



Designing for Smaller Spaces

Kitchen & Laundry Considerations
for Multi-Residential Dwellings

INTRODUCTION

Whether due to rising property prices, convenience or changing lifestyle preferences, an increasing number of Australians are choosing to live in apartments. According to 2016 census statistics, the number of Australians living in apartments has increased by 78% over the last 25 years.¹ This amounts to a total of 1,214,372 dwellings across Australia.²

More recent reports indicate this trend will continue as surging land prices force people away from detached housing.³ Increasing population densities in Australia's major cities will also raise demand for accommodation and infrastructure. Building upwards looks to be the most viable way of addressing existing constraints on land affordability and supply.

At the same time, we are seeing the rise of 'compact living' with the size of living spaces dramatically shrinking. The floor area of new apartments over the past 15 years has shrunk 17.5% on average – from 131 square metres in 2003-04 to 108 square metres in 2017-18.⁴ Yet, while homes are getting smaller, the demand for high-quality living remains as high as ever.

Architects and designers will need to think smaller and smarter to deliver healthy, functional living spaces in a space-constrained future. Compact living trends have changed the role of the kitchen and laundry in the average Australian home. They need to be tighter and more concise, while catering for the homeowner's desire for flexibility.

In this whitepaper, we explore the challenges of small-space design and how this impacts the design of kitchens and laundries in Australian apartments.





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THE CHALLENGES OF SMALL-SPACE DESIGN

In recent years, the role of kitchens and laundries have changed significantly. With the rise of food delivery services and dining out options, we need far less kitchen space than previous generations. Kitchens remain an important feature of Australian homes, but fully-featured fit outs have become less critical for Australians who are always on the move.

Similarly, over time the laundry has become more of a luxury than a necessity. The generously-sized laundries found in homes of the last century have slowly reduced to the minimum space needed to fulfil its functional purpose.

Flexibility has risen to the top of the list of design priorities for modern homeowners. With the emergence of mobile technologies, people are living in a greater hurry and their needs are constantly changing. The proliferation of portable devices has allowed people to work from and around the home. Consequently, people want living spaces that can be adapted on the fly.

Given this context, smaller living spaces present a range of practical challenges for architects and designers:

- The most obvious is the **lack of physical space** available for furniture, appliances and other fixtures. Designers need to squeeze as much function as possible within a limited spatial footprint.
- Smaller spaces can also become too **visually cluttered** if the layout of furniture, fixtures and appliances is not carefully considered. Too much clutter combined with limited physical space can create the feeling of being enclosed.
- **Ergonomics** can be compromised if the layout does not allow users to navigate the space easily. Appliances need to be easily accessible and comfortable to use while occupying only the minimum amount of space.
- Most units require generous storage space, but designing for a spatially-challenged apartment means traditional **storage** options may be limited. There is a need to preserve floorspace and avoid kitchens and laundries overflowing into other parts of the unit.



THINKING SMALLER BUT SMARTER

Space planning considerations

Smaller space does not necessarily mean less liveable. A well-designed space – with appropriate access to light, ventilation, and appliances – can deliver a better lifestyle than a poorly-designed yet spacious home. However, for smaller homes, space planning becomes critical.

The first step is a functional analysis of the space. There are several different ‘zones’ in a home, each dedicated to specific type of activity: social, work, private and storage. These zones cannot be designed in isolation as there are functional relationships between them, for example the kitchen area is typically near the dining area, the laundry near the bathroom, and so on. In compact living spaces, there may be even greater overlap within these zones.

Kitchen and laundry layouts

When designing a compact kitchen or laundry, several factors will influence the eventual layout of the space. This includes:

- specific user requirements and lifestyle needs;
- the appliance needs for the space;
- the number of people using the space;
- frequency of cooking, washing and storage needs;
- water, electric and gas supply; and
- accessibility requirements for user with limited mobility.

