Better Apartments Public Consultation Report

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OFFICE OF THE VICTORIAN GOVERNMENT ARCHITECT

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Summary

Public consultation on the Better Apartments Draft Design Standards was undertaken between August and September 2016. This report provides a summary of the levels of satisfaction, main issues and proposed changes by different types of submitters including community members, councils, the development industry, and planning and design practitioners.

A total of 253 submissions were received on the draft design standards from individuals and organisations. There were clear variances in satisfaction levels by different types of submitters for each draft design standard. Summaries for each of the 16 standards are provided including a snapshot of the most significant issues raised and the responses and changes made to each of the draft standards. The report also provides a summary of other issues raised in the submissions.

The responses and changes made to the draft design standards are the result of submission analysis, market testing and technical advice received from councils, acoustic engineers, architects, building and wind modelling experts, economists, environmental scientists, statutory planners and urban designers.

Each of the new apartment design standards is available at http://delwp.vic.gov.au/planning/policy-and-strategy/better-apartments

All submitters

More than half of all online survey submitters were satisfied or very satisfied with all draft design standards (except for the Building setback, Room depth, and Landscaping standards).

The standards that all online survey submitters were mostly satisfied with were:

- Waste
- Dwelling entry and internal circulation
- Water management
- Storage, and
- Solar access to communal outdoor open space.

Standards that online submitters were most dissatisfied with were:

- Building setback
- Room depth
- Landscaping
- Windows, and
- Natural ventilation.

They mostly wanted the standards changed for:

- Building setback
- Room depth
- Landscaping
- Communal open space, and
- Natural ventilation standards changed.

Community members

The majority of community members were satisfied or very satisfied with all of the draft design standards. About one third wanted changes to the draft standards: the majority wanted changes to the Room depth and Storage standards. Community members are genuinely interested in making internal living spaces better for occupants.

Councils

Council submitters were mostly satisfied with all of the draft design standards:

- Private open space
- Windows
- Natural ventilation
- Room depth
- Communal open space
- Storage, and
- Solar access to communal outdoor open space.

They strongly support better management of the amenity of apartment living by having more guidance in the planning and building systems.

Many councils wanted the draft design standards changed to improve their usability and application by practitioners.

The standards most council online survey submitters wanted changed were:

- Energy efficiency
- Noise impacts
- Building setback
- Accessibility, and
- Landscaping.

Development industry

Development industry submitters broadly supported the need for greater consistency with apartment development measures to ensure greater certainty about development decisions. However, they were concerned the draft design standards would increase construction costs, affect development yields, and reduce housing affordability.

They were most satisfied with the draft design standards for:

- Waste
- Water management
- Dwelling entry and circulation
- Noise impacts, and
- Accessibility.

The majority of development industry online survey submitters wanted changes to the draft design standards for:

- Building setback
- Room depth
- Windows
- Landscaping
- Natural ventilation
- Noise impacts
- Communal open space, and
- Solar access to communal outdoor open space.

Planning and design practitioners

Planning and design practitioners – architects, building designers, and planning consultants – had moderate support for more than half of the draft design standards. They supported having more design guidance for apartments to make decision-making more consistent however, they had mixed views about the type of standards that might apply.

Planning and design practitioners were most satisfied with the draft design standards for:

- Storage
- Waste
- Water management
- Solar access to communal outdoor open space, and
- Noise impacts.

They most wanted changes to the draft design standards for:

- Building setback
- Communal open space
- Room depth
- Windows
- Natural ventilation
- Landscaping
- Private open space, and
- Light wells.

Many practitioners wanted to know how the standards would work in practice.

Introduction

Purpose of this report

For over 18 months, the Victorian Government has been engaging with the community, councils, the development industry and other stakeholders about how to improve the liveability and sustainability of apartments.

In May 2015, *Better Apartments – A Discussion Paper* kick-started a statewide conversation about the internal amenity of apartments and their potential future design. During the engagement process, more than 1,700 people took part in a community survey and 145 submissions were received. The extensive consultation process and its outcomes were documented in the *Better Apartments – Public Engagement Report* published in December 2015.

In August 2016, the government published *Better Apartments – Draft Design Standards*. This consultation report summarises the feedback received about the draft design standards. Together with the results of the engagement process around *Better Apartments – A Discussion Paper*, this consultation report informs the introduction of minimum design standards for promoting high-quality apartment living opportunities in Victoria.

Context

The Victorian Government is committed to ensuring Victoria has liveable, affordable housing options that meet the long-term needs of the community.

Victoria's population is growing, and Melbourne is experiencing the majority of that growth. Between 2016 and 2051 Melbourne is projected to grow from a population of 4.5 million to 7.9 million. Melbourne's growth will require an estimated 1.5 million additional dwellings.

Apartments are the preferred housing choice for more and more Victorians because they are affordable and offer lifestyle benefits (such as being in a desired location near jobs, education facilities and other services).

We need new standards to keep up with changes in Victoria's housing market. Twenty years ago, only about five per cent of all new dwellings in Victoria were apartments in high density buildings. Over the year to May 2016, more than 25% of new homes approved for development were apartments in higher density buildings. The number of apartments in Victoria is set to increase over the next 40 years, and about two thirds of these are expected to be built in Melbourne.

Not all of Victoria's apartments are healthy places for people to live. Some have little or no access to natural light. Some are poorly ventilated and insulated, and are too noisy. Some have dysfunctional spaces and no room for storage. These are places that can hae a negative impact on peoples' health and wellbeing.

People want attractive places in which to live and invest. This requires fair and effective development assessment processes, similar to what people expect for detached housing.

Well-designed apartment developments will support Victoria's sustainable growth, and can contribute to reducing the effects of climate change and ensure the environmental impacts of urbanisation are minimised. It is important that apartments meet the needs of a diversity of households today and in the future (including the aged, people with disabilities, and families with children).

We want to protect and enhance Victoria's reputation for liveability and good design, and ensure that as our cities grow, they leave positive legacies for future generations.

How we consulted

In August 2016, the Department of Environment, Land, Water and Planning (DELWP) published the *Better Apartments Draft Design Standards* on its website for feedback. Feedback closed on 19 September 2016.

To address the apartment design and amenity issues raised in 2015, DELWP sought feedback on 16 draft design standards:

- Building setback
- Light wells
- Room depth
- Windows
- Storage
- Noise impacts
- Energy efficiency
- Solar access to communal outdoor open space
- Natural ventilation
- Private open space
- Communal open space
- Landscaping
- Accessibility
- Dwelling entry and internal circulation
- Waste
- Water management

The consultation included an online survey, information sessions, and discussions with key stakeholders.

Online Survey

Comments on the draft design standards were invited via an online survey (see Appendix A).

The survey had open- and closed-ended questions. Submitters were invited to rate their level of satisfaction (from very satisfied to very dissatisfied) with each draft design standard and to suggest changes. They could provide information within the survey's format and could attach further detailed comments.

Information Sessions

From 23 August to 6 September 2016, DELWP held four information sessions with local government and industry stakeholders:

- Session 1 was held on 23 August 2016 in the Melbourne Central Business District for industry practitioners.
- Session 2 was held on 30 August 2016 at Moonee Valley Race Course for local government practitioners.
- Session 3 was held on 1 September 2016 in the Melbourne Central Business District for industry practitioners.
- Session 4 was held on 6 September 2016 in the Melbourne Central Business District for local government practitioners.

The purpose of the information sessions was to explain the draft design standards and to clarify any technical issues with stakeholders before they lodged a submission. In all, 118 people attended the sessions.

Key Stakeholder Discussions

DELWP together with the Office of the Victorian Government Architect (OVGA) met with the Local Government Working Group, Project Reference Group, technical experts and other stakeholders about the draft design standards before and after they were published in August 2016.

The meetings enabled attendees to consider refinements to the draft design standards and how they would be implemented through the planning and building systems. The meetings considered best-practice design guidance, design review processes and ways to enable consumers to make more informed decisions.

Better Apartments Project Reference Group

The Better Apartments Project Reference Group includes representatives from peak local government, consumer and industry bodies. They are:

- Australian Institute of Architects
- Building Designers Association of Victoria
- Housing Industry Association
- Master Builders Association of Victoria
- Municipal Association of Victoria
- Planning Institute of Australia
- Property Council of Australia
- Real Estate Institute of Victoria
- Urban Development Institute of Australia
- Victorian Planning and Environmental Law Association

Local Government Working Group

The Local Government Working Group includes council officers with expertise in planning, urban design, heritage and environmentally sustainable development. It includes representation from:

- Ballarat City Council
- Baw Baw Shire Council
- Kingston City Council
- Manningham City Council
- Maribyrnong City Council
- Maroondah City Council
- Melbourne City Council
- Melton City Council
- Moonee Valley City Council
- Moreland City Council
- Port Phillip City Council
- Stonnington City Council
- Whitehorse City Council
- Wyndham City Council

Findings at a glance

We received 253 submissions about the draft design standards from individuals and organisations.

Figure 1 shows that 95 (38%) of the total submissions were from community members, 76 (30%) were from planning and design practitioners, 43 (17%) were from the development industry, 33 (13%) were from local government, and 6 (2%) were from other government agencies.

Of the 253 submitters, 231 (91%) completed the online survey.

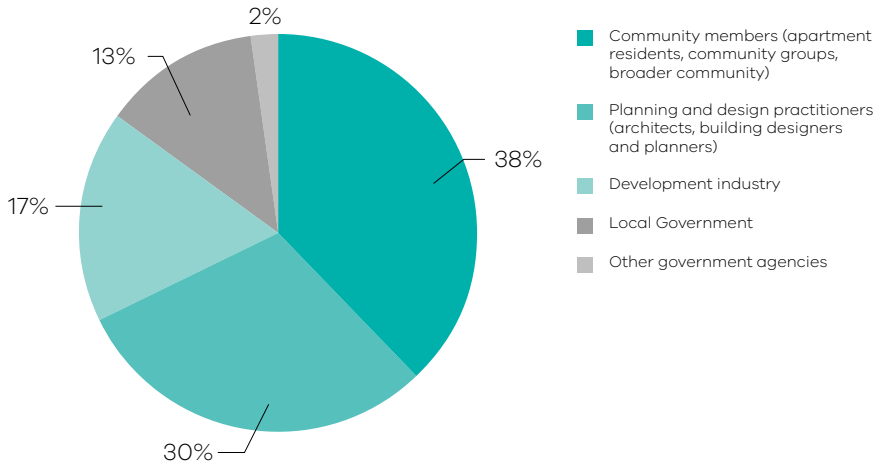

Figure 1 – Submitters to the draft design standards, by the type of submitter

All online survey submitters

The statistics below and in the 'Findings and responses' section exclude the 9% of submitters who did not complete the online survey. All submitter responses and information gained through the key stakeholder discussions are included in the qualitative findings.

The online survey asked about the extent of submitters' satisfaction with the draft design standards in improving the amenity of apartments.

Figure 2 shows the top five draft design standards with which all online survey submitters were satisfied or very satisfied with were: Waste (69%), Dwelling entry and circulation (66%), Water management (64%), Storage (63%), and Solar access to communal outdoor open space (61%). Over half of all online survey submitters were satisfied or very satisfied with all standards (except for the Building setback, Room depth, and Landscaping standards).

The top five draft design standards with which they were dissatisfied or very dissatisfied were: Building setback (46%), Room depth (45%), Landscaping (39%), Windows (36%), and Natural ventilation (34%). Many submitters who were dissatisfied asked for the standard to be clarified rather than changed.

For each standard, a small proportion of online survey submitters were undecided about their satisfaction. Submitters were most undecided about the Water management, Noise impacts, Energy efficiency, Accessibility, Dwelling entry and circulation, and Waste standards.

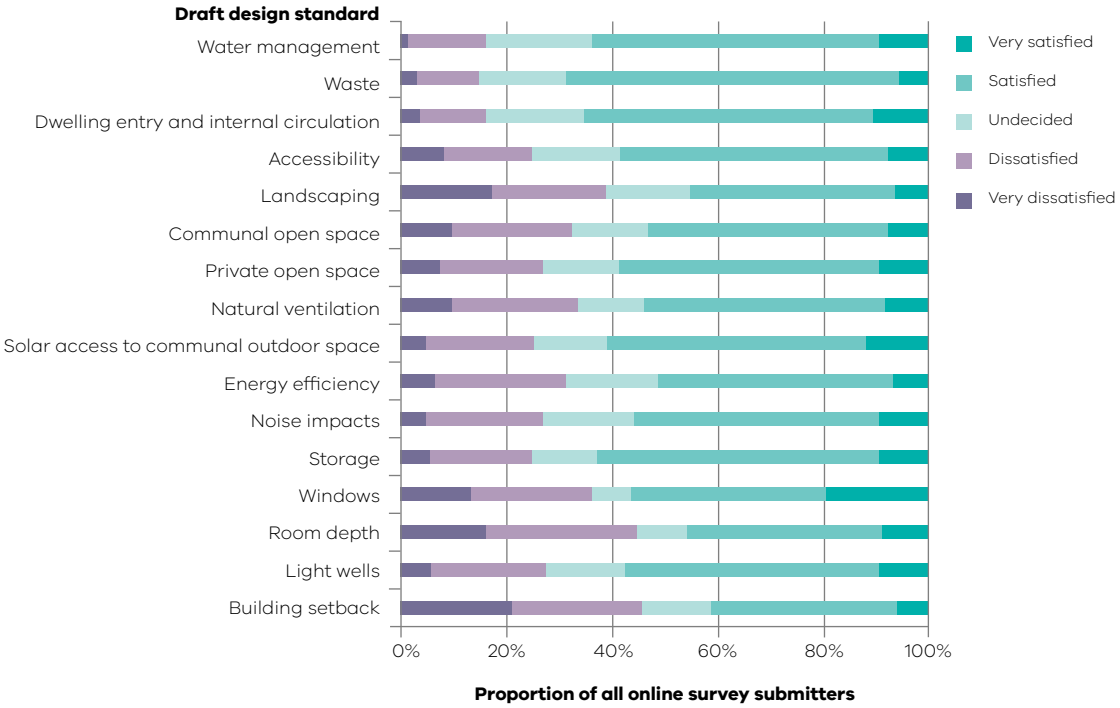

Figure 2 – Satisfaction with draft design standards, all online survey submitters

The online survey asked whether submitters wanted changes to the draft design standards. Despite a large proportion of submitters being generally satisfied with most standards, many of them wanted changes.

Figure 3 shows the top five draft design standards that most online submitters wanted changed were: Building setback (65%), Room depth (60%), Landscaping (58%), Communal open space (54%), and Natural ventilation (53%). The three draft design standards that fewest submitters wanted changed were: Water management (72%), Waste (66%), and Dwelling entry and circulation (66%).

The proposed changes varied across types of submitters. Community member submitters wanted changes to measures and wording. Planning and design practitioners were strongly focused on changes to measures. Councils were mostly wanting editorial changes to the standard, while also wanting changes to the measures. The development industry wanted the standards to be more flexible, and in some cases wanted the standard removed.

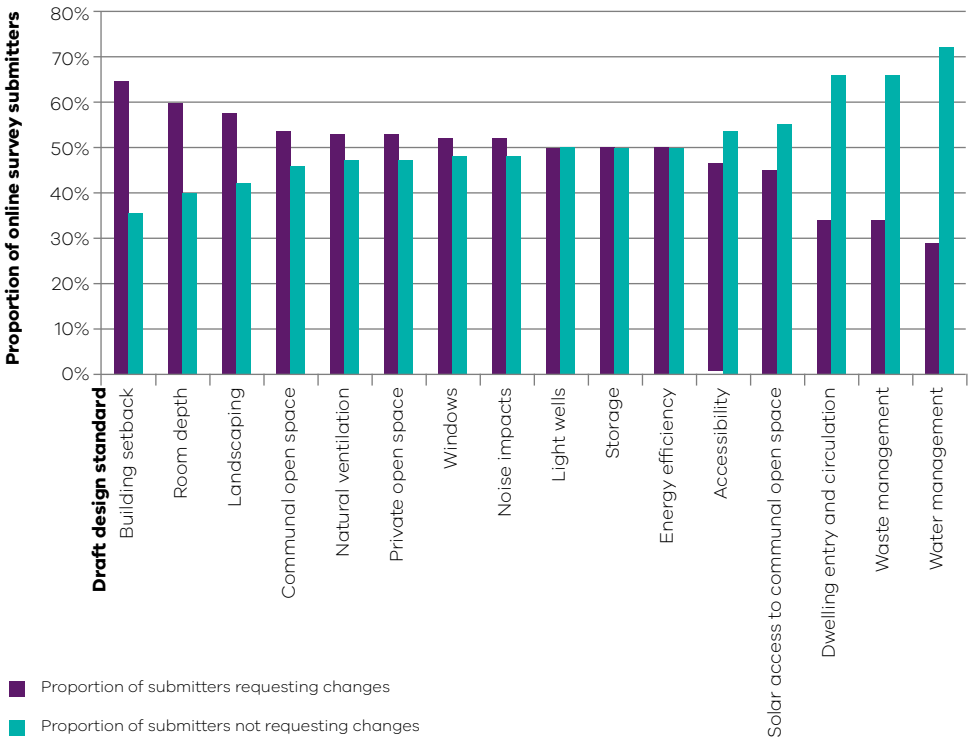

Figure 3 – Changes wanted to the draft design standards, by all online survey submitters

Community members

Community member submitters included residents of apartments, members of community groups and people who might consider living in an apartment in future.

Figure 4 shows the majority of community online survey submitters were satisfied or very satisfied with all of the draft design standards. This accords with the what the public engagement process in 2015 found: community members are genuinely interested in making internal living spaces better for occupants.

