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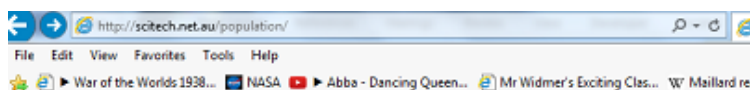
Submitted by John Widmer

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Copies of this document and the methodologies used are held at

<http://scitech.net.au/population/>

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Welcome to John Widmer's Population and Planning Web

This website is committed to the tradition first enunciated by Galileo Galilei. He believed that discussion w

- The Planning Panel Discussion Paper - [Population Modelling for Precinct 4](#) - North West Quadrant.
- The fourth powerpoint - "[Planning for new residential zones](#)" - June 2014
- The third powerpoint presentation give to the Future Melbourne Committee - "[The impacts of the Stru](#)
- The second powerpoint presentation given the Future Melbourne Committee - May 7th - "[Crowded K](#)
- How to [calculate population density](#).
- [My Powerpoint presentation](#) to the Melbourne City Council in our failed attempt to revise the 30 year attempted to use the 2011 Australian Census to begin a discussion of the projected impacts of populat Melbourne, Australia.
- A [web version](#) of the first presentation given in 2012 that used the latest 2011 Census data.

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PART 1: A Review Of The Published Capacity Population Figures And Evidence Of The Expert Witness Regarding Those Estimates

City of Melbourne provides residential population estimates for Arden-Macaulay. The estimates were updated during the public consultation and advertising period for Planning Amendment C190.

The population estimates were formally communicated to residents and other stakeholders via the DRAFT Arden Macaulay Structure Plan 2011 and the (final) Arden Macaulay Structure Plan 2012.

Draft Arden Macaulay Structure Plan, May 2011- Page 6, by City of Melbourne

Estimated Population of Residents by 2040	25,000 residents
Estimated Residents/Hectare	170
Estimated Dwellings/Hectare	100
Assumed Residents/Dwelling	1.7

Arden Macaulay Structure Plan, March 2012 – Page 5¹, by City of Melbourne

Estimated Population of Residents by 2040+	20,500 residents
Estimated Residents/Hectare	139
Estimated Dwellings/Hectare	85
Assumed Residents/Dwelling	1.7

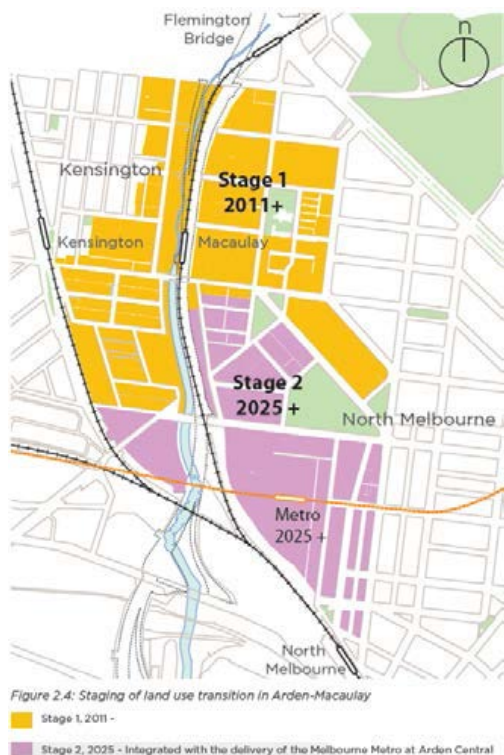
As a Kensington resident, I would like to understand how many people could live in the Arden Macaulay area within Kensington (i.e. west of the Moonee Ponds Creek), specifically in the precinct adjacent to my neighbourhood, which is to the north of Macaulay Rd.

Nothing in the structure planning documentation provides me this information. In support of the population estimates, there are Expert Witness reports dated 2013, and 2015, which I now examine in search of this missing information.

¹ This is reproduced in Appendix A

Expert Witness Statement of 8th August 2013 entitled “Melbourne Planning Scheme Amendment C190”, by Rodney Yeoman, on behalf of City of Melbourne. This report:-

1. Prepares forecasts that cover both Stage 1 and Stage 2 of the Arden Macaulay Structure Plan area. See Page 3 of the report:



“It is important to note that the two sets of research cover the entire Arden-Macaulay Structure Plan area, which includes the area covered by the Planning Scheme Amendment C190 (stage1) and the stage 2 area (as per figure 2.4 of the Structure Plan).”

2. States that it also includes an estimate of the capacity and the forecast growth for the C190 Area – that is, Structure Plan, Stage 1.

See Page 4: “In this evidence I have provided both the original analysis for the entire Structure Plan area and an estimate of the capacity and the forecast growth that is expected to be located within the Planning Scheme Amendment area (stage 1 area).”

3. Provides an opinion on the capacity method that was used to establish the population forecasts. See Page 4:

“.....Scope of Work

Provide expert opinion on the capacity method that was applied to establish the potential employment and population associated with the proposed C190 amendment.”

See Page 5:

“I have reviewed the capacity method applied by EdgResearch, the data sets, method and assumptions applied by the consultant and consider they are all sound. The resulting capacity is a valid representation of the potential urban form that could be developed within the Structure plan area in the long term.”

4. Indicates that the author was responsible for preparing the forecasts, see page 3:

“Area of Expertise in this Case:

I was responsible for preparing the forecasts of population and employment that is expected to locate within the Arden-Macaulay Structure Plan area.”

5. Includes a list of reference documents, some of which are available from City of Melbourne website, under Planning Amendment C190. The Capacity Study documents that are available are:

EdgResearch (2012) *Arden-Macaulay Capacity Study (2011) – Addenda 1*

EdgResearch (2013) *Arden-Macaulay Capacity Study – Addenda 2 and Addenda 3*

Available here:

http://www.melbourne.vic.gov.au/BuildingandPlanning/Planning/planningschemeamendments/Documents/AmendmentC190/Report_-_Arden_Macaulay_Capacity_Study_Addenda_2_and_Addenda_3.pdf

The referenced “EdgResearch (2013) *Arden-Macaulay Stage 1 Analysis of Future Melbourne Committee*” is not available from the C190 website.

6. Estimates a capacity population of 20,500 residents for the whole of Arden Macaulay. See Page 5:

“Given the proposed height and built form controls, urban form and other constraints on development the Amendment could allow 20,500 residents and 22,500 employees to locate in the area if built to capacity”.

