Support for SEPP 65 and the Residential Flat Design Code

Submission to the Department of Planning & Environment
14 November 2014

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Top: ‘Maddison Mews’ – northern half of the former Tooth & Co site, Redfern – design by Meriton Apartments Pty Ltd. Pre-SEPP 65 south facing apartments exhibiting little design quality

Bottom: ’Moore Park Gardens’ – southern half of the former Tooth & Co site, Redfern – design by Allen Jack & Cottier Pre-SEPP 65 north facing apartments which began the cultural shift towards the acceptability of denser living by choice.

Executive Summary

The introduction of *State Environmental Planning Policy No. 65 – Design Quality of Residential Flat Development* (SEPP 65) and the Residential Flat Design Code (RFDC) was a game-changer for NSW living when introduced in 2002. The complete package which included the need for building designs to be produced by trained professionals, and a set of guidelines standards and a design review process, demonstrably lifted the standards and take-up of apartment living. This lead the way to a more compact and efficient city. The need for such an approach was heralded by the national AMCORD standards a decade before, when the national debate and media focused on poor and substandard unit developments, sensationalised by owners unfurling banners over their balconies declaring their homes unfit to live in and unable to be sold.

The City of Sydney Council (the City) is perhaps the greatest user of this standard, assessing and approving more apartments over the past ten years than any other local jurisdiction. Housing supply approvals in the City of Sydney Local Government Area are ahead of NSW state targets, and the acceptability of uneven designs carries developer risks. On the other hand, there are few industries that can presell their entire inventory (through off the plan sales) prior to production. The purchaser or investor is a relatively uninformed transactor and the information provided at point of sale is diagrammatic and subject to disclaimer.

SEPP 65 and the RFDC have provided an environmental and consumer protection function by ensuring that minimum requirements for healthy living (ventilation, daylight, ceiling heights, storage and building separation) are matters taken into account consistently across the state. However, an issue that has arisen since 2002 is the uncertain weight given to the guiding standards by the courts when designs are subject to appeal. For this reason, it is strongly recommended that nine code components be embedded in the SEPP itself providing clarity and certainty around their application with the remaining components in their current guideline format.

The City strongly supports the design quality outcomes that have resulted from the application of SEPP 65 and the RFDC. The City relies on their code-like value as contained in the RFDC to ensure design quality in apartment development. The City believes that design quality and high residential amenity are essential to support Sydney's successful transformation into a more compact, liveable, economical and environmentally sustainable city.

The exhibited SEPP 65 amendments and revised RFDC include some welcome changes and clarifications but the proposed performance overlay will increase uncertainty and degrade the policy through court precedence and industry perception. It is not possible to clearly define clear code components as alternatives within a loose performance-based framework, a point noted by legal analysis. This proposed performance overlay across a dozen or so measures will undermine the realisation of quality design and amenity outcomes and lead to significant levels of planning uncertainty. Court decisions may collapse the design quality intent and the community will suffer the consequences of a return to poor amenity.

It is recommended that the best outcome is a certain 'code' or 'standards' component in the SEPP and a more flexible 'guideline' component. The City recommends that SEPP 65 and the RFDC (proposed to be renamed the Apartment Design Guide (ADG)) allocate discretion where it can be assessed and minimize discretion where the alternative to a numeric guide cannot be defined or is uncertain.

The overarching recommendations of the City of Sydney are:

1. Adopt a statutory framework of clear simple numeric code components and a clear pathway for planning merit based variation to provide certainty where required and flexibility where appropriate and amend the structure of the proposed ADG.

2. Insert core code components into the SEPP 65 instrument – this will provide a high level of certainty and appropriate flexibility. In relation to apartments:
    i. minimum separations by building height
    ii. minimum 70% to receive **2 hours sunlight** to their living room window and balcony in mid-winter
    iii. minimum 60% to be naturally cross-ventilated (up to 10 storeys)
    iv. minimum apartment sizes
    v. minimum ceiling heights
    vi. maximum 8 apartments per core
    vii. maximum habitable room depth
    viii. minimum mix of apartment types (with limited upper flexibility range to be selected by Councils)
    ix. minimum communal open space
    x. minimum universal (accessible) design
    xi. minimum deep soil and tree planting (except in CBD areas)
    xii. minimum separation/setback from busy roads and rail corridors.

3. Clarify through accompanying guidance notes that Standard Instrument LEP Cl. 4.6 (or SEPP 1) is the pathway for varying the code components based on planning merit to provide flexibility.

4. Delete the performance criteria and *different design feature or method* for core standards.

5. Parliamentary Counsel Office to review the development standards and any clauses relating to variations to or from the standards for robustness.

6. Establish a biennial cycle of consultation and review of the operation of SEPP 65 and the ADG and issue regular (as required) clarifications and guidance for interpretation through circulars and practice notes.

7. Adopt the 2 hour sunlight control to living rooms and balconies as a universal standard for apartment development.

8. Clarify that the minimum parking standard within 800m of a train station is to be zero.

9. Clarify that SEPP 65 Clause 30 does not override maximum parking development standards in LEPs.

10. Clarify that SEPP 65 development standards are not overridden by SEPP BASIX.

11. Retain and strengthen the maximum room depth to ceiling height provisions and revised maximum building envelope provisions.

12. Reclassify the current performance criteria in the ADG as objectives.

13. Provide stronger and clearer guidance to local plan making authorities on acceptable relationships between height and FSR.

SEPP 65 Recommendations
Detailed commentary and recommendations on the Clauses of SEPP 65 are found at **Appendix A**

ADG Recommendations
Detailed commentary and recommendations on the provisions of the ADG are found at **Appendix B**

14. In the event that the core standards in Recommendation 5 remain in the ADG and performance criteria can be used to circumvent quality outcomes provided by the standards:
    i. Provide a clause in SEPP 65 that describes a performance based pathway for proposing 'different design features or methods' that are equal to or better than the outcomes under the development standards and not inconsistent with them;
    ii. Clearly identify the 'core' measurable standards in the ADG and provide a linking clause in SEPP 65 that makes it clear that they are the highest order standards and that performance criteria are subordinate – this will provide a low to moderate level of certainty and clarity;
    iii. Include a section in the ADG that describes a very robust general methodology for assessing applicant proposed "different design features or methods";
    iv. Redraft the performance criteria to be measurable and verifiable;
    v. Provide technical verification methods to support three critical standards being: daylight, natural cross ventilation and minimum apartment size performance criteria – all performance criteria should have verification methods; and
    vi. Set up technical committees to draft technical verification methods to support each remaining performance criteria.

1.0 Introduction

This submission has been prepared by the City of Sydney (the City) in response to exhibition of draft amendments to SEPP 65 and the RFDC (renamed the ADG) by the NSW Department of Planning & Environment (the Department).

1.1 Summary of the key features of the proposed amendments

The Department's summary of the key features of the exhibited draft documents are:

- *amendment so that SEPP 65 will apply to residential flat buildings, shop top housing and mixed use developments that include apartments*
- *three clear reasons why consent authorities cannot refuse a DA if it complies with the design guide for ceiling heights, apartment size and car parking*
- *renaming the Residential Flat Design Code the 'Apartment Design Guide'*
- ***the Apartment Design Guide is a guideline to be applied flexibly***
- ***key parts of the Apartment Design Guide will prevail over council Development Control Plans to remove conflicts***
- ***the Apartment Design Guide is outcome based and focuses on performance criteria***
- ***car parking requirements have been reduced in accessible locations to improve feasibility***
- *confirm that residential flat building applications need to comply with BASIX*
- *delegation to councils to set up design review panels and amended fees that councils can collect*
- *introduce a minimum size for studio apartments*
- ***clearer alternative solutions to specific performance criteria***
- *clearer and fairer guidance about assessing privacy and building separation*
- *clearer design advice for natural ventilation and daylight*
- *proposed education and support program to ensure that the SEPP and guideline are used consistently.*

Source: NSW Department of Planning and Environment, *Overview Proposed amendments to SEPP 65 and the Residential Flat Design Code*, p7

(emphasis indicates main issues dealt with in this submission).

1.2 The compelling case for review of SEPP 65 and the RFDC

1.2.1 Uncertainty through appeals

The industry constantly promotes certainty and code-based assessment. Yet proponents and their experts constantly seek to set aside numeric design requirements for commercial advantage. Initially the court interpreted the 'rules of thumb' in the RFDC (guiding code) as development standards. This resulted in the quality outcomes described further below. Recently however, coinciding with a change to the weight given to DCP controls, some court judgements have treated the guiding measures with little weight resulting in some poor amenity outcomes being approved. If the measures in the ADG are described as highly flexible guidelines as well as having discretion in their implementation then this tendency will allow further diminution of existing quality outcomes

1.2.2 SEPP 65 Relevancy

State Environmental Planning Policy 65 (SEPP 65) has been in force since 2002 and it is appropriate to review the operation of the policy and the accompanying *Residential Flat Design Code* (RFDC). The City of Sydney has a strong interest in the design quality of apartment buildings. As of June 2014 the City has almost 75,500 apartments in the Local Government Area (LGA), of which 30% have been approved since the introduction of SEPP 65 and the RFDC. In the eight years since 2006, 283 apartment building projects have been approved in the LGA with a combined value of $7,390 million ($7.4 billion) excluding non-residential components.

A further 3,898 units are currently under consideration at various stages of the development application process (2012 Floor Space and Employment Survey and City of Sydney Development Statistics 2006-2014).

Looking to the future, the City expects that almost all the growth in residential dwellings in the LGA will be in the form of apartments. The City's strategic plan, *Sustainable Sydney 2030*, sets a target to provide an additional 48,000 dwellings by 2030 from 2006 levels or approximately an additional 40,000 dwellings from the present.

By 2030, more than half the dwellings in the City of Sydney LGA will have been designed with regard to the objectives and standards set out in SEPP 65 and the RFDC which will be a legacy achievement for this state.

1.2.3 Legacy Considerations – One Chance to get it Right

Apartment buildings are regarded as legacy construction because strata titled apartment buildings are effectively permanent fixtures of a city, outliving many generations who reside in them and are difficult and expensive to repair and change. In the Sydney LGA, apartment developments are typically large developments. Since 2006, on average they have comprised 78 units with a median capital value of $26.51 million. As the vast majority of apartment developments are strata titled, redevelopment is uncommon because of the complexity of dealing with large numbers of individual owners who set their own price for their interest in a redevelopment site being consolidated. The result is that the redevelopment of a poorly performing apartment building without overwhelming incentives or compulsory acquisition is highly frustrated. Therefore it is essential that strata-titled buildings are well designed before construction begins and the concrete sets.

1.2.4 National Planning Context

SEPP 65 and the RFDC give effect to the Council of Australian Governments' (COAG) urban design quality principles. COAG agreed in December 2009 on a national objective and set of reforms 'to ensure Australian cities are globally competitive, productive, sustainable, liveable and socially inclusive and are well placed to meet future challenges and growth.'

As a prerequisite to qualify for future infrastructure funding from the Federal Government for capital city projects the Government must adopt policy settings that meet Criterion 8: *'Encourage world-class urban design and architecture'*.

Anecdotally, the RFDC is being used as a de-facto national standard, including use in other states of Australia to provide appropriate urban and architectural design standards for apartment development. It is also referenced in English and New Zealand housing codes.

Recently, Moreland City Council (VIC) produced a *Higher Density Design Code* based on the SEPP 65 RFDC which, supported by the Victorian Coalition Government, won a Planning Institute of Australia award.

1.2.5 The Social Case for SEPP 65 and the RFDC

The State Plan target to 'build liveable centres' requires the metropolitan plan to direct a significant proportion of Sydney's future growth to be delivered as infill development. This must largely be in the form of apartment buildings. The social acceptability of this housing stock, so very different from the traditional quarter acre block will hinge on its design quality and amenity.

The success of SEPP 65 demonstrates how important higher design quality and amenity has been to increasing the social acceptance of higher density living compared to the poor quality outcomes and resultant poor acceptance of apartment living by the general public prior to SEPP 65 coming into effect. This acceptance will be critical to the successful transformation of the Sydney metropolitan area over the coming decades.

SEPP 65 and the RFDC ensures that high density development results in liveable, high amenity environments that deliver community wellbeing and support Sydney's continuing economic growth, environmental sustainability and success as a global city.

1.2.6 The Economic Case for SEPP 65 and the RFDC

As Sydney grows the economic imperative to intensify development around existing infrastructure is increasing. Sydney needs to increase the number of dense job hubs that deliver high productivity due to agglomeration effects. These hubs benefit from being proximate to the dense residential areas needed to support them.

A dense city ensures that it is possible for workers to live near their workplaces, rather than being required to commute long distances with associated disadvantages in terms of time and environmental sustainability impacts. If jobs and housing are not proximate transport costs are high and the city's road network, already under pressure, will grind to a halt. Also, a high density city supports space and cost efficient active transport which increases network efficiency and population health and consequently puts downward pressure on health related expenditure.

In a large and growing global city such as Sydney, where well located and public transport connected land supply is limited, maintaining the potential for workers to live close to their jobs necessitates high density residential development.

The acceptability of high density residential neighbourhoods to a highly skilled and globally mobile workforce will depend on quality and liveability.

For lower income groups, in a context of an in-demand housing market fuelled by historically low interest rates, price for non-investors is largely determined by capacity to pay (or capacity to borrow) - then only regulation assures minimum quality standards (see analysis *Housing Design Standards Evidence Summary* by the Greater London Authority).

High density housing theoretically lowers the distributed land cost component. When supply/demand issues stabilise lower land cost per dwelling will enable higher density apartments to be delivered at a significantly lower price point than low density housing.

Amenity can also add to the global competitiveness of business and spatial economic output. Increasingly skilled global talent (highly-qualified, experienced and multi-cultural) has become the key source of economic advantage for cities and regions.

As with other cities facing a similar high density future, the major challenge for Sydney is to ensure that intensified urban environments are shaped with a focus on achieving high standards of liveability and amenity; that they are characterised by high quality design and levels of environmental sustainability; and are well located and serviced by public transport and social infrastructure.

In a very recent study (released at 6th October 2014), Boston Consulting Group surveyed over 200,000 people world-wide in the 'global talent' work-pool. In this study Sydney was ranked as the 4th most preferred global workplace destination behind just London, New York and Paris. (Boston Consulting Group Global Talent Survey 2014)

Australia, generally, was ranked 7th, implying the significance of local factors has increased Sydney's ranking above the national ranking. This provides Sydney businesses with a significant global advantage to access this highly-skilled workforce to enhance global competitiveness. Businesses are able to take advantage of local labour market size, rejuvenation, expertise and specialisation – both to recruit and attract globally-mobile labour but also to access knowledge flows for diffusion of innovation and other productivity gains.

With the ageing of the world population, a shortage of this global workforce is looming. Australia is expected to have a shortage by 2020 and a two million person shortage by 2030. Global talent is expected to become scarcer. This will make perceptions of city attractiveness even more significant for sustained economic success.

In either case, minimum product standards through regulation that provides more certainty over amenity can enhance global labour attractiveness. SEPP 65, in enhancing and guaranteeing a high standard of residential amenity in apartments not only reduces direct risk of poor amenity on relocation but also increases the certainty of the quality of other properties in a residential location.

Put simply, higher (and sustained) amenity attracts skilled labour. Labour attracts business and job growth, which, in turn, can add further to location-specific amenity – leading to a 'virtuous' economic growth cycle. The opposite can also occur, if lowered amenity standards drive such global workers to other locations.

Land prices paid by developers have over time become the highest cost input for development. Development guides, rules and standards contained in the current RFDC provide the private sector with certainty in relation to development costs/yields and therefore land price. Excluding recent overseas investors with different drivers, certainty has contributed to the stabilisation of land values over time for domestic developers. Land price escalation through uncertainty and speculation is the most significant affordability problem for housing in New South Wales. Clear and universally understood development standards reduce the likelihood of speculation on land because the relationship between cost and return is more reliable. Good urban policy recognises that design quality of housing is inextricably linked with quality of life. A range of health and wellbeing benefits are directly associated with living in a well-designed home that provides a safe, light, well-ventilated, hygienic environment with sufficient household facilities.

1.2.7 Victorian Government driving stronger standards

The Victorian Government architect, the Victorian Government and Melbourne City Council have identified that SEPP 65 and the RFDC have provided NSW with a competitive advantage in the provision of quality housing that flows through to general economic productivity advantages. They have seen the very poor outcomes of unregulated high density residential development, have learnt from NSW's experience and the Victorian Government will shortly introduce similar but stronger standards to those in the RFDC into its planning system.

The Victorian Government is driving reforms to its planning system to embed stronger standards than SEPP 65 and the RFDC.

Melbourne's high-rises riddled with bad apartments

June 13, 2014

Peter Truong is happy living in his tiny studio apartment on Flinders Street. *Photo: Simon Schluter*

Melbourne's newest high-rise towers are overrun by bad-quality apartments, but the investors who buy them do not care – as long as they get the rent. A Melbourne City Council study has estimated 55 per cent of the city's tallest apartment buildings over 15 storeys are of "poor" quality, with common design flaws such as cramped layouts and a lack of natural light.

Meanwhile, windowless bedrooms exist in almost a quarter of new residential developments studied.

The good, the bad and the ugly of Melbourne apartments.
Source: Future Living report, City of Melbourne 2013.

Some of Melbourne's architects are so unhappy with the result of buildings they have designed they have refused to have their name associated with them, the Australian Institute of Architects has revealed.

The group's president, Melbourne architect Jon Clements, is backing calls for minimum apartment design standards, mandated through legislation.

"The general feeling among architects is that it's ridiculous to be forcing architects to produce buildings that don't deliver appropriate quality and amenity standards," he said.

Melbourne City Council's Future Living report, which analysed the design of 25 of the city's new residential developments, found poorer quality apartments were more likely to be located in taller apartment buildings.

All 11 of the high-rise apartment designs studied were considered either poor or average quality. Common failings included kitchens in hallways, poor storage, lack of ventilation and excessive energy use.

But the report's authors said as long as there was someone willing to rent the property, the investors who buy 85 per cent of apartments in the municipality were not bothered.

"An owner occupier … will be more discerning when it comes to layout, access to sunlight, daylight, ventilation and adequate storage," the report said.

"An investor will be less concerned with these elements as long as the apartment can be rented."

There are no laws in Victoria governing how apartments must be designed, beyond the National Construction Code.

A set of apartment design standards is currently being developed by the Office of the Victorian Government Architect. Planning Minister Matthew Guy is committed to enforcing them.

"They're being developed to be enforced not as a deceleration," he told The Saturday Age.

Earlier this week it was revealed Melbourne is home to developments so dense that they would not pass laws in Hong Kong, New York and London, prompting concerns the city was building the slums of the future.

The Age June 13, 2014

Sky-high slum fears in Melbourne prompt design rule rethink by state government

4 April, 2014 **Geraldine Chua**

Melbourne skyline. Source: The Australian

The Victorian government is set to overhaul building controls to boost the design quality of apartments being built in the Melbourne CBD amidst fears that the city skyline will be marred by sub-standard buildings.

Currently, regulations only impose controls on ventilation, light and key design measures to proposals up to four storeys – measures which have not kept up with a billion-dollar building boom.

Just last month, Planning Minister Matthew Guy fast-tracked five residential projects for approval on one day.

Yet, complaints have arisen within the industry about the unimaginative design, small size and lack of amenities (light, ventilation and privacy) in many of these larger inner-city developments.

A 2013 City of Melbourne report, titled 'Understanding the Quality of Housing Design', extends these issues to poor building and apartment layout, poor environmental performance, a lack of communal space and facilities, and flexibility and adaptability limitations.

Design experts have also cited the use of cheap materials as contributing to the creation of 'sky-high slums', which puts the burden of repair and replacement on future generations.

These concerns have prompted the Office of the Victorian Government Architect to finalise best practice standards based on their NSW equivalent, including regulations for amenities such as access to daylight and ventilation, and building performance.

However, some architects say that exacting standards have been imposed by major builders, who blame naive entrants for possible sub-standard designs.

"You cannot legislate for good design," Roger Poole, chairman of Bates Smart and a board member of think-tank Committee for Melbourne, was recently quoted in the Australian Financial Review.

Design is not the only element impacted by the surge in 'sky-high slums', with the Reserve Bank having issued a warning last year about the potential apartment glut in Melbourne's CBD. Current trend vacancy

rates for Melbourne's Docklands and Southbank is about seven per cent, as compared to the average rate of three per cent that landlords and tenants regard as a good balance.

Robert Mellor, managing director of BIS Shrapnel, has also said there could be 2000 apartments in excess of demand in Melbourne's inner city, with more to become available this year – signals of an oversupply of new apartments, which could drive down prices and rents, spelling bad news for investors and developers.

The same story has been told for Brisbane, Melbourne and Canberra, with inner-city apartments said to be flooding into capital cities at up to three times the market's ability to occupy them.

Oversupply is threatening apartment prices and rents in areas like Docklands in Melbourne

The Australian April 4, 2014

1.3 Common Arguments against Regulating for Quality

Common but flawed arguments that are mounted against maintaining design quality standards in the SEPP 65 and the RFDC are:

1.3.1 Argument 1: Quality and Amenity Standards Decrease Land Supply

Land supply for medium density residential development is not affected by the application of design quality standards. Land supply is affected by strategic planning decisions made by local plan making authorities guided by the metropolitan strategy and in brown field sites, resolution of affectations such as flooding and contamination. The housing market operates as a series of sub-markets that are geographically, typologically and price-point specific. Currently, infrastructure, supply and transport availability, not diminution of quality, is what affects land supply.

1.3.2 Argument 2: Quality and Amenity Standards Increase Construction Costs

The Reserve Bank of Australia in its February 2014 submission to the Senate References

Committee Inquiry into Affordable Housing[1] showed development analysis that construction costs for infill development (predominantly apartment buildings) is lower in Sydney inclusive of design quality standards under SEPP 65 than in Melbourne which currently has no design quality standards. This would tend to indicate that construction costs are subject to other more relevant drivers than quality standards of design and construction. It is also apparent that NSW apartment design standards have not resulted in a competitive economic disadvantage between cities. Data shows that land costs and government charges are higher in Sydney. Land cost relates primarily to supply, and developer competition for pipeline is subject to other finance and regulatory decisions that are largely unaffected by design quality standards.

Claims from some sectors that continued application of the standards in SEPP 65 and the RFDC will drive up cost are unsubstantiated. In any case, what little cost can be attributed to date has already been absorbed into land valuations since 2002. No evidence has been provided that the very minor changes proposed in the ADG will have any impact on development cost. Additionally there is little evidence that the existing standards increase costs.

1.3.3 Argument 3: Increased Construction Costs Reduces Affordability

This criticism ignores the central part that developers play in delivering apartments and their economic imperatives. In economic theory developers are referred to as 'profit takers'. This refers to their objective to maximise profits within given constraints (they are businesses, not not-for-profit organisations). The classic strategies for maximising profit are: to offer the highest competitive price for land in order to secure raw inputs; minimise all subsequent costs (including construction and design performance) and to maximise sale price in a given market appetite. When savings are made through lowering design standards, there is no incentive to pass the savings on through lower prices to consumers, if the capacity is there to achieve higher returns in a seller's market. This means that any reduction in costs will be absorbed as profits or higher prices for the next site acquisition leading to no improvement in affordability.

The NSW Property Council in correspondence to the NSW Department of Planning and Infrastructure (19 July 2011) noted that their members thought that:

> *The standards sought under the SEPP 65 framework were seen to have had only a relatively minor impact on the affordability of dwellings*

Moreover there is no evidence that if numeric code components (standards) were reduced that any savings will be in fact passed on to a purchaser as a saving. This is because in the current market, price is more strongly influenced by capacity to pay and investor demand through property tax

[1] Submission to the Inquiry into Affordable Housing Senate Economic References Committee, February 2014 | http://www.rba.gov.au/publications/submissions/inquiry-affordable-housing/pdf/inquiry-affordable-housing.pdf

breaks (capital-gain seeking investors and negative-gearing seeking investors outstripping shelter seekers) than competition.

1.3.4 Argument 4: Regulation Increases Uncertainty

This argument is only true of unclear regulation. Clear regulation that is easily interpreted and consistently applied increases certainty. The BCA is a good example of clear regulation leading to certainty. The City's proposal is to make the "core" development standards very clear and easily interpreted.

1.3.5 Argument 5: Regulation increases approval times

When regulation is unclear, compliance with regulatory standards is difficult to assess leading to uncertainty and increased approval times. As noted above, if regulation is clear easily interpreted and consistently applied, then processing of approvals will be faster.

1.3.6 Argument 6: Regulation stifles innovation

The development industry has demonstrated strong resistance to innovation in apartment building design. In contrast, true innovation is being developed in construction techniques which is governed by a strong regulatory framework (the BCA) unaffected by design quality regulation. The McKinsey Global Institute's 2014 report *A Blueprint for Addressing the Global Affordable Housing Challenge* identified construction costs as the second most significant barrier to affordable housing provision. The first is land cost which is addressed above.

1.3.7 Argument 7: Registered Architects can ensure design quality without the need for standards

Architects are subject to the instructions and demands of their clients. In the absence of measurable standards in an environment of vague principles, architects can at most ensure within these professional constraints that quality is maximised. However, they are in a weak servant position with contractual arrangements to meet milestones and cannot in themselves ensure an even standard of quality is maintained against the instructions of their client. More simply, only clear standards can empower architects to design the quality which they are trained to deliver.

1.3.8 Argument 8: Design Quality Regulations Conflict with LEP Controls

Well tested controls effectively mitigates conflict. If the minimum controls are specified in the SEPP then any conflict is clearly removed. The issue is perceived rather than actual and in spite of the apparent complexity the ADG provides a clear solution.

Where the relationship between the height control (equivalent in storeys) and FSR is less than 3:1, then a purely residential development will require design skill to resolve, less skilled designers will increase the risk to approval. This simple test should trigger a potential purchaser of a site to hire a team including a skilled architect and planner to develop a simple concept plan consistent with SEPP 65 development standards to assess yield prior to purchase.

High density development requires skill to design successfully and some sites, particularly in business zones (including mixed use areas), may be unsuitable for purely residential development.

This section has addressed some of the most common criticisms of development standards that ensure design quality. The next section focuses on what all the stakeholders agree on: everyone

supports design quality and everyone wants certainty. Some sectors incorrectly see the two issues as being in competition and so set the balance more toward certainty (of profitability) over quality, but, as will be explained, this conflict is perceived and not real.

1.4 Strong professional and industry support for development standards for design quality and certainty

The relevant professional institutes, Australian Institute of Architects, the Planning Institute of Australia and Australian Institute of Landscape Architects are unanimous in their advice that only a policy framework that provides strong measurable development standards will provide certainty and ensure that quality design outcomes will be delivered.

The peak development industry groups, either agree or concede that SEPP 65 and the standards and guidance in the RFDC have increased the quality of apartment buildings.

Previously major residential flat building developer Harry Triguboff said he opposed design quality requirements. Now he supports it because 'design sells'.

In 2011 the NSW Property Council wrote to the NSW Department of Planning and Infrastructure:

> *Over 85% of respondents considered that the implementation of SEPP 65 and the RFDC have led to the improved design of residential flat buildings.*
>
> *The greatest driver of this improvement was the guidance provided in the RFDC*
>
> *Source: NSW Property Council to NSW Department of Planning and Infrastructure*, 19 July 2011

In a recent opinion piece published in the Sydney Morning Herald, Chris Johnson CEO of the Urban Taskforce said:

> *… by making apartments up to 25 metres code-assessable* [based on clear standards]*… through a change to the NSW housing codes to set standards to be complied with leading to faster approvals.*
>
> Chris Johnson, *Density done well*, Sydney Morning Herald 20 April 2014

The push for clear standards has been a consistent theme. In 2013 Mr Johnson wrote in a submission on the Planning White Paper:

> *We are of the firm belief that most forms of development can be considered as code assessable development* [based on clear standards] *including residential apartment and commercial buildings in appropriate, clearly defined locations.*
>
> Urban Taskforce, *Planning White Paper Submission*, 28 June 2013, p28

The development industry clearly advocates for quality and certainty delivered through clear standards in codes.

The City's experience of the planning assessment process generally shows that developers who are willing to embrace the standards and seek high quality outcomes experience a more

straightforward and quicker pathway through the approval process. Conversely, those developers who resist complying with the standards or seek to challenge their intent typically experience a more complex and longer pathway that absorbs time, cost and creates uncertainty. The City's experience is that a collaborative relationship with developers who are willing to meet the standards upheld by the City leads to a quicker, more streamlined process that is more efficient and satisfactory to all parties.

1.5 No Quality Standards = Poor Quality Outcomes (the Melbourne Experience)

The City of Melbourne has recently completed a review of the poor quality housing outcomes that have resulted from their largely unregulated market operating in a very permissive planning system. The report titled *Understanding the Quality of Housing Design*[2] completed in early 2013 concluded that only 16% of developments could be described as 'good' (attached for reference). Common issues identified in recent developments resulting from unregulated market pressures included:

1. *Small apartment sizes*
2. *Lack of apartment choice*
3. *Dominance of car parking*
4. *Poor Internal Amenity:*
    - *(a) Poor light*
    - *(b) Poor natural ventilation*
    - *(c) Visual privacy*
5. *Poor building layout*
6. *Poor apartment layout*
7. *Limited flexibility and adaptability*
8. *Poor environmental performance*
9. *Limited communal space and facilities*
10. *Lack of storage and utility spaces*

City of Melbourne, *Understanding the Quality of Housing Design,* 2013, p29

The report's main conclusion was that:

> *The quality of new housing in the City of Melbourne is just as important as the number of new homes built. Housing design is a key element in helping to accommodate successfully the proposed population growth in the City of Melbourne and create a positive legacy of city living for future generations.*
>
> City of Melbourne, *Understanding the Quality of Housing Design,* 2013, p13

[2] http://www.melbourne.vic.gov.au/BuildingandPlanning/FutureGrowth/Documents/Understanding_Quality_Housing_Design.pdf

> *The importance of good housing design …[is that] it can add social, economic and environmental value and help create neighbourhoods and communities which are robust enough for future challenges and change. Securing high quality housing is essential to successfully transform our urban renewal areas and provide 45,000 new homes which meet the daily needs of residents, are fit for purpose in the long term and designed to accommodate the changing needs of occupants throughout their lifetimes.*
>
> ibid, p75

This report and its assessment of the poor outcomes resulting from lack of design quality standards directly led to the Victorian Government developing standards for residential flat buildings that emulate and improve on SEPP 65 and the RFDC. Although an early draft was leaked early in 2014 which set back the timetable for adoption it has not halted internal progress. The Victorian Government's resolve to improve on the standards in SEPP 65 and the RFDC is also because these are regarded as resulting in Sydney's competitive advantage in delivering quality housing. In July Victorian Minister for Planning the Hon. Matthew Guy MP told 774 ABC Melbourne that if the standards were revised, they would address things like natural light and size:

> *The Government architect has put a proposal to us that all the bedrooms need to have a form of natural light.*
>
> *The concept of just building apartments with just bedrooms that have borrowed light, either from lift wells or balconies sourced through another living room, is not one that is going to lead to a greater level of amenity.*
>
> *Melbourne is in the midst of quite a substantial building boom. There is a huge level of demand which is greater than people realise.*
>
> *As a consequence we need to have some improved standards around what we're building.*
>
> *Source: ABC News, 23 July 2014*

Minister Guy's comments clearly indicate that in an unregulated market, design quality can be reduced to very low levels. Some of the 'innovations' that the Minister referred to, include rooms with no windows, are present in recent development applications to the City from Melbourne based developers unfamiliar with SEPP 65 and the RFDC. Some national developers have recently indicated in their discussions with the City Planning team that it was not possible to compete in the Melbourne CBD market with quality designs that include features such as balconies, windows to bedrooms and internal storage, against what is being built. With the introduction of new Victorian development standards this situation will be resolved.

More consistent apartment standards attract owner-occupiers as well as investors. Lower standards (as experienced in Melbourne) attract investors who are return sensitive through rental rates. A mixed tenure is a better proposition for any city's liveability standards.

1.6 Who bears the Cost of Poor Quality Apartments?

The most internationally respected building quality regulation organisation CABE from the UK sums up the argument for ensuring design quality:

> *Past failures to achieve good housing design are clearly recognisable – badly-designed places impose costs on their occupiers, their neighbours and society. At a time of scarce resources, design costs are in effect social costs, born by all and requiring careful justification.*
>
> Design Council CABE, *The Bishop Review – The Future of Design in the Built Environment,* 2012, 6.3, p21.

CABE's excellent series *Building for Life* demolishes the arguments for ever reducing standards. Their evidence based analysis shows that unclear or overly flexible standards reduce long term flexibility and utility of the final asset. In unregulated markets consumer preferences are often not matched by available products. The evidence for providing clear standards is well summarised in the Greater London Authority's 2010 publication *Housing Design Standards Evidence Summary*.

1.7 Conclusions on the need to Maintain Design Quality

i. SEPP 65 and the RFDC have delivered significant value across social, economic and environmental spheres and are critically important for the successful delivery of the NSW State Plan and the Sydney Metropolitan Strategy.

ii. The arguments against setting and maintaining development standards are flawed and inconsistent.

iii. The relevant professional associations and peak development industry groups support development standards that deliver certainty and quality.

iv. It is in the public's interest to introduce clear standards as demonstrated by the Victorian Government's example of a deregulated market failure.

The recommendations in Section 2 of this submission seek to support and strengthen SEPP 65 and the RFDC (ADG) and the critical development standards that they contain.

2.0 Recommendations

Recommendations are made by the City of Sydney in relation to the proposed amendments to State Environmental Planning Policy No. 65 (SEPP 65) and the Apartment Design Guide (ADG).

The recommendations create a statutory framework that will deliver quality, amenity, certainty and appropriate flexibility in residential flat buildings in NSW.

1. **Adopt a statutory framework of clear measurable code-like measures and an understood and accepted pathway for planning merit based variation to provide certainty where required and flexibility where appropriate and amend the structure of the proposed ADG.**

   Section 3 of this submission describes the issues with the exhibited performance criteria and Section 4 outlines a clear simple solution with strong precedents in other SEPPs.

   Amend the structure of the ADG. For each issue include: an introduction, reference to the relevant development standards in SEPP 65 (generally replacing the RFDC "rules of thumb"), value statement, objectives, good design practice (guidance) and provide worked examples for complex development standards.

   'Good design practice' should be mandatory but not reportable. Design Review Panels should check conformance with 'good design practice' and require changes where variation is not justified. In revising the acceptable solutions to 'good design practice' clearly identify where choices need to be made between alternative 'good design practice' solutions and in other instances where all 'good design practice' solutions must be implemented concurrently.

   Carefully revise the photographs in the ADG. The photographs in the ADG should be revised to include only examples that are SEPP 65 compliant. They should also be tightly cropped to only illustrate the issue being discussed and the photograph carefully chosen by an architect to ensure that it does actually illustrate the acceptable solution. Irrelevant photographs should be deleted. Finally photographs need to be chosen with care in relation to ground level interfaces. The majority of the photos used in the ADG illustrate how not to interface with the public domain at ground level.

2. **Insert core measurable development standards into the SEPP 65 instrument – this will provide a high level of certainty and appropriate flexibility. In relation to apartments:**

   Section 5 of this submission describes the 9 'core' code components (numeric standards) and provides a clear nexus to the Design Quality Principles for each as a rationale for their adoption. Adopting this approach will effectively reduce the number of regulations from more than 80 to 9.

   Retain and reinforce the most critical measures from the RFDC and ADG by including them code components in SEPP 65 Cl. 6A.

   i. **minimum separations by building height**

   ii. **minimum 70% of apartments to receive 2 hours sunlight to their living room window and balcony in mid-winter**

iii. **minimum 60% of apartments to be naturally cross ventilated**

iv. **minimum apartment sizes**

v. **minimum ceiling heights**

vi. **maximum 8 dwellings per core**

vii. **maximum habitable room depth**

The City supports a small number of additional measures be included in the development standards. The most important of which are:

viii. **minimum mix of apartment types**
(with limited upper flexibility range to be selected by Councils)

For larger developments require a mix of apartment types consistent with a flexible set of ranges similar to those used in SDCP in SEPP 65 Cl. 6A "Apartment Layout".

ix. **minimum communal open space**

Require minimum communal open space provision in SEPP 65 Cl. 6A "Common Circulation and Spaces"

x. **minimum universal (accessible) design**

Require universal housing as a development standard under SEPP 65 Cl. 6A "Apartment Layout" and expand the application to 100% Silver and 10-15% Platinum for all developments.

xi. **minimum deep soil and tree planting**

Require minimum deep soil and tree planting relevant to zone type and density in SEPP 65 Cl. 6A "Common Circulation and Spaces" excluding CBD areas.

xii. **minimum separation/setback from busy roads and rail corridors**

Require minimum separations and elevation above busy roads and rail corridors in SEPP 65 Cl. 6A "Visual Privacy (and Separations)".

The City strongly urges the Department to retain and strengthen the critical design quality standards provided in the RFDC. Sections 4 and 5 of this submission provide additional detail on a simple and clear way to achieve this supported by technical detail in Appendix C.

Rename SEPP 65 Cl. 6A "Visual Privacy and Separations". Require minimum separations in SEPP 65 Cl. 6A "Visual Privacy and Separations" from blank walls, boundaries etc. Additional guidance for the drafting of this development standard is provided in Appendix C.

3. **Clarify through accompanying guidance notes that Standard Instrument LEP Cl. 4.6 (or SEPP 1) is the pathway for varying development standards based on planning merit to provide flexibility.**

   Clarify that SILEP Cl. 4.6 applies to the development standards. This will make it clear that applicants should use the established framework of presenting a planning argument that it is "unreasonable or unnecessary in the circumstances of the case" to strictly comply with the development standard where flexibility is required.

4. **Delete the performance criteria and *different design feature or method* for core standards.**

   In excess of 80 performance criteria and 290 acceptable solutions are proposed in the amendment which both increase uncertainty and introduce a heavy regulatory burden on applicants and consent authorities. A detailed description of the problems associated with performance criteria can be found in Section 3 of this submission. A clear framework of 9 'core' code components (measurable standards) will increase certainty and reduce unnecessary regulation. See Section 5 of this submission for more detailed description of the proposed development standards and measures and Appendix C for additional details.

