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metroSTOR Webinar Summary and Transcript

Waste Management Design Advice

18.06.25

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0800 102 6365
enquiries@metrostor.uk
metrostor.uk

metroSTOR Webinar Summary

Jose Sorribes and Nyomi Rowsell from Buro Happold joined metroSTOR's Nigel Deacon for a deep dive into designing effective waste systems for residential buildings – a timely topic as the sector prepares for Simpler Recycling.

Drawing on experience from UK and international projects, the speakers argued that waste design must be prioritised early to avoid long-term operational issues. Jose opened with a clear message: good design encourages good behaviour, and without it, even well-intentioned systems fail.

Nyomi highlighted how small issues, like poor lighting or a missing bin lid, can lead to serious waste problems in flats. Behaviour breeds behaviour – if a bin is misused, others will follow. She also stressed the role of circular design, noting the need for shared responsibility across residents, councils, and building managers.

The team then walked through five key design principles:

1. Waste forecasting and flexibility – Base designs on current data, not outdated standards.
2. Convenience – Stores should be close, accessible, and equally easy to use across all waste streams.
3. Storage and segregation – Layout, lighting, ventilation and security all matter. Inadequate design leads to contamination and overflows.
4. Bulky waste and service areas – Plan for items like mattresses and furniture to avoid fire risks and fly-tipping.
5. Technology – From compactors to RFID systems and underground bins, new tools need space and infrastructure built in from the start.

Jose shared insights on compaction, recommending a max 250kg load for 1100L bins to protect crews. He also noted a shift in London, where more councils are adding crane vehicles to support underground bin systems.

The session wrapped with a discussion on chutes, where Jose advised early planning and design to mitigate common issues. While convenient, chute systems are not always the best fit.

The takeaway? Designing for waste is no longer optional – it is essential to building performance, resident satisfaction and environmental compliance. As Simpler Recycling rolls out, integrated, thoughtful design will be key to success.

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Nigel Deacon

Welcome everyone and thank you for joining our webinar on bin store design. I am pleased to welcome Jose and Naomi, who have kindly agreed to present on this interesting and often challenging subject. I am looking forward to sharing their insights with you and of course, hearing your feedback as well – particularly from those of you working at the coalface.

Bin store installations are one of those things where, if they work well, nobody notices – but if there is a problem, everybody notices. One of the key changes on the horizon, as many of you will know, is the introduction of the Simpler Recycling guidelines. We all understand what that will mean and the impact it is likely to have on our current and upcoming projects, including those already well into development.

So I am looking forward to what Jose and Naomi have to show us today. Jose, over to you – thank you.

Jose Sorribes

Thank you, Nigel. Welcome everyone and thank you for joining us today. We are genuinely thrilled to have been invited by metroSTOR to present in this webinar and to have the opportunity to share our thoughts and insights on how to design for efficient waste management in buildings. Bin stores are, of course, one of the main components of that, but we thought it would be useful to take a slightly broader view. So we will be extending the presentation to cover a few additional aspects as well.

We have prepared a presentation that we hope you will find concise, useful and easy to engage with. We will begin with some brief introductions, so you can get to know who we are, where we come from and why we are here sharing this with you. We will then move on to outline a few key arguments that make the case for giving waste management much more consideration during the design stage. After that, we will get into the core of the presentation, which focuses on five key design considerations for efficient waste management in buildings.

To start with introductions – my name is Jose Sorribes. I am a waste management and logistics specialist, currently working as an Associate Director at Buro Happold. I am absolutely passionate about solid waste management, particularly the operational aspects and the role of building design in shaping effective waste processes. I am also very interested in process optimisation, especially in how we can improve or enhance waste-related operations within the built environment.

I have been working in consultancy for more than eleven years, delivering projects both in the UK and internationally, with clients from both the private and public sectors. If I had to highlight my main areas of expertise, one would be developing and implementing waste management strategies during the design stages of buildings and masterplans. I have also developed a specialism in managing waste for complex building types – such as hospitals, airports and stadiums – which are particularly challenging from a waste perspective.

That is a bit about me and now I will hand over to my colleague Naomi.

