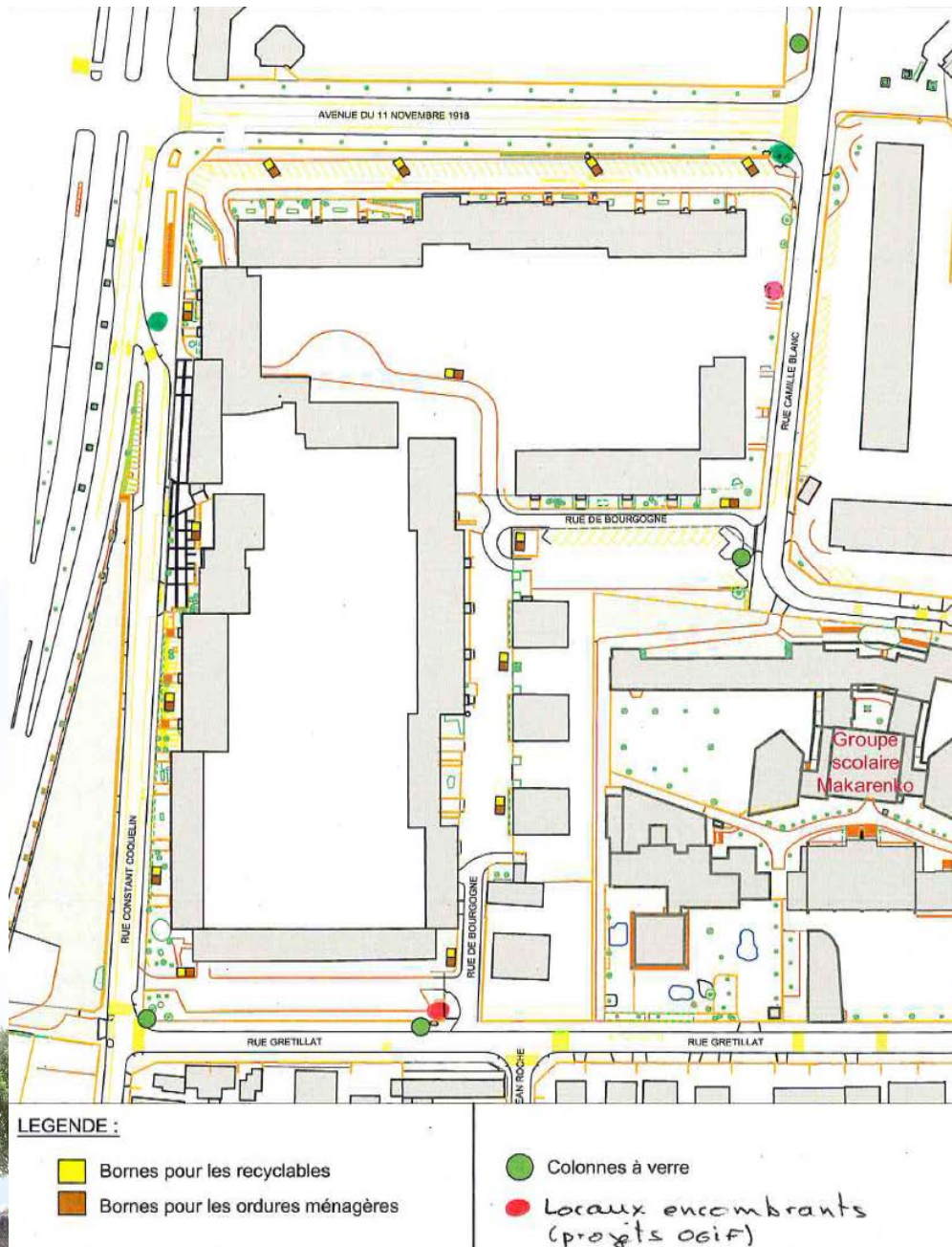
OGIF unit

(811 homes + 3 shops)

33 inlets distributed between 15
collection points

5 columns for used glass
collection

Project to build 2 large waste
storage facilities (including buried
columns for glass)