7. Says the capacity population could be 23,700 due to the introduction of 30% additional discretionary height. See Page 5:

“The 30 per cent discretion on heights and the post-exhibition changes to the height controls have increased the capacity in the area. Under these circumstances the analysis indicates that the capacity of the area would be 23,700 residents and 29,600 employees.”

8. Says the capacity population could be 24,900 because of revised heights introduced by Councillors at Future Melbourne Committee:

“In June 2013 the Future Melbourne Committee revised the heights in the DDO60. The capacity enabled by this revision is 24,900 residents and 30,600 employees”.

9. Says that 50% of the Arden Macaulay population will relate to Amendment C190, which is the area designated as Stage 1. See Page 5:

“The Planning Scheme Amendment C190 area (Stage 1) has around 50 per cent of the residential capacity in the Structure Plan area which is approximately 12,000 residents.”

10. Predicts that Arden Macaulay's population will grow to 12,816 by 2031. It is not clear on how much of this population will relate to C190, the Stage 1 Area of Arden Macaulay. See Page 5:

"I consider that the capacity which is enabled by the Planning Scheme Amendment C190 and the Structure Plan is likely to take many decades to be fully utilised. The forecast research predicts that **demand** in terms of residential population is expected to grow from 2,670 in 2011 to 12,816 in 2031."

11. Endorses the Capacity research model, and identifies the source documents. See Page 7.

"The purpose of the **Capacity** research was to answer the following question:

Given the planning controls suggested in the Structure Plan, what is the potential capacity of the area to accommodate residents and employees?

This question is answered by the Capacity research, which models the capacity if the potential enabled by the Structure Plan is achieved.

For more details please refer to the EdgResearch reports which provide an extensive explanation of the modelling and the key assumptions."

12. Discusses the capacity research model, in gives support to three key assumptions:

- **Site Coverage**, or building footprint, will be 70% of site area
See Page 11:
 - a) it is average for Docklands
 - b) if greater than 70%, overshadowing and overlooking impacts would reduce saleability and rental prospects
 - c) over the next 20 years less than 70% of the whole of Arden Macaulay capacity will be developed, because supply from existing Urban Renewal areas is likely to satisfy demand for higher density dwellings.
- **Space Use Mix** is based on the preferred space mix outlined by urban design and planners within the City of Melbourne and for C190, Stage 1, is mainly residential use because this is the strategic intent and direction of the Structure Plan.
- **Dwelling Size** is assumed to be greater than the average for Docklands and Southbank, because Arden Macaulay is further away from the CBD than either of those areas, and the apartments will be differentiated from smaller, central city apartments.

13. Predicts the uptake of the estimated capacity using research by demographic consultants ID Consulting, which in turn uses the Capacity Study estimate as the upper constraint for the forecasting model. See Pages 15 – 20, for a discussion on the forecasting method and assumptions:
- a) Forecasting relies on 2006 ABS Census data and on City of Melbourne's Development Activity Monitor from 2010
 - b) Ignores infill and small residential projects in suburbs of Kensington and North Melbourne
 - c) Uses assumptions about surrounding residential areas that cannot be true for the Arden Macaulay area, which is currently without a sample population. For example, 'age of population' and 'dwelling mix' in predicting future housing demand.

The forecasting results are stated on Page 20:

"The population forecasts show that the number of residents living in the Structure Plan area is expected to grow by around 10,000 residents over the coming twenty years. This is equivalent to growth of 500 residents per annum. The population is expected to reach 12,818 residents by 2031, which represents 64 per cent of the capacity enabled in the Structure Plan area if developed according to the preferred maximum height only (i.e. not with additional 30% discretion)."

14. Thus, according to the report, out of a possible 24,900 capacity population for the whole of Arden Macaulay, less than 50% or approximately 12,818 residents will be living there by the end of 2031 and the growth will be slow and steady, at 500 new residents per year.

15. Furthermore, for Stage 1 of Arden Macaulay, it says:

"I estimate that approximately 8,300 new residents will locate in the Planning Scheme Amendment C190 area (Stage 1) over the forecast period, with population rising to around 10,600. This represents 81 per cent of the residential growth that is forecast for the Structure Plan area."

This appears in conflict with a statement on Page 5, that 50% of the Arden Macaulay population will relate to Amendment C190, which is the area designated as Stage 1. See Point 9, above.

16. Concludes with a section on the specific risks of the forecasting model, such as economic down turn and additional urban renewal land supply at Fisherman's Bend. The report admits that its forecasts were made in 2011 and have not been remodelled since. See Page 24:

“It was considered that the level of capacity under the draft Structure Plan was significantly higher than the forecast growth and that the increase in capacity would only have a marginal effect on the forecasts. For this reason the forecasts have not been remodelled to incorporate the additional capacity enabled by the variations in the Structure Plan.”

17. As a resident, I would like to understand how many people could live in the Arden Macaulay area within Kensington (i.e. west of the Moonee Ponds Creek), specifically in the precinct adjacent to my neighbourhood. Nothing in the expert witness report of 5th August 2013 provides me this information.

18. An addendum to this report, dated **26th June 2015**, was supplied as an update for the reconvened C190 Planning Panel Hearing.

What additional opinion is provided in the 2015 statement?

a) Regarding Capacity Population Estimates:

- No significant change in Site Selection that would impact the capacity estimates previously provided
- Site coverage assumption of 70% still valid
- No change in built form rules since 2013 version of C190, so no impact to the gross floor area calculations
- No change to space use mix assumption of primarily residential use
- Considers that dwelling size assumption could have been too high and if it should be reduced, which would result in additional 10% residential population
- Considers the previous capacity estimates would vary by only plus or minus 5% if the modelling were redone with current data

b) Regarding Population Forecasts:

- Population growth expected to be greater than previously forecast
- By 2031, could be an additional 5,600 residents on what was previously forecast for Arden Macaulay
- The forecast residential population is still within the original capacity population estimate of 24,900 for whole of Arden Macaulay
- Despite this change, the 2012 forecasts and results are still reliable and fit for purpose, although if forecasts were updated using today's data, more population may be located in Arden Macaulay than predicted by the 2012 modelling.

19. My question remains unanswered. How many people could live in the Arden Macaulay that is west of the Moonee Ponds Creek, specifically in the precinct

between Macaulay Rd and Racecourse Rd, which is adjacent to my Barnett St neighbourhood?

