

BUILDER INSIGHT



Balcony Design for Resident Wellbeing in MURB

Overview

Healthy housing is important for the wellbeing of all Canadians. Multi-unit residential buildings (MURB) are now the fastest growing housing type in urban centers and there are specific challenges in this type of housing including access to outdoor space, daylight, fresh air, and fostering a sense of community. Research shows that housing impacts people's health and wellbeing. The majority of new apartment buildings have balconies, and when properly designed, these indoor-outdoor spaces can extend the living space and contribute to better quality of life.

The size of a balcony and its location on the building can play a role in privacy, view and how often it is used. Desirable balconies are those that afford a range of activities and that are big enough to use. This report summarizes results of a study that considered the role of balconies in healthy MURB focused on resident experience. When planning or selecting between different apartment layouts and balcony designs, this information can be useful to building owners and occupants. Information in this bulletin is based on the results of a study that considered minimum sizes and ease of use, view and privacy, location of balconies in relation to suite layouts, and design for best unit daylighting.



Figure 1. **Covered balcony.**

A balcony should be large enough to use by a resident. This image shows a comfortable balcony with a sofa, rug, and plants.

BUILDER INSIGHT is a series of bulletins and companion videos designed to provide practical information about new and emerging technologies, best practices and current issues in residential construction to Licensed Residential Builders and others in the industry. Produced by BC Housing, this bulletin was prepared based on research conducted by researchers at Toronto Metropolitan University and University of Toronto.

Benefits of Balconies

Extend the Living Space

A balcony can provide an additional indoor-outdoor room for residents in an apartment. It should be accessible from the living and dining areas, not the bedrooms. The balcony should have sliding or opening doors in the center of the balcony, so they do not disrupt use of the space or position of furniture. The balcony needs to be large enough to use, with at least enough room to accommodate a small table and two chairs.

Connection to Nature

Balconies can be used by residents for views, access, and sensory connection to the outdoors. The balcony can be a positive experience of weather, time of day, seasonal changes and connection to the community. A balcony can be a place for potted plants, balcony gardening, and a space for a green view of nearby trees and parks.

Views to the City

Depending on its location and level of enclosure, a balcony can offer a private space or a semi-public environment, connected to fresh air, sounds, daylight and views to neighbours and the street. Qualities such as the daylighting of the space, level of enclosure, materials, and size of the balcony will determine how comfortable the space is for residents at different times of the day, and in different seasons.



Figure 2. **Glass enclosed balcony.**

A glass enclosed balcony can be a comfortable all-season place to relax and read a book with views of the city.



Figure 3. **Open air terrace.**

A large terrace can be furnished with a dining table and seating for residents to enjoy dinner outside in nice weather.



Figure 4. **Covered balcony.**

A balcony can provide a variety of seating options such as a sofa with side table or two stools and table, so that residents can use the space for different activities.

Balconies Provide Community Connection

In MURB, balconies are semi-public residential spaces that can often be seen by neighbours and the street. The design features such as level of enclosure, materials, size, and location all impact how the balconies are used by residents. This chart explores the role of balconies in apartment housing through the lens of Equity, Diversity and Inclusion (EDI). In the study, the impacts of balcony design decisions were considered in terms of public and domestic realms, and identified challenges in balcony design including the lack of regulation and guidelines. While many general conclusions can be drawn from the results of the study, the findings may not necessarily apply to all MURB and all balconies. Each building has unique features and location, and therefore the balcony uses and building performance characteristics are also unique.

