PNEUMATIC WASTE COLLECTION
IN VITRY-SUR-SEINE

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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)
PRESSENTATION OF VITRY-SUR-SEINE

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

![Photo of degraded public spaces with overflowing bins and rats]
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
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
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)

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 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