The figure shows the top five draft design standards with which community members were satisfied or very satisfied were: Dwelling entry and circulation (69%), Waste (63%), Windows (65%), Water management (63%), and Light wells (63%).

The top five draft design standards with which they were dissatisfied or very dissatisfied were: Room depth (35%), Building setback (32%), Storage (32%), Noise impacts (32%), and Communal open space (32%).

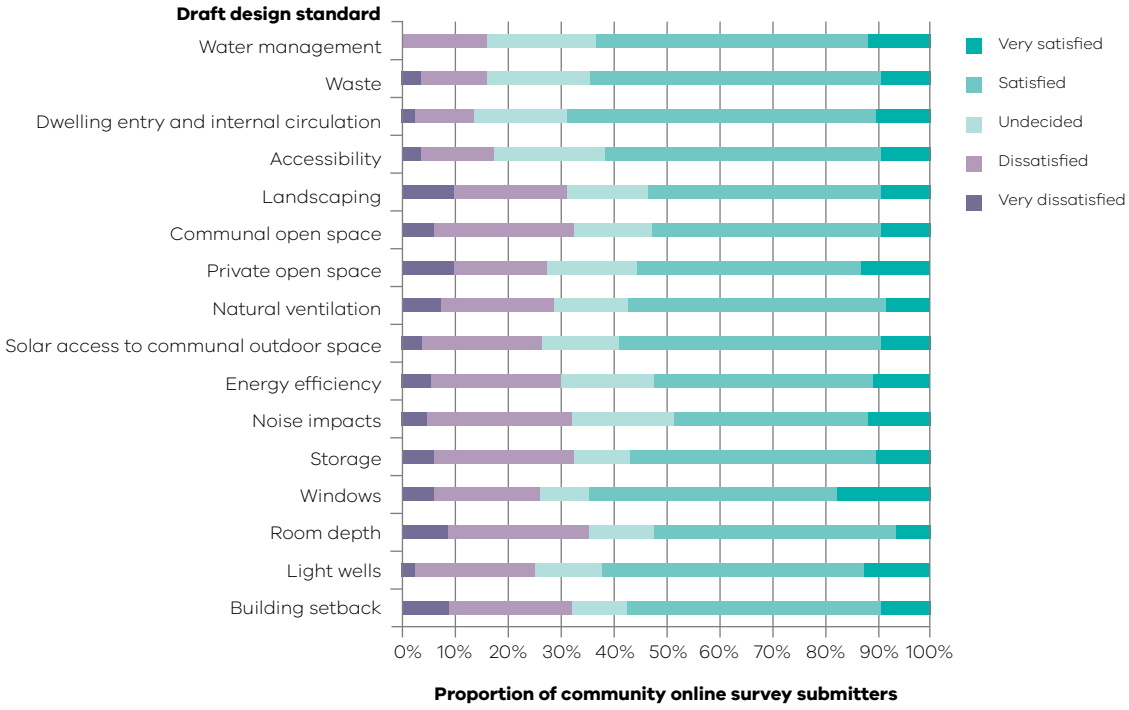

Figure 4 – Satisfaction with the draft design standards, community member online survey submitters

About one third of community member online survey submitters wanted changes to the draft design standards.

Figure 5 shows that the majority wanted changes to Room depth (53%), and Storage (51%) draft design standards. The public engagement process in 2015 found that apartment residents saw noise minimisation as one of the most important issues to be addressed.

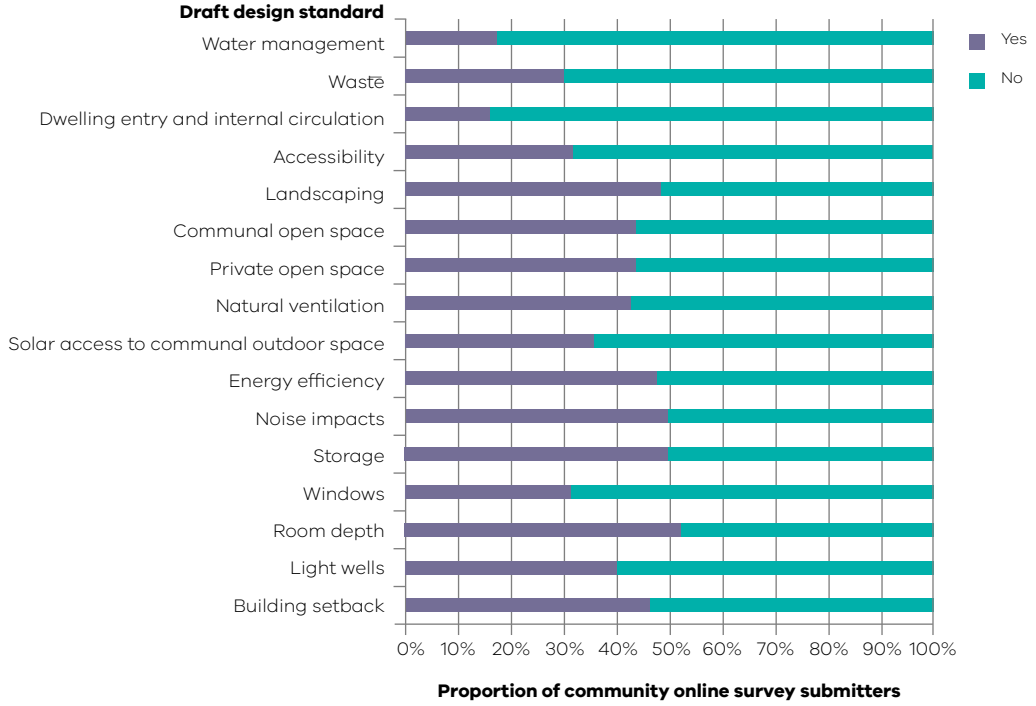

Figure 5 – Changes wanted to the draft design standards, community member online survey submitters

Councils

Council submitters were mostly satisfied with the draft design standards. This accords with what the public engagement process in 2015 found: councils strongly support better management of the amenity of apartment living by having more guidance in the planning system and possibly the building system.

Figure 6 shows the top five draft design standards with which council online survey submitters were satisfied or very satisfied were: Private open spce (90%), Windows (89%), Natural ventilation (89%), Room depth (85%), Communal open space (84%), Storage (84%), and Solar access to communal outdoor open space (80%).

The top five draft design standards with which they were dissatisfied or very dissatisfied were: Noise impacts (33%), Energy efficiency (26%), Landscaping (26%), Water management (22%) and Building setback (21%).

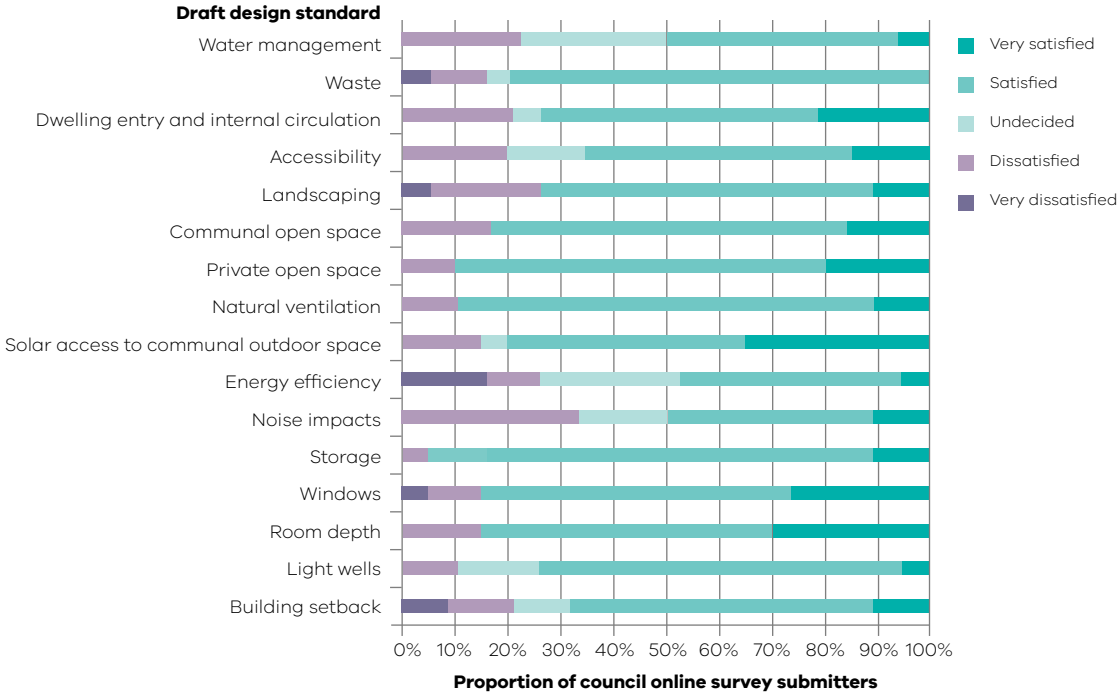

Figure 6 – Satisfaction with draft design standards, council online survey submitters

While there was satisfaction with many draft design standards, many council online survey submitters wanted the draft design standards changed to improve their useability and application by practitioners.

Local Government Working Group members emphasised the need for further work to make the wording of the draft design standards precise, to minimise uncertainty by decision-makers.

Figure 7 shows the standards most council online survey submitters wanted changed were: Energy efficiency (90%), Noise impacts (86%), Building setback (82%), Accessibility (82%) and Landscaping (80%).

Many council submitters were concerned about how the standards would apply in their municipalities. For example, some felt the Building setback and Landscaping standards could be improved to enable decision-makers to consider how apartment developments fitted in with the street and neighbourhood context.

Council submitters generally supported having environmentally sustainable design (ESD) standards such as energy efficiency, landscaping and water management. Some councils sought to clarify how their ESD policies would work with the standards.

Many council submitters wanted better guidance about minimum apartment space requirements. In particular, while some supported introducing minimum bedroom sizes to make apartments more accessible for a greater diversity of households (including those with people with limited mobility), some felt a minimum bedroom size could have the unintended effect of reducing living room sizes, in order to maintain yields.

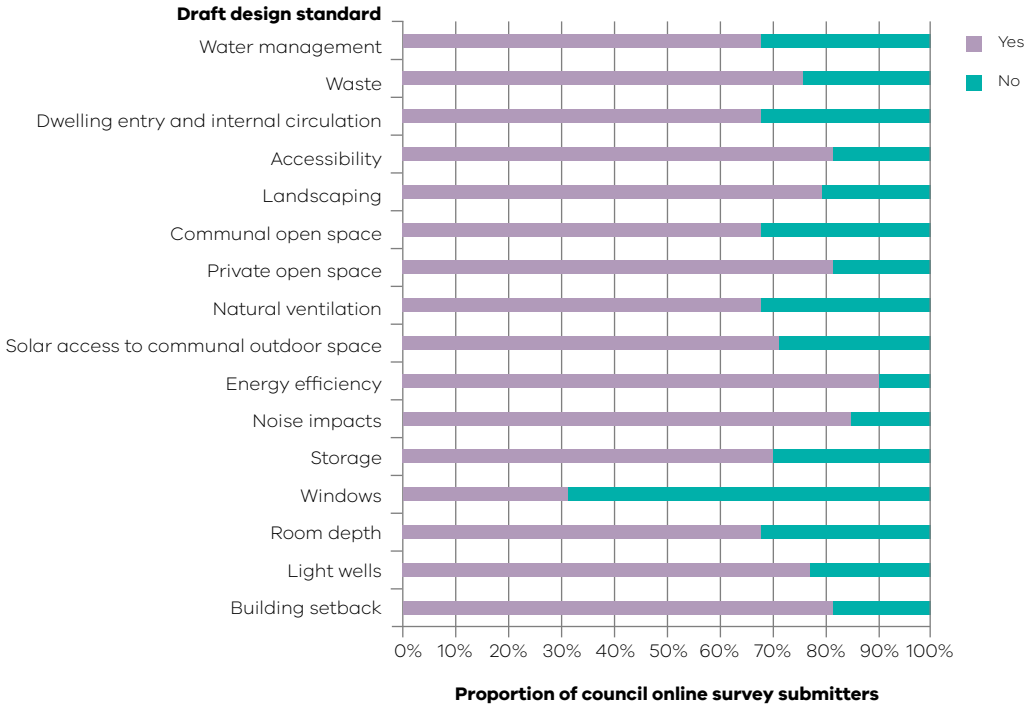

Figure 7 – Changes wanted to draft design standards, council online survey submitters

Development industry

The development industry had mixed views about the draft design standards. Discussions with the Better Apartments Project Reference Group and submitters indicated the development industry broadly supports the need for greater consistency with apartment development measures to ensure greater certainty about development decisions. However, there is concern the standards could increase construction costs, affect development yields, and reduce affordability by increasing the prices of apartments at the lower end of the market.

Figure 8 shows the top five draft design standards with which development industry submitters were satisfied or very satisfied were: Waste (74%), Water management (67%), Dwelling entry and circulation (65%), and Noise impacts (62%), and Accessibility (56%). The standards with which they were dissatisfied or very dissatisfied were: Building setback (74% dissatisfied or very dissatisfied), Room depth (74%), Windows (68%), Landscaping (66%), and Natural ventilation (55%).

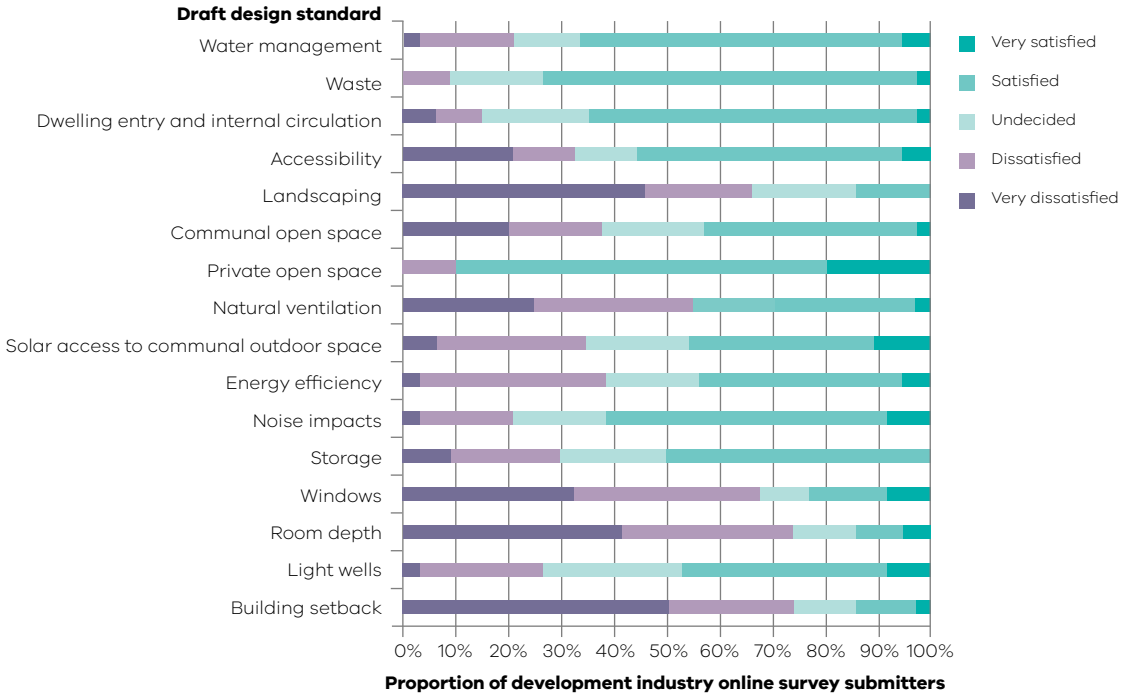

Figure 8 – Satisfaction with draft design standards, development industry online survey submitters

Figure 9 shows the majority of development industry online survey submitters wanted changes to the standards: Building setback (79%), Room depth (75%), Windows (75%), Landscaping (71%), Natural ventilation (66%), Noise impacts (57%), Communal open space (55%), and Solar access to communal outdoor open space (55%).

Many submitters sought clarification about how the standards would be applied in practice, and wanted a flexible approach. In particular, they wanted further information about how the standards will work with existing building regulations to avoid duplication.

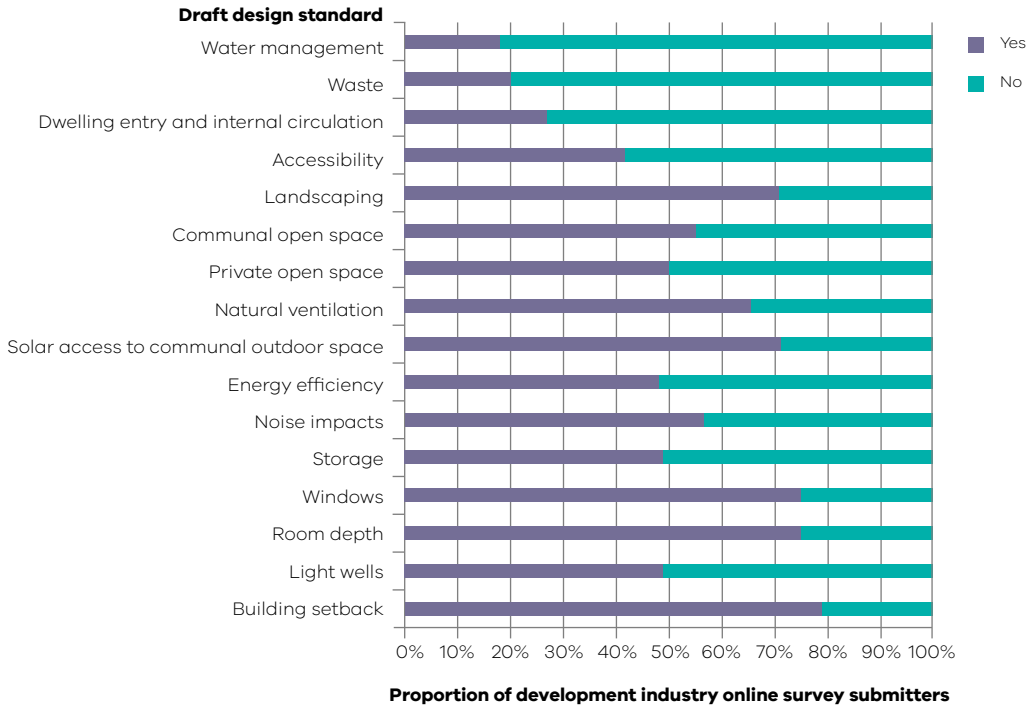

Figure 9 – Changes wanted to the draft design standards, development industry online survey submitters

Planning and design practitioners

Planning and design practitioners – architects, building designers, and planning consultants – had mixed views about the draft design standards, with moderate support for over half of them. This accords with what the public engagement process in 2015 found: while practitioners support having more design guidance for apartments to make decision-making more consistent, they have mixed views about the type of standards that might apply.

