

Residential Development

at
LOT 1
DP 349727
27-61 NIKKO ROAD
WARNERVILLE

for
KINGSTON PROPERTY FUND
No.2 PTY LTD

JOB No. 1028
REVISION 4
SEPTEMBER 2019

INTRODUCTION

This report has been prepared by Shaddock Architects with reference to Wyong Shire Council Development Control Plan 2013 in reference to the relevant chapters detailing required levels of solar access. Shadow Diagrams are presented to show the effect of overshadowing on external spaces and neighbouring properties for the proposed site layout. Shadows are analysed at 9:00am to 3:00pm on the 21st of June.

COMPLIANCE

We believe this development is capable of achieving sufficient solar access in accordance with the objectives and controls set out in WSC DCP 2013. The Development Application documentation seeks to show that the proposed design achieves an adequate outcome in regards to solar access and orientation.

**Requirements for Dwelling Houses & Small Lot Housing Development (Lots 1-14, 151/152, 161/162, 17-24, 25-29, 32-35, 361/362, 37, 39-41, 421/422, 43-47, 481/482, 491/492, 50-51, & 521/522)
56 Proposed Dwellings**

- a On June 21, 50% of the required principal private open space area for all dwellings should receive at least 3 hours of unobstructed sunlight access between 9am and 3pm.*
- b On June 21, 50% of the required principal private open space on adjoining land should receive at least 3 hours of unobstructed sunlight access between 9am and 3pm. Council may consider adopting a lesser standard than provided under this provision in circumstances where:*
 - i the proposed development complies with the building height and building envelope setbacks with this chapter*
 - ii the proposal adequately considers site constraints including slope and site orientation*
 - iii it can be identified that the adjoining development has not sufficiently considered likely future development and site constraints such as lot orientation in the location of private open space.*

The proposed design complies with the requirement of 50% of the 24m² required area of private open space for the Dwellings Houses. Refer to amended shadow diagrams and solar access quantitative analysis table forming part of this revised submission.

**Requirements for Dual Occupancy Development (Lots 301/302, & 311/312)
4 Proposed Dwellings**

- a At least 75% of each required private open space area shall receive at least three hours unobstructed sunlight between the hours of 9 am and 3 pm on June 21 (winter solstice).*
- b New development shall have due regard for maintaining solar access to adjoining properties and not cause overshadowing. At least 75% of required private open space on adjoining lands shall receive at least three hours unobstructed sunlight between the hours of 9 am and 3 pm on June 21 (winter solstice).*
- c Dwellings should be orientated to allow optimum solar access for internal and external living areas.*
- d Buildings shall be designed to minimise adverse impact by wind velocities, intensities and directions on the amenity of the development and surrounding areas.*

The proposed design complies with the requirement of 75% of the 45m² required area of private open space for the Dual Occupancy Dwellings. Refer to amended shadow diagrams and solar access quantitative analysis table forming part of this revised submission.

