

# SUTHERLAND LEP INDEPENDENT REVIEW

## WEBSITE SUBMISSION

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<b>Comment:</b>  In this submission are suggestions regarding changes or support for considerations of landscape area, building heights, floor space ratios, gross floor area and setbacks in Zone E4. The general principles could apply to all (residential) zones.  The suggestions here are intended to encourage high quality design of sustainable living spaces, generally promoting larger room areas and open plans that allow better practice for solar passive heating and the sustainable evolution of a building. It also encourages featuring additional green space that will assist in sustainable landscaping, energy efficiency and public amenity.	

## **Submission for independent review into the Draft SSLEP**

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### **A NOTE ON SUSTAINABLE DESIGN-EVOLUTION AS USED IN THIS DOCUMENT.**

Sustainable design-evolution is the ability of a design to evolve sustainably. When designing a building, the future use of that building should be taken into consideration. The building should be designed with some intention of making its evolution less disruptive to the environment, such as ensuring the main structure can be repurposed, renovated, allows for extension, etc, without needing to demolish any (or many) components or waste any materials. In this document, sustainable design-evolution is a factor (among others) for considering these suggestions.

I have considered all, though addressed particular objectives of the 2013 Draft LEP's "aims of plan". These aims are written as such:

- (a) To deliver the community's vision for Sutherland Shire by achieving an appropriate balance between development and management of the environment that will be ecologically sustainable, socially equitable and economically viable.
- (b) to establish a broad planning framework for controlling development, minimizing adverse impacts of development, protecting areas from inappropriate development and promoting a high standard of urban design,
- (c) to protect and enhance the amenity of residents, workers and visitors in all localities throughout Sutherland Shire,
- (d) to minimise the risk to life, property and the environment from hazards, particularly bushfire, flooding and climate change,
- (e) to concentrate development in localities with adequate infrastructure accessible to transport and centres.
- (f) to provide economic opportunities which respect people and nature,
- (g) to protect and enhance the natural environment and scenic quality of the Sutherland Shire through the retention and rehabilitation of wildlife habitats, wildlife corridors, bushland, foreshores and waterways,
- (h) to conserve, protect and enhance the environmental and cultural heritage of Sutherland Shire,
- (i) to provide leisure and recreation opportunities to suit the needs of the changing population,
- (j) to meet the future housing needs of the population of Sutherland Shire.

Some regulations in the Draft LEP do not adequately provide for these objectives.

I have also considered the council's "response to submissions" regarding the Draft DSSLEP (before the recent amendment) and will address some of these issues.

## Landscape area

The landscape area was reduced to 30% in the Draft LEP, though now increase back to 35%. This is acceptable and encouraged, however, considering contemporary lifestyles and knowledge of environmental effects, certain provisions should be made to allow better green management, with additional green space that will assist in sustainable landscaping, water retention, energy efficiency and public amenity.

This is of particular concern regarding land that suffers from a lack of quality soil depth. However the general principles are appropriate for all buildings.

Throughout The Shire, though particularly in the areas Zone E4 and E3 the foundations of many lots comprise mostly rock with little soil. Little grows well and where canopy trees have managed to grow many have proven dangerous, often slanting, with some falling prey to strong winds and shallow root systems. In other places the soil is so thin the grass will not grow easily.

This is likely due to natural soil erosion, which could be better controlled with structural retaining (reducing the load on storm-water catchments). In this vain, the following is suggested.

To combat soil erosion, help water retention and general encourage more manageable greenery the following allowances could provide a better outcome for the environment, the occupants comfort and security, as well as aid public amenity.

Firstly, allow an inclusion of up to 15% of the lot area to be included in the landscape area for effective structural landscaping that can improve or does not reduce the natural landscape's ability to provide quality vegetation and water retention. This includes the horizontal only measure of:

1. Permanent landscaping, at a ratio of 1:2, over any structure (basements, terraces, rooftops, walls etc), with a depth of (say) at least 200mm. *This would vastly improve water retention and in many cases add to public amenity.*
2. Planters and other build up retained sections, greater then (say) 600mm deep and over (say) 500ltr capacity, aimed at improving on the natural landscapes ability to grow plants safely and manage them effectively and provide better water retention.

Allowance could also be made for vertical gardens that face and can be seen from a public street, deemed to add to public amenity. This could be the total surface area at a ratio of 1:3 of:

3. A sustainable, vertical and sloping garden, position on a wall that can be seen from a public street and adds to public amenity.

