

Submission on Solar Access for Design and Place SEPP

We are writing this submission in relation to only the solar access items of the Design and Place SEPP as we are an expert witness in this field and have appeared as such in the Land and Environment Court. We assist many different architects and government agencies in trying to achieve the solar targets of the Apartment Design Guide. We have also worked for Department of Industry and Planning NSW doing peer reviews of other solar submissions.

Our review of the EIE for the Design and Place SEPP has highlighted 4 main areas that solar access is affected:

1. Method of Measurement
2. Extending hours
3. Glass to Solid ratio (glare)
4. Overshadowing of neighbouring properties

We would argue that of the above, the most important item is the method of measurement. The way Solar Access is measured in NSW currently differs across each SEPP and in most LGA's DCP documents. The Design and Place SEPP EIE that is currently on exhibition discusses changes to the way that solar access is measured in SEPP 65. This is a chance to start to unify the solar access controls, so that regardless of the scale of building proposed (for example from dual occupancy to multi-residential apartments), the method of measurement of solar access is consistent.

Below is a summary of how solar access is currently measured in various documents:

Apartment Design Guide (SEPP 65).

The design criteria of Objective 4A-1 does not hold any method of measurement. There is a design guidance around a method of measurement, but the Department of Planning and Environment issued a practice note on this item. Currently the design guidance is the following:

To maximise the benefit to residents of direct sunlight within living rooms and private open spaces, a minimum of 1m² of direct sunlight, measured at 1m above floor level, is achieved for at least 15 minutes.

It then goes onto say the following:

*It quantifies an amount of sunlight that will be useable and provide real benefits to residents within the 2 or 3 hour period. It means that this amount of sunlight will be provided **at a point** within the 2 or 3 hour period so that a resident can for instance pull up a chair and read a book in the sunlight in their living room/private open space.*

At the end of the practice note, it then discusses measuring the quantity of sun on a vertical plane

The quantity of direct sunlight within the living room or private open space can be demonstrated, where required, on a vertical plane using the view from the sun technique.

Based off the above, there is no clear method of measurement.

SEPP Seniors

No method of measurement.

SEPP Affordable Rental Housing

No method of measurement.

Low Rise Housing Diversity Code

The Design Guide sets out the following method of measurement for solar access to both the dwelling and the neighbouring properties. The following is for a 3 hour period of sun:

Direct sunlight is achieved when 1m² of direct sunlight on the glass is achieved for at least 15 minutes. To satisfy 3 hours direct sunlight, 12 periods of 15 minutes will need to be achieved, however the periods do not need to be consecutive.

Within the same Design Guide, there is a 2 hour method of measurement:

Direct sunlight is achieved when 1m² of direct sunlight on the glass is achieved for at least 15 minutes. To satisfy 2 hours direct sunlight, 8 periods of 15 minutes will need to be achieved - however the periods do not need to be consecutive.

This is the only State based document that has a clear method of measurement for solar access. It also supports the LEC Planning Principle for Sunlight.

Local Government Areas DCP

Solar Access controls also vary at a local government level. Below we have investigated just a few of the many LGAs methods of measurement.

City of Sydney

City of Sydney DCP, Part 3.1.4.1 Provision (1) states the following:

Development sites and neighbouring dwellings are to achieve a minimum of 2 hours direct sunlight between 9am and 3pm on 21 June onto at least 1sqm of living room windows and at least 50% of the minimum amount of private open space.

The above 1m² for 2 hours between 9am and 3pm is the same methodology used in the Low Rise Housing Diversity Code. The 50% of POS requirement under City of Sydney contradicts the LEC Planning Principle of Sunlight. Strict mathematical formulas are removed in the 5th dot point of line 144. This control should be updated to remove the 50% requirement.

Northern Beaches Council (Pittwater DCP)

Windows to the principal living area of the proposal, and windows to the principal living area of adjoining dwellings, are to receive a minimum of 3 hours of sunlight between 9am and 3pm on June 21st (that is, to at least 50% of the glazed area of those windows).

The above contradicts the LEC Planning Principle at line 144 due to the 50% requirement of glazed windows.

Northern Beaches Council (Warringah DCP)

At least 50% of the required area of private open space of each dwelling and at least 50% of the required area of private open space of adjoining dwellings are to receive a minimum of 3 hours of sunlight between 9am and 3pm on June 21.

