



The Unintended Disruption & Cost of Waste Chutes in Apartment Buildings

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Executive Summary

The Problem

- The increasing prevalence of waste chutes in apartment buildings is creating a burden of time, cost, and disruption of service to Owners Corporations within the ACT.
- Owners Corporations are undertaking major infrastructure upgrades at considerable cost to counter the ongoing problems associated with managing resident behaviour associated with waste chutes.
- Environmental benefits, such as achieving high levels of recycling outcomes, are being hampered within buildings that rely on waste chutes.

The Solution

- Government and industry must work together to optimise waste management outcomes at a planning level.
- More flexible waste management solutions, including a return to more traditional solutions with some enhancements.



Introduction

Vantage Strata is a market leading strata management company, with a portfolio representing 13,000 units/lots.

Since being established in 2015, Vantage Strata has had a particular focus on larger sized strata complexes, specialising in apartments and complex vertical communities, resulting in an average size of more than 70 units/lots per building (significantly greater than the market average).

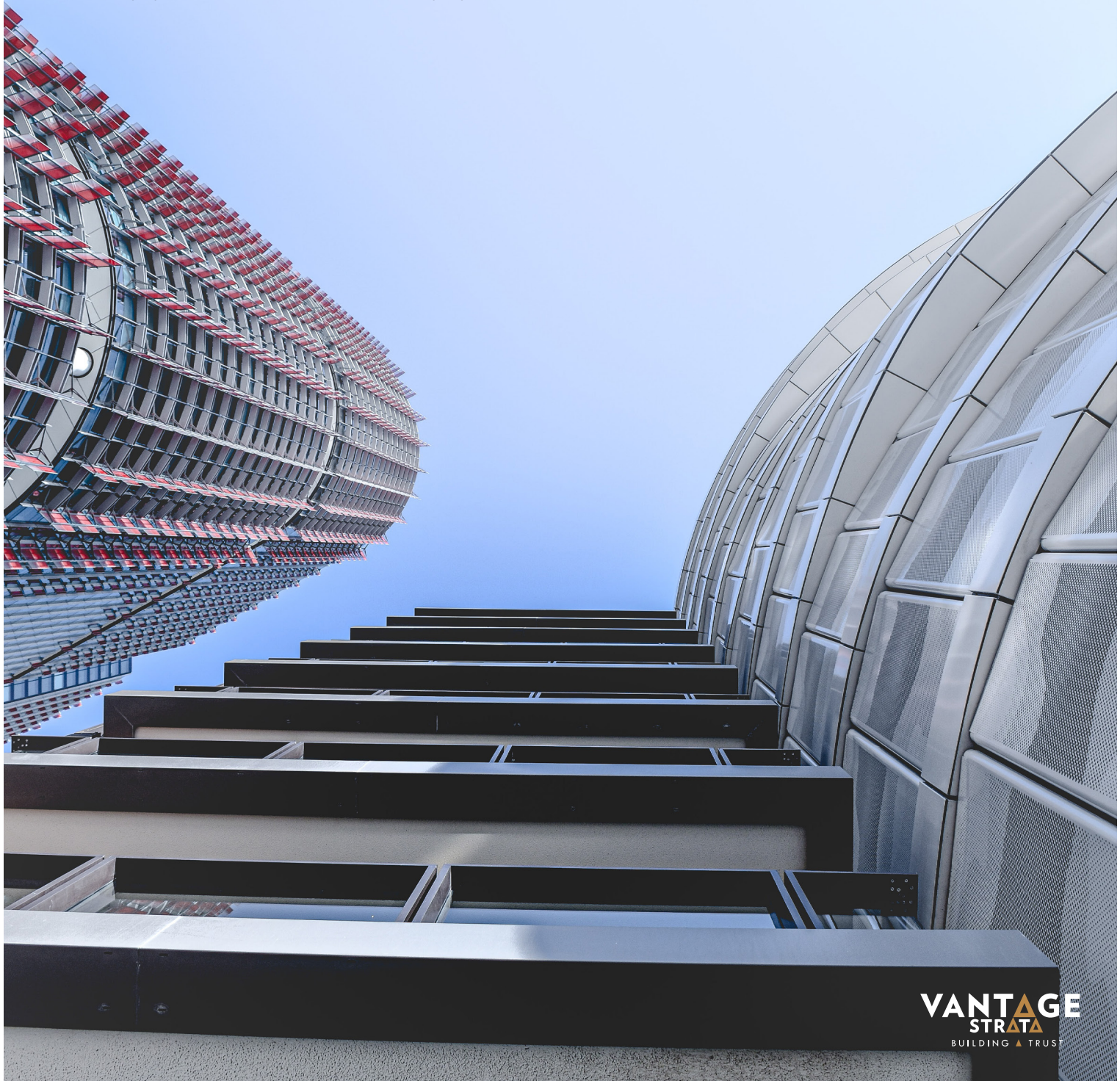
Vantage Strata is therefore uniquely positioned to provide insights into issues impacting tall strata titled buildings.

