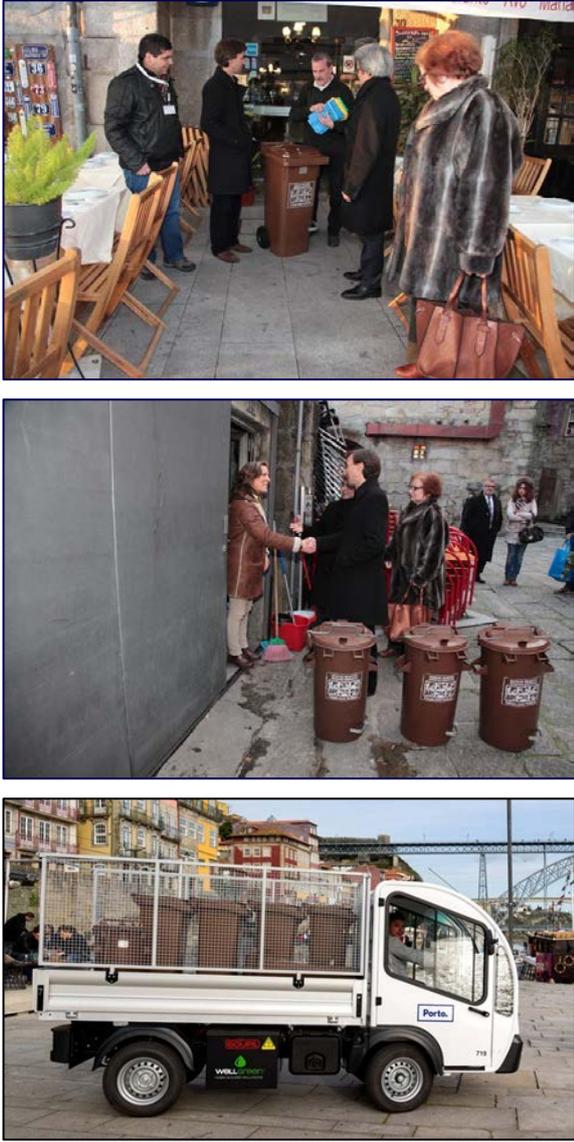
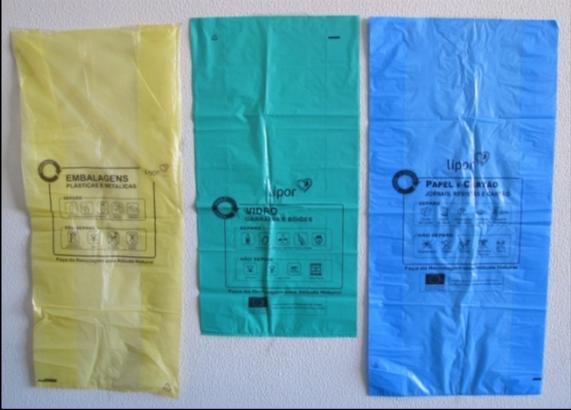


Good Practice in Waste Deposit in Heritage City Centres		
Nº.	Section	Description
0.	<b>Title of the practice</b>	<i>Door-to-door deposit and collection in commerce</i>
1.	<b>Photograph</b>	

		 
2.	<b>Proposers</b>	Municipality of Porto
3.	<b>Contacts</b>	Pelouro da Inovação e do Ambiente: <a href="mailto:pelouro.ia@cm-porto.pt">pelouro.ia@cm-porto.pt</a> +351 222 097 161
4.	<b>Useful links</b>	<a href="http://www.cm-porto.pt">www.cm-porto.pt</a>
5.	<b>Start date</b>	February, 2015
6.	<b>Activities' state of the art</b>	Ongoing
7.	<b>Location</b>	Portugal, Porto, Heritage City Centre, Ribeira
8.	<b>Inhabitants in the area</b>	7000
9.	<b>Description of the practice</b>	<p>In the Heritage City Centre we do the selective waste collection in commerce by a door-to-door collection system. With this system we collect the packaging waste fractions – paper and cardboard, plastic and metal and glass – and also the food waste.</p> <p>For the packaging fractions we give the commercial owners colourful plastic bags for the waste separation. Every day, twice a day, the commercial owners or employees place the bags in the street, usually in a back entrance of their establishment, from where they are collected by our</p>

teams. In some special cases our employees go inside the customer facilities. The three different fractions are collected all at the same time, by hand, and loaded to a box truck. Afterwards, when the service is done, the collection team goes to the civic amenity site, where they separate the waste fractions by the colour of the bags. In the civic amenity site the waste collected by this service is placed together with materials with different origins, until the storage capacity is reached. At this point the materials are transported to the recycling plant.