Nyomi Rowsell

Hi everyone, my name is Nyomi Rowsell. I originally trained as an architect and have since gained hands-on experience as a waste project officer. I am now working as a consultant, a role I have been in for a few years. During my master's in applied design, I specialised in community participation and sustainable construction materials and I have a strong passion for circular, integrated design.

These principles are important to me both professionally and personally. For example, at home I keep chickens, which produce eggs and fertiliser for the vegetable garden – a small but meaningful example of circular living. I also spent six years living in Malawi, East Africa, where I worked in international conservation and clean-up management. I founded a social enterprise there which, to this day, is run independently by a local team. They operate income-generating activities in waste management, creating significant environmental, social and economic benefits.

Back in the UK, I have worked with the Surrey County Council Environment Partnership team, focusing particularly on underperforming areas – especially blocks of flats – to improve recycling quality and expand food waste collection programmes. Now, as a waste consultant at Buro Happold, I develop both operational and construction waste strategies for international clients as well as those here in the UK. I have a particular interest in London's evolving policy landscape and the growing opportunities around the circular economy. Thanks everyone.

Jose Sorribes

Great, thank you.

We thought it would be helpful to begin by showing you this. What you are looking at is a small selection of photographs we have collected over the years during site visits to various locations. These images illustrate what can happen when waste management is not properly considered during the design stage of a building. They show the consequences of poor design decisions – the kinds of issues that arise when waste has not been given adequate attention early on.

Some of you might be thinking: is this really down to poor design, or is it a result of poor user behaviour? It is a valid question and I fully acknowledge that there is always a behavioural component in these situations. However, based on my experience, I have come to believe that good design is fundamental in promoting good behaviour when it comes to waste management. I know Naomi also has some insights to share on this.

Nyomi Rowsell

Yes, as you said, Jose, behaviour does breed behaviour. If someone leaves bulky waste on the side of the road, there is a high chance that others will follow suit. In the context of shared bins and multiple dwellings, problems can escalate very quickly. If a bin contains incorrect items, for example, the collection crews may refuse to empty it – which then leads to an overflow, with several bins left full and bags piling up on the floor. When that happens, it is highly likely that residents will simply add to the pile rather than try to find a bin that has space.

Often, these situations stem from seemingly minor issues. Something as simple as a broken light can make a bin store feel uninviting or unsafe and once the space becomes unpleasant, residents are less likely to use it properly. Managing multiple stakeholders is a major challenge in all this – from council waste officers and collection crews to developers and building managers. It is essential that everyone works together to support effective design and clear messaging that encourages appropriate user behaviour.

Jose Sorribes

Yes, I am sure many people in the audience will be familiar with these kinds of situations. They have probably experienced them first-hand, whether in their personal lives or through their work. What we are aiming to do today is share a few ideas and considerations that will hopefully help prevent these issues from arising in the first place.

Moving on to the next section, we have called this part Prevention is Better Than Cure. It is a phrase often used in healthcare, but one I am personally very fond of because I believe it is equally relevant to the topic of waste management in buildings. The principle of addressing potential problems early, before they become operational challenges, is essential.

Giving waste management proper consideration at the design stage is, in my view, fundamental to preventing inefficiencies and difficulties later, once a building is in use. So, in this section, we have pulled together a few key arguments that we believe demonstrate how this ethos – of designing buildings with efficient waste management in mind – can benefit a wide range of stakeholders, including local authorities, developers and residents.

Starting with local authorities, how do they benefit from prioritising waste management during the design phase?

The first point is compliance with current waste collection services. We have seen several examples where a failure to design suitable waste facilities has meant that a building could not accommodate the systems required by the local authority, according to their operational standards. This is a significant risk that can be avoided with proper early-stage planning.

The second point is adaptability to future policies. This is particularly relevant now, with the introduction of Simpler Recycling. Changes are coming in terms of how materials are segregated and collected, so designing flexibility into waste facilities from the outset makes it much easier to adapt to these new requirements.

Another benefit is achieving higher capture rates. This ties back to user behaviour – when a building has well-designed, accessible waste facilities, residents are more likely to use them correctly. This leads to better separation of recyclables and organic materials, which in turn helps local authorities reduce both collection costs and carbon emissions.