SOLAR ACCESS QUANTITATIVE ANALYSIS TABLE

LOT NUMBER	9:00am	9:30am	10:00am	10:30am	11:00am	11:30am	12:00pm	12:30pm	1:00pm	1:30pm	2:00pm	2:30pm	3:00pm
1	18 m ²	19 m ²	19 m ²	20 m ²	21 m ²	20 m ²	19 m ²	17 m ²	15 m ²	13 m ²	10 m ²	7 m ²	3 m ²
2	31 m ²	40 m ²	47 m ²	15 m ²	52 m ²	54 m ²	54 m ²	58 m ²	57 m ²	55 m ²	52 m ²	48 m ²	43 m ²
3	4 m ²	9 m ²	12 m ²	15 m ²	17 m ²	18 m ²	19 m ²	19 m ²	19 m ²	19 m ²	18 m ²	17 m ²	15 m ²
4	7 m ²	12 m ²	15 m ²	17 m ²	19 m ²	20 m ²	20 m ²	20 m ²	20 m ²	19 m ²	18 m ²	17 m ²	14 m ²
5	4 m ²	9 m ²	12 m ²	15 m ²	17 m ²	18 m ²	18 m ²	18 m ²	18 m ²	18 m ²	17 m ²	15 m ²	13 m ²
6	7 m ²	13 m ²	17 m ²	21 m ²	23 m ²	24 m ²	24 m ²	24 m ²	23 m ²	22 m ²	20 m ²	17 m ²	13 m ²
7	11 m ²	16 m ²	20 m ²	24 m ²	26 m ²	27 m ²	24 m ²	26 m ²	25 m ²	23 m ²	21 m ²	17 m ²	13 m ²
8	10 m ²	16 m ²	20 m ²	24 m ²	26 m ²	27 m ²	27 m ²	26 m ²	25 m ²	23 m ²	21 m ²	18 m ²	13 m ²
9	7 m ²	13 m ²	17 m ²	21 m ²	24 m ²	24 m ²	24 m ²	24 m ²	23 m ²	21 m ²	19 m ²	16 m ²	12 m ²
10	3 m ²	8 m ²	11 m ²	14 m ²	16 m ²	17 m ²	18 m ²	18 m ²	18 m ²	17 m ²	16 m ²	15 m ²	12 m ²
11	3 m ²	8 m ²	11 m ²	14 m ²	16 m ²	17 m ²	18 m ²	18 m ²	18 m ²	17 m ²	16 m ²	15 m ²	12 m ²
12	3 m ²	8 m ²	11 m ²	14 m ²	16 m ²	17 m ²	18 m ²	18 m ²	18 m ²	17 m ²	16 m ²	15 m ²	12 m ²
13	3 m ²	8 m ²	11 m ²	14 m ²	16 m ²	17 m ²	18 m ²	18 m ²	18 m ²	17 m ²	16 m ²	15 m ²	12 m ²
14	3 m ²	8 m ²	11 m ²	14 m ²	16 m ²	17 m ²	18 m ²	18 m ²	18 m ²	17 m ²	16 m ²	15 m ²	12 m ²
151	2 m ²	12 m ²	17 m ²	20 m ²	23 m ²	24 m ²	24 m ²	24 m ²	22 m ²	17 m ²	18 m ²	14 m ²	9 m ²
152	9 m ²	16 m ²	19 m ²	22 m ²	25 m ²	25 m ²	21 m ²	16 m ²	12 m ²	7 m ²	4 m ²	1 m ²	0 m ²
161	9 m ²	15 m ²	19 m ²	22 m ²	25 m ²	26 m ²	24 m ²	21 m ²	18 m ²	14 m ²	9 m ²	5 m ²	0 m ²
162	8 m ²	9 m ²	14 m ²	20 m ²	24 m ²	25 m ²	24 m ²	22 m ²	19 m ²	16 m ²	11 m ²	4 m ²	0 m ²
17	18 m ²	27 m ²	33 m ²	38 m ²	36 m ²	33 m ²	25 m ²	16 m ²	6 m ²	5 m ²	3 m ²	1 m ²	0 m ²
