

Taking Recycling To A New Level



A White Paper into the potential contribution of low and high rise flats to UK and European recycling targets

January 2010



Intelligence



Introduction

The UK has, in a remarkably short period of time, made dramatic improvements in its domestic recycling performance. From an almost standing start a decade ago, recent Government figures¹ show that 36.9% of household rubbish in the UK is now being recycled - almost a 3% increase on the previous year. It's a similar story across the rest of the country with Scotland showing over 33% of household waste being recycled and Wales & Northern Ireland returning a 32% rate.

It is acknowledged, however, that more needs to be done if European and domestic targets are to be met and the drive towards Zero Waste is kept on course (the Scottish Government and the Welsh Assembly Government have both committed to recycling 70% of all household waste by 2025). Moreover failure to meet targets could cost councils dear, with the prospect of fines up to £3bn.

One of the key components in the recycling infrastructure is the question of how best to maximise recycling participation for those who live in multi-occupancy and high-density dwellings such as low and high-rise flats.

Areas with a high proportion of such properties clearly face particular

challenges in providing residents with a recycling service which is effective, along with the ability to deliver high participation rates in a cost-efficient manner – something that will become an increasingly important factor in coming years.

Progress is being made to bring the amount of waste recycled by residents in such dwellings up to the amount recycled by residents in what might be called more traditional properties, where kerbside collections are usually the norm.

One such authority, which has achieved considerable success in ensuring all residents have access to recycling at the kerbside or at the foot of their tower block is North Lanarkshire, Scotland's fourth largest

council with a high proportion of tower blocks and low rise flatted properties. North Lanarkshire's success has been achieved through an approach that has given residents clear information, through booklets and DVDs, about what materials can be recycled and how they may be recycled. This has been combined with aesthetically designed containers for recycling collection with clear pictographic signage and colour schemes, strategically and conveniently sited and the result has been that residents in tower blocks and flatted properties have at least equalled and even outperformed those living in areas provided with kerbside collections.

¹Municipal Waste Management Statistics for England, 2008/09: Defra, 2009

The potential for recycling in multi-occupancy dwellings

In the UK, kerbside collections have clearly had a positive impact on recycling rates and have played an invaluable part in helping some local authorities reach a 50% recycling rate. Kerbside, however, has its main influence in street level housing, and the challenge will be to move areas with multi-occupancy homes nearer the recycling rates enjoyed by the more traditional housing areas - and in a way that fits the local authority infrastructure and budget.

Whilst anecdotal evidence and opinion has been widespread, for those trying to make an informed decision on the best method of urban recycling it's been difficult to find hard data and informed opinion of what makes, or prevents, people recycling.

This is reflected in research undertaken for WRAP² – the Waste & Resources Action Programme, which showed that, until now, there has been little recent research or good practice guidance for flats since a Defra report issued in 2006³ and a similar survey by Remade Scotland in 2007⁴. WRAP's research found that 75% of English local authorities were operating near-entry or centralised bring site collections and that they mainly base recycling collections for flats on what fits best with kerbside and/or bring recycling schemes. The research also found that, in general, blanket schemes have been introduced, which may not be suitable for every block and are, sometimes, low performing.



²Recycling Collections from Flats (conducted on behalf of WRAP): research carried out by WRAP, 2008.
³Recycling for Flats: Defra, 2006
⁴Recyclate Recovery: An Analysis of Scottish Recycling Schemes: Remade Scotland, 2007/08

“ Big cities have some challenging properties. 20% of UK households are high-rise accommodation or multi-occupancy dwellings- particularly prevalent in cities. For these residents recycling can be a challenge as no recycling site is available close to their dwellings. ”

The research carried out by WRAP discovered that recycling rates in flats were variable. For weekly collections, 1.94kg/hh/wk was the average figure and compared to 1.33kg/hh/wk for fortnightly collections, while residents in low-rise blocks were found to recycle more than high-rise. If chutes were present for refuse disposal, the average recycling figure was 1.24kg/hh/wk whereas if no chute was available, the figure achieved was 2kg/hh/wk. Residents with internal receptacles were also found to recycle almost double the amount recycled by those without such a receptacle.