Next, we have more efficient collections. If buildings are designed with waste operations in mind, the removal process becomes smoother and more streamlined. Collection crews can do their jobs more efficiently, which again results in cost savings and lower emissions for the local authority.

Finally, good design contributes to safer and less strenuous operations. This is increasingly important given health and safety concerns and the demands placed on collection crews today. Designing for safety and ease of use benefits everyone involved in the process.

Nyomi Rowsell

Developers can also benefit significantly from taking ownership of a well-designed waste space with appropriate sizing, working lighting and good ventilation. When the bin store is clean, well lit and easy to access, residents are more likely to use it correctly and treat it with care. If waste reduction, reuse and sharing systems are promoted within the building, less space is required in the central waste store – which frees up valuable space for other important services, such as mechanical equipment. I am sure many architects will appreciate the value of that.

A well-designed store, both functionally and spatially, creates a ripple effect of efficiency. Systems run more smoothly, service charges can decrease and there are fewer emergency collections. Safety issues are also minimised. Taking a proactive approach at the design stage saves significant time and energy compared to constantly reacting to problems once the building is operational.

Jose Sorribes

The next group of stakeholders to consider are residents. How do they benefit from all of this?

The most obvious benefit is that by designing buildings for efficient waste management, we are helping to create a better place to live. This means safer, cleaner and less polluted environments, with reduced risks from things like vehicle movements and heavy refuse collection trucks. It also contributes to improved aesthetics, which in turn enhances residents' overall quality of life.

Another important point is that when waste systems are well designed, residents are far more likely to use them correctly. Good design encourages people to do the right thing – it supports participation and compliance with local waste policies. Over time, this can foster a stronger sense of community. When residents see their neighbours recycling properly and keeping shared spaces clean, it reinforces positive behaviour and builds a shared sense of responsibility for the space.

Nyomi Rowsell

For building managers, a well-designed and appropriately sized waste store, with adequate bin provision, clear signage and even the addition of plants, can help create a more pleasant, self-sustaining environment. In these spaces, waste is treated more like a resource to be managed, rather than simply discarded.

This kind of thoughtful design reduces the workload for building managers, as fewer issues arise from misuse or neglect. The result is greater overall efficiency and improved wellbeing for staff who are responsible for maintaining the space.

Jose Sorribes

Great. Hopefully we have given you a few solid reasons why considering waste management during the design stage of a building is both important and necessary. If you are now on board, we would like to move on and share how this can actually be done. We will take you through some key design considerations that we have gathered from our experience over the years, working with a wide range of clients and design teams. This is not an exhaustive list, but we hope it provides a useful set of core principles to work with.

The first key design consideration is around waste composition, segregation and forecasting. It is an obvious point, but worth stating: any building will generate waste once it is operational. Whether it is a residential building, a commercial unit or something mixed-use, tenants and occupants will produce waste. That is unavoidable. What is essential is to anticipate how much waste will be generated and what types of materials it will include. This process is known as a waste generation analysis or modelling exercise.

Not only do we need to estimate the quantities of waste that will be produced, but also the composition – in other words, which materials will be involved and in what proportions. This is a vital part of designing buildings for efficient waste management, but it is often overlooked or not given the attention it deserves.

To ensure your waste modelling is accurate and useful, there are a few things to bear in mind. Firstly, avoid relying on outdated waste generation metrics. Waste patterns change over time – we do not generate the same amount or types of waste today as we did five or ten years ago. Trends in consumption, lifestyle and packaging all influence this, so using current and relevant data is important.

Secondly, particularly when working on residential buildings, it is crucial to engage with environmental officers or waste officers at the local authority. Most UK local authorities have their own guidance and standard waste generation metrics. Sometimes these are accurate and up to date, but not always. So it is good practice to liaise directly with them and agree on realistic, locally appropriate figures for your development.

Another important point is to consider future trends and fluctuations in waste generation. We are designing buildings that may not be completed or occupied for five or six years – and once in use, they are likely to operate for decades. So we need to anticipate how habits might change over time and ensure our designs are flexible enough to accommodate that change. None of us has a crystal ball, of course, but thinking ahead is key.