For compact kitchens, the layout will make all the difference in getting the most out of the space. Traditionally, kitchen designs followed the concept of the kitchen work triangle, in which the cooktop, the sink and the refrigerator are placed in close proximity. Smaller kitchens may not strictly adhere to the kitchen work triangle concept, but should still follow the general principle of creating a working flow that connects the main sections of a kitchen together without spacing them too far apart or being on top of one another.

Space constraints necessitate different types of kitchen configurations. One-wall kitchens are popular in compact living units as a space-saving yet functional layout that does not feel enclosed or cramped. Open L-shape or U-shaped kitchens may also be considered depending on the actual dimensions of the space. Compact kitchen designs also emphasise vertical storage solutions and the ergonomic placement of appliances to optimise space usage.

Like the kitchen, the laundry must remain a functional workspace, with the layout and appliances working in cohesion. Compensations in storage space, bench or sink

size to allow for the safe operation of a washing machine and/or dryer may be required. Architects may consider using the same drainage system as the kitchen for the laundry to reduce its spatial footprint.

Design concepts

Shape-shifting spaces

Moveable surfaces and modular units are common features in many space-saving concepts. For example, a moveable benchtop can allow occupants to create a food preparation space in any room of the house. Similarly, a wall-mounted drop-leaf table and folding chairs allow occupants to create a dining table or work desk on the fly. Some collapsible kitchen concepts combine cooktops, benchtops and dining tables into a single unit, with embedded seating and slimline storage options for maximum space efficiency.

Verticality

The use of vertical space is a reoccurring theme in compact designs. Designers can utilise the full floor-to-ceiling space to create more storage opportunities. Beyond the storage problem, floor layouts are evolving with ladder interiors creating useable, multi-level living spaces that go against conventional floorplan thinking.

Lightweight and flexible

Lightweight solutions that can be carried from one living area to the next and stored away quickly can help free up space. This could be a lightweight benchtop or even a portable cooktop or oven. The use of slimline fixtures and furniture with a lightweight appearance, rather than heavy or chunky designs, can also help create the illusion of more space.

Integrated appliances blend seamlessly with kitchen cabinets and benchtops to create a larger space. They also reduce visual clutter by emphasising streamlined cabinetry rather than bulky appliances.



CHOOSING AND INTEGRATING APPLIANCES

Choosing the right appliances can be the difference between a successful compact kitchen or laundry design and one that feels cluttered and uncomfortable. Below are some key design considerations

Integration

Integrating appliances creates a seamless kitchen that expands the usable living space of the compact home. When designing integration, do not be limited by off-the-shelf integrated appliance solutions as this will confine functionality and capacity, but more importantly it can also mean sacrificing efficiency. For example, the energy efficiency of integrated refrigerators is generally 2 stars lower than the equivalent best-in-class freestanding option. Clever cabinetry design, such as incorporating pocket doors, allows for traditional built-in appliances like built-in ovens and refrigerators to be concealed. Installing an integrated dishwasher in a tower provides a great aesthetic whilst improving ergonomics.

There is now a wide selection of integrated appliance options on the market. This includes ovens that can be installed within wall units; integrated hobs that flow seamlessly into benchtops; fridges that can be built directly into cabinetry; and dishwashers, washing machines and dryers that can be hidden behind cupboard doors. Kitchen accessories can also be integrated into kitchen designs, including wine coolers, chopping boards and coffee machines. These options provide designers more flexibility when designing within space constraints.

Size and footprint

When space is at a premium, careful measurements need to be made prior to appliance selection. There are a variety of compact appliance solutions on the market, including single ovens and streamlined cooktops with one or two burners. Some brands offer multi-function appliances such as combined ovens and microwaves, or combined ovens and cooktops. Consider ways to align appliances aesthetically, for example installing a 50cm integrated hood side on over a 30cm cooktop to reduce impact on overhead cupboards. Dishwashers also come in multiple widths and dimensions, with smaller holding capacities to save space.