The above contradicts the LEC Planning Principle at line 144 due to the 50% requirement for private open space.

Canada Bay Council

Canada Bay references the old LEC Planning Principle of Parsonage as their method of measurement for solar access. That planning principle is no longer to be referenced, and instead the planning principle is from line 144 of *The Benevolent Society v Waverley Council* [2010] NSWLEC 1082.

Canada Bay references the old LEC Planning Principle references in Parsonage; so their method of measurement for solar access is outdated. That planning principle is no longer to be referenced, and instead the planning principle that is now referenced is from line 144 of *The Benevolent Society v Waverley Council* [2010] NSWLEC 1082. Canada Bay Council's method of measurement is therefore outdated; and it is likely they are not the only LGA to be implementing an outdated method of measurement.

The Design and Place SEPP has a chance to start to unify the method of measurement across NSW rather than introducing yet another unique measurement. We suggest that the Design and Place SEPP should state the following:

3 Hour compliance method of measurement:

“Direct sunlight is achieved when 1m² of direct sunlight on the glass is achieved for at least 15 minutes. To satisfy 3 hours direct sunlight, 12 periods of 15 minutes will need to be achieved, however the periods do not need to be consecutive.”

2 Hour compliance method of measurement:

“Direct sunlight is achieved when 1m² of direct sunlight on the glass is achieved for at least 15 minutes. To satisfy 2 hours direct sunlight, 8 periods of 15 minutes will need to be achieved – however the periods do not need to be consecutive.”

Regardless of trying to unify NSW Solar Access into one clear method of measurement, there are still issues with the proposal in the EIE to *“Limit east-west single-aspect units, and/or maximise units within 15 degrees of north”*. This can be explained through a look at a theoretical site in Sydney CBD that may have a tall building on the Northern Boundary, and has a dual frontage on the East and West to streets which are typically 50m apart. For a site such as this it is not beneficial to maximise units within 15 degrees of north as there will be minimal solar access due to the northern neighbouring building. Placing units on the East and West is the best outcome for urban planning and also for solar access. A test under the proposed EIE control would fail on this site and as such the 2 hour test that is currently stipulated in the ADG is a much better test to ensure that apartments have great amenity.

Even if the above does replace the Objective 4A-1 of the ADG, at a minimum it needs to specify **true** north rather than simply saying north as people may use magnetic north as it is often on surveys.

Part 2 – Extended Hours

Design and Place SEPP is investigating extending the hours of compliance to beyond 9am to 3pm. Whilst we agree that 9am to 3pm is not appropriate for every site there are issues with this being extended as a blanket rule across all of NSW. An example below is an 8am View from the Sun for a site in Gosford LGA, but this could be replicated in nearly every LGA in NSW. Due to the large changes in topography, at 8am there are a lot of sites that are overshadowed by natural topography that sometimes could be over 1km away. If the hours were to be extended from 8am to 4pm, there needs to be a much more rigorous test undertaken to ensure that enough context is modelled (for example a 1km radius from the site including all buildings and natural topography).

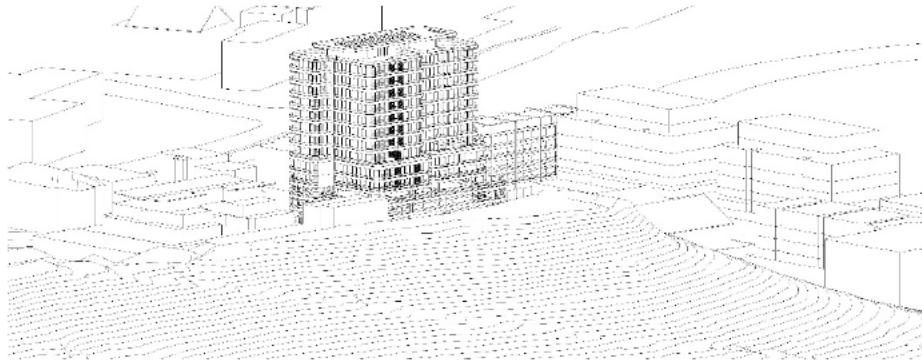


Image 1: View from Sun at 8am in Gosford showing impact Presidents Hill has on solar access.



Image 2: Sites overshadowed at 8am in Figure 1.