Figure 10 shows the top five design standards with which planning and design practitioner online survey submitters were satisfied or very satisfied were: Storage (73%), Water management (73%), Waste (73%), Water management (72%), Solar access to Communal outdoor open space (67%), and Noise impacts (64%).

The standards with which they were dissatisfied or very dissatisfied were: Building setback (56%) and room depth (51%). Less than 50% of planning and design practitioner online survey submitters were dissatisfied with the remaining standards.

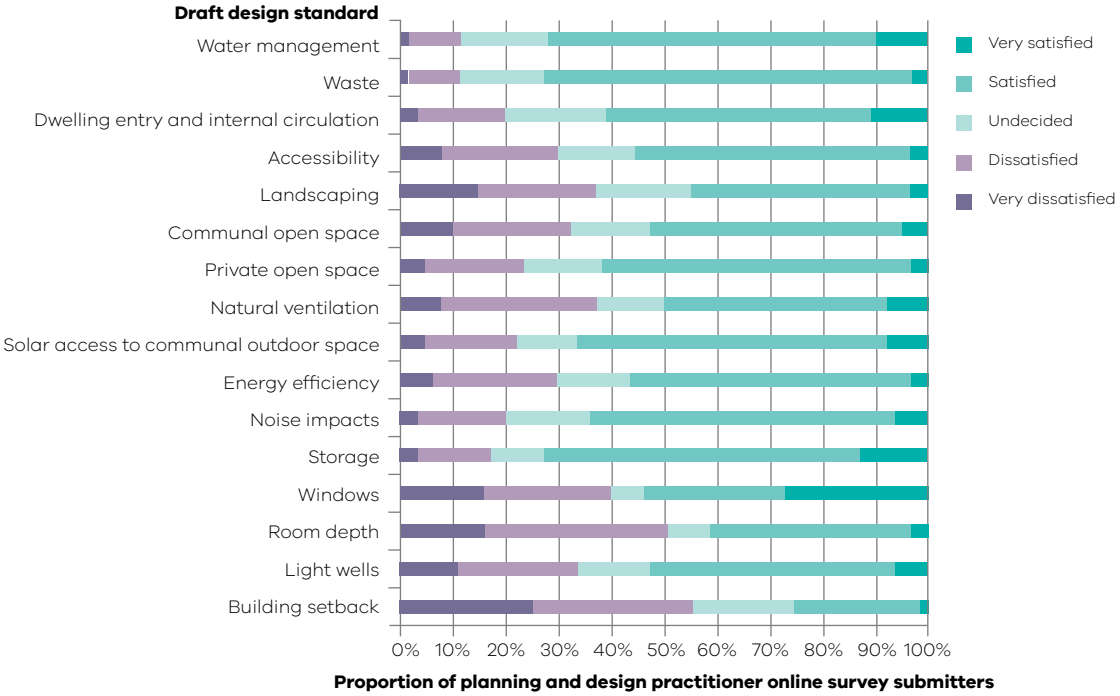

Figure 10 – Satisfaction with draft design standards, planning and design practitioner online survey submitters

Figure 11 shows the majority of planning and design practitioner online survey submitters requested changes to the standards: Building setback (76%), Communal open space (61%), Room depth (59%), Windows (58%), Natural ventilation (56%), Landscaping (56%), Private open space (54%), and Light wells (52%).

Many practitioners wanted to know how the standards would work in practice. For example, some were concern about the competency of planners to assess development proposals against the standards. Some thought the standards did not provide enough guidance to allow for alternative design solutions to be considered by decision-makers. Others queried how the standards would fit in with local contexts and whether councils would be allowed to vary the standards.

Some planning and design practitioners thought there was a need for a standard on minimum apartment size or room size, to ensure a functioning apartment.

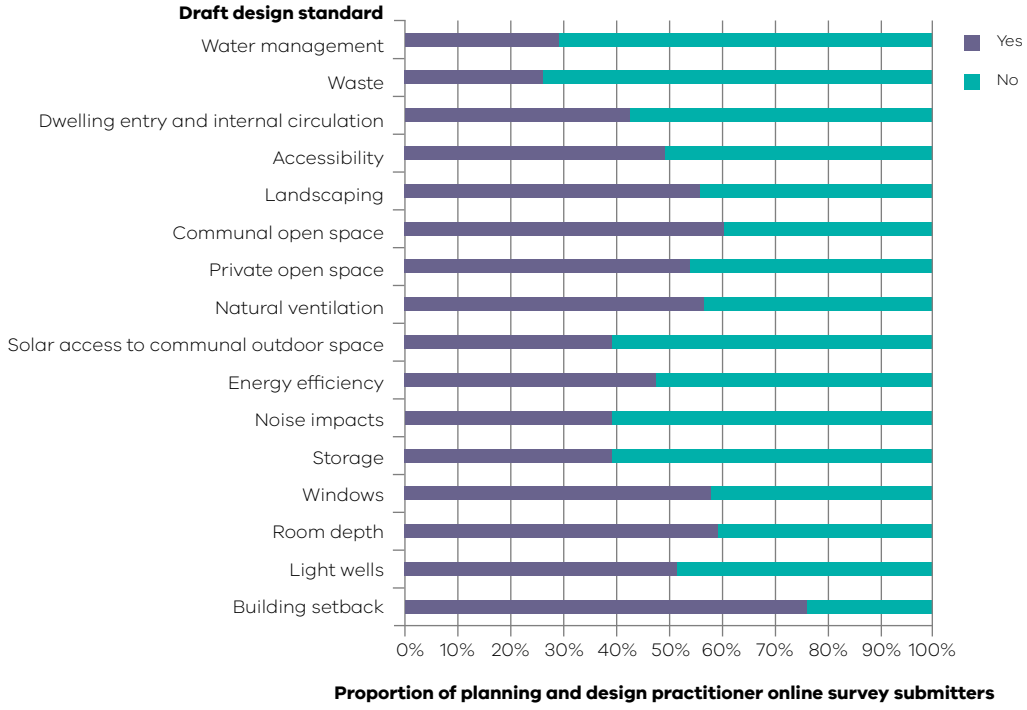

Figure 11 – Changes wanted to draft design standards, planning and design practitioner online survey submitters

Findings and responses

This section explains, for each draft design standard, what we found from the public consultation process, further work we did to investigate issues raised by the feedback and how we changed the standard as a result.

The further work included market-testing and technical advice from councils and private practitioner experts including acoustic engineers, architects, building and wind modelling experts, economists, environmental scientists, statutory planners and urban designers.

Building setback

Why this is important

Building setbacks ensure apartment developments are adequately set back from their boundaries and from other buildings on a site to provide reasonable daylight, sunlight, privacy and outlook opportunities for new dwellings. Setbacks also provide areas for private open space, communal open space and landscaping. These things improve the amenity of apartments.


DAYLIGHT


SUNLIGHT


PRIVACY & OUTLOOK

What you told us

- Building setbacks are important for outlook, daylight and privacy.
- The building setback in the draft standard could result in a loss of development yield due to the reduced building footprint, and make a large number of development sites unviable.
- Flexible setback distances are needed that respond to the site context, including the massing of buildings.
- The building setback distances in the draft standard are contrary or greater than existing local planning controls, which could result in confusion and uncertainty.
- The one-size-fits-all approach could result in poorly designed developments (for example, developments having a 'wedding cake' look).
- Setbacks from the front of the street are important, too.

Your satisfaction

Less than half (41%) of all online survey submitters were satisfied or very satisfied with the draft Building setback standard. However, views diverged by type of submitter: majorities of council (68%) and community member (57%) submitters were satisfied or very satisfied with the draft standard, compared with minorities of development industry (15%) and planning and design practitioner (25%) submitters.

Changes wanted

Of all the draft standards, Building setback had the greatest percentage of online survey submitters (65%) wanting the draft standard to be changed. Types of submitters most wanting changes were councils (82%), the development industry (79%) and planning and design practitioners (76%), compared with community members (47%).

Some submitters wanted the minimum setback specification deleted. Others wanted the application of it made more flexible by allowing consideration of the site context.

Some councils and other submitters wanted greater discretion in decision-making. Councils were concerned that they already have planning controls that take into account setbacks, and more importantly that the proposed setback in the standard would not take account of local variation.

> *'Councils should be given the ability to vary the standard through local schedules. Activity centres have a different development context than incremental change areas, and a varied building separation or boundary setback may help achieve local design and consolidation objectives better than the default 6 – 12 metre requirement. We support the proposed setbacks, however we note they will be difficult to achieve on some sites, particularly inner metropolitan areas with irregular shaped or narrow lots.' (Maribyrnong City Council)*

Development industry and planning and design practitioner submitters were more strongly opposed to the draft standard. Some asked that it be removed because the setbacks were more onerous than the setbacks proposed by council planning controls, and because it could affect the development yield of many building sites across Melbourne.

> *'As an architect and a developer, I believe the proposed setback will result in a lot of good development sites becoming unfeasible to develop.' (Desyne Developments)*

> *'The proposed setbacks could have a limiting effect on a number of sites given site dimensions and in some cases the width across a site between two existing roads. While I understand the theory behind the need for this standard, the application could limit the future potential development growth of Victoria.' (Windtech Consultants)*

Some community members asked that the standard be expanded to include front, side and rear setback, not just side and rear.

> *'Setbacks should also apply from the front boundary, not just the side and rear, and provide suitable privacy from street level.' (Anonymous)*

> *'It needs to be more than the 12 metres from the side or rear for over 25 metre high properties, but (the standard) doesn't even mention the setback from the front of the street.' (Individual)*

> *'The BVRG supports the inclusion of side and rear setbacks for apartment buildings but considers that front setbacks, where appropriate, should have been incorporated in the draft standards. In activity centres where apartment buildings are designed with setbacks that enable canopy plantings, the street amenity as well as that of the apartments are improved. Additional benefits include passive cooling and a softening of the canyoning effect resulting from building to boundary.' (Blackburn Village Residents Group Inc.)*

Our response

In response to the feedback, we market-tested the draft Building setback standard and refined it with technical experts.

Engineering experts advised that while there are varying methods for determining a daylight factor, there is no authoritative national or international standard.

As with any modelling methods, daylight factor modelling uses a range of assumptions and controlling these assumptions can be complicated to achieve consistent results.

Daylight factor modelling is an evolving field, meaning that methodologies will continue to change and while it can help the design process, it is not suitable to include as part of the standard at this stage.

The Department proposes to work with key stakeholders including the Green Building Council of Australia, Council Alliance for a Sustainable Built Environment (CASBE), Municipal Association of Victoria (MAV), councils and other industry bodies to consider the recognition and/or adaptation of acceptable existing tools, methods and benchmarks for meeting the Better Apartments Design Standards and/or the establishment of new tools, methods and benchmarks if necessary.

Market testing demonstrated that the draft design standard would significantly reduce yield for existing apartment developments considered to be examples of good design.

Market testing also emphasised the importance of considering the urban context in assessing building setbacks.

Council officers indicated that outlook is also an important consideration.

What we changed

We changed the draft design standard by:

- removing reference to specific minimum setback distances
- requiring building setback to achieve adequate outlook, as well as adequate daylight and privacy
- requiring buildings to be set back a reasonable distance from other buildings within a site
- adopting a qualitative assessment of building setbacks to ensure apartment developments are responsive to the site and urban context, with the application of zones and overlays prevailing over the building setback standard.

Light wells

Why this is important

Light wells help provide daylight and ventilation into dwellings.

DAYLIGHT

NATURAL VENTILATION

What you told us

- Light wells should be discouraged as the primary light source for dwellings or habitable rooms.
- The draft standard affects the delivery of other standards, including Building setback and Noise impacts.
- The standard should introduce a 'daylight factor' – a technical measure to ensure each apartment gets adequate daylight.
- The light well dimensions in the standard are inadequate. The size of light wells should be increased to allow for more daylight, while ensuring privacy and minimising outside noise.
- The standard should allow for innovative ways to provide adequate daylight using a performance-based approach.
- Apartments on lower levels of high-rise apartment buildings do not benefit from light wells.

Your satisfaction

Over half (58%) of all online survey submitters were satisfied or very satisfied with the draft Light wells standard. However, views diverged by type of submitter: majorities of council (74%) and community member (63%) submitters were satisfied or very satisfied with the draft standard, but planning and design practitioner (52%) and the development industry (40%) submitters were less so.

Changes wanted

Half of all online survey submitters wanted changes to the Light wells draft standard. Types of submitters most wanting changes were councils (77% of submitters) and to a lesser extent planning and design practitioners (52%), the development industry (48%) and community members (40%).

Many councils, planning and design practitioners and development industry submitters wanted to strengthen the performance-based approach to determining adequate daylight access. Some submitters suggested including a performance standard similar to that specified in the Built Environment Sustainability Scorecard (BESS) assessment tool. They wanted a daylight factor to help the responsible authority decide on the design of light wells and to ensure it could accurately determine what was an adequate level of daylight.

BESS is an online tool for assessing the sustainability of development proposals at the planning stage. It assesses projects against a benchmark in nine environmental categories, with each category contributing to the total score. The tool sets a minimum pass rate for indoor environment quality, energy, water and stormwater. It also uses a daylight factor as the basis to measure daylight access to living areas and bedrooms. A small number of Victorian councils have approved use of the scorecard in their local policies on the basis that the state government will determine performance measures for environmentally sustainable design (ESD) for the planning and building systems.

> *'Reference to a measurable daylight access standard … needs to be provided as it is felt that without this ascertaining an adequate level of daylight cannot be accurately established.' (Melton City Council).*

Other submitters said that living areas and primary bedrooms of an apartment should not rely on daylight from a light well because they considered the level of daylight received was considered to be poor quality for habitable rooms. In particular, they said apartments on the lower levels of high-rise buildings would not significantly benefit from light wells.

Some submitters said that adequate daylight would only be provided if the size of light wells was increased. However, some were also concerned that a light well could increase noise levels in an apartment and reduce privacy.

> *'It is no use implementing light wells if the problem of adjacent window overlooking within the light wells is not addressed. Privacy screening is a very poor design solution and curtails available light to windows within light wells. The draft standard only addresses part of the problem … it needs more thought'. (Anonymous)*

> *'Definitely support living rooms not being able to solely have a light well as its light and ventilation source. Light wells are more than just about light: – when windows are open, they transmit sound. A light well then amplifies sound from one bedroom/living room to another. This provision should not just be for bedrooms.' (Anonymous)*

Our response

In response to the feedback, we tested the Light wells standard with technical experts, and found the following:

- As noted under Building setback, experts advised that there is no authoritative national or international standard for determining a daylight factor. Daylight modelling is very complicated and in the absence of an agreed assessment method, it is difficult to achieve consistent results.
- BESS offers a user friendly interface to guide the performance of buildings on a range of environmental design considerations. The 'daylight factor' measure it uses to determine acceptable daylight access to an apartment is a guide only and is not currently suitable as a state-wide performance standard. When accepted daylight modelling metrics and validated testing procedures become available, an update to the standards will be considered.

  The Department proposes to work with key stakeholders including the Green Building Council of Australia, Council Alliance for a Sustainable Built Environment (CASBE), Municipal Association of Victoria (MAV), councils and other industry bodies to consider the recognition and/or adaptation of acceptable existing tools, methods and benchmarks for meeting the Better Apartments Design Standards and/or the establishment of new tools, methods and benchmarks if necessary.

- Light wells do not provide adequate daylight access in the majority of cases and should only be permitted as a secondary light source to non-primary bedrooms, service rooms and circulation areas.
- The proposed dimensions for light wells require a lesser setback than those required from the side and rear boundary. This will result in an over reliance on light wells for daylight and natural ventilation access in an attempt to avoid the boundary setback requirements.
- Light wells can create amenity issues for apartments, particularly in relation to privacy and noise.

What we changed

- We removed the standard so as to not encourage the use of light wells as a design response.
- We incorporated the assessment of light wells into the Building setback standard.

Room depth

Why this is important

An apartment's room depth and ceiling height are important determinants of the amount and quality of daylight its habitable rooms receive and are important contributors to the health and wellbeing of its occupants.

What you told us

- The draft design standard could be detrimental for room layouts, including those of open-plan kitchens and living areas.
- There should be different room depth requirements for different rooms.
- The draft standard should define 'adequate daylight'.
- The amount of light entering a room depends on the size of the window(s).
- The use of a ratio is too restrictive, particularly for south-facing apartments.
- The minimum ceiling height should be 2.7 metres.
- The draft standard disadvantages corner apartments and larger apartments.