The landscape area should not exclude:

1. Up to (say < 9 m<sup>2</sup>) of a decked area with at least 5mm gap between the boards and that has natural ground beneath with the ability to retain water. *This might encourage less concreting or paving.*
2. Any non-walled structure, build over natural rock, where there is no existing vegetation or water retention qualities. *This might encourage the building of such structures (gazebos, decks, ponds or even planters, etc) over land that is not naturally suited for growing vegetation.*
3. A part of a pool (up to 10m<sup>2</sup>) where the pool walls and/or floor is mostly (more than 50%) made from natural rock. *Encouraging the use of natural rock, thus less concrete or other unnatural materials.*

The use of green roofs and green terraces should be encouraged (to some degree) as a substitute for canopy trees, particularly gum trees. Large gum trees, within close proximity to housing have proven time and again to be a hazard (firstly, they house possums, secondly, they drop large

branches at will, thirdly, in a storm these large falling branches and the trees themselves are significantly more dangerous, and fourthly they are a fire hazard.

Green roofs are attractive, can be easily managed and can aid with energy efficiency. They can also support, but appropriately manage native fauna. They possess none of the hazards created by gum trees (and other shallow rooted canopy trees). The appropriate use of canopy trees, for effective shading (thus aiding energy efficiency), and where necessary for feeding native fauna is encouraged.

The current cost of building a green roof will prevent a flourish of change, however for new developments, which inevitably end up removing canopy trees, this is a good incentive for developers to add to public amenity and improve on the natural landscape's qualities for water retention and manageable growth.

These suggestions regarding landscape area meet and improve on the "aims of plan":

- (a) To deliver the community's vision for Sutherland Shire by achieving an appropriate balance between development and management of the environment that will be ecologically sustainable, socially equitable and economically viable.
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These suggestions work with the landowner and developer, providing incentive to achieve a more sustainable outcome.

In relation to the response to submissions regarding landscape area, 8. *Floor Space Ratio and Landscape Area*, on page 1 it is written:

"The submissions generally object to the proposed increase in the permissible floor space ratio and proposed decrease in the required landscape area in the low density residential areas. The submissions identify that the combined effect of the proposed changes will be '*much bigger buildings and much less vegetation – particularly native vegetation*'. The underlying theme in all the submissions is that the proposed changes will fundamentally change the character and attractiveness of the Sutherland Shire – '*the green Sutherland Shire will no longer be and this is really bad news for the quality of life here for both humans and native wildlife*'."

In response to this, these suggestions encourage vegetation growth and improvements to the natural landscape's inadequacies. They encourage landscaping solutions that improve public amenity despite the size of the building. The character may change, but the attractiveness is maintain or perhaps even improved.

This also addresses the section on "water quality impacts" (page 6), which states:

"Increased hard surfaces result in increased rainfall runoff which mobilises more organic matter and pollutants into the stormwater system."

These suggestions encourage more soft surfaces (on the buildings' terraces or roof tops), which can retain water for longer, allowing greater evaporation and less runoff.

## Building Heights

It has been proposed that building heights, in low density zones, be reduced to 8.5m from 9m in the amended DSSLEP. This was in response to fears (as outline in the council's response to submissions in 9. *Building Heights and Amenity Impacts in the Low and Medium Density zones* of blockish style developments, enabling three story buildings with flat roofs that would dominate the streetscape and detract from the scenic quality of the waterway. There also were concerns of over shadowing and privacy.

These concerns are founded, however lowering the height limit to 8.5m is not an ideal solution.

Council states:

"It is considered that an 8.5m height limit supports two storey development consistent with the suburban character of much of the Shire's residential areas. This local character has been maintained through consistent enforcement of development controls, including the two storey height limit. An 8.5m height control would be more effective in limiting the scale of development. An 8.5m height limit also encourages development to be built close to natural ground level, following the topography of the land."

An 8.5m height limit would not be effective in limiting the scale of development, only in limiting effective design. It would still allow blockish style development, only at 8.5m, with lower ceiling heights (between 2.4 and 2.6m) or excavation.

It also has negligible impact on over shadowing (from 9m). Council states on Page 3:

"It is recognised that an 8.5m building envelope with no pitched roof will also create overshadowing, however an 8.5m building envelope does not comfortably fit a three storey building and is therefore less likely to occur."

The fact is, if someone wants a three-story house they will build it and they can. Furthermore they could build a two-story house with very height ceilings, also taking up the entire building envelop.

The 8.5m limitation might however reduce the ability to create green roofs at top level. Green roofs require a greater 'slab' height – the slab including an adequate soil bed would be about 500mm+.

Furthermore, encouraging a two-story development also encourages great use of the land and hence a reduction in landscape area and potential increased hard surfaces, affecting water quality – issues discussed in the previous section.

Rather than reduce the height limit to 8.5m, leave it at 9m, however introduce the following conditions.