18	2 m ²	7 m ²	19 m ²	30 m ²	41 m ²	43 m ²	39 m ²	33 m ²	25 m ²	16 m ²	9 m ²	6 m ²	2 m ²
19	23 m ²	32 m ²	38 m ²	43 m ²	41 m ²	35 m ²	25 m ²	14 m ²	3 m ²	0 m ²	0 m ²	0 m ²	0 m ²
20	0 m ²	4 m ²	16 m ²	27 m ²	37 m ²	39 m ²	36 m ²	30 m ²	22 m ²	16 m ²	8 m ²	5 m ²	1 m ²
21	26 m ²	33 m ²	38 m ²	42 m ²	40 m ²	33 m ²	23 m ²	12 m ²	1 m ²	0 m ²	0 m ²	0 m ²	0 m ²
22	0 m ²	3 m ²	16 m ²	27 m ²	37 m ²	38 m ²	36 m ²	29 m ²	22 m ²	15 m ²	7 m ²	5 m ²	2 m ²
23	22 m ²	30 m ²	36 m ²	41 m ²	40 m ²	33 m ²	23 m ²	13 m ²	3 m ²	0 m ²	0 m ²	0 m ²	0 m ²
24	2 m ²	5 m ²	18 m ²	29 m ²	41 m ²	45 m ²	45 m ²	42 m ²	39 m ²	34 m ²	28 m ²	23 m ²	15 m ²
25	11 m ²	13 m ²	15 m ²	16 m ²	17 m ²	16 m ²	14 m ²	13 m ²	11 m ²	8 m ²	6 m ²	3 m ²	0 m ²
26	4 m ²	2 m ²	5 m ²	7 m ²	12 m ²	12 m ²	13 m ²	13 m ²	13 m ²	12 m ²	12 m ²	8 m ²	4 m ²
27	7 m ²	13 m ²	17 m ²	21 m ²	22 m ²	22 m ²	21 m ²	20 m ²	18 m ²	15 m ²	12 m ²	8 m ²	2 m ²
28	7 m ²	13 m ²	17 m ²	21 m ²	23 m ²	22 m ²	24 m ²	23 m ²	22 m ²	21 m ²	19 m ²	15 m ²	11 m ²
29	4 m ²	8 m ²	12 m ²	14 m ²	16 m ²	17 m ²	16 m ²	16 m ²	15 m ²	13 m ²	11 m ²	8 m ²	5 m ²
301	49 m ²	54 m ²	57 m ²	59 m ²	60 m ²	59 m ²	57 m ²	55 m ²	52 m ²	48 m ²	44 m ²	37 m ²	24 m ²
302	51 m ²	58 m ²	62 m ²	66 m ²	69 m ²	68 m ²	67 m ²	64 m ²	61 m ²	57 m ²	51 m ²	42 m ²	39 m ²
311	28 m ²	39 m ²	46 m ²	52 m ²	57 m ²	58 m ²	57 m ²	55 m ²	53 m ²	50 m ²	46 m ²	41 m ²	33 m ²
312	14 m ²	24 m ²	33 m ²	40 m ²	45 m ²	47 m ²	47 m ²	46 m ²	45 m ²	42 m ²	39 m ²	35 m ²	28 m ²
32	4 m ²	8 m ²	11 m ²	13 m ²	14 m ²	14 m ²	14 m ²	14 m ²	13 m ²	12 m ²	9 m ²	7 m ²	3 m ²
33	3 m ²	6 m ²	10 m ²	12 m ²	13 m ²	14 m ²	13 m ²	13 m ²	12 m ²	12 m ²	8 m ²	6 m ²	2 m ²
34	3 m ²	6 m ²	10 m ²	12 m ²	13 m ²	14 m ²	13 m ²	13 m ²	12 m ²	12 m ²	8 m ²	6 m ²	2 m ²
35	30 m ²	32 m ²	33 m ²	36 m ²	37 m ²	39 m ²	39 m ²	39 m ²	39 m ²	37 m ²	30 m ²	22 m ²	10 m ²
361	0 m ²	6 m ²	13 m ²	18 m ²	22 m ²	24 m ²	24 m ²	25 m ²	24 m ²	23 m ²	20 m ²	17 m ²	12 m ²