   See recommendation 14 (i) to (vi) if this recommendation is not adopted.

5. **Parliamentary Counsel's Office to review the development standards and any clauses relating to variations to or from the standards for robustness.**

   For SEPP 65 to deliver certainty, the code components associated with it warrant legal drafting. This will ensure that there is consistency of interpretation and that the objectives of the standards will be met. Appendix C provides a conceptual draft of what the proposed 9 code components (development standards) could constitute.

   Although not strictly required, if standards were to remain in the ADG and/or pathways for flexibility retained, they should be subject to legal drafting given the direct cross reference between the guide and SEPP 65.

   The City would welcome the opportunity to provide further feedback on drafting the development standards given the City's extensive applied use of existing standards.

6. **Establish biennial cycle of consultation and review of the operation of SEPP 65 and the ADG and issue regular (as required) clarifications and guidance for interpretation through circulars and practice notes.**

   All amendments to planning policy incorporate a defined process of review. A biennial review should be detailed in SEPP 65 so as to enable consultation with Consent Authorities, Design Review Panels (DRPs) and review of recent Court decisions. This will enable the Department to update statutory instruments and guidelines or issue circulars or practice notes for guidance relating to interpretation if outcomes are not reflecting design quality objectives. This formal process should supplement constant monitoring and adjustment through practice notes as required.

7. Adopt the 2 hour sunlight control to living rooms and balconies as a universal standard for apartment development.

Direct sunlight is an important aspect of residential amenity. The City understands that achieving 3 hours of direct sunlight to 70% of apartments is the guideline that is difficult to achieve based on site constraints and density. The City's position is that if the 2 hour standard is reasonable in high density contexts that it should be universally acceptable. Requiring 2 hours not 3 hours to 70% of apartments will have the effect of making compliance with the measure more possible in contexts in which apartments are appropriate and specifically for sites that are oriented with their long boundaries facing very close to east or west.

This proposed adjustment of the general control must go hand in hand with clear guidance that where sites provide very limited direct sunlight that they are not suitable for residential apartment development and other non-residential land uses need to be considered. The City supports retaining measurement of sun only from 9 to 3 (not 8 to 4 refer to *Sunlight Access to Apartments for Residential Amenity,* Cox/ATA, 2005 on the Department's website) and requiring sun to living room windows and balconies which is consistent with the City's current practice (since balconies may be too cold/windy to use in the critical winter months to provide amenity for sitting in the sun).

If this is adopted, no variation or exemption should be given for the conversion of existing buildings (office towers) if they are intended to be for permanent residential use. Any concession would create substandard housing outcomes for residents. Consistency is critical.

8. Clarify that the minimum parking standard within 800m of a train station is to be zero.

Set minimum parking rates within 800m of train stations in inner and middle metropolitan Sydney that override LEPs and DCPs. This is more straightforward and is supported by data on observed resident behaviour from TfNSW.

9. Clarify that SEPP 65 Clause 30 does not override maximum parking development standards in LEPs.

Either move parking from Clause 30 to Clause 6A
or
Reword Clause 30 to ensure that it doesn't override maximum parking rates in LEPs. The current wording may have the effect of not allowing a consent authority to refuse consent to a development where it exceeds the maximum parking standard because it has exceeded the minimum parking standard. See Appendix A for further discussion and detailed recommendations relating to parking.

10. Clarify that SEPP 65 development standards are not overridden by SEPP BASIX.

Insert a note in SEPP 65 to ensure that SEPP BASIX will not invalidate the development standards in it.
and/or
Clarify in SEPP 65 that where development standards deal with aspects of development that could be deemed to impact on "thermal performance" or to "reduce emissions of greenhouse gases" that

their aims are concerned with residential amenity and that no conflict or overlap with the aims specified in SEPP BASIX exists.

11. Retain and strengthen the new maximum room depth to ceiling height provisions and revised maximum building envelope provisions.

Retain and strengthen the proposed maximum 2.5:1 ratio control to improve natural daylight and natural ventilation of habitable rooms. This provision if implemented correctly may remove the necessity to include a maximum building envelope control. This is a sensible improvement of apartment quality standards that is strongly supported by environmental engineering advice. Otherwise, retain the existing 8m maximum habitable room depth and proposed definition of building envelope to be a maximum of 18m including balconies.

12. Reclassify the current performance criteria in the ADG as objectives.

The existing performance criteria are well drafted as objectives. They refer to maximising and minimising certain aspects of development. They should be reclassified as objectives in most cases.

13. Provide stronger and clearer guidance to local plan making authorities on acceptable relationships between height and FSR.

Clarify that where a consent authority is rezoning land where the desired future character is mainly residential apartment buildings that the appropriate height control should be guided by either:

- envelope testing where the FSR occupies at most 70% of the envelope (or inversely that the envelope is 143% larger than the total floor space); or
- defining a height control in storeys at a rate that is 3 times the FSR (ie. 2:1 = 6+ storeys) and a height in metres control by the formula of ((3 x 3.1 x the FSR) + 4)m (ie. 2:1 = 22.6m)

SEPP 65 Recommendations

Detailed commentary and recommendations on the Clauses of SEPP 65 are found at **Appendix A.**

ADG Recommendations

Detailed commentary and recommendations on the provisions of the ADG are found at **Appendix B.**

Please Note: The recommendation 14 (i) to (vi) apply in the not-preferred situation where standards remain in the ADG and performance criteria can be used to circumvent quality outcomes provided by the standards – refer to Recommendation 4.

14. In the event that the core standards in Recommendation 5 remain in the ADG and performance criteria can be used to circumvent quality outcomes provided by the standards:

i. Provide a clause in SEPP 65 that describes a performance based pathway for proposing 'different design features or methods' that are equal to or better than the outcomes under the development standards and not inconsistent with them;

This is important to ensure that the design quality standards are not undermined.

ii. Clearly identify the 'core' code-based measures in the ADG and provide a linking clause in SEPP 65 that makes it clear that they are the higher order standards and that performance criteria are subordinate – this will provide a low to moderate level of certainty and clarity;

This option is open to the Department but will seriously reduce the certainty around compliance with the core measures. This option will require very clear definition of the hierarchy of the standards in relation to the performance criteria and their relationship to the acceptable solutions and alternative solutions. Due to the relative consideration of code standards in DCPs it is imperative that the ADG be given stronger status otherwise the code standards will be subject to major variation particularly by the court. This will then permeate through industry and consent practices.

If this option is pursued then the ADG should be referenced in SEPP 65.

iii. Include a new section in the ADG that describes a very robust general methodology for assessing applicant proposed "different design features or methods";

The new section in the ADG must ensure that a "different design feature or method" delivers an equal to or better outcome than the code standard. This is addressed in detail is Section 4 of this submission with suggested wording.

iv. Redraft the performance criteria to be measurable and verifiable;

If the decision is made to retain performance criteria then they should be modelled on the National Construction Code (BCA) which includes clear measurable hurdles. Any performance criteria should produce outcomes that are equal to or better than the development standards.

v. Provide technical verification methods to support three critical standards being: daylight, natural cross ventilation and minimum apartment size performance criteria – all performance criteria should have verification methods; and

Examples of what the development of daylight and natural ventilation criteria and verification methods need to consider are provided at Appendix D and are based on the Green Building Council Multi Unit Residential v1 2009 tool and for apartment size reference the London Housing Design Guide furniture schedules and circulation guidance provided for information at Appendix F.

vi. Set up technical committees to draft technical verification methods to support each remaining performance criteria.

Like the Australian Building Codes Board that maintains the NCC (BCA), the Department should establish panels of experts to develop and maintain the performance criteria and technical verification methods and update the documents annually to reflect the outcomes of the work of these technical committees.

In addition, the City wishes to acknowledge its support as follows:

SEPP 65 Amendments

1. Retention of the principle components of SEPP 65 including the 'Design Quality Principles' and design review panels (DRP);
2. Retention of the requirement for residential flat buildings to be designed by or under the supervision of a qualified architect to support minimum design and development application standards; and
3. Retention of DA Design Verification requirements by the architect who designed or supervised the design of the project.

Proposed Apartment Design Guide

1. Additional provisions relating to maximum building depth and habitable room depth;
2. Relation of car parking rates to public transport access levels or distance to railway stations;
3. Substantial retention of the objectives, 'rules of thumb' and 'better design practice' provisions of the *Residential Flat Design Code* with minor amendments (subject of further commentary in Appendix B);
4. Retention of the requirement for merit based assessment;
5. Expansion of minimum dwelling sizes (subject of further commentary in Appendix B);
6. Provision of minimum standards for window and balcony setbacks from side and rear boundaries (subject to further commentary in Appendices B and C); and
7. Provision of additional guidelines for ground level apartments.

3.0 A Lack of Certainty and Quality

Updates to the policy and apartment design guidelines include:
Certainty and consistency around standards

Media Release: The Hon. Pru Goward MP, Minister for Planning, Minister for Women 23 Sep 2014

3.1 Quality and Certainty

Because of the performance overlay, the proposed amendments to SEPP 65 and ADG will not improve the planning and design of apartment buildings. As drafted, the proposed amendments to SEPP 65 and the ADG promote unintended uncertainty and will unwind the code-based improvements in the quality of apartments that have been a direct result of the introduction of SEPP 65. A number of lawyers have promoted this real potential to their clients.

Across a dozen of so criteria, the performance alternatives lack clarity, vary in priority without hierarchy and are too numerous. This will most likely lead to appeal and compromise in the Land and Environment Court. The outcome will be that the quality of apartments will be left to a series of individual case based decisions by the Court. The Court will establish: what the standards are; how the standards should be applied; and, how the standards should be assessed. This is not the desired outcome.

Currently the *Rules of Thumb* from the RFDC are often used as de facto development standards with variations supported through a merit based assessment during the consent process. The City supports this approach and believes that the standards should be acknowledged and formalised with merit assessment for variation allowed to provide flexibility as though a code. The City appropriately exercises its discretion and allows variation on merit and circumstances and explains significant departures in its reports.

3.2 The Structural Problem in the ADG - Performance Criteria

The inherent problem in the draft ADG is the link between performance criteria and the quantitative criteria needed to assess a proposed '*different design feature or method'* as described in paragraph 3 on page 11 of the ADG. In order to develop a design, numbers (such as dimensions and areas) must be used. If the standards are not numerical and measurable, and cannot be justified by comparison with an acceptable solution or derived from verification methods (i.e., if verification methods are not provided), then it is difficult to assess the acceptability of the design.

The proposed amendments to SEPP 65 do not provide a sufficient link between the public policy qualitative statements, which represent the values of society, and the quantitative aspects of the architect's job. Therefore the architect must attempt to interpret what society values, choose quantitative values appropriately, and then convince the responsible consent authority that the design does in fact comply with the policy. The problem in this case is that, without measurable

standards, the designer might choose, and the authority may accept, values that are contrary to the desires of society.

Refer*: Qualitative versus quantitative aspects of performance based regulations; Douglas Bellar, Greg Foliente and Brian Meacham; CIB/CTBUH conference Kuala Lumpur; 2003*

3.3 A Known and Accepted Model with Performance Criteria

A precedent for the setting of performance standards is the National Construction Code (BCA) where a nationally agreed set of development standards has delivered baseline quality and certainty nationally across multiple jurisdictions.

The BCA provides a clear hierarchy of control that consist of: objectives, functional statements; performance requirements; a 'deemed to satisfy' provision and allows alternative solutions (their language for a *different design feature or method)*. It also provides detailed assessment methods for alternative solutions called Verification Methods. The Verification Methods include: Calculations - using analytical methods or mathematical models; and/or Tests - using a technical operation either on-site or in a laboratory to directly measure one or more performance criteria of a given solution. In keeping with the flexibility provided in the performance-based BCA, practitioners are not restricted to using a listed Verification Method. Any other method may be used if the appropriate authority is satisfied that it establishes compliance with the BCA. However, in making a decision, the appropriate authority may have regard to the relevant Deemed-to-Satisfy Provisions or Verification Methods provided for in the BCA.

The BCA works because it is clear; the "deemed to satisfy" numerical standards (similar in concept to the ADG's "acceptable solutions") are meritorious, accepted and supported. A detailed and structured way of proposing alternatives to the "deemed to satisfy" measurable standards is given. The structured alternative pathways create outcomes that are equal to or better than the "deemed to satisfy" numerical standards by requiring technical modelling benchmarked against them. There is no merit path around the standards contained in the BCA. This ensures certainty.

3.4 There are currently no standards in the ADG

The current draft of revised SEPP 65 and the ADG is deficient because it references standards in the ADG where none are nominated. The ADG contains performance criteria that may be interpreted as 'standards' but do not provide a measure and their language is imprecise. Acceptable and alternative solutions provide multiple possible design responses and as such cannot be described as standards; although if redefined and rewritten they could become such.

The lack of certainty arises because assessors may not have the skills to assess different methods. Moreover, the *different design feature or method* may not be objective, measurable or provide for independent verification. It is important to be precise then enable discretion. Do not introduce imprecision, which through discretion will lead to abandonment of the intent. Housing is

too valuable and lasts too long to get wrong.

Case Study 1 (below) and the subsequent discussion illustrate and explain the problem with the performance criteria in the ADG as they have been drafted.

Case Study 1, Studio apartment size

Coinciding with the launch of the exhibition of SEPP 65 and the ADG the Minister for Planning circulated a press release which included:

> *Updates to the policy and apartment design guidelines include:*
> *- A minimum size of 35m^2 for studio apartments*
>
> Media Release: The Hon. Pru Goward MP, Minister for Planning, Minister for Women, 23 Sep 2014

A few days later an analysis was published by Gadens legal advisers to the property industry, on their website:

> *…there is plenty of latitude for 'thinking outside the square'…*
>
> *We can see how the performance-based approach works when we consider how apartment size is dealt with. The proposed performance criterion 4N-1 requires that:*
>
> *Spatial arrangement and layout of apartments is functional, well organised and provides a high standard of amenity.*
>
> *The actual minimum size of apartments is not part of the criterion itself. Instead, minimum apartment sizes are nominated as part of the 'acceptable solutions'. That is, studio, one bedroom, two bedroom and three bedrooms apartments must be at least 35m^2, 50m^2, 70m^2 and 95m^2 respectively for the 'acceptable solutions' to be satisfied.*
>
> *However, a developer may propose smaller apartments if it can be demonstrated that the 'spatial arrangement' will still provide a high standard of amenity, etc.*
>
> Gadens, *Cutting red tape? New more 'flexible' apartment design rules*, http://www.gadens.com/publications/Pages/Cutting-red-tape--New-more-%E2%80%98flexible%E2%80%99-apartment-design-rules.aspx, Accessed 26/09/2014

What has caused the difference between the Minister's statement and the industry's legal interpretation?

The key to working with Parts 3 and 4 of the ADG is that a development needs to demonstrate how it meets the *performance criteria*. Applicants can use either the listed *acceptable solution*, in this case 35m^2, the *alternative solution* (where available) or put forward *a different design feature or method* that achieves the relevant criteria (ADG p11). As Gadens have demonstrated this last pathway effectively allows the numerical standard to be disregarded.

What are the performance criteria?

The ADG gives performance criteria that define what the resulting outcome should achieve. For apartment size the performance criterion is:

> *4N-1 Spatial arrangement and layout of apartments is functional, well organised and provides a high standard of amenity.*

What will be the outcome?

A development can implement an apartment smaller than 35m^2 because a *high standard of amenity* is undefined and what aspects of an apartment need to be *functional* is not stated. Meeting the criterion can easily be successfully argued (as per the Gadens' analysis). For example if a studio apartment was to contain a fold down bed and table, a kitchen consisting of a small sink and microwave and a minimal bathroom with a shower over the water closet. It could be functional with as little as 16m^2, half the intended minimum size.

This approach will undermine the authority of SEPP 65 and the standard will become unenforceable. In its place no control will exist.

3.5 Discussion following from Case Study 1

3.5.1 Do the performance criteria in the ADG establish standards as referenced in the SEPP?

No. Performance criteria are normally accompanied by verification methods to allow evaluation of their performance in relation to defined criteria. These can be numerical standards for comparison, approved software, studies of existing parallel cases etc. These allow innovation while ensuring the performance criteria are not undermined and are normally tied to the performance of the acceptable solution without having to replicate it.

The performance criteria in the ADG are not measurable, there are no guidelines *for a different design feature or method* and there are no verification or evaluation methods in the ADG, this means in effect that there are no standards.

3.5.2 What would a performance based system look like?

To achieve the intended outcome a performance based system would need objectives, verification methods and evaluation guidelines that are proven and robust. The performance criteria also need to be written in language that is clear and unambiguous. They should not contain terms like sufficient, optimise, maximise/minimise or a high standard as these provide no basis for assessment.

3.5.3 What are some possible consequences of implementing performance criteria in the way currently proposed?

The Planning White Paper proposed performance based controls:

> *Development guides will be performance based rather than solely prescriptive controls. By being performance based, they will be focussed on the planning outcomes to be achieved instead of the method used to get there. The economic feasibility of development guides will*

> *be tested and considered to ensure they can deliver desirable outcomes and do not place unrealistic burdens on development.*
>
> *Each guide will have performance criteria and acceptable solutions. Acceptable solutions illustrate the preferred way of complying with a corresponding performance criterion and are usually expressed in measurable or quantifiable terms. There may be other ways to comply with performance criteria and it is up to the applicant to demonstrate how an alternative solution achieves this acceptably.*
>
> White Paper: A New Planning System for NSW, p99

The performance outcomes contained in the ADG should be meaningful and *measurable*. Similarly, what is meant by '*a different design feature or method'* should be made clear.

The opportunity to provide '*a different design feature or method' to achieve the performance criteria* may encourage applications that seek unreasonable departures from key controls and an incentive for proponents to manipulate solutions. The adoption of performance outcomes that are measurable and objective will help ensure that proposals relying on *a different design feature or method* do not become a means of securing approvals for speculative and unmeritorious applications.

The quantification of the assessment criteria contained in the ADG also requires further consideration. The criterion for verifying a *different design feature or method* is vague or non-existent and consequently dependent upon the perspective of the assessor. Similarly, no criteria for merit assessment is given, therefore the assessment could be subjective and vague.

Note: The ADG is unusual in that it uses the phrase "a different design feature or method" where most literature relating to performance based systems use the term "alternative solutions".

Case Study 2 demonstrates that the above is not an isolated problem in the ADG. This case study relates to increased ceiling heights that have been one of the most important outcomes of the current SEPP 65 and RFDC.

Case Study 2, Ceiling Heights

Minimum 2.7 celling heights in the City of Sydney LGA were in place by the 1990s. One of the more effective contributions to improving the quality of apartments in the current version of SEPP 65 and the RFDC has been to increase ceiling heights in habitable rooms from 2.4m, the minimum under the National Construction Code (BCA), to 2.7m state-wide.

Prior to the introduction of the RFDC, 2.4 metre ceiling heights in apartments were common place except in the City of Sydney (central Sydney area). Today, ceiling heights in apartments are generally 2.7 metres high. It is rare for higher ceilings to be proposed. This evidences that the RFDC *rule of thumb* has become a minimum standard and that there is little appetite in the industry to *innovative* and improve upon the standard amenity. Elsewhere, where a higher

standard does not apply 2.4 metre ceilings remain predominant.

The relevant section of the RFDC includes the following:

> *Objectives*
> *- To increase the sense of space in apartments and provide well-proportioned rooms.*
> *- To promote the penetration of daylight into the depths of the apartment.*
> *- To contribute to flexibility of use - To achieve quality interior spaces while considering the external building form requirements in residential flat buildings or other residential floors in mixed use buildings:*
>
> Rules of Thumb
>
> *- in general, 2.7 metre minimum for all habitable rooms on all floors, 2.4 metres is the preferred minimum for all non-habitable rooms, however 2.25m is permitted - for two storey units, 2.4 metre minimum for second storey if 50 percent or more of the apartment has 2.7 metre minimum ceiling heights*
> *- for two-storey units with a two storey void space, 2.4 metre minimum ceiling heights*
> *- attic spaces, 1.5 metre minimum wall height at edge of room with a 30 degree minimum ceiling slope.*
>
> *- Developments which seek to vary the recommended ceiling heights must demonstrate that apartments will receive satisfactory daylight (e.g. shallow apartments with large amount of window area).*
>
> *Residential Flat Design Code*, p74

The ADG contains the following performance criterion:

> *4O-1 Ceiling height achieves sufficient natural ventilation and daylight access*

The key word is *sufficient*. There are no objectives relating to ceiling height in the document.

The acceptable solution in the ADG follows the previous rules of thumb from the RFDC.

In this case *a different method* to achieve the performance criteria could be to use the National Construction Code (BCA).

The BCA objective is:

> *to safeguard occupants from injury or loss of amenity caused by inadequate height of a room or space*.

The functional objective is:

> *to provide height in a room or space suitable for the intended use*.

The performance requirement is that it:

must have sufficient height that does not unduly interfere with its intended function.

The deemed to satisfy provision in the NCC is:

2.4m in a habitable room.

Sufficient means adequate or enough. Clearly 2.4m is a sufficient ceiling height.

If implemented as is, without objectives, without a verification method, without an evaluation guide and with without imperative criteria; it is inevitable that a different method to achieve the relevant criteria *sufficient* would be 2.4m.

In some cases a lower ceiling would provide more storeys within a height limit. The construction saving of a lower ceiling in a tight marketplace will provide a competitive advantage that is likely to become endemic. Furthermore, there is no evidence to suggest that this will lower the price of housing as developers are profit takers and the range in dwelling prices are generally based on locational advantage. Housing is seen as an essential good and the price is determined by ability to pay fixed by lending institutions.

It is widely acknowledged that the 2.7m ceiling height is an improvement in quality in apartments and the use of the rule of thumb as a development standard in practice has ensured that it has been universally adopted. The improvement in the amenity of apartment buildings initiated by SEPP 65 in 2002 will be lost.

4.0 Achieving Design Quality Outcomes – A Clear Framework

> *Apartment living should not mean that quality is sacrificed – and that is what our changes ensure by setting minimum standards for communal open space, light, air and privacy.*
> Minister Goward, op.cit.

As the case studies show the use of a *different design feature or method* will undermine quality and contradict the Minister's statement.

We note that each of the other performance criteria could be interpreted with a variety of different design features or methods to undermine the quality gains in apartment design obtained by SEPP 65 since its inception.

4.1 Better Regulation Points Away from Performance Based to Prescriptive Regulation

The different regulatory approaches form part of a continuum, ranging from performance based options which specify desired outcomes or objectives but not the means by which these outcomes must be met, through to prescriptive rules that focus on inputs, processes and procedures. Prescriptive regulatory instruments are likely to be more justifiable where a high level of certainty is required. This type of regulation can provide greater consistency and clarity of expectations.

NSW 2021: a plan to make NSW number one sets the NSW Government's agenda for change. In order to restore accountability to government Goal 29 of the plan is to *restore confidence and integrity in the planning system.* This requires a clear and transparent planning system i.e. greater consistency and clarity of expectations. In this context prescriptive regulation rather performance based regulation is required.

Performance based alternatives which allow an applicant to determine how they will meet performance standards can be more flexible and encourage innovation. This approach is particularly important where rapid change is being experienced, for example, with fast paced technological advances. This is not the case for residential flat buildings.

Performance based regulatory schemes can also be cheaper to implement and/or administer than prescriptive regulation. However, it is important to consider the full range of impacts as compliance can be more difficult than for prescriptive regulation.

For residential flat buildings performance based regulations are difficult to develop, as they require detailed specification and measurement of desired outcomes, which are not readily apparent. Similarly, it requires the development of operational guidance to provide adequate understanding and knowledge of the requirements to ensure compliance – this is not currently available.[3]

[3] See NSW Government, *Guide to Better Regulation*, www.betterregulation.nsw.gov.au

The ADG has not provided either of these requirements as they are too difficult. Therefore relying only on a performance based guide to deliver quality for apartments is not practical, does not deliver certainty and will not restore confidence.

The undefined use of *a different design feature or method* provides even less certainty and is likely to increase the lack of confidence in the planning system. This aspect of the ADG should be abandoned.

4.2 Improving the operation of SEPP 65 is easily achieved.

The current draft SEPP 65 and the ADG could be improved with the following options to ensure quality in apartment buildings is continued (in order of preference):

Option 1 – Placing numerical code based development standards in SEPP 65 in clause 6A (strongly preferred)

For example for 6A (e) ceiling heights, insert the table in 4O-1 Acceptable solution 1 in the ADG. This would be similar to the structure of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008

Note: SEPP 65 is currently the only residential dwelling related SEPP that does not include development standards embedded in the statutory document. SEPPs including development standards for residential dwellings include the State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 and State Environmental Planning Policy (Affordable Rental Housing) 2009.

Option 2 – Indicating the code based standards in the ADG (acceptable)

For example for 6A (e) ceiling heights, indicate the table in 4O-1 Acceptable solution 1 in the ADG is the standard referred to. For clarity, it should be placed above the performance standard in the ADG and the interrelationships of the various parts of the ADG given a clear hierarchy with the Standards placed above the others.

Option 3 – Rewrite the performance criteria to include measurable standards. In the ceiling height case include the 2.7m dimension as a minimum.

For example: To ensure spaciousness, assist in natural cross ventilation and daylight penetration, accommodate a range of furniture and safely provide for the diverse daily activities of people the ceiling height in habitable rooms of an apartment will be a minimum of 2.7 metres.

The other variations in ceiling heights listed in the table can become acceptable solutions.

Option 4 – Rewrite the performance criteria such that a verification method and an assessment tool are available.

For example: Natural ventilation can be quantified by a variety of means and these can allow a variety of solutions leading to innovation. However, the ADG does indicate the amount of natural ventilation required for rooms in an apartment, how this is to be measured and what are the certification processes required to ensure that a *different design feature or method* has a achieved the required outcome.

A simple solution would be to adopt *Green Building Council of Australia IEQ-22 Natural Ventilation Guidelines:*

http://www.gbca.org.au/uploads/IEQ22%20Natural%20Ventilation%20Guidelines_MURT_191009.pdf

This guideline sets out a recognised and accepted performance based criteria to achieve natural ventilation in multi-residential buildings.

Note: Each performance requirement would require a suitably comprehensive guideline. In some cases additional research is required to ensure that the performance criteria are objective, measureable and provide independently verifiable assessment. If this is not achieved, the performance criteria will remain highly discretionary and unreasonable departures from the requirements will be encouraged. Discussion and examples are provided at Appendices E and F.

4.2.1 Explanation of options

Option 1 is normative being more consistent with other SEPP's that apply to housing and provides for flexibility in line with other environmental planning instruments through the application of SILEP cl. 4.6. (or SEPP 1) It also provides the most certainty.

Option 2 places standards in the ADG so that they can be read in relation to the performance criteria and acceptable and alternative solutions. It is less clear how flexibility is to be exercised by the consent authority as SILEP cl 4.6 does not apply. This could lead to uneven application of assessment undetected by the Department. The interaction of the standard and the performance criteria will need clear relationship definition and stated hierarchy. In this option an explanation of why some parts have a standard and other parts do may not be clear. This may have unintended consequences.

Options 2, 3 and 4 would require further review and testing with peak stakeholder groups.

Options 3 and 4 are more complex.

Option 4 could be introduced gradually over time.

Options 1 and 2 are discussed in detail below.

If further exploration of options 3 and 4 are required the City would be able to provide supplementary material.

The City recommends Option 1 – as its preferred model which embeds the essential non-performance standards in the SEPP 65 in clause 6A.

In addition the option for *a different design feature or method* should be deleted and the ADG should be reordered and its headings changed to include objectives (generally these are now named *performance criteria),* a lesser number of acceptable solutions and reinstate better design practice as guidelines.

4.3 Amendments required for Preferred Option 1

4.3.1 SEPP 65

1. AMEND Cl. 6A to become 6B and add a new 6A and a new definition

PROPOSED AMENDMENT

6A Residential flat development must comply with the following development standards:

(a) visual privacy and separation,

(b) solar and daylight access,

(c) common circulation and spaces,

(d) apartment layout,

(e) ceiling heights,

(f) balconies and private open space,

(g) natural ventilation (up to 35m in height),

(h) storage,

(i) parking.

6B Development control plans cannot be inconsistent with development standards under SEPP65 ~~Apartment Design Guide~~

The provisions of a development control plan under Division 6 of Part 3 of the Act, whenever made, are of no effect to the extent to which they aim to establish standards with respect to any of the following matters in relation to residential flat development that are inconsistent with the following standards: ~~set out: in the Apartment Design Guide~~

3 Definitions

Development standards means the provisions identified in Clause 6A

Explanation: Only a limited number of essential measurable quality standards would be placed in the SEPP. The remaining performance criteria, acceptable solutions, alternative solutions and the ability to use a different design feature and method remain in the ADG as Better Design Guidance.

2. ADD development standards set out in Appendix C of this submission into Cl. 6A

3. ADD Cl. 6C [Note: this is only required if *a better design feature or method* is not deleted. It is strongly recommended to delete this.]

PROPOSED AMENDMENT

6C Apartment Design Guide cannot be inconsistent with SEPP65 Development Standards

A different design feature or method referred to in the Apartment Design Guide cannot be inconsistent with any standard in clause 6A of SEPP65.

Explanation: This is required to ensure that innovation made available by a different design feature or method does not undermine the quality standards.

4. To enable certain Local Government areas to opt out of certain provisions a schedule similar to **Schedule 4 Land excluded from the General Exempt Development Code** of **State Environmental Planning Policy (Exempt and Complying Development Codes) 2008** should be provided in the SEPP with a supporting exclusion process detailed in a circular.

4.3.2 Apartment Design Guide

1. *AMEND Who is this Apartment Design Guide for - Page 10*

PROPOSED AMENDMENT

The Apartment Design Guide provides consistent planning and design guidelines ~~standards~~ for residential apartments across NSW. It has been prepared to:

2. *AMEND Achieving the performance criteria Page 11*

[If *a different design feature or method* is retained, it is strongly recommended to delete this.]

PROPOSED AMENDMENT

Parts 3 and 4 of the Apartment Design Guide provide performance based guidance for the siting, design and amenity of apartment development. Each topic area is structured to provide the user with:

1. A description of the topic and an explanation of its role and importance

2. Performance criteria that define what the resulting outcome should achieve

3. Acceptable solutions that provide possible design responses to achieve the performance criteria

4. Alternative solutions for selected topics that outline an alternative to the acceptable solutions,

e.g. for adaptive reuse projects

The key to working with Part 3 and 4 is that a development needs to demonstrate how it meets the performance criteria. Applicants can use either the listed acceptable solution, the alternative solution (where available) or put forward a different design feature or method that achieves the relevant criteria.

A different design feature or method provides for innovation that improves the quality of apartments by allowing for flexible ways of achieving an outcome.

Where a different design feature or method is proposed an applicant must demonstrate that they provide a measurable improvement to the quality of apartments when compared to any development standard in SEPP 65 and are capable of independently verifiable assessment

Explanation: This defines the purpose of a different design feature or method and ensures that they can be assessed.

4.4 Amendments required for Option 2 (not preferred)

4.4.1 SEPP 65

1. *ADD 6B and a new definition(below)*

PROPOSED AMENDMENT

6B Residential flat development must comply with the following development standards:

(a) visual privacy and separation,

(b) solar and daylight access,

(c) common circulation and spaces,

(d) apartment layout,

(e) ceiling heights,

(f) balconies and private open space,

(g) natural ventilation,

(h) storage

(i) parking.

2. *ADD Cl. 6C* [Note this only required if *a better design feature or method* pathway is not deleted. It is strongly recommended to delete this.]

PROPOSED AMENDMENT

6C A Different Design Feature or Method cannot be inconsistent with SEPP 65

A different design feature or method referred to in the Apartment Design Guide cannot be inconsistent with any standard in the Apartment Design Guide referenced in clause 6A of SEPP65.

3. ADD to Definitions

PROPOSED AMENDMENT

Standards means provisions and tables of the Apartment Design Guide Schedule 1 in relation to the carrying out of development, being provisions by or under which requirements are specified or standards are fixed in respect of any aspect of that development, including, but without limiting the generality of the foregoing, requirements or standards in respect of:

(a) visual privacy;

(b) solar and daylight access;

(c) common circulation and spaces;

(d) apartment layout;

(e) ceiling heights;

(f) balconies and private open space;

(g) natural ventilation;

(h) storage;

(i) parking; and,

(j) such other matters as may be prescribed.

4. To enable certain Local Government areas to opt out of certain provisions a schedule similar to **Schedule 4 Land excluded from the General Exempt Development Code** of **State Environmental Planning Policy (Exempt and Complying Development Codes) 2008** should be provided in the SEPP with a supporting exclusion process detailed in a circular.

4.4.2 Apartment Design Guide

1. AMEND Achieving the performance criteria Page 11

[If *a different design feature or method* is retained, it is strongly recommended to delete this.]

PROPOSED AMENDMENT

Parts 3 and 4 of the Apartment Design Guide provide performance based guidance for the siting, design and amenity of apartment development. Each topic area is structured to provide the user with:

1. A description of the topic and an explanation of its role and importance

2. Performance criteria that define what the resulting outcome should achieve

3. Acceptable solutions that provide possible design responses to achieve the performance criteria

4. Alternative solutions for selected topics that outline an alternative to the acceptable solutions, e.g. for adaptive reuse projects

The key to working with Part 3 and 4 is that a development needs to demonstrate how it meets the performance criteria. Applicants can use either the listed acceptable solution, the alternative solution (where available) or put forward a different design feature or method that achieves the relevant criteria.

A different design feature or method provides for innovation that improves the quality of apartments by allowing for flexible ways of achieving an outcome.

Where a different design feature or method is proposed an applicant should demonstrate that they provide a measurable improvement to the quality of apartments when compared to any standard in the ADG and are capable of independently verifiable assessment.

Explanation: This defines the purpose of a different design feature or method and ensures that they can be assessed.

2. *ADD Schedule 1 to the ADG. This would be the same as the standards set out in 6A of option 1. With the following note:*

   For the purposes of applying this guide, the development standards affected by Clause 6A and 6B of SEPP 65 are identified at Schedule 1

The next section describes the City's proposed development standards and validates their importance with reference to the existing relevant ADG and RFDC value statements. Appendix C provides a conceptual draft of how the development standards referred to above could work if. Appendix C is complex and the City would welcome the opportunity to provide further commentary regarding the drafting instructions for the development standards for the PCO.

5.0 Design Quality Development Standards

This section describes the City's proposed nine (9) code-based (development) standards and validates their importance with reference to the existing relevant ADG and RFDC value statements.

The City has reviewed these standards within the ADG that are referenced by SEPP 65 clause 6A and broadly agree that these cover most but not all of the "core" code-based components that ensure design quality.

The City believes that from the current 83 performance criteria and 290 acceptable solutions it is possible to consolidate to 9 "core" standards covering a range of measures and to locate them in SEPP 65 without requiring re-exhibition.

The nine (9) code standards required to ensure design quality and provide certainty are the same as those in the exhibited SEPP 65 clause 6A:

(a) Visual Privacy *and Separations*

(b) Solar and Daylight Access

(c) Common Circulation and Spaces

(d) Apartment Layout

(e) Ceiling Heights

(f) Balconies and Private Open Space

(g) Natural Ventilation

(h) Storage

(i) Parking

With the addition of (i) Parking that creates the link to clause 30.

Table 1 on the next page shows the measures covered under each of the proposed development standards above and Appendix C provides a conceptual draft of how the development standards could work if moved into SEPP 65. Appendix C is complex and the City would welcome the opportunity to provide further commentary substantiating these development standards.

Table 1. Preferred "core" code standards and measures

Code *Cl. 6A & Cl.30*	*Measures* *(Italics indicates not covered by Cl. 6A in exhibited draft)*
(a) Visual Privacy *and Separations*	Separations between windows, balconies, boundaries and blank walls by building height Separation increase at zone boundary *Separations from busy roads & rail*
(b) Solar and Daylight Access	Everywhere within a habitable room a window will be visible Maximum habitable room and overall building depth (8m, 18m) or Habitable room depth to ceiling height ratio (2.5:1) Direct sunlight – living and balcony (min. 70%-2hrs, max. 15%-0hrs) & communal (min. 50% - 2hrs)
(c) Common Circulation & Spaces	8 apartments per core per level, *40 per lift* Daylight and natural ventilation to common areas *Direct entry from the street to ground floor apartments and clear path to lifts* *Communal open space (% and size)* *Deep soil (%, number and size of trees)*
(d) Apartment Layout	Apartment sizes Bedroom, living room and wardrobe sizes *Universal (accessible) design silver (100%) and platinum (10%)* *Apartment mix % ranges*
(e) Ceiling Heights	Floor to ceiling and floor to floor heights
(f) Balconies and Private Open Spaces	Private open space sizes and adjacency
(g) Natural Ventilation	Every habitable room must have a window that is openable Cross ventilated apartments (min. 60%)
(h) Storage	Storage sizes
(i) Parking	Minimum rates near transport

Appendix E shows that almost all the 9 "core" proposed development standards and their related measures above are already covered by Cl. 6A (including parking captured under Cl. 30). The appendix shows the relevant subsection of Cl. 6A and the related section in the ADG. The remaining measures in the ADG should be reorganised to sit below the development standards nominated in Cl. 6A consistent with Table 1 above.

5.1 Proposed Code Standards' Value Statements

Although the value of the "core" code standards nominated above is self-evident it is important to restate their value. Most of the standards have value statements included in the RFDC and these have been restated, generally with only minor changes, in the ADG but with largely the same intent. The value statements reproduced here are those that relate to the "core" code standards and measures put forward by the City for consideration for inclusion in SEPP 65. Commentary is provided as appropriate particularly for those standards that are presently not covered by Cl. 6A.