1. 60% of the roof's surface and buildings extremities, measured horizontally (in plan view) must be below a height of 8m. 40% may exceed 8m but must be below 9m. At least half of this 40% must be located on the northern half of the building.
2. Not more than 40% of a buildings street front façade exceeding 7.5m can be build within 900mm of the building line.  
*This encourages gradient and/or multi-level roof designs, reducing overshadowing and adding to public amenity and the quality of design.*

These conditions address all the concerns of public amenity, whilst allowing for partial 3-story development. It also encourages reduced overshadowing.

The issue not addressed is privacy, however this is not as great a concern as it might seem, particularly in zones E4 and E3, where the sites are sloping towards the waterfront. Most lots including internal lots in the E4 zone look down the hillside and overlook the water, rarely seeing into someone's backyard. It is easier to see into someone's backyard from the other side of the bay. This restriction might be effective in a situation where the lots are on level ground with their back yards adjacent, however this is not the case in much of zone E4. If such an issue arises, it should be dealt with on a case-by-case basis via neighbour protests, as would issues of blocked views.

In light of this for zones E4 and E3, the amendment should be repealed and the height limit left at 9m, with the suggested conditions applying. Other low-density zones could apply for exemption on a case-by-case basis.

Should these suggestions be considered too restrictive, then I propose the height limit remain at 9m, as the reduction to 8.5m has negligible effect, except to reduce quality design outcomes.

### **Internal Block Building Heights**

Dwellings, including dual occupancies on internal lots should have a height limit of 6.2m (up from 5.4m) and the restriction of single story removed.

The current restrictions are mainly to reduce overlooking, (see clause 4.3.1.a.c) however, as stated (3 paragraphs) above, most lots including internal lots in the E4 zone look down the hillside and overlook the water, rarely seeing into someone's backyard.

Again, if an issue arises, it should be dealt with on a case-by-case basis via neighbour protests, as would issues of blocked views. In most cases, the rise on 800mm would have little effect on blocking views.

In general the 5.4m, single story restriction is not effective or necessary. It merely inhibits the ability of a house to take full advantage of its aspect and for its design evolution to be sustainable, thus reducing the quality and effectiveness of housing in the area.

Perhaps most importantly, in order to fit an adequate house on an internal lot, it encourages developers to build more at ground level and thus reduced landscape area. On the flip side, it may actually encourage them to use the landscaping features as suggested above in the landscape area section. However in the interest of achieving the best sustainable outcome, a 6.2m height limit is preferred.

The 6.2m height allows for a better quality, sustainable, two-story dwelling with a flat (potentially green) roof. The 200mm over 6m is to allow for a green roof (improving public amenity) and/or shallow slant.

These suggestions regarding building heights, resolve the issues brought forth in the previous submission to the first Draft LEP2013 and meet and improve on the "aims of plan":

- (a) To deliver the community's vision for Sutherland Shire by achieving an appropriate balance between development and management of the environment that will be ecologically sustainable, socially equitable and economically viable.
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## Floor space ratio

In general floor space ratio (FSR) needs to be looked at in an entirely different way. Its (primary) *most consequential* purpose is (as should be) for control over population density, which is essential for civil maintenance (see clauses 4.4.c.iii & iv below). The other objectives are subjective and while important, matters of good design, that which these suggestion encourage.

The objective of clause 4.4 *Floor space ratio* states:

- (a) to ensure that development is in keeping with the characteristics of the site and the local area,
- (b) to ensure that the bulk and scale of new buildings is compatible with the context of the locality,
- (c) to establish the maximum development density and intensity of land use, taking into account:
  - (i) the environmental constraints and values of the site, and
  - (ii) the amenity of adjoining development and the public domain, and
  - (iii) the availability of infrastructure to service that site and
  - (iv) the capacity of the road network to accommodate the vehicle and pedestrian traffic the development will generate, and
  - (v) the retention of the scenic, visual, and landscape qualities of the area.

Bulk and scale is inevitable when allowing for population growth, however it can be managed more appropriately through landscape areas, building heights and setbacks (as suggested in this document). Regulation over the internal space of a home should allow freedom enough to design a holistically sustainable environment. The general restrictions of floor space ratio do not and thus can lead to lower standards of living.

A blanket percentage of a lot area is not always appropriate, particularly on smaller lots. A smaller lot should not necessarily (to some degree) equate to a small home. There is a general lifestyle trend to want smaller lots (which are easier to maintain) but still want large (entertainment friendly) houses. The floor space ratio is restrictive in this manner and thus leads to a compromise on lifestyle – usually resulting in either smaller rooms and/or smaller living space (as it is the general consensus that the number of bedrooms sell a house and most Australians will opt for the investment value over lifestyle value).

