ST LEONARDS SOUTH

REPORT TO COUNCIL

REVIEW OF CHARRETTE & DPIE REPORT

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1. Executive Summary

1.1 Introduction

St Leonards South is a precinct of approximately 6.5 hectares located south of the Pacific Highway and west of the T1 North Shore rail line, bound by Park Road, Marshall Avenue, River Road, and Canberra Avenue (and extending to Greenwich Road in the west). (Refer to figure 1.1).

Planning for the area has a long history with Lane Cove Council first proposing the opportunity for redevelopment of the area in 2012. Council's intention for the development of the area was to redevelop for high density Transit Oriented Residential Development.

The south sloping nature of the area is challenging. It is important to ensure that the development of the site can retain a sense of the tree lined streets that contribute strongly to the character of the area. It is also critical to ensure great public spaces are created that encourage walking.

Council's Masterplan and DCP proposed high standards of liveability and walkability with housing providing diversity and density (and desirably affordability), amenity, placemaking and which is well served by community infrastructure.

The Department has identified principles that it believes should guide the planning for the area in its draft 2036 Plan, and asked the IPC, to look at and provide advice on Council's proposal against these principles. The IPC's advice was released on 24 July 2019.

To bring together the advice of the IPC and to ensure Council had a clear set of recommendations to progress its planning for St Leonards South, the Department, the Government Architect NSW (GANSW), and State Design Review Panel (SDRP) members joined with representatives of Lane Cove Council in a collaborative full-day design charrette.

A charrette was held on 11 November 2019 and allowed the Department to take the advice of urban design experts and examine the changes which might be appropriate to the Council's planning for St Leonards South.

The Department has evaluated and supports the recommendations from the charrette and encourages Council to contemplate implementing these as it considers the next steps for its planning proposal. This report is Councils response to the Charrette Report.

Figure 1.1: St Leonards South Planning Proposal Area

1.2 In response to the IPC comments we found the following:

The amount (and distribution) of public open space as proposed by Council is more than adequate particularly because:

- It is well connected by East-West (E-W) pedestrian links
- It optimises potential for incorporating road closures
- Council's planning proposal provides in addition a very high level of communal open space in Green Spines (see Landscape Master Plan (LMP)).

The existing character of the precinct is based on single family dwellings/detached cottages. The Planning Proposal (in line with State Policy) is to create high density Transit-Oriented Development. This will inevitably be of different character to existing family dwellings.

Council has submitted a planning proposal (figure 1.2, 1.3, & 1.4) which follows the principles of Transit-Oriented Development (State Policy) and facilitates dense residential apartment development around the St Leonards Railway Station and Town Centre (See Chapter 2.0 & Appendices for principles of Transit-Oriented Development).

The Planning Proposal proposed a strong mix of different sized apartments. Town houses and single family dwellings are simply not viable in the evolving context. However, townhouse form may front development along Canberra Ave.

The topography is problematic. Nevertheless, the Planning Proposal has created a very walkable precinct.

The transition to the west is considered appropriate for the following reasons:

- Land west of Park Road is likely to be up-zoned and redeveloped at some stage in the future
- Sites on the west side of Park Road (north end) are significantly elevated
- Park Road has very strong avenue planting which effectively screens one side of the street from the other. This will be further enhanced by further trees planted in build-outs in parking lanes.

Additional overshadowing of Newlands Park is partially ameliorated by shadows of existing trees along Canberra Avenue and by shade structure over children's playground.

Overshadowing of Council proposed new park is limited by the following measures:

- North-South buildings to street alignment with generous space between (Green Spines)
- Careful positioning of taller building components

Cumulative Traffic issues have been fully explored in Council's Traffic Study and endorsed by NSW Roads and Maritime Services.

Heritage Items are elevated above the street and will not be overlooked or dominated by any development on the East side of the street.

Figure 1.2: St Leonards South Planning Proposal
Note: north-south green spines located to the rear of the residential lots are private and for resident use only.

Figure 1.3: St Leonards South Planning Proposal – Built Form Envelope

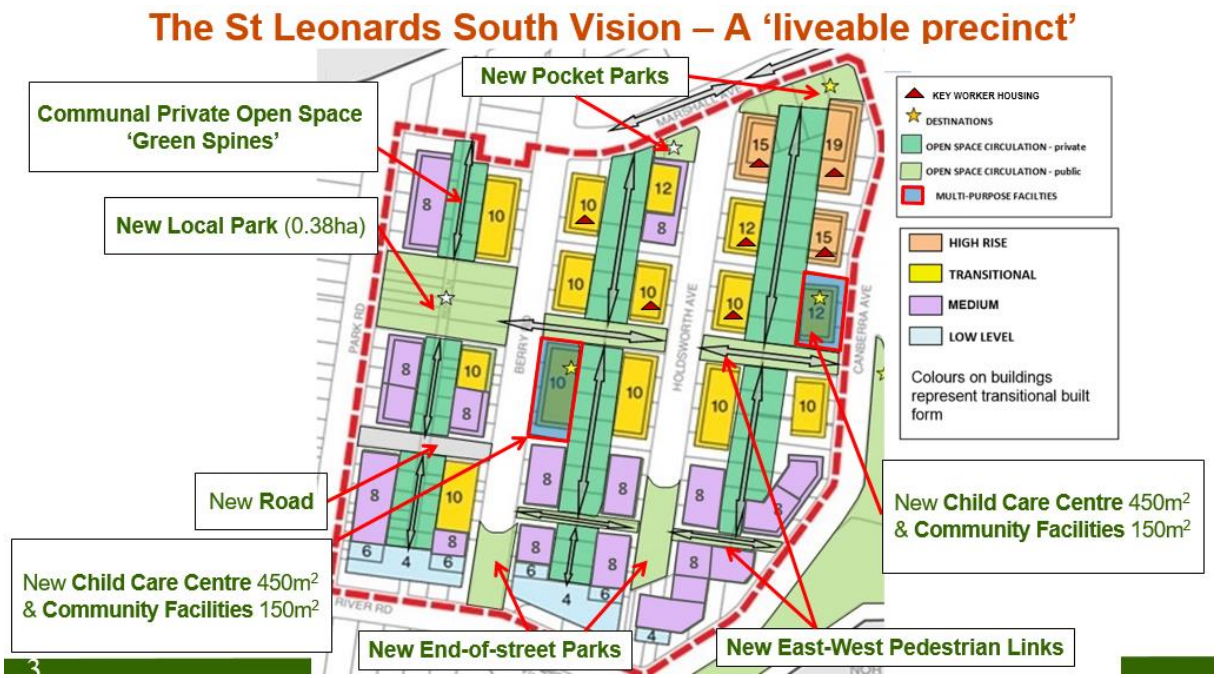

Figure 1.4: Planning Proposed Building Heights

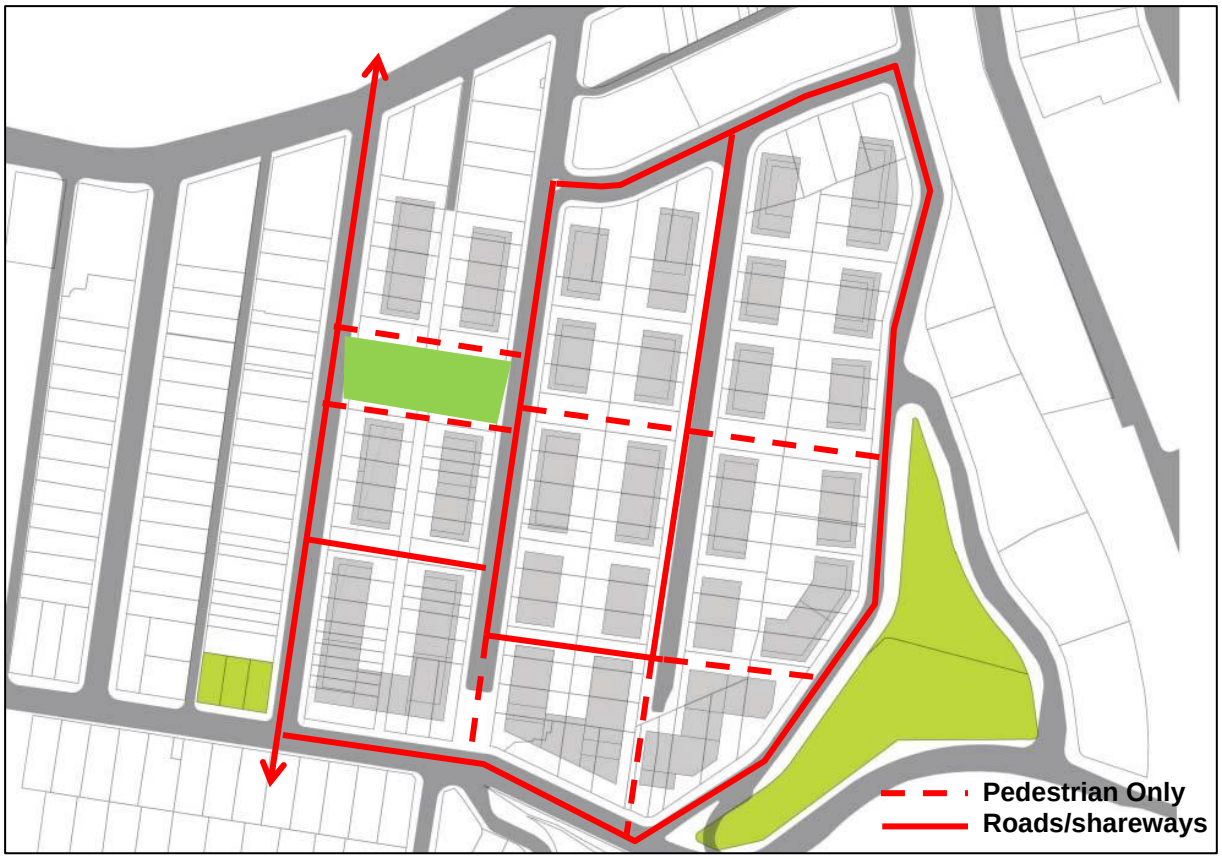

Figure 1.5: Movement Planning Proposal

Figure 1.6: Open Space/Pedestrian Connection (Planning Proposal)

1.3 The DPIE/GANSW Charrette Report Recommendations:

Changes that can be supported (most already included in Council's Plan (PP25)):

- Reduced maximum **car parking**. (To be investigated)
- Adopt **Solar** access planes to public space
- **Vehicular** movement analysis
- Varied dwelling **typologies** (already done)
- LSPS (via LHS i.e Local Housing Strategy) to address land to **west** of Park Road
- Improve permeability and **pedestrian** movement. (already done)
- Consider **Sustainability** measures. (Already done)
- Strategise **Tree** management. ((already done)
- Pursue **Design** excellence
- **Incentives/mandating** options, Clear **public domain**
- **Park Road** reduced setback
- A "pedestrian avenue" along **Marshall Ave** (Already done).
- Widening **River Road** footpath (Note: practical barrier of cliff edge).
- Some 6-storeys along **Canberra Ave** fronting Newlands
- **Terrace form typology** along periphery of precinct (unviable, unless part of RFBs)

There are however a number of **Proposals in the Charrette Report that cannot be supported**:

- **Relocation** of central **Park** (short-term view, no extra accessibility, potential extra costs, impacting heritage item views & not supported by 2036 Plan)
- **Enlarged (consolidated) Park** via 'land swaps'/dedications (Problematic. More accessible in short-term but not more quantum) (Park= $27.4m -> $60.4m) Swaps are mostly road closures.
- **10-storeys** surrounding Park (some won't overshadow, but others may). Development required to pay for adjacent east-west links, etc).
- "Employment generating", activating **non-residential uses**, around Park. (Poor viability)
- Reduced north-south **lot sizes**. Smaller lot sizes reduce potential and viability due to increased separation and setback requirements.
- Removing external **lifts** is prohibitive to accessibility.
- East-west blocking of **Green Spines** in 5 locations (impacting ADG solar access compliance).
- Giving bonus FSR/Height for **design excellence** (vs bonuses for open space, community facilities & affordable (key worker), housing which are already under question).
- Giving bonus FSR/Height for **sustainability measures** (vs. DCP now; and vs bonuses for open space, community facilities & affordable housing which are already under question).

1.4 Less Important Changes that cannot be supported:

- Attempt to co-locate **community/childcare facilities** (funding and other locational issues, eg. no benefit in co-locating two childcare centres.
- Consolidate **social infrastructure** (viability issue)
- Six relocated and widened **east-west links** (Same as current proposal. Links "shared" but unclear if all are roads. N.W. link not needed). Impact on green spines.
- Create a **grid street** pattern (unclear; unnecessary; unviable due to steep slopes)
- Explore development controls "**beyond market forces**".

1.5 Conclusion

The St Leonards South Outcomes and Recommendations report, prepared by the Department of Planning, has provided Council the opportunity to contemplate alternative design and land use approaches to respond to the concerns of the IPC and finalise Planning Proposal 25.

This report has provided recommendations and support for development in the St Leonards South precinct given the strategic merit of the precinct with its proximity to employment opportunities in St Leonards and opportunity to leverage the growing health, medical research and education land uses to the north alongside additional housing.

This is suggested Council review and contemplate the recommendations for Planning Proposal 25 which include amendments such as:

- The creation of a new central park to make better use of strategically co-located community uses;
- Consolidation of public open spaces to best maximise the usability of open space;
- Creation of new east west links to improve pedestrian accessibility;
- Re-orientate density within the precinct through alternative built form envelopes and building heights; and
- Minimise traffic movements and decrease parking rates.

After considering the Design Charrette report, and with additional studies undertaken by Council, it is clear that the Design Charrette recommendations cannot be implemented in full given the lack of feasibility/viability, unsuitability of some design and land use recommendations and inconsistency with the IPC advice.

Option Evaluation

From the above it is concluded that:

a) Removal of Key Worker Housing incentives will provide a small reduction in height and FSR. This will not be significant and does not justify the removal of the opportunity to provide “Key Worker” housing.

b) Reduced heights along Canberra Avenue can improve solar access too Newlands Park. This however has impacts on development viability. Transference of this Floor space from Canberra Ave to Holdsworth Ave will have impacts on solar access to the “Green Spine”. This however, could be compensated by provision of “Roof Gardens”.

   Note that this assumes large scale amalgamations street to street in order to facilitate transfer of FSR’s and strategic reductions in height (Canberra Ave and Park)

   Reduced heights along Park Rd will also have impacts on development viability. Transfer of floor space from Park Rd to Berry Rd frontages will have impacts on solar access to “Green Spines” and again this could be compensated by provision of “Roof Gardens”.

c) Floor Space Reductions generally across the site do not produce significant advantages.

Reductions greater than 5% are likely to have significant impacts on project viability.

Thus, it is recommended that:

a) Key Worker Housing incentives be maintained.

b) Heights be reduced along Canberra Avenue and lost floor space be transferred to Holdsworth Avenue frontage. Roof Gardens should be provided to compensate for reduced solar access to “Green Spines”.

Heights to be reduced along Park Rd while average building heights along Berry Road frontage will remain if public benefits are provided. Buildings adjoining the new Park (Sites 21 and 22) will have increased upper level setbacks stepping up to lessen the impact of the built form facing the new park. Sites 22 and 23 will now acquire, construct and embellish the new E-W road connecting Park and Berry Roads.

1.6 Recommendations

That Council:-

1. **Support** the following recommendations of the design charrette:

    - Reduce maximum car parking rates (subject to further investigation);
    - Create solar access planes to public open space (subject to further testing against Apartment Design Guide requirements);
    - Vehicular movement analysis – this has been addressed through Council's existing studies and RMS have "*no objection to the Planning Proposal proceeding before the Draft 2036 Plan is finalised*";
    - Variety of dwelling typologies (eg. More studios and 3+ bedroom dwellings) – this is already covered by Council's existing Development Control Plan;
    - Intentions for land west of Park Road – this will be examined when Council undertakes its Draft Local Housing Strategy;
    - Consider Sustainability measures – measures already contained in DCP and Draft Landscape Master Plan;
    - Tree Management – already contained in Draft Landscape Master Plan and Draft Development Control Plan;
    - Design excellence – previously resolved by Council on 13 July 2015; and
    - Public benefit and open space delivered through planning controls – Council's proposal already achieves this.

2. **Partially support** the following recommendations of the design charrette:

    - Creation of 'pedestrian avenue' along Marshall Avenue – note Charrette built form would result in 'canyon effect';
    - Widening River Road – however would need to consider existing cliff edge;
    - Some 6 storey buildings along Canberra Avenue fronting Newlands Park – subject to further testing; and
    - Review DCP provisions for townhouse style development – can be investigated further as part of integrated apartment complex.

3. **Not support** the following recommendations of the design charrette:

    - Relocation of central park and enlarged (consolidated) Park – would cost $60 million, result in less public open space being provided and inconsistent with IPC advice relating to Park Road impacts (heritage buildings);
    - 10 storeys surrounding relocated park – would not improve solar access to new park;
    - 10 storeys at the bottom of River Road – inconsistent with IPC advice which found Council's transition along River Road appropriate;
    - Additional non-residential uses (employment-generating) – would have poor viability and was not part of the IPC advice;
    - Co-locate and consolidate social infrastructure (i.e. multi-purpose facilities) – no real benefit in co-locating 2 child care facilities;
    - Reduced north-south lot sizes – would decrease viability;
    - Relocated E-W connections and removing lifts – gradient of relocated East-West connections not improved (still does not achieve DDA compliance) so lifts still required;
    - East-West buildings blocking Green Spines (communal open space) – would be inconsistent with Apartment Design Guide requirements (solar access for communal open space);

- Bonuses for design excellence & sustainability measures – would be inconsistent with intent of Council's proposal (i.e. bonuses where public benefits are justified and provided); and
- Reduce setbacks on Park Road to 4 metres – would contradict the IPC advice.