5.1.1 Proposed Standard (a) Visual Privacy and Separations

Proposed measures:

- Separations between windows, balconies, boundaries and blank walls by building height
- Separation increase at zone boundary
- Separations from busy roads & rail

Separations (including at zone boundaries)

The value statement from the ADG relating to separations is clearly stated under the heading of Visual Privacy:

> *Visual privacy allows residents both within an apartment development and on adjacent properties to use all their private spaces without being overlooked. It balances the need for views and outlook with the need for privacy. In higher density developments it also assists to increase overall amenity.*
>
> *Visual privacy balances site and context specific design solutions with views, outlook, ventilation and solar access. The consideration of visual privacy requires an understanding of the adjacent context, site configuration, topography, the scale of the development and the apartment layout*
>
> ADG, p62

The value statement from the RFDC relating to separations and setbacks is provided in the section on Building Separation:

> *Buildings which are too close together also create amenity problems inside the building, for the space between and for neighbouring buildings. These problems include lack of visual and acoustic privacy, loss of daylight access to apartments and to private and shared open spaces*
>
> *Objectives [ie. provide development standards:]*
>
> - *To ensure that new development is scaled to support the desired area character with appropriate massing and spaces between buildings.*
> - *To provide visual and acoustic privacy for existing and new residents.*
> - *To control overshadowing of adjacent properties and private or shared open space.*

- *To allow for the provision of open space with appropriate size and proportion for recreational activities for building occupants.*
- *To provide deep soil zones for stormwater management and tree planting, where contextual and site conditions allow.*

RFDC, p28

Comment:
The importance of adequate separation between buildings cannot be overstated. As noted in both the ADG and RFDC above separation provides not only visual privacy but also access to sun, daylight, air and acoustic privacy. Separations are also critical for providing space for outdoor areas and large trees and for managing impacts on adjoining properties in relation to all of the above issues including overshadowing.

Separation from Busy Roads and Rail

The value statement from the ADG relating to providing separations from busy roads and rail lines is provided in the section on Noise and Pollution:

> *Properties located near major roads, rail lines and beneath flight paths can be subject to noise and poor air quality. Similarly, hostile and noisy environments such as industrial areas, substations or sports stadiums can have impacts on residential amenity. Careful design solutions can help to improve quality of life in affected apartments by minimising potential noise and pollution impacts.*

ADG, p120

Comment:
There is now strong evidence of the health impacts of living and working near busy roads. Although some steps have been taken to introduce positive measures though the NCC (BCA) these are mitigation measures at point of impact. As noted in the State Government's interim guideline for *Development Near Rail Corridors and Busy Roads* the best solution is to provide reasonable separation between rail and busy roads and sensitive land uses such as residential. The RMS note on their maps relating to busy roads that impact from roads with 20,000 vehicles per day should be considered. These recommendations are consistent with the solution that the City has been pursuing in its recent master planning work and with the proposal put forward in this submission.

5.1.2 Proposed Standard (b) Solar and Daylight Access

Proposed measures:

- Everywhere within a habitable room a window will be visible
- Maximum habitable room and overall building depth (8m, 18m) or Habitable room depth to ceiling height ratio (2.5:1)
- Direct sunlight - living, balcony (min. 70% - 2hrs, max. 15% - 0hrs) & communal spaces (min. 50% - 2hrs)

Everywhere Within a Habitable Room a Window Must be Visible & Direct Sunlight

The value statement from the ADG relating to the value of sunlight and daylight is provided in the section on Solar and Daylight Access:

> *Solar and daylight access are important for apartment buildings, reducing the reliance on artificial lighting and heating, improving energy efficiency and residential amenity through pleasant conditions to live and work.*
>
> ADG, p96

The value statement from the RFDC relating to the value of sunlight and daylight is more comprehensive:

> *Daylight consists of skylight - diffuse light from the sky - and sunlight - direct beam radiation from the sun. It changes with the time of day, season, and weather conditions. This variability contributes to pleasant environments in which to live and work. Within an apartment, daylighting reduces reliance on artificial light, improving energy efficiency and residential amenity.*
>
> *Objectives [ie. provide development standards to:]*
>
> - *To ensure that daylight access is provided to all habitable rooms and encouraged in all other areas of residential flat development.*
> - *To provide adequate ambient lighting and minimise the need for artificial lighting during daylight hours.*
> - *To provide residents with the ability to adjust the quantity of daylight to suit their needs.*
>
> RFDC, p84

Comment:
The amenity of daylight and direct sunlight are what differentiate Sydney from most other global cities. Ensuring that most new dwellings benefit from this amenity is essential to maintaining the liveability of Sydney and the economic and social value that the community derive from being an extraordinarily attractive place to live. Additionally, provision of direct sunlight has important health implications in ensuring adequate vitamin D, avoiding mouldy environments and providing mental health benefits. Some of the benefits of daylight and sunlight are the ability to conduct everyday activities in natural light and sitting in the sun in winter.

Maximum habitable room and overall building depth (8m, 18m) or Habitable Room Depth to Ceiling Height Ratio

The ADG addresses the ratio between ceiling height and habitable room depth in the section on Apartment Layout:

> *layout directly impacts the quality of residential amenity by incorporating appropriate room shapes and window designs to provide daylight access, natural ventilation*
>
> ADG, p102

Comment:
The introduction of a ceiling height to habitable room depth ratio of 2.5:1 is a welcome move. It strikes an appropriate balance between the science that suggests that apartments be very shallow (2:1) and current practice which has produced some overly deep plans with living spaces and kitchens very distant from windows (3:1). The ratio clarifies that deep plans can provide good amenity when coupled with higher ceilings. Ensuring habitable spaces are not overly deep is very important to ensure that spaces are well ventilated which avoids "stale air" and prevents mould build up. It also benefits occupants by providing choices relating to management of the thermal environment and the possibility of undertake tasks without needing to use artificial lighting. For technical arguments supporting the ratio for both daylight and natural ventilation refer to:

- P. Littlefair, *Site Layout Planning for Daylight and Sunlight, A Guide to Good Practice, BRE Trust, 2011*
- C. Reinhart and T. Otis, *A Design Sequence for Diffuse Daylighting – Daylighting Rules of Thumb*
- C. Reinhart, *A Simulation-Based Review of the Ubiquitous Window-Head-Height to Daylit Zone Depth Rule-Of-Thumb,* in SimBuild, 2005
- N. Baker and K. Steemers, *Daylight Design of Buildings*, 2011
- The Office of the Deputy Prime Minister (London UK), *Building Regulations 2000 Ventilation Approved Document F*, 2000
- S. Wong, A study of the daylighting performance and energy use in heavily obstructed residential buildings via computer simulation techniques, 2006
- N. Lechner , *Heating, Cooling, Lighting – Design Methods for Architects*,
- Sustainability Victoria, *Natural Ventilation Systems*, 2001
- CIBSE, *Natural Ventilation in Non Domestic Buildings*, 1997
- M. DeKay and G Brown, *Sun, Wind and Light Architectural Design Strategies*, 2014
- USDOE , *EnergyPlus Input Output Reference*, 2010

5.1.3 Proposed Standard (c) Common Circulation and Spaces

Proposed measures:

- 8 apartments per core per level, 40 per lift
- Daylight and natural ventilation to common areas
- Direct entry from the street to ground floor apartments and clear path to lifts
- Communal open space (% and size)
- Deep soil (%, number and size of trees)

Apartments per Core per Level

The value statement from the ADG that relates apartment numbers with lifts is provided in the section on Common Circulation and Spaces:

> *Common circulation spaces provide opportunities for casual social interaction among residents and can assist with social recognition and safety. Important design considerations include safety, amenity and durability. In addition, the choice of common circulation types has a direct influence on the apartment types provided, building form, articulation and the building's relationship to the street.*
>
> ADG, p100

Importantly the RFDC adds a consideration:

> *To encourage interaction and recognition between residents to contribute to a sense of community and improve perceptions of safety.*
>
> RFDC, p79

Comment:
This feature of buildings has substantial implications for their ability to meet amenity criteria relating to direct sunlight and cross ventilation. The more lift cores there are per level the more dual aspect apartments will be delivered. Additionally, there has been substantial international work relating to the social dimensions of communities living at high densities.

Consistent with international evidence the City's guidance is that the number of apartments per lift core should be limited for low to medium rise buildings. Refer to the work by the Greater London Authority *Housing Design Standards Summary of Evidence* and Design For Homes (UK) *Living at Superdensity* that recommends that where there are more than 25 apartments served by a single core that a concierge is provided. As a general standard 8 apartments per level per lift core should be maintained and the City proposes 40 apartments per lift for buildings up to 35m (approx. 8-9 storeys).

Daylight and Natural Ventilation to Common Areas

Dealt with under Natural Ventilation. Recent studies have shown that artificially lighting and ventilating common areas imposes a very significant cost to body corporates. Providing natural light and ventilation reduces these ongoing costs and improves long term affordability.

Direct Entry from the Street to Ground Floor Apartments and Clear Paths to Lifts

The value statement from the RFDC that relates ground floor apartments is:

> *Ground floor apartments are special because they offer the potential for direct access from the street and on-grade private landscape areas. They also provide opportunities for the apartment building and its landscape to respond to the streetscape and the public domain at the pedestrian scale. Ground floor apartments also support housing choice by providing accessibility to the elderly and/or disabled and support families with small children. Ground floor apartments extend the lifestyle choices available in apartment buildings by facilitating activities, such as gardening, play and pet ownership.*
>
> *Objectives*
>
> - *To contribute to the desired streetscape of an area and to create active safe streets.*
> - *To increase the housing and lifestyle choices available in apartment buildings.*
>
> RFDC, p77

The ADG adds:

> *Ground floor apartments offer the potential for at-grade landscaped private open spaces and direct access from the street. They also provide opportunities for the apartment building and its landscape to respond to the human scale of the streetscape. …*
>
> *Ground floor apartments can be of particular benefit to the elderly and disabled as they are generally more accessible. They also suit families with small children and extend the lifestyle choices available in apartment buildings by facilitating activities such as home business, gardening, outdoor play and pet ownership.*
>
> ADG, p78

Comment:
Both the ADG and the RFDC underplay the critical importance that apartments that directly access the street play in creating a safe and sociable street environment. New York City has long had policies that require ground level apartments to be entered directly from the street specifically to overcome safety issues in particular neighbourhoods.

Communal Open Space

The value statement from the ADG supporting the provision of communal open space is:

> *Communal open space is an important environmental resource that provides outdoor recreation opportunities for residents, connection to the natural environment and valuable 'breathing space' between apartment buildings. It also contributes to the well-being of residents. …*
>
> *High quality open space is particularly important and beneficial in high density developments*
>
> ADG, p56

Comment:
The provision of reasonably sized communal open space allows residents to share a major amenity that is unaffordable individually and supports generally smaller private space provision. This is economical and can increase affordability while maintaining amenity. The City strongly supports the provision of communal open space, preferably at ground level but also on podiums and rooftops. These spaces are social and environmental spaces and provide significant benefits to residents.

Deep Soil and Trees

The ADG provides the following value statement for deep soil and trees:

> *Deep soil zones have important environmental benefits, such as allowing infiltration of rain water to the water table and reduction of stormwater runoff, promoting healthy growth of large trees with large canopies and protecting existing mature trees.*
>
> ADG, p60

The RFDC adds

> *To improve the amenity of developments through the retention and/or planting of large and medium size trees.*
>
> RFDC, p44

Comment:
Exclude CBD areas. Aside from the ecological benefits noted above the provision of deep soil that supports very large trees has significant microclimatic benefits. A recent study has shown that large trees make a significant contribution to thermal comfort both internally and externally. Additionally there is evidence that mental health is improved by provision of significant landscaping (See for eg. F. Kuo, *Environment and Crime in the Inner City*, 2001)

5.1.4 Proposed Standard (d) Apartment Layout

Proposed measures:

- Apartment sizes
- Bedroom sizes and wardrobe sizes
- Living room sizes
- Universal design silver (100%) and platinum (10%)
- Apartment mix % ranges

Apartment, Bedroom and Living Room Sizes

The value statement from the RFDC supporting definition of minimum apartment sizes is:

> *The internal layout of an apartment establishes the spatial arrangement of rooms, the circulation between rooms, and the degrees of privacy for each room. In addition, the layout directly impacts the quality of residential amenity, such as access to daylight and natural ventilation, and the assurance of acoustic and visual privacy. The apartment layout also includes private open space.*
>
> *Objectives*
>
> - *To ensure the spatial arrangement of apartments is functional and well organised.*
> - *To ensure that apartment layouts provide high standards of residential amenity.*
> - *To maximise the environmental performance of apartments.*
> - *To accommodate a variety of household activities and occupants' needs.*
>
> RFDC, p67

Comment:
The City supports minimum apartment, bedroom and living room sizes and notes that the sizes proposed are closely comparable to those adopted in other major cities. Refer to analysis by City of Melbourne in *Understanding the Quality of Housing Design pp32-33* for comparisons.

Universal (Accessible) Design

The ADG value statement for universal design is:

> *Universal design is an international design philosophy that enables people to carry on living in the same home by ensuring that apartments are able to change with the needs of the occupants. Universally designed apartments are safer and easier to enter, move around and live in.*
>
> *They are of benefit to all members of the community, from young families to older people, their visitors, as well as those with permanent or temporary disabilities. Incorporating universal design principles in apartment design is a step towards producing a robust, flexible housing*

stock. It ensures that simple and practical design features are incorporated into new buildings that would be difficult and costly to retrofit at a later date.

Universal design is different to adaptable housing which is governed by Australian Standard 4299 and is specifically designed to allow for the future adaptation of a dwelling to accommodate the occupant's needs.

In addition to the specific aims of universal design and adaptable housing, flexible apartment design is also desirable to allow buildings to accommodate a diverse range of lifestyle needs such as different household structures, live/work housing arrangements and future changes in use.

ADG, p88

The RFDC adds an additional value:

Flexible design provides the potential for 'housing for life', increases the life span of buildings and exercises sustainable practice.

RFDC, p75

Comment:
The City strongly supports design standards that provide for and are inclusive of the entire community over their whole lifetimes. Reviewing the exhibited ADG standards it is the City's position that the Liveable Housing Design Guidelines "Silver" standard should be adopted universally with substantial long term benefits. Also, the City's current policy is that 10% of all dwellings should be equivalent to the "Platinum" standard (rising to 15% for developments of 30 or more dwellings). The City strongly advocates for inclusionary policies and recommends that achieving 100% Silver standard and 10-15% Platinum standard is achievable and will create significant long term benefits.

Apartment Mix

The ADG provides the following value statement in relation to apartment mix:

A mix of apartment types provides housing choice and supports equitable housing access. By accommodating a range of household types, apartment buildings support the needs of the community now and into the future. This is particularly important because apartment buildings form a significant and often long term part of the urban fabric.

ADG, p76

The RFDC adds:

To provide a diversity of apartments types, which cater for different household requirements now and in the future.

To maintain equitable access to new housing by cultural and socio-economic groups.

RFDC, p70

Comment:
Providing a mix of apartment types is critically important for ensuring housing diversity and choice. For developments over 20 apartments the City uses a flexible scale that ensures that some larger dwelling types are provided. This approach is recommended but there should be the flexibility built in to allow variation where appropriate to market demand conditions.

5.1.5 Proposed Standard (e) Ceiling Heights

Proposed measure:

- Floor to ceiling and floor to floor heights

Ceiling Heights

The value statement from the ADG supporting definition of minimum ceiling heights is:

> *The height of a ceiling contributes to amenity within an apartment and the perception of space. Well designed and appropriately defined ceilings can create spatial interest and hierarchy in apartments.*
>
> *Ceiling height is directly linked to achieving sufficient natural ventilation and daylight access to habitable rooms.*
>
> ADG, p106

Comment:
The adoption of 2.7m ceilings has substantially improved the quality and amenity of apartments and it is now universally accepted. Consistent with the City's practice it is proposed that floor to floor heights should also be specified to reduce uncertainty about achieving the required ceiling height and clearing the approval pathway without requiring complex conditions of consent.

5.1.6 Proposed Standard (f) Balconies and Private Open Space

Proposed measure:

- Private open space sizes and adjacency

Private Open Space

The value statement provided in the ADG for private open space and balconies is:

> *Private open spaces are outdoor spaces of the apartment, including balconies, courtyards and terraces, which enhance the amenity and indoor/outdoor lifestyle of residents. They capitalise*

on NSW's temperate climate, providing an area for external activities, an extension of living spaces as well as the opportunity for pet ownership.

Private open spaces are also important architectural elements on the outside of an apartment building, contributing to the form and articulation of the building with fences, balustrades and screens.

ADG, p108

The RFDC adds that private open space and balconies:

contribute to the safety and liveliness of the street by allowing for casual overlooking and address.

RFDC, p 71

Comment:
These values are strongly supported however the City's practice is to allow flexibility so that a proportion of dwellings can be provided without balconies to increase consumer choice.

5.1.7 Proposed Standard (g) Natural Ventilation

Proposed measures:

- Every habitable room must have a window that is openable
- Cross ventilated apartments (min. 60%)

Natural Ventilation (and Cross Ventilation) and Openable Windows

The value statement from the ADG relating to natural ventilation (and cross ventilation) is provided in the section on Natural Ventilation:

Natural ventilation is the movement of sufficient volumes of fresh air through an apartment to create a comfortable indoor environment. Sustainable design practice incorporates natural ventilation by responding to the local climate and reduce the need for mechanical ventilation and air conditioning.

ADG, p112

This value statement is very similar to the RFDC which adds that the objective or providing good natural (and cross) ventilation is:

To ensure that apartments are designed to provide all habitable rooms with direct access to fresh air and to assist in promoting thermal comfort for occupants.

RFDC, p86

Comment:
Like direct sunlight, one of the main amenity benefits of natural cross ventilation and natural

ventilation is choice. Residents in apartments that benefit from cross and good natural ventilation can choose how to manage their environments\. Choice and control strongly correlates in studies with measures associated with wellbeing.

5.1.8 Proposed Development Standard (h) Storage

Proposed measure:

- Storage sizes

Storage

The RFDC value statement for storage is:

> *Providing storage space for items ancillary to people's living needs is particularly important in residential developments where the size of dwellings and their configuration are constrained.*
>
> RFDC, p82

Comment:
International studies have shown that lack of adequate storage is an endemic problem and that it significantly impacts on the capacity of apartment residents to manage their personal possessions which can result in significant stress. The City supports further research to determine whether the current standards are well calibrated.

5.1.9 Proposed Standard (i) Parking

Proposed measure:

- Minimum parking rates near transport

Parking

The ADG provides the following value statement in relation to car parking:

> *Parking requirements should be determined in relation to the availability, frequency and convenience of public transport. Reduced requirements promote a reduction in car dependency and encourage walking, cycling and use of public transport. Provision of parking for alternative forms of transport such as car share vehicles, motorcycles and bicycles should also be considered. Where less car parking is provided, councils are encouraged to limit on street resident parking for these new residents.*
>
> ADG, p70

The RFDC adds:

To minimise car dependency for commuting and recreational transport use and to promote alternative means of transport-public transport, bicycling, and walking.

To provide adequate car parking for the building's users and visitors, depending on building type and proximity to public transport.

To integrate the location and design of car parking with the design of the site and the building.

RFDC, p62

Comment:
The City strongly supports adoption of a clear and consistent car parking policy for the inner and middle ring of the metropolitan area. The City has consistently advocated no minimum and sensible maximum rates that are specifically linked to public transport accessibility levels. Particularly near public transport, studies have consistently shown underutilisation of car parking that has been built based on incorrect appreciation of market demand. Parking rates should only be able to be revised downward not upward.

5.2 The Detail

This section has set out the 9 "core" development standards and the measures required to support each standard. The City has reviewed the operation of each of the measures in the ADG and found some of them unclear and open to varying interpretation. To assist the Department the City has provided a conceptual draft of the proposed standards redrafted to produce greater certainty. This conceptual draft is at Appendix C. As noted previously, Appendix C is complex and the City would welcome the opportunity to provide further commentary regarding the drafting of development standards to ensure that the intent of the standards and measures are met.

Top: Cultural shift through quality housing of choice - Harold Park Stage 1 – under design development – design by Mirvac Design

Above: Cultural Shift through quality housing of choice - Victoria Park Stage 2 – under construction – design by Tony Caro Architecture for Meriton Apartments

6.0 Value of the Existing Policy and Code

6.1 Cultural Shift

State Environmental Planning Policy 65 (SEPP 65) has proved to be critically important in lifting the design quality of residential flat development since 2002. It mandates the involvement of qualified designers in the Development Application (DA) design process and it gives status to the Residential Flat Design Code (RFDC) as a matter for consideration in the development assessment process.

Through better designed buildings and environments, SEPP 65 has been fundamental in enabling a cultural shift from detached dwellings to denser living choices which make the compact city. Compact cities support better transport systems, better social interaction, healthier living, less motor vehicle fatality and less isolation from social support. For many, a well located apartment with good amenity, privacy and low running costs is preferable to the quarter acre ideal of more than a decade ago.

Without SEPP 65, this important cultural shift over the course of a decade may have taken longer, and with a larger number of poorly built strata-titled buildings to contend with in the future.

6.1.1 Proficiency in Design

The involvement of *qualified designers* (architects registered and regulated under the *NSW Architects Act 2003*) in the design and development application (DA) process has significantly improved the quality of design and documentation of residential flat buildings submitted for approval under the *Environmental Planning and Assessment Act 1979*.

Although no guarantee of aesthetic outcome, architectural training involves a tertiary education and practical experience. Practice as an *architect* in NSW requires accreditation through the NSW Board of Architects which is annually renewed and which requires high levels of design, contract and practical knowledge developed in the industry. This is supplemented with mandatory ongoing professional development in diverse areas such as technology change, legislation, sustainable practices and new systems of construction.

Architects are generally consultants in the development process rather than developers or owners. The consultant role provides a small but critical separation from financial decision making regarding project development. This separation allows architects to advocate for design quality which they are required to ‘verify’ as part of the development application documentation.

The verification is in the form of a *Design Verification Statement* (DVS) in which the architect evaluates the project in relation to the ‘Design Quality Principles’ outlined in SEPP 65. It should be made clearer in the wording of SEPP 65, that the Design Verification Statement must only be signed by the architect who is responsible for the design itself. Consent authorities are responsible for ensuring that any required DVS is checked for accuracy (i.e., from the NSW Board of Architects

website[4]) and recorded as part of the approval process, as it is a statutory requirement that the building design is by a *qualified designer* [5] in the State of NSW.

Top: Pedestrian cross site link, Mondrian Apartments, Waterloo – design by Stanisic Associates
Above: Victoria Park Stages 1-4 – under construction – various architects, Meriton Apartments

[4] http://www.boarch.nsw.gov.au/home.cfm

[5] Defined as a person on the NSW Register of Architects

6.1.2 The RFDC works with BASIX to ensure appropriate ecologically sustainable development outcomes

Many of the provisions of the RFDC work to ensure that residential flat buildings meet minimum natural daylight access and natural ventilation standards which reduce reliance on artificial lighting and mechanical ventilation / air conditioning systems and their associated energy use and cost implications.

6.1.3 SEPP 65 mandates establishment of design review panels staffed by suitably qualified professionals

The City does not have a design review panel constituted under SEPP 65 but refers large and complex residential projects to its non-statutory Design Advisory Panel. This panel provides advice that is taken into consideration during the assessment and determination of applications.

The involvement of professionals with design expertise in the assessment of residential flat building development applications has had a significant and beneficial impact on the design quality of development.

6.1.4 Good Practice versus Best Practice

Most of the provisions of the RFDC and the new ADG relate to good design practice.
The guidance and standards are reasonable, not excessive and should be retained.

END

Appendix A – SEPP 65 Comments and Recommendations

Insertions and replacements in the exhibited SEPP 65 are shown in red

Where existing replaced text is reproduced it has been shown with a ~~strikethrough~~

Exhibited SEPP 65 Clause	*Comment/recommendation*
State Environmental Planning Policy No 65—Design Quality of Residential Flat Development [2002-530]	Applicants are already preparing documentation with relation to the revised SEPP and ADG, as well as the existing SEPP and RFDC, as well as local DCPs. Recommendation: • The Department should issue a direction that at this time it is not known when the amendments to SEPP 65 will be finalised or when the proposed ADG may be adopted and that this uncertainty is such that significant weight should not attach to the draft amendments and ADG.
Part 1 Preliminary **1 Name of Policy** This Policy is State Environmental Planning Policy No 65 - Design Quality of Residential Flat Development.	No change
2 Aims, objectives etc (1) This Policy aims to improve the design quality of residential flat development in New South Wales. (2) This Policy recognises that the design quality of residential flat development is of significance for environmental planning for the State due to the economic, environmental, cultural and social benefits of high quality design. (3) Improving the design quality of residential flat development aims: (a) to ensure that it contributes to the sustainable development of New South Wales: (i) by providing sustainable housing in social and environmental terms, and (ii) by being a long-term asset to its neighbourhood, and (iii) by achieving the urban planning policies for its regional and local contexts, and (b) to achieve better built form and aesthetics of buildings and of the streetscapes and the public spaces they define, and (c) to better satisfy the increasing demand, the changing social and demographic profile of the community, and the needs of the widest range of people from childhood to old age, including those with disabilities, and (d) to maximise amenity, safety and security for	Clause 3(g) provision of affordable housing options is not clear beyond car parking initiative.

Exhibited SEPP 65 Clause	*Comment/recommendation*
the benefit of its occupants and the wider community, and (e) to minimise the consumption of energy from non-renewable resources, to conserve the environment and to reduce greenhouse gas emissions, and (f) to contribute to the provision of a variety of dwelling types to meet housing and population targets, and (g) to contribute to the provision of affordable housing options, and (h) to facilitate the timely and efficient assessment of applications for residential flat development. (4) This Policy aims to provide: (a) consistency of policy and mechanisms across the State, and (b) a framework for local and regional planning to achieve identified outcomes for specific places.	
3 Definitions (1) In this Policy: ***Apartment Design Guide*** means the document titled "Apartment Design Guide" published by the Department of Planning and Infrastructure on the day on which State Environmental Planning Policy No 65—Design Quality of Residential Flat Development (Amendment No 3) commenced. Note. A copy of the Guide is available on the website of the Department. ***design quality principles*** means the principles set out in Schedule 1. ***design review panel*** means a panel constituted under Part 3. ***relevant design review panel***, in relation to an application for development consent or the modification of development consent, means the design review panel for the local government area or areas in which the development concerned is being (or is proposed to be) carried out. ***residential flat development*** means development to which this Policy applies because of clause 4. ***the Act*** means the Environmental Planning and Assessment Act 1979. (2) Words and expressions used in this Policy have (subject to this clause) the same meaning as they have in the standard local environmental planning instrument prescribed by the Standard Instrument (Local Environmental Plans) Order 2006.	Clause 3(2) says to use the definitions provided in SILEP. Definition of *residential flat development* under 3(1). Recommendation: To improve consistency in the use of terms between SEPP and SILEP that the same terms are applied without the need to introduce new terms of reference.
4 Application of Policy This Policy applies to development for the purpose of a residential flat building, shop top housing or mixed use development with a residential accommodation component if: (a) the development consists of any of the following: (i) the erection of a new building, (ii) the substantial redevelopment or the	Clause 4 clarifies through 3(2) that the SEPP applies to residential flat buildings, shop top housing and mixed use development with a residential accommodation component as defined by SILEP. This appears to exclude boarding houses and serviced apartments that were previously being captured under SEPP 65. SEPP ARH Division 3 Boarding Houses does not point to

Exhibited SEPP 65 Clause	*Comment/recommendation*
substantial refurbishment of an existing building, (iii) the conversion of an existing building for use as a residential flat building, shop top housing or mixed development with a residential accommodation component, and (b) the building concerned is at least 3 or more storeys (not including levels below the ground level (existing) providing for car parking, and (c) the building concerned contains at least 4 or more dwellings.	SEPP65 where Division 1 Infill Affordable Housing does (Clause 16). Also BCA/NCC p515 specifically excludes Class 3 buildings from BASIX (uses Section J instead). Clause Clause 4(a)(iii) 'mixed use development with a *residential accommodation'* component is of concern - the SILEP the definition of *residential accommodation* is '*a building or place used predominantly as a place of residence, and includes any of the following: (a) attached dwellings, (b) boarding houses, (c) dual occupancies, (d) dwelling houses, (e) group homes, (f) hostels, (g) multi dwelling housing, (h) residential flat buildings, (i) rural workers' dwellings, (j) secondary dwellings, (k) semi-detached dwellings, (l) seniors housing, (m) shop top housing, but does not include tourist and visitor accommodation or caravan parks.'* Clause 4(b) changes the definition of '3 or more storeys'. The new definition of '*not including levels below the ground level (existing) provided for car parking'* may effectively lower the height threshold (for example 2 storeys of units above car parking that is partially above ground level). Clause 4(c) changes the definition of 'four or more dwellings'. Previously was '4 or more *self-contained* dwellings.' 'Self-contained' is now removed. Implies that some dwelling types like boarding houses might be captured, even though 4 excludes them. Recommendations: • Either include BCA class 2 only or exclude BCA classes 1 and 3 • Clarify the above exclusions expressly with a note to the effect of 'no BCA class 3 buildings'. • Reinstate previous note at 3(1)(b) regarding non-applicability to BCA Class 1a and 1b dwellings. • Clarify application to Student housing and Seniors Housing. • Clarify which development types defined under mixed use development with a residential accommodation component should be considered. • Clarify the intention is still three storeys of *units*. This should align with SILEP definition of *basements.*
5 Land to which this Policy applies (1) This Policy applies to the whole of the State. (2) Despite subclause (1), this Policy does not apply to land to which State Environmental Planning Policy (Kosciuszko National Park—Alpine Resorts) 2007 applies.	No changes
6 Relationship with other environmental planning instruments (1) In the event of an inconsistency between this Policy and another environmental planning instrument, whether made before or after this Policy, this Policy prevails to the extent of the inconsistency.	This section and recommendation associated with it are dealt with in detail in the main body of the submission. The effect of clause 6 (2) is to enable BASIX to prevail over SEPP 65. For reasons further particularised in the submission, it is proposed that clause 6(2) be qualified to

Exhibited SEPP 65 Clause	*Comment/recommendation*
(2) Subclause (1) does not apply in relation to State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004.	exempt its application to the issues addressed by the standards under Cl. 6A or ensure that the potentially overlapping issues as considered independently so that neither SEPP need to prevail.
6A Development control plans cannot be inconsistent with Apartment Design Guide The provisions of a development control plan under Division 6 of Part 3 of the Act, whenever made, are of no effect to the extent to which they aim to establish standards with respect to any of the following matters in relation to residential flat development that are inconsistent with the standards set out in the Apartment Design Guide: (a) visual privacy, (b) solar and daylight access, (c) common circulation and spaces, (d) apartment layout, (e) ceiling heights, (f) balconies and private open space, (g) natural ventilation, (h) storage.	Clause 6A is new and serves to overwrite standards in DCPs with new standards. This is positive in principle as it intends to resolve the issue where the RFDC competes with DCPs. Clause 6A draws on standards contained in the ADG, however there does not appear to be any clear standards in the ADG. They would probably be interpreted as the 'performance criteria' since they can't be the 'acceptable solutions'. Clause 6A also implies that DCPs can establish standards which they cannot under the EP&A. Clause 6A wording *'aim to establish standards with respect to any of the following matters in relation to residential flat development that are inconsistent with the standards set out in the ADG'* may have a much broader impact than anticipated ie. affect any number of other controls, not just similar controls, but all controls that are *related.* Remaining text in ADG should be considered *better design practice*, or guidance to achieving the standards. Clause 6A(f) It may be appropriate that balconies and private open space standard be set at a local level. Recommendations: • See main body of this submission for details relating to Cl. 6A: Section 4 that includes minor wording suggestions and Appendix C that provides conceptual draft development standards to be included. • Clarify how broadly the impact of this control will be on related DCP control (see above). • The parking provision under Cl. 30 should also be reflected in Cl. 6A. • Cl. 6 (2) should be amended to "does not apply, in relation to SEPP BASIX except in relation to matters raised in Cl. 6A (a)-(h)"
	Clauses 7 to 18 were the previously the Design Quality Principles. They have been revised and moved to a schedule. The current versions of the principles are reproduced there for information.
Part 3 Design review panels **Division 1 Appointment** **19 Constitution of panels** (1) The Minister may constitute a design review panel	Clause 19 (2) allows the Minister to abolish a DRP for *any* reason. Recommendation: • Provide heads of consideration for abolition of design

Exhibited SEPP 65 Clause	*Comment/recommendation*
for: (a) a particular local government area, or (b) 2 or more local government areas. (2) The Minister may abolish a design review panel at any time and for any reason.	review panels.
20 Requirement for consultation (1) The Minister, before constituting a design review panel for one or more local government areas, must consult with the relevant councils or council to ascertain whether they wish, or it wishes, a design review panel to be constituted. (2) The Minister must also consult with the relevant council or councils on the proposed membership (including an alternate member) of a design review panel.	Minor change
21 Membership of panels (1) A design review panel is to consist of 3 or more persons appointed by the Minister. (2) A person is qualified for appointment as a member of a design review panel if the person has expertise in any one or more of the following disciplines, namely, architecture, landscape architecture or urban design. (3) A person is not qualified for appointment as a member of a design review panel if the person is an officer or employee of a consent authority that is advised by the panel. Note. An officer of a consent authority includes a councillor of a council. **Note.** An officer of a consent authority includes a councillor of a council. (4) In appointing members of a design review panel, the Minister is to ensure that, as far as practicable, the panel will have a mix of expertise in the disciplines referred to in subclause (2).	Clause 21 has removed the requirement that at least one member of the DRP was to have an appreciation of the design issues of the region. Clause 21(2) has removed the 'environmental planning' discipline from the list of experts in a DRP. Clause 21(2) It is not clear that architects on a DRP need to be registered although if they are not they could possibly be considered to be urban designers. Recommendation: • Cl. 21 (1) should be amended to require at least 6 members of the DRP including an alternate for each member to ensure that they can rotate according to availability. This is consistent with the provisions that relate to the Central Sydney Planning Committee and the Central Sydney Traffic and Transport Committee as well as JRPPs.
22 Alternate member (1) The Minister may appoint one or more alternate members for a design review panel. (2) An alternate member may act in the place of any member of the design review panel who for any reason is unable to act as a member. (3) An alternate member must have one of the qualifications referred to in clause 21 (2) and is not required to have the same qualification as the member in whose place the alternate member acts. (4) The provisions of clauses 21 (5), 23 and 24 apply to an alternate member in the same way as those	No change

Exhibited SEPP 65 Clause	*Comment/recommendation*
provisions apply to a member.	
23 Term and other conditions of office A member of a design review panel: (a) holds office for such term as is determined by the Minister (being a term of at least 2 years), and (b) ceases to hold office in any of the following circumstances: (i) if the panel is abolished by the Minister, or (ii) if the member's term of office expires and the member is not re-appointed, or (iii) if the member dies or resigns, or (iv) in such other circumstances as the Minister determines, and (c) is entitled to such remuneration, if any, and to the payment of such expenses, if any, as are determined by the Minister, and (d) holds office subject to such conditions as are determined by the Minister.	Clause 23(c) discusses remuneration. Recommendation: • Specify that pay rates should be hourly to allow for proper review of applications and should be at a level commensurate with expert experience.
24 Pecuniary interests A member of a design review panel who has a pecuniary interest (within the meaning of sections 442 and 443 of the Local Government Act 1993) in any matter that is the subject of advice by the panel and who is present at a meeting of the panel at which the matter is being considered: (a) must disclose the interest to the meeting as soon as practicable, and (b) must not take part in the consideration or discussion of the matter, and (c) must not vote on any question relating to the matter.	No change
25 Procedure at meetings Subject to clause 26, the procedure at meetings of a design review panel is to be determined by the Minister in consultation with the members of the panel having regard to Part 5 of the Apartment Design Guide.	Clause 25 is new and links to the new Part 5 of the ADG regarding procedure at meetings.
26 Quorum The quorum at a meeting of a design review panel is 3 members of the panel.	Recommendation: • This provision is supported if Cl. 21 is modified to require at least 6 members of a design review panel to ensure that they can rotate according to availability.
Division 2 Functions **27 Functions of panels** (1) The functions of a design review panel are as follows: (a) to give specific independent design advice to the consent authority on a development application for residential flat development or an application for the modification of development consent for such development and, in particular, to give such advice on the design quality of the residential flat development (or modifications)	Clause 27(1)(a) positive addition now requires DRPs to provide advice on 'modifications to development consents' as well (many other Clauses also capture this). Clause 27(1)(g) now requires DRPs to provide advice 'in a timely manner'. The change to14 days from first meeting will not necessarily improve turnaround. Recommendations:

Exhibited SEPP 65 Clause	*Comment/recommendation*
when evaluated in accordance with the design quality principles and the Apartment Design Guide, (b) to provide independent advice to consent authorities and applicants, and their consultants and advisers, before the lodging of relevant development applications or applications for the modification of development consents as well as afterwards, on the design quality of residential flat development proposals having regard to the design quality principles, (c) to give independent advice to councils on the design content of draft local environmental plans, development control plans, master plans, similar plans and draft planning policy documents having regard to the design quality principles, (d) to give independent advice to councils on other mechanisms and initiatives to improve achievement of the design quality principles, (e) to contribute to the understanding of design quality, and to improve the achievement of the design quality principles, by making public its advice under paragraphs (a) and (c), (f) to contribute to the co-ordination of design quality across boundaries of local government areas. (g) to provide advice to consent authorities in a timely manner. (2) A design review panel may: (a) carry out a review of provisions relating to the design quality of residential flat development in any local environmental plans and development control plans in the area or areas for which it is constituted, and (b) advise the relevant council or councils whether or not it endorses those provisions.	• Define a timely manner in days
Part 4 Application of design principles Note. The Environmental Planning and Assessment Regulation 2000 also contains provisions dealing with the application of the design quality principles and the Apartment Design Guide in connection with residential flat development. See, for example, clauses 21A, 50, 115, 143A and 154A. **28 Determination of development applications** (1) After receipt of a development application for consent to carry out residential flat development (other than State significant development) and before it determines the application, the consent authority is to refer the application to the relevant design review panel (if any) for advice concerning the design quality of the residential flat development. (2) In determining a development application for consent to carry out residential flat development, a consent authority is to take into consideration (in addition to any other matters that are required to be, or may be, taken into consideration):	This clause has changed substantially. The previous text is reproduced below: ~~**28 Preparation of instruments**~~ ~~A person who prepares:~~ ~~(a) an environmental planning instrument, or~~ ~~(b) a development control plan, or~~ ~~(c) a master plan or similar plan,~~ ~~that makes provision with respect to residential flat development should include provisions in the instrument or plan to~~ ~~ensure the achievement of design quality in accordance with the design quality principles and have regard to the publication Residential Flat Design Code (a publication of the Department of Planning, September 2002).~~ ~~**Approval of development control plans**~~ ~~Note. The Environmental Planning and Assessment Regulation 2000 contains the following provision:~~ ~~21A Approval of development control plans relating to residential flat development~~ ~~(1) The council must not approve a draft development control plan (including an amending plan) containing~~

Exhibited SEPP 65 Clause	*Comment/recommendation*
(a) the advice (if any) obtained in accordance with subclause (1), and (b) the design quality of the residential flat development when evaluated in accordance with the design quality principles, and (c) the Apartment Design Guide. (3) However, if the relevant design review panel fails to inform the consent authority of its advice concerning the design quality of the residential flat development within 14 days after its first meeting to deal with the application concerned, the consent authority may determine the development application without considering any such advice and a development consent so granted is not voidable on that ground. (4) The 14-day period referred to in subclause (3) does not increase or otherwise affect the period within which a development application is required to be determined by a consent authority. (5) A consent authority is not required to obtain the advice of a relevant design review panel under subclause (1) if an architectural design competition that is consistent with the Design Excellence Guidelines has been held in relation to the proposed development. (6) In this clause: ***architectural design competition*** means a competitive process conducted in accordance with the Design Excellence Guidelines. ***Design Excellence Guidelines*** means the Design Excellence Guidelines issued by the Director-General in October 2010. Note. A copy of the Guidelines is available on the website of the Department.	~~provisions that apply to residential flat development unless the council:~~ ~~(a) has referred the provisions of the draft development control plan that relate to design quality to the design review panel (if any) constituted for the council's area (or a region that includes the council's area) under State Environmental Planning Policy No 65—Design Quality of Residential Flat Development, and~~ ~~(b) has taken into consideration any comments made by the design review panel concerning those provisions.~~ ~~(2) This clause extends to a plan the preparation of which commenced before the constitution of the relevant design review panel.~~ Clause 28(3) now requires the DRP to provide advice 'within 14 days after its first meeting to deal with the application concerned'. Previously was '31 days after the request for its advice was made by the consent authority.' This is intended to make the process faster, but because they are just different dates on the same continuum, it may be exactly the same time, or perhaps even slower (depending on the meeting date). Clause 28(5) is intended to prevent double handling of competitions by both a DRP and a Design Excellence Jury. Recommendation: • Retain 31 day timeframe from the request for advice by the consent authority.
29 Determination of applications for development consent modifications (1) This clause applies if a consent authority is required by clause 115 (3A) of the Environmental Planning and Assessment Regulation 2000 to refer an application for the modification of development consent (other than in relation to State significant development) to a relevant design review panel (if any) for advice as to whether the modifications diminish or detract from the design quality, or compromise the design intent, of the development for which the consent was granted. (2) In determining an application to which this clause applies, the consent authority is to take into consideration (in addition to any other matters that are required to be, or may be, taken into consideration): (a) the advice (if any) obtained from the design review panel, and (b) the design quality of the residential flat development (as modified) when evaluated in	This clause is procedural and relates to development application modifications and is supported.

