Our ref: WSP -ESD-LTR-SEPP RevDP.docx

28 April 2021

DPIE
Via NSW Planning Portal

To Whom it May Concern

This letter summarises our submission comments on the new Design and Place SEPP relating to sustainability matters. These comments have been compiled from the Sydney Sustainability team at WSP, and are based on our project experience, technical expertise, education and research. The comments are our opinions only, designed to facilitate development of the SEPP and its associated guides and tools (such as the Apartment Design Guide and the BASIX online tool) in a manner which will result in practical, realistic and sustainable outcomes for NSW development.

The Design and Place SEPP includes many proposed changes which we support, this letter focuses on those that we see as key matters to either retain or amend.

The table attached itemises our key concerns and details considerations or recommendations where appropriate. We are very happy to discuss these in detail at any time. Contact Details have been included at the bottom of the letter should anyone wish to discuss these with us.

Yours sincerely

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ADG – Solar and daylight access requirements	The current ADG requirement for solar access to living spaces drives buildings which have a predominant orientation to the east and west. While this maximises the number of apartments which have a minimum level of sunlight, it results in apartments which are poorer performing thermally. Passive design principles encourage a northern orientation, however maximising the northern orientation results in a greater proportion of apartments facing south, and therefore the ADG solar access requirements cannot be met. We recommend this requirement is removed and replaced with a requirement to maximise thermal comfort, and a depth requirement to ensure indirect daylight access. A deep south facing apartment has poor amenity both because of a lack of solar heating through direct solar access and a lack of daylight. Whereas limiting the depth of the apartment will enable reasonable daylight access to improve amenity. We have conducted research into the thermal performance of apartments in Sydney under future climate scenarios. This research has demonstrated that by as soon as 2030, apartments in Sydney will have significantly higher cooling loads, while heating loads reduce to almost insignificant levels. This suggests that in a short time, climate change will result in apartments with little direct solar access becoming more comfortable than those with direct solar access. **We support a change to a focus on daylight access instead of solar access, enabling architects to focus on designs which promote thermal comfort and energy efficiency.**
ADG – Natural cross-ventilation requirements	We support the need for adequate natural cross-ventilation to apartments. This is particularly important in a warming climate. Cross ventilation via opposing or adjacent orientations is optimal, however there are other design attributes that can also support good ventilation that are currently not encouraged by the ADG. For example, good single sided ventilation can be achieved in shallow depth rooms. A rule of thumb that can be applied is 2.5 times the space height – for a 2.7m ceiling this would be a maximum 6.8m depth. The ADG currently refers to a maximum depth of 8m. A shallower depth for single sided apartments could be used as an alternative for achieving good natural ventilation when dual aspect cannot be achieved.

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BASIX Tool Commentary	• We feel that the most important aspect is that BASIX should not reward gas. Currently, technologies that use gas achieve better results than if they're replaced with highly efficient electric equipment (e.g. gas boilers vs heat pumps for domestic hot water). BASIX must support the necessary transition to **electrification** to achieve the net zero targets set by the NSW state. • There should be an allowance to reward projects with off-site renewable energy sources • We recommend that full BASIX assessments should not be required until CC. The level of detail required for BASIX is often not available at DA, therefore the BASIX assessment needs revising at CC stage anyway. Other states only require NatHERS assessments at the equivalent of CC • An **increase in transparency** of calculations required behind the BASIX scores for projects including: a. Providing clarity around where targets come from and the logic behind targets i.e. where the percentage targets come from and why they are lower for taller buildings. b. An increase in transparency of the interlink between the scores of the tool sections e.g. that changing fixtures impacts 'water' and 'energy' sections and why. c. An update to the rainwater tank calculation. The current calculator is not clear in how required volumes are calculated and often results do not seem reasonable. This transparency will allow assessors to provide useful advice to home owners, developers, etc of how to improve the performance of their residential building. The tool at the moment relies on an element of trial and error. • An **update of technologies** within the market place and their associated variables e.g. car stackers and car lifts, internal lifts for houses and terraces, central thermal plant, cogeneration, trigeneration, etc. The latter items are covered within the current tool however do not allow sufficient flexibility for rating different designs. • **Integrate** assessment of building fabric and glazing performance to non-dwelling components of residential buildings e.g. common corridors, lobbies, etc. At present, this is covered under Section J and the analysis undertaken for this is not linked to BASIX analysis. • An inclusion for **bulk-file upload** for NatHERS e.g. CSV for heating and cooling loads. • **Consistency** could be improved across the tool e.g. LED lighting isn't always an option throughout; pool covers and pool rainwater reuse isn't always an option throughout; and appliance ratings aren't an option for single houses and townhouses. • **Improvement on usability** of tool. The current tool and pilot tool are slow to calculate, slow to use and is 'clunky'. • We support the intent for **improvement on the interface** of the tool. • Improvement on **channel of support** from BASIX. The current channel of support requires consultants to contact Service NSW and leave a message for a return phone call. This process typically takes weeks.