2. Principles of Masterplan and LEP

2.1 What is Transit-Oriented Development?

Transit Oriented Development is a planning concept that promotes the creation of a network of well-designed human-scale urban communities focused around transit stations.

While there are various definitions in use around the world, there is common agreement that Transit Oriented Development is characterised by:

1. A rapid and frequent transit service
2. High accessibility to the transit station
3. A mix of residential, retail, commercial and community uses around the transit
4. High quality public spaces and streets, which are pedestrian and cyclist friendly
5. Medium- to high-density development within 800 metres of the transit station (i.e. the TOD precinct)
6. Reduced rates of private car-parking

(See Appendix 2)

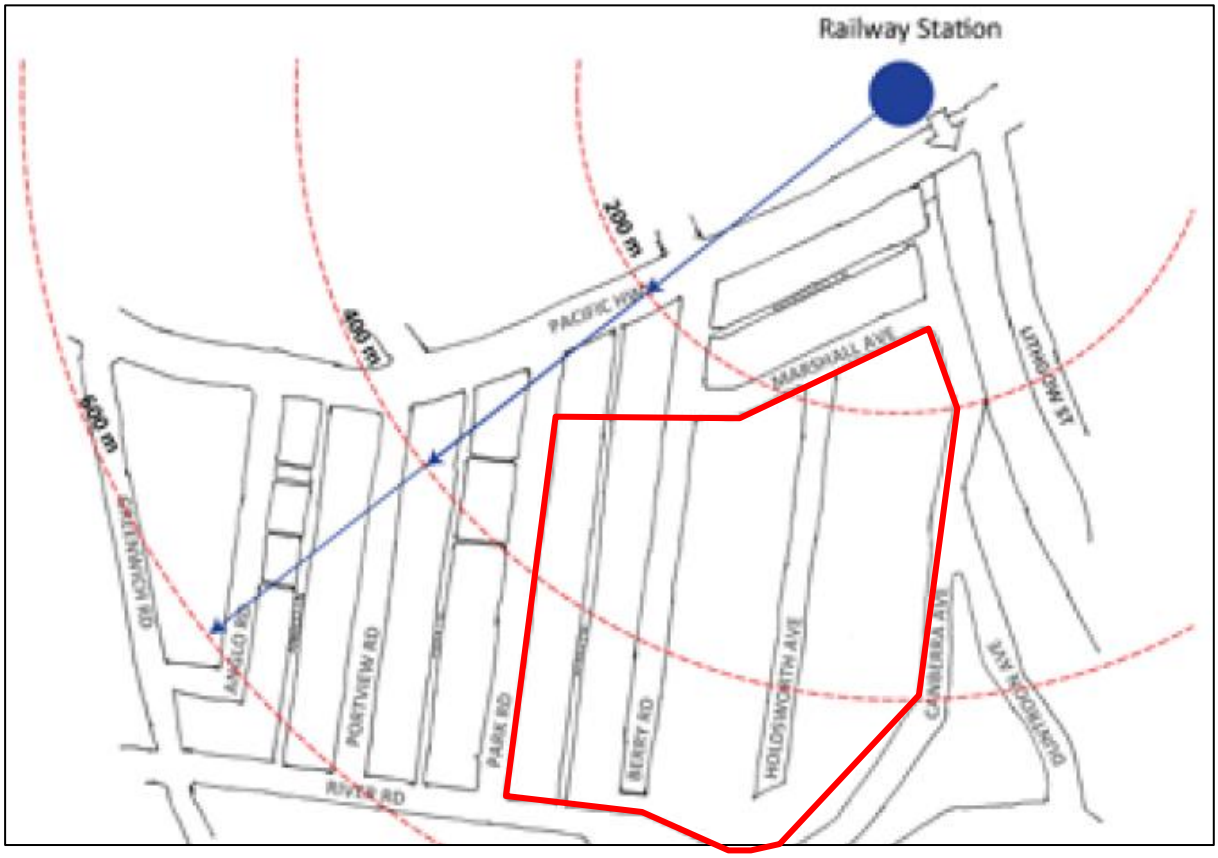

Figure 2.1: TOD Influence

3. Response to Charrette Recommendations Report

A full day design charrette was carried out in November 2019 with representatives of DPIE, GANSW, SDRP and Lane Cove Council to assist in responding to IPC on Council's Planning Proposal. Below is a summary of issues which were explored during the charrette and responses to the recommendations.

3.1 Plan for a neighbourhood 'heart' for the precinct with centralised facilities

See figures 3.1 & 3.2)

Response

- A relocated park, while potentially centring greater density around the park in the short-term, ignores possible further future staging of the residential precinct west of Park Road.
- There is, also, no evidence that Council's proposed park location is less accessible to vehicles or more in need of "mid-block pedestrian connections".
- Further, the relocation negatively affects views associated with the Park Road heritage items (The IPC advice found that the current park location "would not unreasonably interfere with any existing key views or vistas for these properties," which would not be the case under the new proposal. para 82). This compromises the Recommendation that "the park relocation would also improve views from within the proposal area."
- Non-residential facilities:
    - While agreeing in principle that commercial/retail uses could help activate a 'vibrant community' around a park, this location, (within 400m of a developing commercial/ community centre (at 88 Christie) containing library, supermarket, restaurants and other non-residential uses and the major plaza over the railway line), is almost certainly unviable. No evidence is given to support employment generating uses outside the core centre of St Leonards.
    - The IPC makes no reference to such a mechanism to generate community vibrancy.
    - The zoning and DCP can permit mixed-use around the park (whatever its location) but realistically only a corner shop/coffee shop/bar and maybe some live/work are likely to be viable.

Figure 3.1: Sketch Design for Centralised Park (Note: this drawing is at sketch design stage only. Further testing and validation studies are required).

Figure 3.2: Open Space/Pedestrian Connection (Planning Proposal)

3.2 Consolidation of central park to area around Holdsworth Avenue to Berry Road.

Response

- The key landscape objectives of the Draft 2036 Plan address one Action to "encourage new open space to be connected to the regional open space network" However, it contains no objectives that can be interpreted as supporting a centralised park (over Councils proposal given the proximity to the larger Newlands Park and Gore Hill Park).
- Open Space (excluding East-West connections)
  - Council – Central Park (3,804 m^2) + Other Parks (4,003 m^2). Total = 7,807 m^2
  - Charrette– Central Park = 6,676 m^2
  - **1,131 m^2 less Open Space.**
- East-West connections (excluding New road between Berry to Park Road)
  - Council – Total = 2,358 m^2
  - Charrette – Total = 5,706 m^2 (but as "shared" links they can't be counted as public open space)
- Council – Total = 10,165 m^2 (Canberra Avenue extension = extra 3,500 m^2)
- Charrette – Total = 12,382 m^2 (includes likely shared roads).
- While agreeing that a larger, consolidated park (increasing by 75% from 3,800 m^2 to 6,700 m^2) would allow more residents direct park frontage, and possibly "greater flexibility", the cost to purchase and embellish (@ $8,800 m^2) these lots is $60,438,393 at the rate identified by Council's S7.11 Contributions Plan. This is far in excess of what any adjusted S7.11 Plan would allow. (n.b: Council's proposed park is $27,437,527 = purchase/embellish).
- **It is suggested that the Marshall Ave pocket parks (1700 m^2) (dedicated, $15million-valued), currently to be provided by development of Areas 1,2 & 12 in return for extra FSR/Height, be relocated to the enlarged park. However, the offer of two 8 and 6-storey buildings in the pocket park spaces to incentivise purchase of land elsewhere in the precinct is unlikely to be viable as these areas are already included in incentive calculations. Further, the two 8 and 6-storey buildings would most likely not be ADG-compliant for solar access/cross-ventilation. This would also remove open space from Marshall Ave (needed to avoid a 'canyon effect' of tall buildings, and closes off two Green Spines).**
- It is also suggested that Council swap Proposed Park (960 m^2) for two lots in the enlarged park (1110 m^2). This swap would still result in a funding shortfall and any incentive heights and FSRs for developers to purchase land would be excessive. This may also be problematic in terms of incentivising the land owners in the new park area to agree to the swap. Note development potential is limited along River Road.
- Note that the Council's proposed park has a south-west gradient of 1:15 (DDA compliant), while the proposed relocated park slopes more steeply to the south-east at 1:13 (not DDA compliant).

- **Council's proposal to close Canberra Ave near River Rd would be a cost-effective means of increasing open space.**
- The principle of taller (10 storey) buildings to the south of a larger new park is supported. However, the clustering of buildings of 10 storeys on all four sides of the relocated park is problematic. In particular, those to the north and south are required to dedicate the east-west links in return for 10-storeys. However, they are also required to provide community facilities/childcare. They can't do both. Further, they may increase the amount of overshadowing in the p.m., as opposed to leaving the park in its current location (even with greater setbacks).

Figure 3.3: Sketch Design for Centralised Park (Note: this drawing is at sketch design stage only. Further testing and validation studies are required). It shows proposed pocket parks, street closures etc to be relocated to enlarge park. Note that these rarely deliver any additional development opportunity.

3.3 Prepare sun access planes to protect solar access to public spaces,

- Being consistent with the Apartment Design Guidelines, this is supported. Note, that the current heights proposed are generally ADG-compliant. Some further setbacks to park north buildings may be desirable. Larger scale versions of these diagrams are included in Appendix 1.

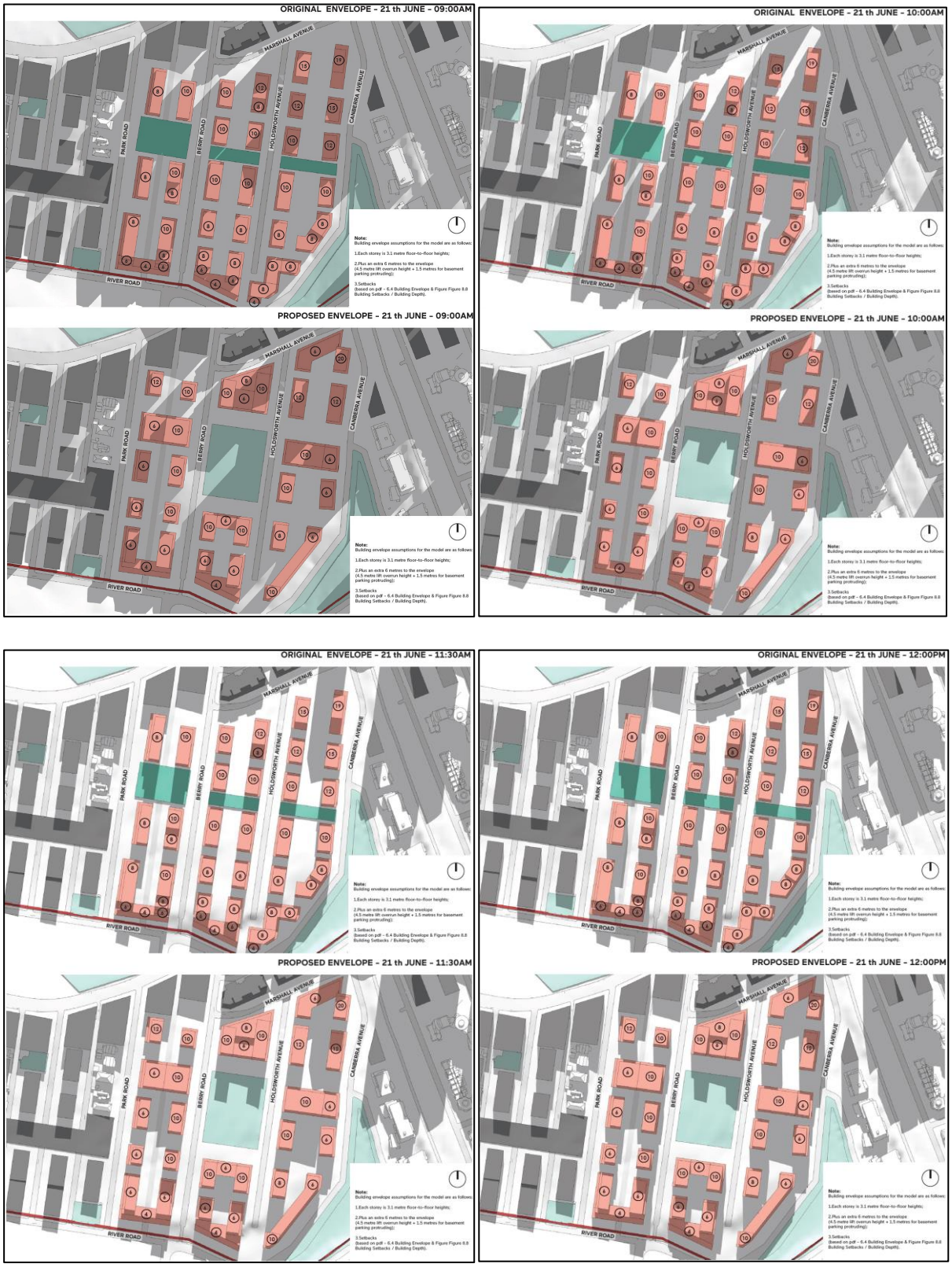

Figure 3.4: Solar Access

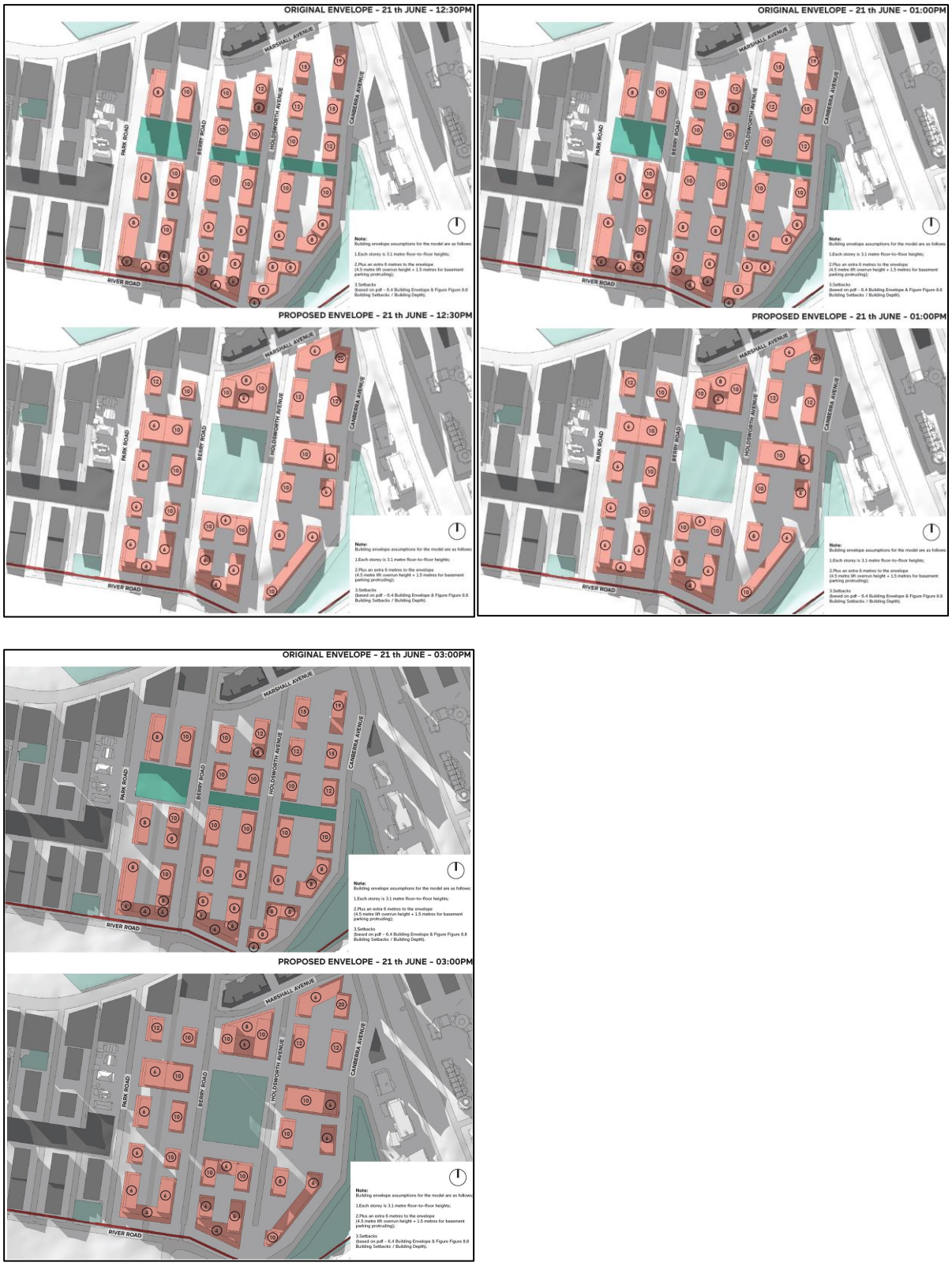

Figure 3.4: Solar Access

Note that solar access is similar for both Council's proposal and Charrette Proposal, except that the larger (and non-viable) park in the Charrette proposal provides greater solar access due to size.

3.4 Improve connectivity for vehicular and pedestrian movements in, through and from the site.

- Conduct an analysis of vehicular movement – re. amenity and accessibility.

Response

- Already addressed in Council's Cumulative Traffic Study, which concludes, "In general terms. The modelling results indicate that a number of relatively minor improvements would be required as a result of general growth of network traffic, LEP 2009 developments and the proposed St Leonards South Master Plan development. These improvements will be required regardless of the other approved and proposed developments subject of this report."

- Consider a greater number of east-west pedestrian links. [IPC advises improved pedestrian connectivity].