Exhibited SEPP 65 Clause	*Comment/recommendation*
accordance with the design quality principles, and (c) the Apartment Design Guide. (3) However, if the relevant design review panel fails to inform the consent authority of its advice within 14 days after its first meeting to deal with the application concerned, the consent authority may determine the application without considering any such advice and a modification of consent so granted is not voidable on that ground. (4) The 14-day period referred to in subclause (3) does not increase or otherwise affect the period within which an application for the modification of development consent is required to be determined by a consent authority.	
30 Standards that cannot be used as grounds to refuse development consent or modification of development consent (1) A consent authority must not refuse consent to a development application for the carrying out of residential flat development (or refuse an application for the modification of development consent) on any of the following grounds: (a) ceiling height: if the proposed ceiling heights for the building are equal to, or greater than, the minimum recommended ceiling heights set out in Part 4 of the Apartment Design Guide, (b) apartment area: if the proposed area for each apartment is equal to, or greater than, the recommended internal area for the relevant apartment type set out in Part 4 of the Apartment Design Guide. (c) car parking: if the proposed car parking for the building is equal to, or greater than, the recommended minimum amount of car parking set out in Part 3 of the Apartment Design Guide. Note. The Building Code of Australia regulates the minimum ceiling heights for residential flat buildings. (2) Nothing in this clause permits the granting of consent to a development application (or the modification of development consent) if, in the opinion of the consent authority, the proposed development or modification does not demonstrate that adequate regard has been given to the design quality principles. Note. The provisions of this clause do not impose any limitations on the grounds on which a consent authority may grant or modify development consent.	Clause 30 (previously Clause 30A) has been extended to include car parking. However, unlike ceiling height and apartment area, car parking has not been included on the list of proposed standards at clause 6A. For clarity and consistence car parking should be added to the list attaching to clause 6A Alternatively, amendment is required to 30(1)(c) as its use of the term “equal to , or greater than” creates ambivalence as to the application of controls or policies that seek to impose a maximum amount of car parking. For this reason, the removal of the phrase “greater than” is advocated. It is understood that the intention of this clause is to prohibit the refusal of an application where the proposed parking at least meets the minimum car parking amount. However, an unintended consequence is that interpretational argument may suggest that if the minimum is zero then the development application cannot be refused on the basis of car parking development. ***Car Parking Detailed Commentary*** Proposed clause 30 of the SEPP stipulates that a consent authority must not refuse a development application for the carrying out of a residential flat development or associated modification application if the proposed car parking for the building is equal to, or greater than, the recommended minimum amount of car parking set out in Part 3 of the Apartment Design Guide (ADG). Part 3J of the ADG sets no standards for the provision of car parking for residential flat developments that are located within 400m of a railway station or light rail stop in nominated inner and middle metropolitan Sydney areas. Although unclear, the City understands this standard to mean that there is no minimum requirement for car parking to be provided on those development sites. For sites located more than 400m from a railway station or light rail stop, the AMG requires that the development satisfies the requirements set out in the RMS’ Guide to Traffic Generating Development (RMS Guideline) or the requirements prescribed by the relevant council, whichever in the lesser.

Exhibited SEPP 65 Clause	*Comment/recommendation*
	For the City, the car parking requirements proposed in the ADG conflicts with those car parking requirements for residential development prescribed in Part 7 of the LEP. Part 7 of the LEP sets the maximum car-parking rates for residential developments. Like Part 3J of the ADG, the purpose of Part 7 of the LEP is to encourage the use of public transport and reduce the amount of vehicular traffic. However unlike the ADG, Part 7 operates as an absolute prohibition on development that exceeds the maximum car parking standards which cannot be varied by clause 4.6 of the LEP. The SEPP overrides the LEP to the extent of any inconsistencies. The operation of Part 7 of the LEP will be clearly inconsistent with the application of those standards in Part 3J of the ADG. The numerical standards in Part 7 of the LEP may continue to apply to those sites located more than 400m away from a railway station or light rail stop if it prescribes a lesser rate than the RMS' Guideline. However, Part 7 could not operate as a development prohibition because the ADG assumes flexibility in varying the car parking standards. Further, the City expects the numerical standards in Part 7 of the LEP will be inconsistent with the ADG for those sites that are located within 400m of a railway station or light rail stop in the absence of any recommended car parking rates. It is proposed that the Note below Clause 30(1) referencing the BCA be removed. Although it may have no legal effect, it may nonetheless be interpreted as suggesting a lesser ceiling height were the BCA amended in that manner and could cause confusion in relation to the application of the performance criteria. For certainty, clause 30(1)(b) should be amended to include "minimum" before "recommended internal area". This is both consistent with clause 30(1)(a) and 30(1)(b) as well as the numerical approach adopted by Table 6 of the ADG. Recommendations: • **Modify Cl. 30 (c) car parking provisions to ensure that they do not override local maximum rates only minimum rates. Amend cl.30(c) of the SEPP – vary the words "equal to, or greater than" and replace with "satisfies the standards set out in cl.6A" or suggest deleting the words "~~or greater than~~"** • Place a zero numerical control for car parking requirements for sites located within 400m of a railway station or light rail or provide minimum and maximum rates and clarify that the maximum applies only where it is lower than the LEP/DCP rate. • Place car parking standards in cl.6A of the SEPP.

Exhibited SEPP 65 Clause	*Comment/recommendation*
	These standards would still be capable of being varied by cl.4.6 but would need to satisfy reasonable and necessary test. Heading of cl.6A and words "development control plans" would also need to be varied to include LEPs. • Remove the note referring to the BCA as it could undermine achieving 2.7m floor to ceiling heights and recent changes to the BCA make the note unnecessary.
Part 5 Miscellaneous **31 Transitional provision** Each design review panel (if any) in existence immediately before the commencement of State Environmental Planning Policy No 65—Design Quality of Residential Flat Development (Amendment No 3) is abolished on that commencement.	Clause 31 removes all of the previous Transitional Provisions. Recommendation: • Provide a transitional arrangement so that existing panel members are held over for a period of up to a year to avoid a situation where on commencement all panels have to be simultaneously reappointed by the Minister.
32 Effect of Amendment No 1 The amendments made to this Policy by State Environmental Planning Policy No 65 — Design Quality of Residential Flat Development (Amendment No 1) do not apply to a development application made but not finally determined before the commencement of those amendments.	No change
33 Review of Policy The Minister must ensure that the provisions of this Policy are reviewed at least every 5 years after the commencement of State Environmental Planning Policy No 65—Design Quality of Residential Flat Development (Amendment No 3).	Clause 33 is new and requires SEPP65 to be reviewed every 5 years. Recommendation: • Modify to require more frequent review biennial with a standing committee which can review progress of the new document and potentially release circulars (which update or extend the ADG) to resolve interpretation issues. These should also have enough strength to overturn findings of the Land & Environment Court where perverse or unintended outcomes have been upheld. This process could include review of reported SILEP Clause 4.6/SEPP1 reasonings and develop new guidance around these. Should also consult with DRPs to collect/discuss/debate information/interpretations and attempt to provide consistency across DRPs.
Schedule 1 Design quality principles (Clause 3 (1), definition of "design quality principles")	Schedule 1 now contains the Design Quality Principles (previously Clauses 7-18). For each principle the previous text is included for reference. ~~**7 Design quality principles**~~ ~~The design quality principles for residential flat development are the principles set out in this Part.~~ ~~**8 Introduction to the principles**~~ ~~Good design is a creative process which, when applied to towns and cities, results in the development of great urban places: buildings, streets, squares and parks.~~ ~~Good design is inextricably linked to its site and locality,~~

Exhibited SEPP 65 Clause	*Comment/recommendation*
	~~responding to the landscape, existing built form, culture and attitudes. It provides sustainable living environments, both in private and public areas.~~ ~~Good design serves the public interest and includes appropriate innovation to respond to technical, social, aesthetic, economic and environmental challenges.~~ ~~The design quality principles do not generate design solutions, but provide a guide to achieving good design and~~ ~~the means of evaluating the merit of proposed solutions.~~ The 'Introduction to the Principles' has been removed. This clause was important structurally as it brought all of the following Clauses together under a heading and defined what good design is. In particular, the wording 'Good design serves the public interest' has been removed. Recommendation: • Reinstate the introduction to ensure that the value statement 'Good design serves the public interest' is retained. • Generally ensure the Principles refer to the standards and the sections of the ADG so that there is a causal link back to the SEPP.
Principle 1: Context and Neighbourhood Character Good design responds and contributes to its context. Context is the key natural and built features of an area, their relationship and the character they create when combined. It also includes social, economic and environmental conditions. Responding to context involves identifying the desirable elements of an area's existing or future character. Well designed buildings respond to and enhance the qualities and identity of the area including the adjacent sites, streetscape and neighbourhood. Consideration of local context is important for all sites, including sites in established areas, those undergoing change or identified for change.	~~**9 Principle 1: Context**~~ ~~Good design responds and contributes to its context. Context can be defined as the key natural and built features of~~ ~~an area.~~ ~~Responding to context involves identifying the desirable elements of a location's current character or, in the case of precincts undergoing a transition, the desired future character as stated in planning and design policies. New buildings will thereby contribute to the quality and identity of the area.~~ Minor changes
Principle 2: Built Form and Scale Good design achieves a scale, bulk and height appropriate to the existing or desired future character of the street and surrounding buildings. Good design also achieves an appropriate built form for a site and the building's purpose in terms of building alignments, proportions, building type, articulation and the manipulation of building elements. Appropriate built form defines the public domain, contributes to the character of streetscapes and parks, including their views and vistas, and provides internal amenity and outlook.	~~**10 Principle 2: Scale**~~ ~~Good design provides an appropriate scale in terms of the bulk and height that suits the scale of the street and the surrounding buildings.~~ ~~Establishing an appropriate scale requires a considered response to the scale of existing development. In precincts undergoing a transition, proposed bulk and height needs to achieve the scale identified for the desired future character of the area.~~ ~~**11 Principle 3: Built form**~~ ~~Good design achieves an appropriate built form for a site and the building's purpose, in terms of building alignments,~~ ~~proportions, building type and the manipulation of building elements.~~

Exhibited SEPP 65 Clause	*Comment/recommendation*
	~~Appropriate built form defines the public domain, contributes to the character of streetscapes and parks, including their views and vistas, and provides internal amenity and outlook.~~ Principle 2 has combined the previous Principles for Scale and Built Form. This is positive as they previously overlapped significantly. Recommendations: • Use the phrase local street context rather than 'street' since streets can be long. • Revise 'appropriate built form defines the public domain' so that it also captures settings intended to be dominated by landscape.
Principle 3: Density Good design has a density appropriate for a site and its context, in terms of the number of units or residents. Appropriate densities are consistent with the area's existing or projected population. Appropriate densities can be sustained by existing or proposed infrastructure, public transport, access to jobs, community facilities and the environment.	**~~12 Principle 4: Density~~** ~~Good design has a density appropriate for a site and its context, in terms of floor space yields (or number of units or residents).~~ ~~Appropriate densities are sustainable and consistent with the existing density in an area or, in precincts undergoing a transition, are consistent with the stated desired future density. Sustainable densities respond to the regional context, availability of infrastructure, public transport, community facilities and environmental quality.~~ Principle 3 has removed floor space yields as a measure of density. Now only relates to number of units or residents. This appears to have been done to remove an overlap with Built Form and Scale. Recommendation: • Clarify that density should match the existing or desired future character as stated in the planning controls.
Principle 4: Sustainability Good design involves design features that provide positive environmental and social outcomes. Good sustainable design includes use of natural cross breezes and sunlight for the amenity and liveability of residents and passive thermal design for ventilation, heating and cooling reducing reliance on technology and operation costs. Other elements include recycling and reuse of materials and waste, use of sustainable materials and deep soil zones for groundwater recharge and vegetation.	**~~13 Principle 5: Resource, energy and water efficiency~~** ~~Good design makes efficient use of natural resources, energy and water throughout its full life cycle, including construction.~~ ~~Sustainability is integral to the design process. Aspects include demolition of existing structures, recycling of materials, selection of appropriate and sustainable materials, adaptability and reuse of buildings, layouts and built form, passive solar design principles, efficient appliances and mechanical services, soil zones for vegetation and reuse of water.~~ Principle 4 has been renamed to 'Sustainability' from 'Resource, Energy and Water Efficiency'. Recommendations: • Use the same terminology as the ADG - 'natural cross ventilation' (not breezes).

Exhibited SEPP 65 Clause	*Comment/recommendation*
	• Ensure 'Passive thermal design' does not conflict with BASIX. • Use the word 'comfort' to remove overlap with BASIX • Include reuse of buildings. • Reinstate 'efficiency' and 'sustainability as being integral to the design process'. • Include the long term maintainence of the building to reduce ongoing costs including using durable materials, minimizing short life span finishes, reducing reliance on mechanical and electrical systems and minimizing complex shared facilities.
Principle 5: Landscape Good design recognises that together landscape and buildings operate as an integrated and sustainable system, resulting in attractive developments with good amenity. A positive image and contextual fit of well designed developments is achieved by contributing to the landscape character of the streetscape and neighbourhood. Good landscape design enhances the development's environmental performance by retaining positive natural features which contribute to the local context, co-ordinating water and soil management, solar access, micro-climate, tree canopy, habitat values and preserving green networks. Good landscape design optimises useability, privacy and opportunities for social interaction, equitable access, respect for neighbours' amenity and provides for practical establishment and long term management.	~~**14 Principle 6: Landscape**~~ ~~Good design recognises that together landscape and buildings operate as an integrated and sustainable system,~~ ~~resulting in greater aesthetic quality and amenity for both occupants and the adjoining public domain.~~ ~~Landscape design builds on the existing site's natural and cultural features in responsible and creative ways. It enhances the development's natural environmental performance by co-ordinating water and soil management, solar access, micro-climate, tree canopy and habitat values. It contributes to the positive image and contextual fit~~ ~~of development through respect for streetscape and neighbourhood character, or desired future character.~~ ~~Landscape design should optimise useability, privacy and social opportunity, equitable access and respect for neighbours' amenity, and provide for practical establishment and long term management.~~ Minor changes
Principle 6: Amenity Good design positively influences internal amenity for residents and external amenity for neighbours. Achieving good amenity contributes to positive living environments and resident well being. Good amenity combines appropriate room dimensions and shapes, access to sunlight, natural ventilation, outlook, visual and acoustic privacy, storage, indoor and outdoor space, efficient layouts and service areas, and ease of access for all age groups and degrees of mobility.	~~**15 Principle 7: Amenity**~~ ~~Good design provides amenity through the physical, spatial and environmental quality of a development.~~ ~~Optimising amenity requires appropriate room dimensions and shapes, access to sunlight, natural ventilation, visual and acoustic privacy, storage, indoor and outdoor space, efficient layouts and service areas, outlook and ease of access for all age groups and degrees of mobility.~~ Principle 6 states 'good design positively influences internal amenity for residents and external amenity for neighbours'. Recommendations: • Include consideration of external amenity for residents and the internal amenity for neighbours. • Include access to daylight, natural ventilation, sunlight and natural cross ventilation under Amenity and Sustainability.
Principle 7: Safety Good design optimises safety and security, within the development and the public domain. It provides for quality public and private spaces that are clearly defined and fit for purpose. Opportunities to maximise	~~**16 Principle 8: Safety and security**~~ ~~Good design optimises safety and security, both internal to the development and for the public domain.~~ ~~This is achieved by maximising overlooking of public and communal spaces while maintaining internal privacy,~~

Exhibited SEPP 65 Clause	*Comment/recommendation*
passive surveillance of public and communal areas promote safety. A positive relationship between public and private spaces is achieved through clearly defined secure access points and well lit and visible areas that are easily maintained and appropriate to the location and purpose.	~~avoiding dark and non-visible areas, maximising activity on streets, providing clear, safe access points, providing quality public spaces that cater for desired recreational uses, providing lighting appropriate to the location and desired activities, and clear definition between public and private spaces.~~ Minor changes
Principle 8: Housing Diversity and Social Interaction Good design achieves a mix of apartment sizes, providing housing choice for different demographics, living needs and household budgets. Well designed developments respond to social context by providing housing and facilities to suit the existing and future social mix. Good design involves practical and flexible features, including different types of communal spaces for a broad range of people, providing opportunities for social interaction amongst residents.	~~**17 Principle 9: Social dimensions and housing affordability**~~ ~~Good design responds to the social context and needs of the local community in terms of lifestyles, affordability, and access to social facilities.~~ ~~New developments should optimise the provision of housing to suit the social mix and needs in the neighbourhood or, in the case of precincts undergoing transition, provide for the desired future community.~~ ~~New developments should address housing affordability by optimising the provision of economic housing choices and providing a mix of housing types to cater for different budgets and housing needs.~~ Principle 8 has been renamed from 'Social Dimensions and Housing Affordability' to 'Housing Diversity and Social Interaction'. This is a significant change in focus and the idea of 'affordability' is watered down. The words 'optimising the provision of economic housing choices' has been removed. Recommendations: • Expressly address accessibility.
Principle 9: Architectural Expression Good design achieves a built form that has good proportions and a balanced composition of elements, reflecting the internal layout and structure. Good design uses a variety of materials, colours and textures. The visual appearance of well designed apartment buildings responds to the existing or future local context, particularly desirable elements and rhythms of the streetscape.	~~**18 Principle 10: Aesthetics**~~ ~~Quality aesthetics require the appropriate composition of building elements, textures, materials and colours and reflect the use, internal design and structure of the development. Aesthetics should respond to the environment and context, particularly to desirable elements of the existing streetscape or, in precincts undergoing transition, contribute to the desired future character of the area.~~ Principle 9 has been renamed from 'Aesthetics' to 'Architectural Expression.' Recommendations: • Do not use subjective or jargon terms including: 'good proportions' and 'rhythms of the streetscape' balanced composition of elements and particularly desirable elements. • Do not require 'variety of materials, colours and textures' in every instance. • Include reference to 'well-resolved' designs/buildings • Address robustness and durability as they relate to materials. • Include: accommodating weathering, fully incorporating construction requirements, considered

Exhibited SEPP 65 Clause	*Comment/recommendation*
	relationship to the context, clarity of intentions.
Schedule 2 Amendment of other environmental planning instruments **2.1 Blacktown Local Environmental Plan (Central Business District) 2012** Clause 6.2 Serviced apartments Omit clause 6.2 (2) (a) and (b). Insert instead: (a) the design quality principles set out in Schedule 1 to State Environmental Planning Policy No 65—Design Quality of Residential Flat Development, (b) the design principles of the Apartment Design Guide (within the meaning of that Policy). **2.2 Botany Bay Local Environmental Plan 2013** Clause 6.10 Converting serviced apartments to residential flat building Omit clause 6.10 (2) (a) and (b). Insert instead: (a) the design quality principles set out in Schedule 1 to State Environmental Planning Policy No 65—Design Quality of Residential Flat Development, (b) the design principles of the Apartment Design Guide (within the meaning of that Policy). **2.3 Gosford City Centre Local Environmental Plan 2007** Clause 22G Serviced apartments Omit "Part 2 of State Environmental Planning Policy No 65—Design Quality of Residential Flat Development and the design principles of the Residential Flat Design Code (a publication of the Department of Planning, September 2002)". Insert instead "Schedule 1 to State Environmental Planning Policy No 65—Design Quality of Residential Flat Development and the design principles of the Apartment Design Guide (within the meaning of that Policy)". **2.4 Kiama Local Environmental Plan 2011** Clause 6.9 Serviced apartments Omit clause 6.9 (2) (a). Insert instead: (a) the consent authority has considered the following in relation to the development as if it were a residential flat development: (i) the design quality principles set out in Schedule 1 to State Environmental Planning Policy No 65—Design Quality of Residential Flat Development, (ii) the design principles of the Apartment Design Guide (within the meaning of that Policy), and **2.5 Liverpool Local Environmental Plan 2008** Clause 7.19 Serviced apartments Omit clause 7.19 (2). Insert instead: (2) Development consent must not be granted for the subdivision under a strata scheme of a building or part of a building that is being, or has been, used for serviced apartments unless the	Procedural updates

Exhibited SEPP 65 Clause	*Comment/recommendation*

consent authority is satisfied that the following are achieved for the development as if it were a residential flat development:

(a) the design quality principles set out in Schedule 1 to State Environmental Planning Policy No 65—Design Quality of Residential Flat Development,

(b) the design principles of the Apartment Design Guide (within the meaning of that Policy).

2.6 Newcastle Local Environmental Plan 2012

Clause 6.3 Serviced apartments

Omit clause 6.3 (2) (a) and (b). Insert instead:

(a) the design quality principles set out in Schedule 1 to State Environmental Planning Policy No 65—Design Quality of Residential Flat Development,

(b) the design principles of the Apartment Design Guide (within the meaning of that Policy).

2.7 North Sydney Local Environmental Plan 2013

Clause 6.11 Converting serviced apartments to residential flat buildings

Omit clause 6.11 (2) (a) and (b). Insert instead:

(a) the design quality principles set out in Schedule 1 to State Environmental Planning Policy No 65—Design Quality of Residential Flat Development,

(b) the design principles of the Apartment Design Guide (within the meaning of that Policy).

2.8 Parramatta City Centre Local Environmental Plan 2007

Clause 22F Serviced apartments

Omit clause 22F (2). Insert instead:

(2) Development consent must not be granted to development on land zoned B4 Mixed Use for the purpose of the strata subdivision of a building or part of a building that is or has been used for serviced apartments, unless the consent authority is satisfied that the following design principles are achieved for the development as if it were a residential flat development:

(a) the design quality principles set out in Schedule 1 to State Environmental Planning Policy No 65—Design Quality of Residential Flat Development,

(b) the design principles of the Apartment Design Guide (within the meaning of that Policy).

2.9 Penrith City Centre Local Environmental Plan 2008

Clause 31 Serviced apartments

Omit "Part 2 of State Environmental Planning Policy No 65—Design Quality of Residential Flat Development and the design principles of the Residential Flat Design Code (a publication of the Department of Planning, September 2002)".

Insert instead "Schedule 1 to State Environmental

Exhibited SEPP 65 Clause	*Comment/recommendation*

Planning Policy No 65—Design Quality of Residential Flat Development and the design principles of the Apartment Design Guide (within the meaning of that Policy)".

2.10 State Environmental Planning Policy (Affordable Rental Housing) 2009

Clause 15 Design requirements

Omit clause 15 (2). Insert instead:

(2) This clause does not apply to residential flat development within the meaning of State Environmental Planning Policy No 65—Design Quality of Residential Flat Development.

2.11 Strathfield Local Environmental Plan 2012

Clause 6.5 Converting serviced apartments to residential flat building

Omit clause 6.5 (2) (a) and (b). Insert instead:

(a) the design quality principles set out in Schedule 1 to State Environmental Planning Policy No 65—Design Quality of Residential Flat Development,

(b) the design principles of the Apartment Design Guide (within the meaning of that Policy).

2.12 Tweed City Centre Local Environmental Plan 2012

Clause 6.7 Serviced apartments

Omit clause 6.7 (2) (a) and (b). Insert instead:

(a) the design quality principles set out in Schedule 1 to State Environmental Planning Policy No 65—Design Quality of Residential Flat Development,

(b) the design principles of the Apartment Design Guide (within the meaning of that Policy).

2.13 Willoughby Local Environmental Plan 2012

Clause 6.9 Serviced apartments

Omit clause 6.9 (3) (and the note at the end of the subclause). Insert instead:

(3) Development consent must not be granted for the change of use from serviced apartments to a residential flat building, with or without strata subdivision, unless the consent authority is satisfied that the development complies with the design principles of the Apartment Design Guide (within the meaning of State Environmental Planning Policy No 65—Design Quality of Residential Flat Development).

Note. The design quality principles set out in Schedule 1 to State Environmental Planning Policy No 65—Design Quality of Residential Flat Development also apply to the development.

2.14 Wollongong Local Environmental Plan 2009

Clause 7.12 Serviced apartments

Omit clause 7.12 (2). Insert instead:

(2) Development consent must not be granted for the strata subdivision of a building that is being, or has been, used as serviced apartments unless the consent authority is satisfied that, if the

Exhibited SEPP 65 Clause	*Comment/recommendation*
development was a residential flat building: (a) the design quality principles set out in Schedule 1 to State Environmental Planning Policy No 65—Design Quality of Residential Flat Development would be achieved, (b) the design principles of the Apartment Design Guide (within the meaning of that Policy) would be achieved. **2.15 Wollongong Local Environmental Plan (West Dapto) 2010** Clause 7.7 Serviced apartments Omit clause 7.7 (2). Insert instead: (2) Development consent must not be granted for the subdivision under a strata scheme of a building or part of a building that is being used for serviced apartments unless the consent authority is satisfied that the following are achieved for the development as if it were a residential flat development: (a) the design quality principles set out in Schedule 1 to State Environmental Planning Policy No 65—Design Quality of Residential Flat Development, (b) the design principles of the Apartment Design Guide (within the meaning of that Policy). Note. It may be necessary to add additional amendments to this Schedule before it is made to cater for any relevant 2013 Local Environmental Plans made between the time this draft is exhibited and the time it is made.	

Appendix B – ADG Comments and Recommendations

See table below for detailed comments

General Comments

Introduction

- p9 - 3 states that SEPP65 refers to parts of the ADG that 'must be applied when assessing development applications' (ie standards). It says that any part of the ADG referred to in SEPP65 will prevail over *LEPs* as well as DCPs.
- p10 - 1 states the ADG provides 'consistent planning and design ***standards*** for residential apartments'
- p11 - 6 Describes how the performance criteria works. *See full discussion in Section 3*. It states you can use 'the listed acceptable solution, the alternative solution (where available) or put forward a different design feature or method that achieves the relevant criteria.' The 'acceptable solutions' are set out as a list that can be chosen from. Many 'acceptable solutions are not numeric (eg 4L-1 1) and appear to be able to be chosen over the numeric control (eg 4L-1 4). The 'alternative solutions' do not appear to be different ways of achieving the *same* outcome as their title implies. The 'alternative solutions' instead appear to be 'alternative *situations'* that provide a different 'control' under different circumstances. It is unclear whether there can be an 'alternative solution' for sections without an alternative solution box. The ability to put forward a 'different design feature or method' appears to open the door to any number of possible solutions. It is of concern that the onus is placed on Applicants to set the benchmark to achieve as well as demonstrate that it has been achieved. A performance based system needs to clearly set out itself the benchmarks to achieve as well as the method of testing to demonstrate this. Alternatively, a *merit based* system would be possible where a SEPP1/Clause 4.6 mechanism would allow a standard to be varied where it can be demonstrated it is unreasonable/unnecessary in the circumstances and delivers a better outcome.
- p12 - 1 states that the SEPP 65 DQPs 'act as an important nexus' between SEPP 65 and the ADG. If this is the case, each ADG section, but more importantly, the key standards (Clause 6A, '6B', '6C') need to be 'called up' specifically in the DQPs so that this (legal) link is not lost.
- p14 - 1 The idea/intention of this matrix is good, however its implications are problematic if it is not properly constructed. For example 'DQP5 Landscape' is given a *low level* of interaction with '3J Car parking' when this should be a *high level*. It may be preferable to avoid this matrix (as an unnecessary step in translation) and instead ensure the nexus between the DQP wording and the ADG sections and standards is more tightly drafted. **The City strongly recommends deleting the matrix** as it will create uncertainty.
- p27 - 13 'When determining the floor spaces of a precinct, the ~~net~~ gross floor space is based on the whole site

Part 1 Context

- 1B Local character and context and 1C Precincts and individual sites should come before 1A Apartment building types. Before a building typology is determined for a site, an understanding of context is needed.
- Should include a discussion on higher density. Not all density is occurring in defined 'centres'. Many redevelopment opportunities are located outside of centres. Urban renewal areas are not necessarily centre based.

Part 2 Controls

- Boxes are titled 'Considerations in setting the controls' and are seemingly aiming at LGAs to assist with drafting their controls. With this title they cannot be relied upon to provide Good Design Practice or standards for residential flat building applications.

Part 3 Siting and Part 4 Building

- 'Performance criteria' are not worded to perform successfully. They include words like 'optimise' 'maximise' 'minimise' and 'unavoidable' which are subjective. They should describe enforceable, objective, robust, measurable and verifiable outcomes.
- 'Performance criteria' could generally work as 'objectives' in their current format (like Part 2), supported by controls. 'Performance criteria' should be drafted with an action word rather than 'is'.
- 'Performance criteria' should be grouped within each section (like Part 2/RFDC/AMCORD), as many apply to 'acceptable solutions' in other boxes. If they are individually itemised with 'acceptable solutions' assigned to each, the nexus between intent and outcome can be lost.
- 'Acceptable solutions' should be either identified as a SEPP 65 Clause 6A standard, or referred to as 'Good Design Practice' as many can be utilised at the same time. 'Acceptable solutions' should be organised into a hierarchy. Standards should be located in the SEPP, and/or, promoted to the top of the boxes with a separate title. See Section 5 and Appendix C.
- 'Acceptable solutions' should be given a letter in brackets for ease of reference, for example '4L-1(a)' rather than 4L-1 1.

Part 5 Review Panels

- p134 - 10 'Appoint members for an initial term of 3 years' conflicts with SEPP 65 23(a) 'at least 2 years.'
- p141 - 'Council's key development standards' includes LEP (FSR/HOB) and DCP (setbacks). May conflict with Clause 6A, for example Visual Privacy and Separation.
- p143 - 'The matrix in the introduction to this guide should be used when testing how a proposal addresses the Apartment Design Guide and the SEPP 65 Design Quality Principles. The matrix shows the main relationships but not all, therefore some proposals may have more relationships because of

their context or design'. This calls into question the value of the matrix and whether it is an added complexity or a useful tool. The City recommends that the DRP apply the DQPs directly to the application without introducing the step of the matrix.

Appendices

- p146 - Any items that is essential in checklists should be strengthened by augmenting EP&A Regulations with additional *required* information.
- p153 - 'number of hours of solar access to both living rooms of units and private open space within the proposal'.

Apartment Building Types

- All examples should align with Clause 6A standards and main ADG controls, for example deep soil.

Glossary

- Update with final contents of the '6A standards' document

General

- Number of parts of ADG used in review/assessment has increased significantly since RFDC Rules of Thumb. Reduce to Clause 6A standards.
- Language is to generic – It needs careful language around specialist areas, for example sustainability and landscape.
- All images should be credited (designer/photographer) and credits located at the rear of the document.
- Photographs require revision
- Remove drop shadows from diagrams, for example Figure 3F.2

Exhibited ADG Provision	*Comment/recommendation*
2A Primary controls	
Primary development controls are the key planning tool used to manage the scale of development so that it relates to the future desired character of an area and manages impacts on surrounding development.	Supported.
Primary development controls include building height, floor space ratio, building depth, building separation and setbacks (refer to sections 2C - 2H). When applied together, the primary development controls create a building envelope, which forms the three dimensional volume where development should occur.	Supported. Recommendations: • Modify text to distinguish between SILEP controls (HOB, FSR), DCP controls (setbacks) and ADG controls (depth, separations)
Setting and testing the controls Primary controls should be developed taking into account solar and daylight access, orientation and overshadowing, natural ventilation, visual and acoustic privacy, communal open space and deep soil zones.	Supported. Recommendations: • Modify Figure 2A.1 - controls should also permit an adequate dimension of deep soil to plant new trees
The controls must be carefully tested to ensure that the desired built form outcome is achievable and be coordinated with each other to ensure the desired density and massing can be accommodated within the building height and setback controls.	Supported.
2B Building envelopes	
A building envelope is a three dimensional volume that defines the outermost extent of a building.	Supported.
Building envelopes set the appropriate scale of future development in terms of bulk and height relative to the streetscape, public and private open spaces, and block and lot sizes in a particular location. Envelopes are appropriate when determining and controlling the desired urban form in town centres, brownfield sites, precinct plan sites and special sites such as those with extreme topography.	Supported.
A building envelope should be at least 25-30% greater than the achievable floor area (see section 2D Floor Space Ratio) to allow for building components that do not count as floor space but contribute to building design and articulation, such as lifts, stairs and balconies.	Supported. Recommendations: • Modify provision: ‘A building envelope should be 1.5 times greater than the achievable floor area or the achievable floor area should be 2/3 of the building envelope.[this is to provide greater flexibility and an easy to use numerical guide.
Building envelopes help to: • define the three dimensional form of buildings • inform decisions about appropriate density for a site and its context • define open spaces and landscape areas • test the other primary controls to ensure they are coordinated and achieve the desired outcome	Supported.
2C Building height	
Considerations in setting height controls	

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2C 1. Ensure that building height controls respond to the desired number of storeys, the minimum ceiling heights required for future building uses and include generous ground floor heights	Supported. Recommendations: • Modify provision: maximum height in metres (HOB) should be set by allowing for standard floor-to-ceiling heights (plus 0.4m structure and services) for the uses desired (for example mixed use is higher than residential) and adding 3m to the total to allow for topography, roof forms and lift overruns. Flood prone areas should consider additional height to allow for freeboard.
2C 2. Ensure permissible building height allows for articulated roof planes and building services or that architectural roof features are enabled by the local environmental plan	Supported.
2C 3. Where a floor space ratio control is defined, test height controls against the FSR to ensure a good fit	Supported.
2C 4. Develop site-specific building envelopes and heights for complex sites such as those on steep slopes or with changing topography	Supported.
2C 5. It may be appropriate to determine heights by relating them to site-specific features such as cliff lines or heritage items . This may include: • defining an overall height or street wall heights to key datum lines, such as eaves, parapets, cornices or spires • aligning floor to floor heights of new development with existing built form	Supported. Recommendations: • Modify provision: in this instance consider using an RL or AHD to define the height limit.
2C 6. Where rooftop communal open space is desired, ensure adequate overall height is provided and consider secondary height controls for lift/stair access and shade structures	Supported. Recommendations: • Utilise SILEP Clause 5.6 Architectural roof features where available.
2C 7. Consider secondary height controls to transition built form, for example: • a street wall height to define the scale and enclosure of the street • a step down in building height at the boundary between two height zones	Supported. Figure 2C.2 suggests height change within a site. This scenario may not be LEP compliant
2C 8. The Building Code of Australia requires fire sprinklers on buildings that exceed 25m in height. When setting height controls around 25m, consider this threshold as it can have an impact on the feasibility of a development. Applicants should be able to design a building to the maximum height while achieving an economically viable development.	Supported. Recommendations: • Refer to the BCA*/NCC* • Clarify that this is 25m *to the floor level of the upper most floor served*. A suitable HOB to accommodate this may be 31-32m (not including mezzanines).
2D Floor space ratio	
Considerations in setting FSR controls	
2D 1. Test the desired built form outcome against the proposed FSR to ensure consistency with the building envelope, height, setback and open space requirements	Supported.
2D 2. The gross floor area (GFA) should be	Supported.

