

# Waste space and recycling practices: the case of the Abattoirs in Brussels

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The paper investigates the space of waste and recycling through the lens of urbanism theory and practice, given the traction that the waste recycling paradigm has gained as global sustainability strategy. A paradigm, nevertheless, commonly discussed in terms of technical innovations and behavioural changes, in a way it risks to overlook the spatial conditions in which they materialize. To contribute overcome this gap, the paper looks in-depth into the case of the Abattoirs and Market of Anderlecht, in Brussels. The case is of interest given the large volume of consumer goods that transits through what is one of the largest city markets, resulting in the generation of waste products that are discarded and temporarily accumulated on site. Waste is therefore highly visible in the area and is a major concern for the overall site's functioning. Since a decade, the Abattoir company has developed a waste management and recycling system which relies on an entanglement of actors and practices. The fact that the system has been successful is not simply due to the economic profitability of the recycling choice, but also, as the paper argues, by the fact that its implementation suits and leverages on certain socio-spatial conditions specific of the site. Specific conditions which can nevertheless provide interesting insights into the relation between the space of waste and recycling practices.

## Introduction

Cities generate an impressive amount of solid wastes, whose management is commonly entrusted to techno-managerial networks of waste collection, disposal, and recycling. Investment and running costs of these networks represent an important expenditure for public authorities which might rise as waste production is increasing even faster than population growth (Hoornweg and Bhada-Tata, 2012). As the 'recycling' paradigm arises as the main discourse in waste management, the way cities are equipped for managing and recirculating an ever-growing (or at least steady) amount of waste is under question (Acuto, 2014; Corvellec and Hultman, 2012; Davies, 2008; Engler, 2004; Hoornweg and Bhada-Tata, 2012; Un-Habitat and Programme, 2010; Zapata and Hall, 2013). One option is under the eyes of everyone, as multiple bins and liners for recyclables are popping-up in public and private spaces and curbside collection is stabilized as the most cost-effective way to remove waste from cities (Willman, 2015).

Yet, municipal waste recycling which relies on heavy industry (for crushing, shredding, and re-manufacturing) has not been spared by harsh criticisms (Beatty et al., 2007). Main questions regard the high energy demand and down-cycling processes involved in recycling (McDonough and Braungart, 2010), as well as the uncertainty about the percent of materials which is effectively recycled due to contamination and fluctuation in the secondary raw material market (Rogers, 2006). The stabilization of the recycling industry, moreover, is blamed to naturalise disposables instead of foregrounding practices of waste redesign, reduction and, most importantly, elimination (Liboiron, 2009; MacBride, 2011). Firstly, it contributes to absolve manufacturers from the responsibility of keeping on producing and pouring in the market single-use and cheap goods which, once discarded, create long-lasting environmental problems. Secondly, the enormous sunk costs invested in large technical infrastructures create path dependencies and 'loops of technological fixes' (Tarr, 1984) which are deemed responsible for undermining decentralized approaches in recycling and waste prevention (Wilts, 2012).

On the other hand, small-scale, community-based recycling programs which originate in Europe and North America from early environmental movements of the 1960s have proven to be mostly incapable to tackle the waste problematic at the magnitude at the urban scale (Lounsbury, 2005; MacBride, 2011; Strasser, 2000). Already at the end of the 1970s, the movements which struggle for waste prevention, reuse, and recycle, were subsumed by national authorities and the recycling industry (Cooper, 2010; Lounsbury, 2005; O'Brien, 2007). According to MacBride (2011), a main reason of the failure of community-based recycling programs is believing the city not only as a major source of waste generation, but also as a place where the demand for recycled products was higher and, as consequence, more easily marketable with an immediate impact on local labour and retail market (Lounsbury, 2005).

This believe follows the aspiration, which dates back to the 1960s and is still present in most of contemporary debates on 'zero waste' of envisioning recycling primarily as a strategy to rebuild communities around alternative modes of sustainment, which reject mass consumerism and discard (Helvert, 2016; Lounsbury, 2005). "Recycling activities not only aimed to better the ecosystem, but to create self-sustaining production system that where geographically bounded" (Lounsbury, 2005, p. 78). Something that can be read in today's zero waste and 'circular economy' discourses: "the increased local circulation of commodities to discards to

commodities and so on will lessen demand for materials from the outside. The locality, will become, again in theory, more “self-reliant” (MacBride, 2011, p. 133). But if this could be true for products such as textiles and furniture which are resold in second-hand shops, for most of the remaining waste fraction (plastic, metal, and glass containers), recycling programs have been mainly concerned by the management of by-products of consumption with rather little outlets at the local scale, failing to avoid “the migration of recycled commodities out of localities” (MacBride, 2011, p. 151).