The issue of floor space ratio is of particular concern in the more market sensitive areas (Such as E4 and E3). It has always been a tactic of real estate agents to approach residents about selling their properties. Though at this time, while there is an assumption that values are down, they are giving very low “market” values. This is because the ones buying them are developers. Developers, whose intention is to make money (understandably), will put up a simple box (perhaps dressed with a fancy façade), and run. We can’t expect them to do anything different and resultantly we end up further devaluing the area. Suggestions throughout this document, however, encourage developers to think outside the box.

Making a change in the way the FSR and gross floor area (GFA) are calculated (as suggested below), will, most importantly, give homeowners the opportunity to make quality, sustainable additions to their homes. This potential alone will likely lift the market (which should have a flow-on effect for the whole community). If developers get the opportunity to buy, they will need to pay more. Ideally, this would lead to developers building better homes, so that they can sell them for more. This ideal however needs incentive. The current FSR restriction will not suffice. The proposed changes below, would give developers the scope to produce quality housing (using quality site-specific designs) and thus all in all we end up with better quality house that is holistically sustainable – environmentally, psychologically, culturally and financially.

The proposed changes could be limited to particular (low and medium density) zones, however, in the interest of Shire-wide sustainability it should apply to all residential zones. The main issue here would be affordable housing. We most certainly do not want to prevent developers from

building affordable house, especially near the town centres, however, the intention of these changes is to encourage designers and developers to think about the long-term future – sustainable design-evolution. Affordable does not need to mean small, and small (in the long-run) is generally not sustainable – that is large rooms, apartments or whole levels, can be made smaller in the future if necessary (though seldom necessary in Australia), but small spaces are a lot more difficult to make this larger, without knocking down and starting again. If we build (what we can foresee) as long-term appropriate in the first place, then we do not need to redevelop in the near future, and if there is a need, make it easy and future-friendly to our environment. This is the ultimate sustainability – reusability.

The proposed changes whilst sensitive to sustainability issues have the primary objective of control over (unsustainable) population density, (particularly in low density areas), but allowing for sustainable growth.

The current FSR regulation and GFA calculation allows for a large number of bedrooms and small living areas, which is unacceptable for any residential area in Australia let-alone The Shires low-density areas. I have seen this low standard in many of the lower-GFA project homes and it is unfortunate that it is creeping into our neighbourhood. This is not only contrary to the primary objective but also to issues of quality and sustainable design. Houses with large rooms and quality living spaces should be encouraged. Of course, if owners ultimately want to live in small rooms it is still their choice (within the BCA standards), however rarely is it a want and barely a choice; rather it is a necessary restraint due to poor product availability at reasonably cost. (Whilst a separate issue, it is important to point out that many builders will charge the same per m<sup>2</sup>, regardless of materials, and, if the buzzword, “sustainability” is uttered the charge (but not cost) usually increases – this need to be addressed).

An FSR to a degree is a valuable and important tool to ensure the entire building envelope is not consumed just because it can be, however, to allow and encourage better sustainable design, it is suggested here to be more lenient with the **gross floor area** (GFA) calculation. Hence the FSR could be kept as currently proposed in the Draft LEP (or even perhaps slightly reduced), but the gross floor area calculation could be amended.

The idea is to essentially include only the useable, liveable space of a residential building and in the process reward owners/developers for sustainable design. The follow is perhaps complex, but then, what is simple about the LEP. Importantly, the following are not dictatorial, but allow for choice.

It is suggested that the **gross floor area** calculation be amended as follows. Including the current exclusions from the gross floor area, we could also exclude:

1. Up to 20m<sup>2</sup> of any open area (including mezzanines, on-level landings and communal living spaces) on a level above that has views to a level below where the void is a larger then the open area in question. *This should encouraging quality, sustainable design and help to provide light and solar passive heating to necessary areas.*
2. Up to 10m<sup>2</sup> for dedicated storage areas less then 2401mm wide directly attached to and with direct access from a utility area, parking area, in a basement or attic, or from the main entry foyer.
3. Up to 5m<sup>2</sup> for a walk-in pantry (attached to the kitchen) and up to 10m<sup>2</sup> for space occupied by kitchen fixtures (cabinets and kitchen bench area, include spaces, within the cabinet configuration, for 2 on-ground, domestic, major appliances) of the main kitchen and directly attached secondary (butler) kitchen only. *Only include useable walking space in kitchen, thus encouraging the use of quality fixtures and a highly usable layout with much storage.*
4. Up to 5m<sup>2</sup> for space occupied by laundry fixtures (but not space occupied by appliances). *Discouraging the use of more or larger appliances the necessary.*