Response

- Both proposals show six street-to-street east-west links for pedestrians. Figure 7 is unclear about which links are "shared".
- Secondly, there seems no reason for the new, costly north-west link.
- Council's Planning Proposal provides generous, DDA compliant and appropriate E-W links.

- Create a pedestrian avenue along Marshall Avenue to the north in response to the significant pedestrian traffic along this route.

Response

- **However, Council's proposal currently shows 1700 m^2 of pocket parks here to moderate the effect of tall buildings on both sides of the Avenue and to activate the approach to the railway station concourse. However, the Charrette proposed plan actually relocates these parks away from Marshall Ave, and potentially replaces them with development. Unclear then how a "pedestrian avenue" might be created using this approach. Also, note the shared paths and pedestrian refuges on Marshall Avenue shown in Council's Cumulative Transport and Accessibility Study.**

Figure 3.5: Possible walk to station through east-west pedestrian link, Canberra Ave to Berry Rd. (Council's Planning Proposal)

3.5 Improve permeability and safe movement within and through the site.

- Five of the six Actions recommended in the Charrette Report are already supported by Council's *Cumulative Transport and Accessibility Study*, which supports widening verges, traffic lights for River Road and dual-use paths. Council also supports the closure of the intersection of River Road and Canberra Avenue.

- Review [north-south] **block sizes** to consider permeability and safe movement, in order to allow additional pedestrian links

Response

- Smaller block/footprint cannot be supported. This would create problems with increased side setbacks and consequent loss of development potential.
- Council's current proposal and the Charrette design both propose six east-west pedestrian links. I.e. similar permeability. Smaller block/ footprint sizes will reduce viability and therefore opportunities for public benefits. Note that Council's draft DCP requires building widths of max. 35m. And note that Duntroon Ave buildings are an average 50m wide, as are most of those in the Charrette Report.
- It is also argued that smaller block sizes make for more manageable level changes. With advice from the DCP and LMP, a skilled architect is expected to manage the current level changes. (As expounded in LMP and DCP.
- Note that smaller block sizes will create problems with additional side setbacks and reduce development potential.
- Note that figure 3.6 explains the complex nature of site levels which facilitate optimum development, walkability and continuous, integrated "Green Spines".

- Footpath widths on River Road should be increased, allowing separation from the high-volume road, tree planting to better reflect the character of the area, with wide shared path with landscaped setback into the site.

Response

Consistent with Council's *Cumulative Transport and Accessibility Study*, and footpaths can be widened further, but rocky cliff edging must be considered. Path widths may vary due to cliff intrusion but this can be incorporated into a meandering footpath amongst new tree planting.

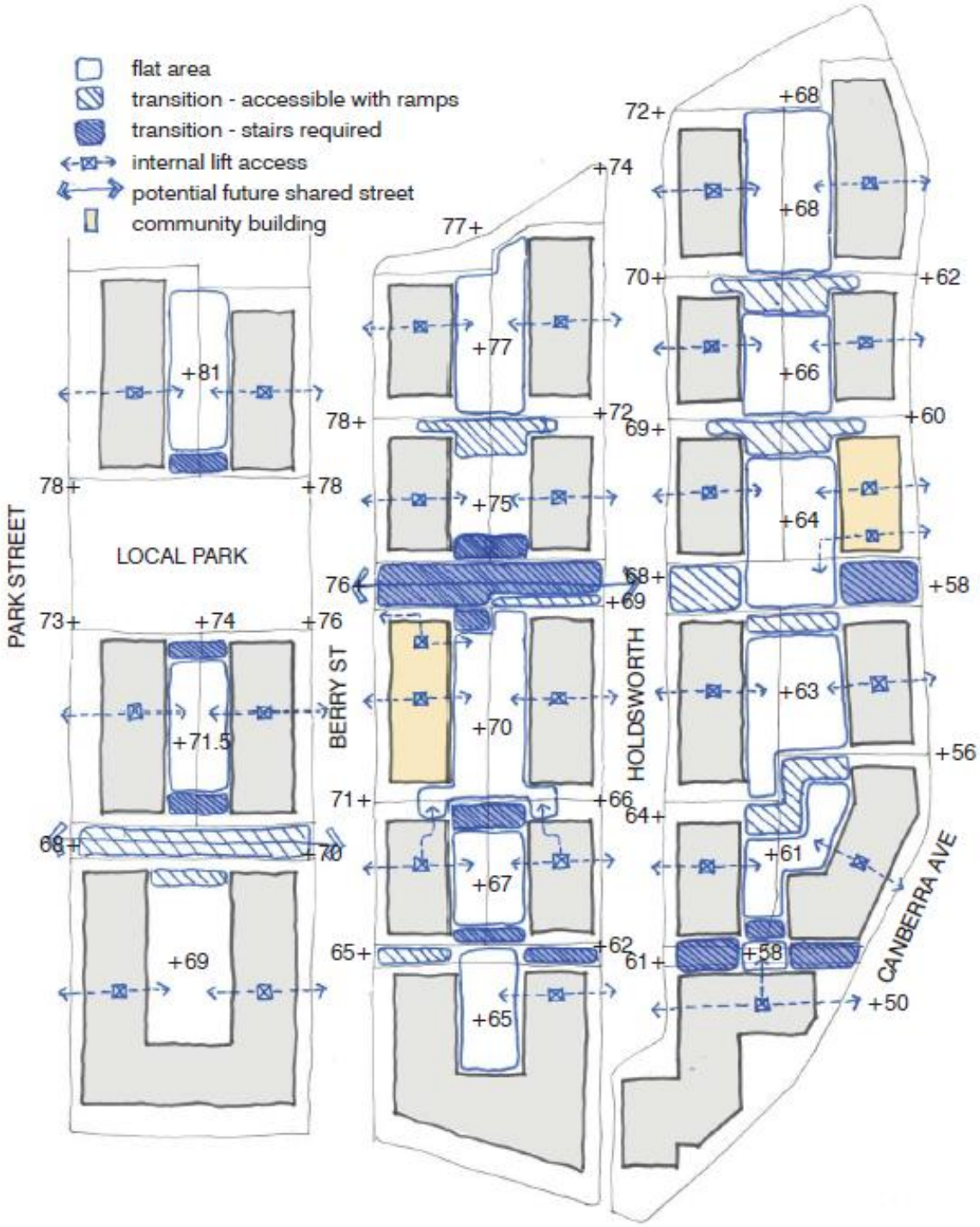

Figure 3.6: Levels & Terraces (Planning Proposal)

3.6 Reconsider the nature and role of an east-west link. (see figures 3.7-3.11)

- Minimise laneways, prioritizing shared zones wherever possible

Response

No laneways proposed in Council's proposal.

- Deliver shared vehicular, cycle and **pedestrian movement**

Response

- Council separated Pedestrian/Cycle from vehicles which is a much better outcome see Figure 16 of Council's *Cumulative Transport and Accessibility Study*. Slope often too steep to facilitate vehicular movement.
- Unable to confirm no cars on E-W connections.

- Prepare cross section for Marshall Avenue to show pedestrian environment

Response

- See the shared paths and pedestrian refuges on Marshall Avenue in LMP.
- Street plan and section can be provided.

- Deliver a network of **publicly accessible** pedestrian connections across the site between public spaces.

Response

- The gradients of the current links range between 1:7 and 1:11. The proposed Charrette gradients range between 1:9 and 1:12. While there is some improvement, both propositions are much steeper than the standard 1:14 required for rail-assisted accessibility. Both will require ramps, and lifts from Canberra Avenue.

- "Less emphasis on the formalised east-west link, decreasing the cost by **removing the need for lifts** within buildings, the management and maintenance of the access"

Response

- **Not supported** by gradient analysis. Also **not supported** by Disability Discrimination Act. Note that lifts are shared with community buildings as public facilities.

- In combination with a centrally-located and consolidated open space, **re-align the east-west connections** to provide better [pedestrian] access to Pacific Highway and Newlands Park.

Response

- In the Charrette Plan, the six east-west links are simply moved three or four lots north and widened in some cases. In effect, the walking journey to major destinations is the same, and is not improved. Need for (non-functional) grid system unclear.
- This also removes Council's coherent central east-west pedestrian link.
- Note that Council's E-W links are strategically located in order to:
    - connect major parks
    - optimise level changes/connections

- deliver pedestrians to N-S streets/footpaths to move toward rail station
- optimise capacity to integrate with community facilities and facilitate funding by development

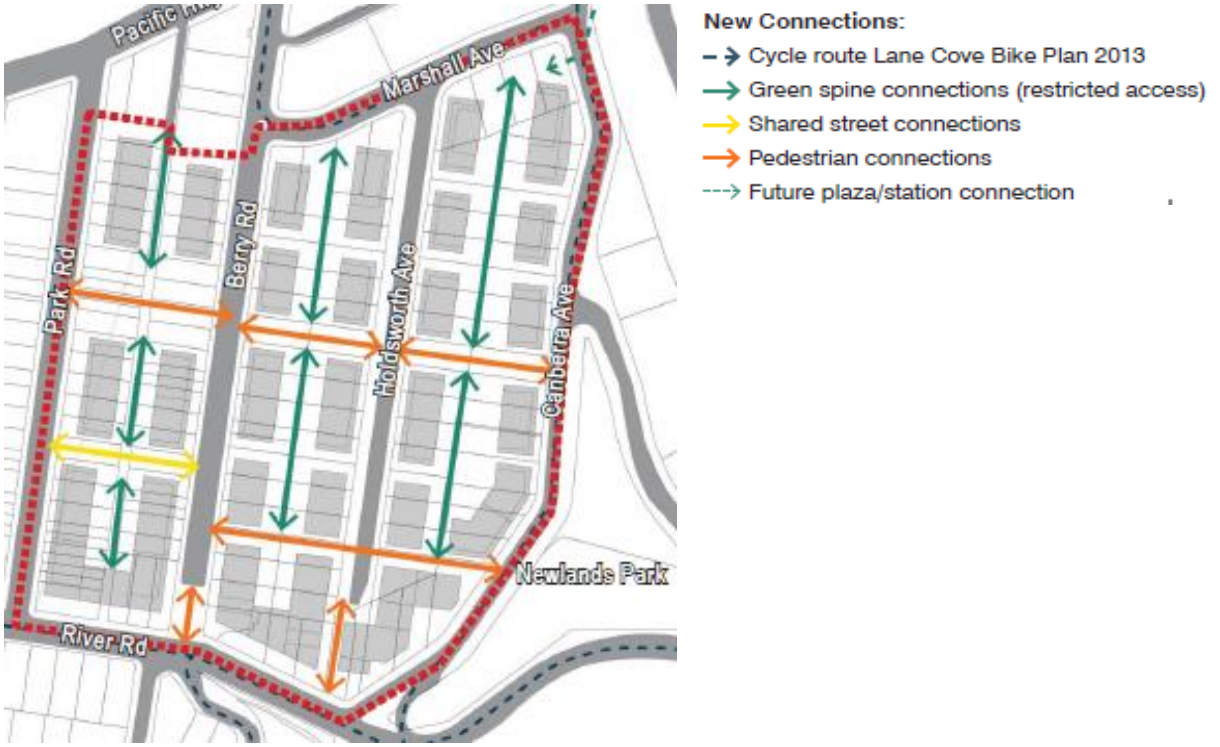

Figure 3.7: Planning Proposal New Connections

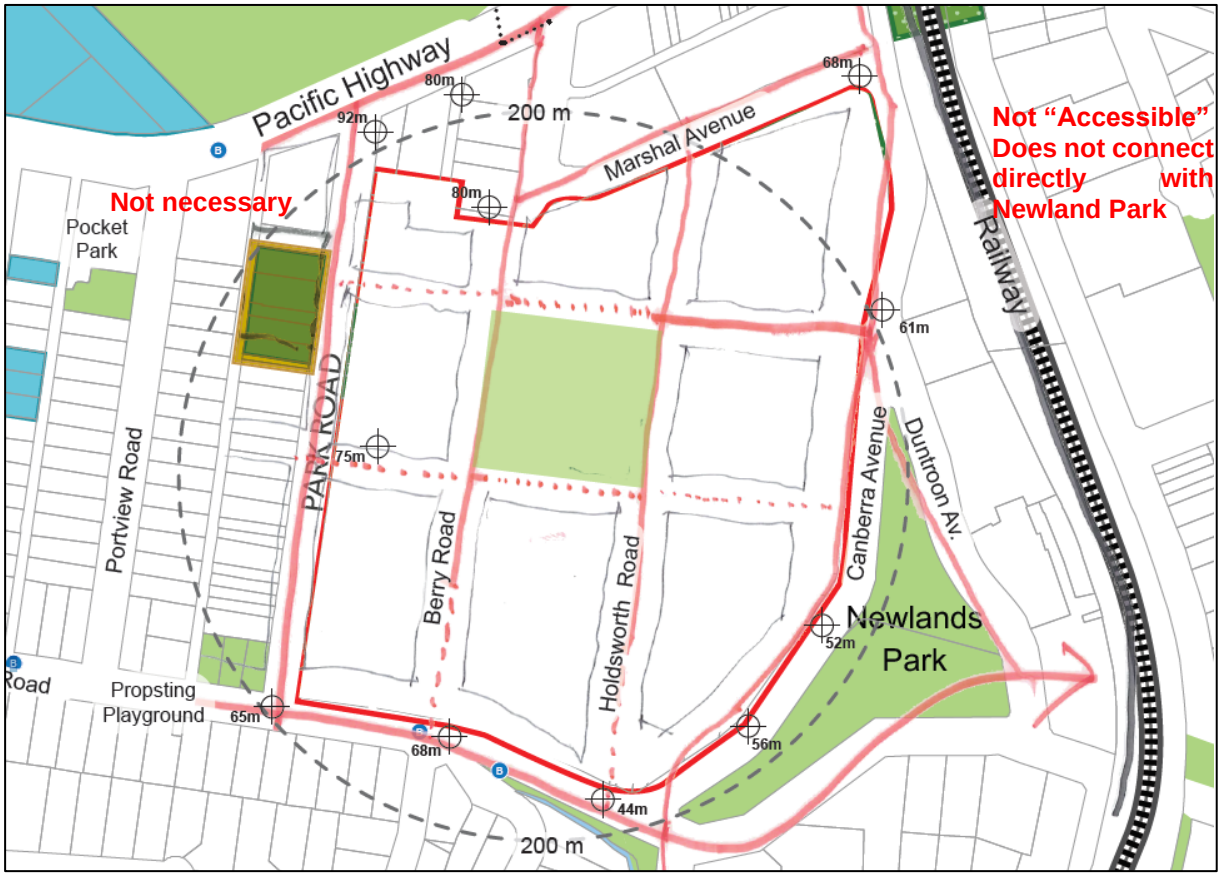

Figure 3.8: Sketch Design Circulation Plan (Note: this drawing is at sketch design stage only. Further testing and validation studies are required)

Figure 3.9: Landscape Strategy (Planning Proposal)

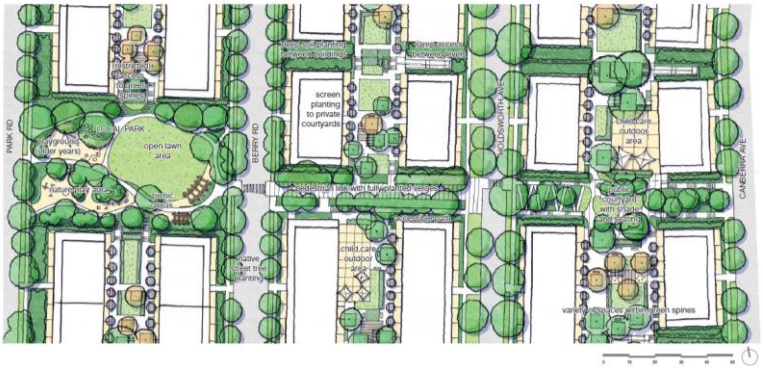

Figure 3.10: Major E-W Pedestrian Link (Planning Proposal)

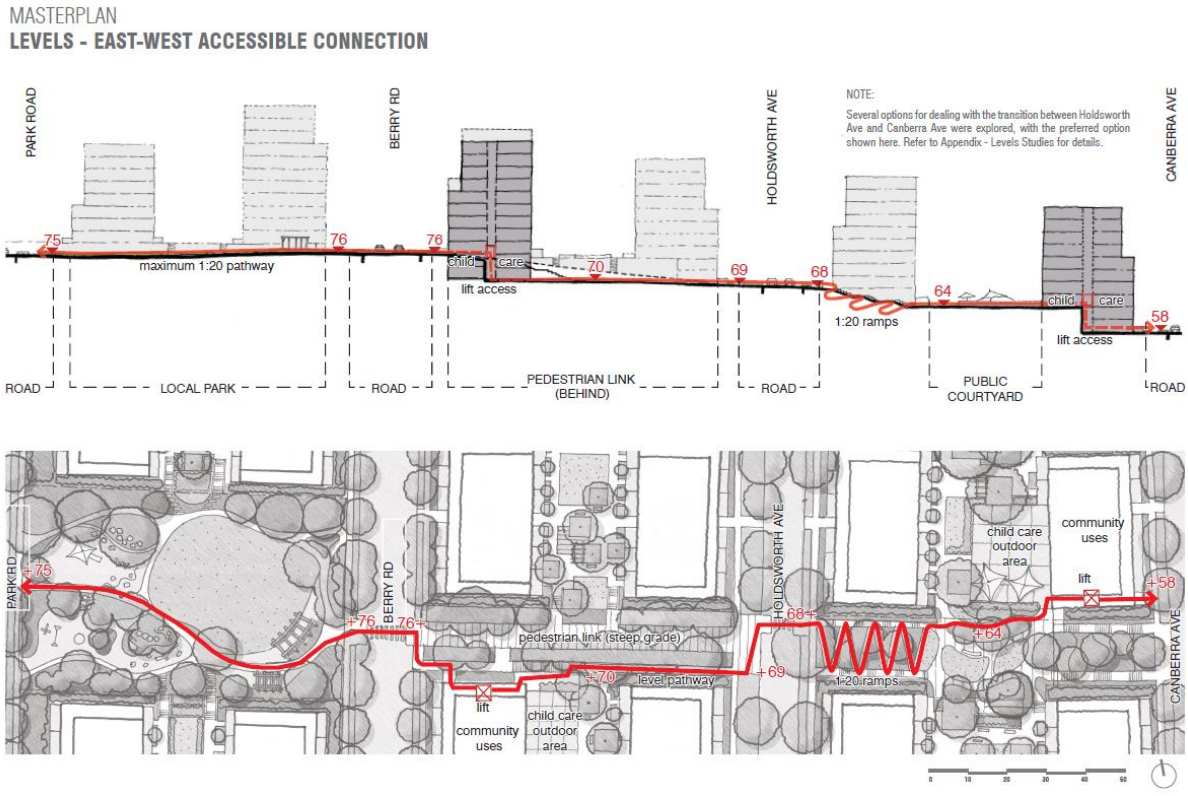

Figure 3.11: Major E-W Pedestrian Link (Planning Proposal)

3.7 Minimise car parking provision on the site.

- Introduce maximum car parking rates for the precinct, similar to other accessible areas (i.e. North Sydney Council).