### **A matter of space, a matter of practices**

Against this background, and given the fact that the issue of waste and recycling crosses different urban scales and daily practices (of generation, accumulation, disposal, and recovery), the paper investigates the space of waste and recycling practices through the lens of urbanism theory and practice. The issue is of interest given the fact the ‘waste as a resource’ paradigm requires to overcome conventional approaches which focus on the rapid collection and transfer of waste, in favour of more integrated, context- and community-based, solutions (Davies, 2008; Gutberlet, 2016; Hoornweg and Bhada-Tata, 2012; Seadon, 2010; Tremblay et al., 2010; Un-Habitat and Programme, 2010; Wilts et al., 2016). Yet, little attention, with few exception (Yatmo et al., 2013), has been paid, by both scholars and practitioners, to the space of waste and recycling practices in cities. To advance in this direction, the paper builds on a case study research, namely, an empirical inquiry into “contemporary phenomena within a real-life context” (Yin, 2005 cited in Deming and Swaffield, 2011, p. 80). Firstly, the paper enounces urbanism key principles and insights which resonate with the issue of urban waste management and recycling. Secondly, it introduces the case and presents the results of a series of fieldworks and non-structured interviews with key informants and local stakeholders. The research deploys a descriptive mixed method based on the systematic observation and recording of both quantitative and qualitative information and their translation into spatial schemes and maps. In the conclusion, the paper discusses the results of the case study against the background of urbanism principles and concepts raised in the introduction.

The paper draws from the notion of ‘urban’ as a social space, product of the intersection of everyday life with social systems and structures (Certeau et al., 1990; Lefebvre, 1974). It stems therefore from considering the urban infrastructure which organizes the flows of goods and wastes as a partially technical, and partially social and political project. A project that in everyday life is not just about technological networks and infrastructures but “is composed by embodied labour, mundane materials and quotidian connections” (Tonkiss, 2013, p. 24). Embodied labor and connections, which enable material and waste circulation, transfer, and exchange, but are conditioned, on turn, by their infrastructures. It builds therefore on the consideration of the urban question as a ‘distribution problem’ (Tonkiss, 2013, p. 114) that concerns not only the distribution of resources (e.g. water, energy, goods, etc.) in a certain space and time, but also and primarily the distribution of infrastructures and social capacities to accede these resources, as well as the risks and costs associated with their exploitation.

This reflection builds also on the work of urbanists such as Jacobs (Jacobs, 2016 [1960]), Sennet (Sennett, 1970), and Lynch (Lynch, 1984), which regard at the urban environment – and its accumulation of people, infrastructures, capacities, and diversity of agencements – as a resource. Contrary to the belief that efficiency lays in the social division of labour, these authors have shown that the urban environment entails a ‘thicker’ social space which enables synergies and create transactions and collaborative practices among discrete groups and activities (Simone, 2011; Tonkiss, 2013). The process of conjunction which creates the material conduits of everyday life is what Simone calls ‘people as infrastructure’ (2004, p. 419). The notion, used by the author to track the more or less spontaneous, formal and informal practices of ‘infrastructural’ self-provision by various urban actors (such as marginalized communities), is key as it looks at people as both final users and providers of the urban service. Within this perspective, the issue of waste management and recycling is not just a question of technological efficiency of the urban infrastructure, but rather about the social aim of its collective construction.

### **Learning from the Abattoirs and Market of Anderlecht**

The Abattoirs and Market of Anderlecht are located in Cureghem, an urban neighbourhood which spans between the Brussels South train station and the Brussels-Charleroi Canal – the former city’s industrial backbone. Similarly to other inner-city neighbourhoods, Cureghem has the particularity to have a central location and being one of the most deprived and socially mixed of Brussels<sup>1</sup>. With the process of deindustrialization and peri-urban expansion of the second half of the 1900s, different immigrant communities (initially from South European and then North African and East European countries) settled here because of the low rent of houses made available by the middle class that was moving in the city’s

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<sup>1</sup> Cureghem is ranked at the second lowest position in terms of incomes (14007 €/years in 2013) and the second highest position in terms of unemployment rates (24.28% in 2014) among the neighborhoods of the Brussels Region (Monitoring des Quartiers de la Région de Bruxelles-Capitale)

outskirts (Jouret, 1972; Kesteloot and Meert, 1999; Mistiaen et al., 1995; Vandermotten, 2014). Today, despite new (re)development projects are endangering some processes of gentrification along the Canal and under the Regional authority direction, little has changed in the neighbourhood also due to the lack of interest shown over the years by municipal authorities and local elites (Sacco, 2010, 2011). As such, Cureghem has become a privileged case where to investigate urban development models more coherent with the existing environment, rather than with metropolitan visions and plans underpinned by the housing and regional development sector. (Van Criekingen and Rosenfeld, 2015).

[fig.1] The neighborhood of Cureghem, Brussels. Elaborated by the author from UrbIs