Finally, it is important to future-proof designs in relation to emerging policies and legislation. A good example is the new Simpler Recycling regulations. Even if these are not yet in force at the time of design, it is essential to plan for them. If we know certain requirements are coming, then we should be designing for them now to avoid costly retrofits later.

Moving on to the second key design consideration: waste flow. This refers to how waste moves through the building – from the point where it is generated to the point where it is stored ready for collection. Again, this is something that often gets overlooked, yet it has a major impact on usability and effectiveness.

For residential developments, there are typically three main systems for moving waste from individual units to a central storage area. The first – and most common – is resident-led disposal, where individuals carry their waste to the bin store themselves. The second involves vertical conveyance, such as waste chute systems. The third is a valet or porter service, where a team manages waste collection on behalf of residents.

For resident-led disposal, key design considerations include the distance from flats to the bin store. In the UK, British Standards and Building Regulations recommend this should be less than 30 metres. The shorter the distance, the more convenient it is – and convenience is one of the most effective drivers of good waste behaviour.

Another essential consideration is avoiding what we call a ‘path of least resistance’. For example, if general waste can be disposed of via a chute, but recyclables must be carried downstairs, this imbalance will discourage recycling. We have seen this lead to recyclable materials being thrown into general waste, simply because it is easier. Ensuring equal convenience across all waste streams helps to prevent this.

It is also helpful to ensure that routes to waste stores coincide with residents’ natural movement patterns – such as on the way to the car park or bike store. This again increases convenience and encourages correct use. Finally, make sure these routes are accessible to all. Avoid stairs, steep ramps or narrow doorways that might present barriers, particularly for disabled or older residents.

For chute systems, we could run an entire session on best practice, but I will highlight a few key points. Firstly, ensure that each floor has an inlet room, as the core benefit of chute systems is convenience. Depending on your setup, you may need space for two or three chutes to handle different materials. The number of chutes required will depend on how many waste streams need to be separated.

At the base of the chute, discharge rooms need to be carefully planned. These are where the waste containers sit and where they will be rotated or swapped out regularly. Ensure there is enough space for this movement and storage and that staff can operate safely.

You will also need an alternative system for handling waste that cannot go down the chute – large cardboard boxes, for example. These are a common source of blockages, especially as online shopping grows. An alternative drop-off option must be just as convenient as the chute itself, or people will simply misuse the system.

Lastly, we have valet systems, where a facilities team manages waste movement. In these cases, you will need service lifts to avoid interfering with resident lifts and you must think carefully about the handover process. Will staff collect bags door-to-door? Or will each floor have an intermediate bin room where residents can drop their waste, ready for collection? If so, these spaces must be built into the design and equipped with proper lighting, ventilation and fire protection.

Where possible, provide back-of-house routes for the valet team to transport waste discreetly, away from residents. That reduces disruption and improves the user experience for everyone.

Now I will hand over to Naomi, who will talk through considerations for waste storage.

Nyomi Rowsell

So, is the waste store better located internally or externally? That really depends on the available space and ensuring the carry distance is within 30 metres, as recommended. One option is a central internal waste store, or alternatively, interim stores located closer to residents. However, if interim stores are used, the facilities management (FM) team will then need to transfer the waste to a central location for collection.

External stores offer another solution, but selecting the right type of store is crucial. These are open to the public realm, so they are generally more vulnerable to misuse. To improve recycling quality, bin positioning is key. For example, placing the recycling bins furthest away within the store can reduce contamination, as residents who make the extra effort to reach them are more likely to sort their waste properly.

Bin sizing must also match daily waste generation rates, while accommodating the spatial constraints of the site. Effective waste store design requires close collaboration with architects to optimise both layout and capacity for operational efficiency. Essential design features include double doors, with at least 15 centimetres clearance on either side of each bin to allow for safe and easy manoeuvring. Bin store doors should be located within 10 to 15 metres of the collection point, in line with local authority guidance.

In space-constrained developments, compaction equipment can help reduce both waste volume and collection frequency, improving overall efficiency. This could include compactors, cardboard balers or glass crushers, depending on the waste streams produced. All waste stores should be properly ventilated, well-lit and include appropriate drainage and signage. In locations that are prone to misuse, secure locking systems and restricted apertures can prevent unauthorised access or non-compliant residents contributing to issues.