5. Up to  $4\text{m}^2$  for a server, media control room/area or other justifiable utility room.
6. 2 ensuite bathrooms – up to  $10\text{m}^2$  for main and  $6\text{m}^2$  for secondary bedroom.
7. Linen cupboards and fixed robes, including walk-ins - up to  $5\text{m}^2$  per secondary bedroom or  $10\text{m}^2$  for main bedroom. (Walk-in robes must be access directly from within a bedroom).
8. Up to the lesser of 50m or 10% of the total GFA for horizontal circulation areas (foyers, corridors, bridges, on-level landings) less than 1801mm wide or 2401mm if storage cupboards and/or interior design fixtures reduce it to less than an 1801mm wide walking space, except:
  - a. A walled corridor in which the primary purpose is to connecting two communal living spaces.
  - b. Corridors that connect more than 3 adjacent rooms
9. Any internal structural wall or column or any necessary utility wall or column (such as a bathroom wall or laundry shoot).
10. Up to a total of 50% of the FSR.

In the interest of people density, ultimately it is the sleeping spaces that are of concern. It might be more simply to exclude all non-habitable rooms and only include a percentage of communal living spaces; this however would not necessary encourage good design. The idea of the condition above is to reward a design for including areas and features that aid sustainability and increase quality of live.

If anyone is wondering what some of the exclusions have to do with sustainability, consider holistic sustainability – this is to what I am referring. Briefly, this considers not only natural environmental issues, it also considers liveability, wealth, (the occupant's) culture and personal psychology and more than this. It is about creating a space where both nature and the occupants have the opportunity to be as happy as they can be for as long as they can be.

Accompany the above with this minimum room calculation sizes. When calculating the gross floor area, the following minimum sizes must be used for calculation:

1. For any (clear) bedroom space (excluding built-in/walk-in robes and ensuites) under  $10\text{m}^2$  a minimum of  $10\text{m}^2$  must be used.
2. For any (enclosed) living room or common area under  $16\text{m}^2$  a minimum of  $16\text{m}^2$  must be used.
3. If the total of all bedroom areas, including robes is greater than the total of all internal living areas, including the kitchen (but excluding circulation areas), than this greater total must be used in the calculation for the total living areas.

In the case of (equally sized) dual occupancies (hence not secondary dwellings), attached or detached, the calculation can be applied independently for each dwelling.

The idea of this gross floor area suggestion is to reward occupants, or developers, with greater floor-space, if they use it in a way that is appropriate for liveability and sustainability. It also removes the blanket percentage, and allows better quality (more sustainable) development on smaller lots. The FSR will still relate the to size of the lot, however the GFA calculation will allow an independent increase in size base on merit awarded through good quality, sustainably design.

**To demonstrate this let's look at the most extreme example - a small lot**, say half a dual occupancy, with dedicated land size of  $350\text{m}^2$  (the minimum achievable). (Most lots in the low-density areas will be much larger than this and do not fit dual occupancies). If we consider Zone E4 and lower the FSR back to 0.45:1, this gives a FSR or  $157.5\text{m}^2$ .

In the interest of encouraging holistic sustainability, this is probable too small for a quality and what should be luxury home in the low-density areas of the shire. It barely allows for 3

bedrooms, when we should be encouraging 4 - including a guess bed or study. (Bare in mind, this is about encouraging not dictating what is good for holistic sustainability. People will be inhibited by what they can afford, but at least they will have a better potential investment – aiding financial sustainability).

If the designer incorporated all possible fixed-area conditions of the GFA calculation the total would be 70m<sup>2</sup>.

Other considerations would depend on the no of bedrooms and FSR and total GFA.

If we allowed for 4 bedrooms with walk-in robes, than this total would the 25m<sup>2</sup>.

This gives a total of 95m<sup>2</sup>.

We can allow another 10% of the GFA, which won't be know until the design is roughed out. However, at this stage it is inconsequential as we have exceeded the final condition, which limits the total of these exclusions to 50% of the FSR.

So for this example the maximum GFA could be  $157.5 + 78.75 = 236.25\text{m}^2$ . This is still a little small for a 4 bed home (considering minimum room sizes), however very reasonable to allow for a well designed, highly liveable, and holistically sustainable 3 bed home. (This is not to say that a good sustainable home cannot be design with less, only that this calculation allows for greater opportunity over a range of site conditions). Using this GFA calculation, a reasonable 4 bedder of with 270m<sup>2</sup> could be achieved with on 400m<sup>2</sup> lot.

**Looking at another example for and average sized E4 zoned lot of say 800m<sup>2</sup>.** The FSR of lowed to 0.45:1 would allow for a 360m<sup>2</sup> house. Although already fairly large, these GFA calculation would encourage the design to favour inter proportion over number of rooms.

