Press information

Using refuse container locks saves money

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Automatic recognition of waste containers is now standard practice in local government waste disposal in Germany. About 60 percent of all waste containers are now fitted with transponders, as the RFID chips used in the sector are known. This allows containers to be uniquely identified during tipping, and for charges to be calculated on the basis of usage. But it is not only with small individual waste containers where the identification system has benefits, but also with the large refuse containers that are used mainly in large housing complexes.

Numerous practical examples show that with the introduction of refuse container locks combined with such identification systems (using RFID) the number of containers can be substantially reduced and handling costs can fall by a minimum of 50 percent. Such systems achieve better levels of waste separation, maximum exploitation of container capacities and a raised awareness among residents, which in turn leads to improved waste disposal behaviour.

A comparison between conventional waste disposal and disposal using identification technology

Where waste disposal in residential complexes is done without RFID – in other words, where it is done using conventional systems – each household has to pay a contribution based on the size of their apartment, no matter how much rubbish they have generated. This leaves them without any motivation to separate or reduce waste. And billing is not fair on residents who avoid producing rubbish as, despite their efforts, they will still end up having to pay the same standard charge. Another disadvantage of the process is that it is not clear when the container is completely

full – many containers are getting emptied when they are only half full. "This is a crazy situation for residents who would like to have some control over the amount that they are charged for waste disposal, but do not have that ability at the moment. But help is coming from refuse container locks in combination with RFID-based access control," explains Ronald Bottin, MOBA product manager. The use of identification technology with large containers allows each use of the refuse disposal service to be recorded – just as is already the case for electricity, heating and water costs – thus allowing contributions to be charged appropriately on the basis of usage. The benefit for residents is that they pay only for the rubbish that they actually produce, which puts them in direct control of their utility costs – in exactly the same way as for heating and water consumption.

Refuse container locks in successful operation in Darmstadt-Dieburg

In the administrative district of Darmstadt-Dieburg, for example, waste container locks fitted with an RFID access control system developed by MOBA were introduced about 15 years ago. Integrating an access control system by fitting such a refuse container lock was possible on almost all refuse containers in the district. Residents dispose of their refuse by opening the refuse container lock using a chip card the size of a standard debit card or with an RFID chip. They simply throw their rubbish bag in and close the lid, and their rubbish will fall down into the refuse container. The chip card allows each use of the refuse container lock to be registered to a resident or apartment, as each card contains its own number uniquely identifying it. All usage data are saved and transmitted via GSM mobile communication to the waste disposal service for the administrative area of Darmstadt-Dieburg, Zweckverband Abfall- und Wertstoffeinsammlung (ZWA). This data then provides the necessary evidence of who has disposed of how much waste. Then once a year ZWA sends

the invoice to the building administrator. The invoice lists out the data for each household, allowing the building administrator to charge the individual residents appropriately. "The benefit of the system is that it allows simple and at the same time fair and transparent billing," says Manuela Philipps of ZWA.

The refuse container lock, by recording how much gets tipped in, also registers when the container is full. Information on the filling level is passed onto the waste disposal service. This gives the waste disposal company the benefit of being in a position to optimise collection routes, in which only full containers are selected for tipping and fed into an automatic route generation facility into the system.

Potential savings of up to 50 percent

"We now have 175 refuse container locks fitted at 113 locations," reports Manuela Philipps. These locks are installed mainly in larger residential complexes. "Owners – mainly through owners' collectives or housing associations – approach us regularly to ask whether it makes sense for them to install refuse container locks. We then visit the location, check the on-site conditions and draw up customised comparative costings that allow owners to gauge whether or not it makes sense to install refuse container locks," says Philipps. For it to make sense to introduce a refuse container lock with access control, there should really be at least 27 households with an emptying frequency of 14 days, or at least 38 households where emptying is done weekly. Under such conditions, the introduction of the new system will always make sense: these conditions can produce a saving of 50 percent of disposal costs. To take the example of a residential complex containing 43 households and served by a fortnightly tipping of the container for general refuse, the annual tipping charge using a conventional system will total 10,238.40 euros. If the system is converted to one using a refuse container lock, then the minimum tipping rate for the 43 households comes down to 2,476.80 euros,

while the annual basic charge per refuse container lock under a weekly tipping regime will be as low as 1,878 euros. This gives a total of 4,356.60 euros. That means a potential saving of almost 6,000 euros per year.

About MOBA

With more than 40 years of experience in the development and manufacture of measurement and control technology, identification and weighing systems for construction machines and waste disposal vehicles, MOBA is a globally recognised expert in the field of mobile automation. MOBA is one of the leading system specialists and OEM partners in the industry. With headquarters in Limburg, branch offices in Dresden, Langenlonsheim and Merenberg, eleven subsidiaries and equity stakes in local enterprises, and an extensive international dealer network, MOBA has a presence in all important growth markets. Company sales grew over the past decade from 26 million euros in 2004 to more than 54 million euros in 2014; the number of employees increased in this period from 210 to 482.

Using an RFID chip: the user is identified via the chip, the refuse container lock opens and the user can throw in his or her rubbish

Refuse container locks in two different volume versions

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Fully-fitted under-floor containers with RFID-controlled access

Photos: MOBA

Further information and downloads of press texts and images

available at www.moba.de.

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