- Improvement on **technical capability** of BASIX support team. This can be done through regular education programmes.
- With the current **reassessment of heating and cooling loads**, we suggest that this is undertaken with respect to other states in Australia. It is worth noting that at present, dwellings in NSW can typically achieve compliance with the thermal comfort section with the equivalent of a NatHERS rating below 5 stars. In numerous states in Australia, the mandatory minimum in the NCC is 5 stars. We believe that BASIX should reflect the NCC requirements and be updated when there are updates to NCC.
- Providing **training for those utilising the BASIX** tool, with particular attention to those certifying without a NatHERS Thermal Performance Assessor accreditation. The current tool allows for certain ratings to be undertaken without prior training / accreditation, and training will help improve consistency in use of the tool.
- Providing **training for certifiers**. Based on our experience, certifiers often rely on BASIX consultants to provide certification for occupation certificate, however this is typically outside of our role.
- There should be consideration for how BASIX could be integrated with the NABERS Tool for Apartments: https://www.nabers.gov.au/apartment-buildings

  As NABERS can now be applied to apartment buildings, it would be great if the two tools could work together to either:

  a. Streamline the documentation/reporting process for residential developments
  b. Award extra points based on achievements or commitments that are set
  c. Develop a crosswalk to show how the tools differ/are connected

  The benchmarking or language could be updated so industry can more easily understand how residential developments are performing

Appendix A of the explanation of intended effect - ***Proposed Amendments to the Apartment Design Guide and SEPP 65- Part A2.3*** - **Commentary**	**Climate change means access to sunlight is less important and shading more important.** Could there be provision for **minimum levels of daylighting** (for example daylight factor calculation) **OR solar access** to help extend the intended amenity benefits of this particular design criteria? Beyond principle-based recommendations, we suggest references be provided showing the evidence basis for improving indoor air and light quality to support people's daily routines and sleep patterns. We make these observations: Direct sunlight on interior surfaces can cause glare, reducing visual quality. Daylight opportunity without direct sun however improves internal light levels and can improve energy efficiency through reduced electric lighting use, and does not carry the same issues of needing solar control in summer that enabling solar access creates. It is unclear how solar access promotes improved indoor air quality; if to do with mould and microbial control, this reason could be clearer. Regarding daily routines and sleep patterns, such circadian benefits derive in part from access to changing light levels associated with solar time of day and in part from direct retinal solar impingement. The rhythm of changing light through the day can still be rendered through effective daylighting without the need for direct sunlight.
	We agree with the proposal to **provide a guide to the number of apartments within 15° of North**.
	We agree that there needs to be **a clearer definition of natural cross-ventilation**. Additional to fresh air, the benefits of **air movement to improve occupant experience of thermal comfort in warm and hot conditions**, and which therefore can extend the amount of time where air conditioning does not need to be used, could be better articulated. **Natural cross ventilation will help to purge hot air** from a dwelling.
	We **agree to the proposal to require Ceiling fans**. As for natural cross-ventilation, there is added benefit to include ceiling fans where ceiling heights suit their use, by improving comfort and amenity, and improving liveability by helping to minimise energy use for air conditioning. The inclusion of fans further benefits the achievement of NatHERS thermal comfort targets which can assist the planning approval process. Make clear that fans, rather than promoting air flow from room to room, improve comfort in those rooms due to better movement of air on the skin for occupants. **Fans should not be used to the exclusion of natural cross-ventilation** however, as this would reduce access to fresh outdoor air.