WRAP's research findings reflect the outcomes of two Scottish reports. The first was carried out in 2006 on behalf of the then Scottish Executive, which considered seven schemes across seven local authorities, with performance ranging from 0.66-1.91kg/hh/wk. The second report from Remade Scotland, referenced above, also gave a range of recycling performance for all kerbside schemes in Scotland from 2007/08 of 0.05 to 4.92kg/hh/wk.



Research recently carried out by Score Environmental under the direction of Professor James Baird at Caledonian Research Centre, part of Glasgow Caledonian University, amongst residents in North Lanarkshire, has sought to throw new light on the potential of increasing recycling yields in high and low rise flats.



The study, which involved the completion of more than 1,000 door to door surveys, gained feedback on the operational performance of a new communal recycling system, together with glass waste bins, introduced in North Lanarkshire for residents in low and high rise flats. This sample of 1,000 multi-occupancy dwellings was a subset of the 8,000 multi-occupancy dwellings covered by the scheme.

North Lanarkshire offers residents of single level homes a blue bin for co-mingled recycling material, but this service was not available to residents in tower blocks and flats, who instead had to travel to civic amenity sites if they wished to recycle – a problem for the elderly and those without cars. Introducing a viable recycling service to these homes was not an easy exercise. Many flats lacked the storage space to accept the additional containers required to recycle, and the tower blocks all had internal

rubbish chutes, with no means of segregating waste from the valuable recycling material. Fire safety is another consideration – a flats recycling scheme in Hackney in London was modified because it originally proposed kerbside boxes for each flat but on the order of the London Fire Brigade this was changed to communal recycling containers outside the flats.

In April 2009, North Lanarkshire installed 205 node recycling systems (Node is a purpose built communal recycling facility), as well as

containers for glass waste, to offer 'near entrance' recycling facilities to 8,000 properties for the first time. Residents were also provided with a box in which to store materials inside their flats until they were ready to take the material to the recycling point.

It was clearly a major decision by North Lanarkshire Council to introduce the node recycling centres, and it was one taken after many consultations with local residents and housing groups. But have the results justified the decision?

Of those residents that took part in the survey 67.6% said they recycled. Almost all used the new node recycling centre facilities, a significant figure from a standing start.

Following the introduction of the node recycling centres, it is estimated that the residents of these homes now recycle approximately 1.88 kilograms per household per week, a figure made even more notable by the fact that refuse chutes and bins are still in place. When corrected for the 10% vacant occupancy of the flats, this yields a figure of 2.09 kilograms per household per week, a high scoring figure. Residents are not being forced to recycle, they are making a conscious decision to do so.

The tonnage figure, when compared to the Remade Scotland report on recycling performance for all kerbside schemes in Scotland for 2007/8, also gives a favourable impression, with Score Environmental highlighting that the node/glass bin recycling container systems perform “better than kerbside recycling services run by other councils”.

The introduction of the recycling facilities has been welcomed by local residents, with 96% of those using the node recycling centres saying that they approved of the system and 94% finding them easy to use. Approximately 93% of those who had previously recycled said they did so more since the node recycling centres were introduced, and 82% have used the recycling centres between once a week and 2-3 times a week, whilst 67% of visits to the node recycling centres are dedicated trips, again confirming the public acceptance of recycling on their doorstep.

The research revealed that such active participation in using the new recycling systems has the potential of increasing the Council's overall recycling performance by 0.3%. In the context of 35 % recycling rates achieved and councils aiming for 40%, and the easy wins having been won, this is a significant number from a hard to reach group. Furthermore it is a point of community inclusivity to make recycling services available to all.