We agree that there are definitely cases where the extended hours of 8am to 4pm are relevant and should certainly be considered, but there needs to be a rigorous test put in place. The case that is most often referred to when trying to extend the hours to 8am–4pm is *Botany Development Pty Ltd v Council of the City of Botany Bay* [2014] NSWLEC 1073, at paras. 79 through 87. Here the commissioner granted the extended hours due the sites long east west axis with a street to the southern side which leads to a certain design outcome. He agreed that *“the sunlight available between 8 am and 4 pm, the orientation of the site and the design that seeks to maximise solar access to the northern face of the building.”* (line 87). Based off that, there are sites in NSW that would benefit from extended hours

Hours should NOT be extended as a blanket rule across NSW. This should only be done in very dense urban settings such as within the Central Business District of Sydney. Within the City of Sydney, there is a context model that is purchased from the City of Sydney which leads to highly accurate solar analysis. It would achieve a theoretical rule of 1km radius of the site being modelled.

It is our submission that the hours of solar access should remain limited to the 9am to 3pm window on a state-wide basis until a rigorous test is included regarding accuracy and distance of context modelling.

Part 3 – Glass to Solid Ratio (Glare)

It is stated in the Design and Place SEPP that

Provide additional guidance on achieving shading and glare control including assessment criteria, with practical guidance such as 50% glazing and no glass (or high-performance glazing) for the first metre from the floor

Whilst we agree glare can be an issue in some apartments, the above will not solve that problem. If we are looking at say the winter sun which is at 32 degrees altitude, a 1m no glass portion will not prevent glare for anything beyond the first 2m of the balcony (see diagram below). Usually, a north facing apartment will have a balcony in front of the living room and thus if the sun is at 32 degrees and there is a solid balustrade, it is only stopping the sun from reflecting off the floor of the first 2m of balcony. Typically the most effective way to combat glare is to change the reflectance of the floor and wall materials within the apartment as this has the greatest impact (gloss verse matte tiles/floorboards for example).

Putting limits on the amount of solid or glass surfaces is not the best way to combat glare within apartments.

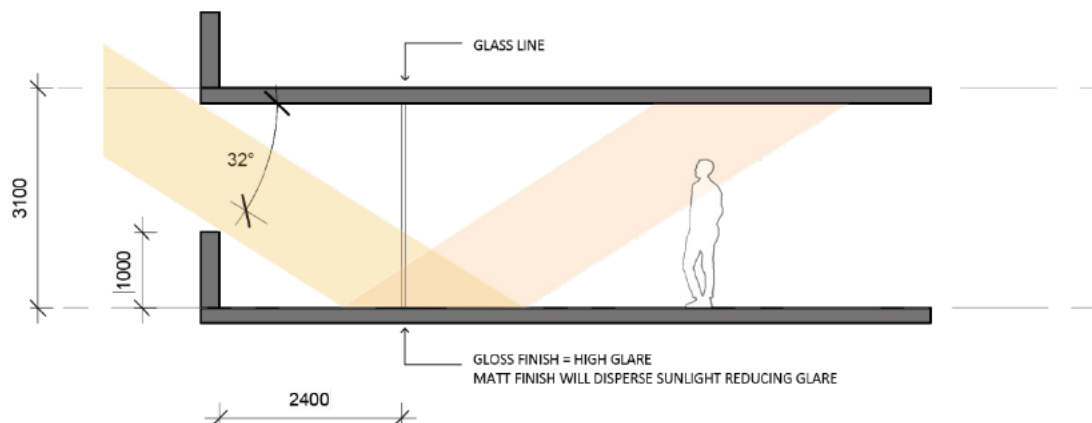


Image 3: Sketch showing even with a 1m solid upstand, glare occurs in apartments. This is best combatted by using matt surfaces.

Part 4 – Overshadowing

We agree that currently Objective 3B-2 of the ADG is not the best method to combat overshadowing. Every site is different and a blanket 20% rule does not work in all circumstances. We agree with any review of this but we ask for further information to be circulated as there is no current proposal of how this is to be amended.

We ask that similar to the Low Rise Housing Diversity Code, there is a clear method of measurement when looking at overshadowing of neighbouring properties. We again submit that the best method is the one contained in the Low Rise Housing Diversity Design Guide, and it will help to unify the NSW Solar Access Methods of Measurement.

Yours Sincerely,

Scott Walsh
Director



Walsh Analysis