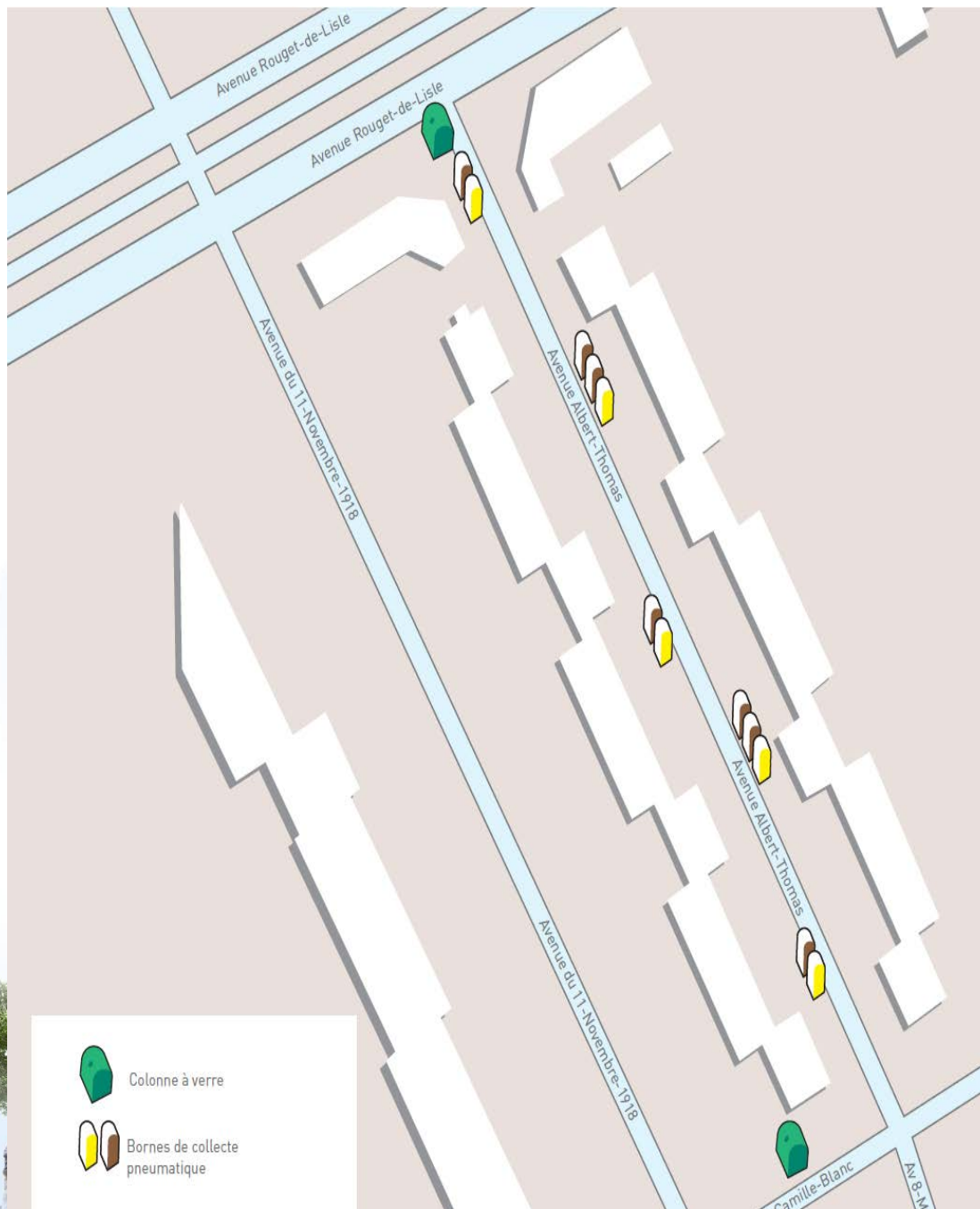
February 2016

Valophis unit
Av. Albert Thomas

(249 homes + 7 shops)