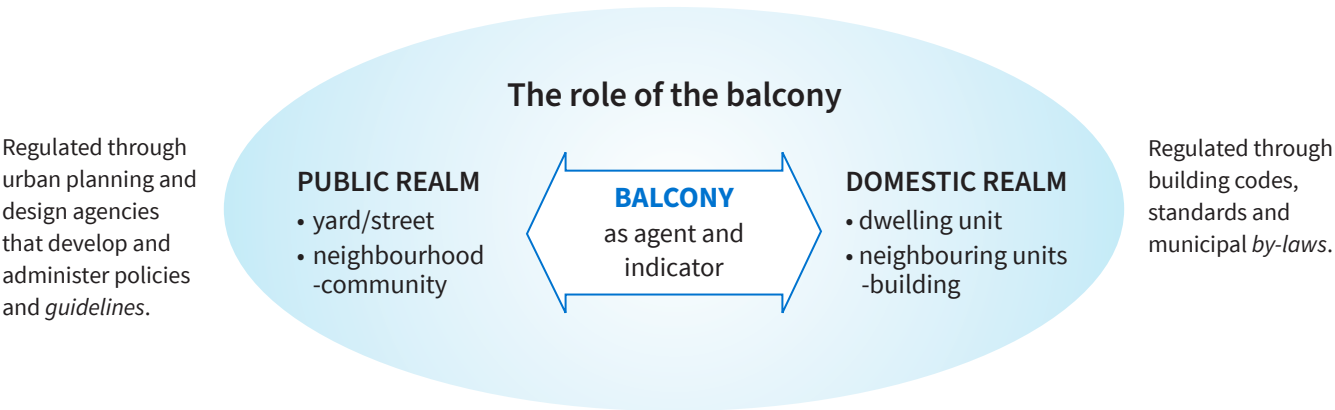


Figure 5. **Conceptual diagram of the role of the balcony in more equitable housing design.**
The balcony occupies a regulatory “no man’s land” that is not adequately addressed in urban planning and design guidelines. At the building level, only the basic health and safety requirements in codes and standards apply to balconies, if they are provided. This diagram shows the role of the balcony as a potential agent and indicator of equity in housing.

Balcony Design Considerations on Equity, Diversity, and Inclusion

Equity	Diversity	Inclusion
• affordability • accessibility • security • privacy • amenity (access to goods, services, facilities and public spaces) • resilience • environmental control • daylight, views, ventilation • hospitable outdoor space (yards, terraces, balconies) • solar access (right to light)	• singles • couples • families • homeless • immigrants/refugees/asylum seekers • children/adults/seniors • multi-generational • disabilities • race • religion • gender • sexual orientation • economic class/income level	• universal design • flexibility/adaptability • work from home • aging in place • palliative care • civility (balance between public and private realm) • hospitability (ergonomic, comfortable, safe) • post-occupancy evaluation • input to planning policies, design guidelines, codes and standards

Figure 6. **Table with balcony design considerations for equity, diversity and inclusion in housing.**
This table does not include aspects such as housing policy, instead focusing on what is within the purview of the housing designer. A set of metrics and indicators remain to be associated with each of the design parameters / criteria listed above.

Best Practices for Healthy Balconies in Canadian MURB

- sizes of balconies, minimum dimensions depth 1.8m, too small is not useful
- views and privacy - balustrade, privacy separators, social distancing
- extend the living space, location and uses, access from living room not bedroom, all season/adaptable
- balcony gardening potential, different uses
- design for best unit daylight, considerations for human centric lighting such as light during daytime, bedroom must get dark not floor-to-ceiling glazing

Design Balcony Guidelines

1. Size and Proportion

Balconies should be large enough to function as spaces for people, not merely facade elements. A well proportioned balcony enables inhabitants to the outdoor space by putting one or more chairs and a table outside.