Strata titled apartments makes up a significant and growing sector of the housing market, with at least 10% of ACT's population residing in a strata titled property.

It is estimated that 70% of all new housing supply will be strata titled for the foreseeable future.

A number of ongoing problems have emerged in relation to the existence of waste chutes in taller apartments buildings.

It is timely for stakeholders, including the ACT Government and the strata community, to review and adjust design and planning guidelines in order to address this growing problem.



Background

Apartment dwellings are making headways in bridging the gap between lack of supply and rising populations nationally. This is particularly evident in the ACT, which has more constrained land supply dynamics.

As the ACT apartment market has matured over the past 2 decades, many developers have elected to include waste chutes, as some considered this to be a desirable amenity. On the surface of it, a waste chute may be a convenient way for a resident to dispose of household waste with a limited need to traverse through the common areas of the building.

The confluence of building trends and, more recently, ACT Government policy has given rise to a prevalence of waste chutes as a core component of the waste management strategy for many apartment buildings. This trend is a deviation from traditional waste management arrangements, which tended to favour rudimentary solutions, such as concentrated collection points requiring residents to simply transport waste directly from their apartment to the waste bins for collection.

However, despite a measurable increase in prevalence, waste chutes have by no means been a universal feature of new apartment buildings constructed over the past 2 decades. It is therefore possible to weigh up the real-life practical benefits and trade-offs between the various waste management solutions across apartment buildings within the ACT.

With the benefit of practical experience, strong evidence is emerging that waste chutes are a sub-optimal solution with considerable financial and administrative consequences for Owners Corporations, arising from a range of factors including poor resident behaviour, cost of rectifying blockages, and the inability to identify offenders without major upgrades to security infrastructure. The same drivers are also likely causing environmental objectives to fall short.

The Problem

Management and Operational Costs

The average costs associated with waste chutes in buildings can be relatively straight forward to calculate, depending on a few variables, including but not limited to:

- Size of building
- Age of building
- The presence (or otherwise) of on-site building management
- Chute age and design

These expenses are relatively knowable in advance and include things such as waste bin reticulation (from ejection points), running costs and maintenance of associated plant (extraction fans etc), regular chute cleaning and deodorising.

Using a real-life example of an apartment building in Belconnen managed by Vantage Strata, the combined annual direct costs of the above-mentioned items is around \$7,500 per chute system, which in this case is 2, for a total annual cost of \$15,000. It is worth noting that the chutes in this case only accommodate general waste, and not recycling. It is estimated that the cost would increase by 50% if recycling chutes were added.

However, it is much more difficult to calculate the indirect costs of chutes in advance, as many of the problems are latent and only become visible in the ongoing management of this infrastructure or are borne out in other ways that are never surfaced in a direct or obvious way.

Some of these indirect costs are categorised and discussed in the following pages.

Clearing of Chute Blockages

The most insidious challenge presented by waste chutes is the prevalence of blockages, caused primarily by poor resident behaviour. When used correctly, waste chutes are generally reliable, and blockages are minimal. However, in practical use across many residents the lived reality is that they are seldom used correctly, resulting in a frequency of blockages that is frankly an unacceptable burden in time and cost.

Based on a review of a sample of properties managed by Vantage Strata, a typical week would see at least one chute blockage, and it is not uncommon to see two or three in the same period. For illustrative purposes it is reasonable to apply an expectation of one blockage per week. Depending on whether the building has a permanent on-site manager (part time or full time), these personnel may be able to clear the blockage.