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approximately 70-75% of the building envelope to account for floor space that is not included in GFA definition and to allow for building articulation	Recommendations: • Modify provision: 'The gross floor area (GFA) should be approximately 2/3~~-75%~~ of the building envelope...' as per text on p34 See 2B
2D 3. Ensure controls are coordinated so that building height, depth, setbacks and floor space ratio combined result in the desired built form outcome	Supported. Recommendations: • Add text: This is a very important point and it should be highlighted in the layout of the page and better referenced in the text. • Add text: Capture in words the intent of Figure 2D.1 by describing in a rule of thumb that the height control must allow at least 3 storeys for each 1:1 of FSR ie. That 1:1 FSR is generally a minimum of 3-4 storeys in height, 2:1 FSR is generally a minimum of 6-8 storeys in height and 3:1 is generally 9-12 storeys in height. • Add text: That describes where a height control is not appropriately set that a completely residential development may not be possible and a mix of uses may be required.
2D 4. Consider how floor space is implemented across larger sites as a single floor space ratio may result in under or over development. For example, in an area with a consistent height control: • corner, mid-block or wide shallow sites tend to have different floor space capacities • small sites with a single building may have greater floor space capacity than larger sites with multiple buildings • large sites with multiple buildings require greater space between buildings and may have less floor space capacity	Supported.
2D 5. On precinct plan sites with new streets and/or open spaces, both the gross FSR for the whole site and the net FSR for individual development parcels need to be defined. The net FSR may be significantly higher than the gross FSR	Supported. Recommendations: • In Figure 2D.3 indicate the 'whole site' area
2D 6. Where both residential and non-residential uses such as retail or commercial offices are permitted, develop FSR controls for each use. Note that residential FSR tends to be lower compared with commercial or retail ratios. This is because residential buildings are typically less deep than commercial buildings and need to adhere to stricter performance criteria (as outlined in this guide).	Supported.
2D 7. Consider opportunities to achieve public benefits such as community facilities and public domain improvements, such as new streets, through-site links and open spaces	Supported.
2E Building depth	Recommendations: • Modify provision: In the introduction 'For residential; development in general, narrower buildings of ~~10-14m~~ 12-15m depth have a greater potential…

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Considerations in setting building depth controls	
2E 1. Use maximum apartment building depths of 12-18m when precinct planning and testing development controls to help ensure apartments receive adequate daylight and natural ventilation and optimise natural cross ventilation	Supported. Recommendations: • Modify provision: 'Use maximum apartment building depths of ~~12~~ 18m when precinct planning'
2E 2. Test building depths against indicative floor plate and apartment layouts to ensure they can meet natural ventilation and sunlight requirements	Supported. Recommendations: • Modify provision: 'to ensure they can meet natural *cross* ventilation and sunlight requirements'
2E 3. Site constraints may require varied building depths to achieve good levels of residential amenity for residents and neighbours	Supported.
2E 4. Consider varying building depth relative to orientation. For example, buildings facing east-west capture sun from both aspects and may be up to 18m wide, while buildings facing north-south should be narrower to reduce the number of south facing apartments that have limited or no direct sunlight access (see section 4L Solar and daylight access)	Supported.
2E 5. Where greater depths are proposed, demonstrate that indicative layouts can achieve acceptable amenity with room and apartment depths. This may require significant building articulation and increased perimeter wall length	Supported. Recommendations: • Add text: Clarify that a useful measure of building depth is when it is taken through the middle of the building (double loaded corridors and cross-through apartments). Building depth should not usually be measured through corner apartments.
2E 6. Coordinate building height and building depth: • buildings that have smaller depths over a greater height deliver better residential amenity than those with greater depth and a lower height • greater building depths may be possible where higher ceiling heights are provided	Supported.
2E 7. For mixed use buildings, align building depth to the intended use. For example, transition deeper commercial or retail podium levels to a narrower residential tower above. If the intended building use changes, the building depth needs to change accordingly	Supported.
2E 8. Set the depth control in metres. The building depth includes the internal floor plate, external walls, balconies, external circulation and articulation such as recesses and steps in plan and section	Supported.
2F Building separation	
Considerations in setting building separation controls	
2F 1. Design and test building separation controls in plan and section	Supported.
2F 2. Test building separation controls for solar access to buildings and open spaces	Supported.
2F 3. Minimum separation distances for buildings within a	**Supported as a SEPP 65 Cl. 6A Development**

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site and between adjoining sites for buildings are: *Up to four storeys (approximately 12m):* • 12m between habitable rooms/balconies • 9m between habitable and non-habitable • 6m between non-habitable *Five to eight storeys (approximately 25m):* • 18m between habitable rooms/balconies • 12m between habitable and non-habitable • 9m between non-habitable rooms *Nine storeys and above (over 25m):* • 24m between habitable rooms/balconies • 18m between habitable and non-habitable • 12m between non-habitable	**Standard. See Section 5 and Appendix C for details.** p39 states 'gallery access circulation areas should be treated as habitable space with separation measured from the ~~exterior~~ closest edge of the circulation space.' And 'When measuring building separation between commercial and residential uses, consider office windows and balconies to be habitable space and service and plant areas as non-habitable. Recommendations: • Correct Figure 2F.4 9 storeys and above dimension • Modify provision: Reference storeys only rather than metres to avoid conflict • Modify provision: Allow non-habitable rooms to have windows onto common access balconies
2F 4. Building separation may need to be increased to achieve adequate solar access and open space provision on the site, for example on slopes	Supported.
2F 5. Building separation may need to increase at boundaries between lower and higher density residential areas	Supported.
2F 6. Increase building separation proportionally to the building height to achieve amenity and privacy for building occupants and a desirable urban form	Supported.
2F 7. At the boundary between a change in zone from apartment buildings to a lower density zone, increase the building setback from the boundary by 3m	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.**
2F 8. No building separation is necessary where building types incorporate party walls. Typically this occurs along a main street or at podium levels within centres	Supported.
2G Street setbacks	
Considerations in setting street setback controls	
2G 1. Determine street setback controls relative to the desired streetscape and building forms, for example: • define a future streetscape with the front building line • match existing development • step back from special buildings • retain significant trees • in centres the street setback may need to be consistent to reinforce the street edge • consider articulation zones accommodating balconies, landscaping etc. within the street setback • use a setback range where the desired character is for variation within overall consistency, or where subdivision is at an angle to the street	Supported. Recommendations: • Add text: Provide advice regarding corner sites and secondary street setbacks.
2G 2. Align street setbacks with building use, for example, in mixed use buildings a zero street setback is appropriate	Supported.
2G 3. Consider nominating a maximum percentage of development that may be built to the front build-to line, where one is set, to ensure modulated frontages along	Supported.

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the length of buildings	
2G 4. Identify the quality, type and use of open spaces and landscaped areas facing the street so setbacks can accommodate landscaping and private open space	Supported.
2G 5. In conjunction with height controls, consider secondary upper level setbacks to: • reinforce the desired scale of buildings on the street • minimise overshadowing of the street and other buildings	Supported.
2G 6. To improve passive surveillance, promote setbacks which ensure a person on a balcony or at a window can easily see the street	Supported.
2G 7. Consider increased setbacks where street or footpath widening is desired	Supported.
2H Side and rear setbacks	
Considerations in setting side and rear setback controls	
2H 1. Relate side setbacks to existing streetscape patterns	Supported. Recommendations: • Add text: Provide advice regarding corner sites with regards to side versus rear setbacks.
2H 2. Test side and rear setbacks with height controls for overshadowing of the site, adjoining properties and open spaces	Supported.
2H 3. Test side and rear setbacks with the requirements for: • building separation and visual privacy • communal and private open space • deep soil zone requirements	Supported.
2H 4. Consider zero side setbacks where the desired character is for a continuous street wall, such as in dense urban areas, main streets or for podiums within centres	Supported. Recommendation: Add text: Note that required separations will still apply to windows facing boundaries
2H 5. On sloping sites, consider increasing side and rear setbacks where new development is uphill to minimise overshadowing and assist with visual privacy	Supported.
3A Site analysis	
Performance criteria 3A-1 Site analysis illustrates that design decisions have been based on opportunities and constraints of the site conditions and their relationship to the surrounding context	
Acceptable solutions	
3A-1 1. Each element in the Site Analysis Checklist is addressed (see Appendix 1)	Supported as Good Design Practice. Recommendations: • Include requirement for this site analysis in EP&A Regulation Part 1(2)(5) • Correct figure: Figure 3A.5 shows a residential

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	storey sitting predominantly below the courtyard landscape level. This should be corrected. • Correct figure: Figures 3A.5 and 3A.6 show orange dotted lines. It is unclear if these are envelope outlines or height limits.
3B Orientation	
Performance criteria 3B-1 Building types and layouts respond to the streetscape and site while optimising solar access within the development	
Acceptable solutions	
3B-1 1. Buildings along the street frontage define the street, by facing it and incorporating direct access from the street. See figure 3B.1	Supported as Good Design Practice.
3B-1 2. Where the street frontage is to the east or west, rear buildings are orientated to the north	Supported as Good Design Practice.
3B-1 3. Where the street frontage is to the north or south, overshadowing to the south is minimised and buildings behind the street frontage are orientated to the east and west. See figure 3B.2	Supported as Good Design Practice. Recommendations: • Add text: Also refer to figure 3B.1
Performance criteria 3B-2 Overshadowing of neighbouring properties is minimised during mid winter	
Acceptable solutions	
3B-2 1. Living areas, private open space and communal areas receive solar access in accordance with sections 3D Communal and public open space 1.4 and 3.5, 4L Solar and daylight access 1.4 and 2.1	Supported as Good Design Practice. Recommendations: • Check references: 3D-3 5 does not exist
3B-2 2. Solar access to living rooms, balconies and private open spaces of neighbours is protected	Not supported. May unduly restrict development. Recommendations: • Modify provision: Rephrase to 'Consider the extent of solar access to existing neighbours to remain and to future planned neighbours.'
3B-2 3. Where an adjoining property does not currently receive 3 hours of solar access, the proposed building ensures solar access to neighbouring properties is not reduced by more than 20%	Not supported. May unduly restrict development.
3B-2 4. If the proposal will reduce the solar access of neighbours, building separation is increased beyond minimums contained in section 3F Visual privacy	Supported as Good Design Practice. Recommendations: • Add text: Height can also be decreased
3B-2 5. Overshadowing is minimised to the south or down hill by increased upper level setbacks	Supported as Good Design Practice. Recommendations: • Add text: Separation can also be increased
3B-2 6. Buildings are orientated at 90 degrees to the	Not supported.

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boundary with neighbouring properties to minimise overshadowing and privacy impacts, particularly where minimum setbacks are used and where buildings are higher than the adjoining development	May conflict with other guidelines.
3B-2 7. A minimum of 4 hours of solar access is retained to solar collectors on neighbouring buildings	Not supported. May unduly restrict development.
3C Public domain interface	This section should also address the character of the streetscape and how a building and its landscape can successfully fit into it. Elements like verges, fences, setbacks, and rhythm of buildings should be considered (link to 3A Site Analysis). Figure 3C.5 is considered a positive example of this, however view is not well selected. Also reference 4B Ground floor apartments.
Performance criteria 3C-1 Transition between private and public domain is achieved without compromising safety and security	
Acceptable solutions	
3C-1 1. Terraces, balconies and courtyard apartments have direct street entry, where appropriate	Supported as Good Design Practice.
3C-1 2. Changes in level between private terraces, front gardens and dwelling entries above the street level provide surveillance and improve visual privacy for ground level dwellings. See figure 3C.1	Supported as Good Design Practice. Encouraging level changes work counter to accessibility. Potentially conflicts with 3C-2 5. Recommendations: • Modify provision: Do not nominate a particular max level change in figure as too constraining. Does not work in all situations, for example sloping sites.
3C-1 3. Upper level balconies and windows overlook the public domain	Supported as Good Design Practice.
3C-1 4. Front fences and walls along street frontages use visually permeable materials and treatments. The height of solid fences or walls is limited to 1m	Supported as Good Design Practice. Recommendations: • Modify provision: Do not nominate a 1m maximum solid fence height as too constraining. Does not work in all situations, for example sloping sites. Show a variety of solutions through different precedent images.
3C-1 5. Length of solid walls is limited along street frontages	Supported as Good Design Practice. Recommendations: • Modify provision: Provide guidance on appropriate length of walls – suggest maximum 8m
3C-1 6. Opportunities for casual interaction between residents and the public domain is provided for, design solutions may include seating at building entries, near letter boxes and in private courtyards adjacent to streets	Supported as Good Design Practice.
3C-1 7. In developments with multiple buildings and/or entries, pedestrian entries and spaces associated with individual buildings/entries are differentiated to improve	Supported as Good Design Practice.

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legibility for residents, using a number of the following design solutions: • architectural detailing • changes in materials • plant species • colours	
3C-1 8. Opportunities for people to be concealed are minimised	Supported as Good Design Practice.
Performance criteria 3C-2 Amenity of the public domain is retained and enhanced	Recommendation: Add text: This criteria should also address *future* public domain spaces.
Acceptable solutions	
3C-2 1. Planting softens the edges of any raised terraces to the street, for example above sub-basement car parking	Supported as Good Design Practice.
3C-2 2. Mail boxes are located in lobbies, perpendicular to the street alignment or integrated into front fences where individual street entries are provided	Supported as Good Design Practice.
3C-2 3. The visual prominence of underground car park vents is minimised and located at a low level where possible	Supported as Good Design Practice.
3C-2 4. Substations, pump rooms, garbage storage areas and other service requirements are located in basement car parks or out of view	Supported as Good Design Practice.
3C-2 5. Ramping for accessibility is minimised by building entry location and setting ground floor levels in relation to footpath levels	Supported as Good Design Practice. Note: Potentially conflicts with 3C-1 2
3C-2 6. Durable, graffiti resistant and easily cleanable materials are used	Supported as Good Design Practice.
3C-2 7. Where development adjoins public parks, open space or bushland, the design positively addresses this interface and uses a number of the following design solutions: • street access, pedestrian paths and building entries which are clearly defined • paths, low fences and planting that clearly delineate between communal/private open space and the adjoining public open space • minimal use of blank walls, fences and ground level parking	Supported as Good Design Practice. Recommendations: • Modify: Do not use Figure 3C.2 or 3C.3(upper) showing high blank fences to recessed private courtyard which provides poor outlook and daylight.
3C-2 8. On sloping sites protrusion of car parking above ground level is minimised, using split levels to step underground car parking	Supported as Good Design Practice.
3D Communal and public open space	The function of communal open space also includes provision of planting and habitat. Recommendation: Add text: Communal open spaces should be 'inviting'.
Performance criteria 3D-1 Communal open space is consolidated, well configured and designed	
Acceptable solutions	

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3D-1 1. Communal open space has a minimum area equal to 25% of the site. See figure 3D.3	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.** Recommendations: • Add text: Define 'communal open space' as consolidated, open to the sky and in communal ownership. • Modify Figure: 3D.3 should be amended to properly illustrate *communal open space.* The communal open space should include all areas that are not building or private open space. The red line looks to be the deep soil area. The black line looks to be the 'principal usable portion of the communal open space.' Note: Social housing generally does not desire communal open space due to maintenance issues.
3D-1 2. Communal open space is consolidated into a recognisable and usable area	Supported as Good Design Practice. Recommendations: • Modify provision: 'Communal open space is consolidated into ~~a~~ recognisable, <u>well-proportioned</u> and usable <u>areas</u>'
3D-1 3. Communal open space is co-located with deep soil areas	Supported as Good Design Practice.
3D-1 4. Solar access is provided to 50% of the principal useable portion of the communal open space for a minimum of 2 hours between 9am and 3pm in mid winter	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.** Recommendations: • Add text: Define function of 'Principle usable portion' as a consolidated part of the communal open space that provides a collective social focus and provides facilities such as a barbecue and seating • Modify provision: Quantify 'Principle usable portion as 5m2 per dwelling up to 25% of site area
3D-1 5. Direct, equitable access is provided to communal open space areas from common circulation areas, entries and lobbies	Supported as Good Design Practice.
3D-1 6. Where communal open space cannot be provided at ground level, it is located on a podium or roof	Supported as Good Design Practice.
Performance criteria 3D-2 Communal open space can be used for a range of activities	
Acceptable solutions	
3D-2 1. Facilities are provided for a range of age groups where size permits, incorporating some of the following elements: • seating for individuals or groups • barbeque areas • play equipment or play areas • swimming pools, gyms, tennis courts or common rooms	Supported as Good Design Practice. Recommendations: • Modify provision: 'Facilities are provided <u>in the principal portion of communal open space</u> for a range of age groups ~~where size permits~~, incorporating some of the following elements'

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	• Add text: Internalised facilities like gyms and common rooms should not be provided *in lieu of* the principal portion of communal open space
3D-2 2. Location of facilities responds to microclimate and site conditions with access to sun in winter, shade in summer and shelter from strong winds and down drafts	Supported as Good Design Practice.
3D-2 3. Impacts of services are minimised, including location of ventilation duct outlets from basement car parks, electrical substation and detention tanks	Supported as Good Design Practice.
3D Communal and public open space	
Performance criteria 3D-3 Safety of communal open space is maximised	
Acceptable solutions	
3D-3 1. Communal open space and public domain is readily visible from habitable rooms and private open space areas while maintaining visual privacy, design solutions may include: • bay windows • corner windows • balconies	Supported as Good Design Practice.
3D-3 2. Communal open space is well lit	Supported as Good Design Practice. Recommendations: • Add text: 'using energy efficient lighting'
3D-3 3. Where communal open space/facilities are provided for children and young people they are safe, well lit and contained	Supported as Good Design Practice. Recommendations: • Delete text: Do not need to repeat 'well lit'
Performance criteria 3D-4 Public open space, where provided, responds to the existing pattern and uses of the neighbourhood	
Acceptable solutions	
3D-4 1. Space is well connected with public streets along at least one edge	Supported as Good Design Practice.
3D-4 2. Space is connected with nearby parks and other landscape elements or linked through view lines, pedestrian desire paths, termination points and the wider street grid	Supported as Good Design Practice. Recommendations: • Modify provision: 'Space is <u>physically or visually connected</u> with nearby parks and other landscape elements ~~or linked through~~ <u>with view</u> lines, pedestrian desire paths, termination points and <u>connection</u> *<u>to</u>* the wider street grid. • Delete Figure: 3D.9 is not supported as a precedent. It appears uninviting. • Delete Figure: 3D.10 is not supported as a precedent. This space has not been successful.
3D-4 3. Solar access is provided year round and space is protected from strong winds	Supported as Good Design Practice.

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3D-4 4. A range of uses are provided for people of all ages	Supported as Good Design Practice. Recommendations: • Modify provision: 'Space should be accessible to all and of sufficient size to suit the intended use' • Add text: 'Discuss the provision of public open space early in the design process to identify the demand for open space and appropriate uses for the space'
3D-4 5. A positive street address and active street frontages are provided adjacent to public open space	Supported as Good Design Practice.
3D-4 6. Boundaries are clearly defined between public open space and private areas	Supported as Good Design Practice.
3D Alternative solutions Where developments are unable to achieve the recommended 25% communal open space, such as those on small lots, sites with high site coverage or in a centre, they should: • provide communal spaces elsewhere such as a landscaped roof top terrace or a common room • provide increased private open space or balconies • demonstrate good proximity to public open space and/or provide contributions to public open space	Not supported as an alternative solution. Supported as Good Design Practice to guide merit based argument for unreasonable/unnecessary. Recommendations: • Modify provision: Roof top terraces should be included as an acceptable solution. • Add text: Greater guidance is needed with regards to provision of communal open space as internalised space, such as common rooms, for example common rooms must open directly onto the principal portion of communal open space.
3E Deep soil zones	Deep soil benefits also include: temperature reduction and micro climates from significant tree planting ('heat island' effect)
Performance criteria 3E-1 Deep soil zones are suitable for healthy plant and tree growth, improve residential amenity and promote management of water and air quality	
Acceptable solutions	
3E-1 1. Deep soil zones meet the requirements as shown in Table 1	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.** Recommendations: • Modify provision: Directly insert contents of Table 1 into the standard • Modify provision: Phrase standard in same way as 3F-1 2. 'Deep soil zones ~~meet the~~ requirements ~~as shown in Table 1~~ are: Site area Deep soil zone (% of site area) Minimum dimensions ~~Less than~~ Up to 650m2 7% consolidated – Over 650m2 up to 1,500m2 10% 3m ~~greater than~~ Over 1,500m2 15% 6m ~~greater than~~ Over 1,500m2 20% 6m *Deep soil zones should be consolidated.* Table 3 at 4E should be relocated to deep soil. This table shows the recommended tree planting in

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	deep soil areas. Recommendations: • Modify provision: Directly insert contents of Table 3 4E into the standard • Modify provision: Phrase standard in same way as 3F-1 2. 'Tree planting in deep soil zones is: Site area Recommended tree planting Up to ~~850m2~~ 650m2 1 medium tree per 50m2 of deep soil zone ~~Between~~ Over 650m2 up to 1,500m2 1 large tree or 2 medium trees per 90m2 of deep soil area ~~Greater than~~ Over 1,500m2 1 large tree of two medium trees per 80m2 of deep soil area'
3E-1 2. Deep soil zones are located to retain existing significant trees and allow for the development of healthy root systems, providing anchorage and stability for mature trees. Design solutions may include: • basement and sub basement car park design that does not fully cover the site • use of front and side setbacks • adequate clearance around trees to ensure long term health • co-location with other deep soil areas on adjacent sites	Supported as Good Design Practice.
3E-1 3. On sites with sand, clay, alluvial, transition and disturbed soils, soil volume is: Tree size Height Spread Soil volume Large trees 13-18m 16m 80m3 Medium tree 9-12m 8m 35m3 Small tree 6-8m 4m 15m3	Supported as Good Design Practice. Recommendations: • Modify provision: Clarify that soil volumes are *minimums* • Modify provision: Phrase standard in same way as 3F-1 2. • Modify provision: Address trees that are over 18m in height 'On sites with sand, clay, alluvial, transition and disturbed soils, minimum soil volume is: Tree size Height Spread Soil volume Large trees ~~13-18m~~ Over 13m up to 18m 16m 80m3 Medium tree ~~9-12m~~ Over 9m up to 13m 8m 35m3 Small tree ~~6-8m~~ Over 6m up to 9m 4m 15m3'
3E-1 4. On sandy sites with reduced soil volumes, the number of trees planted is proportional to available soil volume	Supported as Good Design Practice. This text appears to relate to Table 3 4E. See 3E-1 1. Recommendations: • Modify provision: 'On ~~sandy~~ sandstone sites with reduced soil volumes'
Performance criteria 3E-2 Deep soil zones allow for limited servicing and access	Not supported. Deep soil zones do *not* allow for servicing and access. Ideally they are unimpeded and intrusions should be avoided. Where unavoidable, the solution should be *limited to* 3E-2 1 and 2.
Acceptable solutions	
3E-2 1. Pedestrian pathways and paving which is	Supported as Good Design Practice.

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specifically designed for tree root growth occupies a maximum of 10% of the deep soil zone. See figure 3E.4	Recommendations: • Correct reference: to Figure 3E.2 • Correct reference: Figure 3E.4 is incorrectly labelled • Correct reference: Figure 3E.4 should be coordinated with Figure 3D.3.
3E-2 2. Services are limited to a maximum 300mm diameter consolidated services trench	Supported as Good Design Practice.
3E Alternative solutions Reductions to deep soil zone requirements should demonstrate that the development provides planting on structure and addresses stormwater management in accordance with sections 4F planting on structures and 4U water management and conservation Some circumstances where alternative solutions may be acceptable include: • lack of space for deep soil at ground level due to the building typology and its relationship to the site. For example a tower within a central business district or shop top housing in a centre • the ground floor is predominantly nonresidential, site coverage is 100% and the site is located in a centre • it is demonstrated that deep soil is maximised and/or alternative planting on structure is provided	Not supported as an alternative solution. See 3E-1 1. May also want to *increase* deep soil. Supported as *Good design practice* to guide merit based argument unreasonable/unnecessary. Recommendations: • Correct reference: to 4V • Modify text: Reverse order of paragraphs 'Some circumstances where ~~alternative solutions~~ a reduction may be acceptable include: • lack of space for deep soil at ground level due to the building typology and its relationship to the site. For example a tower within a central business district or shop top housing in a centre • the ground floor is predominantly nonresidential, site coverage is 100% and the site is located in a centre ~~• it is demonstrated that deep soil is maximised and/or alternative planting on structure is provided~~' Reductions to deep soil zone requirements should demonstrate that the development provides planting on structure and addresses stormwater management in accordance with sections 4F planting on structures and ~~4U~~ 4V water management and conservation.
3F Visual privacy	2F building separation is not structured as 'performance criteria' with 'acceptable solutions.' 3F Visual privacy is the only section which *controls* separation. Recommendations: • Amend title: to Visual Privacy <u>and Separations</u> • Modify provision: The scope should be expanded to include separations (for light, air and outlook) • Modify provision: explain that separation assists in achieving daylight and solar access, landscape quality (deep soil) and useful communal open spaces.
Performance criteria 3F-1 Visual separation distances are shared equitably between neighbouring sites, providing reasonable levels of external and internal visual privacy	Many acceptable solutions are also relevant to 3F-2.
Acceptable solutions	

Exhibited ADG Provision	*Comment/recommendation*
3F-1 1. New development is located and oriented to maximise visual privacy between on site and neighbouring buildings. Design solutions include: • side and rear setbacks satisfy section 2H Side and rear setbacks • site layout and building orientation minimise privacy impacts (also see section 3B) • on sloping sites, apartments on different levels have appropriate visual separation distances. See figure 3F.4	Supported as Good Design Practice. Recommendations: • Add text: Also make reference to 2F Building separation • Add text: 2F 8 advice regarding party walls to 3F
3F-1 2. Unimpeded space is provided in front of windows and balconies to ensure visual privacy is achieved. Separation distances from buildings to the side and rear boundaries are: Building height Habitable rooms and balconies Nonhabitable rooms up to 12m (4 storeys) 6m 3m up to 25m (5-8 storeys) 9m 4.5m over 25m (9+ storeys) 12m 6m Separation distances between buildings on the same site are double the above requirement. See figure 3F.4rooms up to 12m (4 storeys) 6m 3m up to 25m (5-8 storeys) 9m 4.5m over 25m (9+ storeys) 12m 6m Separation distances between buildings on the same site are double the above requirement. See figure 3F.4	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.** Recommendations: • Modify provision: The view cones approach illustrated in 3F.2, while supporting its intent, the City notes that this approach breaks down where spaces are oriented at 90 degrees to each other. At higher levels this approach would sterilise large proportions of apartments to no purpose. The City has proposed a new form of this control that is found at Appendix C. Also note that the diagram is incorrect since some habitable rooms and balconies are not shown with their cones (since they would illustrate unresolvable clashes). • Modify Reference: to Figure 3F.4 is incorrect. Should be Figure 3F.2 and/or Figure 3F.6 • Modify Reference: Clarify that Figure 3F.2 and 3F.6 is for a maximum 4 storey development • Modify Reference: Figure 3F.2 reference to Section B (figure 3F.5) is incorrect. Should be Figure 3F.3.
3F-1 3. Privacy separation distances between residential and commercial buildings meet the above required separation distances as follows: • retail, office spaces and commercial balconies - habitable room distances • service and plant areas - non-habitable room distances	Supported as Good Design Practice.
3F-1 4. Apartment buildings should have an increased separation distance of 3m (in addition to the requirements set out in 3F-1.2) when adjacent to a zone permitting lower density residential development. See figure 3F.5	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.** Recommendations: • Modify provision: 'when adjacent to a *different land use* zone permitting lower density' • Modify provision: *'to provide for the transition in scale and allow for an increased area of landscaped planting'*
3F-1 5. Direct lines of sight are avoided for windows and balconies across corners	Supported as Good Design Practice. Recommendations: • Delete Figure: 3F.8 is not supported as a precedent.
3F-1 6. For small infill sites where it is demonstrated that privacy separation distances can not be achieved, minimum separation distances for rooms such as secondary bedrooms and studies are:	Not supported. Reductions in separation to habitable rooms should not be compromised.

Exhibited ADG Provision	*Comment/recommendation*
• 4.5m for up to 12m (4 storeys) • 7m for up to 25m (5-8 storeys) • 9m for over 25m (9 storeys+) The above dimensions should be used as a guide when sizing light wells	'Small infill sites' is not defined.
3F Visual privacy	
Performance criteria 3F-2 Site and building design elements increase privacy without compromising access to light and air, balance outlook and views from habitable rooms and private open space	Recommendations: • Modify provision: 'Site and building design elements increase privacy without compromising access to light and air and balance outlook and views from habitable rooms and private open space'
Acceptable solutions	
3F-2 1. Communal open space, common areas and access paths are separated from windows to apartments, particularly habitable room windows. Design solutions may include: • setbacks • windows offset from the windows of adjacent buildings • recessed balconies and/or vertical fins between adjacent balconies • solid or partially solid balustrades to balconies at lower levels • fencing and/or trees and vegetation to separate spaces • screening devices • raising apartments/private open space above the public domain or communal open space • planter boxes incorporated into walls and balustrades to increase visual separation • pergolas or shading devices to limit overlooking of lower apartments or private open space • on constrained sites where it can be demonstrated that building layout opportunities are limited, fixed louvres or screen panels to windows and/or balconies	Supported as Good Design Practice. Recommendations: • Modify provision: The solution is the first sentence. The dot points are elements to assist privacy. • Modify provision: Some dot points do not relate to communal open space interface. Provide separate Good Design Practice for building-to-building design solutions. • Modify provision: Remove 'screening devices' dot point. Last dot point is preferred. • Modify provision: Add 'bay windows or 'pop-out' windows to screen and provide outlook simultaneously.
3F-2 2. Balconies and private terraces are located in front of living rooms to increase internal privacy	Supported as Good Design Practice. Recommendations: • Modify provision: Clarify with 'where this does not prevent solar access to living rooms'
3G Pedestrian access and entries	
Performance criteria 3G-1 Building entries and pedestrian access connects to and addresses the public domain	
Acceptable solutions	
3G-1 1. Multiple entries (including communal building entries and individual ground floor entries) are provided to activate the street edge	Supported as Good Design Practice.
3G-1 2. Entry locations relate to the street and subdivision pattern and the existing pedestrian network	Supported as Good Design Practice.
3G-1 3. Building entries are clearly identifiable. Communal entries are clearly distinguishable from private entries	Supported as Good Design Practice.

Exhibited ADG Provision	*Comment/recommendation*
3G-1 4. Where street frontage is limited and multiple buildings are located on the site, a primary street address is provided with clear sight lines and pathways to secondary building entries	Supported as Good Design Practice.
Performance criteria 3G-2 Access, entries and pathways are equitable and easy to identify	
Acceptable solutions	
3G-2 1. Building access areas including lift lobbies, stairwells and hallways are clearly visible from the public domain and communal spaces	Supported as Good Design Practice.
3G-2 2. The design of ground floors and underground car parks minimise level changes along pathways and entries	Supported as Good Design Practice.
3G-2 3. Steps and ramps are integrated into the overall building and landscape design	Supported as Good Design Practice.
3G-2 4. For large developments 'way finding' maps are provided to assist visitors and residents	Supported as Good Design Practice. Recommendations: • Modify provision: Clarify that this is not in lieu of clarity of site circulation or building entry locations
3G-2 5. For large developments electronic access and audio/video intercom is provided to manage access	Supported as Good Design Practice.
Performance criteria 3G-3 Pedestrian links through developments provide access to streets and connect destinations	
Acceptable solutions	
3G-3 1. Pedestrian links through sites facilitate direct connections to main streets, centres and public transport	Supported as Good Design Practice. Recommendations: • Modify provision: 'Pedestrian links through sites facilitate direct connections to <u>open spaces,</u> main streets, centres and public transport. <u>They assist with permeability of large block structures and can improve access and the legibility of building entries.</u>'
3G-3 2. Pedestrian links are direct, have clear sight lines, are overlooked by habitable rooms or private open spaces of dwellings, are well lit and contain active uses, where appropriate	Supported as Good Design Practice.
3H Vehicle access	
Performance criteria 3H-1 Vehicle access points are designed and located to achieve safety and high quality streetscapes	
Acceptable solutions	
3H-1 1. Car park access is integrated with the building's overall facade, design solutions may include: • the materials and colour palette minimise visibility from the street • security doors or gates at entries that minimise voids in	Supported as Good Design Practice. Recommendations: • Modify provision: Add 'shared basements should be encourage where possible to minimise car

Exhibited ADG Provision	*Comment/recommendation*
the facade • where doors are not provided, the visible interior reflects the facade design and the building services, pipes and ducts are concealed	crossing points on footpaths.
3H-1 2. Car park entries are located behind the building line	Supported as Good Design Practice.
3H-1 3. Vehicle entries are located at the lowest point of the site minimising ramp lengths, excavation and impacts on the building form and layout	Supported as Good Design Practice.
3H-1 4. Car park entry and access is located on secondary streets or lanes where available	Supported as Good Design Practice.
3H-1 5. Vehicle standing areas that increase driveway width and encroach into setbacks are avoided	Supported as Good Design Practice. Recommendations: • Modify provision: Clarify with 'where there is sufficient space in the public domain.'
3H-1 6. Access point locations avoid headlight glare to habitable rooms	Supported as Good Design Practice.
3H-1 7. Adequate separation distances are provided between vehicular entries and street intersections	Supported as Good Design Practice.
3H-1 8. The width of vehicle access points is limited to the minimum	Supported as Good Design Practice. Recommendations: • Modify provision: Add 'combined entry/exits to car parks should be encouraged where permitted under relevant Australian Standards'
3H-1 9. Visual impact of long driveways is minimised through changing alignments and screen planting	Supported as Good Design Practice.
3H-1 10. The requirement for large vehicles to enter or turn around within the site is avoided	Supported as Good Design Practice. Recommendations: • Modify provision: Clarify with 'where there is sufficient space in the public domain.' • Modify provision: Clarify whether this includes Council's waste vehicles
3H-1 11. Garbage collection, loading and servicing areas are screened	Supported as Good Design Practice. Recommendations: • Change text: Refer to garbage as 'waste'
Performance criteria 3H-2 Conflicts between pedestrians and vehicles are avoided	
Acceptable solutions	
3H-2 1. The width and number of vehicle access points are as narrow and as few as possible	Supported as Good Design Practice.
3H-2 2. Clear sight lines are provided at pedestrian and vehicle crossings	Supported as Good Design Practice.
3H-2 3. Traffic calming devices such as changes in paving material or textures are used where appropriate	Supported as Good Design Practice.

Exhibited ADG Provision	*Comment/recommendation*
3H-2 4. Pedestrian and vehicle access is separated and distinguishable. Design solutions may include: • changes in surface materials • level changes • the use of landscaping for separation	Supported as Good Design Practice. Recommendations: • Modify provision: Add 'pedestrian priority across driveways is promoted through footpath continuation' • Modify provision: Add 'a minimum of 3m is provided between driveways and pedestrian entries where possible'
3J Bicycle and car parking	Recommendations: • Modify provision: 'Provision of parking for ~~alternative~~ other forms of transport such as car share vehicles, motorcycles and bicycles ~~should also~~ need to be considered'
Performance criteria 3J-1 Car parking is provided based on proximity to public transport in metropolitan Sydney and centres in regional areas	
Acceptable solutions	
3J-1 1. Number of car parking spaces meet the requirements as shown in Table 2 where applicable	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.** Recommendation: • Modify provision: This clause should be clearer and provide a minimum of 0 spaces within 800m of inner and middle ring metropolitan Sydney. The rest should remain unaffected since they have poor levels of service.
3J-1 2. Number of visitor spaces are limited, particularly in basements, to 1 space per every 10 apartments	Supported as Good Design Practice. Could be a part of the 3J-1 1 Clause 6B standard
3J-1 3. Where a car share scheme operates locally, provide car share parking spaces within the car park or on street. Car share spaces may be provided in lieu of the required number of car parks, in accordance with council policy	Supported as Good Design Practice. Recommendations: • Delete Figure: 3J.2 is not supported. It should show a successful design solution within a building. • Modify provision: Car share parking should be provided on site. Car share operators are able to integrate security systems with apartment buildings so that secure and traceable access is possible.
Performance criteria 3J-2 Parking and facilities are provided for other modes of transport	
Acceptable solutions	
3J-2 1. Conveniently located and sufficient numbers of parking spaces are provided for motorbikes and scooters	Supported as Good Design Practice.
3J-2 2. Secure undercover bicycle parking is provided that is easily accessible from both the public domain and common areas	Supported as Good Design Practice. Recommendations: • Modify provision: 'Secure undercover bicycle parking is provided that is easily accessible from both the public domain and common areas. A

Exhibited ADG Provision	*Comment/recommendation*
	minimum of one bicycle parking space per apartment should be provided for residents, and a minimum of one bicycle parking space per 10 apartments should be provided for resident visitors. The layout, design and security of bicycle facilities must comply with the minimum requirements of Australian Standard AS 2890.3 Parking Facilities part 3: bicycle Parking Facilities (or as updated)'
3J-2 3. Conveniently located charging stations are provided for electric vehicles, where desirable	Supported as Good Design Practice.
Performance criteria 3J-3 Car park design and access is safe and secure	
Acceptable solutions	
3J-3 1. Car park contains supporting facilities including garbage, plant and switch rooms, storage areas and car wash bays, which can be accessed without crossing car parking spaces	Supported as Good Design Practice. Recommendations: • Change text: Refer to 'waste' rather than 'garbage' • Delete Figure: 3J.4 is not supported as a precedent. Should show a successful design solution.
3J-3 2. Direct, clearly visible and well lit access is provided into common circulation areas	Supported as Good Design Practice.
3J-3 3. A clearly defined and visible lobby or waiting area is provided to lifts and stairs	Supported as Good Design Practice.
3J-3 4. For larger car parks, safe pedestrian access is clearly defined and circulation areas have good lighting, colour, line marking and/or bollards	Supported as Good Design Practice. Recommendations: • Modify provision: Define 'larger car parks' by number of spaces
Performance criteria 3J-4 Visual and environmental impacts of on-grade car parking are minimised	
Acceptable solutions	
3J-4 1. On-grade car parking is avoided	Supported as Good Design Practice.
3J-4 2. Where on-grade car parking is unavoidable, the following design solutions are used: • parking is located on the side or rear of the lot away from the primary street frontage • cars are screened from view of streets, buildings, communal and private open space areas • safe and direct access to building entry points is provided • parking is incorporated into the landscape design of the site, by extending planting and materials into the car park space • stormwater run-off is managed appropriately from car parking surfaces • bio-swales, rain gardens or on site detention tanks are provided, where appropriate • light coloured paving materials or permeable paving systems are used and shade trees are planted between every 4-5 parking spaces to reduce increased surface temperatures from large areas of paving	Supported as Good Design Practice. Recommendations: • Modify provision: Add 'individual garage doors are well integrated into the building' • Modify provision: Add 'undercroft spaces are defined from communal open spaces and well lit' • Modify provision: 'stormwater run-off is managed appropriately from car parking surfaces *by means of filtration via WSUD mechanisms such as* bio-swales, rain gardens, on site detention *and retention* tanks, *and reuse irrigation systems*.