362	5 m ²	11 m ²	18 m ²	23 m ²	28 m ²	30 m ²	28 m ²	25 m ²	23 m ²	19 m ²	15 m ²	8 m ²	0 m ²
37	5 m ²	9 m ²	12 m ²	15 m ²	18 m ²	19 m ²	18 m ²	16 m ²	13 m ²	11 m ²	7 m ²	2 m ²	0 m ²
38	DETENTION BASIN												
39	0 m ²	3 m ²	8 m ²	14 m ²	17 m ²	17 m ²	17 m ²	16 m ²	14 m ²	12 m ²	9 m ²	4 m ²	0 m ²
40	0 m ²	3 m ²	8 m ²	15 m ²	17 m ²	18 m ²	17 m ²	16 m ²	14 m ²	12 m ²	9 m ²	4 m ²	0 m ²
41	0 m ²	4 m ²	9 m ²	15 m ²	17 m ²	18 m ²	17 m ²	16 m ²	15 m ²	12 m ²	9 m ²	4 m ²	0 m ²
421	2 m ²	8 m ²	12 m ²	18 m ²	20 m ²	20 m ²	20 m ²	19 m ²	18 m ²	16 m ²	13 m ²	9 m ²	5 m ²
422	28 m ²	30 m ²	32 m ²	29 m ²	26 m ²	23 m ²	20 m ²	16 m ²	12 m ²	8 m ²	6 m ²	2 m ²	0 m ²
43	12 m ²	14 m ²	15 m ²	15 m ²	15 m ²	14 m ²	13 m ²	11 m ²	8 m ²	4 m ²	1 m ²	0 m ²	0 m ²
44	13 m ²	15 m ²	15 m ²	15 m ²	15 m ²	14 m ²	13 m ²	11 m ²	8 m ²	4 m ²	1 m ²	0 m ²	0 m ²
45	21 m ²	23 m ²	24 m ²	24 m ²	23 m ²	22 m ²	20 m ²	18 m ²	11 m ²	6 m ²	4 m ²	0 m ²	0 m ²
46	21 m ²	22 m ²	23 m ²	22 m ²	21 m ²	20 m ²	18 m ²	13 m ²	5 m ²	0 m ²	6 m ²	5 m ²	2 m ²
47	13 m ²	15 m ²	15 m ²	15 m ²	15 m ²	14 m ²	12 m ²	10 m ²	6 m ²	4 m ²	1 m ²	0 m ²	0 m ²
481	12 m ²	14 m ²	15 m ²	15 m ²	15 m ²	14 m ²	13 m ²	11 m ²	8 m ²	6 m ²	1 m ²	0 m ²	0 m ²
482	19 m ²	23 m ²	26 m ²	28 m ²	29 m ²	28 m ²	27 m ²	25 m ²	21 m ²	17 m ²	10 m ²	5 m ²	0 m ²
491	22 m ²	31 m ²	38 m ²	42 m ²	42 m ²	39 m ²	31 m ²	22 m ²	13 m ²	6 m ²	4 m ²	2 m ²	0 m ²
492	16 m ²	20 m ²	26 m ²	29 m ²	28 m ²	25 m ²	22 m ²	18 m ²	14 m ²	9 m ²	7 m ²	3 m ²	1 m ²
50	26 m ²	36 m ²	43 m ²	47 m ²	51 m ²	53 m ²	55 m ²	56 m ²	57 m ²	55 m ²	51 m ²	41 m ²	27 m ²
51	14 m ²	17 m ²	18 m ²	17 m ²	16 m ²	14 m ²	13 m ²	7 m ²	3 m ²	3 m ²	1 m ²	0 m ²	0 m ²
521	19 m ²	19 m ²	18 m ²	17 m ²	15 m ²	13 m ²	12 m ²	6 m ²	3 m ²	2 m ²	1 m ²	0 m ²	0 m ²
522	25 m ²	29 m ²	33 m ²	36 m ²	38 m ²	37 m ²	36 m ²	34 m ²	31 m ²	26 m ²	19 m ²	15 m ²	6 m ²