Your satisfaction

Less than half (46%) of all online survey submitters were satisfied or very satisfied with the draft Room depth standard. Of all types of submitters, councils submitters were the most satisfied (85%) with the draft standard, then community member (52%), planning and design practitioner (41%) and development industry (15%) submitters.

Changes wanted

Of online survey submitters, 60% wanted changes to the draft Room depth standard. Of all standards, only the Building setback standard had a higher percentage of submitters (65%) wanting a standard changed. Types of submitters most wanting changes were development industry (75%) and council (68%) submitters and to a lesser extent planning and design practitioner (59%) and community member (53%) submitters.

While submitters supported having minimum room depths to address daylight requirements, all types of submitters were concerned about the impact of the standard on room layouts, particularly on living areas. Some submitters suggested kitchens be excluded from the room depth requirements because people would normally use artificial light to work in the kitchen.

'The 5.4 m habitable room depth would be unlikely to accommodate a typical open-plan living, dining and kitchen, and the standard does not allow a south-facing open-plan area to be increased to an 8 m depth.' (Maribyrnong City Council)

'The requirement to have all habitable rooms facing the external of the building and (based on south facing) being no deeper than 5.4 m will greatly affect the possible layouts for apartments and the effective extent of floor plate, this requirement being balanced up with light courts and additional set back will again significantly reduce the number of sites that are suitable for development with in the areas that should be targeted for high to medium-density living.' (Anonymous)

'The standard prevents a deep apartment plan and does not allow a 9 m length for a typical open-plan kitchen, living, dining area which is fundamentally flawed.' (Anonymous)

'By dictating minimum room depths, it places severe restrictions on how an apartment can be planned. The standard should offer an alternate, performance-based method for achieving the objective.' (Anonymous)

Some councils and planning and design practitioners asked that the standard define what is meant by 'adequate' daylight and provide a minimum daylight lux level to help the decision-making process.

'Drop maximum depth of apartment and rely on daylight modelling.' (Anonymous)

'Reference to a measurable daylight access standard…needs to be provided when applying this standard as it is felt without this connection it is difficult to ascertain if an adequate level of daylight has been provided. A better demonstration of why the proposed room depth/ceiling height ratios have been devised and the measure of room depth could be achieved through the inclusion of additional diagrams that demonstrate the extent of daylight penetration into habitable rooms as defined by the daylight access measure.' (Melton City Council)

'To ensure adequate kitchen lighting and that the energy efficiency of the apartment is maximised, an 8m depth should only be acceptable when the kitchen is not on the wall furthest from the window.' (Melbourne City Council)

Many councils supported the standard's objective and said its intent could be made clearer. Some council submitters also said there should be a minimum ceiling height standard to ensure the objective would be achieved in all development scenarios. A minimum floor-to-ceiling height of 2.7 m was suggested for a habitable room, and 2.5 m for a kitchen. Other council submitters wanted greater discretion in determining room depths and ceiling heights.

'Maximum room depths should be set by the design standards. Establishing a relationship between ceiling height and room depth would help provide a sense of spaciousness, and improve the liveability of smaller spaces.' (Darebin City Council)

'The room depth to ceiling height ratio of 2:1 or 2.5:1 with a maximum depth of no more than 8 m are generally supported, however, this is going to have major implication on housing affordability. It is also likely that developers will seek an increase in building height due to the reduced buildable area, which will have implication on other offsite amenity impacts, e.g. overshadowing, which is not assessed.' (Whitehorse City Council)

Our response

In response to public consultation feedback, we tested the draft Room depth standard with technical experts and found:

- A room-depth-to-ceiling height ratio of 2.5:1 can provide good outcomes in single-aspect apartment plans, with appropriate consideration of setback.
- A daylight factor is not a suitable approach as there is no authoritative national or international standard and no agreed technical basis for approaches advocated by different stakeholders.

What we changed

We changed the draft standard by:

- Applying a single room-depth-to-ceiling height ratio of 2.5:1 for all apartments.
- Increasing the maximum permissible room depth for open-plan living areas from 8 m to 9 m for south-facing habitable rooms.

Windows

Why this is important

Windows provide access to natural daylight, direct sunlight and airflow into habitable rooms of apartments, contributing to the health and wellbeing of occupants. They can reduce energy use by enabling occupants to go about their daytime activities without using artificial lighting. Daylight conditions vary according to the time of day, the season and the weather. Apartments should preferably let in direct sunlight: it helps make the living environment pleasant and reduces energy use by providing passive heat in cooler weather.

What you told us

- Although though the standard ensures all habitable rooms have a window, there is no certainty that will ensure a good outlook.
- Using 'snorkel/saddleback' layouts can have good outcomes and should be allowed.
- Specifying that a window should be visible from any point in the room is impractical and limits innovative design responses.
- The standard should set a minimum window size.
- The standard should refer to a 'daylight factor' for measuring what is 'adequate' daylight.

Your satisfaction

More than half (56%) of all online survey submitters were satisfied or very satisfied with the draft Windows standard. However, views diverged by type of submitter: majorities of council (89%) and community member (65%) submitters were satisfied or very satisfied with the draft standard, then planning and design practitioner (54%) and developmernt industry (24%) submitters.

Changes wanted

Of all online survey submitters, 52% wanted changes to the draft Windows standard. Types of submitters most wanting changes were development industry (75%) and council (70%) submitters – even though many councils said they were satisfied with the draft standard – with 58% of planning and design practitioner and 32% of community member submitters also wanting changes.

Mainly, submitters wanted:

- a change to the requirement that a window be 'directly visible from any point in the room'.
- the standard to include a minimum window size to allow sufficient daylight into dwellings
- the standard to allow for saddleback bedrooms.

Some councils and community members wanted the standard to include a minimum window size, to ensure adequate daylight.

> *'Apart from access to daylight another equally important objective of window location, design and consideration is to allow some outlook for the enjoyment and well-being of the occupants. It is important that all habitable windows are designed with some outlook and an ability to control outlook as well as sunlight in order to suit the changing occupant needs throughout the day/ the seasons.' (Greater Dandenong City Council)*

> *'Disallowing saddleback apartments will result in longer, skinnier buildings with reduced floor plate efficiency which will not be suitable on many sites.' (Cedar Woods Properties)*

Many development industry, planning and design practitioner and community member submitters wanted greater flexibility. They said snorkel bedrooms can provide acceptable daylight for bedrooms, if designed well.

> *'Properly designed saddleback bedrooms can easily meet current best practice for daylight with appropriate throat dimensions.' (Anonymous).*

Other development industry, planning and design practitioners and community members felt that the requirement for a window to be 'directly visible from any point in the room' was impractical, because it assumes that all rooms will be rectangular and will not allow for saddleback room layouts.

> *'Shouldn't need to see a window from all locations within a room. This will impact the quality and functionality of practical room design. That a window should be visible from any point in a bedroom or study is unnecessary and an overtly simplistic control. We suggest that having the window visible from 85% of the room is a far more reasonable and practical standard that will not adversely affect residents' amenity.' (Anonymous)*

> *'Agree that most habitable rooms should have access to direct light, however the standard makes little sense and is confusing. A room might have a window that is visible from any position in the room but that is unlikely to be determinative as to whether daylight levels are acceptable or not. Furthermore, not all habitable rooms require direct access to a window. Except where they double as a bedroom, studies do not typically require a window. Likewise, the standard should not prohibit snorkel-style windows to a bedroom. Such arrangements are able to provide a reasonable level of daylight and amenity to a bedroom, providing they are designed with an appropriate width-to-depth ratio.' (Salta Properties)*

Some submitters also proposed using other measures to specify an acceptable size for windows (such as a floor-area percentage, as used in the BESS assessment tool).

Our response

In response to the feedback, we tested the draft Windows standard with technical experts and found:

- Snorkel/saddleback bedroom windows can provide adequate daylight when well designed and where minimum specified dimensions are met.
- There is no authoritative national or international standard for the use of a daylight factor and no agreed technical basis for approaches advocated by different stakeholders.

What we changed

We changed the standard by:

- Making the requirement about the location of a window in a habitable room more flexible.
- Permitting snorkel/saddleback layouts for bedrooms where minimum specified dimensions are met.
- Borrowed light will continue to be an unacceptable design solution.

Storage

Why this is important

Having access to convenient, accessible and secure storage improves the functionality of apartments.

INTERNAL SPACE

STORAGE

What you told us

- Well-sized, flexible storage areas are preferable, being adjustable as people and their needs change over time.
- Storage areas inside an apartment are preferable to external storage (for example, storage located above the bonnet of a car).
- The standard should specify the minimum internal apartment storage requirements (including in bedrooms, kitchens, bathrooms) to avoid most storage being provided in car parks or on private open space.
- The government could provide guidance about what is meant by 'conveniently accessible and secure' storage areas.
- The government could consider how providing additional storage might affect construction costs.
- People living in studio apartments have different storage needs to people living in one bedroom apartments.
- The standard could address the security and accessibility of communal storage external to an apartment.

Your satisfaction

The majority (63%) of all online survey submitters were satisfied or very satisfied with the draft Storage standard. Council (84%) submitters were the most satisfied, then planning and design practitioner (73%), community member (57%), and the development industry (50%) submitters.

Changes wanted

Submitters were evenly divided (50% 'yes', 50% 'no') in wanting the draft Storage standard changed. Despite being the most-satisfied, 70% of council submitters wanted changes. Planning and design practitioner (40%), development industry (48%) and community member (51%) submitters were less concerned about changing the standard.

Some councils said 'over bonnet storage' in car parks should be discouraged because it is difficult to access and has limited functionality (for example, it can be hard to lift heavy items in to these spaces). Others said that storage should be readily accessible: basement storage is often not well-used and not always physically accessible for some occupants.

'Discourage the typical 'above car bonnet' storage being used as the sole or primary storage for any apartment due to its limited functionality. It is also difficult to access for disabled people and the elderly. The above-car-bonnet storage is only acceptable when being used as a secondary storage to complement the floor-to-ceiling height storage cage that is proven more favourable from a flexibility and access point of view.' (Greater Dandenong City Council).

Some community members wanted the total minimum storage volume be doubled to meet their household needs.

'There needs to be a lot, lot more storage! It is a really big issue in apartment living.' (Anonymous).

Other community member and council submitters wanted the standard to specify that a percentage of storage be provided inside the apartment, for safety reasons and to better align with other Australian jurisdictions.

'While provisions for storage in the apartments are important, at least some of the storage should be internal (the draft currently allows all storage to be provided externally, in different parts of the building. This is in contrast to the NSW provisions which require 50% of storage to be internal). Providing all storage outside the apartment might present a problem for people with reduced mobility.' (Individual, South Yarra).

Many development industry submitters wanted the standard to be removed because of its potential to increase construction costs. Some said the storage required was too high and that the market should dictate storage volumes.

'The volume of storage is no different to the other parameters (such as how many bedrooms, bathrooms and car parks occupants choose to rent or buy). The dwelling that most closely satisfies their highest priorities is the one that is selected and this is generally a compromise that brings in other factors such as cost and travel time to family, friends and work.' (Individual, Elsternwick).

Our response

- In response to the feedback, we market tested the draft Storage standard and got advice from technical experts.
- Market-testing indicated that specifying the total storage volume would reduce uncertainty in applying the standard. We also got architectural advice about what would be considered a reasonable amount of storage for apartments of various sizes.

What we changed

We changed the draft standard by:

- Increasing the total minimum storage space required for an apartment to include kitchen, bathroom and bedroom storage.
- Specifying a minimum storage volume to be provided within the apartment.

Noise impacts

Why this is important

Designing to reduce adverse internal and external noise impacts is important to protect the health, and amenity of occupants.

NOISE

What you told us

- Noise requirements are better addressed through the National Construction Code.
- Acoustic reports are expensive to prepare and are often not required for apartment developments.
- The ability to assess noise impacts at the planning stage is limited.
- The requirement to assess noise in uncarpeted rooms is unreasonable.

Your satisfaction

Just over half (56%) of all online survey submitters (were satisfied or very satisfied with the draft Noise impacts standard. The highest satisfaction was by planning and design practitioner (64%) and development industry (62%) submitters. Council (50%) and community member (49%) submitters were less satisfied with the standard.

Changes wanted

About half (52%) of all online survey submitters wanted the Noise impact standard changed. Types of submitters most wanting changes were council (86%) submitters, then development industry (57%), community member (50%), and planning and design practitioner (40%) submitters.

Many development industry, planning and design practitioner and council submitters wanted the noise attenuation requirements to be contained in the National Construction Code.

> *'Minimum standards for noise levels in bedroom and living areas should be retained within the Building Code of Australia.' (Salta Properties)*

Many development industry, planning and design practitioner and council submitters were concerned about the practicality of assessing noise impacts at the planning stage, given the building would not yet be fully detailed or constructed. Some submitters were concerned that the need for acoustic reports would be costly and cause delays. Other submitters said the requirement to measure noise levels in uncarpeted rooms was impractical.

> *'There is concern around how to determine if these standards will be met at the planning permit stage (i.e. before construction). The detail and construction materials in apartment design needs to be addressed through the building approval process.' (Stonnington City Council).*
>
> *'There is no purpose in measuring the acoustic levels of an apartment without carpet or furniture.' (Anonymous)*

'An expensive acoustic report is not justified in the vast majority of sites.' (Anonymous)

'Providing an acoustic report costing thousands, site specific would not be needed in the vast majority of sites.' (Building Designers Association of Victoria)

Some submitters said the standard did not adequately address noise from air conditioning units, often located on balconies.

'The new dwelling attenuation measures should not be limited to off-site noise sources (for example, on balcony compressors).' (Anonymous)

Our response

In response to the feedback, we tested the draft Noise standard with technical experts and found:

- The National Construction Code is designed to address internal noise from adjoining apartments or from other uses and services within the building. It does not include requirements that address the impact of external noise on apartments.
- Other jurisdictions – NSW, SA, QLD and WA – limit the application of state-based noise standards to developments with a 'noise influence area' (this is an area subject to significant external noise such as from railway lines and freeways). Using a 'noise influence area' approach will limit the number of development applications that will need an acoustic report and a building design that addresses the specified noise levels.
- An acoustic report submitted with a development application would model the noise levels in a proposed apartment based on the planned construction and finishes.

What we changed

We changed the standard by:

- Applying the requirement to achieve the specified internal noise levels only to developments in identified noise-influence areas and only then if the proposed apartment development would not be shielded by a solid structure (such as a wall or building), or by the topography of the land; this will reduce the number of developments affected by this requirement.
- Replacing the reference to noise assessment in 'uncarpeted rooms' to 'finished floor' so that the acoustic report and noise attenuation measures will reflect the actual proposed design of the apartment.
- Clarified that lifts are also a potential noise source.

The best-practice apartment design guidelines will provide alternative design and construction measures to attenuate noise. This approach may remove the need for detailed noise testing and verification.

Energy efficiency

Why this is important

Making apartments and apartment buildings energy-efficient reduces the use of fossil fuels and makes use of daylight and solar energy. It also improves the thermal comfort and energy efficiency of apartments in warmer weather.

ENERGY EFFICIENCY

What you told us

- Smaller windows may lessen the benefit of passive solar warming during colder weather.
- The government should clarify how the Energy efficiency standard relates to the National Construction Code.
- It was uncertain how the cooling load cap would operate.
- The cooling load level is too generous and should be assessed for each room or on a square metre basis.
- The implications for councils applying the BESS assessment tool are uncertain.
- The standard should apply to areas outside the Melbourne metropolitan area.
- It was uncertain whether trade-offs could be made between summer cooling and winter thermal comfort performance.

Your satisfaction

About half (51%) of all online survey submitters were satisfied or very satisfied with the draft Energy efficiency standard. Planning and design practitioner (56%) submitters were the most satisfied, followed by community members (53%), councils (47%) and development industry (44%) submitters.

Changes wanted

Online survey submitters were almost evenly divided (51%) in wanting the Energy efficiency standard changed. Most (90%) council submitters wanted the standard changed, compared with the development industry (48%), community member (46%) and planning and design practitioner (43%) submitters.

Many community member, council and development industry submitters said the standard could be broadened to address thermal comfort as well as energy use. To that end, they wanted a measure included to address apartment heating requirements.

> *'Taking into account cooling load alone ignores Victoria's cold winters and therefore needs to also factor for heat load. Thermal load as a whole (heat and cooling load) must be part of the standard.' (Anonymous, South Yarra)*

'We support the objective to ensure that new apartments are energy efficient. However, the focus only on maximum cooling loads is not necessarily the best approach to ensuring an energy-efficient outcome. Because Melbourne (and Victoria) is primarily a "heating climate", this standard could drive apartment designs that work well on a hot summer day, yet therefore demand high levels of energy consumption between Autumn and Spring. We suggest that as well as the cooling load requirement, a heating load requirement also needs to be considered.' (Sustainable Development Consultants)

Other development industry and planning and design practitioner submitters said it would be more appropriate to address the energy efficiency of apartments through the building system via the National Construction Code.

'The planning scheme is not the appropriate mechanism to address energy efficiency. We are concerned about how these standards "double up" on existing assessment matrices such as STEPS [Sustainable Tools for Environmental Performance Strategy] and BESS.' (Building Designers Association of Victoria)

Some councils, community member and planning and design practitioner submitters said that addressing environmental issues including mitigating the effects of climate change should be more prominent. Some councils said that this matter could be considered separately from the standards by taking a state-wide approach that enables all councils to have environmentally sustainable design policies. Other submitters suggested the use of existing tools such as BESS and the Green Star rating system.