20. From the 2011 Census data, I know the existing population density of my residential neighbourhood is 63 persons per hectare². The built form in 2011 comprised predominantly single-story dwellings on small sites of 100 – 200 sq m, and included very few apartment complexes.
21. Under the structure plan for Precinct 4 or the north-west quadrant of Arden-Macaulay, a built form of multi-storey apartments is encouraged. If dwelling size is halved, and buildings are predominantly 6-storeys, this would result in an increase in population density by a factor of 12.
22. Accordingly, for the 9.7 hectares of Arden Macaulay that is adjacent to my residential neighbourhood, representing less than 15% of the total Arden Macaulay area, this order of densification would result in a capacity population of 7,500.
23. The use of known population density and built form in projecting population for an area of proposed built form could be regarded as crude, but it raises alarm bells about the reasonableness of the figures provided by City of Melbourne, purporting to represent the capacity population for the whole of Arden Macaulay.
24. The results of my further investigation to discover the reasons for the discrepancy and my own estimate of the population that could result in Arden Macaulay are presented in PART 2 of this document.

² Refer to the table over page for comparative population densities within Kensington and other suburbs.

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ABS 2011 Population Density Calculations for Kensington and other Melbourne suburbs					
Location	2011 ABS Statistical Area	Population	Area (ha)	Density (persons/ ha)	Density factor above Foch St, Box Hill
Kavanagh St, South Melbourne	2112616	407	0.29	1,403	87
The Kensington Apartments, cnr Bent & Hardiman St, Kensington	2112804	100	0.21	476	30
64 Barnett St Kensington (our house)	2112103	2	0.02	100	6
<i>Statistical areas in Kensington 'east' (bounded by Macaulay, Eastwood, Racecourse & Lambeth Sts)</i>					
Barnett St Statistical Area, Kensington	2112103	463	7.8	59	4
Parsons St Statistical Area, Kensington	2112105	498	8	62	4
Lambeth/Smith St Statistical Area, Kensington	2112104	391	5.5	71	4
<i>Summary for Kensington 'east'</i>		1,352	21.3	63	4
<i>Statistical areas in Kensington 'banks' (redeveloped area west of Epsom Rd)</i>					
Mercantile Parade, Statistical Area, Kensington Banks	2112119	594	8.5	70	4
Speakman St, Statistical Area, Kensington Banks	2112120	710	10	71	4
Cornish Lane, Statistical Area, Kensington Banks	2112122	492	6.3	78	5
Howlett St, Statistical Area, Kensington Banks	2112123	645	8	81	5
Bayswater Rd, Statistical Area, Kensington Banks	2112117	722	11	66	4
Newton St, Statistical Area, Kensington Banks	2112118	476	6.3	76	5
<i>Summary for Kensington 'Banks'</i>		3,639	50.1	73	5
<i>Statistical areas in other Melbourne suburbs</i>					
Finlay St Statistical Area, Albert Park	2112804	426	7.6	56	3
Page St Statistical Area, Middle Park	2112826	493	11	45	3
Ringwood St Statistical Area, Ringwood	2126638	559	18.3	31	2
Foch St Statistical Area, Box Hill	2116328	374	23.3	16	1
<i>Results of my Capacity Population model of the Arden Macaulay Structure Plan for Precinct 4 (North-West Quadrant)</i>					
Arden Macaulay Stage 1 - NorthWest quadrant ->		8,804	9.7	908	57

PART 2: A Review of the ARDEN-MACAULAY CAPACITY STUDY, by EDG Research.

Available here:

http://melbourne.vic.gov.au/BuildingandPlanning/Planning/planningschemeamendments/Documents/AmendmentC190/Report_-_Arden_Macaulay_Capacity_Study_Addenda_2_and_Addenda_3.pdf

Initial capacity estimates are documented over pages 7- 21, followed by subsequent updates in the form of 3 Addendums. The study takes a precinct-based approach.



FIGURE 1A: ARDEN-MACAULAY STUDY AREA AND PRECINCT BOUNDARIES

Precinct 1 Arden Central – is the focus of the area for employment and tertiary education.

Precinct 2 Macaulay Hub – and provides a local retail centre as well as a significant proportion of space for community services, recreation and open space activities.

Precinct 3 Arden-Macaulay – Gateway Hub predominately residential with appropriate provisions for open space

Precinct 4 Service Industry – retains industrial uses along with residential and studio development.

Precinct 5 Heritage Neighbourhood – is residential with mixed residential with a proportion of light industrial activity.

The study uses multiple data sources, and describes a City of Melbourne methodology for capacity analysis that includes site selection, floor space calculations and space use mix. The conclusion of the study is that a total of 7,203 new dwellings could be built within all of Arden Macaulay, Stages 1 & 2, under the structure plan, as shown by Precinct in Table 9, reproduced over page.

TABLE9: RESIDENTIAL CAPACITY ON IDENTIFIED LOTS

	Dwellings				
	1	2	3	4	5
Residential	1,471	920	3,102	504	1,206

To these 7,203 dwellings, the study adds back dwellings that are recently built or under construction or with planning permits, to arrive at the total capacity for the whole of Arden Macaulay:-

Estimated Population of Residents by 2040	14,000 residents
Estimated Dwellings	8,500

Addenda 1 of the Arden-Macaulay Capacity Study, dated 19th November 2012, refer pages 22 – 25.

Revised capacity estimates are published. The date of 1st March 2012 also appears next to the new information. It is not clear the reason for the two conflicting dates. Perhaps the revised estimate was made available on 1st March 2012, however was not updated into the original Capacity Estimate Documentation as an Addendum until 19th November 2012. Note that the original estimate of 14,000 residents rises to 20,500 residents.

The addendum states what had changed since the original estimate:

- Addition of Dryburgh St North Melbourne to the study area with capacity for 1000 residents
- Sites previously excluded added back to analysis because Planning Permits no longer valid
- Road configurations altered significantly, eliminating a boulevard
- Height limits in Precinct 1 changed and a step-down in heights at interfaces to existing residences was added
- Change in space use mix for Precinct 1

As a result of these changes, the total capacity for the whole of Arden Macaulay, Stages 1 & 2 is revised to:

Estimated Population of Residents by 2040	20,500 residents
Estimated Dwellings	Not provided

Addendum 2 of the Arden-Macaulay Capacity Study, dated 27th June 2013, refer pages 26 – 32.