The total GFA cannot reach the total FSR of the previous example, as the limits contain it - the total of the fixed-area exclusions is still fixed at 95m<sup>2</sup>. If this is maxed out (at 455m<sup>2</sup>), than a further 455x10% can be added for Horizontal circulation, making the total of 500.5m<sup>2</sup>.

For lots around this size and greater, the cost factor and sensibilities will prevent many people from achieve the maximums, however in the cases where it is pushed, it is not extreme and importantly encourages quality and sustainability in the layout.

In the interest of future population growth, this definition encourages design principles that allow for sustainable design-evolution, promoting large rooms that in the future could be shared or very large rooms that could be divided. This is in line with the council's objectives to support a growing community, however it does it in such a way that is sustainable and allows for gradual and manageable growth. It also supports cultural diversity – aiming to accommodate a wide range of lifestyles.

One main concern with this change of definition is that someone could change the internal layout after final inspection. Whilst this is possible, it is highly unlikely. The cost of buying land in this area and cost of development, makes immediate (illegal) redevelopment practically absurd and anyone who has the money for a new development in this area, in any case, is unlikely to want a house with many small rooms.

Ultimately, no one can completely control how many people are sleeping inside a house. Neither this method nor the FSR will completely control this. However, this method goes further to enhance the quality of design hence encouraging a higher standard of living for a diverse range of occupants.

Having a blanket FSR does not do anything to promote sustainability. It actually allows currently smaller unsustainable housing to be larger unsustainable housing.

Although council and the community want larger homes, surely they want them to be sustainable. The council addresses this concern in response to submissions to the draft LEP2013, stating in 8. *Floor Space Ratio and Landscape Area*, on Page 8:

A response is needed that accommodates the demand for larger homes while addressing the concerns relating to the reduction in landscape area.

Disappointingly, it goes on to compare project home sizes to what is appropriate. If that is the standard we are all doomed.

This GFA calculation suggestion, along with other suggestions in this document, do accommodate for larger homes appropriately and fairly and also encourage better quality and better use of landscape areas, increasing them sustainability.

Regarding the aims of plan, this GFA calculation suggestion supports and/or improves upon the LEP's ability:

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In general, I support the moderation of bulk and scale, but only to the extent that it helps achieve the best possible sustainable outcome for the owner and affected neighbours. With residential properties, public amenity is secondary, it is subjective and should mostly pertain to culturally offensive gestures or building significantly out of character or rather the conceivable direction of character.

## Setbacks

All regulation in general should favour achieving the most sustainable outcome and, if necessary, further exemptions should be giving to buildings that stretch the regulations in order to achieve favourable (holistic) sustainability, especially when using the most basic of sustainable principles – the position and orientation of rooms in a building to allow and control the best quality of solar access.

Particular regulation, (not cover in the Draft LEP), such is setbacks restrict control over quality solar access and this can make a building less energy efficient and comfortable. (This is of particular concern when designing for narrow east-west running properties, where we want to maximise northern exposure).

In these situations, the current regulations make it difficult to design adequate solar access. A building designer will usually design a house as large as is allow (as requested by most clients or developers). To fit this within the building envelop, we usually end up with boxy housing, side by side and with minimal solar access (particularly between 9am and 2pm during winter) – simply complying with regulation, but not challenging it for a better sustainable outcome. This is not only detrimental for sustainability, but also public amenity.

Setbacks are of course necessary, however, they need to be more malleable for residential zones.

The general side-boundary setback of 900mm should comply for all zones and should comply for a height up to 6m. For heights over 6m a setback of 2.1m should apply. However, further provisions should be introduced to ensure the best solar access can be designed for different lot orientations, particularly for (near) east-west running blocks.

The 900mm (second-story, 6m height limit) setback, should be compensated by a larger setback on the opposite side of the lot, but again in a way that makes the design options malleable. To achieve this we could have a combined northern and southern setback of 3 meters, measured along the north-south axis. For example, one could have a 900mm setback on the south but must have 2100mm on the north, or vice verse. This allows for better control over solar access design for lots that are not exactly on the compass – which is just about all.

This combined with the building height suggestions in this document, enables great potential for sustainable design.

For a narrow, north-south (or near enough) running lot, the 900mm setbacks should be allowed at both (east and west) boundaries, to enable solar access to more of the building.

The rear boundary setback (for all zones, except along the waterfront) should be 3m for heights up to 4.4m and 8m for heights up to the limit.

The purpose of this is not to allow extra bulk and scale, but rather allow a design that can take better advantage of solar access. For narrow, east-west running lots, this would allow for more private open space to be located on the northern side and better solar access to the building.