Response

- Council will review its current rates of parking under its DCP. Supported once detail is provided and Council agrees.
- On-street parking is improved by removal of many kerb crossings in spite of additional tree planting in parking build-outs.
- On-street parking must be “managed” to ensure it is not dominated by outsiders (eg rail commuters, St Leonards shoppers/office workers).
- Note that recent developments in St Leonards (and many other TODs) seem to generate a parking rate of about 1 car/br du – see Appendix 4).

3.8 Ensure public benefit and open space is delivered through planning controls.

- Incentives and/or mandating options will assist in clearly delineating public and private space, making envelopes certain, helping enforce solar planes and realizing other sustainability benefits.

  Response

  - Supported by the incentives scheme of Council's proposal.

- If Central Park were to be relocated –

  Response

  - Properties north and south of the park would only be able to purchase half a block of land each for portion of relocated E-W connection. Any additional benefits to be delivered by building around the relocated open space (i.e. multi-purpose facilities, retail etc.) would result in further increases to FSRs and heights.

- Set a clear public domain, including minimum solar access requirements to the central park.

  Response

  Done in Council's Planning Proposal.

- Set an overarching FSR uplift, but allow design excellence to guide bonuses where it does not contravene the principles outlined above [on public benefits and open space].

  Response

  - An overarching, incentivising FSR uplift to 2.75:1 has been established in economic analysis by HillPDA. Council opposes any opportunity for S4.6-type relaxation of the precinct-wide built form based around amalgamation and bulk and scale. Incentives are carefully calculated to take advantage of location to provide public benefits for bonuses.
  - Design excellence factored for FSR benefits and DA's reviewed by proposed Design Review Panel.

- Create a grid street pattern.

  Response

  - Unclear if six new roads are proposed. North-west roadway unnecessary, and Canberra-to-Holdsworth gradients too steep for vehicles.
  - Note: unclear why 12-storey tower is proposed in N.W. corner (overshadowing).

3.9 Diversify typologies through analysis of the location of non-residential facilities and employing other available mechanisms.

- Support a greater variety of dwelling typologies (e.g. more studios and 3+bedroom dwellings).

  Response

  - Supported. Council's current DCP delivers a minimum of 10% 1,2,3+ bedrooms, and is likely to include "some larger apartments and some ground floor/podium townhouses" similar to 1-13 Marshall Ave.
  - Within the broader St Leonards Crows Nest precinct, Council's Planning proposal (PP25) delivers more apartments to complement other existing typologies in the precinct.
  - Note that medium density dwellings are generally considered unviable in St Leonards South.

- Review DCP provisions for townhouse-style development as an interface to the wider area.

  Response

  - HillPDA economic advice is that medium density FSR/Height is not viable in this area. However, DCP provisions for townhouses can be investigated, particularly as part of an apartment complex (e.g. 25 Marshall Ave).

- Achieve diversity through activation of ground floor development for non-residential uses.

  Response

  (Note this has very limited opportunity). – Not supported

- Deliver strategically located commercial activity within the precinct through analysis of shopping preferences (i.e. neighbourhood shops, etc.). Non-residential uses should be located adjacent to open space.

  Response

  - Note that non-residential uses are not an issue of concern to the IPC.
  - See also major mixed-use development 88 Christie Street above just 400m away. This would render non-residential uses unviable.

- Create a finer grain built form through the reduction of block size running north-south. (Note: LCC DCP = max. 35m wide; Duntroon Ave = ave 50m; Fig.8 = ave 35-50m)

  Response

  - The Department's Evaluation notes that the charrette process was not able to test potential changes to dwelling yield resulting from the changed building layout. In reality, buildings (on smaller block sizes) would reduce viability due to increased number of ADG compliant building separations.
  - Where the park between Berry/Park Roads has been infilled with buildings. Overall, the effect of the layout is to create more, smaller buildings. As stated above, smaller apartment footprints would reduce viability and therefore opportunities for public benefits.

- Secondly, the proposed E-W layout locates buildings across the proposed Green Spine in five places. This effectively reduces solar access in these areas, and would be inconsistent with ADG guidelines (solar access/cross ventilation etc) and reduces N-S connections of communal open space.

- Consolidate social infrastructure (e.g. childcare facilities)

Response

- Presumably around the open space. Supported in principle – to contribute to a "vibrant community". However viability threatened by the likelihood that these buildings also fund the East-West links (north & south sides of park), while buildings to the west and east of the park have 10 storeys presumably to compensate for amalgamation with 6 storey buildings. The Council proposal carefully integrates slope, community facilities and Green Spines.
- Note that there is no benefit in co-locating 2 child care centres. One in Council's Plan is located in proximity to rail station.
- Note also that current locations of community facilities are strategic given the following:
  - Generate incentives in FSR and height
  - Facilitate E-W pedestrian connection, community facilities and lift access to mark steep slopes accessible.
  - Fund community facilities of E-W link.

- Reduce bulk and scale [6-storey] of development adjoining Newlands Park to improve transitions and reduce overshadowing of Newlands Park "between 3.00pm-2.30pm."

Response

- A much more moderate height to prevent additional overshadowing of Newlands Park to be investigated.
- Also, the 10-storey tower proposed at the bottom of Canberra Avenue would almost certainly overshadow properties south of River Road and is not supported. This is not required as the IPC is satisfied with the current proposed heights here (4-8 storeys) and "considers that the scale of the proposed development, existing tree planting and proposed setbacks adjacent to properties on River Road would represent a transition that would not adversely impact the character of the area or the amenity of these properties from overshadowing." Therefore, this part of the recommendation is inconsistent with the IPC advice and creates additional impacts beyond Council's proposal.

Figure 3.12: Residential Transect

A = Existing Detached Residential Cottages
B = Urban Core Transit-Oriented Development

Note that figure 3.12 illustrates the transition from a detached cottage environment (A) to a TOD based medium-high density Urban Environment (B).

3.10 Confirm future intentions for land west of the site.

Consider [future plans to the west] in the finalisation of the planning proposal, particularly given the potential impacts on east-west links through the site and on the built form interface along Park Road.

Response

- The LSPS has been amended to incorporate new housing principles to guide the Local housing Strategy.
- By implication, the centre of the future precinct is more likely to be Park Road, a more logical park location in the long-term.
- The Masterplan proposed development and connections across the whole site to Greenwich Road. This was staged in order to prevent random development (and impacts) across the whole precinct and rather to concentrate immediate development close to railway station (TOD).

3.11 Leverage the opportunity for best practice sustainable performance.

Sustainability measures are already reflected in the proposed site-specific DCP and Landscape Master Plan.

The DPIE Review suggests a stronger emphasis on sustainability.

The proposal complies with and exceeds current standards:

- Nathers and ADG are generally able to be complied with minor exceptions
- Having regard to the considered urban design and orientation, exceedances occur in the following areas:
  - Climatic comfort … major avenue trees in streets and major tree retention and expansion in Green Spines (see Landscape Masterplan – LMP) can and will have major impacts on climatic comfort (shade in summer/sun in winter)
  - Major provision of Deep Soil in excess of ADG requirements. The provision of the Green Spine will provide major areas of Deep Soil capable of conserving existing major trees and supporting provision of new tree growth. The Green Spines have been carefully designed to facilitate this (see LMP). Increased deep soil results in improved rainwater absorption, improved landscape and tree growth
  - Roof garden provision on all buildings will ensure that:
    - Roofs will be climatically controlled
    - Communal open space will be assured with excellent solar access
    - Communal vegetable gardens can be provided if required
  - Designated solar collector areas can be provided
  - WSUD provision … stormwater can be collected and stored in combined storage tanks/retaining walls which will be integrated with the stepped nature of Green Spines. This water can be used to irrigate garden areas
  - Note that the TOD nature of the proposal will already have major influence on sustainability (American figures demonstrate that TOD can have major influence, see figure 3.4)
  - TOD development appears to lead to reduced car ownership (Census figures Appendix 4). Reduced car ownership results in reduced vehicle kilometres travelled and improved sustainability. (see figure 3.15).

- Include precinct-wide best-practice sustainability measures (e.g. stormwater management). This should be reflected in a site-specific DCP.

Response

- Sustainability measures are already reflected in the proposed site-specific DCP and Landscape Master Plan.
- Include recommendation for combined retaining wall/water storage tanks (see figure 3.13).
- Review opportunities for further sustainability initiatives.

Figure 3.13: Sustainability (Planning Proposal) combined retaining walls, rainwater detention/storage tanks can be used with terracing of slopes. (see figure 3.6)

- Sustainability performance could be incorporated into Council's existing incentives clauses.

Response

  - Current incentives clauses are carefully planned to provide public benefits of open space, community facilities, childcare, and key worker housing. These are already likely to be reduced under the Charrette Plan. There is no extra height/FSR that can be found to incentivise sustainability performance. It is, however, able to be mandated in the precinct DCP and Landscape Master Plan.

- Sustainability performance should extend to social sustainability targets (e.g. GSC key worker housing targets).

Response

  - As a principle of preparing a housing strategy, Council is required by the North District Plan (p43) to consider the financial viability of rezoned land. The revised proposal allows in excess of 40 key worker housing units. This number would be unviable given any reduced yield and increased open space of the Charrette plan.

- Consider opportunities to co-locate open space and [community/childcare] facilities to minimise Council's ongoing maintenance of the precinct. [responds to IPC advice for "vibrant community" open space area].

Response

  - Agreed in principle, to reinforce the park, wherever located, as a community focus. However, it is not supported as incentivising is problematic. The new 10-storey buildings to the north and south of the park are needed to purchase the east-west links, and cannot pay for both. The 10-storey buildings to the west and east appear to be given extra height in order to amalgamate with the small (6-storey) adjacent buildings, without which the 6-storey buildings would be unviable (8-storey is the base according to HillPDA's economic analysis).
  - Note that there is no benefit in co-locating two child care centres around the park. Indeed the Council's Plan proposes one child care centre near the Railway Station accessed from Canberra Avenue.

Study: Transit outperforms greenbuildings

Transit oriented development is the key to cutting energy consumption - even more so than Energy Star construction or green cars, according to a peer-reviewed study supported by EPA.

The report, *Location Efficiency and Housing Type -- Boiling it Down to BTUs*, finds that

Transit-orientated design alone results in a 50 percent reduction in energy use in multifamily buildings and 42 percent and 39 percent reductions in single-family attached and detached dwellings.

That said, green building and green automobiles make a significant contribution to reducing household energy use as well.

If a typical suburban household were to adopt all four strategies -- move to an efficient multifamily unit near transit and purchase a green car -- they could reduce their energy consumption by 72 percent.

New Urban News, April - May 2011, Issue 12

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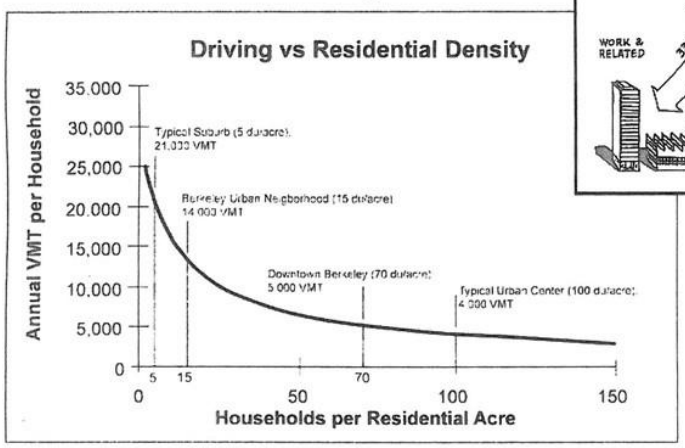
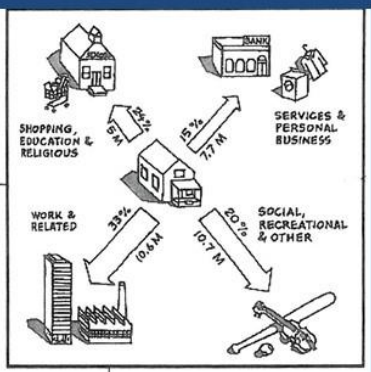
Figure 3.14: Sustainability of TOD (Planning Proposal)

Density vs Auto Use

Travel Behavior and Place Type





When municipalities encourage density, they also encourage reduction in VMT.
(Adapted from Holtzclaw 2002)

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Figure 3.15: Sustainability Auto-use (Planning Proposal)

3.12 Undergo study on existing trees and develop strategy for any removal and/or replacement

- Actions already addressed by the Landscape Master Plan (also included in the Draft DCP):

Response

- "Existing Trees" (tree audit – to be completed during development design phase) p.10
- "Tree Removal and Retention" p.57
- "Street Tree Master Plan" p.58
- A Landscape Strategy should be incorporated with each DA to demonstrate achievement of Landscape Master Plan and particularly public domain and the "Green Spine" communal open space. (see figure 3.16 & 3.17)

Figure 3.16: Existing Trees (Planning Proposal)

Figure 3.17: Proposed Landscape Enhancement (Planning Proposal - Landscape Strategy)

3.13 Achieve design excellence through a design excellence strategy and the establishment of a design review panel.

Response

Council resolution #123 (13 July 2015) supporting St Leonards South Master Plan – Item 5: “Establish an Expert Design Review Panel... to ensure a high standard...”

- “Reduce the setbacks to Park Road so that there is a consistent edge to the street.” [Reduce heights from 8-storeys to 6-storeys]

Response

- This contradicts the IPC advice, which is that the 10m setback currently proposed “does not adequately transition” towards Park Road west (82).
- Together with reducing the height of Park Rd buildings from 8 storeys to 6 storeys, these setbacks effectively result in an unchanged visual impact, for no worthwhile reason. Self-defeating. See also impacts on heritage item views.
- The Charrette proposal to relocate park to east actually reduces the potential to incorporate the park (in Park Road) as part of the transition.
- Existing dwellings on the west side of Park Road are significantly elevated often giving an apparent height in the order of 3 storeys.
- The strong existing avenue of Melaleuca trees in Park Road substantially screen one side of the road from the other. Additional avenue planting in build outs in the parking lanes will further aid in transition.

4 Major Issues

4.1 Open Space

Charrette Recommendations

The Charrette Report proposes the relocation of the major park one block to the east. It emphasises:

- The centrality of this location
- Maximisation of active and passive recreation
- Effective use of co-located community uses.
- **Creation of a new central park -** the proposed open space should be relocated to sit centrally within the St Leonards South precinct in order to maximise opportunities with active and passive recreation and make effective use of strategically co-located community uses.
- **Consolidation of public open space -** pocket parks referenced at Holdsworth Avenue, Marshall Avenue and Berry Road should be consolidated into one central open space. This will maximise useability of open space for both passive and active recreation activities

In reality this relocation of the park will:

- Not be a more central location than Council's Planning Proposal which is more central to the wider precinct of the Masterplan area (west to Greenwich Road)
- Provide for a larger area but on considerably steeper E-W slope therefore not improving conditions for active recreation
- Facilitate some community uses being co-located. There is little benefit in co-locating two childcare centres, particularly when one was previously proposed with particularly ready access to Railway Station and St Leonards Centre

It should also be noted that the cost of acquisition for the park moved east will be significantly greater than Council's proposal.

The Charrette Report also recommends consolidation of public open space (pocket parks from Holdsworth and Marshall Avenue and Berry Road). This is not a real proposition because these parks are either road closures (Holdsworth/Berry) or difficult to develop sections (Marshall Avenue) i.e. they are not either/or and are not able to be redeveloped in compensation.

- **Creation of new east-west links** – an amended block layout should be explored with additional east-west links to establish a grid pattern in the precinct. This will achieve improved pedestrian permeability and activate public open space connections.

The charrette proposal suggests that additional E-W links will achieve improved pedestrian permeability and activate public open space connections.

This will not effectively improve or increase E-W connections above those proposed in Council's Planning Proposal and in effect will not be at appropriate grades for vehicles or for access impaired pedestrians. Increased road access would also decrease and limit pedestrian use.

Figure 4.1: Existing avenue plantings in N-S streets which provide exceptional public domain (Planning Proposal)

The relocation of community facilities will remove the opportunity for providing community lifts at Canberra and Holdsworth associated with E-W link and community facilities.

Green Spines are a particular feature of this Planning Proposal for the following reasons:

- There are numerous mature trees centrally located in these North-South Blocks (Back yards)
- They provide continuous integrated deep soil zones in each nominated development area, connecting with E-W links, accommodating level changes and providing a wide variety of communal opportunities for the use of residents.
- They provide for a green corridor for fauna/avifauna
- Provide opportunity for solar access into both the Green Spines and into adjacent overlooking buildings
- Provide a green outlook from adjacent buildings and ample building separation.
- Provide extensive opportunity for deep soil planting.