What had changed?

- added back into the analysis the Barret Street site, new heights for the area bounded by Gracie, Green, Henderson St and allocation of dedicated open space/parkland
- 30% discretionary height controls added, other than the mandatory heights specified at street frontages, land frontages and southern boundaries

As a result of these changes, the total capacity for the whole of Arden Macaulay, States 1 & 2 is revised to:

Estimated Population of Residents by 2040	20,128 residents
Estimated Dwellings	Not provided
Estimated Population of Residents by 2040 including 30% additional building height	23,730

Addendum 3 of the Arden-Macaulay Capacity Study, dated 6th August 2013, refer pages 33 – 34.

What had changed?

- Post-exhibition of C190, Council adopted further changes to height limits and the total capacity for the whole of Arden Macaulay, States 1 & 2 is revised to:

Estimated Population of Residents by 2040	20,786 residents
Estimated Dwellings	Not provided
Estimated Population of Residents by 2040 including 30% additional building height	24,864

Review of the Capacity Study Site Selection process

The Capacity Study uses FILTERING-OUT CRITERIA; refer Page 11, where it states that sites are excluded from the gross area calculations, according to the following criteria:

- a) Existing parkland and open space, and heritage-graded buildings
- b) Property that is recently built, or currently being built or has a current planning permit
- c) Property that has a registered owner's corporation

According to the study, sites in the Arden-Macaulay area comprise 823,436 square metres. After the filtering out process, there are 555,342 square metres where redevelopment could take place. The study removes 32.5% of total site area from consideration.

A series of four maps (labelled Figure 2, on pages 12 & 13) indicate in black shading, the cumulative effect of applying the above criteria. No listing of individual properties is provided, one must 'figure it out', which I have done to the best of my ability.



To examine the validity of the site selection process, I will concentrate within the Arden Macaulay area I am most familiar with, Precinct 4 of the EDG Capacity Study, also referred to as the 'North-west quadrant' of Arden Macaulay, Stage 1.

Sites Filtered Out from Precinct 4 because of Criteria a) Existing parkland and open space, and heritage-graded buildings:



We can see along the west bank of the Moonee Ponds Creek, some land parcels flagged for exclusion from the Capacity Study.

- 11-23 Stubbs St, office/warehouses, VICTRACK land
- 161-179 Stubbs St, garden centre, VICTRACK land
- 153-159 Stubbs St, warehouse, VICTRACK land
- 141-151 Stubbs St, Aurizon Operations, VICTRACK land
- 129-139 Stubbs St, Distinctive Carriages, VICTRACK land
- 113-127 Stubbs St, equipment hire, VICTRACK land

The VICTRACK land is *proposed* to be rezoned Public Park & Recreation Zone (PPRZ) but as we heard in VICTRACK's submission to the panel, it seeks to have the land rezoned to MUZ.

Whilst the study claims these sites meet criteria a), they are not existing parkland and open space and the proposal that they be rezoned to PPRZ is strongly contested.

What could be built on these excluded sites?

The VICTRACK land parcels comprise 10,719³ square metres and are located in Area 3 of DDO60, where the preferred height is 20m or 6 levels. There are no sensitive interfaces with the existing residential zone and the DDO does not require any sensitivity towards the vacant land at its rear, the Moonee Ponds Creek corridor, currently zoned PUZ. The street frontage is to Stubbs St, which is 20m wide. This means a 20m or 6-level building could be built to the street edge, rear and side boundaries.

³ Refer points 1.7 & 1.8 of VICTRACK submissions by Best Hooper, presented to the Panel on 13th July, 2015.

If this land were rezoned as MUZ and redeveloped as 6-level residential apartments, this would add approximately 500 dwellings or 800 residents to Arden Macaulay. Additional discretionary height would increase those numbers.

Sites Filtered Out from Precinct 4 because of Criteria b) Property that is recently built, or currently being built or has a current planning permit:



The lots excluded for this reason are at:

- 25-77 Stubbs St, Midway Business Estate
Built in 2008, the estate is excluded because it was 'recently built' and is listed in the City of Melbourne Development Activity monitor. The existing 2-storey offices are constructed in concrete panels and demolition would not be difficult or very expensive.
- 64-68 Stubbs St, offices
The site has a Planning Permit TP-2014-1080 under assessment.

What could be built on these excluded sites?

The land at 25 – 77 Stubbs St, Midway Business Estate, is also located in DDO60 Area 3. There are no sensitive interfaces with the existing residential zone and DDO60 does not require sensitivity to the vacant land at its rear, along the Moonee Ponds Creek. Street width of Stubbs St is 20m. This means a 20m or 6-level building could be built to all four boundaries.



Midway Business Estate 25-77 Stubbs St, Kensington.

Midway Business Estate, at 6,933 sq. metres or 0.7 ha is a large site in terms of the land available in Kensington and would be considered redevelopment potential, yet is excluded from the Capacity Study. Approximately 350 dwellings accommodating 600 residents could be built here.

Another site in Precinct 4 that is excluded from the Capacity Study because of Criteria b) is 64-68 Stubbs St, Kensington, pictured below.



This site has a Planning Permit dated 8-Dec-2014 which is 'Under Assessment', proposing a change of use to Child Care Centre, including partial demolition. Despite this, the owner may still desire to redevelop the building under the Arden-Macaulay structure plan.

Located in Area 3, where preferred height is 20m or 6-levels, this site will be required under DDO60 to have 3-levels at its interface with the rear of residences at 73 & 75 Smith St. Upper levels can extend to 8 levels if concealed from line of sight.



In April 2014, the property was advertised as a future redevelopment opportunity. The site area of 823 sq. m could be redeveloped as 45 dwellings, accommodating 75 residents. Additional discretionary height could add to these numbers.⁴

Sites Filtered Out from Precinct 4 because of Criteria c), the property has a registered Owner's Corporation

On page 11, the Capacity Study states:

“...lots which have a registered owner corporation are removed from the potential lots. This is due to the difficulties involved in acquiring lots which have been strata titled.”



Four sites appear to be filtered out for this reason:-

- 352 Macaulay Rd (Cityside Industrial Estate)
- 50-62 Stubbs St
- 40-48 Stubbs St
- 75-103 Parsons St

⁴ Refer Appendix B for analysis of the built form.