In the previously mentioned sample, the buildings each had an on-site presence for 38 hours a week, and it was reported than around 80% of blockages could be cleared by those personnel taking around an hour each time. If after around one hour the blockage was not cleared, an external contractor is required, accounting for around 20% of blockages. In those cases, it was estimated that the time taken by the contractor to clear the blockage was about 2 hours. Below are some calculations of the cost based on the above assumptions:

Number of blockages pa (assume 1 per week)	52pa
80% cleared by Building Manager (1 hour @ \$67.50 per hour)	\$2,808pa
20% external contractor (1 hr BM @ \$67.50 + 2hrs contractor @ \$350 per hour including travel)	\$7,982pa

Additional waste collections

In most cases a flow on effect of a blockage results in a need for an additional collection. This occurs due to waste not finding its way to the end point collection hopper for a period of time while it is backing up within the chute itself. As there is a lag between when the blockage occurs and when it becomes evident, and then subsequently cleared, the buildings waste collection service will occur anyway with a smaller volume of garbage. Upon resolving the blockage, consequently the hopper may fill (or overflow) and require an urgent collection. Below are the calculations of the cost based on the previous mentioned assumptions:

Additional collections (52 blockages per week @ \$100 each):	\$5,200pa
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Administration and management due to service disruption

During the course of a blockage occurring and its subsequent resolution, there are a number of administrative steps that must be taken to support the various stakeholders involved in the solution or impacted by the problem. For example, the building manager and / or strata manager will often first learn of the problem upon being contacted by residents. Often there will be multiple residents who will communicate through a combination of phone calls and emails, which must be answered, acknowledged, investigated, and then further communicated with once a plan is in place. Communications must also be distributed en masse to other residents, so they are informed, and to prevent further calls and emails reporting the same issue.

In addition to keeping residents informed, there will also be a channel of communication and coordination between various professionals and contractors, such as building and strata managers, expert waste chute contractors, and waste collection providers.

This process of communication and coordination, while straight forward, is quite time consuming on aggregate.

Blockages frequently occur outside of regular business hours and must be handled as an “after hour maintenance emergency”. The same communication steps described above are therefore at a considerably higher cost in those cases.

Finally, it is also necessary to process invoices for the various contractors involved and reconcile them against building manager notes. This process often requires third party approval of the client who will generally require a report of events to assist them in the approval process.

It is estimated that on average the above administration represents in the order of 2 hours of time spent per event. According to Vantage Strata's standard management agreement the rate of charge for strata and administration services is \$150 per hour during business hours and \$200 per hour outside of business hours.

Administration related to blockages (2 hrs per event x 52 per year @ \$150 per hour)

\$15,600pa

Lost opportunity to identify responsible persons

In most buildings with waste chutes, the system provides for anonymous use by residents, i.e., there is no capacity to reliably identify the unit or resident responsible for inappropriate use, which may lead to the creation of a blockage (among other undesired outcomes).

This may also be true for buildings with more traditional waste arrangements, involving centralised drop off points. However, it is far more common for those buildings to have building security infrastructure that enables the Owners Corporation to investigate misuse, which frequently results in the responsible party being identified. This is achieved by reconciling the use of a security pass to gain access to the waste area (often involving the use of a proximity card reader to access various secure areas, including in the lift and the waste area itself) with CCTV footage capturing the misuse. Each security pass has a discrete identifier and is issued to each resident in a manner that enables date and time stamped usage. Further, when using a common facility, it is more likely that there may be multiple residents in this area at the same time and peer pressure can have a desirable effect on behaviour.

The Unit Titles legislation in the ACT provides for a clear and efficient mechanism for the Owners Corporation to recover its costs in disposing of incorrectly dumped waste from the responsible party, including ancillary costs such as administration.

While it might be the case that not every building with traditional waste arrangements is equipped with the necessary security infrastructure to enable a process of identification as the one described above, the capital upgrades required to achieve this outcome is exponentially less expensive than would be the case to make the same upgrades to building that relied on waste chutes.

Associated Capital Upgrades

As discussed above, it is well established that a robust security system, including access control and CCTV, creates an effective way for an Owners Corporation to identify waste misbehaviour and recover its costs (and adjust behaviour) accordingly.