'All new building developments should comply with minimum overall Green Star energy efficiency ratings.' (Anonymous)

'The climate zones only apply to metro Melbourne.' (Baw Baw Shire Council)

'Increase the maximum cooling load proposed. The current proposed level is too easily achieved and would not improve significantly on the energy performance of existing Victorian apartments.' (Architects for Peace)

Our response

In response to the feedback, we tested the draft Energy efficiency standard with technical experts and found:

- The main thermal performance issue for apartments is with units with large glassed areas exposed to the summer sun. Detailed assessments show this is the primary area where some apartments perform poorly.
- Modelling also indicates the change required to reduce the cooling load – trimming the expanse of north-facing glass typically results in modest heating load reductions of between 6% and 13%.
- The standard complements the National Construction Code (that is, it does not increase the energy performance of apartment buildings over the current six-star standard) and will be superseded if the National Construction Code adopts an equivalent standard, which is a number of years away.
- The existing NatHERS tool used for energy assessments already incorporates a cooling load function and this can be used to apply the cooling cap measure. Compliance is demonstrated by providing a standard NatHERS certificate generated by all the available NatHERS tools (AccuRate, FirstRate and BERSPro).

What we changed

We did not change the draft standard.

Cooling load calculations for regional centres will be available in 2017.

The best-practice design guidelines will include information about how to apply the standard.

Solar access to communal open space

Why this is important

Good solar access to communal open space ensures it is desirable and usable for residents. Well-used communal open spaces support a sense of community and increase the amenity of apartment developments.

SUNLIGHT

OUTDOOR SPACE

What you told us

- The functionality and usability of communal open space is paramount.
- Apartment developments that have larger areas of communal open space than required may be disadvantaged.
- The requirements for direct sunlight are insufficient and may be difficult to achieve because of the orientation of an apartment to neighbouring buildings.
- The standard would be easier to satisfy by using rooftops as communal open space.

Your satisfaction

The majority (61%) of all online survey submitters were satisfied or very satisfied with the draft Solar access to communal outdoor open space standard. Council submitters (80%) were the most satisfied, followed by planning and design practitioner (67%), community member (59%) and development industry (46%) submitters.

Changes wanted

Less than half (45%) of all online survey submitters wanted the draft standard changed. Types of submitters most wanting the standard changed were from council (71%) and development industry (55%) submitters, compared to planning and design practitioner (39%) and community member (36%) submitters.

Submitters' views about the changes needed to the standard, ranged from increasing its requirements to deleting it. Some community member and council submitters wanted the sun exposure time and the area exposed to sunlight increased for environmental, health and wellbeing reasons.

> *'Getting fresh air and sunshine are critical to health and wellbeing - having the tiny spaces proposed will not meet those needs, suggest 4 hours.' (Individual)*

> *'There should be at least 3 hours of sunlight provided for to align with requirements for internal living spaces.' (Port Phillip City Council)*

> *'An increased and more aspirational number of hours (such as 3 hrs) should be aimed for with direction on what the design of these spaces should encompass where this number is not met. This should be seen in conjunction with the landscaping provisions and incorporate greenery and address the urban heat island effect.' (Wyndham City Council)*

Some community member, planning and design practitioner, and development industry submitters felt the standard could be difficult to achieve on some sites. For example, shade from adjacent buildings or structures could make it difficult to meet the solar access requirements.

> *'Further consideration is required to protect communal open space from potential overshadowing from adjacent development'. (Australian Institute of Landscape Architects)*

Development industry submitters said the standard should permit apartment developments that provide greater communal open space than minimum requirements but which cannot achieve at least 50% direct sunlight for at least two hours between 9am and 3pm on 21 June. Others said these hours are when many occupants are away from the apartment, at work.

> *'The requirement punishes a development that might provide a high amount of communal outdoor open space. For example, Development A might have 50 m² of communal outdoor open space, meeting the minimum allowed (50 m² indoor communal, 50 m² outdoor communal), with only 50% (50m²) of that space having access to direct sunlight during the specified time. Development B might have 300 m² of open space, exceeding the minimum required, with 30% (90 m²) of that space having access to direct sunlight during the specified time. Despite having a larger area of communal outdoor open space with direct access to sunlight, Development B does not meet the proposed standards.' (Urban Development Institute of Australia)*

> *'Any time based restriction on sunlight access should be extended to allow for early morning or late-afternoon sun generated from different orientations.' (Mirvac)*

> *'It must be assessed on an individual basis, not with a general rule. It must consider the impact of individual sites enabling potential future development in the vicinity.' (Anonymous)*

Our response

In response to the feedback, we tested the draft Solar access to communal outdoor open space standard with technical experts.

Architectural advice was that the standard disadvantages developments that provide larger areas of communal outdoor space.

What we changed

We changed the draft standard by:

- Allowing an alternative maximum area of 125 m² of communal open space for receiving solar access to ensure that developments are not disadvantaged. For example, if a development provides 500 m² of communal outdoor open space, the area will require solar access to 125 m² rather than 250 m².
- Aligning the standard with the Communal open space standard to avoid discouraging the provision of larger areas of communal open space.

Natural ventilation

Why this is important

Natural ventilation allows for the fresh air movement through an apartment, increasing passive cooling opportunities and creating a comfortable, healthy indoor environment in habitable rooms.

NATURAL VENTILATION

What you told us

- Cross-ventilation is difficult to achieve in single-aspect apartments.
- Increasing the maximum breeze path from 15 m to 18 m would make it more achievable for larger apartments.
- The site context (for example, the location of adjacent buildings) influences the effectiveness of natural ventilation measures.
- 'Volume of air replacement' should be an allowable alternative measure.
- The specified percentage of apartments requiring natural cross ventilation should be reduced.

Your satisfaction

Just over half (54%) of all online submitters were satisfied or very satisfied with the draft Natural ventilation standard. Satisfaction with this draft standard varied widely by submitter type. Most (89%) council submitters were satisfied or very satisfied with it, compared to community member (58%), planning and design practitioner (50%) and development industry (30%) submitters.

Changes wanted

About half (53%) of all online survey submitters wanted the draft Natural ventilation standard changed. Types of submitters most wanting the standard changed were council (68%) and development industry (66%) submitters, compared to planning and design practitioner (56%) and community member (42%) submitters.

Many submitters were concerned about the percentage of apartments to which the standard would apply. Community members wanted the standard applied to 100% of apartments. Others said open windows could increase noise levels in an apartment.

> *'The standard says that "at least 60% of dwellings with a finished floor level less than 35 m height should be naturally cross-ventilated". This should be increased to 100%.' (Southbank Residents Association)*

> *'There should be a minimum noise floor for living spaces when the windows are open. There is no point having cross-flow ventilation etc. if you can't realistically ever open the windows or leave them open.' (Individual)*

In contrast, many development industry submitters wanted the natural ventilation standard removed. They said the standard would increase development costs, did not sufficiently factor in the use of mechanical ventilation to achieve air flow, and duplicated National Construction Code requirements.

> *'There are standards already set out in building codes. A standard requiring a minimum number of openable windows would be more appropriate and less onerous from a design and construction cost perspective.' (Cedar Woods Properties Limited)*

> *'If implemented it will likely require gaps and slots between apartments to create a false dual aspect which will have significant ramifications for developable yield, lift core requirements and apartment configurations, and hence add significant cost.' (Mirvac)*

> *'We would also suggest that the provisions should encourage other, practical and proven options for cross ventilation in addition to other ventilation options. These should include … the use of mechanical or other methods which achieve appropriate pressure differentials or ventilation shafts and any other method that can be substantiated.' (Property Council of Australia)*

Other submitters claimed the requirement for the 15 m maximum length of the breeze path – distance between windows – would be difficult to achieve. A suggestion was to increase the breeze path for larger apartments.

> *'The 15 m metric is very restrictive in planning an apartment and would make cross ventilating some perfectly reasonable three-bedroom apartments impossible.' (Australian Institute of Architects, Victorian Chapter)*

Many council, planning and design practitioner, development industry and community member submitters called for more guidance about how the standard could implemented effectively. Submitters felt cross-ventilation would be difficult to achieve for single-aspect apartments.

> *'We agree with the intent of the standard. We believe the deletion of standards for single-sided ventilation is limiting the prospect of larger developments to comply with the 60% natural ventilation Standard. Single-aspect apartments are unavoidable in larger developments … We suggest including requirements for single sided ventilation, which should consider window operability and sizing, apartments depth and / or trickle ventilation.' (Anonymous)*

> *'Air moves in response to a pressure differential. It is not particularly concerned if the distance is 15 m or 20 m. The standard (should) be changed such that at least 50% of dwellings with a finished floor level less than 35 m height should be naturally cross ventilated. The length of a breeze path through the dwelling should be a maximum of 18 m.' (Insight Planning Consultants)*

Our response

In response to the feedback, we tested the draft Natural ventilation standard with technical experts and found:

- Natural ventilation for each development is site-specific so there is no single air volume metric.
- The height limitation for openable windows and cross-ventilation is redundant: effective natural ventilation is determined by the building's orientation, shape and layout of the site and by built form on adjoining land.
- Cross-ventilation is generally the most effective form of natural (wind) ventilation.
- Cross-ventilation is more easily achieved in corner apartments where openings are on different walls, or openings are on opposite walls.
- There is no significant difference between the maximum 15 m and 18 m path because air moves in response to pressure differentials between the windward inlet and leeward outlet.
- A minimum 5 m breeze path is required to ensure natural ventilation is between rooms and not within a single room.
- Locations with strong prevailing winds from certain direction or at certain times need windows that occupants can adjust windows that close automatically.
- Aspects of a development's design (such as the number of apartments on a floor) and its orientation affect the proportion of apartments that can be effectively cross-ventilated.

What we changed

We changed the draft standard by:

- Removing the reference to the 35 m height limitation for natural cross ventilation and 80m height limitation for openable windows and doors. The standard takes a performance-based approach to natural ventilation design that is more responsive to surrounding conditions.
- Requiring 40% of all apartments to be naturally cross-ventilated.
- Revising the criteria for effective cross-ventilation, including a maximum breeze path of 18 m and a minimum breeze path of 5 m.

Private open space

Why this is important

Access to functional and usable private open spaces – outdoor spaces such as balconies, courtyards and terraces accessible only to the particular apartment – allows occupants to extend their living spaces outdoors to enjoy a range of recreations.

OUTDOOR SPACE

What you told us

- Occupants value usable private open space.
- The minimum private open space area for larger apartments in the draft standard should be increased to meet the needs of different occupants, including families with children.
- The balcony sizes in the draft standard are too small or too large.
- Wind conditions and solar access are important design considerations.
- The requirement for minimum areas of private open space could make apartments smaller.
- The standard should ensure balcony size is proportional to dwelling size.
- Height limitations for the provision of balconies should be removed.
- The area excluded from the minimum area calculation by for an air-conditioning unit should be reduced.

Your satisfaction

The majority (59%) of online survey submitters were satisfied or very satisfied with the draft Private open space standard. However, views by type of submitter varied. Most (90%) council submitters were satisfied or very satisfied, with planning and design practitioner (62%), community member (55%) and development industry (43%) submitters less so.

Changes wanted

About half (53%) of all online survey submitters wanted the draft Private open space standard changed: that was 82% of council, 54% of planning and design practitioner, 50% of development industry and 44% of community member submitters.

Many submitters were concerned about the minimum area of private open space in the draft standard. Some community member, council and planning and design practitioner submitters wanted the area increased, particularly for larger apartments that might have families with children. Some submitters said the NSW *State Environmental Planning Policy No 65 – Design Quality of Residential Flat Development* should be used as a benchmark for minimum private open space requirements.

'The private open space minimum areas are too small and not conducive to liveability; i.e. retirees, people with disability who may spend more time than normal in the apartment, or families with young children who may need a play space.' (Frankston City Council)

'With more families needing to live in apartments, it is vital that all apartments have suitable, safe private open space with sunshine for several hours each day.' (Individual, Brunswick).

In contrast, some development industry and planning and design practitioner submitters wanted the minimum area of private open space reduced, due to the potential increase in construction costs and considering the draft standard subtracted the area required for an air-conditioning unit from the total minimum area. Submitters felt it was more important to focus the standard on the purpose and functionality of private open space rather than on its size.

Some submitters considered the requirement to provide minimum areas and dimensions for a balcony was unnecessary. They said balconies are rarely used in high-rise developments and that purchasers would prefer to have a choice of buying an apartment with or without a balcony.

Some development industry and planning and design practitioner submitters were also concerned that specifying a minimum private open space area could reduce the size of an apartment's internal living areas.

'The market shows that not all buyers want a balcony.' (Jamien Investment Pty. Ltd.)

'While we recognise that some may prefer bigger balconies, they come at a cost and in an increasingly unaffordable market we question the implications of increasing their size so dramatically.' (Property Council of Australia)

'We are concerned that the combined pressure of the accessibility standards, which define bedroom and bathroom sizes, and the increased balcony sizes, will result in an impact on the size of living areas.' (Australian Institute of Architects, Victorian Chapter)

'The sizes of the private open space areas are generous and may be difficult to achieve across the board. Placing a specific standard reduces the flexibility of the architectural design response to locate other items such as public space (and access ways for ground level spaces) within these areas.' (Echelon Planning)

'This standard should also require appropriate weather protection and consideration of solar access objectives for private open space areas, to meet the objective of providing an area that meets the "reasonable recreation and service needs of residents.' (Monash City Council)

In addition, many submitters thought the standard could be improved by better defining terms such as 'natural ground level' and by including diagrams.

Our response

In response to the feedback, we tested the draft Private open space standard with technical experts and found:

- The usability of balconies is determined by wind conditions and the building's orientation, which are significantly influenced by site conditions and built form on adjacent land, rather than by height.
- The proposed minimum area and dimensions for private open space for studio and one bedroom apartments are disproportionate to the apartment area.

What we changed

We changed the standard by:

- Removing the reference to the 35 m height limitation for the provision of balconies.
- Requiring the provision of private open space to be responsive to site conditions.
- Revising the minimum area and dimensions for private open space so:
    - studio and one bedroom apartments have a reduced minimum dimension of 1.8 m (from 2 m)
    - two bedroom apartments have a reduced minimum area of 8 m^2 (from 10 m^2)
    - three bedroom apartments have an increased minimum dimension of 2.4 m (from 2 m).
- Specifying that the area excluded from the minimum balcony area calculation by an air-conditioning, heating or condenser unit be a minimum of 1.5 m^2.

Communal open space

Why this is important

Communal open space supports the health and wellbeing of occupants and provides for a range of passive and active recreational uses. Communal open space helps establish a sense of community in apartment developments and improves safety and security.

OUTDOOR SPACE

What you told us

- The standard is too onerous for smaller developments and too lenient for larger developments.
- The functionality and usability of communal open spaces are important.
- Requiring the provision of communal open space may increase development costs.
- The proximity of the site to nearby parks should be taken into account when determining communal open space requirements.
- The cost of maintaining communal open space is concerning: the bigger the space, the greater the maintenance costs.
- Communal open space should provide an outlook for as many occupants as practical and be designed to protect the natural features of the site.

Your satisfaction

Just over half (53%) of all online survey submitters were satisfied or very satisfied with the draft Communal open space standard. Satisfaction was highest (84%) with council submitters, less so for community member (53%), planning and design practitioner (52%) and development industry (43%) submitters.

Changes wanted

The draft Communal open space standard received the fourth highest number of requests for changes overall, with 54% of all online survey submitters wanting it changed. There were higher percentages of council (68%) and planning and design practitioner (61%) submitters wanting it changed than development industry (55%) and community member (44%) submitters.

Some council and planning and design practitioners wanted the standard amended to ensure communal open space was safe, functional and accessible for users.

> *'There is no mention about the design of communal areas and landscaped areas with regards to infrastructure. i.e. they mention that "landscaping should provide a safe, attractive and functional environment for residents".' (Baw Baw Shire Council)*

'The idea of this standard is good - but further research will need to go into making these communal spaces more active, usable and practicable. Often the cases with these communal areas within apartments are they are not used or rarely used – and are provided more as a token gesture.' (XEN Architecture)

The draft standard would apply to developments with 20 or more apartments and there were mixed views about this number. Council and the community member submitters said the threshold should be reduced from 20 to 15 apartments, contrasting with planning and design practitioner submitters' threshold of 30 apartments and development industry submitters' threshold of between 40 and 50 or more apartments. Some submitters also said it was important to consider the site in context of neighbourhood public open space in determining minimum areas of communal open space.

'Fails to make provision for sites which may be proximate or immediately across the road from parklands. We would encourage government to be more nuanced in their approach to communal open space and site context.' (Property Council of Australia)

'Council considers that any outdoor communal space standard should address potential amenity impacts of these spaces on neighbouring properties (whether it be within or outside of the development) such as overlooking and noise. This should be specifically addressed in the standard.' (Nillumbik Shire Council).

Other development industry and planning and design practitioner submitters wanted the standard removed because of its potential to add to development costs. They said the provision of communal open space was better determined by the market.

Community members generally wanted the area of communal open space increased for health and wellbeing reasons.

'The amount of open space needs to better reflect the numbers of potential dwellings and residents. Multiple communal open spaces rather than just 'a communal space' are necessary to make it attractive to residents. Communal open space should not feel claustrophobic.' (Anonymous)

'Communal open space is a great asset for all apartment developments and should be providing the highest quality of amenity.' (Individual)

Other community members were concerned that too much communal open space would result in higher body corporate fees, to maintain the space.

'I always have issues with the long-term upkeep of communal spaces and how it's paid for (including swimming pools, gyms etc).' (Anonymous)

Our response

In response to the feedback, we tested the draft Communal open space standard with technical experts and found:

- The proposed threshold for requiring the provision of communal open space for developments of 20 or more apartments would be onerous for smaller developments. A threshold of 40 or more apartments is considered more appropriate.
- The proposed minimum area of communal open space for those developments (the lesser of 2.5 m^2 per apartment or 100 m^2) is suitable for mid-sized developments, however it is too lenient on larger developments.