Washing machines and dryers are also available in compact designs and a range of capacities. Front-loading washing machines and dryers can usually be stacked on

top of each other if horizontal space is limited. A washing machine and dryer combination may also be considered as a space-saving option.

Functionality

Kitchen appliances should provide the appropriate functionality for the user's lifestyle. If the user likes to cook complex meals, a four-burner stovetop is likely worth the space investment. For certain households, dishwashers may be unnecessary but without one, a larger kitchen sink may be required to clean dishes. Choosing the right appliances will ensure that no space is wasted, but it may require clever design to allow for the installation of full-sized products, not just compact products.

Style

Compact appliances should still add positively to the atmosphere of the room. Consider the style of the appliance and whether it fits into the aesthetic of the rest of the space. There are compact appliances that suit different styles, from modern to retro-vintage. Leading manufacturers also offer compact solutions in a range of colours and finishes.

Efficiency

Compact homes are often designed with sustainability and efficiency in mind. In general, appliances can account for around 30% of home energy use.⁵ When choosing an appliance, the costs of running the appliance should be compared to other models, with the most energy and water-efficient model preferred. The size and power of the appliance should be appropriate for the user's lifestyle needs.

For example, consider a heat pump (HP) dryer compared with a vented dryer. Based on yearly energy use (one wash per week), you can save approximately \$200 over five years, or up to 60%, using a HP dryer. Assuming two washed per week, that saving doubles to approximately \$400.⁶

The quality and longevity of the appliance should also factor into the equation – products that are designed to last will minimise the resources needed for repairs and replacement.

SOLUTIONS FOR SMALL-SPACE LIVING

by Electrolux

As a leading global appliance company, Electrolux places the consumer at the heart of everything. Through its family of brands, including Electrolux, AEG, Westinghouse and Vintec, as well as international brands Frigidaire and Zanussi, Electrolux sells more than 60 million household and professional products in more than 150 markets every year.

Each component in a compact kitchen or laundry must be perfectly planned, from the layout to the appliances, and all must work cohesively to run smoothly. Electrolux can help squeeze every inch of functionality from your kitchen or laundry with its range of appliances.

The 44L Electrolux Built-in Combination Microwave Oven (EVEM645DSE), which is a fan-forced 60cm oven with microwave function and full touch control, is ideal for a small kitchen space or as a secondary oven for a larger family. Combine with an integrated dishwasher that can be completely hidden behind cabinetry, such as the Electrolux 60cm Built-under Dishwasher (ESL69200RO) with MyTime™ tailored dishwashing cycles. When looking at your dishwasher installation consider installing this in a tower with your oven or combination compact oven to improve ergonomics.