However, in order to achieve this outcome for a building which relies on waste chutes the cost of installing such infrastructure can be cost prohibitive, particularly if retrofitting is required.

Most modern apartment buildings have at least a minimal CCTV coverage and electronic access control on completion, and additional cameras and proximity card readers can be added to their respective systems for a relatively small cost (around \$750 - \$1,200 per camera / \$2500 - \$3500 including card reader, door strike (hardware) and cabling per proximity card reader), subject to distance from the central system to the location and amount of cabling required.

If cameras and access control have not been installed at waste collection points for buildings that do not rely on chutes, the cost of upgrading an existing building will, in most cases, be limited to one camera and one proximity card reader.

However, if the same enhancement were required for a building which did rely on chutes, in order to reliably identify the person responsible for misuse of the chute would require a proximity card reader and corresponding camera for every chute recess. This would typically equate to a 2 chute recess per building floor, therefore requiring 2 proximity readers and 2 cameras per building floor. Additionally, most buildings with a base level security system will not have cabling or conduit running to these locations, as access control would likely be limited to the key ground floor entry points, with one access control point in each lift.

It is difficult to estimate the cost variance in retrofitting a building with the necessary security infrastructure required to effectively manage resident waste behaviour due to the many variables. However, there is no question that associated costs for a building which relies on waste chutes are far greater than those for a comparable building with a traditional waste solution. In most cases it places this option out of reach.



Environmental Outcomes

Aside from the practical and financial costs discussed above, there is undoubtedly a hidden environmental cost that requires close examination if the ACT Government is to achieve its stated waste and recycling objectives.

Presumably the insistence of waste chutes is intended (at least in part) to support convenient responsible waste disposal for residents. On the surface of it this would certainly be an expected outcome, particularly in cases where dual garbage and recycling chutes were in situ. However, in practice this is not necessarily the case, and in fact it may well be that the opposite outcome is achieved.

In order for a waste solution involving chutes to function as intended, it requires an unachievably high level of resident compliance. Sadly, in practice it is seldom the case that such a level of compliance is achieved.

That is not to say that a majority of people are not compliant. Although it is hard to say with any real accuracy what the actual compliance rate is, it is probably that most residents adhere to the correct waste procedures most of the time. However, the reliance on each individual is so great that even a small number of recalcitrant residents will cause a critical failure of the entire system.

The anonymity and ease with which a resident can misuse the chute system creates a disincentive for proper waste practices. Additionally, the inconvenience to residents that is created when a garbage chute has failed creates a positive incentive for them to dispose of general waste in a recycling chute or a recycling bin if located in the chute recess (as is the case in most existing buildings with waste chutes) as they have no other means of waste disposal until the chute is re commissioned.

The flow on effect is that recycling becomes contaminated with inappropriate waste which cannot be processed correctly.

Conversely, if a resident is simply required to manually carry their garbage to a central collection point it is no additional effort to dispose of waste and recycling in the correct manner. Furthermore, when obvious misuse occurs, such as large bulky items being dumped in waste hoppers, the responsible party is identified, penalised, and they are likely to modify their future behaviour to avoid further financial penalty.

Solutions

Government led review and stakeholder engagement

In light of the challenges highlighted above and considering that the current waste code has now been in place for 3 years (2019), it is appropriate to review and discuss the outcomes with stakeholders, including Strata Community Association ACT (the peak professional body for strata professionals), the Owners Corporation Network ACT (peak body for the interests of owners in strata communities), and those involved in the development and planning of apartment complexes.

Enhanced Traditional Waste Management Solutions

A potential practical solution might include allowing for alternatives to waste chutes in apartment buildings providing that adequate access control and CCTV infrastructure is installed in such a manner that supports oversight and management of waste disposal as described earlier in this paper. If this cost was borne up front at the development stage, it would avoid the need for an Owners Corporation to upgrade the buildings infrastructure downstream.

Conclusion

Waste chutes should be considered as one of a variety of waste management solutions. Although a waste chute system may offer the potential of a convenient and efficient means of waste management in an apartment building, in practice there are latent costs and inefficiencies that may not be immediately apparent. It is important to reconcile the promise of waste chute systems with the practical experience of owners, residents and those involved in the ongoing management of apartment buildings, and adjust planning policies in response to feedback, in order to ensure successful waste management outcomes.

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