Exhibited ADG Provision	*Comment/recommendation*
Performance criteria 3J-5 Visual and environmental impacts of underground car parking are minimised	
Acceptable solutions	
3J-5 1. Excavation is minimised through efficient car park layouts and ramp design	Supported as Good Design Practice.
3J-5 2. Car parking layout is well organised, using a logical, efficient structural grid and double loaded aisles	Supported as Good Design Practice. Recommendations: • Modify provision: 'Car parking layout is well organised, using a logical, efficient structural grid and double loaded aisles <u>that optimises areas of deep soil'</u>
3J-5 3. Protrusion of car parks does not exceed 1m above ground level, design solutions may include stepping car park levels or using split levels on sloping sites	Supported as Good Design Practice. Recommendations: • Add text: Refer to SILEP definition of 'storeys', 'basement' and 'gross floor area'
3J-5 4. Natural ventilation is provided to basement and sub basement car parking areas	Supported as Good Design Practice. Recommendations: • Add text: Include reference to CO2 monitors to control mechanical ventilation use • Add text: Include reference to use of sensors to control artificial lighting
3J-5 5. Ventilation grills or screening devices for car parking openings are integrated into the façade and landscape design	Supported as Good Design Practice.
Performance criteria 3J-6 Visual and environmental impacts of above ground enclosed car parking are minimised	
Acceptable solutions	
3J-6 1. Exposed parking is not located along primary street frontages	Supported as Good Design Practice.
3J-6 2. Screening, landscaping and other design elements including public art are used to integrate the above ground car parking with the facade. Design solutions may include: • car parking that is concealed behind the facade, with windows integrated into the overall facade design (approach should be limited to developments where a larger floor plate podium is suitable at lower levels) • car parking that is 'wrapped' with other uses, such as retail, commercial or two storey SOHO units along street frontage. See figure 3J.9	Supported as Good Design Practice. Recommendations: • Modify provision: 'Design solutions may include: • Screening, landscaping and other design elements including public art are used to integrate the above ground car parking with the facade. ~~• car parking that is concealed behind the facade, with windows integrated into the overall facade design (approach should be limited to developments where a larger floor plate podium is suitable at lower levels)~~. This solution is not supported – remove. • car parking that is 'wrapped' with other uses, such as retail, commercial or two storey SOHO units along street frontage. See figure ~~3J.9~~ 3J.8'
3J-6 3. Positive street address and active frontages are provided at ground level	Supported as Good Design Practice.

Exhibited ADG Provision	*Comment/recommendation*
	Recommendations: • Modify provision: 'Positive, clear and legible street address and active frontages are provided at ground level.'
4A Apartment mix	
Performance criteria 4A-1 A range of apartment types and sizes is provided to cater for different household types now and into the future	
Acceptable solutions	
4A-1 1. The apartment mix is appropriate, taking into consideration: • the distance to public transport, employment and education centres • the current market demands and projected future demographic trends • the demand for social and affordable housing • different cultural and socioeconomic groups	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.** Recommendations: • Modify provision: Social and affordable housing mixes should be determined by the provider and made in relation to their portfolio • Delete Figure: 4A.1 is not supported. Does not provide design advice. • Delete Figure: 4A.2 is not supported. It does not illustrate its caption successfully. • Delete Figure: 4A.5 is not supported. Does not provide design advice.
4A-1 2. A variety of apartment types is provided	Supported as Good Design Practice.
4A-1 3. Flexible apartment configurations, such as dual key apartments, are provided to support diverse household types and stages of life including single person households, families, multi-generational families and group households	Supported as Good Design Practice. Recommendations: • Modify provision: Flexible apartment configurations~~,~~ ~~such as dual key apartments, are provided to~~ support diverse household types and stages of life including single person households, families, multi-generational families and group households. Solutions include dual key apartment design.
Performance criteria 4A-2 The apartment mix is distributed to suitable locations within the building	
Acceptable solutions	
4A-2 1. Different apartment types are located to achieve successful facade composition and to optimise solar access. See figure 4A.3	Supported as Good Design Practice. Recommendations: • Modify Figure: 4A.3 requires a north point.
4A-2 2. Larger apartment types are located on the ground or roof level where there is potential for more open space and on corners where more building frontage is available	Supported as Good Design Practice.
4B Ground floor apartments	
Performance criteria 4B-1 Street frontage activity is maximised where ground floor apartments are located	
Acceptable solutions	

Exhibited ADG Provision	*Comment/recommendation*
4B-1 1. Direct street access is provided to ground floor apartments	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.**
4B-1 2. Activity is achieved through front gardens, terraces and the facade of the building. Design solutions may include: • both street and foyer entrances to ground floor apartments • private open space is next to the street • doors and windows face the street	Supported as Good Design Practice. Recommendations: • Modify provision: 'both street and ~~foyer~~ common internal circulation entrances to ground floor apartments' • Add provision: Provide additional advice on SOHO units: 'SOHO units should have a flexible space at ground level that can be separate to the rest of the dwelling (see Figure 4B.3)' • Modify figure: Correct stairs in section of Figure 4B.3
4B-1 3. Retail or home office spaces are located along street frontages	Supported as Good Design Practice.
Performance criteria 4B-2 Design of ground floor apartments delivers amenity and safety for residents	
Acceptable solutions	
4B-2 1. Privacy and safety is provided without obstructing causal surveillance. Design solutions may include: • elevation of private gardens and terraces above the street level by a maximum of 1m (see Figure 4B.4) • landscaping and private courtyards • window sill heights that minimise sight lines into apartments • integrating balustrades, safety bars or screens with the exterior design	Supported as Good Design Practice. Recommendations: • Modify figure: Do not nominate a particular max level change in figure as too constraining. Does not work in all situations.
4B-2 2. Solar access is maximised through: • high ceilings and tall windows • trees and shrubs that allow solar access in winter and shade in summer	Supported as Good Design Practice.
4B Alternative solutions Ground floor apartment layouts support small office home office (SOHO) use to provide future opportunities for conversion into commercial or retail areas. In these cases provide higher floor to ceiling heights and ground floor amenities for easy conversion.	Not supported as an alternative solution. Supported as Good Design Practice.
4C Facades	Recommendation: • Add text: Should address exposed party walls and design treatment
Performance criteria 4C-1 Building facades provide visual interest along the street while respecting the character of the local area	
Acceptable solutions	
4C-1 1. Design solutions for front building facades may include: • a composition of varied building elements • a defined base, middle and top of buildings	Supported as Good Design Practice.

Exhibited ADG Provision	*Comment/recommendation*
• revealing and concealing certain elements • changes in texture, material, detail and colour to modify the prominence of elements	
4C-1 2. Building services are integrated within the overall facade	Supported as Good Design Practice.
4C-1 3. Building facades have appropriate scale, rhythm and proportion to the streetscape and human scale. Design solutions may include: • well composed horizontal and vertical elements variation in floor heights to enhance the human scale • elements that are proportional and arranged in patterns • public artwork or treatments to exterior blank walls • grouping of floors or elements such as balconies and windows on taller buildings	Supported as Good Design Practice. Recommendations: • Modify provision: 'Building facades <u>are well resolved with</u> an ~~have~~ appropriate scale, rhythm and proportion to the streetscape and human scale' • Add text: 'responding to the orientation with environmental control elements' • Crop Figures: 4C.1 and 4C.2 are supported but poorly cropped. • Delete Figure:s 4C.3 and 4C.5 are not supported as precedents. They should be replaced by images which show a succesful relationship of a building façade to a streetscape. • Crop Figure: 4C.4 should be more tightly cropped to focus on façade.
4C-1 4. Building facades relate to key datum lines of adjacent buildings through upper level setbacks, parapets, cornices, awnings or colonnade heights	Supported as Good Design Practice. Recommendations: • Modify provision: Clarify with 'where appropriate'
4C-1 5. Shadow is created on the facade throughout the day with building articulation, balconies and deeper window reveals	Supported as Good Design Practice.
Performance criteria 4C-2 Building functions are expressed by the facade	
Acceptable solutions	
4C-2 1. Building entries are clearly defined	Supported as Good Design Practice.
4C-2 2. Important corners are given visual prominence through a change in articulation, materials or colour, roof expression or increased height	Supported as Good Design Practice. Recommendations: • Modify provision: Clarify 'increased height' with 'where controls permit'
4C-2 3. The apartment layout is expressed through façade features such as party walls and floor slabs	Supported as Good Design Practice. Recommendations: • Modify provision: 'The apartment layout is expressed <u>externally</u> through façade features ~~such as party walls and floor slabs~~'
4D Roof design	
Performance criteria 4D-1 Roof treatments are integrated into the building design and positively respond to the street	Recommendations: • Modify provision: 'and can add to the sustainability performance of the building <u>with features such as solar collectors and green roofs.'</u>
Acceptable solutions	
4D-1 1. Roof design relates to the street. Design solutions	Supported as Good Design Practice.

Exhibited ADG Provision	*Comment/recommendation*
may include: • special roof features and strong corners • use of skillion or very low pitch hipped roofs • breaking down the massing of the roof by using smaller elements to avoid bulk • using materials or a pitched form complimentary to adjacent buildings	Recommendations: • Delete Figures: 4D.1 and 4D.3 are not supported. They do not illustrate their captions.
4D-1 1. Roof treatments are integrated with the building design. Design solutions may include: • roof design is proportionate to the overall building size, scale and form • roof materials compliment the building • service elements are integrated	Supported as Good Design Practice.
Performance criteria 4D-2 Opportunities to use roof space for residential accommodation and open space are maximised	
Acceptable solutions	
4D-2 1. Habitable roof space is provided with good levels of amenity. Design solutions may include: • penthouse apartments • dormer or clerestory windows • openable skylights	Supported as Good Design Practice. Recommendations: • Modify provision: 'Habitable roof space is provided with good levels of amenity. Design solutions may include: • ~~penthouse apartments~~ mezzanine levels • dormer or clerestory windows • openable skylights'
4D-2 2. Open space is provided on roof tops subject to acceptable visual privacy, comfort levels, safety and security impacts	Supported as Good Design Practice. Recommendations: • Modify provision: 'Open space is provided on roof tops subject to acceptable visual and acoustic privacy, comfort levels, safety and security impacts.
Performance criteria 4D-3 Roof design incorporates sustainability features	
Acceptable solutions	
4D-3 1. Roof design maximises solar access to apartments during winter and shade during summer. Design solutions may include: • the roof lifts to the north • eaves and overhangs shade walls and windows from summer sun	Supported as Good Design Practice.
4D-3 2. Skylights and ventilation systems are integrated into the roof design	Supported as Good Design Practice.
4D-3 3. Rainwater tanks are located on roofs where possible	Not supported. Recommendations: • Modify provision: Roof tops are not the preferred location for water tanks. • Modify provision: Basements are preferable and far more cost effective.
4E Landscape design	Recommendations:

Exhibited ADG Provision	*Comment/recommendation*
	• This topic is out of place in Part 4 and should be located in Part 3 near 'Communal and public open space' and 'Deep soil zones'. • Add 'Landscape design is important for amenity, aesthetic and environmental outcomes' • Table 3 4E is not referenced in this section and should be moved to 3E deep soil zones.
Performance criteria 4E-1 Landscape design is viable and sustainable	Recommendations: • Modify provision: 'Landscape design should address environmental performance and longevity'.
Acceptable solutions	
4E-1 1. Landscape design is environmentally efficient and may include: • bio-filtration gardens • appropriately planted shading trees • areas for residents to plant vegetables and herbs • composting • green roofs or walls	Supported as Good Design Practice. Recommendations: • Modify provision: 'Landscape design is environmentally ~~efficient~~ sustainable and can enhance environmental performance ~~may include~~ by incorporating initiatives such as: • bio-filtration gardens • appropriately planted shading trees • areas for residents to plant vegetables and herbs • composting • green roofs or walls • diverse and appropriate planting palettes • habitat provision'
4E-1 2. Ongoing maintenance plans are prepared	Supported as Good Design Practice.
4E-1 3. Microclimate is enhanced by: • appropriately scaled trees located on the eastern and western elevations for shade • a balance of evergreen and deciduous trees to provide shading in summer and solar access in winter • shade structures such as pergolas for balconies and courtyards	Supported as Good Design Practice. Recommendations: • Delete Figure: 4E.4 is not supported as a precedent. The space beyond is not well shaded and appears open and unused.
4E-1 4. Tree and shrubs selection considers size at maturity and the potential for roots to overlap	Supported as Good Design Practice. Recommendations: • Modify provision: 'Tree and shrubs selection considers size at maturity and the potential for roots to ~~overlap~~ compete' • Modify provision: Clarify that overlapping of roots is not desirable with regards to Table 3.
	New item Recommendations: • Modify provision: 'Habitat connections for native fauna are established and/or enhanced'
Performance criteria 4E-2 Landscape design contributes to the streetscape and amenity	
Acceptable solutions	
4E-2 1. Landscape design responds to the existing site condition and includes retaining:	Supported as Good Design Practice.

Exhibited ADG Provision	*Comment/recommendation*
• changes of levels • views • significant landscape features including trees and rock outcrops	Recommendations: • Modify provision: 'Landscape design responds to the existing site conditions, ~~and includes retaining~~ including'
4E-2 2. Significant landscape features are protected by: • tree protection zones (see Figure 4E.5) • appropriate signage and fencing during construction	Supported as Good Design Practice. Recommendations: • Modify provision: 'Tree protection zones identified in the design phase and tree wrapping at construction'
4E-2 3. Plants selected are endemic to the region and reflect the local ecology	Supported as Good Design Practice. Recommendations: • Modify provision: 'Plant~~s selected~~ selection includes plants are endemic to the region and ~~reflect~~ appropriate to the local ecology'
4F Planting on structures	Recommendation: • Add text: State clearly that planting on structures is inferior to deep soil planting and should not substitute when deep soil landscaping is possible.
Performance criteria 4F-1 To contribute to the quality and amenity of communal and public open spaces	Recommendations: • Modify provision: 'Planting on structures contributes to the quality and amenity'
Acceptable solutions	
4F-1 1. Building design incorporates opportunities for planting on structures. Design solutions may include: • green walls with specialised lighting for indoor walls • wall design to incorporate planting • green roofs, particularly where roofs are visible from the public domain • planter boxes	Supported as Good Design Practice. Recommendations: • Modify provision: 'Building design incorporates opportunities for planting on structures. Design solutions may include: - Raised planters - Shallow and deep planter beds - Consolidated planting areas - Green walls and roofs' • Modify provision: Add 'Structures designed to host green walls must be integral with the building façade in the event that a green wall fails and the structure is exposed.' • Modify provision: Add 'Metal laser-cut sheets can be used as a frame for climbing plants. Openings in the sheeting should be no less than 50% perforation to allow plant growth.' • Modify provision: Add 'ensure adequate provision for waterproofing is considered'
Performance criteria 4F-2 Plant growth is maximised with appropriate selection and maintenance	Recommendations: • Modify provision: 'Plant growth is ~~maximised~~ optimised with appropriate selection and maintenance'
Acceptable solutions	
4F-2 1. Plants are suited to site conditions, considerations	Supported as Good Design Practice.

Exhibited ADG Provision	*Comment/recommendation*
include: • drought and wind tolerance • seasonal changes in solar access • modified substrate depths for a diverse range of plants	Recommendations: • Modify provision: Add 'lifespan' as a bullet point • Modify provision: Add 'for indoor green walls, use appropriate indoor plant species and locate green walls close to a natural light source'. • Modify provision: Add 'Vegetation is more successful when able to be viewed, accessed and maintained'
4F-2 2. A landscape maintenance plan is prepared	Supported as Good Design Practice. Recommendations: • Modify provision: 'An ongoing landscape maintenance plan is prepared that provides for appropriate maintenance access'.
4F-2 3. Irrigation and drainage systems respond to: • changing site conditions • soil profile and the planting regime • whether rainwater, stormwater or recycled grey water is used	Supported as Good Design Practice. Recommendations: • Modify provision: 'whether rainwater, stormwater, or recycled grey or black water is used.'
Performance criteria 4F-3 Appropriate soil profiles are provided	
Acceptable solutions	
4F-3 1. Structures are reinforced for additional saturated soil weight	Supported as Good Design Practice.
4F-3 2. Soil volume is appropriate for plant growth, considerations include; • depths and widths are modified according to the planting mix and irrigation frequency • free draining and long soil life span • tree anchorage is encouraged	Supported as Good Design Practice. Recommendations: • Modify provision: 'Soil volume is appropriate for plant growth, considerations include; • depths and widths are modified according to the planting mix and irrigation frequency • increasing soil depth in response to different site conditions (high wind or sun impacts) • ~~free draining and long soil life span~~ •use of light weight soils specifically engineered for on-structure plantings. The use of potting mix or top soil alone is not recommended as soil is heavy and compacts easily leading to plant failures. • tree anchorage ~~is encouraged~~
4F-3 3. Minimum soil standards for plant sizes, are provided in accordance with Table 4	Supported as Good Design Practice. Recommendations: • Modify provision: Reduce soil volume for large trees to lesser volumes which are still adequate for healthy trees, but will encourage use of larger trees. • Modify provision: Address trees that are over 18m in height • Modify provision: Address trees with greater crown spread at maturity • Modify provision: Clarify situation when tree height does not match crown spread (eg 11m tree with 9m spread) • Modify provision: Remove or clarify 'or equivalent'

Exhibited ADG Provision	*Comment/recommendation*
	• Add text: Include note as part of standard • Modify provision: Reduce soil depths for shrubs, ground covers and turf which are still adequate to maintain healthy plants, but will encourage more instances of installation. 'Minimum soil standards for plant sizes, are: ~~provided in accordance with Table 4~~ Plant type Definition Minimum soil volume Minimum soil depth Minimum soil area Large trees ~~12-18m~~ Over 12m up to 18m high, up to 16m crown spread at maturity ~~150~~ 80m3 1200mm 10m x10m ~~or equivalent~~ Medium trees ~~8-12m~~ Over 8m up to 12m high, up to 8m crown spread at maturity 35m3 1000mm 6m x 6m ~~or equivalent~~ Small trees ~~6-8m~~ Over 6m up to 8m high, up to 4m crown spread at maturity 9m3 800mm 3.5m x 3.5m ~~or equivalent~~ Shrubs ~~500-600~~400mm Ground cover ~~300-450~~ 200mm Turf ~~200~~ 150mm The above has been calculated assuming fortnightly irrigation. Any subsurface drainage requirements are in addition to the above minimum soil depths'
4G Universal design	
Performance criteria 4G-1 Universal design features are included in apartment design	
Acceptable solutions	
4G-1 1. Developments achieve a benchmark of 20% of total apartments incorporating the silver level universal design features in Table 5	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.** Recommendations: • Modify provision: 100% of apartments achieve a silver level design standard. Silver level compliance has negligible cost impacts on apartments for large benefit derived. Universal design should be applied 'universally'. It provides a standard of housing which is suitable for all demographics over the longer term. • Modify provision: 10% of apartments achieve a platinum level design standard rising to 15% for developments of 30 or more apartments. • Modify provision: The provisions of the Liveable Housing Design Guidelines Second Edition 2012 are inserted into the standard or referenced • This clause should replace existing LGA controls requiring a percentage of Accessible Housing (AS1428) and/or Adaptable Housing (AS4299). It should not override any provisions of accessibility to satisfy the BCA/NCC. • Replace Figure: 4G.1 appears to be much larger than the minimum unit size (possibly a photo of a free standing dwelling)

Exhibited ADG Provision	*Comment/recommendation*
	• Modify provision: 'Developments achieve a ~~benchmark~~ standard of ~~20%~~ 100% of ~~total~~ apartments incorporating the silver level universal design features, and 10%-15% of apartments incorporating the platinum level universal design features ~~in Table 5~~ as stated in the Liveable Housing Design Guidelines Second Edition 2012 [OR preferably insert the provisions]' Note: HNSW requires a Gold standard. Meriton and Grocon have also moved in this direction: http://livablehousingaustralia.org.au/newsdetail/29/grocon-and-meriton-partner-with-livable-housing-australia.aspx The National Dialogue sets 50% by 2015 and 100% by 2020. https://www.dss.gov.au/sites/default/files/documents/05_2012/national_dialogue_strategic_plan.pdf My understanding is that LHDG is pushing for recognition in BCA/NCC.
Performance criteria 4G-2 A variety of apartments with adaptable designs are provided	
Acceptable solutions	
4G-2 1. Adaptable housing is provided in accordance with the relevant council policy	Not supported. Recommendation: Liveable Housing Design Guidelines provisions in 4G-1 1 should replace LGA AS1428 and AS4299 provisions. LHDG responds to much broader range of disabilities (15% pop) whereas Adaptable housing targets profound mobility impairment (3% pop).
4G-2 2. Adaptable apartment design solutions may include: • convenient access to communal and public areas • high level of solar access • minimal structural change and residential amenity loss when adapted • larger car parking spaces for accessibility • parking is titled separately from apartments or there are shared car parking arrangements	Not supported. Liveable Housing Design Guidelines provisions in 4G-1 1 should replace LGA AS1428 and AS4299 provisions. Recommendation: • Add provision: Platinum level dwellings should have a high level of solar access as the occupants are more likely to spend more time the apartment.
Performance criteria 4G-3 Apartment layouts are flexible and accommodate a range of lifestyle needs	
Acceptable solutions	
4G-3 1. Apartment design incorporates flexible design solutions which may include: • rooms with multiple functions • dual master bedroom apartments with separate bathrooms • larger apartments with various living space options • dual key apartments which are separate but on the same	Supported as Good Design Practice.

Exhibited ADG Provision	*Comment/recommendation*
title • open plan 'loft' style apartments with only a fixed kitchen, laundry and bathroom	
4H Adaptive reuse	
Performance criteria 4H-1 New additions to existing buildings are contemporary and complementary	
Acceptable solutions	
4H-1 1. Design solutions may include: • new elements align with the existing building • additions complement the existing scale, proportion, pattern, form and rhythm • use of contemporary materials and finishes	Supported as Good Design Practice. Recommendations: • Modify provision: Delete point 3
4H-1 2. There is clear separation of the old and new	Not supported.
4H-1 3. Existing significant fabric is exposed with well designed insertions and signage	Supported as Good Design Practice.
4H-1 4. New additions allow for the interpretation and future evolution of the building	Supported as Good Design Practice.
Performance criteria 4H-2 Adapted buildings provide residential amenity while not precluding future adaptive reuse	
4H-2 1. Considered features are incorporated into adapted buildings to make up for any physical limitations, to ensure residential amenity is achieved. Design solutions may include: • generously sized voids in deeper buildings • perimeter wall length is extended with façade indents • deeper apartments have greater ceiling heights • alternative apartment types when orientation is poor • additions expand the existing building envelope	Supported as Good Design Practice.
4H Alternative Solutions Alternatives may be considered for adaptive reuse projects for the following areas: • greater depths for habitable rooms, particularly where there are higher ceilings – subject to demonstrating access to natural cross ventilation and daylight • alternatives to providing deep soil where less than the minimum requirement is currently available on the site • building and visual separation – subject to demonstrating alternative design approaches to achieving privacy • common circulation • car parking	Not supported as alternative solutions. Supported as Good Design Practice. Recommendations: • Add text: Provide advice that reusing buildings with lower ceiling heights and deep floor plates (such as commercial towers) may not be acceptable where they do not meet amenity standards. Discuss trade off of keeping building for embodied energy versus achieving acceptable amenity. • Modify provision: Modify dot point 1 to clarify that maximum ceiling depths apply.
4J Mixed use	
Performance criteria 4J-1 Mixed use developments are provided in appropriate locations and provide active street frontages that encourage pedestrian movement	
Acceptable solutions	
4J-1 1. Mixed use development is concentrated around	Not supported.

Exhibited ADG Provision	*Comment/recommendation*
public transport and centres	LGA SILEP planning provisions control this aspect.
4J-1 2. Mixed use developments positively contribute to the public domain, design solutions may include: • development addresses the street • active frontages are provided • diverse activities and uses • avoidance of blank walls at the ground level • live/work apartments are located on the ground floor, rather than commercial	Supported as Good Design Practice.
Performance criteria 4J-2 Residential floors are integrated within the development, safety and amenity is also maximised	
Acceptable solutions	
4J-2 1. Residential circulation areas are clearly defined. Design solutions may include: • residential entries are separated from commercial entries and directly accessible from the street • commercial service areas separated from residential components • residential car parking and communal facilities are separated or secured • security at entries and safe pedestrian routes are provided • avoiding concealment opportunities	Supported as Good Design Practice.
4J-2 2. Landscaped communal open space is provided at podium or roof levels	Supported as Good Design Practice.
4K Awnings and signage	
Performance criteria 4K-1 Awnings are well located and complement and integrate with the building design	
Acceptable solutions	
4K-1 1. Awnings are located along streets with high pedestrian activity and active frontages	Supported as Good Design Practice.
4K-1 2. A number of the following design solutions are used: • continuous awnings are maintained and provided in areas with an existing pattern • height, depth, material and form complements the existing street character • protection from the sun and rain is provided • awnings are wrapped around the secondary frontages of corner sites • awnings are retractable in areas without an established pattern	Supported as Good Design Practice.
4K-1 3. Awnings are located over building entries for building address and public domain amenity	Supported as Good Design Practice.
4K-1 4. Awnings relate to residential windows, balconies, street tree planting, power poles and street infrastructure	Supported as Good Design Practice. Recommendations: • Modify provision: 'Awnings are *coordinated* with'

Exhibited ADG Provision	*Comment/recommendation*
4K-1 5. Gutters and down pipes are integrated and concealed	Supported as Good Design Practice. Recommendations: • Modify provision: 'Gutter, downpipes *and rainwater heads* are integrated and concealed *when viewed from the public domain'*
4K-1 6. Lighting under awnings is provided for pedestrian safety	Supported as Good Design Practice.
Performance criteria 4K-2 Signage responds to the context and desired streetscape character	
Acceptable solutions	
4K-2 1. Signage is integrated into the building design and responds to the scale, proportion and detailing of the development	Supported as Good Design Practice.
4K-2 2. Legible and discrete way finding is provided for larger developments	Supported as Good Design Practice.
4K-2 3. Signage is limited to on and below awnings and a single facade sign on the primary street frontage	Supported as Good Design Practice. Recommendations: • Add note: Signage should be in accordance with any relevant LGA controls
4L Solar and daylight access	
Performance criteria 4L-1 The number of apartments receiving sunlight to habitable rooms, primary windows and private open spaces is optimised	
Acceptable solutions	
4L-1 1. The design maximises north aspect	Supported as Good Design Practice.
4L-1 2. Single aspect, single storey apartments have a northerly or easterly aspect	Supported as Good Design Practice. Recommendations: • Modify provision: 'Single aspect~~, single storey~~ apartments have a northerly or easterly aspect'
4L-1 3. The number of single aspect west and south facing apartments is minimised	Supported as Good Design Practice. Recommendations: • Modify provision: 'The number of single aspect ~~west and~~ south facing apartments is minimised'
4L-1 4. Living rooms and private open spaces of at least 70% of apartments in a building receive a minimum of 3 hours direct sunlight between 9am and 3pm in mid winter	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.** Recommendations: • Add text: Clarify Figure 4L.1 only applies to due north • Delete Figure: 4L.2 does not serve a useful purpose • Delete Figure: 4L.3 is highly incorrect. This diagram should be amended to demonstrate

Exhibited ADG Provision	*Comment/recommendation*
	orientation for gaining hours of solar access between 9am and 3pm in midwinter. This could include balcony position relative to orientation – north with balcony in front of living room; east or west with balcony to side of living room.
4L-1 5. A maximum of 15% of apartments in a building have no direct sunlight between 9am and 3pm in mid winter	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.**
4L-1 6. Living areas are located to the north and service areas to the south and west of apartments	Supported as Good Design Practice.
Performance criteria 4L-2 Reasonable levels of direct sunlight is provided to habitable rooms and balconies	
Acceptable solutions	
4L-2 1. Apartments that receive direct sunlight in accordance with the acceptable solution 4L-1.4 need to demonstrate that a person is able to sit in the sun in a habitable room or on a balcony of an apartment in mid winter between 9am and 3pm. See Figure 4L.1	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.**
4L-2 2. A number of the following design features are used: • dual aspect apartments • shallow apartment layouts • two storey and mezzanine level apartments • bay windows	Supported as Good Design Practice.
4L Solar and daylight access	
Performance criteria 4L-3 Design incorporates shading and glare control, particularly for summer	
Acceptable solutions	
4L-3 1. A number of the following design features are used: • shading devices such as eaves awnings, balconies, pergolas, external louvres and planting • horizontal shading to north facing windows • vertical shading to east and particularly west facing windows • balconies or sun shading that extend far enough to shade summer sun, but allow winter sun to penetrate living areas • operable shading to allow adjustment and choice, where possible and appropriate • high performance glass that minimises external glare off windows, with consideration given to reduced tint glass or glass with a reflectance level below 20% • Reflective films are avoided	Supported as Good Design Practice. Recommendations: • Modify text: Figure 4L.6 refers to daylight instead of sunlight
Performance criteria 4L-4 Opportunities for improved daylight are provided where sunlight is limited	
Acceptable solutions	
4L-4 1. Light wells, skylights and high level windows (with	**Not supported**

Exhibited ADG Provision	*Comment/recommendation*
sills of 1500mm or greater) are used only as a secondary light source in habitable rooms	Light wells are not acceptable.
4L-4 2. Where light wells are unavoidable: • use is restricted to kitchens, bathrooms and service areas • building services are concealed with appropriate detailing and materials to visible walls • lightwells are fully open to the sky • access is provided to the lightwell from a communal area for cleaning and maintenance • acoustic privacy, fire safety and minimum privacy separation distances (see section 3F Visual Privacy) are achieved	**Not supported** Light wells are not acceptable
4L-4 3. Opportunities for reflected light into apartments are optimised through: • reflective exterior surfaces on buildings opposite south facing windows • positioning windows to face other buildings or surfaces (on neighbouring sites or within the site) that will reflect light • integrating light shelves into the design • light coloured internal finishes	Supported as Good Design Practice. Recommendations: • Modify provision: '~~Reflective~~ *Light coloured* exterior surfaces on buildings opposite south facing windows' • Modify provision: 'surfaces… that will reflect diffuse light back to the receiving window'
4L Alternative solutions There may be some circumstances or locations where an alternative solution is proposed because 3 hours of direct sunlight in mid winter is not achievable. It needs to be demonstrated that the number of apartments receiving direct sunlight has been maximised. Design drawings need to demonstrate how site constraints and orientation preclude the achievement of acceptable solutions in this section and how the development meets the performance criteria. Circumstances where this may apply include: • where apartments face greater than 20 degrees east or west of north • in major centres or areas characterised by high density development • where greater residential amenity can be achieved along a busy road or rail line by orienting living rooms away from the noise source • on south facing slopes • where significant views are oriented away from the desired aspect for direct sunlight In these circumstances the development should receive a minimum of 2 hours of direct sunlight to 70% of living rooms and balconies at mid winter. Where buildings face within 20 degrees east or west of south, apartments should maximise dual aspect or have narrow depth for single aspect apartments.	**See Recommendation 8** **Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.** Not supported as an alternative solution. Recommendations: Note: • Reference to facing greater than 20 degrees east or west of north is incorrect. • 'Busy road' requires definition. The City uses the RMS maps for the SEPP INFRASTRUCTURE for >20,000 vehicles per day. • 'Shallow depth' requires definition. Suggest room depth to ceiling height ratio of less than 2:1
4M Common circulation and spaces	
Performance criteria 4M-1 Common circulation spaces achieve good amenity and provide for a variety of apartment types	
Acceptable solutions	
4M-1 1. The maximum number of apartments off a	**Supported as a SEPP 65 Cl. 6A Development**

Exhibited ADG Provision	*Comment/recommendation*
circulation core on a single level is eight	**Standard. See Section 5 and Appendix C for details.** Recommendations: • Add provision: 'For buildings greater than 35m high the number of apartments sharing a single lift should not exceed 40' • Remove Figure 4M.6 that shows more than 8 units off a corridor.
4M-1 2. The number of vertical circulation points and number of entries are maximised	Not supported. Covered by 4M-1 7.
4M-1 3. Corridor widths and/or ceiling heights are greater than minimum requirements, allowing comfortable movement and accessibility particularly in entry lobbies, outside lifts and at apartment entry doors	Supported as Good Design Practice.
4M-1 4. Daylight and natural ventilation is provided to all common circulation and spaces, where possible	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.** Recommendations: • Modify provision: Clarify exceptions such as in car parking areas. • Modify provision: Sensors should be used to control artificial lighting at night (other than any lighting required by BCA/NCA) • Modify provision: Daylight and natural ventilation is provided to all common circulation and spaces, ~~where possible~~
4M-1 5. Windows to corridors are provided where possible, commonly adjacent to the stair or lift core or at the ends of corridors	Supported as Good Design Practice. Recommendations: • Modify provision: 'Windows to corridors are provided ~~where possible,~~ commonly adjacent to the stair or lift core or at the ends of corridors'
4M-1 6. Longer corridors are articulated. Design solutions may include: • a series of foyer areas with space for seating • wider areas at apartments entry doors and varied ceiling heights	Supported as Good Design Practice. Recommendations: • Modify provision: 'a series of foyer areas with <u>windows and</u> space for seating.'
4M-1 7. Design of common circulation and spaces maximises opportunities for dual aspect apartments, including multiple core apartment buildings and gallery access cross over apartments	Supported as Good Design Practice.
Performance criteria 4M-2 Common circulation spaces provide for interaction between residents	
Acceptable solutions	
4M-2 1. Direct and legible access is provided between vertical circulation points and apartment entries by minimising corridor or gallery length to give short, straight clear sight lines	Supported as Good Design Practice.
4M-2 2. Tight corners and spaces are avoided	Supported as Good Design Practice.

Exhibited ADG Provision	*Comment/recommendation*
4M-2 3. Legible signage is provided for apartment numbers, common areas and general wayfinding	Supported as Good Design Practice.
4M-2 4. Incidental spaces, for example space for seating in a corridor, at a stair landing, or near a window are provided, where appropriate	Supported as Good Design Practice.
4M-2 5. In larger developments, community rooms for activities such as owners corporation meetings or resident use are provided and ideally co-located with communal open space.	Supported as Good Design Practice.
4M-2 6. Where external galleries are provided, they are more open than closed along the length above the handrail	Supported as Good Design Practice.
4M Alternative solutions Variations to the number of apartments per core/corridor may be possible. Developments should demonstrate a high level of amenity for common lobbies, corridors and apartments including: • access to ample daylight • natural ventilation of the space • common areas for seating and gathering • wider corridors with greater than minimum ceiling heights • other innovative design solutions that provide high levels of amenity	Not supported as an alternative solution – conflicts with 4M-1 1 delete this provision
4N Apartment layout	
Performance criteria 4N-1 Spatial arrangement and layout of apartments is functional, well organised and provides a high standard of amenity	
Acceptable solutions	
4N-1 1. Apartment sizes are in accordance with Table 6	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.**
4N-1 2. A window should be visible from any point in a habitable room	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.**
4N-1 3. Kitchens are not located as part of the main circulation space in larger apartments (such as hallway or entry space)	Supported as Good Design Practice. This is a clear example where the alternative solution does not seem to be a reasonable alternative. Recommendations: • Add text: Define 'larger apartments' as 2 bedrooms or greater.
Performance criteria 4N-2 Environmental performance of the apartment is maximised	
Acceptable solutions	
4N-2 1. Habitable room depth complies with the ceiling height to room depth ratio as per Figure 4N.3	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.**
4N-2 2. For open plan layouts, combining the living room,	Not supported.