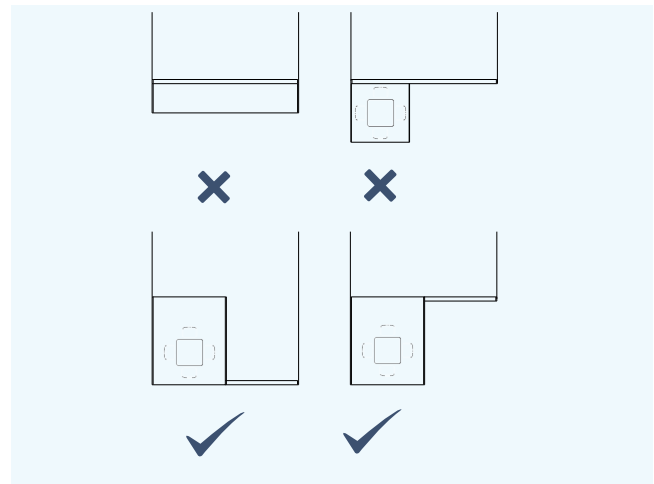


Figure 7. **Large balcony.**

Exterior photograph of River City 3 in Toronto Canada by Saucier + Perrotte/Zas Architects shows large balconies with glazed balustrades.

Figure 8 (above). **Balcony diagrams showing balcony sizes.**

Floorplan diagrams show recommended strategies for size and proportion.

2. Balconies Shade Below

All balconies that protrude from the facade shade the unit below to some extent. Balconies also impact the daylight availability inside dwellings, as they effectively extend the floorplate and therefore light does not reach as far into the unit.

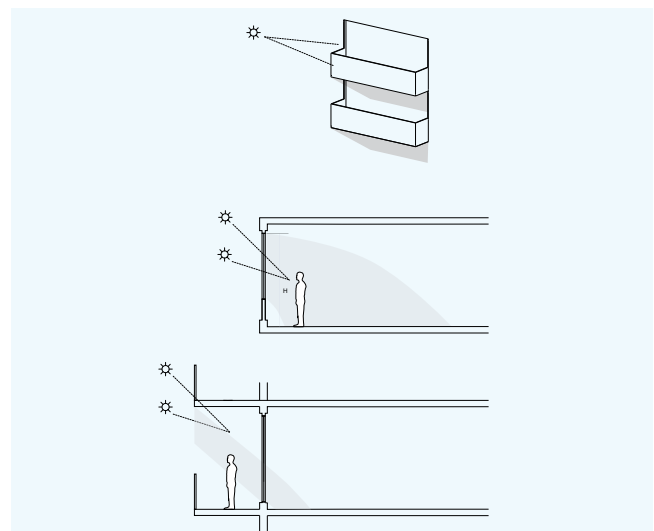
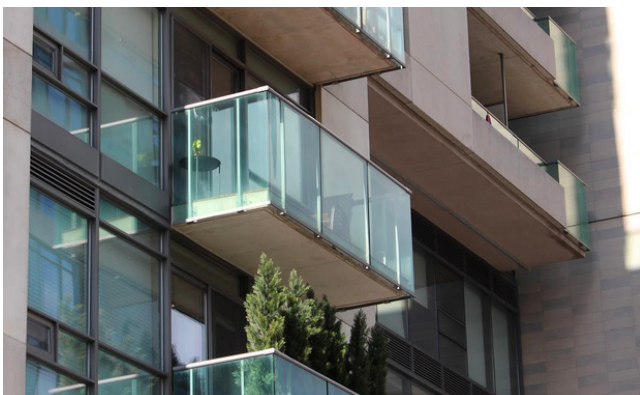


Figure 9 (left). **Balconies shading units below.**

Exterior photograph of Radio City in Toronto Canada by Peter Clewes shows protruding balconies with glazed balustrades.

Figure 10 (above). **Balcony diagrams.**

These illustrate how high sun angles are blocked by protruding balconies from units below.

3. Extend the Living Space

Balconies offer indoor-outdoor living space, therefore access to the balcony should be carefully considered. To extend the living space, balcony doors should provide access from living or dining spaces, not the bedroom.

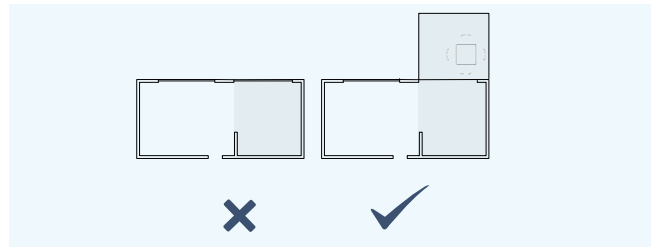


Figure 11 (left). **Access to the balcony.**

Exterior photograph of Solstice in The Park in Chicago USA by Studio Gang shows a living room with access to an open air balcony.