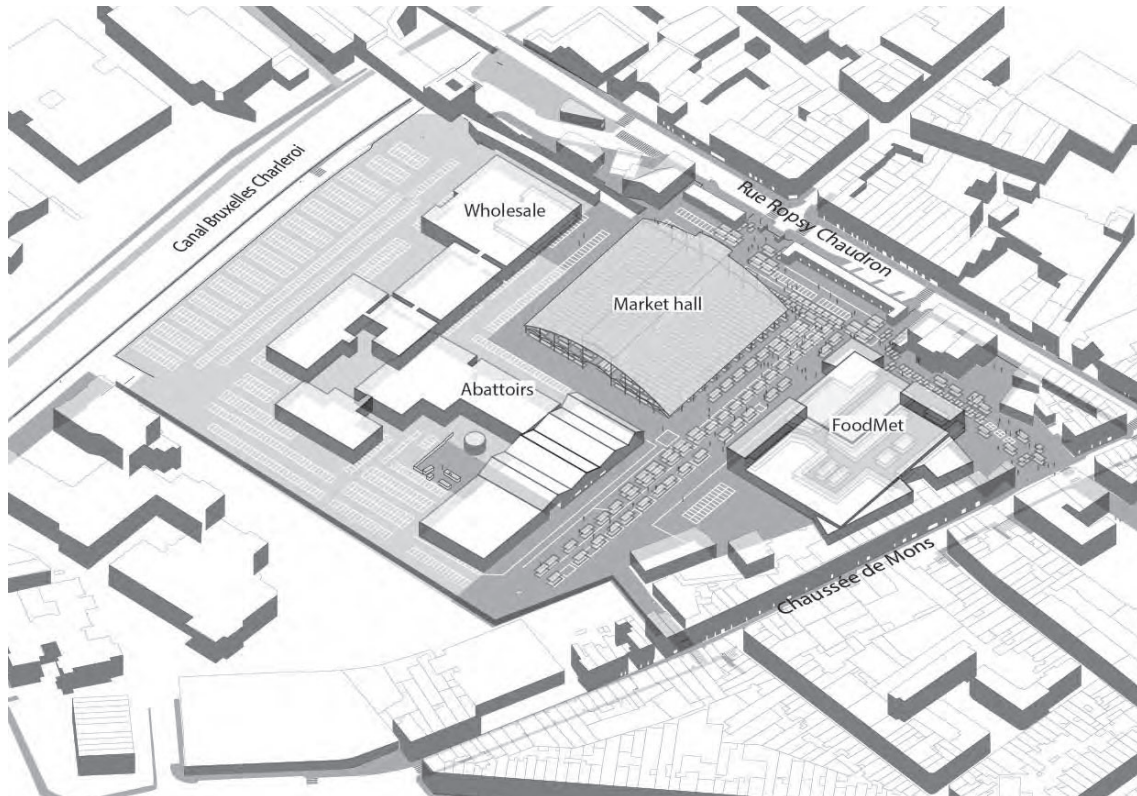


The case of the Abattoirs and Market of Anderlecht falls completely within the case. This 11-hectares urban productive site is roughly split in two main functional areas: the slaughterhouses (one of the few slaughterhouses still actives within an urban centre in Europe) on the West side, and the weekly market that takes place below and around a monumental shed-structure which dates back to 1890 and a brand new building (the 'FoodMet') on the East side. The abattoir and wholesale structures (which comprise the slaughter line) and the market area share the logistic space for truck movements and loading, and a large car park facing the Canal on West, where there is one of the main entrances to the area for trucks and vehicles. The privileged pedestrian accesses are located on the East sides facing, respectively, Chaussée de Mons and Rue Chaudron, two crowded commercial roads served by public transport (Metro and buses), which connect the site, respectively, to the city centre and the South train station [fig. 2].

The concentration, both in the market and surrounding roads, of a variety of wholesales, retails, and restaurant activities – mainly related to the meat sector and the ethnic cuisine – is at the origin of an important generation of waste. The market, in particular, being one of the largest of Brussels represents at the same time a meeting place and a means of subsistence for a part of the most socioeconomically precarious population of the city, e.g. by supplying cheap consumer goods, being a pole of employment for non-skilled workers and a way for immigrants and newcomers to enter the labor market, providing the opportunities for small independent activities to compete with the large distribution. The area is crowded with people especially in the weekend, from Friday to Sunday, when a total of around 100.000 costumers flocked the market that hosts more than 600 vendors. Here, there is the evidence of waste piling up in the streets mainly composed

by plastic bags, cardboard boxes, and wooden pallets. Due to the presence of numerous food stands, also food loss and waste account for a large proportion of overall waste generation in the area.

[fig. 2] Axonometric view of the Abattoirs and Market of Anderlecht, Brussels. In light gray the space of the slaughter line, in dark grey the space of the market. Elaborated by the author