To further aid this, there should not be a dimensional restriction (currently 6x6m) for “primary area of useable private open space at ground level.” Rather it could be a 36m<sup>2</sup> area, bounded within a shape of less than 5 sides (including arcs), with two adjoining sides at least 4m and using no external obtuse angles. This would allow for variation in shape and thus better design choices for solar access, while still maintaining a reasonable private open space. This space should not need to be all on level ground, (it could be sloped or have a retaining wall within), however at least 16m<sup>2</sup> should be level flat ground. It should not need to be at ground level, it could be on a terrace or rooftop, but should be able to adequately support (say 20m<sup>2</sup>) of

vegetation. For example, for houses that have green roofs or terraces, a usable 36m<sup>2</sup> area with 20m<sup>2</sup> of vegetation will comply.

Visual representations of the potential (extreme) effects of these developments are shown on the following page. These show the shading and solar access on 21<sup>st</sup> Jun, the shortest winter day. Note, the summer sun (not shown) can be controlled by shading. The main issue is getting at least 4 (or preferably more) hours of winter sun into as many rooms as possible.

### **Intended Outcome of Proposals**

The intended outcome of the proposals in this document is to allow and encourage good quality, sustainable design throughout the community, (though particularly aimed at lower-density zones).

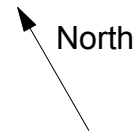
The scope of these restrictions and allowances, gives all owners and developers the opportunity to build appropriate housing for their needs. Developers have the same opportunity to build affordable housing in higher-density zone, though encourage to consider sustainable design. Smaller developers/builders and land owners, (perhaps even project home builders) are encouraged to create buildings that are more sustainable.

The specific allowance of the gross floor area (GFA) calculation provides the scope to put a (currently and unfortunately) more affordable, but perhaps less sustainable house on their lot, but in doing so, will need to fit into a lower floor space ratio (FSR). For example, in a low-density zone if one wished to squeeze a 5 bed house on a small block (say 500m<sup>2</sup>), the absence of quality inclusions, such as walk-ins, ensuites and storage areas, might mean they are restricted to 0.45:1 (down from the currently proposed 0.5:1) or less if its proportions are small then the minimums, making it difficult to fit such a house, but still possible if that is what the owner really wants. The calculation encourages building a large proportioned 4 bedroom house, with greater potential for holistic sustainability.

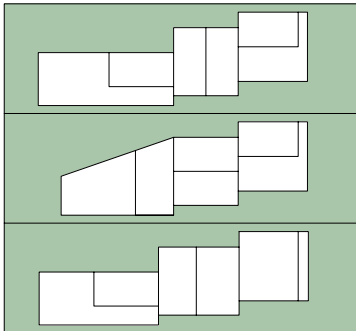
The other suggestions regarding landscape area, building heights, and setbacks, constrain the external proportion appropriately so as to eliminate bulking looking buildings (thus reduced amenity), and allow for good design variety, better sustainable opportunities and additional green space.

There may be other opportunities, not mentioned here, within the LEP that can also aid with holistic sustainable progression (honouring both humane and other natural environments) and these should be encouraged.

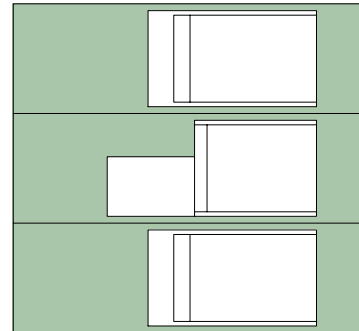
## Example shadow diagrams for near east-west running lot



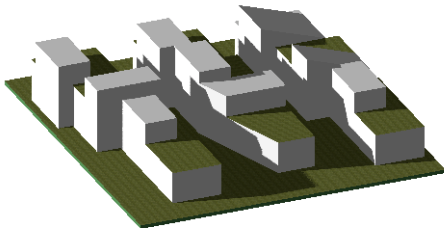
For demonstration these massing models represent buildings encompassing much of the building envelop. Although it is likely many will be smaller, it is possible to encompass the entire building envelop, despite the FSR, as there are no restrictions on ceiling heights.



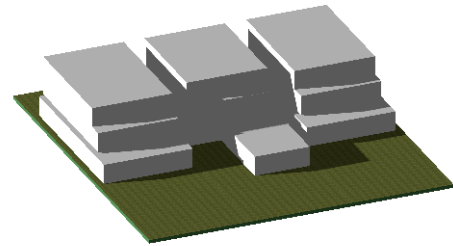
Potentially sustainable designs, complying with my suggestions.