352 Macaulay Rd, the Cityside Industrial Estate (left) is the 2nd largest site in Precinct 4, at 9,591 sq. m, or 0.96 ha.

The industrial estate is subdivided into six office-warehouses that are leased to business tenants. It is unclear whether the subdivided parts are owned by different corporations, or are under single ownership and subdivided for purposes of leasing the separate parcels.



A sign at the entrance to the site says it is owned and managed by Advantage Property Consulting Group. The subdivisions are themselves large for Kensington, and each could be independently redeveloped. It is more likely that the site would be marketed as a “block” site due to its size and redevelopment potential. There is no apparent strata title.

352 Macaulay Rd, the Cityside Industrial Estate, is in Area 3 of DDO60.

Macaulay Rd is 20 m wide. The site could be redeveloped to a height at Macaulay Rd edge of 10.5 m rising behind to the discretionary height limit of 26 m, with levels 4 – 8 setback according to Figure 12. There are no interfaces at side or rear boundaries with low-scale residences. In my estimation, an additional 500 dwellings could be built on this site, accommodating some 850 residents⁵.



⁵ Refer Appendix B for analysis of the built form.

Three other sites are filtered out from the Capacity Study because of the existence of an Owners Corporation.

- 50 – 62 Stubbs St

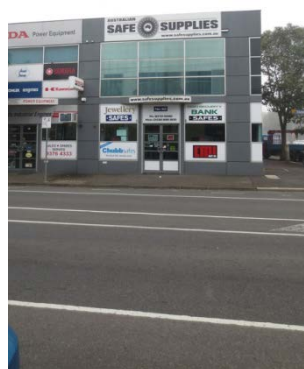


A warehouse/workshop complex subdivided into 6 single storey units and 18 individual car-parking spaces.

Total site area 3,582 sq. m.

No Strata title evident.

- 40 – 48 Stubbs St



A warehouse/office complex subdivided into 10 concrete units, and 18 individual car-parking spaces.

Total site area 2,277 sq. m.

No Strata title evident.

- 75 – 103 Parsons St



Warehouse/workshop complex subdivided into 7 units, and 13 individual car-parking spaces.

Total site area 2,267 sq. m

No Strata title evident.

All are located in DDO Area 3 and have frontages to Stubbs St, which is 20 m wide, and Parsons St, also 20 m wide. Redevelopment is not prohibited by the fact that the sites are subdivided and have a registered Owners Corporation. Given their size and location, these three sites in total could result in capacity population of approximately 700 residents.

- 50 – 62 Stubbs St has a rear boundary interface with low-scale residences. Height at Stubbs St would be 20 m, with discretion to build to 26 m if setback per DDO60 Fig. 1. No side setbacks required.
- 40 – 48 Stubbs St also has a rear boundary interface with low-scale residences. Remaining three boundaries could be built to 20 m, with discretion to build to 26 m if setback per DDO60 Fig. 1.
- 75 – 103 Parsons St has to be setback on the rear boundary for an existing public lane and on the west boundary for a new through connection that is proposed. Height at Parsons St and Stubbs St would be 20 m with discretion to build to 26 m if setback per DDO60 Fig. 1.

Review of the Capacity Study Floor Space Calculations

The Study calculates a gross floor area by subtracting 30 % of the lot area for external amenity, assuming site coverage to be 70%.

This is despite the fact that DDO60 requires buildings to align to the street edge, and that ‘building facades collectively enclose the sides of streetscapes’. I assume this requirement would apply at laneways and new through-streets, as well as established streets.

70% site coverage assumption is not likely to be matched in reality, given current planning and building law does not prohibit 100% site coverage, and current planning and building practice bears this out.

FIGURE 3: ARDEN-MACAULAY HEIGHTS



Next, the Study multiplies gross floor area by the average building height as determined by the City of Melbourne indicative Densities maps (17-12-2010).

These maps are not specifically cited in the Study but Figure 3 on page 14 could be what is referred to. The heights shown here are clearly out-dated, and do not align with any published version of the Arden Macaulay Structure Plan. The Study reduces the gross floor area by a further 20% - 30%, as an allowance for internal spaces such as foyers, lift and stair wells, air-conditioning and heating wells.

The study applies a different percentage reduction according to the land ‘use’ (refer Table 3 below) but as yet, the Study has not provided the assumptions about land use. It would appear this calculation is out of sequence.

TABLE 3: BUILDING CIRCULATION RATIO

	per cent
Commercial	30
Retail	20
Residential	30

The Study goes on to define how the net floor area will be used. The argument is very hard to follow. Assumptions are made about each Precinct and its preferred land use mix is determined, as shown below:-

TABLE 4: PREFERRED SPACE USE

Land Use	Precinct (Space Use)				
	1	2	3	4	5
Retail	5	3	0	0	0
Entertainment	5	0	0	0	0
Commercial	58	22	10	10	20
Industrial	0	0	10	50	10
Residential	20	42	80	40	70
Institutional	12	33	0	0	0
Transport	0	0	0	0	0
Parking	0	0	0	0	0
Total	100	100	100	100	100

In Precinct 4, of the land left in the Study after the filtering out process, a Space Use mix of 10% Commercial, 40% Residential and 50% Industrial is assumed. This is despite the whole area being Re-Zoned from Industrial to Mixed Use to encourage mid-rise and higher density housing.

The final assumption made in these calculations is of dwelling size. Note the text describes a dwelling size assumption of 125 sq. m for Precinct 4 & 5, but the table in the document shows differently.

Dwelling Size

Similar to the workspace ratios the size of dwellings is expected to vary between the precincts. For example the average dwelling size in precinct 1 is 80 square meters, precinct 2 the assumption is 100 square meters the remaining three precincts are each assumed to have an average dwelling size of 125 square meters per dwelling. Table 6 below provides the dwelling sizes used within each of the precincts.

TABLE 6: DWELLING SIZE ASSUMPTION BY PRECINCT

Dwellings Size	Precinct				
	1	2	3	4	5
m ²	80	100	125	100	100

There is no minimum size for apartments under the Victorian Planning System. The standard in NSW is a minimum of 50 square metres for a one-bedroom apartment; 70 square metres for a two-bedroom apartment and 95 square metres for a three-bedroom unit.