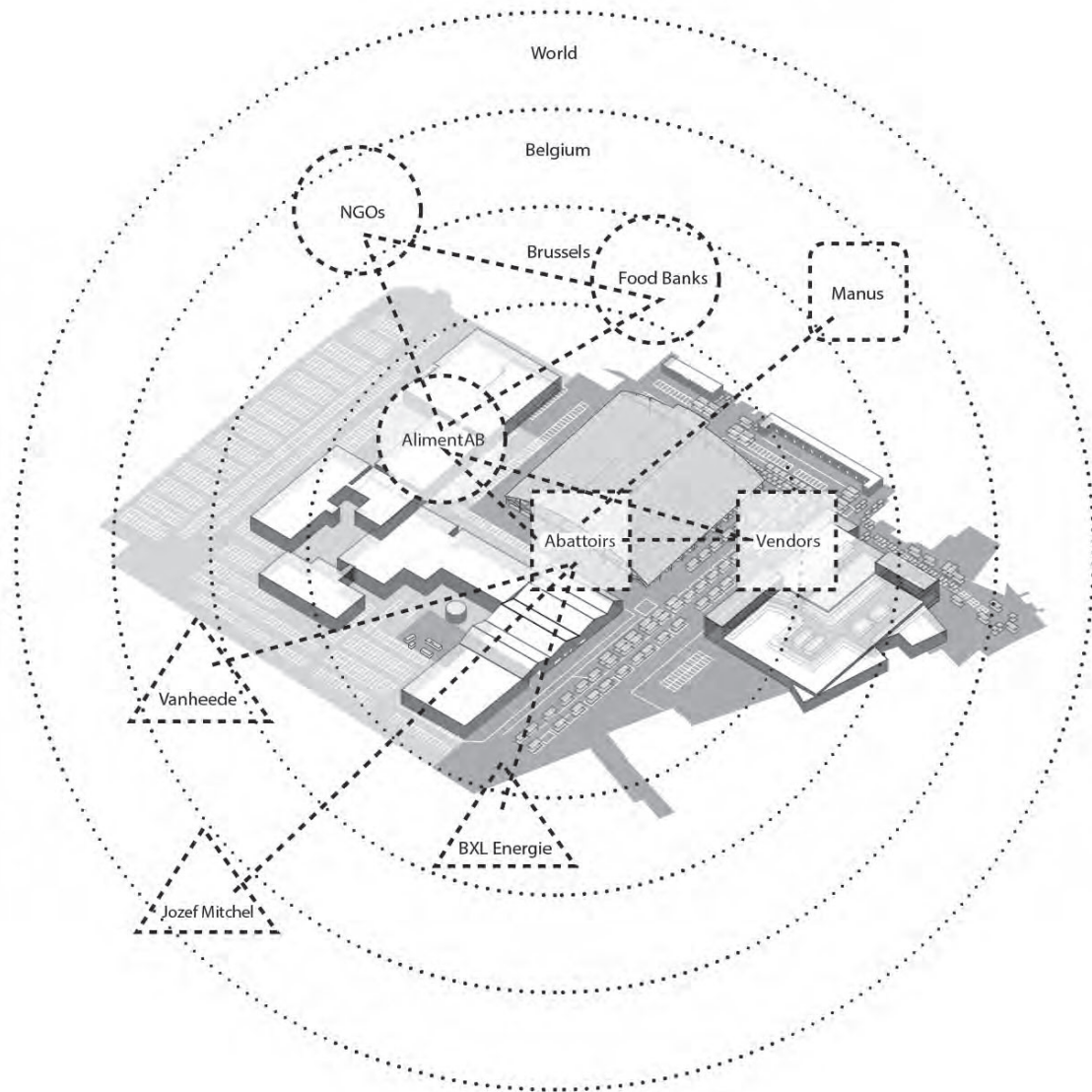
Within this framework, it is worth noting the many efforts the Abattoir company has undertaken over the last decade to counteract littering and implement a waste management service that, as the company states, ‘goes beyond its obligations’<sup>2</sup>. If on one hand, the effort is motivated by the long-standing concern of containing the nuisances generated by the slaughterhouse and market activities (such as odours, traffic, etc.), it is also part of a larger strategy which aims to improve the image of the site *vis à vis* a different (wealthier) client base and attract new public and private investments. Since 2007, in fact, the Abattoir company has benefited of EU and Regional funding (the ERDF – European Regional Development Fund) for the implementation of an ambitious masterplan which proposes the global reorganization of the site with the relocation of the existing slaughterhouses into a new mixed-use building hosting other food-oriented SMEs, the creation of a large public playground, the promotion of new housing developments, and realization of urban rooftop farms (ORG and Abattoir SA, 2013). All these activities, according to the project vision, will create synergies in terms of energy consumption, waste management, and products’ exchange within the framework of a ‘circular economy’ (Kinnaer A. and Sénéchal C., 2015).

Yet, within the current spatial configuration and starting from 2008, the company has developed multiple initiatives to improve on-site waste management. To name but a few: the application of a ‘polluter pay’ system for the cleaning service of the market area; the recruitment of an external enterprise for the cleaning service of the surrounding roads’ sidewalk, the set-up of a ‘recycling point’ for the separate collection of recyclable materials; the creation of a 8-person communication, control, and prevention team; the support of nonprofit associations for the recovery of the unsold food products; the interdiction, starting from 2016, of the use of lightweight, single-use, plastic carrier bags. Like the number of initiatives, also that of the waste concerned actors is relevant, and comprise, beyond the Abattoir company and market’s vendors, two waste recycling contractors (Vanheede, Jozef Mitchel), one social economy operator (Manus), and a non-profit organization (AlimentAB) [fig. 3].

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<sup>2</sup> <http://www.abattoir.be/fr/propret>

[fig. 3] Schemes of waste related actors: interconnections and scale of activity. The circles stand for non-profit organisations, the square for private actors, the rounded square for social economy operators, the triangles for the private (and public-private) waste treatment contractors. Elaborated by the author.



#### *The polluter pay system*

Since 2008, given the fact the most of waste produced on site was transferred to incineration with high treatment costs ( $\approx 200.000 \text{ €/year}$ ), the company has implemented a prevention and separate collection system for recyclable materials (cardboard, plastic, and organic waste). The system relies on a waste collection and cleaning service active seven days a week for both the slaughterhouse, warehouses, and retail activities, mixed with a bring system for recyclable materials and for the market stallholders. Given the fact that the market activities account for the most of refusals produced on site<sup>3</sup>, the cleaning service for the market vendors follows a polluter pay principle. All market stall holders pay a fee to the Abattoir for the daily cleaning of the market area through the use of a sweeping machine assisted by a couple of operators. The fee is based on a *bonus/malus* principle which gradually reduce or increase the amount due by the market holders according to their commitment in leaving their stall as much clean as possible at the end of the market time.