12 inlets distributed between 5
collection points

2 columns for used glass
collection

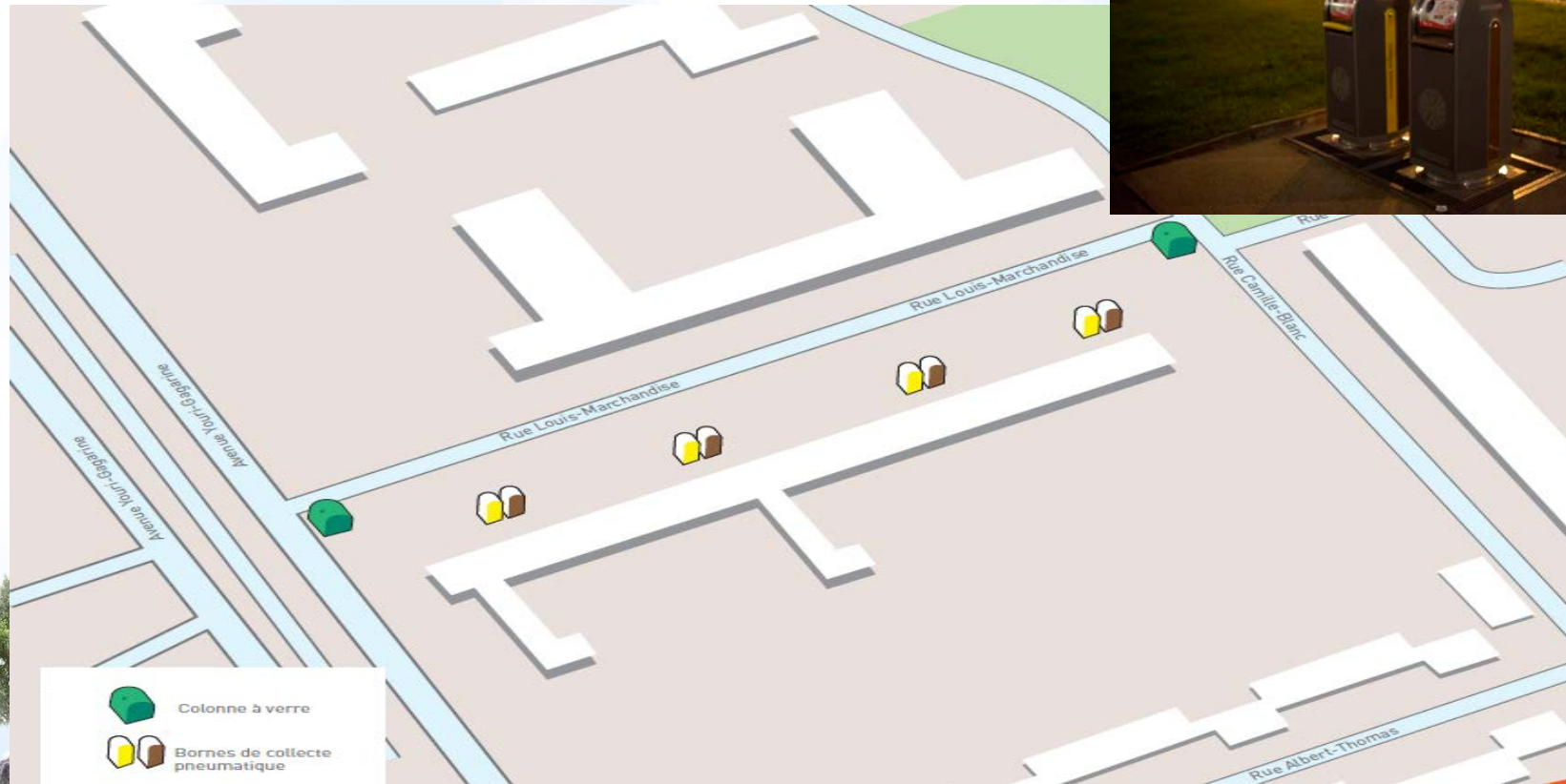




February 2016

Co-ownership located 182, Av. Rouget de Lisle (157 homes)