What we changed

We changed the draft standard by:

- Increasing the threshold for requiring the provision of communal open space from 20 to 40 or more apartments.
- Requiring the provision of communal open space of at least 2.5 m^2 per apartment or 250 m^2 (previously 100 m^2), whichever is the lesser.
- Requiring surveillance opportunities, privacy issues and noise created by the use of the communal open space to be factored into the location of communal open space.

Landscaping

Why this is important

Good landscaping creates attractive and safe environments for people, and makes apartment developments more energy and water-efficient. Deep soil areas support canopy trees which improve residential amenity, make neighbourhoods greener and reduce the heat island effect in urban areas.


LANDSCAPING

ENERGY


WATER & RESOURCE EFFICIENCY

What you told us

- Simplify the deep soil requirements.
- Deep soil areas may be difficult to maintain.
- Define the size of small, medium and large trees.
- Landscaping should relate to and reflect the site's context.

Your satisfaction

Less than half (46%) of all online survey submitters were satisfied or very satisfied with the draft Landscaping standard. Most (74%) council submitters were satisfied or very satisfied with the standard, then community member (54%), planning and design practitioner (45%) and development industry (14%) submitters.

Changes wanted

Over half (58%) of all online submitters wanted the draft Landscaping standard changed. Types of submitters most wanting changes were council (80%) and development industry (71%) submitters, compared to planning and design practitioner (56%) and community member (49%) submitters.

Many councils and planning and design practitioners supported the draft standard and suggested alternative forms of greening such as green walls and green roofs because they help reduce the 'urban heat island effect'. They saw vegetation requirements (including for native vegetation) as important for environmental and amenity reasons.

> *'We need trees to cool our environment, provide a nice outlook and attract native birds and insects.' (Anonymous)*
>
> *'The draft standards should be extended to all neighbourhoods as it is desirable to retain and/or plant trees to combat the urban heat island effect, increase opportunities for carbon sequestration and provide other ecosystem services (such as plant pollination, air filtration, pollution reduction and storm water management).' (Australian Institute of Landscape Architects)*
>
> *'Developments should not only look to plant trees as the standard currently reads, but also consider net community benefits such as increasing tree and other plantings at the street level to combat the urban heat island effect and enhance positive psychological outcomes for users of the public realm.' (Cardinia Shire Council)*

Some planning and design practitioner and development industry submitters wanted the standard deleted. They considered it too open to interpretation. Of particular concern was the requirement for deep soil areas, which some said would discourage small developments and potentially result in fewer car parking spaces for developments.

Community member, council and development industry submitters said it was important to consider an apartment development's surrounds. Many development industry submitters said that a one-size-fits-all solution to the percentage of site area to be landscaped made no sense in a highly urbanised environment and that landscaping requirements were best addressed on a case-by-case basis.

> *'The Landscaping standard is ill-considered and not appropriate as a blanket requirement across all apartment developments. The majority of apartment developments occur in highly built up commercial and mixed-use areas such as the Melbourne CBD and activity centres where there is little to no presence of landscape on private land and where boundary-to-boundary development and strong podium forms are encouraged by policy. Introducing requirements for landscaping in these locations will be out-of-character. Landscaping should be addressed under the local planning policy framework.' (Hollerich Town Planning Pty. Ltd.)*

Other submitters wanted clarity about how the standard would apply. Councils suggested there be clearer definitions for small, medium and large trees and that preferred vegetation types for different circumstances (such as ground level, on green roofs, and on green walls) be clarified. Some submitters said diagrams were helpful. Some also suggested a requirement for replacing canopy trees removed in the past 12 months.

> *'The tree provision number and size should also refer to a minimum number of canopy trees (rather than just medium, large trees). A definition of soil depth should be provided.' (Knox City Council)*

Our response

In response to the feedback, we tested the draft Landscaping standard with technical experts and found that:

- Trees and planted areas can help improve the thermal comfort of the open space surrounding apartments, particularly where stormwater is used to recharge soil moisture.
- In some locations shaded by buildings, it may be more appropriate to have permeable pavement, green walls or vegetated pergolas than deep soil tree planting.

What we changed

We changed the draft standard by:

- Allowing alternative ways of achieving an equivalent canopy cover to absorb heat, provide shade and improve stormwater infiltration. This also provides flexibility for space-constrained development sites.
- Aligning the minimum deep soil area dimensions and tree-size categories with other Australian jurisdictions.
- Defining tree-size categories.

The best-practice apartment design guidelines will include measures to address common problems with planted areas (such as maintenance and providing tree pits that are large enough to allow the tree to grow over time).

Accessibility

Why this is important

Accessibility in design promotes more equal access to apartments including for people with limited mobility, families with young children and the aged. Adaptable apartments have layouts and spaces that are easily altered to meet the changing needs of occupants to ensure the housing stock caters for a diverse range of household types over time.


ADAPTABILITY


UNIVERSAL DESIGN

What you told us

- There was general support for accessibility provisions for people with limited mobility in apartment developments.
- All new apartments must be built to universal design standards to increase housing options for people with limited mobility.
- Setting minimum dimensions for a bedroom and a bathroom may limit the size of living areas.
- Applying the standard to 100% of all apartments (except for 25% of all two bedroom apartments) is too low or too high.

Your satisfaction

Over half of all online survey submitters (58%) were satisfied or very satisfied with the draft standard for accessibility. Council (65%) and community member (62%) submitters were slightly more satisfied than planning and design practitioner (56%) and development industry submitters (56%).

Changes wanted

Less than half (46%) of all online survey submitters wanted the draft standard changed. Of the types of submitters, councils (82%) most wanted it changed, compared to planning and design practitioner (49%), development industry (41%) and community member (32%) submitters.

Views were mixed about the proportion of apartments to which the standard would apply: all apartments except 25% of all two bedroom dwellings. Community members generally supported removing the exception to apply the requirements to all apartments.

> *'Why not make all dwellings accessible, or alternatively require only 75% of all dwellings to comply?' (Frankston City Council)*

> *'100% of dwellings should comply with accessibility requirements.' (Anonymous)*

'We strongly recommend the current 25% exemption for new two bedroom apartments be removed. The revised standards should explicitly reference the Livable Housing Design Guidelines 2010 requiring all new apartments to achieve a silver rating under these guidelines.' (Youth Disability Advocacy Service).

Development industry and planning and design practitioner submitters wanted the standard deleted or applied to a smaller percentage of apartments. Some planning and design practitioners said the standard duplicated the existing accessibility requirements of the National Construction Code and could increase the cost of apartment construction, potentially affecting housing affordability.

'The standard is excessive and should apply to a much smaller proportion of total stock. Will result in increase in floor area and additional costs.' (Salta Properties)

'The standard should be amended so that 5% of the apartments in a development meet the standard.' (Point Polaris)

Some planning and design practitioner and development industry submitters said setting the minimum dimensions for bedrooms and bathrooms would limit apartment layouts and yields, and may reduce the size of living areas and secondary bedrooms.

'Current trends have shown that purchasers prefer to prioritise the size of living spaces over bedrooms and bathrooms to benefit from the flexibility of a larger living zone. Increasing minimum bedroom and bathroom sizes under this standard can result in limited flexibility with respect to the integration of study nooks and laundry joinery units when requirements for limited mobility can be achieved through adapted apartment layouts where required.' (Elenberg Fraser Architects)

'Practically, the standards limit the bathroom design options by prohibiting longer bathrooms for at least one bathroom and dictating the parameters of the room. This creates a significant cost penalty by limiting the yield.' (Property Council of Australia)

'The bedroom size should be differentiated between master bedroom and guest bedrooms. 3 x 3.4 metres is okay to be applied to a master bedroom but 3 x 3 metres (excluding robe) should be the minimum standard for any additional bedrooms because it is already a good size.' (Anonymous)

Some community members and councils questioned how the standard would work with existing standards and the National Construction Code (AS4299 Adaptable housing and AS1428.1 Design for access and mobility) and guidelines such as the 2012 *Livable Housing Design Guidelines* which provide a good benchmark for accessibility requirements.

Our response

In response to the feedback, we tested the draft Accessibility standard with technical experts and found:

- The National Construction Code adopts AS1428.1 Design for access and mobility and it requires wheelchair accessibility to certain common areas in a new apartment building as well as egress from a new apartment building to suit the mobility of the occupants. The standard does not duplicate existing accessibility requirements in the National Construction Code.
- Measures from the *Livable Housing Design Guidelines* which are practical to regulate through planning (such as minimum room dimensions and particular room layouts) could be included in the standard.

- The room dimensions and room layouts under the gold level in the *Livable Housing Design Guidelines* are suitable for wheelchair access in a domestic setting. Doorways may need to be fitted with opening devices.
- An alternative bathroom design based on a modified *Livable Housing Design Guidelines* silver level would allow wheelchair access after adding or removing fittings and is similar to an industry standard apartment bathroom layout.

What we changed

We changed the draft standard by:

- Applying the standard to 50% of all apartments (rather than to all apartments, excluding 25% of two-bedroom apartments).
- Allowing two alternative bathroom design options: The first is based on the gold level in the *Livable Housing Design Guidelines* and the second is based on an adaptation of the guideline's silver level specification that aligns with the standard industry bathroom layout.
- Transferring the minimum bedroom dimension requirement of 3 m by 3.4 m (excluding built-in robes) from the Accessibility standard to a new Functional apartment layout standard and by applying the requirement to all dwellings.
- Including a minimum bedroom dimension requirement of 3 m by 3 m for secondary bedrooms and a minimum living area dimension in the Functional apartment layout standard.

Dwelling entry and internal circulation

Why this is important

Apartment entries add to the quality and character of the street and pedestrian experience. Well-designed entries and circulation spaces create a sense of identity, encourage social interaction and support safe and convenient access for occupants and visitors to apartment developments.


BICYCLE & CAR PARKING


ENTRY & CIRCULATION


OUTDOOR SPACE

What you told us

- Pedestrian and vehicle movement to building service areas in the apartment development are important considerations.
- The standard should include access requirements to building facilities (such as bicycle storage and loading areas).
- The standard should include protection from external weather factors (such as wind and rain).
- Building entrances should comply with the *Safer Design Guidelines for Victoria*.
- The number of apartments accessed from a corridor or lift well should be minimised.

Your satisfaction

Two-thirds (66%) of online survey submitters were satisfied or very satisfied with the draft Dwelling entry and internal circulation standard. The level of satisfaction of the different types of submitters was very similar: council (74%), community member (69%), development industry (65%), and planning and design practitioner (61%) submitters.

Changes wanted

One-third (34%) of online survey submitters wanted changes to the draft standard. About two-thirds (68%) of council submitters, wanted the standard changed, as did smaller percentages of planning and design practitioner (43%), development industry (27%) and community members (16%) submitters.

Councils said the standard should consider the functionality and accessibility of building entry points including onsite loading facilities (for occupants moving in and out of apartments), visitor parking and trade access for maintenance.

> *'Council considers that on-site loading facilities are beneficial for large residential developments, to facilitate households as they move in and out; and their provision should generally be encouraged.' (Nillumbik Shire Council)*

'Council would like both the objective and actual standard expanded to require that apartment entries be a key design feature of developments rather than an afterthought and be clearly visible and accessible to the public realm rather than being hidden. Council would also like to see this standard moved closer to the beginning of the document – its location towards the end does not reflect its importance.' (Moonee Valley City Council)

Council submitters said the standard should specify dimensions for the width and length of corridors to avoid developments with long and narrow corridors. They suggested there be a specified maximum number of apartments accessible by a single corridor (for example, eight apartments per lift core). Any quote?

'Consideration could be given to including standards for corridor widths to enable sufficient internal circulation by all users, while also allowing for more light and air. A standard should be included for a maximum of eight apartments off a circulation/lift core, so that common circulation spaces achieve good amenity and properly service the number of apartments. Such spaces can also provide opportunities for social interaction and community building among residents.' (Melbourne City Council)

Planning and design practitioners had mixed views. Some suggested the standard address avoiding 'conflict between pedestrians and vehicles and the need for 'apartment buildings to be designed to engage with the street'.

'AILA suggests this standard should be flexible to respond to sites where building entries open directly on to a mixed-use/commercial street or laneway. In these locations, the character of the lobby and its extent of frontage and openings should be carefully adjusted to suit the overall experience and rhythm of that street or laneway.' (Australian Institute of Landscape Architects).

Some development industry submitters said that some requirements of this standard could conflict with fire regulations and natural ventilation measures and may be unnecessary.

'Note while agree with general principal of standard by providing common areas and corridors with natural ventilation this brings thermal barrier within a building rather than exterior envelope and adds considerable cost to appropriately insulate internal corridor walls and floors.' (CBUS Property Group)

'Providing windows in stairwells is problematic and contrary to fire regulations.' (Salta Properties)

'The majority of apartment lobbies (even those serving very upmarket apartment buildings) do not have access to natural light and ventilation. Good standards of artificial lighting and ventilation can be achieved in these space (and are mandated by Building Code of Australia regulations), and given that these spaces are typically only passed through briefly by residents, the loss of efficiency in land use by requiring natural light to these areas is unjustifiable.' (Demaine Partnership Architects)

Other development industry and planning and design practitioner submitters suggested the standard be reduced or removed because it could be difficult for larger sites to achieve and because of the added construction costs. Some said apartment developments should be assessed on a case-by-case basis.

'This standard may be difficult for larger sites to achieve, especially if they have centralised 'core' services. The provision of natural light to stairwells and corridors is likely to be problematic, and if it is achieved it is likely to be at the expense of solar access to apartments.' (Building Designers Association of Victoria)

'I generally support this standard although I do note that visitors and residents to apartment buildings spend only a short time in circulation spaces. The need to provide at least one source of natural daylight and ventilation to these spaces is therefore of little overall benefit when compared to the loss of a bedroom or greater amenity to the apartments themselves, that will often result from the provision of daylight to a corridor.' (Hollerich Town Planning).

Our response

In response to the feedback, we tested the draft Dwelling entry and internal circulation standard with technical experts and found:

- Referring to 'open stairs' instead of 'stair wells' ensures the standard will not conflict with fire regulations under the National Construction Code.
- Greater guidance is needed for addressing a range of building amenity and access issued.

What we changed

We changed the draft standard by:

- Revising the name of the standard from Dwelling entry and internal circulation to Building entry and circulation to better reflect the standard.
- Clarifying the layout and design measures required for an apartment building such as providing windows to open stairs and lift areas.

Waste

Why this is important

Good waste management promotes recycling, protects the environment and addresses health and safety risks. Apartment developments with good waste management facilities minimise the impacts of waste on the health and wellbeing of occupants and the amenity of the public realm.

WASTE MANAGEMENT & OTHER SITE SERVICES

What you told us

- The standard should include more measures that support recycling.
- The standard should include twin chutes for waste management in taller buildings, to improve accessibility.
- The standard should include requirements about organic waste collection.
- Multiple waste pickups are inefficient and noisy.
- The standard should include requirements about ventilating indoor waste-storage areas.
- The standard should require the provision of a dedicated space and systems for storing recycling materials.
- Waste-storage areas should be accessible, including for people with limited mobility.

Your satisfaction

About two-thirds (69%) of all online survey submitters were satisfied or very satisfied with the draft Waste management standard. There was a similar level of satisfaction across different types of submitters: council (79%), development industry (74%), planning and design practitioner (73%) and community member (65%) submitters.

Changes wanted

About one-third (34%) of submitters (34%) wanted the draft standard changed. Councils (76%) had the highest percentage (76%) wanting the standard changed, compared to community member (30%), planning and design practitioner (26%) and development industry (20%) submitters.

Some councils, government agencies and planning and design practitioners wanted the standard to clarify the type of waste to be collected (for example, organic waste) and wanted it to provide clearer direction about the design of hard waste systems in apartment developments to support collection processes. Some submitters said that requiring a dual-chute system for garbage and recycling on each floor of high-rise developments would relieve storage space for recycling in each apartment and improve recycling rates.

'The waste management plan (WMP) should be an essential component in every planning application for an apartment building.' (Greater Dandenong City Council)

'Developments greater than four storeys should be required to incorporate on each floor, collection infrastructure, a chute or equivalent system for both landfill and recycling waste. Council also considers that developments of more than 10 storeys should be required to use either twin chutes or a single chute, dual-stream technology, with openings on each floor.' (Maribyrnong City Council)

Community members, councils and planning and design practitioners also wanted the logistics of waste collection (such as site access for waste collection vehicles and steps to minimise their noise) addressed.

'I have the problem of waste trucks arriving almost every day early in the morning which is a noise problem.' (Anonymous)

'Provide bin storage space onsite to allow for one week of waste and recycling volumes to reduce heavy vehicle traffic.' (Port Phillip City Council)

'The circulation area for waste collection should be off-road to avoid traffic congestion and minimise the impact of noise on occupants of adjacent buildings and pedestrians.' (Southbank Residents Association)

Some development industry submitters said the standard should be deleted because it could increase development costs. They said that council waste management plans already encouraged effective waste management practices.

'Councils already require preparation of a waste management report at the planning permit application stage for substantial apartment proposals.' (Salta Properties).

Our response

In response to the feedback, we tested the draft Dwelling entry and internal circulation standard with technical experts and found:

- More design responses are needed for supporting recycling.
- There is a need to incorporate measures to reduce odour from waste storage areas through adequate ventilation and bin washing facilities.
- Noise from waste pickups could be reduced by requiring access arrangements to minimise the need for trucks to reverse off the site (avoiding noise from 'beeper' alarms).

What we changed

We changed the standard by:

- Putting greater emphasis in the objectives on the importance of recycling.
- Requiring bin and recycling enclosures and bin-washing areas to be adequately ventilated.
- Including requirements to reduce noise impacts, by designing vehicle access to avoid the need for trucks to reverse.
- Addressing access to waste facilities for people with limited mobility.