Exhibited ADG Provision	*Comment/recommendation*
dining room and kitchen, the back of the kitchen is a maximum of 8 metres from a window	This provision creates conflict and uncertainty with 4N-2 1. With a minimum ceiling height of 2.7m, a depth of 8m encourages a 'poor' standard of amenity as shown in Figure 4Q.1.
4N-2 3. Main living spaces are oriented toward the primary outlook and aspect and away from noise sources	Supported as Good Design Practice. Recommendations: • Modify provision: Separate into two Good Design Practice notes - 'Main living spaces are oriented toward the primary outlook and aspect' and 'Main living spaces are oriented away from noise sources'
4N-2 4. Main living spaces are located adjacent to main private open spaces to provide direct connections and increase usability	Not supported. 4P-1 1 is better phrased.
4N-2 5. All living areas and bedrooms are located on the external face of the building	Supported as Good Design Practice.
4N-2 6. All kitchens in corner apartments have an external openable window/door	Not supported. This provision does not have a reasonable design rationale.
4N-2 7. For non-corner apartments the number of kitchens with an external openable window/door is maximised.	Supported as Good Design Practice. Recommendations: • Modify provision: '~~For non-corner apartments~~ the number of kitchens with an external openable window/door is maximised.'
4N-2 8. The number of bathrooms and laundries with windows is maximised	Supported as Good Design Practice.
Performance criteria 4N-3 Apartment layout can accommodate a variety of household activities and occupant needs	
Acceptable solutions	
4N-3 1. The number of bathrooms and size of living areas, kitchens and laundries increase proportionately with the number of bedrooms	Supported as Good Design Practice.
4N-3 2. Master bedrooms have a minimum area of 10m2 and other bedrooms 9m2 (excluding wardrobe space)	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.**
4N-3 3. Bedrooms have a minimum dimension of 3m (excluding wardrobe space)	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.**
4N-3 4. All bedrooms allow a minimum length of 1.5m for robes	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.** Recommendations: • Modify provision: Provide 1.8m for main bedrooms and 1.2m for other bedrooms

Exhibited ADG Provision	*Comment/recommendation*
4N-3 5. Living rooms or combined living/dining rooms have a minimum width of: • 3.6m for studio and 1 bedroom apartments • 4m for 2 and 3 bedroom apartments	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.** Recommendations: • Modify provision: Provide 3.6,3.9 and 4.2m widths for 1,2,and 3 bedroom apartments respectively.
4N-3 6. Access to bedrooms, bathrooms and laundries is separated from living areas minimising direct openings between living and service areas	Supported as Good Design Practice. Recommendations: • Modify provision: 'minimising direct openings between living and ~~service~~ other areas'
4N-3 7. Apartment layouts are resilient over time and have dimensions that facilitate a variety of furniture arrangements and removal, design solutions may include: • spaces for a range of activities and privacy levels between different spaces within the apartment • dual master or dual key apartments to provide tenancy flexibility • flexible room sizes and proportions or open plans (rectangular spaces (2:3) are more easily furnished than square spaces (1:1)) • efficient planning of circulation by stairs, corridors and through rooms to maximise the amount of usable floor space in rooms	Supported as Good Design Practice. Recommendations: • Change: Figure 4N.5 centre bottom appears to be the same as 4N.6 bottom.
Performance criteria 4N-4 Safety of children and young people within apartments is maximised	
Acceptable solutions	
4N-4 1. Windows have safety screens, window locks or other safety devices in place to prevent falls. Safety screens support natural ventilation	Supported as Good Design Practice. Recommendations: • Add text: Refer to relevant BCA/NCC clauses • Refer to glossary definition: of 'effective openable area' – 'reduce…area by half'
4N-4 2. Room layouts minimise the need to locate furniture immediately adjacent to windows or balustrades	Supported as Good Design Practice.
4N Alternative solutions Where apartments do not meet the minimum depth standard for habitable rooms, alternative solutions must demonstrate how satisfactory daylight access and natural ventilation are achieved. Alternative solutions proposing greater than the minimum ceiling heights could increase the habitable room depth in single aspect apartments by a ratio of 2.5:1 (room depth = ceiling height in metres x 2.5). Where minimum apartment size and room dimensions are not met, the usability and functionality of the space needs to be demonstrated using realistically scaled furniture layouts and circulation areas.	Recommendation: • Delete provision: The City's preferred position is that this is deleted but if Performance Criteria are retained then Appendix D describes how daylight access and natural ventilation could be *performance based* standard • Reclassify: Furniture and functionality is supported as *Good Design Practice* to guide merit based argument for unreasonable/unnecessary. See furniture schedule attached at Appendix F.
4O Ceiling heights	
Performance criteria 4O-1 Ceiling height achieves sufficient natural ventilation	

Exhibited ADG Provision	*Comment/recommendation*
and daylight access	
Acceptable solutions	
4O-1 1. Measured from finished floor level to finished ceiling level, minimum ceiling heights are: Minimum ceiling height for apartment and mixed use buildings Habitable rooms 2.7m Non-habitable 2.4m For 2 storey apartments 2.7m for main living area floor 2.4m for second floor, where its area does not exceed 50% of the apartment area Attic spaces 1.5m at edge of room with a 30 degree minimum ceiling slope If located in mixed used areas 3.3m for ground floor to promote future flexibility of use These minimums do not preclude higher ceilings if desired	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.** Recommendations: • Modify provision: Include floor to floor and clearer guidance for B zones and mixed use developments. See Appendix C.
4O-1 2. Ceiling height can accommodate use of ceiling fans for cooling and heat distribution	Supported as Good Design Practice.
Performance criteria 4O-2 Ceiling height increases the sense of space in apartments and provides for well proportioned rooms	
Acceptable solutions	
4O-2 1. A number of the following design solutions are used: • the hierarchy of rooms in an apartment is defined using changes in ceiling heights and alternatives such as raked or curved ceilings; or double height spaces • well proportioned rooms are provided, for example, smaller rooms feel larger and more spacious with higher ceilings • ceiling heights are maximised in habitable rooms by ensuring that bulkheads do not intrude. The stacking of service rooms from floor to floor and coordination of bulkhead location above non-habitable areas, such as robes or storage, can assist	Supported as Good Design Practice.
Performance criteria 4O-3 Ceiling heights contribute to the flexibility of building use over the life of the building	
Acceptable solutions	
4O-3 1. Ceiling heights of lower level apartments in centres are greater than the minimum required in the table above (4O-1.1) allowing flexibility and conversion to non-residential uses	Not supported. Incorporate numerics within 4O-1 1.
4P Private open space and balconies	
Performance criteria 4P-1 Primary private open space and balconies are appropriately located	

Exhibited ADG Provision	*Comment/recommendation*
Acceptable solutions	
4P-1 1. Primary open space and balconies are located adjacent to the main living areas, such as the living room, dining room or kitchen to extend the living space	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.**
4P-1 2. Private open spaces and balconies predominantly face north, east or west and solar access to living rooms is not impeded	Supported as Good Design Practice.
4P-1 3. Primary open space and balconies are orientated with the long side facing outwards to optimise daylight access into adjacent rooms	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.**
Performance criteria 4P-2 Primary private open space and balconies are appropriately sized	
Acceptable solutions	
4P-2 1. Primary private open space at ground level or similar space on a structure has a minimum area of 16m2 and a minimum dimension in one direction of 3m	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.**
4P-2 2. Primary balconies are provided for all apartments with the following minimum area and depth according to apartment size: Minimum area Minimum depth 1 bedroom apartments 8m2 2m 2 bedroom apartments 10m2 2m 3+ bedroom apartments 12m2 2.5m	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.** Recommendations: • Harmonise: Figure 4P.2 states 2.*4*m for 3 bedroom apartments • Modify provision: Clarify that area and dimension is clear of obstructions • Modify provision: Revise dimensions and percentage application – see Appendix C
Performance criteria 4P-3 Private open space and balcony design is integrated into the overall architectural form and detail of the building	
Acceptable solutions	
4P-3 1. Projecting balconies are integrated into the building design	Supported as Good Design Practice. Recommendations: • Modify provision: Add 'and consider the design of balcony ceilings and soffits' • Delete Figure: 4P.10 is not supported. It does not show well detailed soffits.
4P-3 2. Operable screens, shutters, hoods and pergolas are used to control sunlight and wind, where required	Supported as Good Design Practice.
4P-3 3. Solid, partially solid or transparent fences and balustrades are suitable for the location and are designed to allow views and passive surveillance of the street while maintaining visual privacy	Supported as Good Design Practice. Recommendations: • Correct: Figure 4P.6 and 4P.7 are transposed. • Delete Figure: 4P.6 is not supported. It does not illustrate its caption. • Delete Figure: 4P.10 is not supported. It does not illustrate its caption.
4P-3 4. Balustrades are set back from the building or	Supported as Good Design Practice.

Exhibited ADG Provision	*Comment/recommendation*
balcony edge where overlooking or safety is an issue	
4P-3 5. Screening is provided for clothes drying, storage and air conditioning units	Supported as Good Design Practice. Recommendations: • Modify provision: Air conditioning units should be located on roofs, in basements, or fully integrated in the façade design. • Modify provision: AC units should be acoustically screened and excluded from the calculation of balcony area..
4P-3 6. Downpipes, balcony drainage and air conditioning units are integrated with the overall facade and building design, with unsightly features hidden	Supported as Good Design Practice
4P-3 7. Ceilings of apartments below terraces are insulated to avoid heat loss	Supported as Good Design Practice
Performance criteria 4P-4 Private open space and balcony design maximises safety	
4P-4 1. Changes in ground levels or landscaping are minimised	Supported as Good Design Practice
4P-4 2. Design and detailing of balconies avoids opportunities for climbing and falls	Supported as Good Design Practice
4P Alternative Solutions Alternative solutions such as juliet balconies, operable walls, enclosed wintergardens or bay windows may be appropriate where balcony use is limited by: • consistently high wind speeds at 9 storeys and above • close proximity to road, rail or other noise sources (see section 4T Noise and pollution for further guidance) • exposure to significant levels of aircraft noise Increased communal open space should be provided where number or size of balconies are reduced	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.** Not supported as an *alternative solution*. Supported as *Good Design Practice* to guide merit based argument for unreasonable/unnecessary.
4Q Natural ventilation	
Performance criteria 4Q-1 All habitable rooms are naturally ventilated	
4Q-1 1. Orientation of building maximises capture and use of prevailing breezes for natural ventilation	Supported as Good Design Practice
4Q-1 2. Rooms have appropriate depths (see Section 4N Apartment layout)	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.** Recommendations: • Modify text: No need to reference 4N-2 1.
4Q-1 3. Unobstructed window openings are equal to at least 5% of the floor area served	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.**
4Q-1 4. Doors and operable windows maximise natural ventilation opportunities established by the apartment layout, using a number of the following design solutions: • adjustable windows with large effective openable areas • a variety of window types that provide safety and	Supported as Good Design Practice

Exhibited ADG Provision	*Comment/recommendation*
flexibility such as awnings and louvres • windows which the occupants can reconfigure to funnel breezes into the apartment such as vertical louvres, casement windows and externally opening doors	
Performance criteria 4Q-2 Natural ventilation for single aspect apartments is maximised	
Acceptable solutions	
4Q-2 1. Apartment depths are limited to maximise ventilation and airflow. See figure 4Q.1	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.** Recommendations: • Note: This overlaps with Figure 4N.3 (4N-2 1). • Change Figure: 4Q.1 could be consolidated with Figure 4N.3. • Amend Figure: 4Q.1 to 'very good/good/OK/unacceptable' • Modify Figure: 4Q.1 should indicate an *openable window in an external wall* at the left
4Q-2 2. Light wells are not the primary air source for habitable rooms	Supported as Good Design Practice
4Q-2 3. A number of the following design solutions are used: • primary windows are augmented with plenums and lightwells (generally not suitable for cross ventilation) • solar chimneys, stack effect ventilation or similar to naturally ventilate internal building areas or rooms such as bathrooms and laundries • lightwells or building indentations with a width to depth ration of 2:1 or 3:1 where possible to ensure effective air circulation and avoid trapped smells	Supported as Good Design Practice Recommendations: • Modify provision: Natural cross ventilation through 'notches' needs to be excluded and should not be considered as cross ventilation because of the limited number of wind directions that will perform
Performance criteria 4Q-3 The number of apartments with natural cross ventilation is maximised	
Acceptable solutions	
4Q-3 1. At least 60% of apartments are naturally cross ventilated	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.**
4Q-3 2. For apartment buildings 9 storeys and over an appropriately qualified wind consultant has confirmed that 60% of the apartments achieve cross ventilation	Supported as Good Design Practice
4Q-3 3. Overall building depth does not exceed 12-18 metres	Supported as Good Design Practice. Recommendations: • Modify provision: 'Overall building depth does not exceed ~~12~~ 18 metres'
4Q-3 4. Cross ventilation is facilitated by limited apartment depths and use of dual aspect apartments, cross through apartments and corner apartments	Supported as Good Design Practice
4Q-3 5. In dual aspect apartments external window and	**Supported as a SEPP 65 Cl. 6A Development**

Exhibited ADG Provision	*Comment/recommendation*
door opening sizes/areas on one side of an apartment (inlet side) are approximately equal to the external window and door opening sizes/areas on the other side of the apartment (outlet side). See figure 4Q.5	**Standard. See Section 5 and Appendix C for details.**
4Q-3 6. Interruptions to airflow are limited through the apartments by minimising the number of corners, doors and rooms that might obstruct airflow	Supported as Good Design Practice
4Q-3 7. Apartment depths, combined with ceiling heights, maximise ventilation and airflow. See figure 4Q.4	Not supported. The text does not describe the Figure. The Figure caption does not relate to the text or stand alone successfully. Figure 4Q.4 could potentially be a definition (or test) for natural cross ventilation. 'In dual aspect apartments, to achieve natural cross ventilation, the minimum habitable room depth to ceiling height ratio between openable windows in external walls is 6:1. See figure 4Q.4'
4R Storage	
Performance criteria 4R-1 Adequate, well designed storage is provided in each apartment	
Acceptable solutions	
4R-1 1. In addition to storage in kitchens, bathrooms and bedrooms, the following storage is provided: Dwelling type Storage size studio apartments 6m3 1 bedroom apartments 6m3 2 bedroom apartments 8m3 3+ bedroom apartments 10m3 with at least 50% located within the apartment	**Supported as a SEPP 65 Cl. 6A Development Standard. See Section 5 and Appendix C for details.** Recommendations: • Modify provision: 'Storage volumes are exclusive of bicycle storage'
4R-1 2. Storage is accessible from either circulation or living areas	Supported as Good Design Practice.
4R-1 3. Storage provided on balconies (in addition to the minimum balcony size) is integrated into the balcony design, weather proof and screened from view from the street	Supported as Good Design Practice.
4R-1 4. Left over space such as under stairs is used for storage	Supported as Good Design Practice.
Performance criteria 4R-2 Additional storage is conveniently located, accessible and nominated for individual apartments	
Acceptable solutions	
4R-2 1. Storage not located in apartments is secure and clearly allocated	Supported as Good Design Practice.
4R-2 2. Storage is provided for larger and less frequently accessed items, where practical	Supported as Good Design Practice.
4R-2 3. Storage space in internal or basement car parks	Supported as Good Design Practice.

Exhibited ADG Provision	*Comment/recommendation*
is provided at the rear or side of car spaces or in cages	
4R-2 4. Storage rooms are accessible from common circulation areas of the building	Supported as Good Design Practice.
4R-2 5. Storage not located in an apartment is integrated into the overall building design and not visible from the public domain	Supported as Good Design Practice.
4S Acoustic privacy	
Performance criteria 4S-1 Noise transfer is minimised through the siting of buildings and building layout	
4S-1 1. Adequate building separation is provided within the development and from neighbouring buildings/adjacent uses (also see section 2F Building separation and section 3F Visual Privacy)	Supported as Good Design Practice.
4S-1 2. Window and door openings are generally orientated away from noise sources	Supported as Good Design Practice.
4S-1 3. Noisy areas within buildings including building entries and corridors are located next to or above each other and quieter areas next to or above quieter areas	Supported as Good Design Practice.
4S-1 4. Storage, circulation areas and non-habitable rooms are located to buffer noise from external sources	Supported as Good Design Practice.
4S-1 5. The number of party walls (walls shared with other apartments) are limited and are appropriately insulated	Supported as Good Design Practice.
4S-1 6. Noise sources such as garage doors, driveways, service areas, plant rooms, building services, mechanical equipment, active communal open spaces and circulation areas are located at least 3m away from bedrooms	Supported as Good Design Practice.
Performance criteria 4S-2 Noise impacts are mitigated through internal apartment layout and acoustic treatments	
Acceptable solutions	
4S-2 1. Internal apartment layout separates noisy spaces from quiet spaces, using a number of the following design solutions: • rooms with similar noise requirements are grouped together • doors separate different use zones • wardrobes in bedrooms are co-located to act as sound buffers	Supported as Good Design Practice.
4S-2 2. Where physical separation cannot be achieved noise conflicts are resolved using the following design solutions: • double or acoustic glazing • acoustic seals • use of materials with low noise penetration properties • continuous walls to ground level courtyards where they do not conflict with streetscape or other amenity requirements	Not supported Physical separation is required. See Section 5 and Appendix C.

Exhibited ADG Provision	*Comment/recommendation*
4T Noise and pollution	
Performance criteria 4T-1 The siting and layout of buildings minimise the impacts of external noise and pollution	
Acceptable solutions	
4T-1 1. A number of the following design solutions are used: • residential uses are located perpendicular to the noise sources and where possible buffered by other uses • non-residential buildings are positioned parallel to the noise source to provide a continuous building shielding residential uses and communal open spaces • non-residential uses are located at lower levels vertically separating the residential component from the noise source • where solar access is in the opposite direction to the noise or pollution source, habitable rooms are located away from these and storage areas, circulation areas, non-habitable rooms and kitchens provide a buffer to the noise or pollution source • where solar access is in the same direction as the noise or pollution source, apartments are dual aspect with shallow building depths • landscape design reduces the perception of noise and acts as a filter for air pollution generated by traffic and industry	Supported as Good Design Practice. Recommendation: • Modify provision: Clarify that dot point 3 is mandatory
Performance criteria 4T-2 Noise transmission is mitigated by appropriate noise shielding or attenuation techniques for the building design, construction and choice of materials	
Acceptable solutions	
4T-2 1. A number of the following design solutions are used: • number and size of openings facing noise sources are limited • seals prevent noise transfer through gaps • double or acoustic glazing, acoustic louvres or enclosed balconies (wintergardens) • materials with mass and/or sound insulation or absorption properties e.g. balcony balustrades, external screens and soffits	Supported as Good Design Practice. Recommendations: • Modify Figure: 'Figure 4T.4 indicates 65% solid walls. Figure 4T.5 shows 100% open walls. • Add text: Provide advice with regards to GFA implications of wintergardens (Haralambis Management Pty Ltd v Council of the City of Sydney [2013] NSWLEC 1009.
4T Alternative solutions Alternative solutions to the requirements for: • solar and daylight access • private open space and balconies and • natural cross ventilation may be proposed to achieve appropriate design solutions on sites that are constrained due to noise and pollution.	Not supported as an *alternative solution.* Supported as *Good Design Practice* to guide merit based argument for unreasonable/unnecessary.
4U Energy efficiency	
Performance criteria 4U-1 Development incorporates passive environmental design	
Acceptable solutions	

Exhibited ADG Provision	*Comment/recommendation*
4U-1 1. Adequate natural light is provided to habitable rooms (see 4L Solar and daylight access)	Supported as Good Design Practice.
4U-1 2. Well located, screened outdoor areas are provided for clothes drying	Supported as Good Design Practice. Recommendations: • Modify provision: 'Communal are lighting should be low energy and use sensors to avoid electrical energy waste'
Performance criteria 4U-2 Development incorporates passive solar design to optimise heat storage in winter and reduce heat transfer in summer	
Acceptable solutions	
4U-2 1. A number of the following design solutions are used: • the use of smart glass or other technologies on north and west elevations • thermal mass in floor and walls in the north facing rooms is maximised • polished concrete floors, tiles or timber rather than carpet • insulated roofs, walls and floors and seals on windows and door openings • overhangs and shading devices such as awnings, blinds and screens	Supported as Good Design Practice. Recommendations: • Modify provision: Add 'East and west facing windows need careful attention to shading in order to control heat loads. • Modify provision: 'the use of ~~smart glass or other technologies~~ high performance glazing on north and west elevations *which can assist to maintain generous glazing area that can enhance good cross ventilation.'* • Correct Figures: 4U.1 and 4U.2 are transposed. 4U.2 'level ~~or~~ *of* daylight and sun access'
4U-2 2. Provision of consolidated heating and cooling infrastructure in a centralised location (e.g. the basement)	Supported as Good Design Practice.
Performance criteria 4U-3 Adequate natural ventilation minimises the need for mechanical ventilation	
Acceptable solutions	
4U-3 1. A number of the following design solutions are used: • rooms with similar usage are grouped together • natural cross ventilation for apartments is optimised • natural ventilation is provided to all habitable rooms and as many non-habitable rooms, common areas and circulation spaces as possible	Supported as Good Design Practice. Recommendations: • Modify provision: Add 'Natural ventilation is provided to car parking to improve BASIX score and reduce compliance costs'
4V Water management and conservation	Third paragraph would be better as third paragraph at 4U
Performance criteria 4V-1 Potable water use is minimised	
4V-1 1. Water efficient fittings, appliances and wastewater reuse are incorporated	Supported as Good Design Practice. Recommendations: • Modify provision: Add 'Wastewater infrastructure can include dual reticulation systems for recycled water and grey water treatment'
4V-1 2. Apartments are individually metered	Supported as Good Design Practice.

Exhibited ADG Provision	*Comment/recommendation*
	Recommendations: • Modify provision: 'Apartments are individually metered *for mains potable water consumption and recycled water consumption where provided.'*
4V-1 3. Rainwater is collected, stored and reused on site	Supported as Good Design Practice. Recommendations: • Modify provision: 'Rainwater *and stormwater* is collected, stored and reused on site' • Modify Figure: 4V.2 should distinguish between roof water and balcony water as they need a different level of treatment. • Modify Figure: 4V.2 key should have a dotted line for contaminated water. • Correct Figure: 4V.2 incorrectly labels units as basement parking '16'.
4V-1 4. Drought tolerant, low water use plants are used within landscaped areas	Supported as Good Design Practice. Recommendations: • Modify provision: 'Ensure species selection adheres to Council's species list.'
Performance criteria 4V-2 Urban stormwater is treated on site before being discharged to receiving waters	
Acceptable solutions	
4V-2 1. Water sensitive urban design systems are designed by a suitably qualified professional	Supported as Good Design Practice.
4V-2 2. A number of the following design solutions are used: • runoff is collected from roofs and balconies in water tanks and plumbed into toilets, laundry and irrigation • porous and open paving materials is maximised • on site stormwater and infiltration, including bio-retention systems such as rain gardens or street tree pits	Supported as Good Design Practice.
Performance criteria 4V-3 Flood management systems are integrated into site design	
Acceptable solutions	
4V-3 1. Detention tanks are located under paved areas, driveways or in basement car parks	Supported as Good Design Practice. Recommendations: • Modify provision: 'or in basement car parks *to promote water storage and reuse'* • Modify provision: Require a plan of management and inspections
4V-3 2. On large sites parks or open spaces are designed to provide temporary on site detention basins	Supported as Good Design Practice. Recommendations: • Modify figure: The downpipe in Figure 4V.4 should drain direct to the rain garden without the surcharge pit to avoid leaf build up and flooding
4W Waste management	Refer to rubbish and garbage as 'waste and recycling'

Exhibited ADG Provision	*Comment/recommendation*
Performance criteria 4W-1 Waste storage facilities are designed to minimise impacts on the streetscape, building entry and amenity of residents	
Acceptable solutions	
4W-1 1. Adequately sized storage areas for rubbish bins are located discreetly away from the front of the development or in the basement car park	Supported as Good Design Practice. Recommendations: • Modify provision: 'Adequately sized storage areas for ~~rubbish bins~~ waste and recycling bins to satisfy Council's requirements are located discreetly away from the front of the development or in the basement car park and provided with clear signage' • Modify provision: Clarify that bin storage must be within 10m of the collection point to facilitate loading and that bins may not be left on the street.
4W-1 2. Garbage storage areas are well ventilated	Supported as Good Design Practice.
4W-1 3. Circulation design allows bins to be easily manoeuvred between storage and collection points	Supported as Good Design Practice.
4W-1 4. Temporary storage is provided for large bulk items such as mattresses	Supported as Good Design Practice. Recommendations: • Recommend a volume
4W-1 5. A waste management plan is prepared	Supported as Good Design Practice. Recommendations: • Modify provision: 'A comprehensive waste management plan and site waste minimisation and management plan is prepared to Council's requirements'
Performance criteria 4W-2 Domestic waste is minimised by providing safe and convenient source separation and recycling	
Acceptable solutions	
4W-2 1. All dwellings have a waste cupboard or temporary storage area of sufficient size to hold two days worth of garbage recycling	Supported as Good Design Practice. Recommendations: • Modify provision: 'All dwellings have a waste and recycling cupboard or temporary storage area of sufficient size to hold two days worth of ~~garbage~~ waste and recycling'
4W-2 2. Communal garbage rooms are in convenient and accessible locations related to each vertical core	Supported as Good Design Practice. Recommendations: • Modify provision: 'Communal ~~garbage~~ waste and recycling rooms are in convenient and accessible locations related to each vertical core' • Add text: Clarify 'taller development' for Figure 4W.6

Exhibited ADG Provision	*Comment/recommendation*
4W-2 3. For mixed use developments, residential garbage storage areas and access are separate and secure from other uses	Supported as Good Design Practice.
4W-2 4. Alternative waste disposal methods such as composting are provided	Supported as Good Design Practice. Recommendations: • Delete Figure: 4W.3 is not supported. It does not illustrate its caption.
4X Building maintenance	
Performance criteria 4X-1 Building design detail provides protection from weathering	
Acceptable solutions	
4X-1 1. A number of the following design solutions are used: • roof overhangs to protect walls • hoods over windows and doors to protect openings • detailing horizontal edges with drip lines to avoid staining of surfaces • methods to eliminate or reduce planter box leaching • appropriate design and material selection for hostile locations	Supported as Good Design Practice. Recommendations: • Modify provision: Add 'ensure a high standard installation of waterproof membrane to roof gardens'
Performance criteria 4X-2 Systems and access enable ease of maintenance	
Acceptable solutions	
4X-2 1. Window design enables cleaning from the inside of the building	Supported as Good Design Practice.
4X-2 2. Building maintenance systems are incorporated and integrated into the design of the building form, roof and facade	Supported as Good Design Practice.
4X-2 3. Design solutions do not require external scaffolding for maintenance access	Supported as Good Design Practice. Recommendations: • Change Figures: Most Figures show rendered buildings that would not conform with this solution.
4X-2 4. Manually operated systems such as blinds, sunshades and curtains are used in preference to mechanical systems	Supported as Good Design Practice.
4X-2 5. Centralised maintenance, services and storage are provided for communal open space areas within the building	Supported as Good Design Practice.
Performance criteria 4X-3 Material selection reduces ongoing maintenance costs	
Acceptable solutions	
4X-3 1. A number of the following design solutions are used: • natural materials that weather well and improve with time such as face brickwork	Supported as Good Design Practice. Recommendations: • Modify provision: Add 'consider the embodied

Exhibited ADG Provision	*Comment/recommendation*
• easily cleaned surfaces that are graffiti resistant • robust and durable materials and finishes are used in locations which receive heavy wear and tear, such as common circulation areas and lift interiors	energy of materials and their potential for reuse' • Include Figures which demonstrate this solution.

Appendix C – Proposed Development Standards
A Conceptual Draft

This appendix provides a conceptual draft of how the development standards referred to in Section 5 of the submission could work if moved into SEPP 65. The draft is complex and the City would welcome the opportunity to provide further commentary regarding the drafting instructions for the development standards for the PCO.

6A Residential flat development must comply with the following development standards:

(a) visual privacy and separation,

(i) Windows to a *habitable room* or an *open side of a balcony* must be separated by open space that is open to the sky, from side boundaries, rear boundaries, centrelines of streets and *blank walls* (including *blank walls* of the same development) for at least as follows:

I. for a height up to 4 storeys above ground level (existing) – 6m;

II. for a height over 4 storeys and up to 8 storeys above ground level (existing) – 9m;

III. for a height over 8 storeys above ground level (existing) – 12m.

(ii) Windows to a *non-habitable room* must be separated by open space that is open to the sky, from side boundaries, rear boundaries, centrelines of streets and *blank walls* (including *blank walls* of the same development) for at least as follows:

I. for a height up to 4 storeys above ground level (existing) – 3m;

II. for a height over 4 storeys and up to 8 storeys above ground level (existing) – 4.5m;

III. for a height over 8 storeys above ground level (existing) – 6m.

(iii) Windows to a *habitable room,* or an *open side of a balcony* must be separated by open space that is open to the sky, from *habitable room* windows of a different apartment, an *open side of a balcony* of a different apartment, *common rooms* and *common circulation* in the same development for at least as follows:

I. for a height up to 4 storeys above ground level (existing) – 12m;

II. for a height over 4 storeys and up to 8 storeys above ground level (existing) – 18m;

III. for a height over 8 storeys above ground level (existing) – 24m.

(iv) Windows to a *habitable room,* and or an *open side of a balcony,* must be separated by open space that is open to the sky, from *non-habitable room* windows of a different apartment in the same development for at least as follows:

I. for a height up to 4 storeys above ground level (existing) – 9m;

II. for a height over 4 storeys and up to 8 storeys above ground level (existing) – 13.5m;

III. for a height over 8 storeys above ground level (existing) – 18m.

(v) Windows to a *non-habitable room* must be separated by open space that is open to the sky, to *non-habitable room* windows of a different apartment, in the same development for at least as follows:

I. for a height up to 4 storeys above ground level (existing) – 6m;

II. for a height over 4 storeys and up to 8 storeys above ground level (existing) – 9m;

III. for a height over 8 storeys above ground level (existing) – 12m.

(vi) When the adjoining land zoning is an R zone that does not permit residential flat development, an IN, E, SP and W zones an additional 3 metres must be added to the separation to any boundary of that land.

(vii) Separation is:

I. the straight line distance from one to another. Landscape elements including trees and planted screens, screens and other privacy devices are not to be considered as interrupting this distance as the separation also contributes to outlook, acoustic privacy and access to natural light and ventilation;

II. also applied within a recess, notch or indent in the building form, light wells and courtyards;

III. between windows, balconies and common circulation of the same development that are set at angle of 90 degrees or more where the distances can be equal to half the separation required at the height up to 4 storeys for the full height of the building;

IV. to a blank wall that is set at angle of 90 degrees or more from the plane of the wall containing the subject window or an open side of a balcony 0m; and,

V. for common circulation around common open spaces 0m.

VI. between blank walls – 0m.

(viii) A recess, notch or indent in a building façade that has a window or balcony must have a plan depth measured from the plane of the facade less than the width of the recess, notch or indent.

(ix) An apartment that is on land within 25m of a rail corridor, the road corridor for, freeway, a tollway or a transitway or any other road with an annual average daily traffic volume (based on the traffic volume data published on the website of the RTA) of:

I. 40,000 or more vehicles and rail corridors, the floor level of an apartment must be elevated above the surface of a road or rail tracks:
- for a distance up to 15m measured horizontally from the edge of the closest traffic lane or rail tracks –at least 8m vertically; and,
- for a distance over 15m but less than 25m measured horizontally from the edge of the closest traffic lane or rail tracks – elevated at least 4m vertically

II. 20,000 or more vehicles, the floor level of an apartment must be elevated above the surface of a road or rail tracks for a distance up to 15m measured horizontally from the edge of the closest traffic lane –at least 4m vertically.

III. 20,000 or more vehicles and rail corridors, for a distance up to 25m measured horizontally and vertically from the edge of the closest traffic lane or rail tracks, an apartment must have an air supply source located on a wall on the opposite side of the building from the road and include defensive noise shielding or attenuation measures to windows and openings on the road or rail side.

NOTE: In this clause, ***freeway***, ***tollway*** and ***transitway*** have the same meanings as they have in the *Roads Act 1993.*

(b) solar and daylight access,

(i) Every *habitable room* must have a window or windows in an external wall with a total minimum glass area not less than 10% of the floor area of the room. This area is calculated exclusive of light borrowed from an adjoining room. More than 50% of the total minimum area must be below 1.5m above the floor level of the room.

(ii) When standing or sitting in any part of any *habitable room* part of the glass of a window must be directly visible.

(iii) Every part of any *habitable room* must be no less than 8m from the glass of a window in an external wall. [or “must have a ceiling height to room depth ratio of at least 1:2.5”]

[Note: A higher ceiling height to distance ratio is, for example 1:2]

(iv) No more than 15% of the number of apartments in a development, the glass of the *primary window* of the *primary living space* and the primary open space can receive no direct *sunlight* on the winter solstice between 9am and 3pm.

(v) At least 70% of the number of apartments in a development the glass of a window or windows of the primary living space and the primary balcony or primary private open space must receive direct *sunlight* on the winter solstice between 9am and 3pm for at least 2 hours.

(vi) At least 50% of the minimum required area of the primary communal open space must receive direct *sunlight* on the winter solstice between 9am and 3pm for at least 2 hours.

(c) common circulation and spaces,

(i) The maximum number of apartments entered from a common corridor system and circulation *core* on a single level is eight.

(ii) The maximum number of apartments entered from a lift *core* for all levels of a building that has a height of less than 35m above ground level (existing) is forty.

(iii) Common circulation and spaces must have *Daylight* and natural ventilation.

(iv) Where the floor level of an apartment is within 1 metre of the adjacent ground level (finished) and the apartment or its associated open space is within 6m of a street it must have access directly from the street.

(v) The pedestrian pathway or route from the street to any lobby must be direct and clear.

(vi) *Primary common open space* must be separate from any common circulation space or common landscape area and must have an area of at least equivalent to $5m^2$ for each apartment up to a maximum of 25% of the site area and have a minimum dimension in any direction of 6m.

(vii) *Common open space* must contain the following minimum *deep soil* areas:

I. In Zones B1 to B3 inclusive, B4 zones where the floor space ratio is greater than 2.5:1 and B5 to B8 inclusive - 0% of the site area.

II. In other than B zones and B4 zones where the floor space ratio is less than 2.5:1 for sites with an area less than $650m^2$ – 6.25% of the site area.

III. In other than B zones and B4 zones where the floor space ratio is less than 2.5:1 for sites with an area more than $650m^2$ and less than $1500m^2$- 10% of the site area.

IV. In other than B zones and B4 zones where the floor space ratio is less than 2.5:1 for sites with an area more than $1500m^2$- 15% of the site area.

(viii) Deep soil areas must allow for suitable tree planting in relation to the amount of deep soil provided.

(d) apartment layout,

(i) The *floor area* of a studio apartment with one bathroom must not be less than 35m^2.

(ii) The *floor area* of an apartment with one bedroom and one bathroom must not be less than 50m^2.

(iii) The *floor area* of an apartment with two bedrooms and one bathroom must not be less than 70m^2.

(iv) The *floor area* of an apartment with three bedrooms and two bathrooms must not be less than 90m^2. If there is only one bathroom the minimum area can be reduced to 85m^2.

(v) The calculation of the *floor area* in (i) to (iv) above excludes the floor area of any additional bathrooms.

(vi) The floor area of a *main bedroom* (excluding the wardrobe) must not less than 10m^2 measured only where a minimum width of 3m (excluding the wardrobe) in two perpendicular directions exists.

(vii) The floor area of *other bedrooms* must not less than 9m^2 (excluding the wardrobe) measured only where a minimum width of 2.7m (excluding the wardrobe) in two perpendicular directions exists.

(viii) The minimum width in any direction of a living room (excluding any storage as required by (h)) in a studio apartment or a one bedroom apartment must not less than 3.6m.

(ix) The minimum width in any direction of a living room (excluding any storage as required by (h)) in a two bedroom apartment should be not less than 3.9m.

(x) The minimum width in any direction of a living room (excluding any storage as required by (h)) in a three bedroom apartment should be not less than 4.2m.

(xi) The *main bedroom* of an apartment and a *studio apartment* must have wardrobe a minimum size of 1.8m long, 0.6m deep and 2.4 high. Other bedrooms must have a wardrobe of a minimum size of 1.2m long, 0.6m deep and 2.4 high.

(xii) Overall building depth must not exceed 18 metres, except in the following circumstances:

I. Where the ceiling height to building depth ratio is at least 1:6.

NOTE: A higher ceiling height to building depth ratio is, for example 1:5

II. For the extent of the *core,* provided that the maximum depth of apartments either side of the core is no more than 8m.

(xiii) The maximium depth of an apartment is 8m.

(xiv) Residential flat developments that contain more than 20 dwellings must provide a mix of dwellings consistent with the following percentage mix:

I. Studio: 5 - 10%;

II. 1 bedroom: 10 – 30%

III. 2 bedroom: 40 – 75%; and

IV. 3 or more bedroom: 10 - 100%

V. The maximum percentage of 1 bedroom apartments may be more than 30% provided that the numbers of studio dwellings and 1 bedroom apartments combined does not exceed 40% of the total apartments proposed.

(xv) To improve universal access to all apartments, every apartment must be designed to achieve the Livable Housing Design Guidelines Silver standard and for developments containing:

I. 10 apartments or more and less than 30 apartments, 10% achieve the *Livable Housing Design Guidelines* Platinum standard

II. 30 apartments or more, 15% achieve the *Livable Housing Design Guidelines* Platinum standard

(e) ceiling heights,

(i) The minimum *ceiling height* of any *habitable room* in an apartment must be at least 2.7 metres which requires a floor to floor height of 3.1m.

(ii) The minimum *ceiling height* of any non-*habitable room* in an apartment must be at least 2.4 metres which requires a floor to floor height of 2.8m.

(iii) The ground floor (including any car parking) in a mixed use development or a B zone must have a *ceiling height* of at least 3.6m which requires a floor to floor height of 4m.

(iii) The first floor level above the ground floor (including any car parking) in mixed use development or a B zone must have a *ceiling height* of at least 3.2m which requires a floor to floor height of 3.6m is required.

(iv) Any above ground car parking level (except for as provided for in (iii) above) must have a *ceiling height* of at least 3.2m which requires a floor to floor height of 3.6m is required.

(f) balconies and private open space,

(i) A *primary private open space* or *balcony* must be located adjacent to and be directly accessible from the living room, dining room or kitchen

(ii) For at least 75% of apartments with a floor level lower than 35m above ground level (existing) a primary private balcony must be provided as follows:

I. For *studio* apartments at least 4m^2 area with no minimum width

II. For 1 bedroom apartments at least 8-m^2 area with a part that has a minimum size of 2m by 2m

III. For 2 bedroom apartments at least 10-m^2 area with a part that has a minimum size of 2m by 2m

IV. For 3+ bedroom apartments at least 12-m^2 area with a part that has a minimum size of 2m by 2.5m

(iii) At ground level or on a podium the primary private open space must have a minimum area of 15m2 with a minimum width in any direction of 3m.