Figure 12 (above). **Balcony diagrams showing balcony sizes.**

Floorplan diagrams show the balcony is accessed from different locations.

4. Connect to Nature

Balconies can provide inhabitants with a visual and non visual connection to nature, opportunities for having plants, and growing food or herbs in balcony gardens. Balconies can be valuable and private outdoor spaces for inhabitants, important considerations in biophilic design.

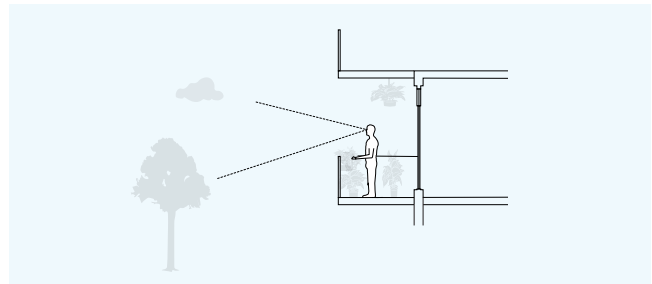


Figure 13 (left). **A balcony with greenery.**

Exterior photograph of Bosco Verticale housing in Milan Italy by Stefano Boeri Architects shows a balcony with built in planters with plants.

Figure 14 (above). **Balcony diagram showing a green view.**

Diagram shows possible green views from a balcony to trees beyond.

5. Glazed Balustrades

The materials and qualities of the balcony walls and balustrades impact the qualities of the balcony and the unit. While solid balustrades may provide more privacy, they also block views and limit light penetration into units, so glazed balustrades should be used.

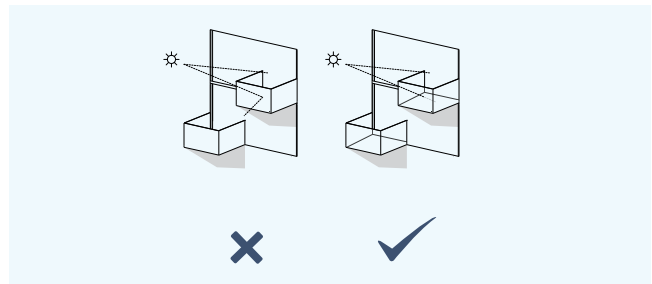


Figure 15 (left). **Glazed balustrades let light in.**

Exterior photograph of 251 1st Street Housing in New York, USA by ODA Architects shows stepped balconies with glazed balustrades.

Figure 16 (above). **Balcony diagrams showing materials.**

Diagrams show the impacts of solid and glazed balustrades for balconies.

6. Enclosed Exterior Space

Balcony size and placement on the facade should consider building orientation, wind conditions on the site, and also the practicality of outdoor balcony spaces at high levels of a building. An exterior balcony on the 10th floor may be comfortable to use for dining, whereas at the 50th floor, designers should consider inset, covered balconies to protect against wind and unease due to heights.

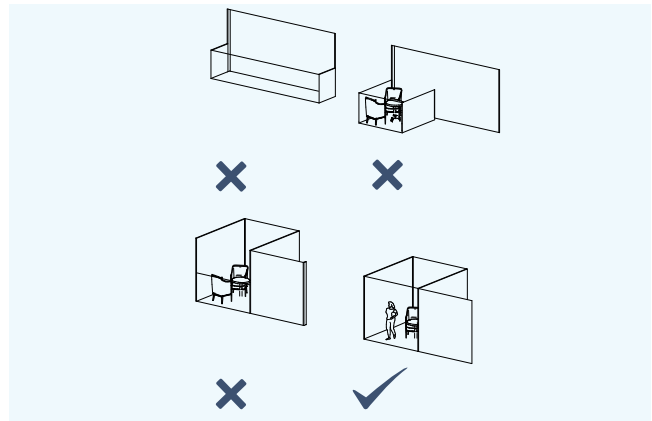
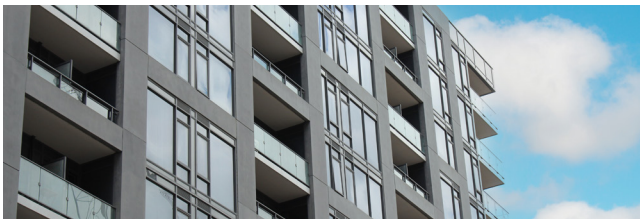