The best-practice apartment design guidelines will note that having dual-chute waste systems on each floor makes it easier and more convenient for occupants to recycle waste. The guidelines will also provide advice on adequately sized waste facilities to minimise the noise impacts arising from multiple weekly waste collection services.

Water management

Why this is important

Potable water is a limited resource. As the number of Victorians increases and with climate change, we need to conserve water consumption by reducing onsite demand, and reusing stormwater.

ENERGY

WATER & RESOURCE EFFICIENCY

LANDSCAPING

What you told us

- There should be minimum standards compatible with existing standards (such as the Built Environment Sustainability Scorecard).
- The standard should not refer to the reuse of greywater, which can be contaminated and is difficult to treat.
- It should include minimum standards for water-efficient fittings and fixtures.
- Rain gardens are difficult to maintain.

Your satisfaction

About two-thirds (64%) of online survey submitters were satisfied or very satisfied with the draft Water management standard. The level of satisfaction of the different types of submitters was similar: planning and design practitioner (72%), development industry (67%), community member (63%) and council (50%), submitters.

Changes wanted

Of all the draft standards, the draft standard had the lowest percentage of online survey submitters (28%) wanting changes to it. Types of submitters most wanting changes were councils (68%), compared to planning and design practitioner (29%), community member (18%) and development industry (17%) submitters.

Many councils and planning and design practitioners wanted stronger environmentally sustainable design (ESD) provisions that incorporate integrated water management applied to all types of development. Some practitioners said that the standards should be mandatory, and some said many councils now apply comprehensive water management standards.

> *'Issues such as waste, water and energy could be more comprehensively addressed in an ESD Policy, potentially removing the need for these issues to be included in the apartment standards.' (Municipal Association of Victoria)*
>
> *'Water capture and re use has to be mandatory. Many councils already demand this as part of their own criteria under the Built Environment Sustainability Scorecard (BESS) and Sustainable Design Assessment in the Planning process (SDAPP) frameworks.' (Mihaly Slocombe Architects)*
>
> *'This should be mandatory. Many councils insist on this in their own planning schemes' (EN Architects).*

While some community submitters supported a requirement for greywater recycling, some council, planning and design practitioner and development industry submitters said that requiring greywater use in apartments could be costly and impractical.

> *'Greywater is not mentioned beyond the objective of the standard. Greywater is hard to reuse given it is often contaminated, particularly in a building with minimal irrigation needs.' (Whitehorse City Council)*

Councils and planning and design practitioners wanted the BESS tool, which is used by some councils, to be adopted as a way of demonstrating compliance.

> *'The guidelines should reference minimum standards for water efficiency and water reuse. These should be compatible with the Built Environment Sustainability Scorecard planning assessment framework.' (Greater Dandenong City Council)*

Other development industry and planning and design practitioner submitters said councils now have policies for managing water use and duplication should be avoided.

> *'Local governments have created their own performance standards and assessment criteria to encourage sustainable water management. It is suggested that water management performance be addressed within the existing (and emerging) environmentally sustainable design frameworks to avoid doubling-up.' (Building Designers Association of Victoria)*

Our response

In response to the feedback, we tested the draft Water management standard with technical experts and found it was consistent with current best-practice standards. The Plumbing Code of Australia specifies the performance requirements of water efficient fittings and fixtures.

What we changed

We changed the draft standard by:

- Removing the reference to greywater recycling
- Amending the title of the standard to more clearly reflect the objectives.

The best-practice apartment design guidelines will include advice about tools and design responses to demonstrate compliance with the standard.

Other issues raised

Submitters also raised other issues about the draft design standards. Some submitters wanted additional standards to address apartment amenity issues. Others wanted clarification about how the standards would be implemented.

Additional standards

Housing diversity

Some community member and council submitters said the standards should support housing diversity by requiring an apartment development to include apartments of different sizes and types to meet the needs of diverse types of households and people. While families with children currently comprise a small proportion of the total number of households living in apartments, the proportion is growing gradually.

Some submitters said only a small proportion of apartments currently being constructed in Victoria have three or more bedrooms. This has implications for the long-term needs of households with children and for households that want a larger number of functional rooms, including households that want to downsize from detached dwellings to reasonably sized apartments. Some submitters said that families have been merging one and two bedroom apartments due to larger apartments not being available. Others said requiring a diversity of apartment sizes and types would restrict the developers' ability to respond to demand.

> *'There are some developments that are proposing up to 80% one-bedroom apartments which are clearly targeting student accommodation, and do not provide a diversity of apartment types and a broader cross-section of the community and demographics.' (Individual)*

> *'Whilst these draft design standards apply to the design of apartments, there is additionally an opportunity to specifically request diversity in the size of apartments be provided, linked to the needs of the local context in each instance.' (MGS Architects)*

> *'Mandate a mixture of 1, 2 and 3 bedroom apartments in each building. If the centre of Melbourne is to become a cohesive community it needs to accommodate family groups of various sizes and ages.' (Southbank Residents Association)*

Our response

Where apartment developments comprise of 10 or more dwellings they will be required to provide a range of dwelling sizes and types, including dwellings with a different number of bedrooms.

Minimum apartment or room size

Many community members, council and some planning and design practitioner submitters wanted a minimum apartment size. They said the public engagement process in 2015 identified adequate functional apartment space as one of the top amenity issues. Many of these submitters wanted similar minimum apartment sizes to those specified by the NSW State Environmental Planning Policy No. 65 – Design Quality of Residential Flat Development, which requires minimum apartment sizes of 35 m^2 for a studio apartment, 50 m^2 for a one-bedroom apartment, 70 m^2 for a two-bedroom apartment and 90 m^2 for a three-bedroom apartment.

Several other community member, council and some planning and design practitioner submitters wanted minimum room sizes. They were concerned that setting a minimum bedroom size could result in smaller living rooms and that setting minimum living room sizes would ensure living areas could accommodate furniture and be functional and accessible. Community members wanted minimum living room sizes to be consistent with the *Livable Housing Design Guidelines*, which (at the platinum level) are that family/living room should accommodate a free space, 2250mm in diameter, to enable ease of movement clear of furniture.

> *'Council believes that the size and layout of an apartment is fundamental to achieving a high standard of amenity. Apartments need to be of sufficient size and good layout to provide usable and comfortable spaces while accommodating basic furniture, providing sufficient circulation and adequate storage.' (Port Phillip Council)*
>
> *'There is a need to have basic functionality of apartments with sufficient space for household items.' (Moreland City Council).*
>
> *'It is strongly recommended that minimum dimensions of both those areas (living rooms and bedrooms) should have minimum areas indicated in the documents.' (Baw Baw Shire Council).*
>
> *'We propose that minimum room sizes should be established and suggest that 12 square meters for a bedroom is not an unreasonable minimum, with 40 square meters allowed for a single bedroom flat, and 55 square meters for a 2 bedroom flat as reasonable minimums. At minimum we propose that all rooms and all designs be fit for purpose.' (Residents About Integrated Development)*
>
> *'A minimum dwelling size standard, or at least minimum room size standard, should be considered as it will work in conjunction with the other standards to improve the internal amenity of all apartments and reduce the propensity for applicants to attempt to vary the requirements of the new standards.' (Whitehorse City Council)*

Our response

In response to the feedback, we have introduced a new Functional layout standard to encourage apartments to include functional areas that meet the needs of residents, and to enable apartments to be adapted to meet the changing needs of residents.

Technical experts advised that regulating apartment size does not necessarily improve the amenity, liveability and functionality of apartments. The Functional layout, Room depth, Windows, Accessibility, Natural ventilation and Private open space standards will improve the design and layout of apartments. This approach will provide designers with the flexibility to achieve innovative design responses.

Bicycle and car parking

Many submitters wanted apartment developments to include a dedicated space for bicycle parking: bicycles are an increasingly popular form of transport, particularly in the inner city.

> *'Council would like to see a requirements for new developments to include some apartments with additional bicycle storage and the option for some apartments to include additional bicycle parking as a trade-off for reduced car parking.' (Moonee Valley City Council)*

'Clause 52.34 of the Victoria Planning Provisions needs to be revised to require at least one secure bicycle parking space per dwelling. General storage provision should not be an acceptable substitute for bike storage … One visitor bicycle parking space should be provided per four dwellings.' (Greater Dandenong City Council)

'A standard should be set in relation to minimum bike parking. For sites within a 10 km radius of the CBD, there should be a minimum of one bike park per apartment. This bike parking should be accessible and distinct from storage spaces.' (Breathe Architecture)

Some council submitters said that when designing apartments car parking should be integrated into the development and should not dominate the street frontage.

'Car parking areas should be hidden from view and podium car parking should be discouraged; and that vehicle access areas should not be combined with service areas to create large, inactive sections of frontage.' (Yarra City Council)

Our response

The Government acknowledges the important role that alternative modes of transport such as bicycles play in supporting growth in Melbourne and the development of a '20 minute neighbourhoods' in the metropolitan area. The Government is currently updating Victoria's cycling strategy as part of its commitment to supporting cycling, by delivering cycling projects and programs that focus on safety and increased participation across Victoria.

Submitters raised a number questions regarding the best way to address bicycle parking in new apartment development proposals, and in particular whether Clause 52.34 Bicycle facilities in the Victoria Planning Provisions should be amended. Further investigation will be undertaken to determine the appropriate provision of bicycle rates.

Car parking requirements will continue to be assessed through Clause 52.06 Car Parking of the planning scheme that seeks to ensure that car parking does not adversely affect the amenity of locality, and that the design and location is of a high standard, creates a safe environment for users and enables easy and efficiency use.

External design

Many council and community submitters were concerned the draft design standards did not include measures for improving the external façade of apartment buildings, their relationship to neighbouring properties and their appearance in the street. They particularly wanted measures for reducing the visual impact of utility services.

'Council suggests that design aspects relating (but not limited to) building frontages, building and façade articulation, awning, pedestrian entry (design and location) and vehicle entry (including loading and unloading facilities for larger development) should be incorporated into the Particular Provisions.' (Boroondara City Council)

'The low quality material and finishes of many apartment buildings have an adhoc impact on the public realm. Material like cheap cement render don't age well and look tired and tend to crack.' (Moreland City Council)

'Include additional standards requiring the appropriate screening of plant equipment (e.g air conditioners vents/fans etc.) especially on rooftops as these can be unsightly if not adequately screened.' (Melton Shire Council)

Our response

Issues relating to the external appearance of apartment developments are outside the scope of the Better Apartments project.

Clause 15.01 – Urban environment of the Victoria Planning Provisions, and the existing urban design guidelines that address the public realm aspects of apartment developments (such as Activity Centre Design Guidelines, Safer Design Guidelines and parts of the Guidelines for Higher Density Residential Development) are being consolidated and will complement the Better Apartments Design Standards and the best-practice apartment design guidelines.

Implementation

Housing affordability

Many development industry and some community submitters were concerned that the standards would increase the cost of apartment developments which would increase costs for buyers. They said if all the draft standards were adopted, the yield of every site would fall. Development industry submitters were particularly concerned about the development cost implications of the draft Accessibility, Building setback, Natural ventilation, Private open space, and Storage standards. Some submitters felt the development cost impact would not be significant.

Some community submitters were concerned the Communal open space and Landscaping standards would increase body corporate fees. However, some councils said we should not reduce standards and provide uncomfortable living environments due to financial considerations.

> *'The Property Council supports the Government's intention to raise the minimum standard of apartments in Melbourne; however we believe that the limited and prescriptive nature of the proposed standards fail to contemplate the consequent cost impost and loss of yield. Our members have overlaid the standards on current projects and the proposed standards show up to a 30 per cent reduction of floor space on larger sites and up to a 50 per cent on smaller sites. This suggests that the standards are going to impose a devastating cost impact on apartment affordability.' (Property Council of Australia)*

> *'PIA does not regard the proposed standards as an additional unwarranted cost on development. As performance-based measures, they will lead to better internal amenity for future developments, better quality planning outcomes and smarter design techniques. Ultimately, they will help ensure Melbourne continues to be considered the world's most liveable city.' (Planning Institute of Australia)*

Our response

In response to the feedback, we sought economic advice from SGS Economics and Planning and refined the draft design standards.

SGS estimated the average additional construction cost per apartment would be $23,000 for apartments up to 4 storeys and $26,000 for apartments 5 or more storeys, and found a net community benefit. It should be noted that many apartments are already achieving the proposed standards and for these apartments there will be no additional costs. SGS also noted any additional construction costs would have a small impact on prices because newly constructed apartments would form only a very small proportion of total dwellings coming onto the market each year. Furthermore, the housing market is generally not sensitive to price - purchasers are usually well informed and as a result will 'shop around', rather than pay an increase in price. This is especially the case when there is ample

supply available in the form of apartments under, or permitted for, construction. Consequently, only a small proportion of any increased costs are likely to be passed on by developers as higher prices to the purchaser. The new design standards will deliver substantial economic benefits, which are around 1.5 times the costs (resulting in a Benefit-Cost Ratio of 1.5), as well as considerable community benefit over time.

We need to provide quality housing stock for Victorians. The standards focus on quality and amenity to ensure new apartments provide long-term liveability for the health and well-being of residents. The community has clearly asked for standards to ensure a minimum level of quality and amenity. Improving the amenity of apartments will maintain their value and potentially appreciate in value over time.

Statutory planning issues

Many submitters queried how the standards would be statutorily implemented through the planning and building systems. Many supported a performance-based approach, which is consistent with the public feedback in 2015. Some submitters wanted greater flexibility in applying the standards to meet the objectives. Some development industry submitters said the draft design standards were too prescriptive and should only apply to smaller apartments.

> *'If building features are deemed insufficient to meet the public amenity expectations of apartments, then it should be addressed with the Australian Building Codes Board and the case should be made to raise the minimum standards.' (Building Designers Association of Victoria)*

Many submitters wanted more information about how the standards would work with the existing *Victoria Planning Provisions*, including clauses 54 and 55 – ResCode – and with the National Construction Code. Some development industry submitters said that the National Construction Code already regulates aspects of apartment design (such as light and ventilation, sound transmission, sound transmission, energy efficiency and accessibility).

Some council submitters said that the objectives of standards could be stronger and that clear and measurable decision-guidelines were needed. They said there was a need to define apartments and clarify their application to townhouses, particularly where a development has a mix of apartments and townhouses. They also wanted to clarify how a planning permit application for an apartment development in an activity centre and other non-residential zone would be assessed.

Some said the standards unnecessarily increased requirements for apartment developments (up to 4 storeys) that are currently assessed under ResCode. Others wanted the standards of ResCode improved.

> *'Our assessment revealed that it was unclear how to apply some standards to the townhouse portion of the site.' (Whittlesea City Council).*

> *'Further clarification is sought on the ability to exercise discretion where a proposal sits within a non-residential zone, activity centre or other site specific context where adherence to some of the standards (i.e. landscaping or building setbacks) may not be appropriate but no statutory control (schedule to a zone or overlay) defines an alternative. This issue includes but is not limited to applications for mixed use developments which may or may not be located within a residential zone.' (Brimbank City Council)*

> *'The standards proposed in this document in many cases would exceed those currently in clause 55 of the VPPs when in reality the standard should be the same.' (Monash City Council)*

'CGD believes that, eventually, through another review process, Rescode will need to catch up with some aspects of the new Better Apartments design standards such as the maximum room depth, the minimum floor to ceiling height, the elimination of 'snorkel' windows, the increased balconu area and the increased storage capacity that are also relevant to buildings of four storeys or less.' (Greater Dandenong City Council)

An education and training program on the application of the standards was welcomed by council and planning and design practitioner submitters.

Our response

The Better Apartments Design Standards will be supported by detailed guidance and information that will explain the type of residential development that the standards will apply to and how the standards will operate. The best-practice design guidelines for designing and assessing apartment developments will include examples of how the standards can be applied in different urban contexts.

An education and training program about the design and assessment of apartment development in line with the new standards will also be provided for council and private-sector planning, building and design practitioners.

A design review process will be made available to councils to help them assess more complex apartment developments.

Keeping designs on track

Some planning and design practitioner submitters wanted a checkpoint to be introduced in the development assessment process to verify that the approved apartment design had been carried through to construction. They wanted an architect or registered building designer to check that what was being built was consistent with what had been approved.

Other submitters said that a registered building surveyor is already required to check the approved design prior to the development being constructed and that it would be too onerous to require an architect or building designer to verify the apartment development following planning approval.

'Council considers that the original architects should be required to remain involved in the project beyond the planning permit stage until final completion of the development.' (Boroondara City Council)

'The current procedure of the building surveyor issuing the building permit entails a check point that assesses whether the documentation is consistent with the endorsed planning permit plans. Adding another check point by an architect or a registered building designer would not add any value to the process other than additional time and cost.' (Greater Dandenong City Council)

'This step is fully supported however it is recommended that this process must be independent of the developer and their team to ensure a robust system free from undue influence. Recent reports of compliance failures with building regulations have demonstrated there are conflicts inherent in having private building surveyors signing off on their own work.' (Cardinia Shire Council)

Other planning and design practitioners said mandating the use of an architect to design an apartment development would ensure apartment amenity issues were addressed.

'Architecture plays a crucial role in sustaining and enhancing the wellbeing of individuals, families and societies. The architectural profession plays a major role in shaping all aspects of the built environment for the betterment of all. We believe mandating innovative, site-specific design responses should be at the foundation of the standards.' (Australian Institute of Architects)

Many submitters said involving experts in design review processes would be helpful. Many councils said a review of how effective the implementation of the standards are in achieving the outcomes was also needed.