(iv) in plan more than 25% of the perimeter of a balcony must be open outwards and not be enclosed by walls

(g) natural ventilation,

(i) Every *habitable room* must have a window in an external wall with a minimum *effective openable area* not less than 5% of the floor area of the room. This area is calculated exclusive of ventilation borrowed from an adjoining room.

(ii) At least 60% of the number of apartments in a development with a floor level below 35m must have *natural cross ventilation*.

(iii) Every part of any *habitable room* must <u>be no less than 7m from the openable part of a window in an external wall.</u> [or "be no further from the openable part of a window in and external wall such that the ceiling height to room depth ratio is at least 1:2.5"]

[Note: A higher ceiling height to distance ratio is, for example 1:2]

(h) storage,

(i) In addition to storage in kitchens, bathrooms, bedrooms and storage for bicycles, the following volume of storage must be provided:

I. For *studio* apartments at least 4m^3

II. For 1 *bedroom* apartments at least 6m^3

III. For 2 *bedroom* apartments at least $8m^3$

IV. For 3 or more *bedroom* apartments at least $10m^3$

(ii) At least 50%of the storage provided in (i) above must be located within the apartment interior (i.e. not on a *balcony*, in private open space or a basement)

(i) parking.

(i) The minimum number of car parking spaces required for residents of a residential flat development for sites within 800m of a railway station or light rail stop in nominated inner and middle ring metropolitan Sydney areas [1)] zero;

NOTE: [1)] Includes the local government areas: Ashfield, Auburn, Bankstown, Botany Bay, Burwood, Canada Bay, Canterbury, City of Sydney, Hurstville, Kogarah, Lane Cove, Marrickville, Leichhardt, North Sydney, Parramatta (City Centre), Randwick, Rockdale, Ryde, Strathfield, Waverley, Willoughby, Woollhara

(ii) The number of visitor car spaces are must not exceed a maximum of 1 space per every 10 apartments.

(iii) One bicycle parking space for each apartment must be provided in a location that is secure, undercover and easily accessible from both the public domain and common areas.

6B Development control plans cannot be inconsistent with SEPP65 Development Standards

The provisions of a development control plan under Division 6 of Part 3 of the Act, whenever made, are of no effect to the extent to which they aim to establish standards with respect to any of the following matters in relation to residential flat development that are inconsistent with the following development standards:

(a) visual privacy and separation,

(b) solar and daylight access,

(c) common circulation and spaces,

(d) apartment layout,

(e) ceiling heights,

(f) balconies and private open space,

(g) natural ventilation,

(h) storage

(i) parking.

3 Definitions

(1) In this Policy:

Ceiling height the vertical distance between the finished floor level and the underside of the finished ceiling level.

Deep soil

Effective Openable Area (EOA) the minimum area of clear opening of a window that can take part in providing natural ventilation. The effective openable area of a sliding or hung sash window can be measured in elevation. Hinged windows such as casement, awning and hopper windows may measure the diagonal plane from the edge of the sash to the jamb and add the triangles at either end up to a total area of the window opening in the wall. Obstructions within 2m of a window reduce the effective openable area as measured in elevation. Fly screens and security screens will reduce the effective openable area by half. Windows required to be child resistant must be calculated with the restricting device in place. [Note: this is not as described in the ABCB advisory note on the Protection of Openable Windows June 2013.]

Floor area means the sum of the floor area of an apartment or a room measured from the internal face of external walls, or from the internal face of walls separating the apartment or a room from any other apartment or common area, or other rooms, measured at a height of 1.4 metres above the floor, and includes:

(a) the area of a mezzanine, and

(b) habitable rooms in a basement or an attic,

but excludes:

(c) plant rooms and other areas used exclusively for mechanical, hydraulic or electrical services or ducting, and

(d) car parking (including access to that car parking), and

(e) terraces and balconies with outer walls less than 1.4 metres high, and

(f) voids above a floor at the level of a storey or storey above.

Balcony

Blank wall a wall without windows or balconies

Building as defined by the BCA.

Building depth is the overall cross section dimension of a building envelope. It includes the internal floor plate, external walls, balconies, external circulation and articulation such as recesses and steps in plan and section.

Ceiling height is measured vertically from finished floor level to finished ceiling level

Common circulation

Common landscape area

Common open space

Core vertical circulation (lift and/or stairs) within a building. A single core may include multiple lifts serving the same floor area

Courtyard communal space at ground level or above a structure (e.g. podium), formed by the building and enclosed on 3 or more sides and open to the sky

Daylight consists of both skylight (diffuse light from the sky) and sunlight (direct beam radiation from the sun). Daylight changes with the time of day, season and weather conditions

Deep soil areas of soil unimpeded by buildings or structures above and below ground within a development and a minimum dimension of 6m. Deep soil zones exclude basement car parks, services, swimming pools, tennis courts and impervious surfaces including paved paths, car parks, driveways and roof areas

Development standards means the provisions identified in Clause 6A

Duct

Habitable room includes a bedroom, living room, lounge room, music room, television room, kitchen, dining room, sewing room, study, playroom, family room, home theatre, sunroom and common rooms; but does not include bathrooms, laundries, water closets, pantries, walk-in wardrobes, corridor, hallway, lobby, photographic darkroom, clothes-drying room, and other spaces of a specialised nature occupied neither frequently nor for extended periods. If an area includes functions of a habitable room and a non-habitable room it is considered a habitable room. Note a corridor, hallway or lobby are a maximum of 2m wide. If these spaces are wider than 2m and allow other uses usually found in habitable rooms, they are considered to be habitable rooms. A kitchen that is a separate room and not part of a living or dining room can be considered a non-habitable room but must have a window that provides the minimum requirement of light and air.

Livable Housing Design Guidelines Livable Housing Design Guidelines Second Edition 2012 or the latest version

Main bedroom the main bedroom within an apartment, every apartment apart from a studio has one main bedroom

Natural cross ventilation is equal to the compliance requirements of the green star multi-residential v1 2009 IEQ-22 Natural Ventilation Guideline with the following addition: a breeze path is an area in plan described by straight lines that connect the outer extents of openings. The breeze path must occupy at least 25% of the primary living space and main bedrooms. To be naturally cross ventilated an apartment must be either a through apartment with windows on opposite sides of the building or

corner apartment on an external corner of the building (not on a notch, slot or indent in the façade) with windows on perpendicular walls.

The aim or purpose of providing natural cross ventilation is not solely to improve the thermal performance of buildings and must be provided independently of any requirement of BASIX.

Natural ventilation has several benefits: no running cost, zero energy consumption and low maintenance. It is also regarded as healthy, having less hygiene problems with ducts, and filters etc, and the 'naturalness' in the way that it connects with the outside is seen as a psychological benefit.

The use of *ducts,* even if they are not mechanically assisted, does not constitute natural cross ventilation.

Natural cross ventilation is more beneficial in summer. In winter, adverse cooling from natural cross ventilation can be controlled by limiting the opening of windows or the use of warm clothing. The availability of natural cross ventilation can expand a person's comfort zone, especially in summer.

Natural cross ventilation also removes air borne pollutants, smells and naturally produced CO2 from the indoor environment.

Non-habitable room spaces of a specialised nature not occupied frequently or for extended periods, including bathrooms, laundries, water closets, pantries, walk-in wardrobes, corridor, hallway, lobby, photographic darkroom, and clothes-drying room. A corridor, hallway or lobby are a maximum of 2m wide, spaces wider than 2m are habitable rooms.

Open side of a balcony

Other bedroom a bedroom that is not the main bedroom

Primary balcony the balcony connected to the living room

Primary common open space the principal area of common open space, usually the largest consolidated area for the active use of residential, for example seating, BBQ space, play space, roof terrace

Primary private open space the principal area of private open space, usually the largest consolidated area

Studio apartment an apartment consisting of one habitable room that combines the functions of a bedroom and a living room

Sunlight the direct beam radiation from the sun. The aim or purpose of providing sun access is not to improve the thermal performance of buildings and must be provided independently of any requirement of BASIX.

Sunlight has physical and psychological health benefits. In winter, when there is generally less sunlight, these benefits are greater and sun access is more desired. Sunlight is particularly beneficial for younger and older groups of the population. It also lessens the need for and the cost of artificial

heating and artificial lighting. The availability of sunlight can expand a person's comfort zone, especially in winter.

For the glass of a window to be defined as receiving sunlight the amount of sunlight on the surface of the glass must be a minimum of $1m^2$.

For a balcony or open space to be defined as receiving sunlight the amount of sunlight must be a minimum of $1m^2$ measured horizontally on a plane at the maximum height of the balustrade of the balcony or the ground level of the private open space.

For communal open space to be defined as receiving sunlight the amount of sunlight is measured at ground level of the communal open space.

When determining the sunlight received all other existing buildings (including fences and any other structures) and landform, but not vegetation that may obstruct the sun must be taken into account. If a DCP or an environmental planning instrument has defined building envelopes these should be considered as buildings even if they are not yet extant.

Window a window in an external wall

Storeys the number of storeys includes all levels of the building predominantly above ground level (existing) or internally within a site from the top of a podium and includes mezzanines, attics and balconies but not roof terraces

30 Standards that cannot be used as grounds to refuse development consent or modification of development consent

(1) A consent authority must not refuse consent to a development application for the carrying out of residential flat development (or refuse an application for the modification of development consent) on any of the following grounds:

(a) **ceiling height**: if the proposed ceiling heights for the building are equal to, or greater than, the minimum recommended ceiling heights set out in ~~Part 4 of the Apartment Design Guide~~ Clause 6A (e),

(b) apartment area: if the proposed area for each apartment is equal to, or greater than, the recommended internal area for the relevant apartment type set out in ~~Part 4 of the Apartment Design Guide~~ Clause 6A (d).

(c) car parking: if the proposed car parking for the building is equal to, or ~~greater~~ less ~~than~~, the recommended minimum amount of car parking set out in ~~Part 3 of the Apartment Design Guide~~ Clause 6A (i).

~~Note. The Building Code of Australia regulates the minimum ceiling heights for residential flat buildings.~~

Appendix D – Merit Based Development Standards & Performance Criteria and Alternative Solutions (different design feature or method)

Merit Based Development Standards & Performance Criteria and Alternative Solutions

The City would like to draw to the Department's attention a clear distinction between

- merit based standards for which nothing can be substituted; and
- performance based standards for which substitutes can be made.

Natural cross ventilation and sunlight controls fall into the first 'merit based standards' category. Nothing can be substituted for these amenities. They are either met or not met with direct sun to a set proportion of apartments in one instance and with air flowing through an apartment in the other.

This is very different to daylight and natural ventilation controls which are part of the second category, 'performance based standards'. For these, a standard is suggested which is that the depth of a habitable room should not be greater than 2.5 times the height of its ceiling. A 'deemed-to-satisfy' solution is adopted because evidence indicates that in the majority of situations this will provide a good outcome in relation to daylight and natural ventilation for the whole of the room. However, an alternative solution could be adopted where a performance based standard was setout to numerically govern what is meant by good daylight and natural ventilation and by demonstrating compliance with this technical criteria, the applicant could vary the habitable room depth to ceiling height ratio by possibly introducing a light shelf for example.

This appendix firstly sets out the merit based controls for cross ventilation and sunlight and the considerations for defining a method for measuring compliance. Then secondly, it sets out the considerations that could be made in determining performance criteria and a sketch of potential verification methods for natural ventilation and daylight.

1. Merit Based Standards

Naturally Cross Ventilated Apartments

There is a clear merit based requirement in the Apartment Design Guide (ADG) that 60% of apartments in a development must be "naturally cross ventilated".

The critical parameters that govern the effectiveness of a "naturally cross ventilated" apartment are:

- Apartment ceiling height relative to apartment depth. This is measured along an air flow path from a window on the windward side of the building to a window on the leeward side of the building; this value is absolutely critical.

- The wind directions that will provide cross ventilation and their frequency across the year. These will be highest for dual aspect through apartments, reasonable for dual aspect external corner apartments and low for single aspect apartments on the localized corner of a 'slot', 'notch' or 'indent' .
- Effective window openable area that can take part in providing "natural cross ventilation". This has been defined as 5% of the floor area being "naturally cross ventilated". This variable should include consideration of parameters that can cause obstructions to the "natural cross ventilation" air flow, for example, restriction caused due to balustrades in close proximity to full height windows, the installation of security/fly screens on windows, or the number of doorways or turns imposed on an air flow path within the apartment.
- The number and proportion of spaces that are on the air flow path which should include the majority of the principle living spaces and at least the main bedroom.
- The use of door catches to hold doors in open position when "natural cross ventilation" mode is being encouraged in the above solutions

The City believes that single aspect apartments on localized corners offer significantly lower amenity than true cross ventilated apartments because the proportion of the time that cross ventilation is available is significantly due to frequency of wind direction (that is, they will only 'cross ventilate' for a single specific wind direction. The proportion of the apartment that receives the benefit of cross ventilation (that is, how deep into the apartment the cross ventilation is effective) is also reduced depending on how deep the 'slot', 'notch' or 'indent' is.

The City believes that the merit based requirements (dealing with height, width and window opening areas) for "naturally cross ventilated" apartments should not be compromised under any circumstances. The science around this aspect is currently not sufficiently advanced to develop a robust performance based control.

Sunlight

There is a clear merit based requirement in the Apartment Design Guide (ADG) that 70% of apartments should receive 2 or 3 hours of sunlight to their living room window and balcony such that a person can sit in full sun.

The key acceptability criteria for sunlight in the ADG are:

- Living rooms and private open spaces of at least 70% of apartments in a building receive a minimum of 3 hours direct sunlight between 9am and 3pm in mid winter, and
- A maximum of 15% of apartments in a building have no direct sunlight between 9am and 3pm in mid winter

Acceptability criteria or alternative performance criteria for the remaining 15% of apartments are not clearly defined. It is recommended that criteria are carefully devised and described for these apartments (for example a minimum of 1 hour of sunlight between 9am and 3pm in midwinter). If not, solutions can show one minute of sunlight during mid-winter are acceptable within the current definition.

Calculation of sunlight received can be carried out with relative ease by a number of software systems that can model the position of the sun, and generate views from the sun, or generate a set of numerical tables. The software can also generate views of the building plan and vertical section, and 3D imagery that can illustrate sunlight incident on floors and wall in a space.

2. Performance Criteria and Assessing "A Different Design Feature or Method"

Natural Ventilation (or habitable rooms with single sided natural ventilation)

There are two potential issues that relate to natural ventilation.

The first is the contention that a single sided apartment is so well naturally ventilated that it performs in a way that is equal to or better than a cross ventilated apartment. Council recommends that this argument should not be accepted for apartments lower than 35m above ground because of the limited number of wind directions that the apartment can offer "induced" cross ventilation (ie from a single wind direction, meaning a far lower proportion of the year).

The second issue arises in relation to the maximum room depth control. If an applicant sought to increase the depth of habitable spaces and claim that it provided good natural ventilation then a standard would need to be set that they could measure their performance against.

Under the current RFDC. single sided natural ventilation attracts the greatest number of applications seeking justification for design compliance using the 'alternate design solution' approach. Developers are always keen to push the boundaries on the definition of a single sided naturally ventilated apartment and justify it as cross ventilated. Proposed solutions that have been received by the City of Sydney have, in a number of instances, have had their efficacy "proven" around the opinion of an expert, with little in the way of calculations backed up by design or construction detail. This is not a satisfactory outcome for either side, with the one of the few ways of challenging the proposed alternative design being a legal challenge.

It is for these apartments that designers, and planning authorities, require a well defined and documented performance based alternative solution compliance pathway. Such an alternate solution process will not be easy to formulate since it requires considerable research to develop, test and document. The following paragraphs attempt to describe considerations for a potential alternative solution approach.

This type of alternate design solution will need to address:

- a definition of the natural ventilation amenity "performance" that is being tested for, with variables that can be calculated and compared
- potentially devise a definition for a "reference" case that must be equalled or bettered in "performance" by the proposed design (similar to the JV3 Verification using a reference building method in the National Construction Code), and

It is encouraging that, in the last decade, the environmental engineering industry has seen the development of whole building, dynamic simulation software which, in a short period of time, in addition to carrying out energy calculations, can:

- determine natural ventilation based air-flows across windows and vents, and
- analyse velocity vectors and air temperature gradients within a space for a selected time step using a computation fluid dynamic analysis
- these computations can be developed from the same building model definition which can feed the required initial input data to one or more calculation engines

These advances in computational and analytical techniques can form the basis of an alternative design solution for natural ventilation amenity. Some potential outputs that can be analysed are discussed below.

Figure-1 is a plot of the airflow coming into and out of a window during a one week period in March, which is a "swing" month, which is neither particularly cold or hot. Reviewing the graph indicates that this window generally lets in more air than it lets out. And also that there is little airflow exchange between midnight and early morning. Tests that could be considered are to review the integrated over periods of 24 hours against the ambient wind speeds to calculate some measure of ventilation efficiency, for days/times when windspeeds are low and when wind speeds are average or more.

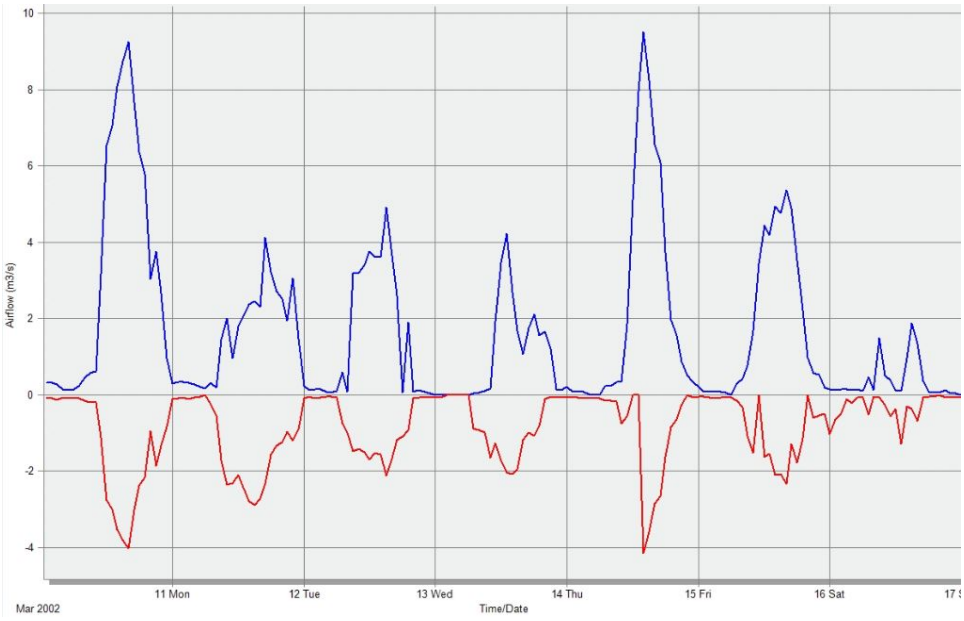

Figure-1: Airflow in (blue) and out (red) of a window

Figure-2 and Figure-3 are plan and section views of a simple 2-zone building model that includes a tall stack and windows at the low and high levels. These were generated by importing boundary conditions from a specific time (hour) selected from Figure-1 and invoking a Computational Fluid Dynamics calculation on the two zone building.

The plan view (Figure-2) provides indications on which portions of the plan are well ventilated compared to the stagnant areas with low air velocities. Figure-3 provides similar information in section.

Figure-4 shows a 3d velocity vector view, which is more interesting to provide a qualitative assessment of the space, but is less useful in a quantitative measure.

The quality of natural ventilation amenity could be defined using these sort of variables, and some performance measure may be generated based on the above; the City strongly recommends that the Department initialise a research project to review available tools and methods towards developing an alternate design solution process for this particular type of apartment design, in terms of the natural ventilation amenity.

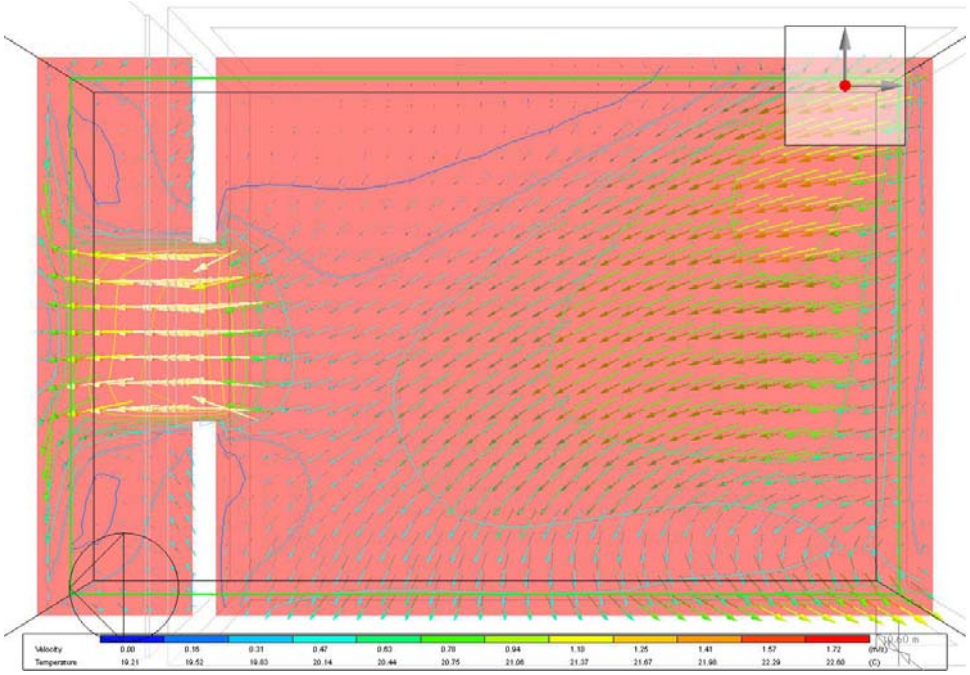

Figure-2: Plan view of velocity vectors

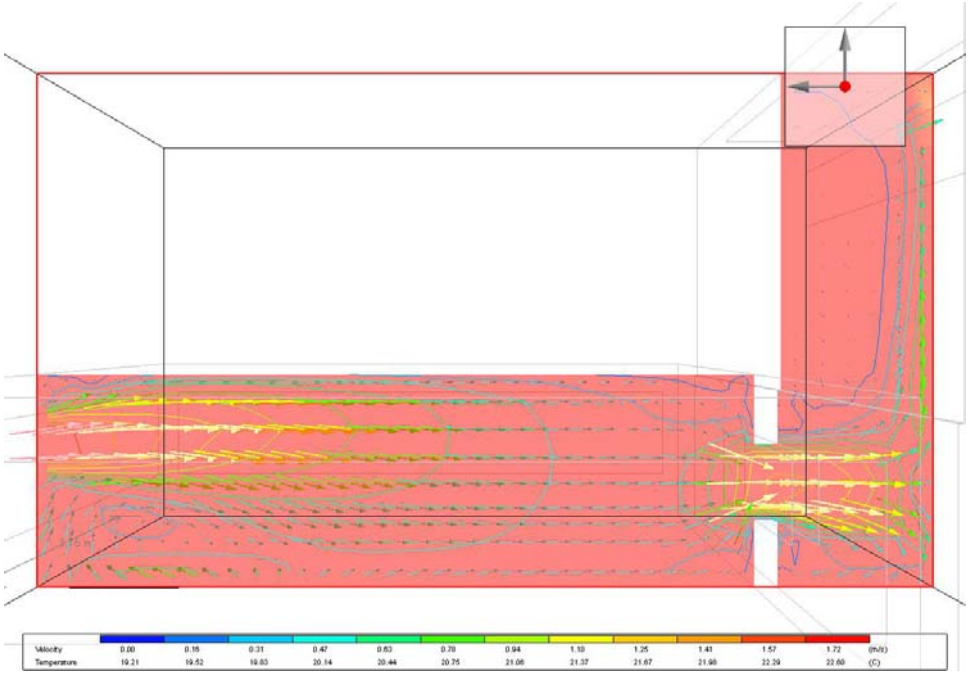

Figure-3: Section view of velocity vectors

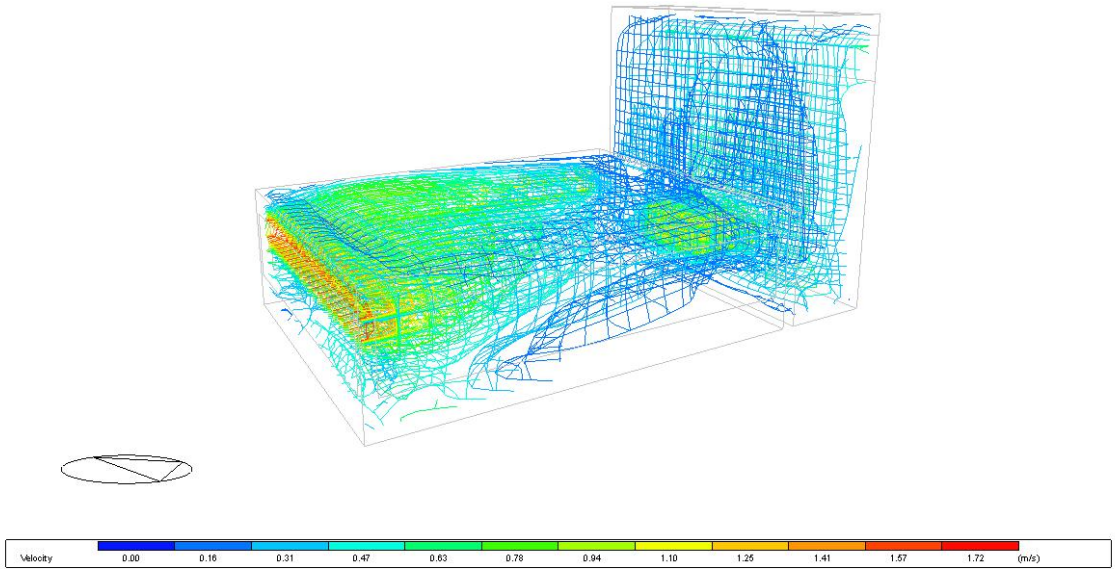

Figure-4: A 3D representation of velocity vectors in the same spaces as Figures-1 and Figure-2

Daylight

Alternative design solutions for meeting daylight amenity can be represented as a performance based criteria that can be numerically modelled. The calculation method recommended is a daylight factor analysis across the room(s) plan, at a pre-selected working plane height, which is required to meet daylight amenity criteria (for example sufficient daylight to perform detailed tasks (a number of lux) for a certain proportion of the day in mid-winter). Some form of averaging is recommended to provide a more realistic solution.

The performance criteria can be an absolute criteria similar to other green building rating systems, for example, the GBCA developed Green Star system. In these systems, each habitable room that does not comply with the documented acceptable solution within the ADG must be shown to achieve a particular daylight level for a stated percentage of its floor area. The criteria includes an averaging process as part of the calculations. Balconies and balustrades are to be included in the calculation protocol.

The City recommends that the Department review the criteria for daylight as available for international and national sustainability rating systems, including the Green Star credit for Multi Unit Residential (as referenced below) and commission a research project to develop the process for evaluating alternate design options in this regard.

Ref: IEQ-4, Daylight, Green Star Technical Manual – Multi Unit Residential, published by Green Building Council of Australia (copy provided for information)

Appendix E – ADG Standards and Measures Referred to in SEPP 65 Cl. 6A

The following table shows that almost all the 9 "core" development standards proposed in Section 5 are already covered by Cl. 6A (including parking captured under Cl. 30). The table below shows the relevant subsection of Cl. 6A and the related section in the ADG. The performance criteria are noted and the existing measures reproduced below. The end of the table shows a small number of additional measures that the City believes are very important that have not been captured under Cl. 6A.

Cl. 6A Ref. *ADG Section*	*"Core" Development Standards covered by Cl. 6A* *Performance Criteria and Acceptable/Alternative Solutions*
(a) Visual privacy **3F Visual privacy**	*Performance Criteria* 3F-1 Visual separation distances are shared equitably between neighbouring sites, providing reasonable levels of external and internal visual privacy
	Unimpeded space is provided in front of windows and balconies to ensure visual privacy is achieved. Separation distances from buildings to the side and rear boundaries are: Building height / Habitable rooms and balconies / Nonhabitable rooms up to 12m (4 storeys) 6m 3m up to 25m (5-8 storeys) 9m 4.5m over 25m (9+ storeys) 12m 6m Separation distances between buildings on the same site are double the above requirement. See figure 3F.4rooms up to 12m (4 storeys) 6m 3m up to 25m (5-8 storeys) 9m 4.5m over 25m (9+ storeys) 12m 6m Separation distances between buildings on the same site are double the above requirement. See figure 3F.4
	Apartment buildings should have an increased separation distance of 3m (in addition to the requirements set out in 3F-1.2) when adjacent to a zone permitting lower density residential development. See figure 3F.5
(b) Solar and daylight access **4L Solar and daylight access**	*Performance Criteria* 4L-1 The number of apartments receiving sunlight to habitable rooms, primary windows and private open spaces is optimised
	Living rooms and private open spaces of at least 70% of apartments in a building receive a minimum of 3 hours direct sunlight between 9am and 3pm in mid winter
	A maximum of 15% of apartments in a building have no direct sunlight between 9am and 3pm in mid winter
	Performance Criteria 4L-2 Reasonable levels of direct sunlight is provided to habitable rooms and balconies
	Apartments that receive direct sunlight in accordance with the acceptable solution 4L-1.4 need to demonstrate that a person is able to sit in the sun in a habitable room or on a balcony of an apartment in mid winter between 9am and 3pm. See Figure 4L.1
	Performance Criteria 4L-4 Opportunities for improved daylight are provided where sunlight is limited

Cl. 6A Ref. *ADG Section*	*"Core" Development Standards covered by Cl. 6A* *Performance Criteria and Acceptable/Alternative Solutions*
	Light wells, skylights and high level windows (with sills of 1500mm or greater) are used only as a secondary light source in habitable rooms
	Alternative solutions There may be some circumstances or locations where an alternative solution is proposed because 3 hours of direct sunlight in mid winter is not achievable. It needs to be demonstrated that the number of apartments receiving direct sunlight has been maximised. Design drawings need to demonstrate how site constraints and orientation preclude the achievement of acceptable solutions in this section and how the development meets the performance criteria. Circumstances where this may apply include: • where apartments face greater than 20 degrees east or west of north • in major centres or areas characterised by high density development • where greater residential amenity can be achieved along a busy road or rail line by orienting living rooms away from the noise source • on south facing slopes • where significant views are oriented away from the desired aspect for direct sunlight In these circumstances the development should receive a minimum of 2 hours of direct sunlight to 70% of living rooms and balconies at mid winter. Where buildings face within 20 degrees east or west of south, apartments should maximise dual aspect or have narrow depth for single aspect apartments.
(c) Common circulation and spaces **4M Common circulation and spaces**	*Performance Criteria* 4M-1 Common circulation spaces achieve good amenity and provide for a variety of apartment types
	The maximum number of apartments off a circulation core on a single level is eight
	Daylight and natural ventilation is provided to all common circulation and spaces, where possible
(d) Apartment layout **4N Apartment layout**	*Performance Criteria* 4N-1 Spatial arrangement and layout of apartments is functional, well organised and provides a high standard of amenity
	Habitable room depth complies with the ceiling height to room depth ratio as per Figure 4N.3
	For open plan layouts, combining the living room, dining room and kitchen, the back of the kitchen is a maximum of 8 metres from a window
	All living areas and bedrooms are located on the external face of the building
	All kitchens in corner apartments have an external openable window/door
	The number of bathrooms and laundries with windows is maximised
	Performance Criteria 4N-3 Apartment layout can accommodate a variety of household activities and occupant needs
	Master bedrooms have a minimum area of 10m2 and other bedrooms 9m2 (excluding wardrobe space)
	Bedrooms have a minimum dimension of 3m (excluding wardrobe space)
	All bedrooms allow a minimum length of 1.5m for robes

Cl. 6A Ref. *ADG Section*	*"Core" Development Standards covered by Cl. 6A* *Performance Criteria and Acceptable/Alternative Solutions*
	Living rooms or combined living/dining rooms have a minimum width of: • 3.6m for studio and 1 bedroom apartments • 4m for 2 and 3 bedroom apartments
	Alternative solutions Where apartments do not meet the minimum depth standard for habitable rooms, alternative solutions must demonstrate how satisfactory daylight access and natural ventilation are achieved. Alternative solutions proposing greater than the minimum ceiling heights could increase the habitable room depth in single aspect apartments by a ratio of 2.5:1 (room depth = ceiling height in metres x 2.5). Where minimum apartment size and room dimensions are not met, the usability and functionality of the space needs to be demonstrated using realistically scaled furniture layouts and circulation areas.
(e) Ceiling heights **4O Ceiling heights**	*Performance Criteria* 4O-1 Ceiling height achieves sufficient natural ventilation and daylight access
	Measured from finished floor level to finished ceiling level, minimum ceiling heights are: Minimum ceiling height for apartment and mixed use buildings Habitable rooms 2.7m Non-habitable 2.4m For 2 storey apartments 2.7m for main living area floor, 2.4m for second floor, where its area does not exceed 50% of the apartment area Attic spaces 1.5m at edge of room with a 30 degree minimum ceiling slope If located in mixed used areas 3.3m for ground floor to promote future flexibility of use These minimums do not preclude higher ceilings if desired
(f) Balconies and private open space **4P Private open space and balconies**	*Performance Criteria* 4P-1 Primary private open space and balconies are appropriately located
	Primary open space and balconies are located adjacent to the main living areas, such as the living room, dining room or kitchen to extend the living space
	Primary open space and balconies are orientated with the long side facing outwards to optimise daylight access into adjacent rooms
	Performance Criteria 4P-2 Primary private open space and balconies are appropriately sized
	Primary private open space at ground level or similar space on a structure has a minimum area of 16m2 and a minimum dimension in one direction of 3m
	Primary balconies are provided for all apartments with the following minimum area and depth according to apartment size::lpe Minimum area / Minimum depth 1 bedroom apartments 8m2 2m 2 bedroom apartments 10m2 2m 3+ bedroom apartments 12m2 2.5m
	Performance Criteria 4P-4 Private open space and balcony design maximises safety
	Alternative Solutions Alternative solutions such as juliet balconies, operable walls, enclosed wintergardens or bay windows may be appropriate where balcony use is limited by:

Cl. 6A Ref. *ADG Section*	*"Core" Development Standards covered by Cl. 6A* *Performance Criteria and Acceptable/Alternative Solutions*
	• consistently high wind speeds at 9 storeys and above • close proximity to road, rail or other noise sources (see section 4T Noise and pollution for further guidance) • exposure to significant levels of aircraft noise Increased communal open space should be provided where number or size of balconies are reduced
(g) Natural ventilation **4Q Natural ventilation**	*Performance Criteria* 4Q-1 All habitable rooms are naturally ventilated
	Rooms have appropriate depths (see Section 4N Apartment layout)
	Unobstructed window openings are equal to at least 5% of the floor area served
	Performance Criteria 4Q-2 Natural ventilation for single aspect apartments is maximised
	Apartment depths are limited to maximise ventilation and airflow. See figure 4Q.1
	A number of the following design solutions are used: • primary windows are augmented with plenums and lightwells (generally not suitable for cross ventilation) • solar chimneys, stack effect ventilation or similar to naturally ventilate internal building areas or rooms such as bathrooms and laundries • lightwells or building indentations with a width to depth ration of 2:1 or 3:1 where possible to ensure effective air circulation and avoid trapped smells
	Performance Criteria 4Q-3 The number of apartments with natural cross ventilation is maximised
	At least 60% of apartments are naturally cross ventilated
	For apartment buildings 9 storeys and over an appropriately qualified wind consultant has confirmed that 60% of the apartments achieve cross ventilation
	Overall building depth does not exceed 12-18 metres
	Cross ventilation is facilitated by limited apartment depths and use of dual aspect apartments, cross through apartments and corner apartments
	In dual aspect apartments external window and door opening sizes/areas on one side of an apartment (inlet side) are approximately equal to the external window and door opening sizes/areas on the other side of the apartment (outlet side). See figure 4Q.5
	Apartment depths, combined with ceiling heights, maximise ventilation and airflow. See figure 4Q.4
(h) Storage **4R Storage**	*Performance Criteria* 4R-1 Adequate, well designed storage is provided in each apartment
	In addition to storage in kitchens, bathrooms and bedrooms, the following storage is provided: Dwelling type Storage size studio apartments 6m3 1 bedroom apartments 6m3 2 bedroom apartments 8m3 3+ bedroom apartments 10m3 with at least 50% located within the apartment

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Cl. 30 (c) Car Parking **3J Bicycle and car parking**	*Performance Criteria* 3J-1 Car parking is provided based on proximity to public transport in metropolitan Sydney and centres in regional areas
	Number of car parking spaces meet the requirements as shown in Table 2 where applicable

"Core" Development Standards not covered by Cl. 6A in the exhibited draft SEPP 65	
Proposed (c) Common Circulation & Spaces **3D Communal and public open space**	*Performance Criteria* 3D-1 Communal open space is consolidated, well configured and designed
Proposed (k) Deep Soil **3E Deep soil zones**	*Performance Criteria* 3E-1 Deep soil zones are suitable for healthy plant and tree growth, improve residential amenity and promote management of water and air quality
Proposed (j) Apartment Mix **4A Apartment mix**	*Performance Criteria* 4A-1 A range of apartment types and sizes is provided to cater for different household types now and into the future
Proposed (c) Common Circulation and Spaces **4B Ground floor apartments**	*Performance Criteria* 4B-1 Street frontage activity is maximised where ground floor apartments are located
Proposed (d) Apartment Layout **4G Universal design**	*Performance Criteria* 4G-1 Universal design features are included in apartment design
Proposed (a) Visual Privacy, Setbacks and Outlook **4T Noise and pollution**	*Performance Criteria* 4T-1 The siting and layout of buildings minimise the impacts of external noise and pollution