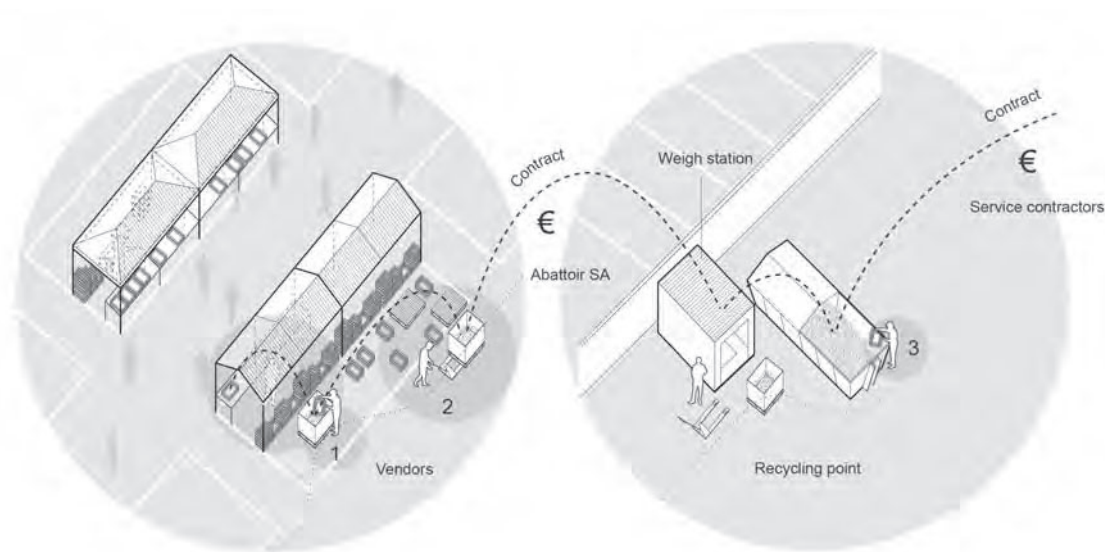
#### *The separate collection system*

Recyclable materials such as cardboard, plastic, and organic materials are brought by the same market vendors in buckets and hand trucks to the backyard of the slaughterhouse where a 'recycling point' of

<sup>3</sup> almost the entirety of the slaughterhouse wastes (e.g. skins, bones, bloods, etc.) are in fact fully recovered within other industrial chains (mainly of animal food and cement production).

approx. 700 m<sup>2</sup> is equipped with a weight station, a machine compressor, and three large freight containers: one for the organic and two for the cardboard and plastic fractions. A single service operator from the Abattoirs company supervises the proper execution of waste sorting and disposal. Containers are then removed on a weekly basis by two different waste companies [fig. 4]. Delivering recyclable materials has a price for market vendors, but it costs less than leaving the waste on place. As a result, market vendors are encouraged to gradually sort and pile refusals during the market hours within the boundaries of their market stall (commonly in the back or beneath the market table), reducing the amount of residual waste that is thrown and which randomly accumulates on the ground. This is clearly an ideal behavior which does not always materialize, and many efforts are made to enforce the regulations through active surveillance by the Abattoir's operators.

[fig. 4] The separate collection system: 1) vendors collect organic refusal and cardboard/plastic materials within the market stand; 2) the same vendors deliver it to a single recycling point; 3) the material is weighted and disposed in different containers that are removed by two service contractors. Elaborated by the author.

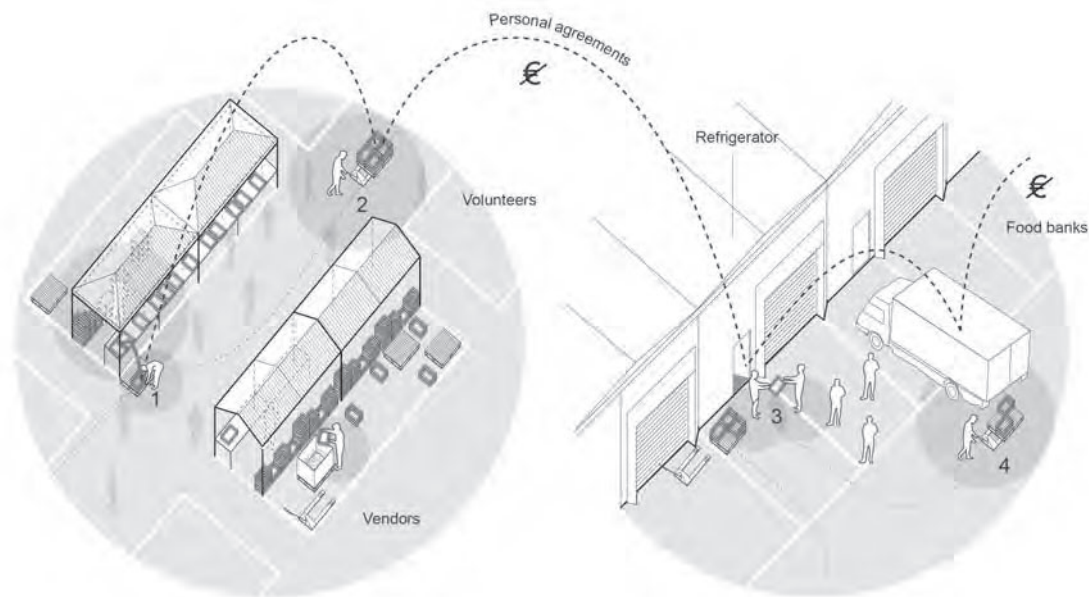


Organic waste is collected at a price to the weight (0,09 €/kg) by the Abattoir company, which on turn contract a third company for the removal and treatment of this fraction at an anaerobic digestion plant located approx. eighty kilometers from the site with a cost of 62 €/t. The disposal of cardboard boxes and plastic packages is collected for free, since its separate collection has a positive income for the Abattoir company that can sell it (50 €/t) to another waste recycling company, which hauls them to Antwerp and then ship to China. The selective collection of plastic, cardboard, and organic materials, allows saving in the costs of residual waste, which is treated at the incinerator located North of Brussels (Bruxelles Energie) with the highest price for the company (103 €/t) (Ibrir, personal communication).