In Victoria, draft new standards are under discussion, based closely on NSW's standards, proposing 37 square metres for a studio apartment; 50 square metres for a one-bedroom unit; 65 square metres for a two-bedroom apartment and 90 square metres for a three-bedroom unit.

Recent planning approvals for Kensington and North Melbourne indicate that the Capacity Study, with its dwelling size assumption of 125 sq. m (or is it 100 sq. m?) is at odds with the reality of current planning and building practice.

Thus the Capacity Study comes to the resulting table of capacity dwellings for Arden Macaulay, by Precinct:-

TABLE9: RESIDENTIAL CAPACITY ON IDENTIFIED LOTS

	Dwellings				
	1	2	3	4	5
Residential	1,471	920	3,102	504	1,206

For Precinct 4, the figure of 504 dwellings is simply not credible.

Addendums 1, 2, & 3 provide revised estimates for the whole of Arden Macaulay (Stage 1 & 2) but do not provide a revised number of dwellings *by Precinct*. It is not possible to drill down on the changes made, to find out where they would apply, and if there would be any change expected for Precinct 4. Nothing in the notes accompanying Addendums 1, 2, & 3 would materially impact on dwelling numbers for Precinct 4.

Recent building activity in my residential-zoned neighbourhood in Kensington shows that over the past 5 years, since the 2011 Census, over 150 new dwellings were added.

My residential neighbourhood is bounded by Macaulay Rd, Eastwood St, Racecourse Rd, and the proposed Arden-Macaulay Precinct 4, and is zoned General Residential (Schedule 2) with the exception of along Racecourse Rd where it is zoned Mixed Use.

There are many examples of redevelopment of single-occupancy housing into multiple dwellings. Typically after property changes hands it will be redeveloped as an investment. There are cases where neighbours have pooled property assets to obtain larger sites for their redevelopment

potential. Some factories that were operating in the General Residential Zone despite their industrial nature have been redeveloped as apartment buildings. There is no vacant land in Kensington. Redevelopment is fundamentally about increasing the number of dwellings on the site, and increasing the residential density.

Examples from the past 5 years in existing General Residential Zone and Mixed Use Zone between Macaulay Rd, Eastwood St, Racecourse Rd, and Lambeth St in Kensington:-

Site re-developed	Site Area	Residential Dwellings
11 Smith St (former Centennial Hotel)	543 sq. m	18
98 – 108 Rankins Rd (former tyre repair)	1041 sq. m	26
2 Nottingham St	258 sq. m	7
247 – 263 Racecourse Rd (MUZ)	902 sq. m	60
64-66 Smith St (former car repair workshop)	307 sq. m	4
99 – 101 Lambeth St (James Apartments)	655 sq. m	14
85-87 Lambeth St	444 sq. m	15
113 - 115 Rankins Rd	365 sq. m	3
20 Smith St (single dwelling)	586 sq. m	3
81 Eastwood St (single dwelling)	445 sq. m	8 (4 completed, 4 under construction)
30 Rankins Rd (single dwelling)	346 sq. m	9 (in construction)
68 Smith St (single dwelling)	307 sq. m	5 (in construction)
35 – 37 Barnett St (2 x single dwellings)	684 sq. m	5 (in construction)

Buildings which were architect-designed ‘modern’ brick homes and recently renovated heritage buildings have been demolished. Each of these redevelopments took place within tightly compacted residential neighbourhoods.

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For example, this home at 20 Smith St, an architect- designed dwelling, was recently replaced with 3 dwellings on the same allotment.



A former tyre distribution warehouse/factory was demolished and replaced with 26-apartments at 96-108 Rankins Rd. The footpath of Rankins Rd was occupied by building-site toilets for over 12 months and pedestrians had to step down into the street gutter or cross the street to walk past the site.



Council approved the plans subject to the removal of one level, which was supported by VCAT when the owner appealed. Subsequently the internal plans were revised such that the removal of one level resulted in only one less apartment.



30 Rankins Rd, a heritage-graded dwelling, with a modern rear addition, was demolished and replaced with 8 dwellings



Former car repair shop at 64 – 66 Smith St replaced with 4 apartments



Perhaps more typical of what we can expect under Arden Macaulay within Kensington is this example at 247 - 263 Racecourse Rd, see over page. This site is zoned Mixed Use and was previously a carpet retail business. It was redeveloped in 2013. There are 2 shops at ground level and 60 Apartments above on a site area of 902 sq. m or 0.1 ha.

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Approaching the rear of Newmarket Apartments, walking along Nottingham St



Racecourse Rd streetscape, looking east, building footprint extends beyond site to overhang Racecourse Rd pavement



Left: Building interface to front of apartments at rear and bluestone lane acts as driveway to underground car-parking

Right: Building footprint extends beyond site boundary to overhang Nottingham St footpath

Below: Garbage bins are permanently located outside the building



PART 3:

My modelling of the capacity population for Arden Macaulay Precinct 4 assumes:

1. Compulsory acquisition of land for new parks and new lanes or walkways is ruled out
2. All of the existing Industrial-Zoned sites could be rezoned to MUZ
3. Site area is taken from City of Melbourne Interactive Maps, available online
<http://www.melbourne.vic.gov.au/AboutMelbourne/CityMaps/Pages/InteractiveCoMmaps.aspx>
4. Site coverage: 90%⁶
5. Internal space used for shared utilities or common use will average 10% of floor space, typically only for lift wells and stair wells. Garbage collection areas are located in basement areas. Heating and cooling systems are located within ceiling ducts and within private balconies or exterior to the building on top of the roof.
6. Apartment size: 75 sq m
7. Area lost by upper level setbacks will be 'compensated' by area available from additional discretionary height
8. For buildings of 6 -9 levels (DDO60 Area 1, Area 3) the space use mix is 20% Retail/Commercial, 80% Residential
9. For buildings less than 6 levels (DDO60 Area 2, Area 4) the space use mix is 100% Residential
10. There will be 1.7 residents for each apartment built

Results:

Under these assumptions, the model predicts that 5,180 apartment dwellings could be constructed, which could result in a total population of 8,800 for the north-west quadrant of Stage 1 Arden Macaulay, labelled Precinct 4 in the Capacity Study. See details over page.

⁶ This is generous when compared with recent Planning Permit applications for Kensington and North Melbourne in the Mixed Use Zone, at addresses within the Arden Macaulay structure plan area. Refer to 347 – 367 Macaulay Rd, 1 Shiel St, 3-15 Shiel St, 104-112 Haines St and 114-116 Haines St.