For the organic fraction we give the commercial owners small plastic bins (50L to 120L). Like in the packaging waste collection, every day, twice a day, we do the organic collection in the commerce sector in Ribeira. Together with the packaging bags, the commercial establishments place the bins in the street or, in some cases our employees go inside the customer facilities. In this case, the collection is carried out with a small electric vehicle, which collects the full bins and replaces them for empty and clean ones. The full bins are then moved to storage nearby where they are unloaded in a rear load collection vehicle. It is in this truck that the organic waste fraction is then transported to the composting plant.

**Origin:**

The waste problem in Ribeira that moved us to the development and implementation of this system was related with the overload of street bins in the area. The high tourism levels and consequent high volume of commerce in Ribeira results in the production of great amounts of waste, especially due to the commerce sector. Before the implementation of the door-to-door collection system in commerce, we were forced to empty the street bins in Ribeira several times per day. Even so it was very likely to find waste left around the bins because they were already full.

**Development and Timescale:**

At this moment the door-to-door selective collection system in commerce in heritage city centre has already passed the development and implementation phase. We started this service in February 2015 so, at this moment, the collection system is fully operational.

**Actors involved:**

After the design and planning phases we started the implementation of the system. In order to ensure the operability of the service we had to involve the commercial establishments owners and employees. The first step was to explain them the changes that were about to happen in the systems and ask for their collaboration. We try to emphasize the advantages of this new system through intensive awareness, also involving the Parish Councils and owners of restaurants and bars. The system works based on the direct collaboration of the municipality and the commercial owners but also with the collaboration of Parish Councils.

**Legal framework:**

There are no specific legal framework that applies to the system or the area where it is implemented.

**Financial framework:**

We can't be precise respecting the costs and revenues associated with the system. Nevertheless, we know for fact that the amount of selective waste recovered in the area covered by the door-to-door system increased significantly with the system implementation. This behaviour results in a decrease of unsorted waste sent to incineration, consequently decreasing the waste treatment cost. On the other hand, once the operational requirements are higher the operation cost is increased.

There is no different model of financing applied to this system. The taxing model for the commercial users covered by the door-to-door is the same applied in the entire city: the individual

	<p>waste management fee depends on the water consumption.</p> <p><b><u>Use degree</u></b></p> <p>In Ribeira the coverage of the door-to-door selective collection system in commerce is 100%, corresponding to approximately 100 commercial places served by the system. However, the system isn't implemented in the entire heritage city centre. We still have potential to extend the system to some more commercial places, even if with a different model – the particularities of Ribeira made the system unique and not replicable but it can be adjusted and adapted to some other areas in the heritage city centre.</p>	
<b>10.</b>	<b>Results</b>	
	<p><b><u>Proven results (through indicators):</u></b></p> <p>In one year, the door-to-door selective collection in the Ribeira resulted in the recovery of approximately:</p> <ul style="list-style-type: none"> <li>• 280 tonnes of paper and cardboard, plastic and metal packaging and glass</li> <li>• 450 tonnes of food waste</li> </ul> <p><b><u>Possible success factors:</u></b></p> <p>Selective collection of commerce waste through a door-to-door system promotes the waste separation in source. The focus on large producers allows the recovery of great amounts of materials and minimizes the pressure on the collective container systems which are already exposed to high levels of production on heritage city centres</p> <p><b><u>Main difficulties encountered:</u></b></p> <p>The main difficulty in the operation of this system in Ribeira is the lack of space in the commercial establishments. Due to the particular characteristics of the area related with its historical context, the commercial places have very little space to storage the waste until the collection moment. That's the reason why we have to do the collection twice a day.</p>	
<b>11.</b>	<b>Main lessons learnt from the practice</b>	<p>We learned that, with hard work and intensive awareness is possible to change ways of thinking and behaviours. The source separation made by the system users before the implementation of the door-to-door collection was minimal, if not null. However we made it possible to recover almost 2350 kg per day of selective fractions, proving that even with all the limitations of the area is possible to get great results.</p>
<b>12.</b>	<b>Additional information</b>	Not applicable