#### *The 'Zero Food Waste' initiative*

Another waste related practice can be observed on the area during the market time. Gleaning, the act of collecting unsold fresh foods, takes places on Sunday afternoon, when the vendors discard perishable goods that have not been sold during the market days. Two forms of gleaning activity can be found. On the one hand, informal gleaners mix with the vendors when the latter dismantle the stall and pack back their things into the trucks collecting still edible goods that are left on the ground. On the other hand, and with the aim to regulate the informal activity on the example of other markets in Europe, a nonprofit association (AlimentAB) has come to install in the site through the intermediation of the Abattoir company in order to take care of the collection of unsold food products among the market stalls. The association organizes groups of volunteers that run throughout the market with hand carts, pick up boxes of unsold but still edible food offered by market vendors, and bring them back to a storage (and refrigerated) room, located along the slaughter line and provided for free by the Abattoir company [fig. 5]. Part of the salvaged food is kept by the same volunteers; part is redistributed to the people who ask for it on site on Monday; what remains is taken over by foodbanks and the social aid sector for being transformed into meals served for free or at low price in other structures.

[fig. 5] The organized gleaning: 1) market vendors put aside unsold products; 2) volunteers collect and transport the products to the storage room; 3) people can demand for it the day after; 4) what remains is taken over by other associations and food banks. Elaborated by the author.



## Discussion

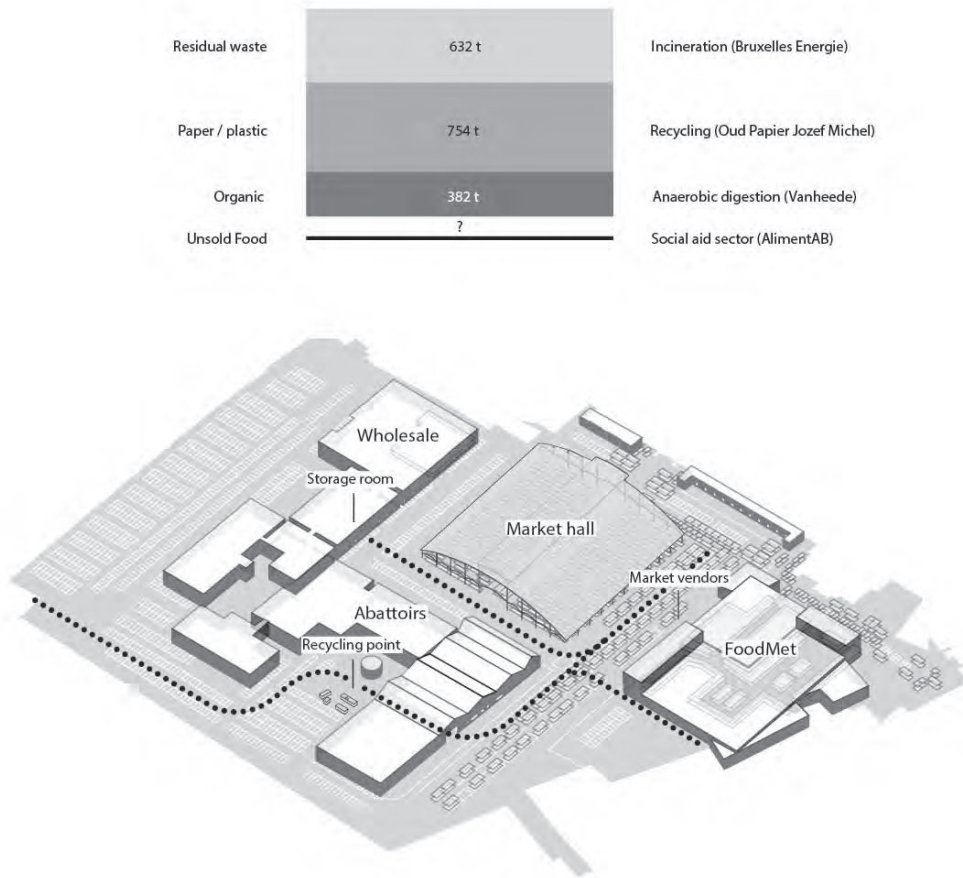
In the Abattoirs and Market of Anderlecht a threefold strategy mixes a common cleaning service with the separate collection of recyclables, and recovery of food products. The system is effective as shown by the fact that, if in 2007 the total amount of residual waste collected was of 1.826 tons, the same stood at 632 tons, with a separate collection of recyclables of 754 (paper/plastic) and 382 tons (organic waste) in 2016 (Ibrir, personal communication). On the other hand – and although in a still limited quantity compared with the fraction of organic waste which is redirected towards anaerobic digestion – several tons of perfectly still edible food are salvaged each year by groups of volunteers which comprise either socially engaged people and people in a condition of need coming from the surrounding neighbourhoods [fig. 6].