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Site Address All sites currently zoned Industrial, located within the Arden Macaulay Stage 1 in Kensington, north of Macaulay Rd and west of Moonee Ponds Creek. Yellow and Green highlighted rows are sites excluded by the City of Melbourne Capacity Study, but included in my analysis for reasons given in my submission.	Site area (sq m)	Schedule DDO60 Area	Levels per Structure Plan	Potential Gross Floor Area (sq m) assuming 90% site coverage	Net Floor Area (sq m) after allowing 10% of every level for use as common space and utilities	Calculate Residential Floor Space (sq m) according to Space Use Mix	Derive # dwellings - Divide by average 2-bedroom apartment size of 75 sq m	Capacity population (1.7 residents per dwelling)
191 - 199 Racecourse Rd (Two storey brick warehouse. Built in 1975)	2,052	1	9	16,621	14,959	11,967	160	271
159 - 189 Racecourse Rd (Two storey brick warehouse. Built in the late 1950's)	4,012	1	9	32,497	29,247	23,398	312	530
135 - 157 Racecourse Rd (former Burge Bros Factory HO959)	4,160	1	9	33,696	30,326	24,261	323	550
22 Thompson St (Civic Steel)	211	2	3	570	513	513	7	12
16 - 20 Thompson St (House - dwelling)	144	2	3	389	350	350	5	8
14 Thompson St (Workshop/Studio)	144	2	3	389	350	350	5	8
6 - 12 Thompson St	793	2	3	2,141	1,927	1,927	26	44
2 Thompson St (Select Salvage)	297	2	3	802	722	722	10	16
402-432 Macaulay Road (Webb Distribution)	7,476	3	6	40,370	36,333	29,067	388	659
352 Macaulay Road (Cityside Business Estate)	9,591	3	6	51,791	46,612	37,290	497	845
346 - 350 Macaulay Road(Vision Australia)	8,803	3	6	47,536	42,783	34,226	456	776
18 - 76 Robertson St (Research and Development)	11,830	3	6	63,882	57,494	45,995	613	1,043
51A Robertson St (Dwelling - house)	155	3	6	837	753	603	8	14
51B Robertson St (Dwelling - house)	152	3	6	821	739	591	8	13
53 - 55 Robertson St (Vacant industrial land)	613	3	6	3,310	2,979	2,383	32	54
59 Robertson St (Victorian Cast Iron Restoration)	613	3	6	3,310	2,979	2,383	32	54
106 Robertson St (Bradrob Building Services - Ross Robbins)	920	3	6	4,968	4,471	3,577	48	81
86 - 96 Stubbs St (Flexible Drive Agencies)	3,986	3	6	21,524	19,372	15,498	207	351

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25-77 Stubbs St, Midway Business Estate	6,933	3	6	37,438	33,694	26,956	359	611
113 - 127 Stubbs St (Equipment hire, Vic Track land)	1,779	3	6	9,607	8,646	6,917	92	157
11-23 Stubbs St (Office/warehouse, Vic Track land)	3,782	3	6	20,423	18,381	14,704	196	333
161-179 Stubbs St, garden centre (Vic Track land)	2,364	3	6	12,766	11,489	9,191	123	208
153-159 Stubbs St, warehouse (Vic Track land)	439	3	6	2,371	2,134	1,707	23	39
141-151 Stubbs St (Aurizon Operations, Vic Track land)	1,949	3	6	10,525	9,472	7,578	101	172
129-139 Stubbs St(Distinctive Carriages, Vic Track land)	1,072	3	6	5,789	5,210	4,168	56	94
70 - 74 Smith St (Duke's Automotive)	613	3	6	3,310	2,979	2,383	32	54
76 - 78 Smith St (A single storey brick warehouse/factory. Built in 1973)	613	3	6	3,310	2,979	2,383	32	54
80 Smith St (Garage/Motor Vehicle Repairs)	307	3	6	1,658	1,492	1,194	16	27
64 - 68 Stubbs St (Offices)	823	3	6	4,444	4,000	3,200	43	73
16 Scarborough Place (Dwelling)	334	3	6	1,804	1,623	1,299	17	29
14 Scarborough Place (Dwelling)	333	3	6	1,798	1,618	1,295	17	29
12 Scarborough Place (Dwelling)	333	3	6	1,798	1,618	1,295	17	29
10 Scarborough Place (Dwelling)	332	3	6	1,793	1,614	1,291	17	29
50 - 62 Stubbs St	3,582	3	6	19,343	17,409	13,927	186	316
40-48 Stubbs St	2,277	3	6	12,296	11,066	8,853	118	201
75-103 Parsons St	2,267	3	6	12,242	11,018	8,814	118	200

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Site Address All sites currently zoned Industrial, located within the Arden Macaulay Stage 1 in Kensington, north of Macaulay Rd and west of Moonee Ponds Creek. Yellow and Green highlighted rows are sites excluded by the City of Melbourne Capacity Study, but included in my analysis for reasons given in my submission.	Site area (sq m)	Schedule DDO60 Area	Levels per Structure Plan	Potential Gross Floor Area (sq m) assuming 90% site coverage	Net Floor Area (sq m) after allowing 10% of every level for use as common space and utilities	Calculate Residential Floor Space (sq m) according to Space Use Mix	Derive # dwellings - Divide by average 2-bedroom apartment size of 75 sq m	Capacity population (1.7 residents per dwelling)
61 - 65 Parsons St	533	3	6	2,878	2,590	2,072	28	47
67 - 71 Parsons St	456	3	6	2,462	2,216	1,773	24	40
73 Parsons St (Car parking for Sheen Panels)	186	3	6	1,004	904	723	10	16
20 Stubbs St (PS Importers)	4,073	3	6	21,994	19,795	15,836	211	359
12 Stubbs St	2,064	3	6	11,146	10,031	8,025	107	182
169 - 173 Rankins Road (Row of 3 Edwardian Shops, HO966)	103	4	3	278	250	250	3	6
458 - 470 Macaulay Road (Kensington Collision Repair Centre)	455	4	3	1,229	1,106	1,106	15	25
456 Macaulay Road (Barnett Motor Body Repairs)	464	4	3	1,253	1,128	1,128	15	26
454 Macaulay Road (Barnett Motor Body Repairs)	464	4	3	1,253	1,128	1,128	15	26
434 - 444 Macaulay Road (Silver Repair Services)	973	4	3	2,627	2,364	2,364	32	54
74 - 80 Stubbs St	550	4	3	1,485	1,337	1,337	18	30
72 Stubbs St (Restaurant)	175	4	3	473	425	425	6	10
TOTAL	96,580			536,250	482,625	388,419	5,179	8,804

PART 4: Population Consequences arising from DDO Acceptance – Issues?