It can also help to display a poster inside the bin store outlining key responsibilities – such as which issues fall to the council, the collection crew, or the building manager. This empowers residents to report problems before they escalate and ensures there is a clear understanding of who to contact.

When evaluating the best waste systems, there are several further options to consider. Steel bin housings, for example, are secure enclosures located externally. These can be accessed by the public, but containers are clearly marked for different waste streams. Features like aperture lids control what goes in and reduce contamination. These units are smarter and more fire-resistant than traditional bins and can look much better in the public realm.

Bin sheds and enclosures are another option, but they must be fully secure – with roofs and strong locks – to discourage misuse. Public bins, especially in communal areas, are often targeted by people from outside the development, so designing to prevent this is important.

Underground refuse systems are another effective option. These help reduce large-scale contamination – like the dumping of bulky items or black bin bags – because they are less accessible for misuse. While residents may still make mistakes (for instance, putting the wrong plastics in recycling), it is the building manager's responsibility to support education and onboarding. New residents should receive welcome packs explaining which items belong in which bins.

Because underground bins have larger capacity and require less frequent collection, there is a risk that contamination could accumulate over time. This is something to keep in mind, particularly when it comes to materials people often misunderstand, like thin plastics that are currently not recyclable.

Side-loading containers, commonly used in public areas across Europe, are also an option to consider. As attitudes shift in the UK, it is worth suggesting these where appropriate.

Bulky waste presents a range of challenges. Items left outside can create fire risks, degrade in the elements and obstruct regular waste systems. Managing this effectively starts with education. Posters can highlight reuse options, local recycling centres and other resources. In cities like London, many residents do not have access to a car, which limits their options. Promoting car-sharing, online marketplaces and other platforms can encourage people to pass items on and even earn a bit of money in the process.

When prevention fails, dedicated bulky waste storage becomes essential. These areas should be clearly partitioned from regular bin storage to prevent inappropriate dumping from becoming normalised. This is particularly important for external stores, where misuse can escalate quickly. Housing managers need to act swiftly to remove dumped items and maintain order.

Managing non-compliant residents often requires both carrot and stick approaches. Positive engagement is always the first step, but if that fails, consequences must be made clear. One effective example involved wrapping dumped items in police-style crime tape and attaching investigation notices. When people see that enforcement is happening, they are less likely to offend themselves.

For areas with ongoing issues, more structured solutions may be needed. Councils and building managers can work together to organise monthly bulky waste collections or reuse events, such as car boot sales. These not only offer a responsible outlet for unwanted items but also encourage residents to hold onto valuable goods and reintroduce them into circulation.

Finally, service yards are high-activity zones that require careful planning for safe vehicle manoeuvring. With the introduction of Simpler Recycling, we are likely to see more vehicles collecting more waste streams, so space and coordination are essential. Ideally, service yards should be integrated within the development itself, allowing for better control and reduced impact on street-level logistics.

Design considerations should include space for a variety of collection vehicles based on council fleet specifications and the inclusion of equipment like compactors or bin lifters. Health and safety compliance is vital and there should also be space for operational tools such as roll cages and waste trolleys. Supporting infrastructure must include water and drainage for cleaning, as well as lighting and ventilation for safe working conditions.

For on-street solutions, lay-by capacity must be sufficient for collection vehicles, with clear, unobstructed routes and accessible kerbs. Where waste stores are located further than 10 or 15 metres from the road, it may be better to provide a bin presentation area – a designated space where building managers can wheel bins out for collection on scheduled days.

Thank you and back over to you, Jose.

Jose Sorribes

Great. I just want to quickly emphasise the point about bin presentation rooms. This is something we have seen time and time again in schemes we have worked on. Often, due to the building's geometry or the architectural concept, waste storage areas are positioned far away from the main point of collection, or from the building's frontage. Sometimes, these stores are located in basement levels that refuse vehicles cannot access directly.