8 inlets distributed between 4 collection points
2 columns for used glass collection





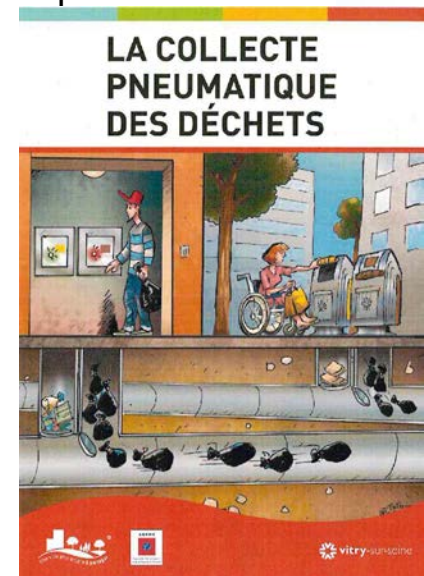
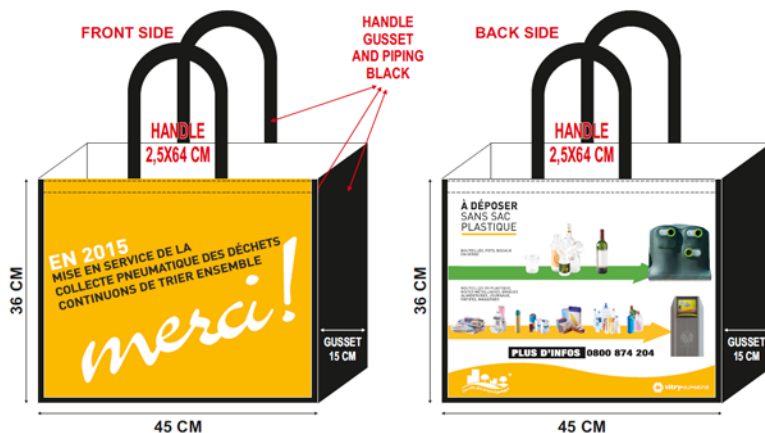
Assessment:

- 1 210 homes served (out of a total of 7 000 household equivalents), or 17% of the project
- 53 inlets in service (out of a total of 312 inlets and hatches), or 17% of the project
- 9 columns for glass installed
- 732 tonnes of waste collected

The accompanying effort:

➤ Before the system came into service:

- Public information meetings and meetings with site managers
- Door-to-door visits with delivery of communication media (bags, separation reminders, comic strips)





➤ At the start of service:

- Sticking separation labels on the inlets





- Presence beside the inlets on the first day of service (with users invited)



- Presence of council waste animators around the inlets during the first weeks after the start of service

➤ After the start of service:

- follow-up (actions in entrance halls)

SYSTEM OPERATION



➤ **June 2015– August 2016:**

- Operation by the Sita-Ros Roca group under the design/implementation contract
- End of June 2016: acceptance of the collection terminal and service network by the contracting authority
- July-August 2016: training of workers from the new operator (Europe Service Maintenance) by the Ros Roca teams

➤ **Since September 2016:**

- Maintenance and operation of the terminal, the inlets and the network carried out by Europe Service Maintenance as part of a public contract lasting one year and renewable twice
- Provisions by ESM: preventive and corrective maintenance for the whole process, on-call service, establishment of a replacement collection if the inlets are not available > 48 hours
- Monthly invoicing depending on the number of inlets in service (for instance 22 500 € /month for 53 inlets - not inc. VAT)
- Utilities (water, electricity, telephony) paid by the contracting authority





ASSESSMENT OF THE PROJECT TO DATE





NEGATIVE POINTS

➤ Poor quality of selective collection

Cause: user separation errors (more than 40% household waste) and very demanding collection system in terms of separation quality



- **Significant additional costs** or works(+ 5 millions euros to date -not inc. VAT)
- **Many contingencies** and agents involved in the project, requiring the continual revision of work schedules
- **Complex relationships** between the contracting authority (Vitry sur Seine Town Council) and the Sita-Ros Roca group because of the considerable sums involved