First of all, it is clear that this is made possible by the availability of space to store and sort waste: two spaces that belong to the slaughter chain but that are easily accessible from the market, are functional to this purpose. Nevertheless, the fact that such spaces were pledged into the management of waste should not be taken for granted in such a dense urban context. In other situations, supposedly, the solution would have been to displace waste elsewhere or entrust it to third parties. On the other hand, the case also highlights the well-known relation between marginal places and waste objects (Engler, 2004; Lynch, 1990; Strasser, 2000): are the slaughterhouses, in fact, whose activity is since some time shrinking and now waiting for the site transformation, which provides, at present, the space for waste.

Secondly, the case shows how the scale and accessibility of both the ‘recycling point’ and ‘storage room’ – coupled with the co-existence of a logistic space for wholesale and retail market – enable multiple actors to collaborate in the recirculation of waste. It is well-known that denser market concentrations in cities promote diversification, competition, and efficiency (Tonkiss, 2013), but the case unfolds the opportunities the spatial proximity between the slaughter line and market activities entails, in particular, for the management of waste. Moreover, the localization of the Abattoirs in Cureghem, a neighbourhood characterized by a strong heterogeneity and promiscuity of populations and functions, contributes to the reproduction these opportunities and synergies well beyond its boundaries.

Finally, the space of waste in the Abattoirs holds also a ‘representative’ value, as it contributes to the recognition and legitimisation of both the private company's and the non-profit organisation's initiatives on waste. The role of the latter is more qualitative rather than quantitative, but in general, the ensemble of the waste management systems developed by the Abattoir company tells us about a form of responsibility on waste. A responsibility that shows the value of an urban area in retaining and recirculating waste in order to improve local resource efficiency, reduce the externalities entailed by the disposal of waste, and enhance individual and collective actions.

[fig. 6] Schemes of waste flows: quantitative and spatial representations. Elaborated by the author.



## Conclusion

From the survey on the space of waste and recycling practices in the Abattoirs and Market of Anderlecht emerges that the management of waste relies on a hybrid – hard and soft – infrastructure: a physical infrastructure proper of productive areas (the space for container storage and truck movement) and a social infrastructure typical of dense urban areas, where everyday life is underpinned by intense social networks and exchanges. The recycling point pins down a stable connection between on-site sorting practices and global material industrial reprocessing chains, while the storage room enables volunteers and market vendors to assemble around waste prevention through food recovery and exchange. On turn, the non-profit association triggers people as infrastructure creating the networks and opening the conduits for the transfer of goods from a condition of surplus to one of scarcity. Here, the space of waste acts as a social platform which enables a diversity of socio-technical agencements within a distributed management system where market stallholders, private operators, and volunteers are equally embedded into a common web of interests and responsibilities. The system has been set up through trials and errors and it is resilient to changes being constantly under negotiation. Yet, it is also vulnerable to abrupt changes. The example of how the entanglement of waste actors and spaces allows to attain an integrated management of waste and recycling provides, once again, an argument in favour of diverse, functionally and socially mixed urban areas. An argument more, perhaps, to counteract any future risks of gentrification and social expulsion.