In such cases, having a designated bin presentation room or area is essential. Without it, collection crews would be expected to wheel bins over excessive distances, which is not only operationally challenging but often unacceptable from a planning perspective. Local authorities are likely to object, as it puts unnecessary strain on crews, increases collection times and compromises the quality of the service. So this is a key design consideration in residential waste management.

Another important point relates to servicing facilities such as loading bays. These spaces must be designed to allow for safe and efficient vehicle turning and manoeuvring. This is where swept path analysis becomes critical – many of you will be familiar with this process, which helps to assess whether collection vehicles can safely access and exit the site. This is a vital part of ensuring waste facilities function effectively.

Finally, I want to touch on technology and innovation. While not every scheme needs to be innovative and in many cases traditional systems work perfectly well, it is always worth considering how technology might improve waste efficiency or enhance the design. I will quickly run through a few proven technologies that can be incorporated at design stage.

First, volume reduction equipment – such as bin compactors, portable compactors, cardboard balers and glass crushers. These help reduce the volume of waste, increasing capacity and potentially reducing the space needed in waste rooms. However, care must be taken to avoid making bins too heavy to manoeuvre safely.

Portable compactors are widely used and effective, but they require space – usually in a loading bay – and must be properly integrated into the design. Cardboard balers are especially relevant in commercial settings with high volumes of packaging. They produce bales that require separate collection arrangements.

Another option is vacuum waste collection systems. These are more common in mainland Europe – including my native Spain – and parts of Scandinavia. Although not yet widely used in the UK, they are gaining interest. These systems automate the transport of waste from the point of generation to the central storage area, essentially turning waste collection into a utility service. A few large residential developments in the UK have trialled this with success.

RFID-enabled bins are another technology to consider. Used in some UK cities and across Europe, they allow data collection and monitoring, offering useful insights for building managers and local authorities.

Bin fill-level sensors are already widely used in the UK. They help track how full bins are in real time, which is especially helpful in buildings where waste is managed by a facilities team. These sensors can guide timely bin swapping and avoid overflows.

We also have identification systems for bins, commonly used in Spain and other parts of Europe. With this system, bins are locked and can only be accessed by residents using an ID card. Each bin use is recorded, linking the action to a specific user. This opens the door to systems like pay-as-you-throw and can encourage better behaviour – in fact, studies in Spain suggest this system has significantly reduced contamination.

Digital reward systems offer another way to promote good practice, providing incentives to residents who separate their waste correctly. These have been trialled in the UK and are worth exploring further.

A newer technology still in early development is AI-assisted bin sorting. The idea is to take the decision-making out of residents' hands and have AI determine the correct bin for each item. While still in the trial phase, this has the potential to significantly reduce contamination in the future.

Finally, I want to mention organic waste treatment systems, including in-vessel composting and small-scale anaerobic digestion. These are most applicable in commercial settings with catering operations or high volumes of food waste. Again, they require space and planning and are only viable if considered early.

The reason for mentioning all of these technologies is that most require infrastructure to be effective – whether that is space, access, digital systems or specialist equipment. If you want to include any of them, they must be planned for at the design stage. Retrofitting later can be costly and complex.

That brings us to the end of the presentation. I hope everything we have shared today has made sense and provided value. We are now happy to take any questions or discuss any of the topics in more detail.

Nigel Deacon

Fantastic, Jose – a really thorough and insightful presentation. Thank you very much.

If anyone would like to raise their hand and ask a question, please feel free to do so. While you are thinking, I will go first.

Could you point us towards any data sources for waste metrics beyond British Standard 5906? This is quite a developing area for local authorities and designers and I think many of us are still finding our way through it. Is there any additional information or guidance you could recommend?

Jose Sorribes

Yes, absolutely. In my experience, the best sources of data are compositional analyses or waste surveys carried out by other organisations or professionals. I often turn to the scientific literature to see what is available, but some of the most useful data can actually be found outside of peer-reviewed journals.

For example, ReLondon has recently carried out some excellent compositional analysis studies across a range of flats and housing types in London. I think that data is incredibly valuable – it is current, accurate and reflective of what is actually happening in buildings today. For me, that kind of study sits right at the top in terms of data quality.