POSITIVE POINTS

➤ **User satisfaction**

- In December 2015 and July 2016: distribution of a satisfaction questionnaire at the sites in service
- Returns: in the 186 questionnaires returned (return rate of 15%):
 - 89% of users are satisfied with the new system
 - 92% of users find the system is easy
 - 79% of users find the system has made the block cleaner
 - 79% of users find the system has encouraged selective separation

➤ **No congestions** in the network

➤ **Permanent availability** of the inlets

➤ **System operating continuously** since it came into service

➤ **Good management of inlets** and their surroundings by the site managers for the inlets installed on private land

➤ **Meeting performance targets** in terms of noise and vibrations, smells and electricity consumption ($< 177 \text{ kWh/T}$).





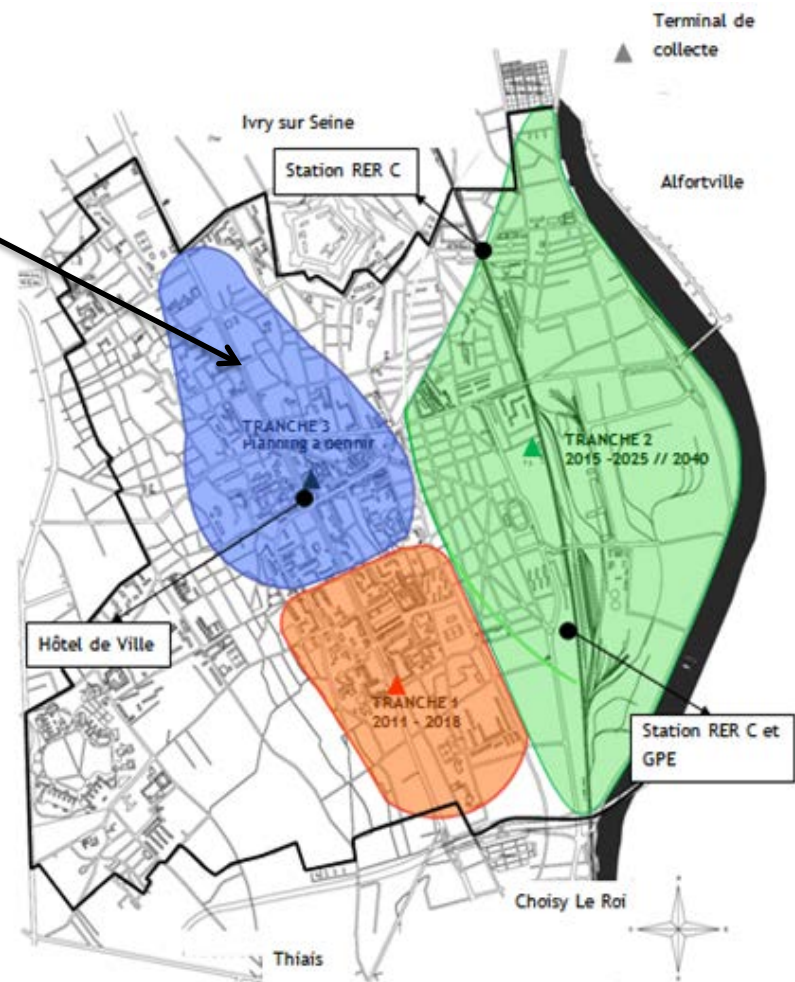
THE PROSPECTS





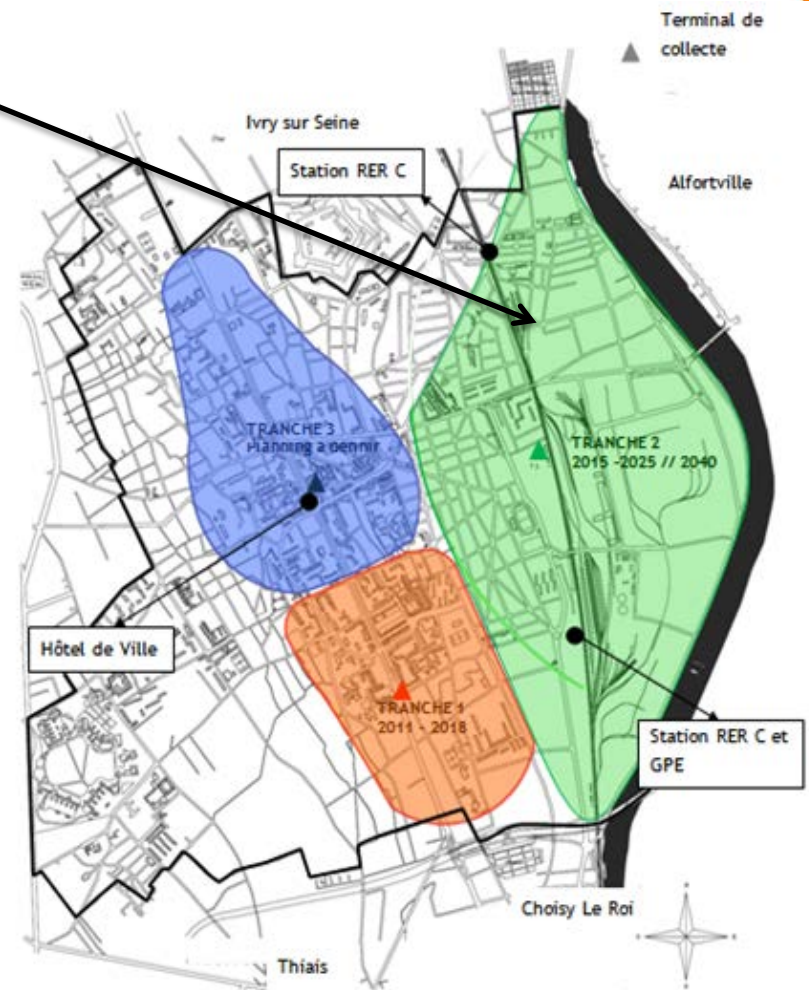
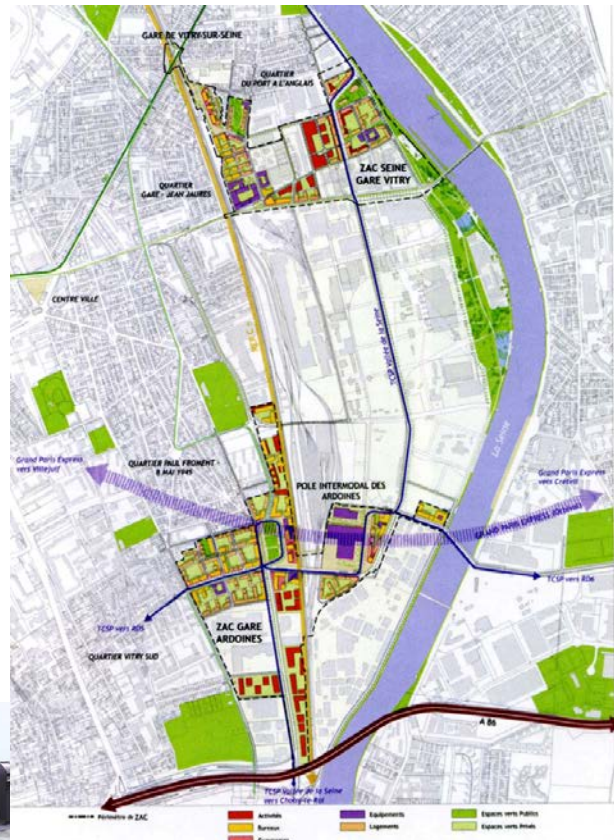
➤ Town centre district

Study in progress as part of a new urban renewal operation to replace door-to-door collections with voluntary sorting (buried containers and/or pneumatic collection).



➤ Vitry Seine-Station and Ardoines-Station new districts

At the beginning of 2017, launch of a comparative study of 3 different ways of collecting waste (wheeled bins, pneumatic collection, buried containers) to help with the decision





Thank you for your attention