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## Bibliography

- Acuto, M., 2014. Everyday International Relations: Garbage, Grand Designs, and Mundane Matters. *Int. Polit. Sociol.* 8, 345–362. <https://doi.org/10.1111/ips.12067>
- Beatty, T.K.M., Berck, P., Shimshack, J.P., 2007. Curbside Recycling in the Presence of Alternatives. *Econ. Inq. Huntingt. Beach* 45, 739–755.
- Certeau, M. de, Giard, L., Mayol, P., 1990. *L'invention du quotidien: Arts de faire*. Gallimard.
- Cooper, T., 2010. Burying the 'Refuse Revolution': The Rise of Controlled Tipping in Britain, 1920–1960. *Environ. Plan. A* 42, 1033–1048. <https://doi.org/10.1068/a42120>
- Corvellec, H., Hultman, J., 2012. From “less landfilling” to “wasting less.” *J. Organ. Change Manag.* 25, 297–314. <https://doi.org/http://dx.doi.org.ezproxy.ulb.ac.be/10.1108/09534811211213964>
- Davies, A.R., 2008. *The Geographies of Garbage Governance: Interventions, Interactions, and Outcomes*. Ashgate Publishing, Ltd.
- Deming, M.E., Swaffield, S., 2011. *Landscape Architectural Research: Inquiry, Strategy, Design*. John Wiley & Sons.
- Engler, M., 2004. *Designing America's Waste Landscapes*. JHU Press.
- Gutberlet, J., 2016. *Urban Recycling Cooperatives: Building resilient communities*. Routledge.
- Helvert, M.V., 2016. *The Responsible Object: A History of Design Ideology for the Future*, 01 edition. ed. Valiz, Amsterdam.
- Henning Wilts, 2012. Transition governance towards decentralised waste infrastructures: Insights from urban waste systems in German metropolitan regions. Presented at the ECPR Graduate Student Conference Jacobs University, Bremen.
- Hoorweg, D., Bhada-Tata, P., 2012. What a Waste a Global Review of Solid Waste Management.
- Jacobs, J., 2016. *The Death and Life of Great American Cities*. Knopf Doubleday Publishing Group.
- Jouret, B., 1972. La méthode du transect appliquée à l'analyse urbaine. Un exemple bruxellois. *Rev. Géographie Lyon* 47, 77–96. <https://doi.org/10.3406/geoca.1972.1602>
- Kesteloot, C., Meert, H., 1999. Informal Spaces: the Geography of Informal Economic Activities in Brussels. *Int. J. Urban Reg. Res.* 23, 232–251. <https://doi.org/10.1111/1468-2427.00193>
- Lefebvre, H., 1974. *La Production de l'espace*. Economica.
- Liboiron, M., 2009. Recycling as a Crisis of Meaning. *eTopia*.
- Lounsbury, M., 2005. Institutional Variation in The Evolution of Social Movements: Competing Logics and the Spread of Recycling Advocacy Groups, in: Davis, G.F., McAdam, D., Scott, W.R., Zald, M.N. (Eds.), *Social Movements and Organization Theory*. Cambridge University Press, Cambridge, pp. 73–95. <https://doi.org/10.1017/CBO9780511791000.006>
- Lynch, K., 1990. *Wasting Away*. Sierra Club Books.
- Lynch, K., 1984. *Good City Form*. MIT Press.
- MacBride, S., 2011. *Recycling Reconsidered: The Present Failure and Future Promise of Environmental Action in the United States*. MIT Press.
- McDonough, W., Braungart, M., 2010. *Cradle to Cradle: Remaking the Way We Make Things*. Macmillan.
- Mistiaen, P., Meert, H., Kesteloot, C., 1995. Polarisation socio-spatiale et stratégies de survie dans deux quartiers bruxellois. *Espace Popul. Sociétés* 13, 277–290. <https://doi.org/10.3406/espos.1995.1703>
- Kinnaer, A., Sénéchal, C., 2015. *L'abattoir illustré*, Forum Abattoir, Bruxelles
- O'Brien, M., 2007. *A Crisis of Waste?: Understanding the Rubbish Society*, 1 edition. ed. Routledge, New York.
- Rogers, H., 2006. *Gone Tomorrow: The Hidden Life of Garbage*. New Press, The.
- Sacco, M., 2011. Political participation of immigrants through new urban policies in Brussels : constraints and small opportunities. *Belg. Rev. Belge Géographie* 41–50. <https://doi.org/10.4000/belgeo.6363>
- Sacco, M., 2010. Cureghem : de la démolition à la revitalisation. *Bruss. Stud. Rev. Sci. Électronique Pour Rech. Sur Brux. Het Elektron. Wet. Tijdschr. Voor Onderz. Brussel E-J. Acad. Res. Bruss.* <https://doi.org/10.4000/brussels.808>
- Seadon, J.K., 2010. Sustainable waste management systems. *J. Clean. Prod.* 18, 1639–1651. <https://doi.org/10.1016/j.jclepro.2010.07.009>
- Sennett, R., 1970. *The uses of disorder: personal identity & city life*. Alfred A. Knopf.
- Simone, A., 2011. The surfacing of urban life: A response to Colin McFarlane and Neil Brenner, David Madden and David Wachsmuth. *City* 15, 355–364. <https://doi.org/10.1080/13604813.2011.595108>
- Simone, A., 2004. People as infrastructure: intersecting fragments in Johannesburg. *Public Cult.* 16, 407–429.
- Strasser, S., 2000. *Waste and Want: A Social History of Trash*. Henry Holt and Company.
- Tarr, J.A., 1984. The Search for the Ultimate Sink: Urban Air, Land, and Water Pollution in Historical Perspective. *Rec. Columbia Hist. Soc. Wash. DC* 51, 1–29.
- Tonkiss, F., 2013. *Cities by Design: The Social Life of Urban Form*. John Wiley & Sons.
- Tremblay, C., Gutberlet, J., Peredo, A.M., 2010. United We Can: Resource recovery, place and social enterprise. *Resour. Conserv. Recycl.* 54, 422–428. <https://doi.org/10.1016/j.resconrec.2009.09.006>
- Un-Habitat, Programme, U.N.H.S., 2010. *Solid Waste Management in the World's Cities: Water and Sanitation in the World's Cities 2010*. Earthscan.
- Van Criekingen, M., Rosenfeld, M., 2015. Bienvenue à Heyvaert. *Uzance* 4, 1–3.

- Vandermotten, C., 2014. *Bruxelles, une lecture de la ville: De l'Europe des marchands à la capitale de l'Europe*. Editions de l'Université Libre de Bruxelles.
- Willman, K.W., 2015. Information sharing and curbside recycling: A pilot study to evaluate the value of door-to-door distribution of informational literature. *Resour. Conserv. Recycl.* 104, 162–171. <https://doi.org/10.1016/j.resconrec.2015.08.012>
- Wilts, H., von Gries, N., Bahn-Walkowiak, B., 2016. From Waste Management to Resource Efficiency—The Need for Policy Mixes. *Sustainability* 8, 622. <https://doi.org/10.3390/su8070622>
- Yatmo, Y.A., Atmodiwirjo, P., Paramita, K.D., 2013. Whose Waste Is It Anyway? *J. Urban Des.* 18, 534–552. <https://doi.org/10.1080/13574809.2013.824364>
- Zapata, M.J., Hall, M., 2013. *Organising waste in the city*. Policy Press.