So I would recommend looking for any recent compositional analysis – whether published academically or produced by organisations actively working in the field. Beyond that, there are also government publications and datasets which are robust and reliable. These can be a useful reference, especially if they are more recent than the British Standard.

The challenge with BS 5906 is that it dates back to 2005 and a lot has changed since then in terms of waste generation patterns, packaging types and recycling behaviours. So while it is a useful starting point, I would always advise supplementing it with more up-to-date sources wherever possible.

Nigel Deacon

Sounds good. Shelley has kindly posted a link in the chat to some of the ReLondon information, so thank you for that, Shelley.

I have another question, this time around bin compactors and the concern over potential overweight issues. I suppose this applies to any form of compaction really. Is that something you have come across? And how do you ensure that the bins do not become too heavy to handle safely?

Jose Sorribes

Yes, that is definitely something we have come across. In fact, several years ago we carried out surveys in a few commercial buildings where there were issues related to overweight bins, particularly with general waste. Collection crews reported problems because once compacted, the bins became too heavy to handle safely.

Interestingly, this tends to be less of a problem with recyclable waste, as the materials are lower in density. You can compact them more without exceeding tolerable weight limits. But with general waste, the density is higher and compacting it too much can quickly push the weight beyond what is manageable.

These days, when we are designing buildings and planning for bin presses, we always carry out calculations to ensure that the compacted bins will not exceed a safe weight limit. We set a clear payload threshold based on what is acceptable for crews to handle and we make sure the compaction settings do not go beyond that.

Of course, that means the efficiency of the compactor may be slightly reduced – but it is a necessary trade-off to maintain health and safety standards for collection crews.

Nigel Deacon

That is helpful. Is there a maximum weight that you typically allow for an 1100-litre bin?

Jose Sorribes

Yes, we would usually target something around 250 kilograms as the payload for an 1100-litre bin. Some people might say that is too low, others might say it is too high – I have heard all the arguments – but I think it is a sensible and safe figure. It is a weight that most collection crews should be able to manage without difficulty.

Nigel Deacon

That is interesting. I was also interested in your reference to underground systems. We have a question around infrastructure and whether the availability of servicing is the limiting factor. In my experience, the constraint tends to be around vehicle access or availability. Are you seeing that change from your perspective? Is it becoming more widely adopted?

Jose Sorribes

Yes, you are absolutely right. In our experience, the biggest limitation when it comes to residential underground waste systems is vehicle availability. Not all local authorities have crane-equipped vehicles in their fleet, which are necessary to empty underground bins. If they do not have the right vehicles, they simply cannot provide the service – and as a result, you cannot design for underground bins in that area.

That said, we are beginning to see a change. More local authorities, especially in London, are now adding these vehicles to their fleets because they want to support underground bin systems. Some councils have even incorporated them into their policies and design standards. They have invested in the infrastructure and naturally want to see it used.

We have also seen situations on projects where there was a clear benefit to using underground systems, but the local authority did not yet have the right vehicle. In some of those cases, developers have been able to negotiate with the council and contribute to the cost of purchasing the required vehicle, which allowed the system to be implemented. So while vehicle availability is still a barrier in some areas, there are positive signs of change and increasing adoption.

When implementing systems like compactors, there is usually a clear return on investment. They can save space and streamline operations, which benefits the design, the scheme and the long-term efficiency of the building.

Nigel Deacon

Yes, that is interesting. Does anyone else have any questions? Feel free to raise your hand and ask the panel. Ah – Cherry, please go ahead.

Cherry Wu

Hi. I have a question. I am coming from an architectural background and working on a high-rise building in Birmingham city centre – about 700 apartments – and this presentation has been really insightful. Our challenge is the limited bin storage space. The waste management plan was developed using a very traditional approach, calculating waste by volume in litres and then allocating bins accordingly. But there is no real focus on recycling quality within that design, which is something we are now trying to improve.

We are likely to have to use a chute system and are also considering compaction. I found it particularly helpful to understand that these systems can save space, but I would like more clarity. If you are improving the quality of the system – for example, by adding a compactor – is there a way to quantify the space saving? Could it reduce the required space by half, or more? How does that efficiency translate into actual layout or space planning?