Figure 17 (left). **Recessed balustrades.**

Exterior photograph of Fabrik Condos in Toronto, Canada by Giannone Petricone Associates shows inset recessed balconies.

Figure 18 (above). **Balcony diagrams showing enclosure.**

Diagram shows recommendations for different amounts of enclosure.

7. Staggered Placement

For optimal daylight access, privacy, and sky views, arranging the balconies on a facade in a staggered arrangement is preferable.

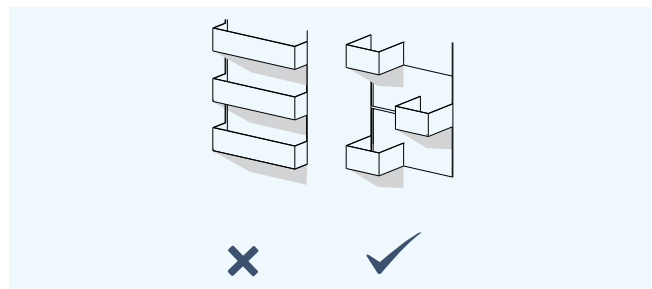


Figure 19 (left). **Balcony location on the building.**

Exterior photograph of Pier 27 in Toronto Canada by Architects Alliance shows balconies staggered across the front of the building.

Figure 20 (above). **Balcony diagrams.**

These show the recommended location of the balconies on the front of the building.

8. Consider Privacy and View

Residents will use their balconies more depending on external qualities such as privacy from neighbours and surrounding buildings, and also view quality. Partition walls between units on long balconies can provide visual privacy between balconies, but depending on orientation also limit light penetration. A better solution is to stagger the balconies on the facade.

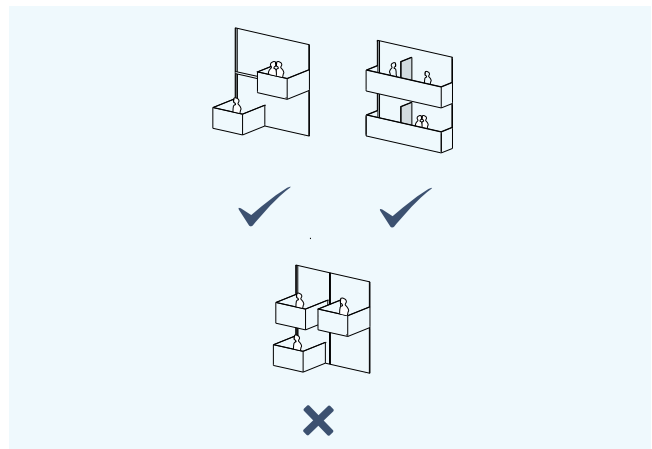
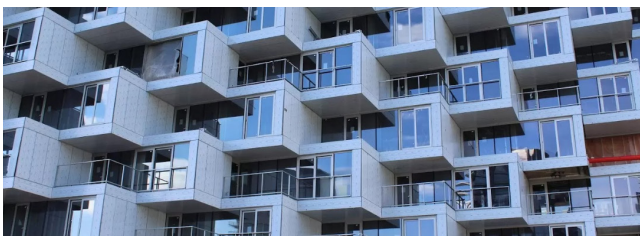


Figure 21 (left). **Balconies with privacy and view.**

Exterior photograph of Vancouver House by BIG Architects shows stepped balconies across the front of the building.