These are illustrated in location in figure 4.2 and integrated levels in figure 4.3.

Figure 4.2: Green spines (Planning Proposal)

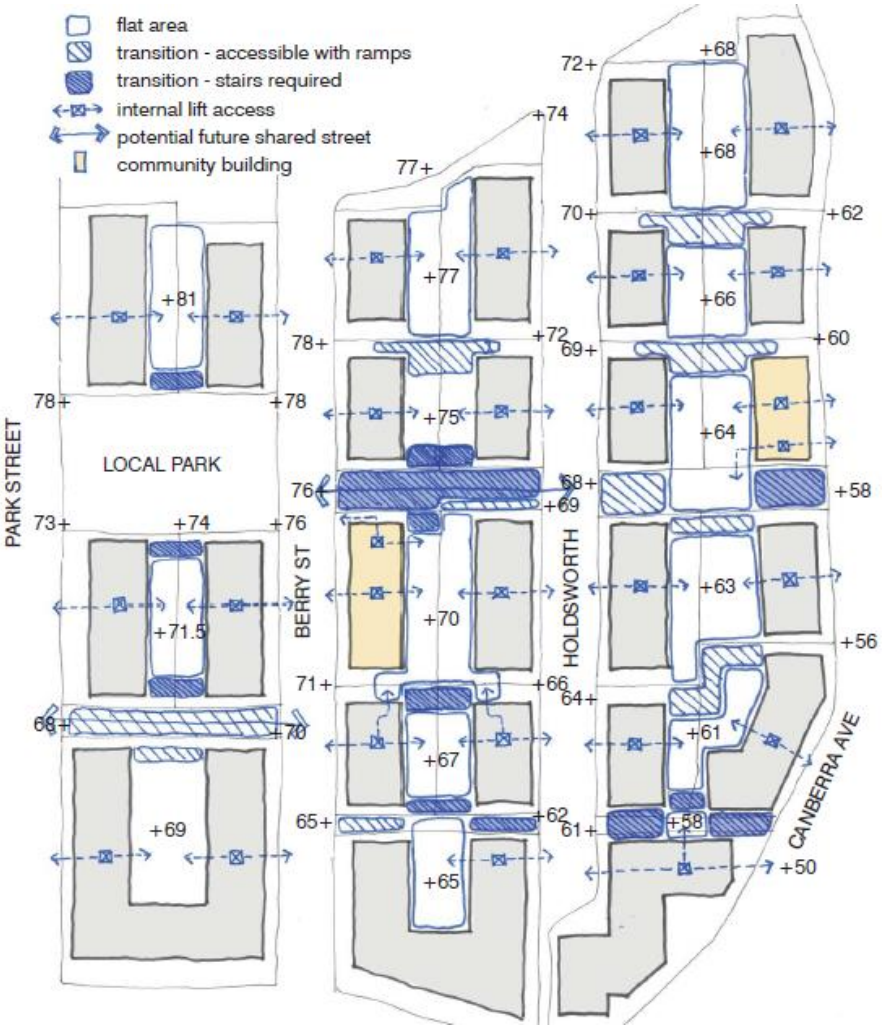


Figure 4.3: Level Changes & Pedestrian Connection (Planning Proposal)

4.2 Height and Density

4.2.1 Introduction

Council has reviewed height and FSR's across the site in the context of a revised Economic Viability Analysis with the intention of investigating where and how much reductions may take place.

Council's proposal (fig. 4.4) has been reviewed by the IPC. A separate design charrette (conducted by the Government Architect and DPIE) has recommended the following building heights shown below (fig. 4.5) (subject to further testing).

Council's Local Strategic Planning Statement has confirmed that St Leonards South will form part of its Local Housing Strategy. Therefore economic viability of development must be tested. Viability analysis consider land value as a result of current market trends. Though a process of finding a "Tipping Point" the analysis recommends a "base case" density (FSR) at which the value of a development is more than the cost of developing it. That is, what is the base density to produce a profitable margin. The HillPDA (attachment) updated report has revised the figures used originally in Council's Plan.

- **Reorientation of density in the precinct** – in order to maintain solar access to public open space, density should be reorientated to the north-east portion of the precinct.

Response

Council's Planning Proposal already has located tallest/densest buildings in the NE portion of the precinct. This is because:

- Proximity to rail station and St Leonards Centre.
- Tall buildings can nestle within shadows of existing/proposed tall buildings nearest highway/railway and this minimises additional overshadowing.
- Tall building locations proposed in the charrette will have similar or more shadow impacts on parks and on Green Spine communal open space (very difficult to comply with ADG in some locations).
- Height and Density are further distributed in order to act as incentives for provision of public domain and community improvements.

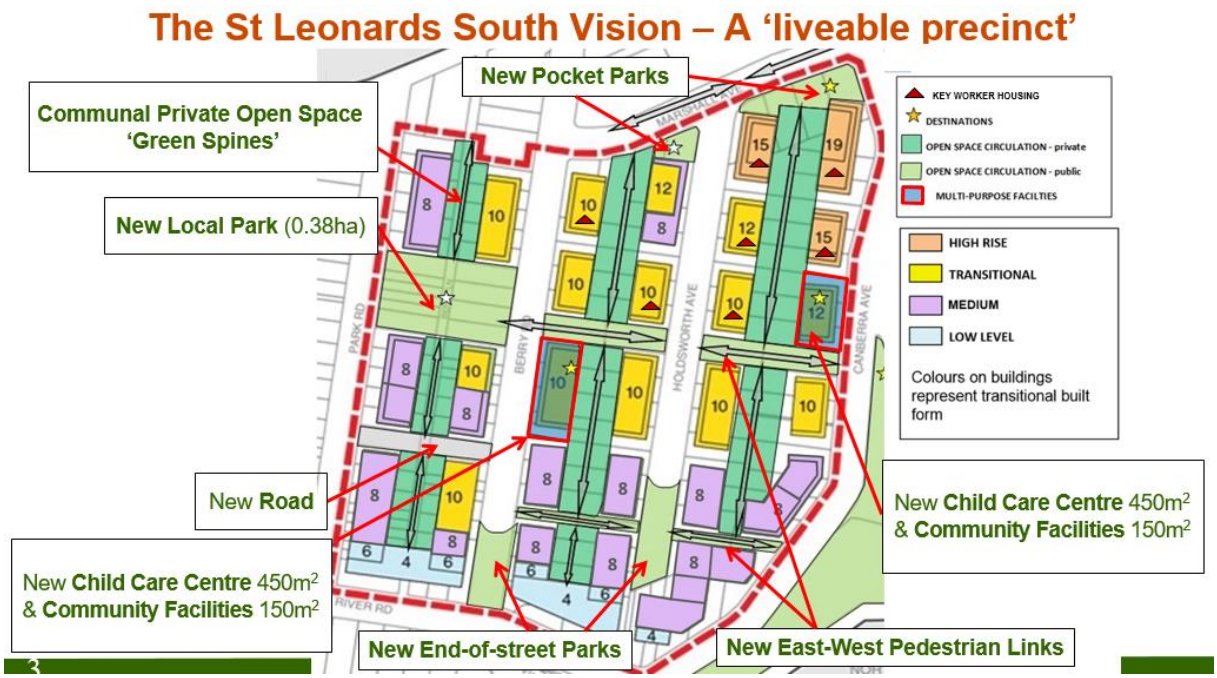


Figure 4.4: Building Heights (Planning Proposal)

Figure 4.5: Building Heights Proposed in Charrette Report

4.2.2 Option 1 - Removal of Key Worker Housing Incentives

If the above incentives are removed then the resulting height and FSR's are as set out below and with the following results. (Including yield for the entire precinct).

This option would result in reducing the floor space ratio and building heights to 2.75:1 and 8 storeys across the entire precinct.
While this would decrease the overall density, it would be inconsistent with the IPC advice which found that all the public benefits, including Key Worker Housing:

> "would contribute to providing a "vibrant community", which is one element of the Vision".

It would also be inconsistent with a number of key recommendations in the Design Charrette which also found these public benefits are essential to provide. In particular, the Charrette found that the provision of Affordable Housing should be investigated further. HillPDA's analysis confirms that 40 key worker dwellings can be provided (increased from 34), but only if the current identified sites retain their floor space ratio (FSR) and height bonuses. Further, a precinct-wide Affordable Housing target is not appropriate or achievable as it would result in an overall FSR of 3:1 and compromise all built form outcomes.

Therefore, this option is not viable or realistic and should not be considered.

Figure 4.6: Location of Key Worker Incentives

Table 1: Recommendations on Affordable Housing percentage of GFA

FSR	Affordable Housing Unit No.	% of total stock (by enclosed floor area)	2017 Recommendation
2.75:1	nil	nil	nil
3.00:1	1	1%	1%
3.10:1	1	2%	3%
3.50:1	2	4%	4%
3.70:1	7	7%	5%
4.00:1	14	9%	5%

Source: HillPDA Table 6.7

4.2.3 Option 2 - Adjust Canberra Ave Edges to 6 storeys (to improve solar access to Newlands Park)

This will result in heights and FSR's as shown (Table 2 & 3 and Fig. 4.7 - 4.11). This may render some sites technically unviable unless some on-site transfer can be arranged.

Figure 4.7: Building Heights - Charrette Report

Height Reductions

Canberra Ave

Reduce heights generally to 6 levels opposite park.

This results in a general reduction of FSR of between 0.2 - 0.3:1 i.e. from 3:1/2.75:1 to 2.75:1/2.5:1 which may cause pressure on viability.

An option could be to move height/FSR west to Holdsworth Avenue buildings. This will have some implications for solar access to “Green Spines” however could be compensated by provision of “Roof Gardens” (see attached figures and table).

Table 2: Reduced Heights - Canberra Ave

Parcel	Existing GFA	Council Height	Changed Height	Reduced GFA	Reduced FSR
7	8346	10	6	720/2782	0.26:1
9	6991	8	6	480/2542	0.19:1
11	11,198	8	6	960/4072	0.24:1

Figure 4.8: Planning Proposal Heights

Figure 4.9: Heights modified to achieve Charrette solar objectives to Newlands Park

Park Road

It has been suggested that heights in Park Road be reduced from 8 storeys down to 6 storeys to aid with transition to unchanged residential cottage area to the west.

This will reduce FSR by 0.2 - 0.4:1 in this area and may have some impacts on viability.

It is suggested that either the proposed 8 storeys be retained (see transition discussion in text) or that some of the reduced FSR be transferred east to Berry Road fronting buildings. (This transfer may not be adequate to meet viability criteria).This requires street to street amalgamation. This would have solar impact on “Green Spines” but could be compensated by provision of “Roof Gardens”.

Table 3: Reduced Heights – Park Road

Parcel	Existing GFA	Council Height	Changed Height	Reduced GFA	Reduced FSR
21	5893	8	8	760/2000	0.3:1
22	7024	8	6	600/2000	0.3:1
23	8431	8	6	600/3000	0.2:1

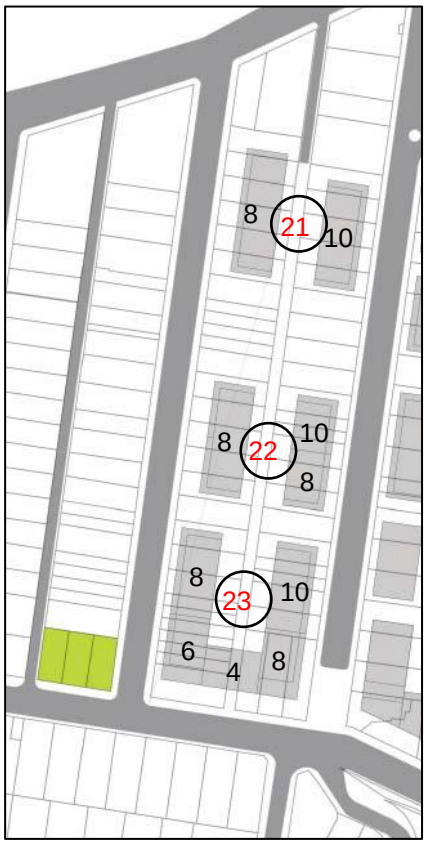


Figure 4.10: Planning Proposal Heights

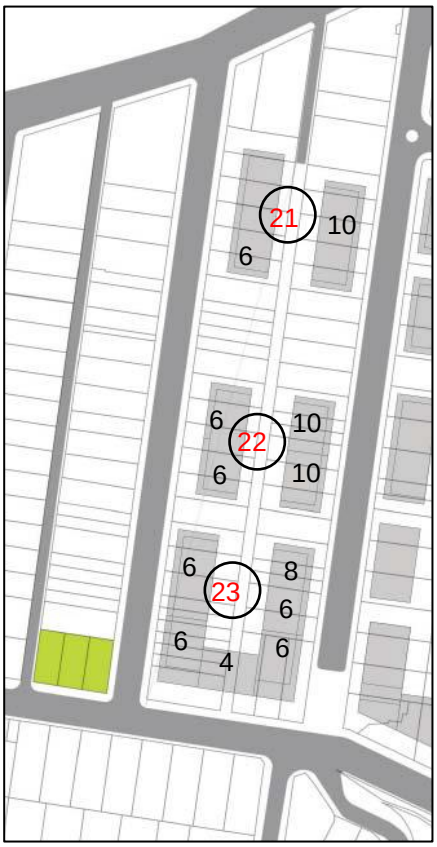


Figure 4.11: Heights modified in response to Charrette Report

4.2.4 Option 3 & 4 - Reduced FSR's generally

We have revised the FSR's down by 5%, 10%, and 15%. This results in development potential are shown in Appendix 5.

Consider reducing density across the precinct - For example reduce the overall FSR and height to 2.5:1 and 7 storeys (a 10% density reduction).

Figure 4.12: Proposed Amalgamation (Planning Proposal)

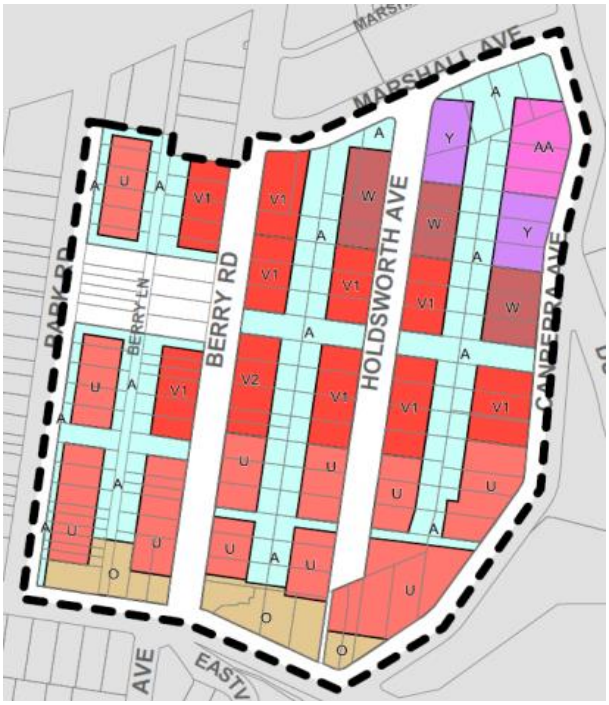


Figure 4.13: Incentive Areas (Planning Proposal)

Figure 4.14: Precinct Hill PDA Analysis

SUMMARY HEIGHT REDUCTION WITH 5%, 10%, 15%. GFA REDUCTION

	Average Footprint	Total GFA	5%		10%		15%	
			GFA	HT	GFA	HT	GFA	HT
1	55 x 22 = 1254	13,660	683	0.54	1366	1.09	2049	1.63
2	42 x 20 = 840	8,566	428	0.5	857	1.02	1285	1.53
3	34 x 20 = 680	7,019	351	0.52	702	1.03	1053	1.55
4	34 x 20 = 680	6,175	309	0.45	617	0.91	926	1.36
5	36 x 20 = 720	7,182	359	0.5	718	1	1077	1.5
6	37 x 20 = 740	5,842	292	0.4	584	0.79	876	1.18
7	38 x 20 = 760	8,346	417	0.55	835	1.1	1252	1.65
8	52 x 20 = 1040	8,346	417	0.4	835	0.8	1252	1.2
9	45 x 20 = 900	6,991	350	0.39	699	0.78	1049	1.17
10	37 x 20 = 740	4,541	227	0.31	454	0.61	681	0.92
11	80 x 20 = 1600	11,198	560	0.35	1120	0.7	1680	1.05
12	52 x 20 = 1040	8,135	407	0.39	813	0.78	1220	1.17
13	37 x 20 = 740	5,901	295	0.4	590	0.8	885	1.2
14	37 x 20 = 740	5,842	292	0.4	584	0.79	876	1.18
15	37 x 20 = 740	6,678	334	0.45	668	0.9	1002	1.35
16	52 x 20 = 1040	8,346	417	0.4	835	0.8	1252	1.2
17	52 x 20 = 1040	8,436	422	0.41	844	0.81	1265	1.22
18	34 x 20 = 680	4,590	229	0.34	459	0.68	688	1.01
19	34 x 20 = 680	4,590	229	0.34	459	0.68	688	1.01
20	48 x 20 (x 2) = 1920	14,869	743	0.39	1487	0.77	2230	1.16
21	60 x 20 = 1200 48 x 20 = 960 1200 + 960 = 2160	13,341	667	0.31	1334	0.62	2001	0.93
22	48 x 20 (x 2) = 1920	13,027	651	0.34	1303	0.68	1954	1.02
23	48 x 20 (x 2) = 1920	18,893	945	0.49	1889	0.98	2834	1.48

Generally, any reduction would need to be distributed evenly throughout the precinct, in order to be consistent with Council's adopted principles for St Leonards South.