Jose Sorribes

Yes, definitely. Using rough figures, one 10-cubic-metre portable compactor is roughly equivalent to the capacity of eighteen 1100-litre bins. So just by incorporating one of those units, you are significantly reducing the amount of space you would otherwise need for standalone bins.

Of course, you will still need some bins for daily use by residents – particularly if you are using a chute or resident-carry system – but you will not need to store a full week or two weeks' worth of bins on site. Instead, you only need space for a day or two of waste, because your facilities or porter team would be transferring waste into the compactor on a regular basis.

Cherry Wu

Yes, that makes sense. Based on a fortnightly collection cycle, understanding that a compactor can offset space requirements for 18 bins is really helpful. Right now, our bin store is completely filled with standalone bins – there is no space left for proper circulation or operational use. Knowing how much space a compactor could save opens up possibilities for improving the quality of the space overall.

Is that 18-bin equivalency published anywhere officially – in a standard, guideline or design document – that we could use to support this kind of approach in discussion with stakeholders?

Jose Sorribes

There are a few sources, yes. I can certainly point you to some guidance and we can follow up on that separately if helpful. But honestly, much of our knowledge has been built over more than a decade of working on these types of schemes – through hands-on experience of design, implementation and, frankly, learning from when things have gone wrong.

So while there are some documents with technical guidance, I would recommend speaking directly with someone who understands these systems in detail. And yes, for a scheme of the size you are describing, compaction is almost certainly the most sensible solution. Without it, you could end up needing space for 50 or 60 bins, which is not only a huge waste of floor area but also a serious operational burden.

It is not ideal for the local authority either, because they would need to collect all of those bins in one go, placing a lot of pressure on their service. So yes – compaction is not just about space, it is also about making the entire system more efficient and manageable.

Cherry Wu

Yes, thank you – that is really useful.

Nigel Deacon

And just picking up on something from the chat – when you are storing waste for a full two weeks, that can introduce problems like odour and hygiene issues. Reducing collection frequency through compaction or better design can definitely help in that respect too.

There is also a question coming through about tri-sorter chutes. Have you had any experience with them, Jose? Personally, I have come across a number of problems with them, but I would be interested to hear your view.

Jose Sorribes

Yes, we have done a lot of work with chute systems. While we do not carry out the final design ourselves – that is done by the suppliers – we work closely with two main providers and manage the early-stage planning. When we recommend a chute system for a scheme, we help with the preliminary space planning, ensuring that there is sufficient space allocated for the vertical shaft and the inlet rooms.

We have enough experience to understand what is required from a design perspective, so we work with the architects during the early design stages to make sure everything is properly coordinated before the chute supplier comes on board to finalise the design.

Chutes are an interesting topic. I have mixed feelings about them, to be honest. On the one hand, they offer clear advantages in terms of convenience. They make it much easier for residents to dispose of waste without having to walk long distances or enter a bin store, which can sometimes feel unpleasant or even intimidating. So in that sense, chutes do a great job of encouraging participation.

However, based on experience, they come with a number of challenges. It is really important to speak with someone who understands the design and operational aspects of chute systems, because many of these issues can be avoided or mitigated if they are addressed early in the design process. It all comes down to understanding how the system will be used, what it can and cannot do and whether it is actually the right solution for a particular building. If it is the best option, we need to know how to design around its limitations. If it is not, that needs to be identified early.

Nigel Deacon

Yes, absolutely. Well, we are a bit over time now – quite a bit, actually – but this has been a really helpful and informative session. We have not managed to cover every question, but we will try to follow up with answers in the chat.

Jose Sorribes

Yes and just to add – if anyone has further questions, please feel free to connect with me or Naomi on LinkedIn. We are happy to continue the conversation and help however we can.

Nigel Deacon

That is fantastic, Jose. Thank you again for all your input today and a huge thanks to everyone who joined and contributed to the discussion. I hope you found some useful insights to take away. We look forward to running more of these sessions. If you have any ideas or topics you would like us to cover, let us know – we are always keen to bring in expert voices like Jose and Naomi to explore these issues in more depth.

Thanks again everyone, have a great day and we will speak soon.

Jose Sorribes

Thank you.

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