Consultation on Planning Scheme Amendment C190 was held from 1 November to 14 December 2012.

A community consultation meeting was hosted in Kensington on Monday 26th November 2012, by the Kensington Association. Representatives from City of Melbourne's Strategic Planning Department could not answer the question, '*how many people would live in the Kensington area which is to be rezoned under Arden Macaulay Stage 1?*'

Subsequent email communication between then President of Kensington Association (Dr Tony Dare) and the City of Melbourne resulted in email communication⁷ from Strategic Planning Team Leader, Leanne Hodyl, which provided the following population estimates⁸ for the two areas of Kensington that are within Arden Macaulay Structure Plan Stage 1

Capacity Estimate for the Arden Macaulay area in Kensington that is north of Macaulay Rd and west of Moonee Ponds Creek (Capacity Study refers to this as Precinct 4)	
Estimated Population of Residents	2,536
Estimated Dwellings	1,492
Estimated Dwellings/Hectare	80
Assumed Residents/Dwelling	1.7
Capacity Estimate for the Arden Macaulay area in Kensington that is south of Macaulay Rd and west of Moonee Ponds Creek (Capacity Study refers to this as Precinct 5)	
Estimated Population of Residents	1,448
Estimated Dwellings	852
Estimated Dwellings/Hectare	90
Assumed Residents/Dwelling	1.7

Firstly, these estimates contradict the precinct-based information available in the CAPACITY STUDY which in turn informed the Structure Plan. The CAPACITY STUDY has been endorsed by the City of Melbourne Expert Witness for Research.

Refer Figure 1 on page 8 of the CAPACITY STUDY, reproduced over page. Precinct 4 (north of Macaulay Rd and west of Moonee Ponds Creek) has considerably less residential capacity than Precinct 5 (south of Macaulay Rd and west of Moonee Ponds Creek). The email communication states the reverse.

⁷ Refer Appendix C

⁸ Per the email, both of these estimates included allowance for an additional 30% discretionary building height.

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Even if the CAPACITY STUDY was later revised, would the capacity be so dramatically reversed?

TABLE9: RESIDENTIAL CAPACITY ON IDENTIFIED LOTS

	Dwellings				
	1	2	3	4	5
Residential	1,471	920	3,102	504	1,206

Secondly, my Precinct 4 calculations, using two different methodologies, point to a capacity population nearly 4 times greater than this.

By derivation, the City of Melbourne email implies that Precinct 4 covers 18.6 hectares. This presumably includes the Moonee Ponds creek and levee bank, laneways, roads, and streets because the total site area for Precinct 4, as measured site-by-site in my analysis, comprises approximately 10 hectares.

An area of 10 hectares needs only to be built to 3 – 4 levels of apartment dwellings to provide capacity for a population of some 2,500 persons.

If the desired population growth for Precinct 4 is truly represented by the City of Melbourne estimates, then this could be achieved under a structure plan similar to the Kensington Banks redevelopment plan.

Is it possible that the City of Melbourne is preparing a whole of Arden Macaulay Structure Plan, and at the same time is selecting sites that will and won't be redeveloped? That is the only way I can conceive that the capacity population estimates provided for Precinct 4 would be realized.

A possible results – not a desirable outcome - is that the green light is being given to a couple of large sites, pre-selected by City of Melbourne, for building high-rise towers to opportunistically capture the market for 'views' and that nothing else will eventuate in terms of a new local area called Arden Macaulay. The new towers would effectively be gated communities, and would not be integrated with the surrounding industrial precinct and adjacent residential neighbourhood. Most of Precinct 4 would continue to exist in its current form, as an industrial suburb. Is this urban renewal?

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Appendix B: Case Studies in Precinct 4, calculating site capacity according to DDO60 height reduction at sensitive interfaces and 30% discretionary height allowance compared with the same calculation using preferred DDO60 height, not adjusted for sensitive interfaces or additional discretionary height. The comparison demonstrates that where required to reduce height at street frontage or at interface with existing residential buildings or laneways, larger sites will generally be overcompensated for reduced capacity by the additional discretionary height. Smaller sites will have a slightly reduced capacity.

	Site Area (sq m) divided into portions approximating different DDO heights	DDO Area	Number of Levels on this portion of Site	Gross Floor area (sq m) assuming 90% site coverage	Net Floor Area (sq m) assuming 10% of every level for utilities	Residential Floor Space (sq m) assuming 20% Commercial /Retail Use for buildings that must have Active Street Frontages per DDO	Number of dwellings assuming average apartment size of 75 sq m	Capacity Population (assume 1.7 persons per dwelling)
Case Study 1:352 Macaulay Rd - Area 3 Maximum height at street edge for Macaulay Rd property is 10.5m. Capacity population calculated with height at street edge of 10.5m and recessed upper levels up to the 30% additional discretionary height according to Figure 12 of DDO60 results in a capacity population of 914.								
Alternative calculation, without reduced height at sensitive interfaces and without discretionary height allowance results in a capacity population of 845.	1,600	3	3	4,320	3,888	3,110	41	71
	1,600	3	5	7,200	6,480	5,184	69	118
	1,600	3	7	10,080	9,072	7,258	97	165
	4,780	3	8	34,416	30,974	24,780	330	562
TOTALS	9,580			56,016	50,414	40,332	538	914
Case Study 2: 64 - 68 Stubbs St - Area 3 Figure 12 line of sight requirements where south boundary interfaces with rear of dwellings in 73 & 75 Smith St. The reduced height results in a capacity population of 62. There is no additional 30% height possible as it could not be recessed from view of 73 & 75 Smith St.	600	3	6	3,240	2,916	2,333	31	53
Alternative calculation, without reduced height at sensitive interfaces and without discretionary height allowance results in a capacity population of 73.	200	3	3	540	486	389	5	9
TOTALS	800			3,780	3,402	2,722	36	62

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