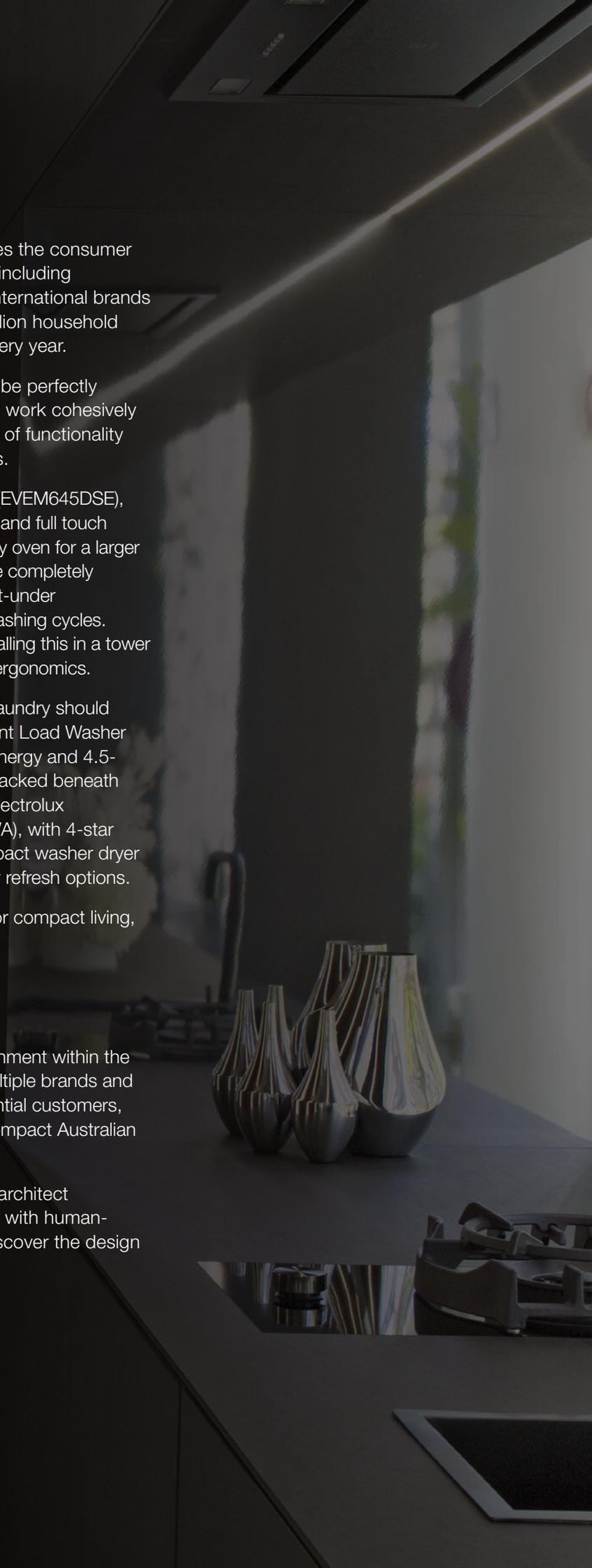
No matter how big or small, Electrolux believes that the laundry should be seamless and intuitive. The 8kg UltimateCare 500 Front Load Washer (EWF8024Q5WB), with Ultramix technology and 4-star energy and 4.5-star WELS rating, is a smaller-sized option that can be stacked beneath a compact dryer. For greater space savings, select the Electrolux 7.5kg/4.5kg Washer Dryer Combination (EWW7524ADWA), with 4-star energy and 4.5-star WELS rating. This efficient and compact washer dryer features Woolmark® Blue certification (wash) and vapour refresh options.

To discover Electrolux's full range of appliances perfect for compact living, visit electrolux.com.au/commercial

See it for yourself at Electrolux's 'Compact Urban Living' space

Electrolux is developing a 'Compact Urban Living' environment within the Electrolux Experience Centre at Mascot to showcase multiple brands and solutions within one cohesive living space. Open to potential customers, this thought-provoking installation represents a typical compact Australian apartment unit with indoor and outdoor elements.

In collaboration with Nicholas Gurney, a Sydney-based architect renowned for transforming and enhancing small spaces with human-centred utility, the space aims to inspire designers to discover the design possibilities and ingenuity of Compact Urban Living.



REFERENCES

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- ³ Bleby, Michael. "High land prices will push people back into apartments." Australian Financial Review. <https://www.afr.com/property/residential/high-land-prices-will-push-people-back-into-apartments-20210525-p57uwm> (accessed 20 October 2021).
- ⁴ Australian Bureau of Statistics. "8752.0 - Building Activity, Australia, Dec 2018." ABS. <https://www.abs.gov.au> (accessed 20 October 2021).
- ⁵ Australian Government. "Appliances." Energy.gov. <https://www.energy.gov.au/households/appliances> (accessed 20 October 2021).
- ⁶ These calculations are based on the energy rating labels on Electrolux EDH803R9WB 8kg Heat Pump Clothes Dryer compared with Electrolux EDV705H3WB 7kg UltimateCare vented dryer, and New South Wales average electricity rates from Canstar Blue: see <https://www.canstarblue.com.au/electricity/electricity-costs-kwh>

All information provided correct as of November 2021