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The survey also highlighted areas where enhancements to the service may increase recycling even further. Elderly residents, for example, were finding it difficult to carry material to the node recycling centres and some found the box supplied for this purpose difficult to handle. North Lanarkshire is looking at the potential of a neighbourhood scheme to assist the elderly, perhaps offering a reusable bag to transport recyclables from individual flats to the node recycling centres as an alternative to the boxes.



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Cost, of course, is an important factor in the delivery of any scheme. Outline costs are given in the table below. Costs in the table do not include capital costs of node recycling centre and glass container provision, the avoided costs associated with landfill disposal and tax and the potential reduction in frequency of servicing the residual bins in each location. It is worth noting however that the capital cost of a node is £2,500 over a 10-year period.

It is possible the council could drop the frequency of servicing the node recycling centres to fortnightly, if more node recycling centres were provided in key locations. This would bring the cost per tonne recycling service down from £183 per tonne to £106 per tonne.

Estimated costs for service provision

	Weekly Service	Fortnightly Service	Three-weekly service
	node	node	Glass
Vehicle	£11,000	£5,500	£11,000
Staff	£12,800	£6,400	£8,800
Gate Fee	£4,680	£4,680	-£1,560
	£28,480	£16,580	£18,240
Cost £ per tonne	£183	£106	£117

If the recycling performance in the area surveyed within North Lanarkshire was replicated across all 8,000 low and high rise properties in the area, where the 205 node recycling centres and glass recycling bins have been placed, the research led by Professor Baird concluded that 782 tonnes of material could be

recycled. This would translate to a cost of £223,000 per year, and once landfill tax and gate fee savings are applied this would reduce the cost of the service to £163,000 per year. This is based on current landfill tax rates. Once the Landfill Tax increases to £72 per tonne, the net costs to the Council will drop to £131,000.



Conclusion

There is no doubt that the public remains firmly behind government plans to make a difference to the environment and, for most householders, recycling is the simplest way to help make a difference. Indeed the Environment Agency found that nine out of ten people would recycle even more if services were available to them. A report by Waste Aware Scotland also shows a marked increase in recycling participation (and a corresponding drop in cross-contamination) when waste advisers helped residents. Similarly North Lanarkshire has harnessed such a willingness by providing facilities to a public who have a desire to combat climate change.

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The research led by Professor Baird offers credible evidence to all authorities in the UK, that multi-occupancy low and high-rise dwellings need not be a barrier to recycling, and that indeed they need to become part of the recycling revolution for targets to be met and zero waste to become a reality.

“ The need to drive up urban recycling rates will create challenges that will need to be addressed. ”

Some 20% of UK households are high-rise accommodation or multi-occupancy dwellings, and for these residents recycling can be a challenge as no recycling site is available close to their dwellings. These households can play an important contribution in meeting future recycling targets if they follow the example of North Lanarkshire and tackle the issues of non availability of facilities and the significant travel required to take material to the nearest bring site. Scotland has over 33% of its population in multi-occupancy dwellings while in Glasgow the figure is more than 70%. In England many areas, such as the London Boroughs of Hackney, Tower Hamlets, Lambeth, and Newham, have figures as high as 50%. Add to this the development of more exclusive apartment blocks in cities such as London, Birmingham, Edinburgh, Liverpool, Manchester and Cardiff and it's clear to see the importance of finding cost-effective solutions for urban recycling.

But the need to drive up urban recycling rates will create challenges that will need to be addressed. For example, in London, which is the UK capital for high density, multi occupancy properties, the amount of waste generated is gargantuan: enough to fill an Olympic-sized swimming pool every hour or the entire capacity of Canary Wharf Tower every eight days. It's a problem that politicians are keenly aware of, and one of the key messages in the 2007 Mayor of London's Climate Change Action Plan⁵ was that Londoners do not have to reduce their standard of living to play a part in tackling climate change but, amongst other things, they should reuse products and materials and recycle.