LEGEND
> 12 m ² of solar access for Small Lot Housing
> 6m ² & < 12 m ² of solar access for Small Lot Housing
< 6m ² of solar access for Small Lot Housing
> 34 m ² of solar access for Dual Occupancy
> 17m ² & < 34 m ² of solar access for Dual Occupancy
< 17m ² of solar access for Dual Occupancy

SHADOW DIAGRAM 9:00am



FIGURE 1
SHADOW DIAGRAM
AT 9:00am ON THE 21ST OF JUNE



FIGURE 2
SHADOW DIAGRAM
AT 9:30am ON THE 21ST OF JUNE

SHADOW DIAGRAM 10:00am



FIGURE 3
SHADOW DIAGRAM
AT 10:00am ON THE 21ST OF JUNE

SHADOW DIAGRAM 10:30am



FIGURE 4
SHADOW DIAGRAM
AT 10:30am ON THE 21ST OF JUNE



FIGURE 5
SHADOW DIAGRAM
AT 11:00am ON THE 21ST OF JUNE

SHADOW DIAGRAM 11:30am



FIGURE 6
SHADOW DIAGRAM
AT 11:30am ON THE 21ST OF JUNE



FIGURE 7
SHADOW DIAGRAM
AT 12:00pm ON THE 21ST OF JUNE



FIGURE 8
SHADOW DIAGRAM
AT 12:30pm ON THE 21ST OF JUNE



FIGURE 9
SHADOW DIAGRAM
AT 1:00pm ON THE 21ST OF JUNE

SHADOW DIAGRAM 1:30pm





FIGURE 11
SHADOW DIAGRAM
AT 2:00pm ON THE 21ST OF JUNE

SHADOW DIAGRAM 2:30pm



FIGURE 12
SHADOW DIAGRAM
AT 2:30pm ON THE 21ST OF JUNE

SHADOW DIAGRAM 3:00pm

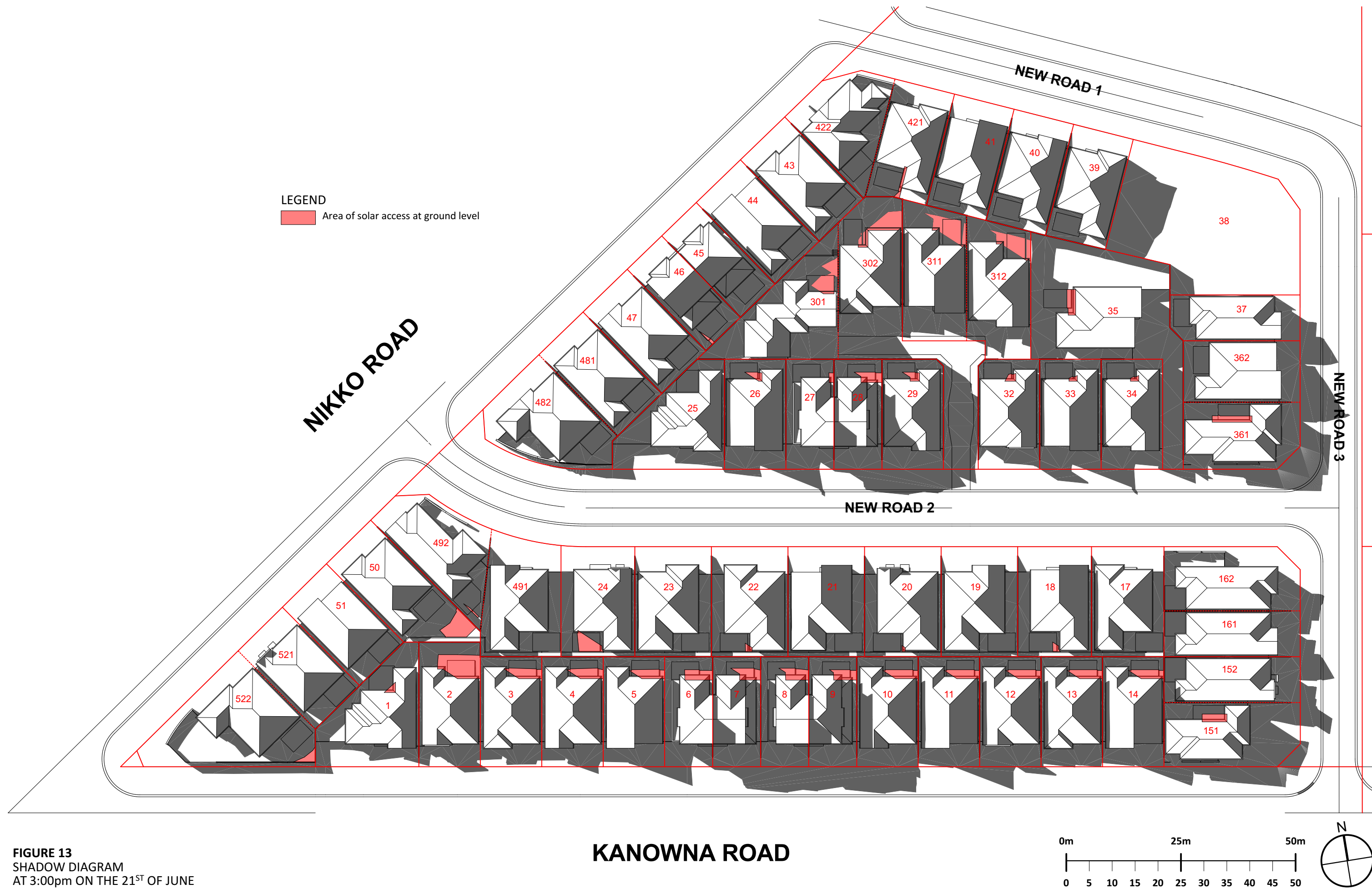


FIGURE 13
SHADOW DIAGRAM
AT 3:00pm ON THE 21ST OF JUNE