Figure 22 (above). **Balcony diagrams.**

These show design recommendations for privacy between suites.

Summary Recommendations for Healthy Balconies in Canadian MURB for the MURB Construction Industry

1. Holistic Design Strategies

Balconies can be important features in healthy housing, providing access to the outdoors, views outside, thermal variability, ventilation, and indoor-outdoor space. Balcony design must be part of the design of the unit, and they must be well located to connected indoor spaces, and appropriately sized for the number of residents. Attention must be paid to solar orientation, views, privacy, and thermal comfort and sensory experience.

2. Healthy Sleep

Resident access and views to balconies should be from living and dining spaces, rather than bedrooms. Balcony access from living and dining spaces promotes social uses of the balcony. Balcony doors are typically glazed and having access to the balcony from the bedroom often means utilizing excessive glazing in bedrooms, which impacts sleep quality. Human centric lighting promotes good daylighting in all rooms during the daytime. Extensive glazing in bedrooms should be avoided, there must be the potential to completely darken bedrooms.

3. Consider Climate

Balconies have the potential to be outdoor rooms and their size and shape, level of enclosure, location next to neighbours, and their materials, impacts how they can be used. Consider recessed, enclosed balconies in cold or wet climates to promote all-season resident use and avoid the shading of projecting balconies. Avoid irregular shaped balconies that may be hard to furnish. Avoid north facing balconies where possible, as solar access is important for resident experience and also for those who want to grow food and plants.

4. Sky Views and View Quality

In the city, dense urban contexts often obstruct large portions of resident views of the sky and may shade the building. Studies on restorative design have found that people value views of the sky from their windows. Providing positive and varied views from the balcony can contribute to quality of life. Design should involve careful consideration of the overall massing of the building and decisions around siting.

5. Physical Distancing

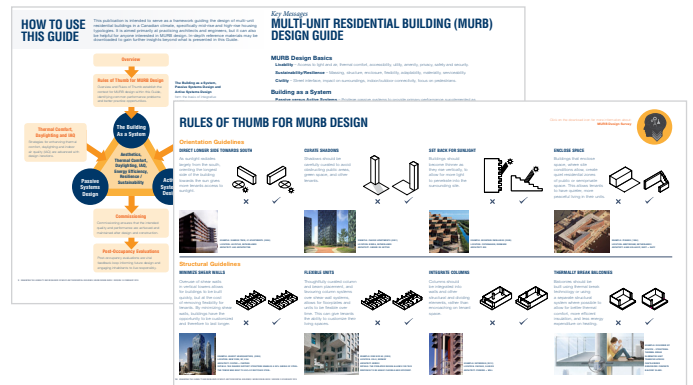
During the COVID pandemic, balconies provided social outlets and the possibility of interaction with urban spaces. The proximity to neighbours and location of balconies in relation to each other impacts how it is used. Consider off-setting the balconies on the facade so that all balconies can have a view of the sky and avoid connecting balconies. When balconies must be attached to each other, provide glazed privacy panels as buffers.

6. Resident Benefits

Affordability, security, and privacy are key considerations for healthy housing. In designing balconies, consider diverse resident needs including aging, accessibility, children, and different social and cultural norms. Consider how the balconies may be used by residents, such as work from home, universal design, and safety as important priorities.

More Information

- MURB Design Guide: Enhancing the Liveability and Resilience of Multi-Unit Residential Buildings
research-library.bchousing.org/Home/ResearchItemDetails/2041
- Builder Insight 12 – Reducing Energy Use in Multi-Unit Residential Buildings
<https://research-library.bchousing.org/Home/ResearchItemDetails/704>
- Builder Insight series on the Vienna House
<https://research-library.bchousing.org/Home/ResearchItemDetails/8790>



MURB Design Guide



Builder Insight 12 – Reducing Energy Use in Multi-Unit Residential Buildings



Builder Insight series on the Vienna House

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