In the 2009 report, ‘Where There's Muck There's Brass’⁶, Murad Qureshi, Chairman of the London Assembly Environment Committee wrote: “London's waste management is unsustainable and uneconomical.” Noting that, under the new GLA Act, the Mayoralty has new powers in waste management, he urged London boroughs to do more to encourage and achieve additional recycling.

⁵ Action Today to Protect Tomorrow: The Mayor's Climate Change Action Plan, 2007
⁶ Where there's Muck there's Brass: London Assembly, Murad Qureshi, 2009



The Code for Sustainable Homes and Mayor of London's Draft Housing Strategy both promote recycling facilities, and with the focus on high-density housing development in the coming years, achieving effective recycling from flats will be important. So too will design aesthetics of recycling containers, which must contribute to a good sense of place to be embraced by the community – Place Shaping. This consideration will need to be borne in mind by planners and architects at the masterplanning and local development framework stages of new developments as well as in the planning of individual buildings.

Another challenge will be the cost of servicing recycling solutions to ensure residents in multi-occupancy dwellings can do their bit for the environment through recycling more, particularly against the backdrop of the increasing financial pressures that councils are having to face up to. Getting the public to recycle means having the right infrastructure in place. As such, more bins will be required and the right allocation of funding between large-scale waste processing/ treatment facilities and collection containers is a must.

However on the flip side local councils face significant extra costs if they fail to meet the stringent recycling targets set by

Governments in the UK as well as the European Union. For example, it costs a typical London borough around £21 to process every tonne of recycling materials put out, and that material works its way back into the economic cycle. Research from WRAP shows that a council must pay around £53 if that same tonne of material is sent to landfill. From April 2010, the tax rises £8 a tonne – effectively an extra £40 for every tonne of waste not recycled, and it is scheduled to increase by an additional £8 per tonne in April 2011. Add to that cost the fines which will be imposed from 2010 if EU directives on recycling are not met and the suggestion that recycling is not an option cannot economically be sustained.



The Recipe for Success

- Campaign
- Community engagement
- Proximity to flats
- Aesthetic design
- Bags for transportation of materials

In conclusion, the basic premise of the North Lanarkshire project was simple: place visually acceptable recycling facilities in convenient locations and engage with residents to offer advice and help to get the material from their homes to the recycling point. In doing so it has showed that communal recycling can be successful, has provided hard evidence of the public willingness to recycle, and laid out a roadmap for other councils to unlock the potential of high-rise and multi-occupancy dwellings and help them further increase recycling rates.

Key Findings

- The estimated figure for materials now being recycled is 2.09 kilograms per household per week and this figure appears to be increasing
- 68% of residents, who had previously recycled, said that they used the new recycling facilities, with most recycling 2-3 times per week
- 86% of residents recycle newspaper, 68% do plastic bottles and 40% recycle cans. Only 7.5% recycle textiles and 26% cardboard
- 96% of residents using the new node recycling centres were happy with the new facilities and 94% thought them easy to use
- 93% now recycle more because the facilities are on their doorstep
- The recycling figures are even more impressive when taking into account the fact that those residents in the tower blocks still have access to rubbish chutes – the residents are recycling because they want to, not because they have to
- In 2008 the volume of materials recycled from the properties surveyed was virtually zero. In 2009 it estimated that about 6 tonnes of material per week is being recycled from North Lanarkshire's multi-occupancy flats, increasing the Council's recycling performance by 0.3%
- Comparisons with other schemes show that this approach to communal recycling in multi-occupancy homes has proven to outperform, in terms of cost and participation, some of the more traditional kerbside services.



Intelligence

Taylor Intelligence, a division of Taylor, the provider of innovative recycling and waste container solutions, horizon-scans trends in the waste and recycling collection and containment marketplace. It provides analysis and commentary on the impacts of these trends and legislative developments for waste containment and recycling collection.

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