The HillPDA analysis found that a precinct wide FSR of 2:1 and less than 6 storeys is not feasible. This reduction is also not feasible in either Areas A or B. It was found the minimum feasibility for Area A is an FSR of 2.5:1 and 7 storeys, but was 2.7:1 and 8 storeys for Area B.

From an urban design perspective, given that Park Road is in Area B, increasing the density and heights here would be inconsistent with the IPC advice, and is not an appropriate response.

Further, if the proposed FSRs are retained for Area B, then additional public benefits can be provided as part of redevelopment. Site 21 can be reduced to 6 storeys with a 2 storey street wall height along Park Road and the new park. The adjoining building along Berry Road can remain as 10 storeys with a further 3 metre setback at and above the 5th storey (for portion fronting the new park) to improve transition and solar access to the new park. Site 22 would also have 6 storeys, with a 2 storey street wall height, along Park Road and the new park while remaining 10 storeys on Berry Road with a further 5th storey setback (of 3 metres) to the park. Site 23 can be lowered to 6 storeys (with 2 storey street wall) along Park Road with 8 storeys along Berry Road, transitioning down to 4 storeys approaching River Road. These provisions for both Sites 22 & 23 would enable these sites to acquire and construct the proposed east-west vehicular connection. If the heights & FSRs are reduced, then these additional public benefits cannot be provided.

Regardless of the above, a clear disparity between Areas A and B means that a consistent precinct wide reduction in FSR and building heights is not realistic.

From the previous tables an overall reduction in GFA of 5% reduces building height by less than one storey.
An overall reduction in GFA of 10% building height by about one storey.
An overall reduction in GFA of 15% reduces building height by 1-2 storeys.

4.2.5 Option Evaluation

From the above it is concluded that:

a) Removal of Key Worker Housing incentives will provide a small reduction in height and FSR. This will not be significant and does not justify the removal of the opportunity to provide “Key Worker” housing.

b) Reduced heights along Canberra Avenue can improve solar access to Newlands Park. This however has impacts on development viability. Transference of this Floor space from Canberra Ave to Holdsworth Ave will have impacts on solar access to the “Green Spine”. This however, could be compensated by provision of “Roof Gardens”.

   Note that this assumes large scale amalgamations street to street in order to facilitate transfer of FSR’s and strategic reductions in height (Canberra Ave and Park)

   Reduced heights along Park Rd will also have impacts on development viability. Again it might be possible to transfer floor space from Park Rd to Berry Rd frontages. Again this will have impacts on solar access to “Green Spines” and again this could be compensated by provision of “Roof Gardens”.

c) Floor Space Reductions generally across the site do not produce significant advantages.

Reductions greater than 5% are likely to have significant impacts on project viability.

Recommendations

Thus, it is recommended that:

a) Key Worker Housing incentives be maintained.

b) Heights be reduced along Canberra Avenue and lost floor space be transferred to Holdsworth Avenue frontage. Roof Gardens should be provided to compensate for reduced solar access to “Green Spines”.

Heights to be reduced along Park Rd while average building heights along Berry Road frontage will remain if public benefits are provided. Buildings adjoining the new Park (Sites 21 and 22) will have increased upper level setbacks stepping up to lessen the impact of the built form facing the new park. Sites 22 and 23 will now acquire, construct and embellish the new E-W road connecting Park and Berry Roads.

4.3 Movement and parking

4.3.1 Traffic

The current road pattern of the precinct is poorly connected by road due to the following:

- Holdsworth Avenue and Berry Road are not connected to River Road due to dramatic topographic difference. This means that they must egress the site via Pacific Highway or circuitously via Marshall/Canberra/Duntroon to River Road.

- E-W road connections are poor with only Marshall Avenue connecting Holdsworth and Berry in the north and no E-W connection between Berry and Park.

  The Council Proposal (fig. 4.14) & the Charrette Proposal (fig. 4.15) both address these issues.

  Response

  The Masterplan recommends a new low key connection between Park Road (which does have access to River Road) and Berry/Holdsworth. This will improve access and redistribute traffic without encouraging "rat running" or through-traffic.

  The steep slopes on the land limit the possible locations of additional E-W vehicular connections. The Masterplan works carefully with the slope to facilitate shareways between Park and Berry and Holdsworth.

- **Minimising traffic movements -** by minimising on-street parking, closing the intersection at Canberra Avenue and River Road, and introducing maximum car parking rates for the precinct. These measures will assist in delivering a pedestrianised environment reflective of the precinct's proximity to active transport.

  Response

  The following items are relevant:

  - The Planning Proposal proposes increased on-street parking by removing many footpath crossings – but also proposes planting large growth trees in parking lane (see Landscape Masterplan) to increase street canopy and climate control.

  - **Support closing intersection of Canberra Avenue and River Road subject to appropriate flood control measures contained in Council's existing Development Control Plans.**

  - **Support the inclusion of maximum parking rates. the actual number requires some research … but note that car ownership in TOD's (by Census) is often under one car per unit (down to about 0.6car/unit). The IPC also supported restricting on-street parking.**

  - **Support improved walkability of the precinct with wider verge/footpaths, build outs in parking lanes and traffic calming. Traffic Report supports this as does LMP and DCP.**

Figure 4.15: Planning Proposal New Connections

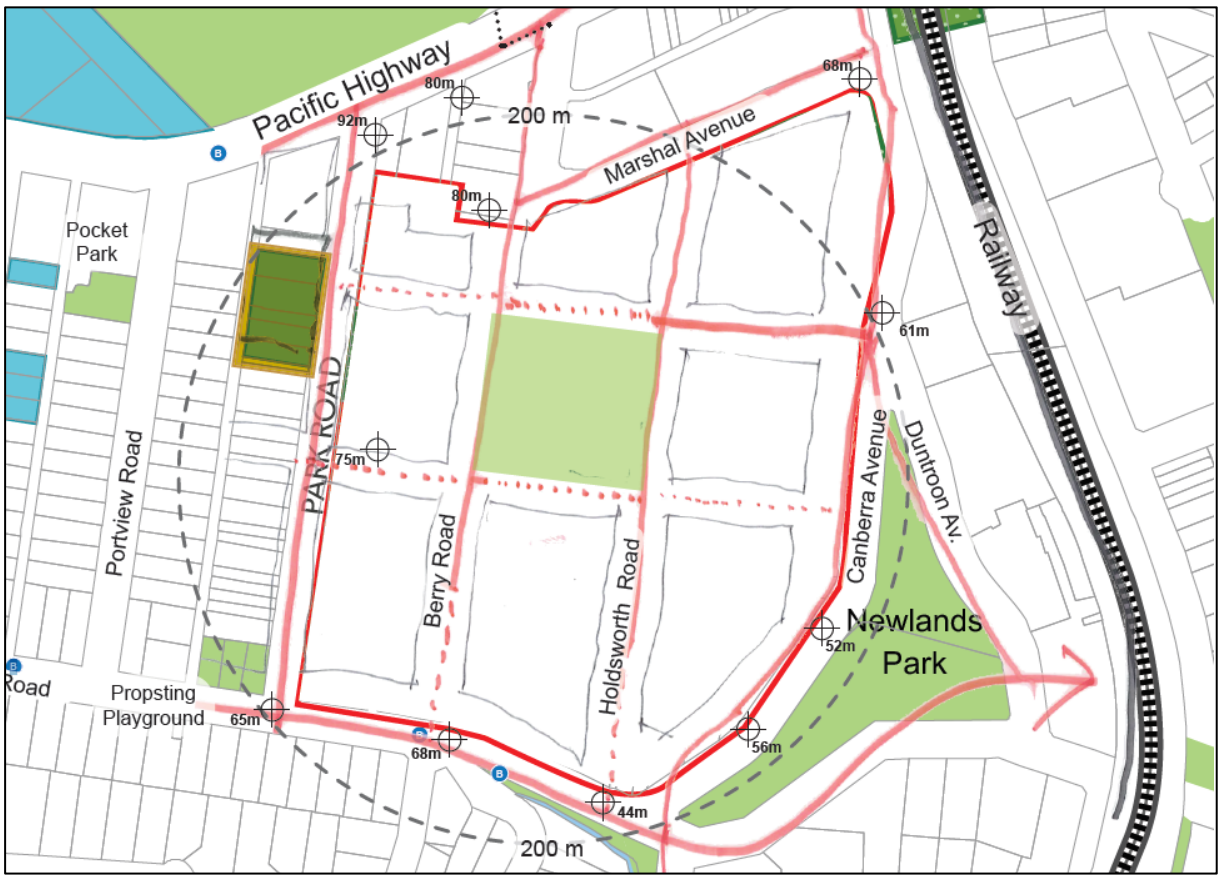


Figure 4.16: Sketch Design Circulation Plan (Note: this drawing is at sketch design stage only. Further testing and validation studies are required)

4.3.2 Parking – Reduce Parking Provision for TOD

Response

Our research has indicated that in St Leonards and similar TOD centres (Chatswood, Hurstville etc), recent developments have resulted in reduced vehicle ownership (about 1 car/dwelling 2006/2011 Census).

Thus it seems desirable to reduce parking provision numbers across this TOD (precise numerics still to be defined).

It should be noted that on-street parking would increase due to reduction of vehicle kerb crossing points (in spite of additional build outs into parking lanes for tree planting). This on-street parking would need to be carefully managed, however in order that it not be consumed by:

- Rail commuters
- Employees at St Leonards
- Employees/visitors at community facilities

It is suggested that 1-2 hour limits apply during working hours.

Note: North Sydney Council requires only 1 car/2br du in St. Leonards.

4.3.3 Pedestrian Walkability

The figures below (figs. 4.16 & 4.17) indicate Councils Proposal for optimised walkability.

Response

The Masterplan sets out to improve E-W pedestrian connection between the proposed new park (between Park and Berry) and Newlands Park (Canberra/Duntroon). This improved connectivity between open spaces complies with DPIE.

The major E-W connection seeks to resolve difficult constraints which include topography, park locations, access to Green Spines.

The exceedingly difficult elevational change between Holdsworth and Canberra Avenue is assisted by the strategic location of community facilities which can thus facilitate lift access support to otherwise difficult slopes (accessibility).

The proposed redesign that came out of the Charrette provides no real improvement in E-W connection and makes it in fact less accessible (no lifts).

It should be noted that considerable effort has gone into ensuring ready access to E-W connections from communal Green Spines (for residents).

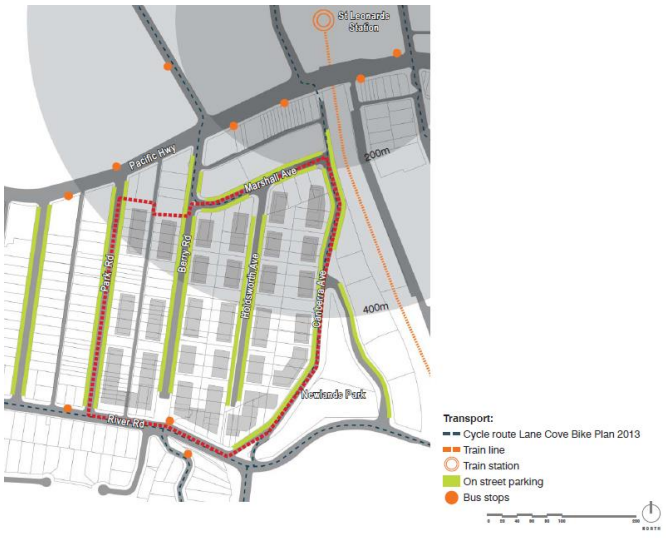


Figure 4.17: Walkability (Planning Proposal)

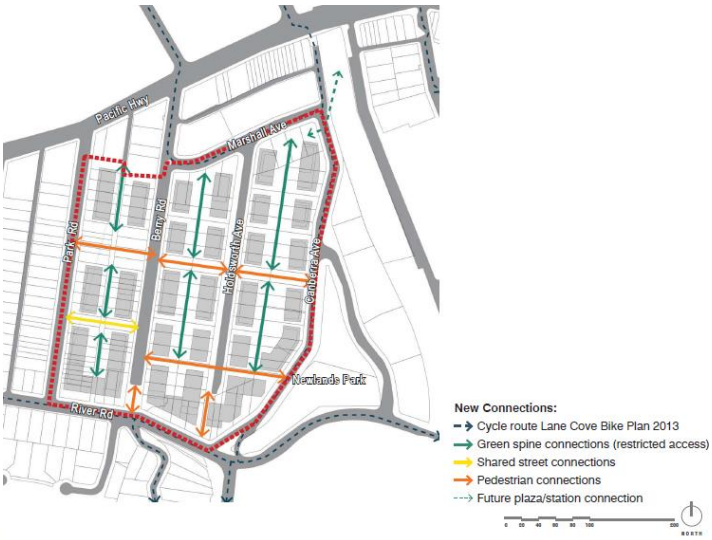


Figure 4.18: Street Structure (Planning Proposal)

5 Conclusion

The St Leonards South Outcomes and Recommendations report, prepared by the Department of Planning, has provided Council the opportunity to contemplate alternative design and land use approaches to respond to the concerns of the IPC and finalise Planning Proposal 25.

The report has provided recommendations and support for development in the St Leonards South precinct given the strategic merit of the precinct with its proximity to employment opportunities in St Leonards and opportunity to leverage the growing health, medical research and education land uses to the north alongside additional housing.

It is suggested Council review and contemplate the recommendations for Planning Proposal 25 which include amendments such as:

- The creation of a new central park to make better use of strategically co-located community uses;
- Consolidation of public open spaces to best maximise the usability of open space;
- Creation of new east west links to improve pedestrian accessibility;
- Re-orientate density within the precinct through alternative built form envelopes and building heights; and
- Minimise traffic movements and decrease parking rates.

After considering the Design Charrette report, and with additional studies undertaken by Council, it is clear that the Design Charrette recommendations cannot be implemented in full given the lack of feasibility/viability, unsuitability of some design and land use recommendations and inconsistency with the IPC advice.

5.1 Recommendations

That Council:-

4. **Support** the following recommendations of the design charrette:

    - Reduce maximum car parking rates (subject to further investigation);
    - Create solar access planes to public open space (subject to further testing against Apartment Design Guide requirements);
    - Vehicular movement analysis – this has been addressed through Council's existing studies and RMS have "*no objection to the Planning Proposal proceeding before the Draft 2036 Plan is finalised*";
    - Variety of dwelling typologies (eg. More studios and 3+ bedroom dwellings) – this is already covered by Council's existing Development Control Plan;
    - Intentions for land west of Park Road – this will be examined when Council undertakes its Draft Local Housing Strategy;
    - Consider Sustainability measures – measures already contained in DCP and Draft Landscape Master Plan;
    - Tree Management – already contained in Draft Landscape Master Plan and Draft Development Control Plan;
    - Design excellence – previously resolved by Council on 13 July 2015; and
    - Public benefit and open space delivered through planning controls – Council's proposal already achieves this.

5. **Partially support** the following recommendations of the design charrette:

    - Creation of 'pedestrian avenue' along Marshall Avenue – note Charrette built form would result in 'canyon effect';
    - Widening River Road – however would need to consider existing cliff edge;
    - Some 6 storey buildings along Canberra Avenue fronting Newlands Park – subject to further testing; and
    - Review DCP provisions for townhouse style development – can be investigated further as part of integrated apartment complex.

6. **Not support** the following recommendations of the design charrette:

    - Relocation of central park and enlarged (consolidated) Park – would cost $60 million, result in less public open space being provided and inconsistent with IPC advice relating to Park Road impacts (heritage buildings);
    - 10 storeys surrounding relocated park – would not improve solar access to new park;
    - 10 storeys at the bottom of River Road – inconsistent with IPC advice which found Council's transition along River Road appropriate;
    - Additional non-residential uses (employment-generating) – would have poor viability and was not part of the IPC advice;
    - Co-locate and consolidate social infrastructure (i.e. multi-purpose facilities) – no real benefit in co-locating 2 child care facilities;
    - Reduced north-south lot sizes – would decrease viability;
    - Relocated E-W connections and removing lifts – gradient of relocated East-West connections not improved (still does not achieve DDA compliance) so lifts still required;
    - East-West buildings blocking Green Spines (communal open space) – would be inconsistent with Apartment Design Guide requirements (solar access for communal open space);

- Bonuses for design excellence & sustainability measures – would be inconsistent with intent of Council's proposal (i.e. bonuses where public benefits are justified and provided); and
- Reduce setbacks on Park Road to 4 metres – would contradict the IPC advice.