'Additional measures, such as the use of a design review panel, or other expert judgement, should be mandated for apartment sizes of less than 35m².' (Mihaly Slocombe Architects)

'An independent review is required when a unit is designed under a certain floor area, say 40m², as these sorts of apartments will require excellent design, not average, for the places to be livable' (Anonymous)

'The government should develop and detail a process to review implementation and outcomes with regular 6 monthly reporting to be followed up by a formal and public report no later than 3 years from the date the provisions become operative.' (Cardinia Shire Council)

Our response

Implementation of the Better Apartment Design Standards will be supported by new tools and processes. This includes:

- Best-practice design guidelines for designing and assessing apartment developments, which will include examples of how the standards can be applied in different urban contexts.
- An education and training program for council and private-sector planning, building and design practitioners about the design and assessment of apartment developments in line with the new standards, also considering alternative design solutions.
- A design review process to provide guidance and advice to local governments about how to assess more complex apartment developments.
- An apartment buyers and renters guide, to help buyers and renters make informed decisions.

A monitoring and review program will be established by the Department of Environment, Land, Water and Planning to progressively measure the effectiveness of the Better Apartments initiatives in achieving the outcomes envisaged for communities. The Better Apartments program will be reviewed in three years.

Glossary

Apartment	A dwelling that is part of a larger building and has other dwellings above and/or below it and does not sit on its own parcel of land.
Borrowed light	When a room has no window directly to the outside and accesses daylight from adjacent rooms, it is known as 'borrowed light'.
Building separation	The distance between two separate buildings clear to the sky.
Communal open space	The outdoor area(s) of a building at ground level or incorporated in or on the building for the exclusive use of occupants.
Cross or cross flow ventilation	The natural movement of air through an internal space (or spaces) between one external opening and another.
Deep soil	An area of natural ground unimpeded by a structure below (and above), providing opportunities for groundwater infiltration and canopy trees.
Dual aspect apartments	An apartment with external walls facing more than one direction that allows for the possibility of natural cross-ventilation from openings in those walls. This includes corner apartments, through-block apartments and cross-over apartments.
Dwelling	A building used as a self-contained residence which must include a kitchen sink, food preparation facilities, a bath or shower, and a closet pan and wash basin. It includes outbuildings and works normal to a dwelling.
Habitable room	Any room of a dwelling or residential building and includes a bedroom, living room, kitchen, dining room and study; but excludes a bathroom, laundry, toilet, pantry, walk-in wardrobe, corridor, lobby, clothes drying room and other space of a specialised nature occupied neither frequently nor for extended periods.
Light well	An unroofed space bounded on all sides which provides daylight to more than one storey of a building and which may also provide ventilation.
Natural ventilation	The movement and change of air in internal spaces by natural means through the use of a window that can be opened rather than the use of mechanical systems.
One bedroom apartment	An apartment that contains an additional habitable room separated from the main habitable room by a wall.
Orientation	The compass direction that an apartment, apartment building or habitable room faces, typically defined by the location of primary openings in external walls.
Outlook	A place from which a view is possible; a vantage point.

Private open space	An outdoor space of an apartment for the exclusive use of occupants.
Saddleback bedroom or snorkel bedroom	A bedroom in an apartment where the bedroom is connected to a window in the exterior wall of the building via an adjoining space that is used to access daylight.
Setback	The minimum distance from any allotment boundary to a building.
Single-aspect apartment	An apartment with external walls facing only in one direction.
Sunlight	Direct rays from the sun, providing radiant heat as well as daylight.
Thermal comfort	The perception of physical comfort in a space, which is influenced by air temperature and movement, humidity, radiant heat, glare and the sense of having some control of these factors.
Urban heat island effect	The heating of a city or metropolitan area that is warmer than surrounding rural areas because vegetated areas have been replaced with buildings, roads and other impervious surfaces as the area has urbanised.

Appendix

Better Apartments Draft Design Standards Submission Form

Better Apartments

Have Your Say at DELWP

Better Apartments Draft Design Standards

Please submit your comments by 5:00pm Monday, 19 September 2016.

Your comments are invited on the **Better Apartments – Draft Design Standards** which are set out below.

This is your opportunity to review each Standard and provide feedback on whether you believe it contributes to improving the amenity of apartments.

You will need to download a copy of the Better Apartments – Draft Design Standards to inform your submission.

If you would like to provide additional information you may do this in Part C.

NOTE: Do not include private information such as names and addresses in the comments boxes or your attachment.

This form is divided into four parts as summarised below:

Part A – Contact Details (Part A is mandatory)
Part B – Draft Design Standards
Part C – Further comments
Part D – Privacy statement

Using this form

- Enter your comments directly into the form. Text boxes allow up to 3000 characters of text (including spaces). If you prefer, your comments may be attached in a separate document in either Microsoft Word or Adobe Acrobat PDF format in Part C.
- Fields marked with an asterisk (*) are mandatory and must be completed to submit the form.
- You can change or add to your submission by using the 'Previous Page' and 'Next Page' buttons at the bottom of the page to navigate through sections of the form.
- You are not able to save the submission form and return to submit; it must be completed in one sitting.

Part A - Contact Details

Title

Better Apartments

Have Your Say at DELWP

First name (Required)

Last name (Required)

Position title

Phone (Required)

Name of organisation

Postal address

Email (Required)

Confirm email address (Required)

I am submitting on behalf of a (select one) (Choose any one option) (Required)

- [ ] Individual
- [ ] Community-based organisation
- [ ] Local government - metropolitan
- [ ] Local government - regional
- [ ] State government department or agency
- [ ] Construction or development industry organisation
- [ ] Sole provider or company involved in the development industry
- [ ] Architect or building designer
- [ ] Planning or development consultant
- [ ] Other

PART B - DRAFT DESIGN STANDARDS

BUILDING SETBACK

Refer to page 15 of the Better Apartments Draft Standards.

How satisfied are you that the proposed standard addressing building setback will improve the amenity of apartments? (Choose any one option)

- [ ] Very Satisfied
- [ ] Satisfied
- [ ] Dissatisfied
- [ ] Very Dissatisfied
- [ ] Undecided

Would you recommend any changes to the standard addressing building setback? (Choose any one option)

- [ ] Yes
- [ ] No

Answer this question only if you have chosen "Yes" for "Would you recommend any changes to the standard addressing building setback?"

If yes, please specify.

LIGHT WELLS

Refer to page 17 of the Better Apartments Draft Standards.

How satisfied are you that the proposed standard addressing light wells will improve the amenity of apartments? (Choose any one option)

- [ ] Very Satisfied
- [ ] Satisfied
- [ ] Dissatisfied
- [ ] Very Dissatisfied
- [ ] Undecided

Would you recommend any changes to the standard addressing light wells? (Choose any one option)

- [ ] Yes
- [ ] No

Answer this question only if you have chosen "Yes" for "Would you recommend any changes to the standard addressing light wells? "

If yes, please specify.

ROOM DEPTH

Refer to page 19 of the Better Apartments Draft Standards.

How satisfied are you that the proposed standard addressing room depth will improve the amenity of apartments? (Choose any one option)

- [ ] Very Satisfied
- [ ] Satisfied
- [ ] Dissatisfied
- [ ] Very Dissatisfied
- [ ] Undecided

Better Apartments

Have Your Say at DELWP

Would you recommend any changes to the standard addressing room depth?
(Choose any one option)

- [ ] Yes
- [ ] No

Answer this question only if you have chosen "Yes" for "Would you recommend any changes to the standard addressing room depth? "

If yes, please specify.

WINDOWS

Refer to page 21 of the Better Apartments Draft Standards.

How satisfied are you that the proposed standard addressing windows will improve the amenity of apartments? (Choose any one option)

- [ ] Very Satisfied
- [ ] Satisfied
- [ ] Dissatisfied
- [ ] Very Dissatisfied
- [ ] Undecided

Would you recommend any changes to the standard addressing windows? (Choose any one option)

- [ ] Yes
- [ ] No

Answer this question only if you have chosen "Yes" for "Would you recommend any changes to the standard addressing windows? "

If yes, please specify.

STORAGE

Refer to page 22 of the Better Apartments Draft Standards.

How satisfied are you that the proposed standard addressing storage will improve the amenity of apartments? (Choose any one option)

- ☐ Very Satisfied
- ☐ Satisfied
- ☐ Dissatisfied
- ☐ Very dissatisfied
- ☐ Undecided

Would you recommend any changes to the standard addressing storage? (Choose any one option)

- ☐ Yes
- ☐ No

Answer this question only if you have chosen "Yes" for "Would you recommend any changes to the standard addressing storage? "

If yes, please specify. More information

NOISE IMPACTS

Refer to page 25 of the Better Apartments Draft Standards.

How satisfied are you that the proposed standard addressing noise impacts will improve the amenity of apartments? (Choose any one option)

- [ ] Very Satisfied
- [ ] Satisfied
- [ ] Dissatisfied
- [ ] Very Dissatisfied
- [ ] Undecided

Would you recommend any changes to the standard addressing noise impacts?
(Choose any one option)

- [ ] Yes
- [ ] No

Answer this question only if you have chosen "Yes" for "Would you recommend any changes to the standard addressing noise impacts? "

If yes, please specify.

ENERGY EFFICIENCY

Refer to page 27 of the Better Apartments Draft Standards.

How satisfied are you that the proposed standard addressing energy efficiency will improve the amenity of apartments? (Choose any one option)

- [ ] Very Satisfied
- [ ] Satisfied
- [ ] Dissatisfied
- [ ] Very Dissatisfied
- [ ] Undecided

Would you recommend any changes to the standard addressing energy efficiency? (Choose any one option)

- [ ] Yes
- [ ] No

Answer this question only if you have chosen "Yes" for "Would you recommend any changes to the standard addressing energy efficiency?"

If yes, please specify.

SOLAR ACCESS TO COMMUNAL OUTDOOR OPEN SPACE

Refer to page 28 of the Better Apartments Draft Standards.

How satisfied are you that the proposed standard addressing solar access to communal outdoor open space will improve the amenity of apartments? (Choose any one option)

- [ ] Very Satisfied
- [ ] Satisfied
- [ ] Dissatisfied
- [ ] Very Dissatisfied
- [ ] Undecided

Would you recommend any changes to the standard addressing solar access to communal outdoor open space? If so, please specify. (Choose any one option)

- [ ] Yes
- [ ] No

Answer this question only if you have chosen "Yes" for "Would you recommend any changes to the standard addressing solar access to communal outdoor open space? If so, please specify."

If yes, please specify.

NATURAL VENTILATION

Refer to page 29 of the Better Apartments Draft Standards.

How satisfied are you that the proposed standard addressing natural ventilation will improve the amenity of apartments? (Choose any one option)

- [ ] Very Satisfied
- [ ] Satisfied
- [ ] Dissatisfied
- [ ] Very Dissatisfied
- [ ] Undecided

Would you recommend any changes to the standard addressing natural ventilation? (Choose any one option)

- [ ] Yes
- [ ] No

Answer this question only if you have chosen "Yes" for "Would you recommend any changes to the standard addressing natural ventilation? "

If yes, please specify.

PRIVATE OPEN SPACE

Refer to page 31 of the Better Apartments Draft Standards.

How satisfied are you that the proposed standard addressing private open space will improve the amenity of apartments? (Choose any one option)

- [ ] Very Satisfied
- [ ] Satisfied
- [ ] Dissatisfied
- [ ] Very Dissatisfied
- [ ] Undecided

Would you recommend any changes to the standard addressing private open space? (Choose any one option)

- [ ] Yes
- [ ] No

Answer this question only if you have chosen "Yes" for "Would you recommend any changes to the standard addressing private open space?"

If yes, please specify.

COMMUNAL OPEN SPACE

Refer to page 33 of the Better Apartments Draft Standards.

How satisfied are you that the proposed standard addressing communal open space will improve the amenity of apartments? (Choose any one option)

- [ ] Very Satisfied
- [ ] Satisfied
- [ ] Dissatisfied
- [ ] Very Dissatisfied
- [ ] Undecided

Would you recommend any changes to the standard addressing communal open space? (Choose any one option)

- [ ] Yes
- [ ] No

Answer this question only if you have chosen "Yes" for "Would you recommend any changes to the standard addressing communal open space?"

If yes, please specify.

LANDSCAPING

Refer to page 34 of the Better Apartments Draft Standards.

How satisfied are you that the proposed standard addressing landscaping will improve the amenity of apartments? (Choose any one option)

- [ ] Very Satisfied
- [ ] Satisfied
- [ ] Dissatisfied
- [ ] Very Dissatisfied
- [ ] Undecided

Would you recommend any changes to the standard addressing landscaping? (Choose any one option)

- [ ] Yes
- [ ] No

Answer this question only if you have chosen "Yes" for "Would you recommend any changes to the standard addressing landscaping? "

If yes, please specify.

ACCESSIBILITY

Refer to page 37 of the Better Apartments Draft Standards.

How satisfied are you that the proposed standard addressing accessibility will improve the amenity of apartments? (Choose any one option)

- ☐ Very Satisfied
- ☐ Satisfied
- ☐ Dissatisfied
- ☐ Very Dissatisfied
- ☐ Undecided

Would you recommend any changes to the standard addressing accessibility? (Choose any one option)

- ☐ Yes
- ☐ No

Answer this question only if you have chosen "Yes" for "Would you recommend any changes to the standard addressing accessibility? "

If yes, please specify.

DWELLING ENTRY AND INTERNAL CIRCULATION

Refer to page 39 of the Better Apartment Draft Standards.

How satisfied are you that the proposed standard addressing dwelling entry and internal circulation will improve the amenity of apartments? (Choose any one option)

- [ ] Very Satisfied
- [ ] Satisfied
- [ ] Dissatisfied
- [ ] Very Dissatisfied
- [ ] Undecided

Would you recommend any changes to the standard addressing dwelling entry and internal circulation? (Choose any one option)

- [ ] Yes
- [ ] No

Answer this question only if you have chosen "Yes" for "Would you recommend any changes to the standard addressing dwelling entry and internal circulation? "

If yes, please specify.

WASTE

Refer to page 41 of the Better Apartments Draft Standards.

How satisfied are you that the proposed standard addressing waste will improve the amenity of apartments? (Choose any one option)

- [ ] Very Satisfied
- [ ] Satisfied
- [ ] Dissatisfied
- [ ] Very Dissatisfied
- [ ] Undecided

Would you recommend any changes to the standard addressing waste? (Choose any one option)

- [ ] Yes
- [ ] No

Answer this question only if you have chosen "Yes" for "Would you recommend any changes to the standard addressing waste?"

If yes, please specify.

WATER MANAGEMENT

Refer to page 43 of the Better Apartments Draft Standards.

How satisfied are you that the proposed standard addressing water management will improve the amenity of apartments? (Choose any one option)

- [ ] Very Satisfied
- [ ] Satisfied
- [ ] Dissatisfied
- [ ] Very Dissatisfied
- [ ] Undecided

Would you recommend any changes to the standard addressing water management? (Choose any one option)

- [ ] Yes
- [ ] No

Answer this question only if you have chosen "Yes" for "Would you recommend any changes to the standard addressing water management? "

If yes, please specify.

PART C - FURTHER COMMENTS

Part C is an opportunity to provide additional comments on the Better Apartments – Draft Design Standards.

You can submit your comments in the text box below.

Note: Answer this question if it applies

If you prefer, your comments may be attached in a separate document in either Microsoft Word or Adobe Acrobat PDF format.

PART D - PRIVACY AND INTELLECTUAL PROPERTY

Please complete this information so that your comments can be registered and considered. The Department of Environment, Land, Water and Planning (DELWP) is committed to protecting the privacy of personal information. For more information read DELWP's Information Privacy Policy (http://delwp.vic.gov.au/privacy). The personal information in your comments is collected by the DELWP to administer the public consultation process only. For transparency and accountability, your comments may be published on the DELWP website which is accessible worldwide. Any person may view your comments. Your comments may remain on external servers, even once your comments are removed from the DELWP website. All comments are public documents and may be accessed by any member of the public unless you request and your comments are given confidential status. You can request access to your personal information by contacting DELWP's Freedom of Information Unit by phone on (03) 9208 3112 or email foi@delwp.vic.gov.au If you are making comments as an organisation your comments may be published, including the name of your organisation. The Department may consider an application for comments to be published anonymously in exceptional circumstances. If you are making comments as an individual please tick the box in the 'Privacy Agreement' section which most accurately reflects the way you want DELWP to publish your comments. Please tick only one box.

Privacy Options (Choose any one option) (Required)

- ☐ These comments are being made by an organisation and I understand that it will be published , including the name of the organisation
- ☐ I agree that my comments can be published openly with my name and suburb/town but no other details
- ☐ I request my comments to be published anonymously with my suburb/town but no other details
- ☐ I request that my comments not be published and my submission will only be disclosed to DELWP officers and any working groups formed to consider the submissions.

Note: Please select an option. If you do not select an option you will not be able to continue with this submission.

IMPORTANT

Selecting the last option in the privacy options above does not guarantee that confidentiality will be granted. DELWP will consider requests for confidentiality on a case by case basis. Please provide reasons why your comments should not be published and also state whether you would like your comments to be published anonymously or withdrawn if you are not granted confidentiality.

Request for confidentiality reasons

Third Party Information

Where personal information about other people (including photos) is included in my comments, I have notified them of the contents of this Privacy Collection Notice and obtained their consent to their personal information being disclosed to DELWP and published on the internet.

Do you agree to the third party information statement? (Choose all that apply) (Required)

- [ ] I agree

Intellectual property rights

I am entitled to deal with the intellectual property rights (including copyright) of all material (both mine and any third party's) in my comments and have obtained the necessary consent(s) from any and all third parties owning the copyright for such dealings.

Do you agree to the intellectual property rights statement? (Choose all that apply) (Required)

- [ ] I agree

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