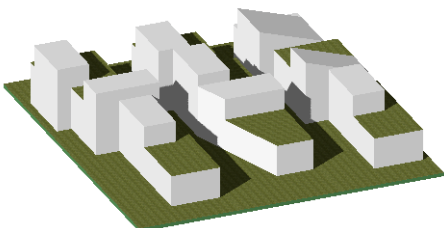
Likely developments from draft LEP, with 8.5 building heights and current setbacks.



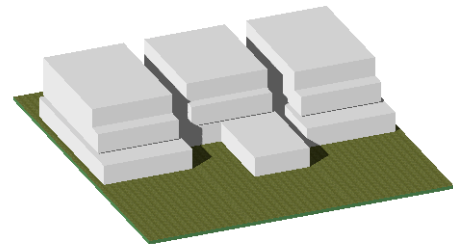
0900 Winter Solstice. Whilst there is little light hitting the ground at 9am, importantly there is access for light into many rooms - including lower levels



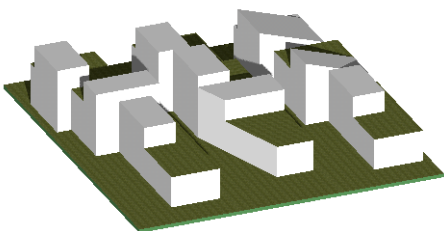
0900 Winter Solstice. Whilst the yard receives light at 9am there is little access for light into any room.



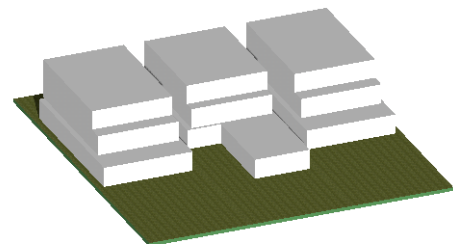
1200 Winter Solstice. There is significant access for light into every room as well as some light access to the yard.



1200 Winter Solstice. Whilst there is some solar access for northern rooms the only significant access is for western rooms and the yard.



1500 Winter Solstice. There is significant access for light into every room as well as light significant access to the yard.



1500 Winter Solstice. There is only light access for western rooms and the yard.

Note: the sun has access to many rooms, front or back of house.

housing like these is more appropriate for north-south running blocks.

## **General comments**

### **Basix:**

Given the purpose of this tool, it should support sustainability. Thus, given that many existing houses are not so sustainable, blockish and positioned at with the bulk towards the front of the lot, basix should support and regulate according to potential future outcomes rather than existing.

When comparing a new development to the neighbour's lot, regulations should relate to what could be build (in the best interest of sustainability) on the neighbour's lot (particularly the southern neighbour). Basix should make the developers (and designers) consider a situation where if the same design was also build on the northern, eastern and western neighbour's lots, how would it affect them and also if the same design was used on the southern lot how would it be affected. This means the developer and designer is not restricted by someone else bad design decision, but rather can design for a better future.

If the neighbour's house is already of good sustainable design, then they should consider the effects as build. If it is not, then eventually it will properly be rebuild and when it is, their neighbour (the current development) will be optimal, thus creating the potential for all buildings to be highly sustainable.

### **Fencing:**

If privacy is such an issue that we consider it in restricting the height of buildings, than why is fencing at ground level restricted to a relatively low maximum. A maximum height is currently 1800mm, which means on a slightly elevated platform (a deck) it is easy to see over a fence. It would make more sense (on non-slopping lots) to have a minimum at 1800 (behind the building line) and maximum of 2100 (still allowing solar access to non-habitable rooms). This might eliminate the need for placing further partitioning in from the boundary. On slopping blocks where overlooking is not an issue and where the outlook might be effected, this regulation can be exempt or reconfigured.

### **Sustainable Population Growth:**

In general I agree with concentrating development in localities with adequate infrastructure accessible to transport and centres. However, as infrastructure and transport in The Shire is generally inadequate, high population growth will create significant problems.

Before we think about local population growth we need to provide support for this growth. As it is difficult the upgrade the roads and transport systems to provide easier access to the Sydney CBD or other major business hubs, we need to create our own business hub. Any increase in residential density is ludicrous without an increase in local jobs.

Development should not only be concentrated at town centres, but should be concentrating on supporting commercial and industrial growth. If there are any opportunities for decentralisation (away from Sydney CBD), The Shire should jump on them.

The Shire does not have adequate infrastructure to get people in and out, therefore give them a reason to stay. The Shire has a large population of professionals that travel into Sydney for work. We need to provide appropriate local resources to encourage government departments as well as large and small business to set up shop in appropriate areas of the shire giving residents access to more jobs and business opportunities in their local community.