Appendices

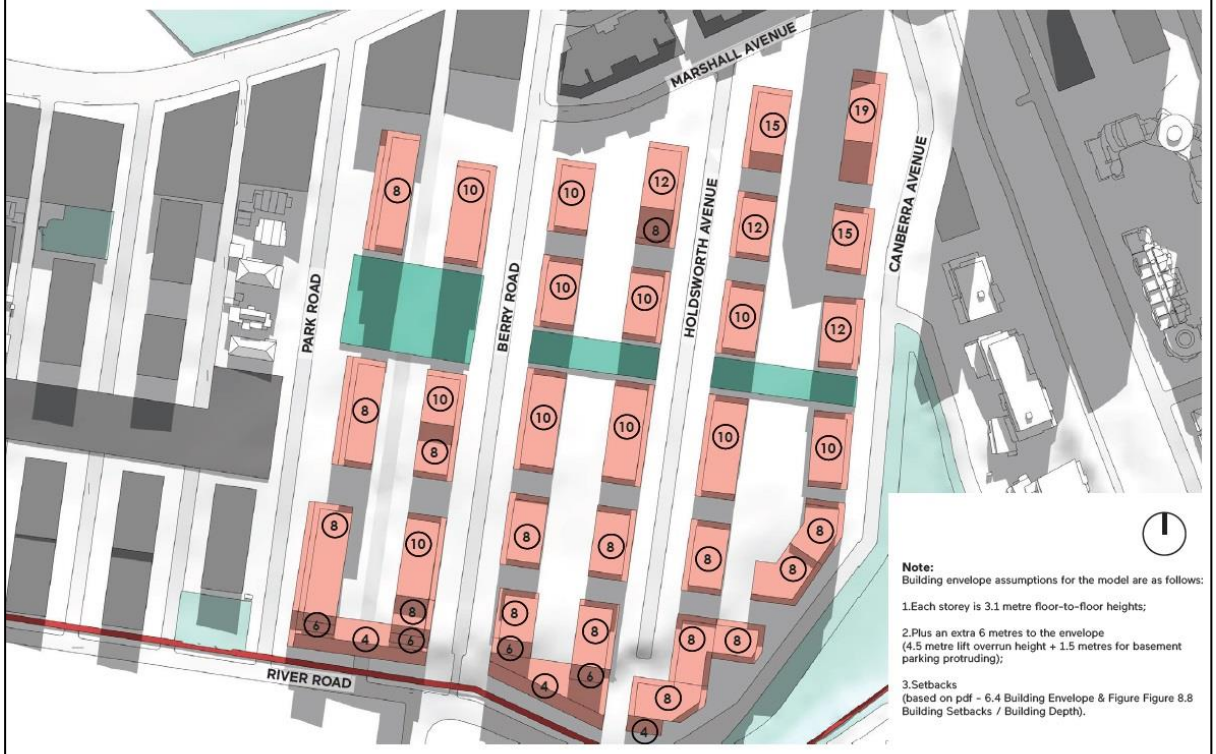
Appendix 1 - Solar Access Modelling and Comparison

This section compares shadow generation in mid-winter between Council Proposal (upper) and Charrette Proposal (Lower).

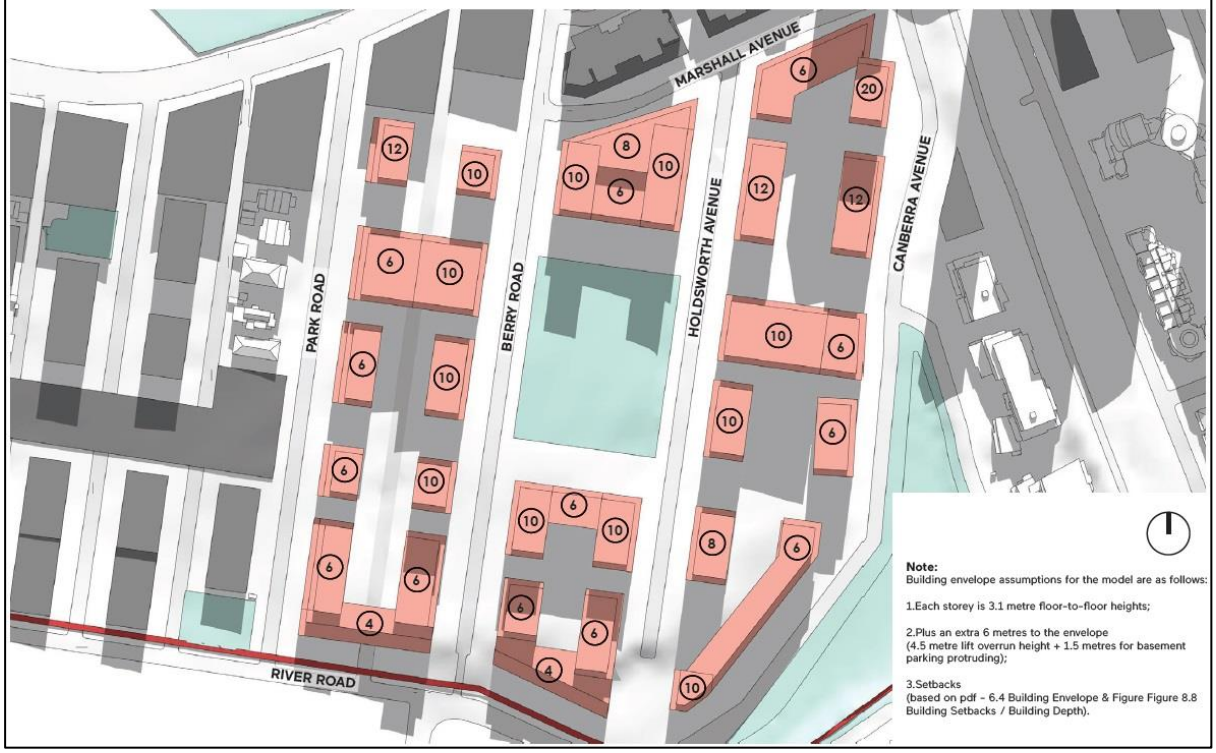
ORIGINAL ENVELOPE – 21 th JUNE – 10:00AM

PROPOSED ENVELOPE – 21 th JUNE – 10:00AM

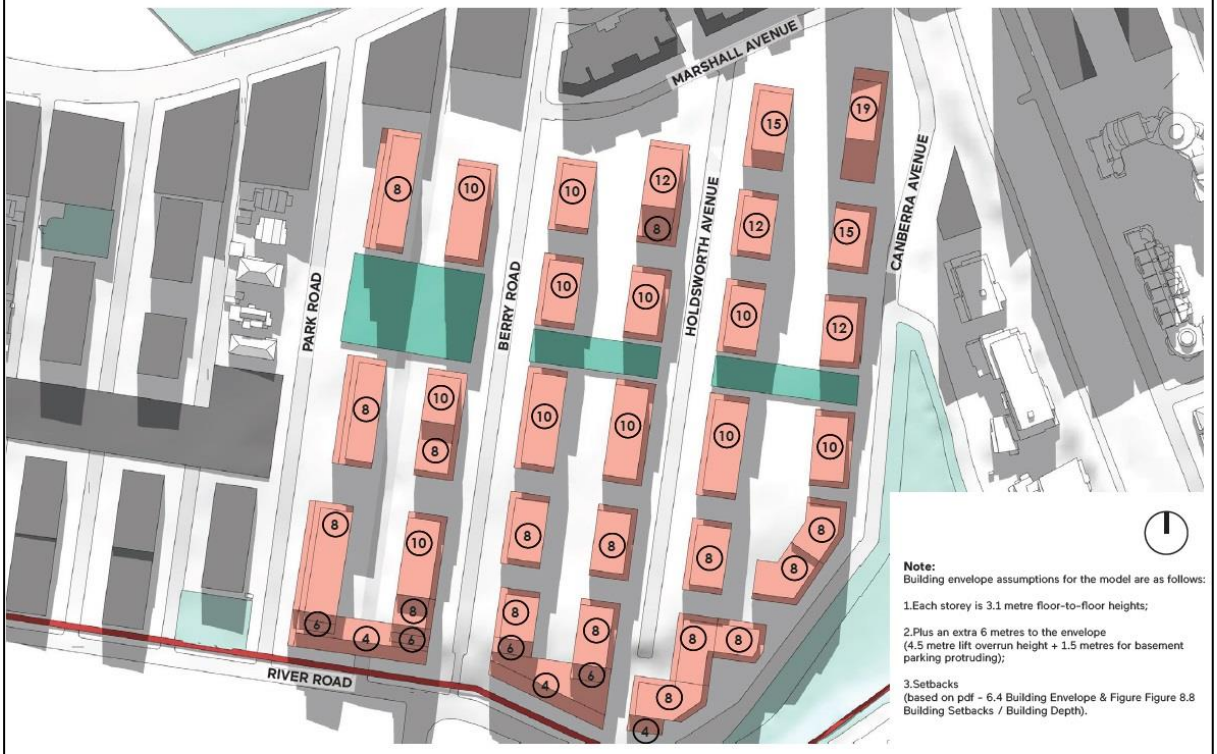
ORIGINAL ENVELOPE - 21 th JUNE - 11:30AM



PROPOSED ENVELOPE - 21 th JUNE - 11:30AM



ORIGINAL ENVELOPE - 21 th JUNE - 12:00PM



PROPOSED ENVELOPE - 21 th JUNE - 12:00PM

ORIGINAL ENVELOPE – 21 th JUNE – 12:30PM

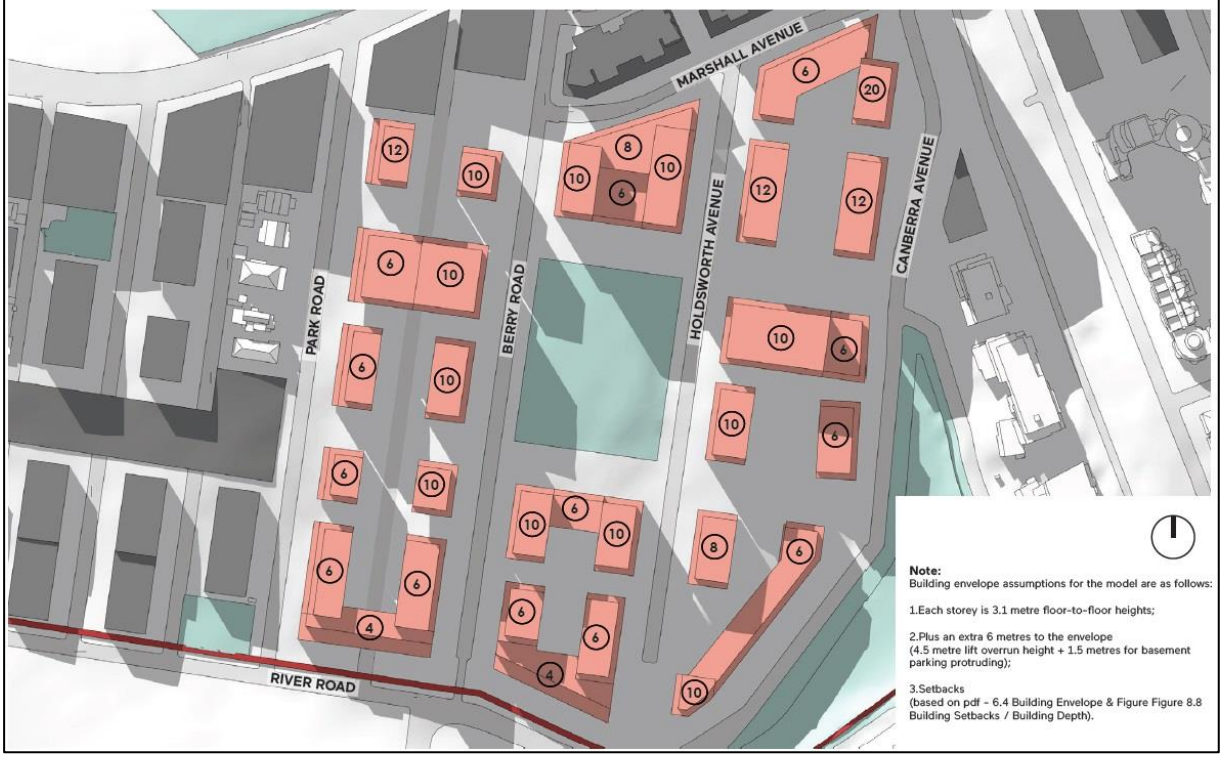
PROPOSED ENVELOPE – 21 th JUNE – 12:30PM

ORIGINAL ENVELOPE – 21 th JUNE – 01:00PM

PROPOSED ENVELOPE – 21 th JUNE – 01:00PM

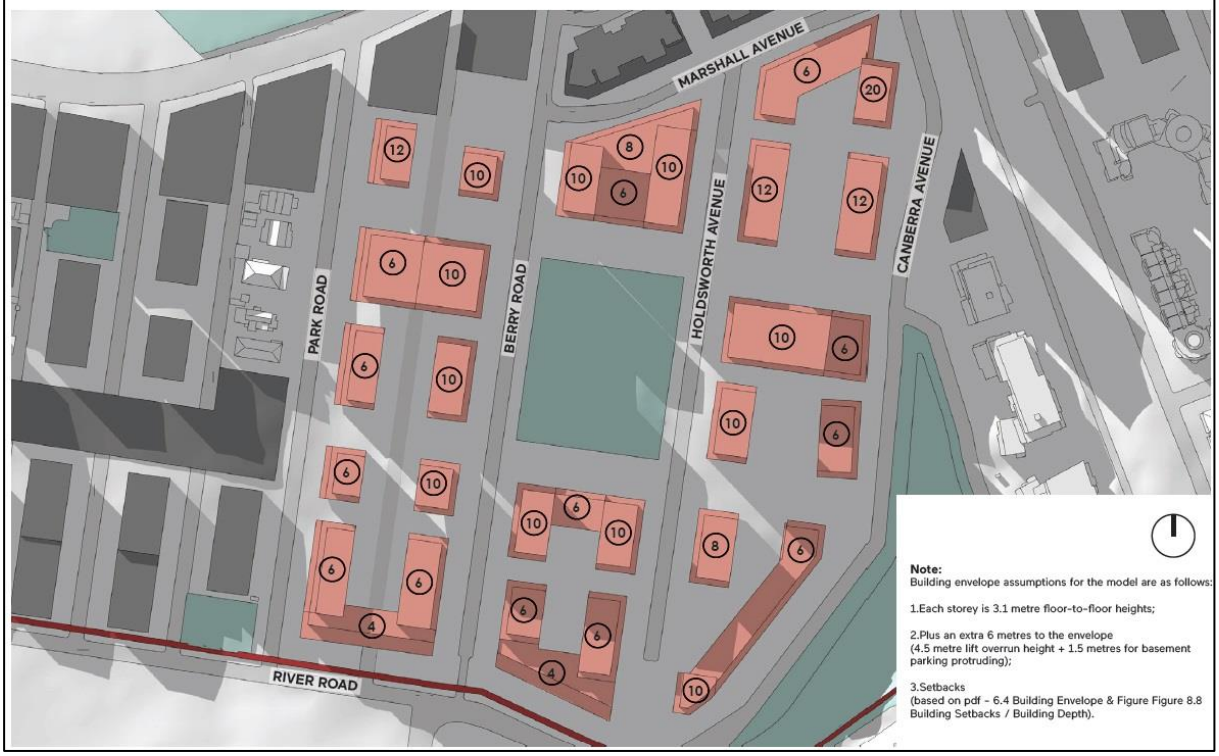
ORIGINAL ENVELOPE – 21 th JUNE – 02:00PM

PROPOSED ENVELOPE – 21 th JUNE – 02:00PM



ORIGINAL ENVELOPE - 21 th JUNE - 03:00PM

PROPOSED ENVELOPE - 21 th JUNE - 03:00PM



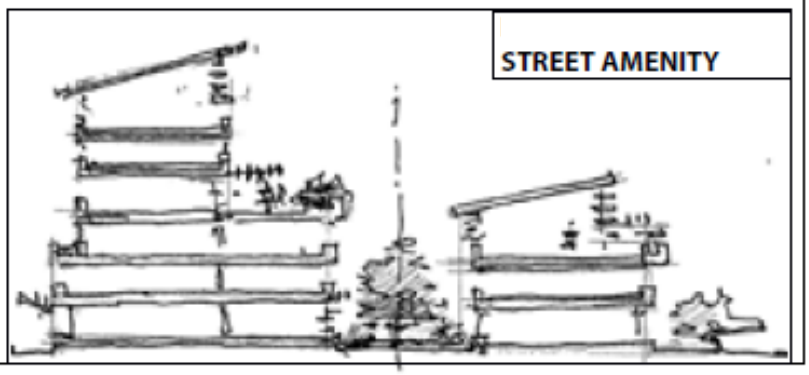
Appendix 2 - TOD Study/Principles

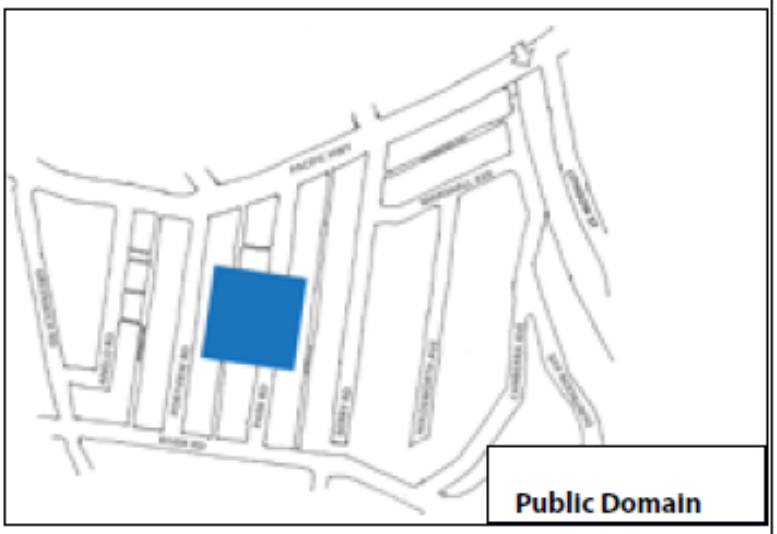
St Leonards South Precinct Planning Principles/Standards

The principles embodied in the St Leonards South Masterplan are set out below:

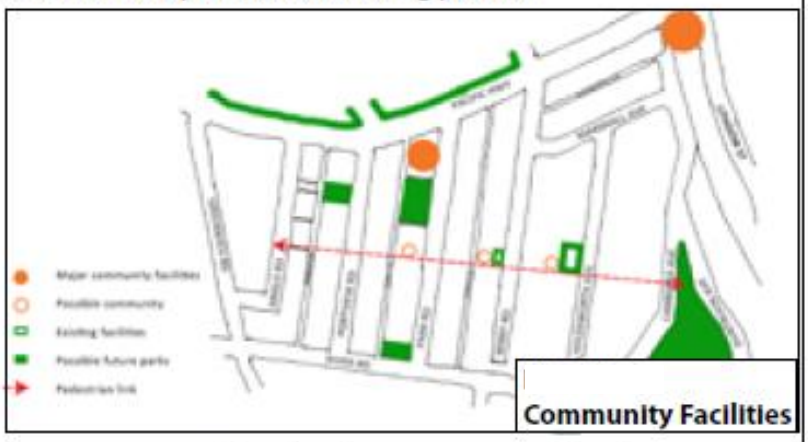
	Principles	Standards/goals
1	Liveability	• Attractive locale, meeting places and services • A range of amenities within close proximity to where people live and work • Accessible buildings and spaces that are capable of cost-effective adaptation • Places designed to reflect the context and character of the locale

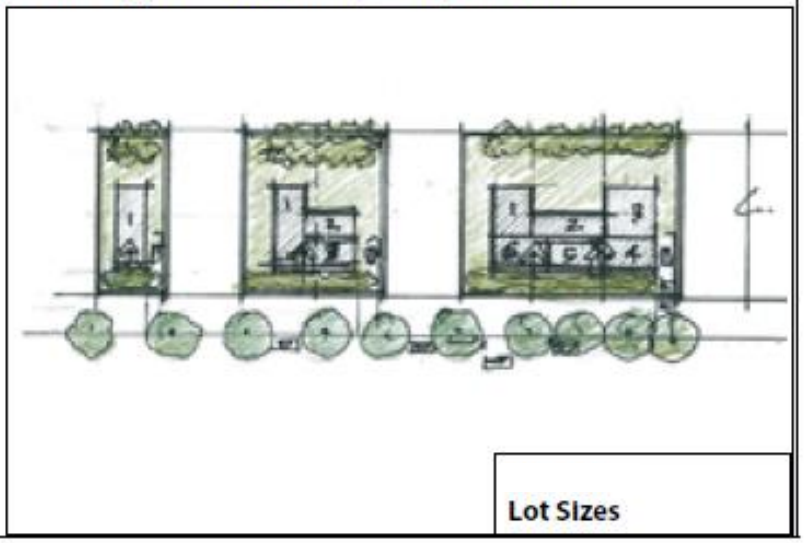
2	Housing for all stages of life
	• Diversity
	
	• A range of apartment sizes & densities
	
	• Affordability - Ownership
		• Houses, units, seniors living, key worker housing, universal (adaptable) design
		•
		• Mix of floor space ratios and heights (average only):-
		  • 0:5 - 1-2 Storeys
		  • 2:1 - 4 to 6 storeys
		  • 2.5:1 - 6 to 8 storeys
		  • 3:1 - 8 to 10 storeys
		  • 5:1 - 12 to 15 storeys
		 
		• Current minimum apartment sizes (under SEPP65)
		  • Studio = no minimum size
		  • 1 bedroom = 50 m2
		  • 2 bedroom = 70 m2
		  • 3 bedroom = 95 m2
		• Proposed draft Apartment Design Guide minimum apartment sizes
		  • Studio = 35 m2
		  • 1 bedroom = 50 m2
		  • 2 bedroom = 70 m2
		  • 3 bedroom = 95 m2
		
		• Developments dedicate 4% of units for key workers?

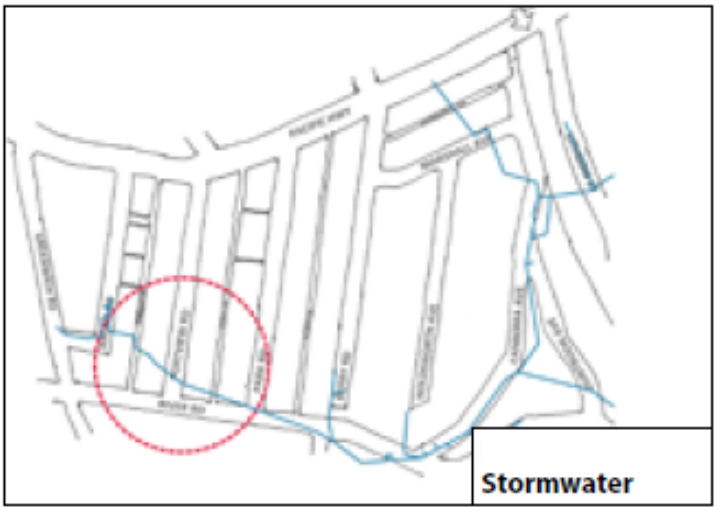
	Principles	Standards/goals
3	Maximise walkability/ cycling/access	• Less than 800 m walk to train • Less than 400m walk to bus (200m distance between bus stops) • Less than 400m walk to park (5 minutes) • Gradient less than or equal to 12:1 or 14:1 (wheelchair accessible) where possible • Explore connections north to RNSH and south to bushland  WALKABILITY
4	Amenity • Built form • Streetscape	• Minimum performance standards for: • Sunlight/ Wind/ Privacy/ Noise impact amelioration • New developments allow for a minimum of 2 hours (urban) and 3 hours (suburban) sunlight access to habitable rooms & private open space of existing residential properties • Any new apartment buildings should minimise impacts with separation distance when adjacent to a low density residential zone • Existing Street Trees enhanced; setbacks to support deep soil planting • Visual transition between different densities • Topography followed, tapering towards south  STREET AMENITY

	Principles	Standards/goals
5	Public domain, Open space and Streetscape	• Use 1.86 hectares per 1,000 residents (existing LGA) as a guide • 1.19 hectares per 1,000 residents (existing precinct) • New parks for general recreation, balancing use of Willoughby oval? • Visual, tree-lined links • Follow contours, where possible, and desire lines • Promote wildlife corridors  Public Domain

6	Efficient traffic flow	• On-street parking is minimised
		• Identify opportunities for east-west links-
		  • Pedestrian/ cycle paths
		  • Shared links with cars as well
		  • Balance ease of access with "rat-runs" reduction
		• N-S "Rat-run" discouraged between River Road and Pacific Hwy
		 
		Traffic Flow

	Principles	Standards/goals
7	Community facilities	• Cater for: • Multi-purpose and for all age groups • Indoor, multi-level sports buildings? • Others? • Explore income producing assets (growth to fund improvements) • Create landmark place(s) and meeting place(s)  Community Facilities

8	Appropriate lot sizes for amalgamation	• 3 lots minimum per flats development (or possibly 2 if FSR 2:1)
		• Under current provisions for flats:
		  • 1,500 m2 min site area;
		  • 18m is maximum building depth (exclusive of balconies);
		  • 40m max building width fronting street;
		  • 7.5m min front setback (if no prevailing setback);
		  • Side & rear setbacks are 6m (up to 4 storeys), 9m (5-8 storeys) and 12m for (9 storeys+).
		• Avoid isolating sites from development potential
		 
		Lot Sizes

	Principles	Standards/goals
9	Appropriate infrastructure & controlled storm-water	• Follow contours • Overland flow –lines followed where possible • Act on advise of Department of Education regarding schools  Stormwater
10	Financial viability & Options for in-creased growth	• Determine minimum floor space ratio necessary to make re-devel-opment viable. • Section 94 – undertake study?

These principles were derived from a Scoping Workshop held with Council Officers and members of the Community Liason Committee. They were then published in the 2014 Master Plan and adopted by Council in July 2015.

Appendix 3 - Further Sustainability Principles

Sustainability & Urban Form

Sustainability is not just solar powered, mud brick, water recycling buildings.

Consider:

- Urban structure - Vkms travelled
- Peak oil and climate change
- Self containment
- TODS, Towns, Villages and Hamlets
- Corridors and Districts
- Employment
- Density and Diversity
- Affordability
- Retirement i.e. Life Cycle Inclusivity

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Sustainability & Urban Form

Sustainability = Many things to many people

Environmental

- Energy efficiency
- Conservation of resources
- Integrating with natural systems
- Water sensitive
- Well Structured

Social

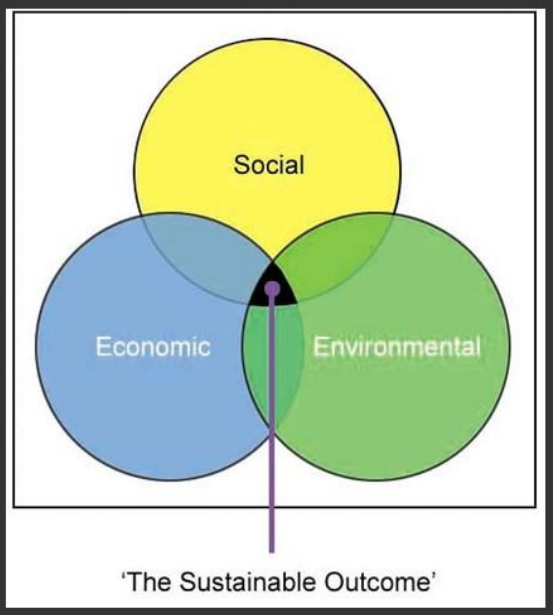
- Creating real, enduring, inclusionary communities

Economic

- Efficient, integrated
- Affordable, enduring
- Adaptable / robust

Use The Triple Bottom Line to Explain Placemaking

- Environmental
- Social
- Economic
- Sustainability is more than environmentalism



Sustainability & Urban Form

Peak Oil + Climate Change + Sub-Prime Crisis = The End of the Suburban Dream

The Dream becomes a Nightmare as China & India compete for dwindling oil supplies.

A complete restructure of society will be required in order to survive...

or else....

Mad Max - Road Warrior

Sustainability & Urban Form

CARBON EMISSIONS

Average American Household

•Drives 21,250 miles per annum

•Burns 1,062 gallons of gas per annum

•Generates 20,602 lbs of carbon emissions (9.4tons)

Traditional Walkable Neighbourhood

•Drive half as much (or less) than national average

Average Household Exurb Chicago

•Generate 11.5 tons of carbon per annum

•Inner ring rail urb generates 8.6 tons

Inner neighbourhoods

Generate 2.5 tons….. i.e. less than a quarter of the exurbs!!!

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Sustainability & Urban Form

Reduction in V kms travelled requires:

• More compact, integrated, self-contained communities

• More connective communities

• Better Transit and/or self containment

•Denser, more diverse, walkable, attractive community

•Understanding of full/complete life cycle (cradle to grave)

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Appendix 4 - St Leonards TOD – Demographics and Statistics

Demographics

Summary

The demographics of new apartments is likely to be markedly different to that of existing single family dwellings. A brief demographic analysis based on existing dwellings in the study area the wider St Leonards Precinct and compared with three predominantly new apartment areas of similar density in Rhodes, Wolli Creek and Zetland.

A review of demographic details from a number of areas experiencing major apartment growth indicates the following:

Age

Residents are predominantly adults (25-54 years) at around 60%. Children generally represent about 10% of the population; older adults generally represent 7-9% of the population. This compares with St Leonards and Sydney metro generally.

Ethnicity

The population of the areas analysed consistently have very high proportions of non-Australian born comprising more than half in Wolli Creek and Rhodes. Chinese born are the predominant (and most rapidly growing) ethnicity, 30-35% in Wolli Creek and Rhodes, 18% in Zetland and 11% in St Leonards.

Other ethnic groups represented include Korean, Indonesian, Indian, Japanese, English, New Zealand and Hong Kong, comprising more than 10% of the local population.

Dwellings

Apartments represent more than 50% of dwellings in all areas investigated with 2 bedroom being the most common at about 60% of apartments Average persons per household is 2.1-2.3.

Car Ownership is generally low at 1.1-1.2 cars/dwelling and less in St Leonards (0.9)

Conclusion

In summary for 1000 dwellings or about 2,200 persons the following could be expected:

(a) Age

Thus we would expect* demand for the following:

- Child care/day care x 3-5 (private)
- Primary school - 6-7 classes
- Secondary school – 5 classes
- Employment for 3000+ adults
- Seniors programs/housing for 250 plus
- Civic and civil facilities (meeting rooms, halls, library etc)
- ✳ According to social planning standards

(b) Ethnicity

It should be anticipated that 50% or more of new residents may be overseas born with a very high proportion of Chinese born.

(c) Car ownership is likely to be just around 1 car/dwelling (based on the presumption of 60% 2 bedroom apartments).

Age	%	/1000 dus	@ 2000 dus
0-4	5	125	250
5-14	5	125	250
15-24	20	500	1000
25-54	60	1500	3000
55-64	5	125	250
65+	5	125	250
		2500	5000

Based on average demographics for new apartment dwellings.

Appendix 5 – Floor Space Reductions, options 3 & 4

This appendix investigates reduction in GFA by 5%, 10% &15% and consequent implications for building height, FSR and project viability.

5% REDUCTION

	TOTAL	GFA / SITE AREA	FSR	REDUCTION	GFA
1	13,660	$\frac{13660}{3415}$	4.0	683	12977
2	8,566	$\frac{8566}{2315}$	3.7	428	8138
3	7,019	$\frac{7019}{1897}$	3.7	351	6668
4	6,175	$\frac{6175}{1669}$	3.7	309	5866
5	7,182	$\frac{7182}{1941}$	3.7	359	6823
6	5,842	$\frac{5842}{1669}$	3.5	292	5550
7	8,346	$\frac{8346}{2782}$	3.0	417	7929
8	8,346	$\frac{8346}{2782}$	3.0	417	7929
9	6,991	$\frac{6991}{2542}$	2.75	350	6641
10	4,541	$\frac{4541}{1651}$	2.75	227	4314
11	11,198	$\frac{11198}{4072}$	2.75	560	10638
12	8,135	$\frac{8135}{2624}$	3.1	407	7728
13	5,901	$\frac{5901}{1967}$	3.0	295	5606
14	5,842	$\frac{5842}{1669}$	3.5	292	5550
15	6,678	$\frac{6678}{2226}$	3.0	334	6344
16	8,346	$\frac{8346}{2782}$	3.0	417	7929
17	8,436	$\frac{8436}{2220}$	3.8	422	8014
18	4,590	$\frac{4590}{1669}$	2.75	229	4361
19	4,590	$\frac{4590}{1669}$	2.75	229	4361
20	14,869	$\frac{14869}{5407}$	2.75	743	14126
21	13,341	$\frac{13341}{4851}$	2.75	667	12674
22	13,027	$\frac{13027}{4737}$	2.75	651	12376
23	18,893	$\frac{18893}{6870}$	2.75	945	17948

10% REDUCTION

	TOTAL	GFA / SITE AREA	FSR	REDUCTION	GFA
1	13,660	$\frac{13660}{3415}$	4.0	1366	12294
2	8,566	$\frac{8566}{2315}$	3.7	857	7709
3	7,019	$\frac{7019}{1897}$	3.7	702	6317
4	6,175	$\frac{6175}{1669}$	3.7	617	5558
5	7,182	$\frac{7182}{1941}$	3.7	718	6464
6	5,842	$\frac{5842}{1669}$	3.5	584	5258
7	8,346	$\frac{8346}{2782}$	3.0	835	7511
8	8,346	$\frac{8346}{2782}$	3.0	835	7511
9	6,991	$\frac{6991}{2542}$	2.75	699	6292
10	4,541	$\frac{4541}{1651}$	2.75	454	4087
11	11,198	$\frac{11198}{4072}$	2.75	1120	10078
12	8,135	$\frac{8135}{2624}$	3.1	813	7322
13	5,901	$\frac{5901}{1967}$	3.0	590	5311
14	5,842	$\frac{5842}{1669}$	3.5	584	5258
15	6,678	$\frac{6678}{2226}$	3.0	668	6010
16	8,346	$\frac{8346}{2782}$	3.0	835	7511
17	8,436	$\frac{8436}{2220}$	3.8	844	7592
18	4,590	$\frac{4590}{1669}$	2.75	459	4131
19	4,590	$\frac{4590}{1669}$	2.75	459	4131
20	14,869	$\frac{14869}{5407}$	2.75	1487	13382
21	13,341	$\frac{13341}{4851}$	2.75	1334	12007
22	13,027	$\frac{13027}{4737}$	2.75	1303	11724
23	18,893	$\frac{18893}{6870}$	2.75	1889	17004

15% REDUCTION

	TOTAL	GFA / SITE AREA	FSR	REDUCTION	GFA
1	13,660	$\frac{13660}{3415}$	4.0	2049	11611
2	8,566	$\frac{8566}{2315}$	3.7	1285	7281
3	7,019	$\frac{7019}{1897}$	3.7	1053	5966
4	6,175	$\frac{6175}{1669}$	3.7	926	5249
5	7,182	$\frac{7182}{1941}$	3.7	1077	6105
6	5,842	$\frac{5842}{1669}$	3.5	876	4966
7	8,346	$\frac{8346}{2782}$	3.0	1252	7094
8	8,346	$\frac{8346}{2782}$	3.0	1252	7094
9	6,991	$\frac{6991}{2542}$	2.75	1049	5942
10	4,541	$\frac{4541}{1651}$	2.75	681	3860
11	11,198	$\frac{11198}{4072}$	2.75	1680	9518
12	8,135	$\frac{8135}{2624}$	3.1	1220	6915
13	5,901	$\frac{5901}{1967}$	3.0	885	5016
14	5,842	$\frac{5842}{1669}$	3.5	876	4966
15	6,678	$\frac{6678}{2226}$	3.0	1002	5676
16	8,346	$\frac{8346}{2782}$	3.0	1252	7094
17	8,436	$\frac{8436}{2220}$	3.8	1265	7171
18	4,590	$\frac{4590}{1669}$	2.75	688	3902
19	4,590	$\frac{4590}{1669}$	2.75	688	3902
20	14,869	$\frac{14869}{5407}$	2.75	2230	12639
21	13,341	$\frac{13341}{4851}$	2.75	2001	11340
22	13,027	$\frac{13027}{4737}$	2.75	1954	11073
23	18,893	$\frac{18893}{6870}$	2.75	2834	16059