

Good Practice in Selective Collection of Waste in Heritage City Centres

Nº.	Section	Description
0.	Title of the practice	<i>Selective Collection - Interaction and integration of different systems</i>
1.	Photograph	<ul style="list-style-type: none"> • Door-to-door selective collection in commerce – General locations  

- Door-to-door selective collection in commerce – Ribeira



- Household selective collection – underground containers



- Household selective collection – semi-underground containers



- Household selective collection – Surface bins



2.	Proposers	Municipality of Porto
3.	Contacts	Pelouro da Inovação e do Ambiente: pelouro.ia@cm-porto.pt +351 222 097 161
4.	Useful links	www.cm-porto.pt
5.	Start date	Not applicable
6.	Activities' state of the art	Ongoing

7.	Location	Portugal, Porto, Heritage City Centre
8.	Inhabitants in the area	7000
9.	Description of the practice	
<p>The Heritage City Centre is a very heterogeneous area regarding several aspects. First of all, the people who go to the heritage city centre, they are moved by different purposes: there are people who lives there, people who works there, people that goes there in their free time and tourists getting to know the city. In respect with the building occupation and utilization, there are residences, restaurants, coffee shops and bars, other store types, hotels, etc. Nevertheless the urban structure is also very diverse through the entire area of the historic centre. All this factors depend on the location in the Heritage City Centre. There are some areas where tourist and recreational activities are much denser than others where residential occupation prevails. Because of this, we are forced to have different waste collection and management systems operating in parallel as an integrated system.</p> <p><u>Origin:</u></p> <p>In order to respond to the different requirements related with the waste management, overtime we have been adjusting the system and developing specific schemes for specific areas in the Heritage City Centre. At the moment, for the commerce sector, we have a door-to-door selective collection system specific for Ribeira, that we have already present and explained. But once Ribeira's occupational and infrastructural characteristics are unique, we have a slightly different system for the door-to-door selective collection of commerce waste in the rest of the historic area. On the other hand we need to address the household waste production as well as the production related with people who works or visits the historic centre. To manage this waste component, we use various types of street bins, adjusted to the location according to the urban structure characteristics and the amount and kind of waste production. As we presented before, the preferential type of street bin is the underground containers but we have also some semi-underground containers and surface bins. At the moment we are also developing studies in order to implement a door-to-door selective collection system for the household waste. However, even in a scenario where the door-to-door collection systems are fully operational in both sectors, they will always have to coexist with street bins. Therefore, the integration and interaction of different waste management systems in Heritage City Centre is inevitable and of the most importance.</p> <p><u>Development and Timescale:</u></p> <p>The selective collection in the Heritage City Centre began exclusively with surface street bins, for commerce and household waste. Overtime, we have been improving these equipments by the installation of other kinds of bins, the semi-underground and the underground ones (2010).</p> <p>Regarding the door-to-door collection in commerce, we started to implement this system in the city in 2008, with around 190 users located only in the main commercial street of the city and we called it "Baixa Limpa". Since then, the system intervention area and the number of users have been growing throughout the city area, including the Heritage City Centre. Once we realized that the standards we had developed for the system couldn't be applied in Ribeira, we started adjusting the system and developing different strategies for Ribeira's unique characteristics. The specific system for multimaterial selective door-to-door collection in Ribeira was implemented in 2015. In 2016 we started to study the applicability of a similar approach for the household waste, in order to develop a system that suits all the inhabitants of the Heritage City Centre.</p> <p>At the moment all the collection systems implemented in the Heritage City Centre are mature and completely operational. However, we are aware that there's still potential for expansion of the door-to-door collection system in commerce. Besides that, the behaviour of the waste production</p>		

is changing continuously because of the city development, especially in the Heritage City Centre where the tourism patterns have been evolving drastically in the last years. Nevertheless, the goals associated with waste recovery are getting higher and higher. Therefore, the integrated waste management system has to be permanently adjusted and evolving in order to follow the city development and the waste recovery targets.

Actors involved:

Once we are talking about many components of an integrated system, each one of them was developed with the involvement of different actors. Regarding the street bins, the location selection and the installation works required the collaboration of several branches of the City Council, like urbanism and archaeology. For the door-to-door collection systems we had to involve not only the commercial establishment owners and employees but also the Parish Concils. Lipor (intermunicipal waste management system) gave a great support too by providing necessary material and awareness campaigns. If in the future we go ahead with the door-to-door collection system for the residencial sector, we'll have to involve directly all the inhabitants of the Heritage City Centre and we'll for sure need the support given by Lipor, which is also colaborating in the studies that we are developing.

Legal framework:

Beyond all issues related with the street cleanness, the satisfaction of the user's needs and the operational aspects of the waste management system, all the efforts we put in the improvement of the selective collection system are moved by legal obligations imposed by the European waste framework legislation. In order to accomplish the goals established by the European Commission for the waste management in respect with waste recovery, reutilization and recycling, our action plan includes several actions to be developed and implemented until 2020. Two of these actions are directly related with the work that we described: the expansion of the door-to-door selective collection systems in the commerce sector and the implementation of this system in the residential sector.

Financial framework:

We can't determine the cost associated with the integrated waste management system operating in the Heritage City Centre.

In respect with the financing model, since the expansion of the door-to-door selective collection system in commerce and its implementation in the residential sector are addressed by the municipal action plan developed in the scope of the legal framework, the development of these actions is dependent on the approval of our application for Community funds.

The taxing model is the same for all users, regardless of the waste management model: the individual waste management fee depends on the water consumption.

Use degree: (%) or number of users (if possible):

According to the standards defined by the national regulatory entity for the waste management systems, the selective collection system in the Heritage City Centre has a coverage rate of 100%. This means that all the 7000 inhabitants of the historic centre have access to the selective collection system.

Regarding the door-to-door collection in the commerce sector, in Ribeira the coverage of this system is 100%, corresponding to approximately 100 commercial places served by it. The other door-to-door selective collection system has around 515 users in the entire city, 65 of them are located in the Heritage City Centre.

Finally, in the studies that we are developing for the implementation of a door-to-door selective collection system in the residencial sector we are considering all houses located in the historic

	centre and the entire population of the area.	
10.	Results	
	<p><u>Proven results (through indicators):</u></p> <p>We can't measure the amount of waste collected specifically in the Heritage City Centre, so it's not possible to quantify the waste recovery results associated with the selective collection in the historic centre.</p> <p><u>Possible success factors:</u></p> <p>By adjusting the selective collection system to the urban characteristics and the user's needs we can ensure better results in terms of waste recovery and also better operational conditions. If the system is adapted to the urban characteristics, than its operation is easier and more efficient. If the system suits to the user's need, than the collaboration is better and the participation rate is higher.</p> <p><u>Main difficulties encountered:</u></p> <p>The main difficulty associated with an integrated system, where several waste collection models have to coexist, is to ensure that each user uses the system component that is meant for him. When this doesn't happen problems may arise related with the scaling of the systems and also it may be reflected in the expected results.</p>	
11.	Main lessons learnt from the practice	The performance of a waste collection system is directly related with its suiting to the environment where it operates. Each place it's unique in some way and the waste collection system has to be built on that uniqueness. The better a system fits in a specific place, the better the results achieved.
12.	Additional information	Not applicable