



11 December 2017

Mr Maged Zaki
Company Director
Little Zak's Academy
PO Box 1026
Meadowbank NSW 2114

Dear Mr Zaki,

61 Mobbs Lane, Epping NSW 2121
Proposed expansion of the number of licensed child places

1. I refer to your request for a traffic engineering assessment of an increase of the number of licensed child places at the existing child care centre located at the above address. My assessment is outlined below.
2. The development in its current form was approved by Hornsby Shire Council on 10 July 2012 with Application Number **MP 08_0258**.
3. The development is currently licensed for 70 child places. It is proposed to increase the number of licensed child places to 78.
4. There are currently 17 car parking spaces provided on site, including a space for people with disabilities.
5. Following changes to Local Government Area boundaries, the development is now located within The City of Parramatta, however the old Development Control Plan (DCP) is to be applied as per the advice on Council's website below:

As a result of the State Government's council amalgamations in May 2016, a number of different DCPs now apply to the City of Parramatta Local Government Area. Until such time a combined DCP is announced for the City of Parramatta, the DCPs that apply to the LGA are:

- o Parramatta Development Control Plan 2011
 - o Auburn Development Control Plan 2010
 - o The Hills Development Control Plan 2012
 - o Holroyd Development Control Plan 2013
 - o **Hornsby Development Control Plan 2013**
 - o Carter Street Precinct Development Control Plan 2016
 - o Homebush Bay West Development Control Plan 2004 (Volume 1)
 - o Homebush Bay West Public Domain Manual 2005 (Volume 2)
 - o Homebush Bay West Development Control Plan (Amendment No. 1) 2013
 - o Wentworth Point Precinct Development Control Plan 2014
6. Car parking provision is required at a rate of 1 space per 4 children (based on both the RMS (2002) Guide to Traffic Generating Developments and Part 1: General of Hornsby Development Control Plan 2013).
 7. The total car parking provision required for the existing 70 child places is $70/4 = 17.5$, that is 18 spaces rounded up. Seventeen spaces are provided as approved, resulting in a deficit of one space (accepted by Council).
 8. The total car parking provision required for the proposed 78 child places is $78/4 = 19.5$, that is 20 spaces rounded up. Therefore, 2 additional spaces are required for the proposed increase of the number of children by the DCP (allowing for the above credit of one space).
 9. However, that the DCP rate of 1 space per 4 children appears to be based on the requirements of RMS (2002) Guide to Traffic Generating Developments. It is important to note the following.

TRAFFIC & PARKING STUDIES AND MANAGEMENT

TRAFFIC IMPACT ASSESSMENTS

INTERSECTION AND NETWORK MODELLING

ENVIRONMENTAL IMPACT ASSESSMENT OF ROADS, TRAFFIC AND TRANSPORT OPERATIONS

ROAD AND TRAFFIC NOISE

ROAD SAFETY STUDIES

TRAFFIC & PARKING SURVEYS

CAR PARK DESIGN

INTERSECTION DESIGN

TRAFFIC ACCIDENT INVESTIGATION

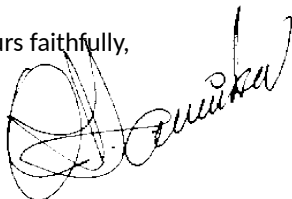
TRAFFIC ACCIDENT RECONSTRUCTION

RESEARCH AND DEVELOPMENT

EXPERT WITNESSES

- 9.1. It must also be noted that the RMS rate of 1 space per 4 children is based on surveys conducted in 1992. This trip generation and parking demand data, collected 25 years ago, is becoming increasingly out-of-date. Also, the RMS surveys and analysis conducted in 1992 were based on and were valid for centres with 29 to 66 children. The subject centre is outside of this range.
- a) I have recently conducted a validation survey of trip and parking generation of child care centres for the RMS NSW. The results of my research indicated that larger child care centres require less parking per child (due to economies of scale and wider spread of children arrivals and departures). For a child care centre with more than 70 children the recommended rate was 1 space per 6 children (13 spaces for 78 children).
- 9.2. Also, the RMS Guide to Traffic Generating Developments makes the following allowance for parking provision.
- a) "Consideration could be given to reducing the parking required if convenient and safe on-street parking is available (e.g. indented parking bays), provided that the use of such parking does not adversely affect the amenity of the adjacent area."
- b) I note that there are sufficient unrestricted parking opportunities on street within a close walking distance, including a Council owned public car park.
- A survey of car parking accumulation was conducted in the surrounding streets within walking distance from the centre (250 m) on Thursday 11 December 2017. The results are presented in **Table 1** overleaf.
 - The survey results indicate that at all times there were 9 vacant spaces on average (minimum of 5 and maximum of 12 during busy times). In addition, at least 22 vacant spaces (through to a maximum of 39) were available in the vicinity of the centre.
 - Additional parking demand of 2 cars during the peak times of children drop-off and pick-up only will be fully satisfied by the existing spare capacity in the car park and will not have any noticeable effect on the street parking situation.
 - It is noted that the surrounding land use is predominantly residential in nature, including a large high-density residential area north-west of the site location. It is likely that the low car usage for the child care car park is a result of residents choosing to walk instead of drive.
10. The proposed increase in the number of children will generate 6 additional car trips in the morning peak hour (in and out combined) and 5 trips in the afternoon peak. This is a low increase which will have no negative impact on the street network operation.
11. The proposed expansion is supportable on traffic and parking grounds.

Yours faithfully,



Oleg I. Sannikov
MEngSc (Traffic Engineering)
MIEAust PEng
FAITPM

Table 1. Results of a car parking accumulation survey.

Time	Number of parked cars								Total
	Parking Location								
6:00	1	2	2	0	0	13	0	0	18
6:30	2	2	3	0	0	12	14	0	33
7:00	6	3	1	0	0	12	11	1	34
7:30	4	4	2	1	0	11	11	1	34
8:00	7	4	1	0	0	11	10	2	35
8:30	9	6	1	0	0	10	8	1	35
9:00	5	6	1	0	0	11	8	2	33
9:30	10	7	1	1	0	12	7	3	41
10:00	9	7	3	0	1	12	7	3	42
10:30	9	7	2	0	0	12	6	3	39
14:30	6	7	1	1	0	9	6	3	33
15:00	8	6	1	0	0	9	5	5	34
15:30	7	4	1	0	0	11	6	6	35
16:00	8	4	0	1	0	12	6	1	32
16:30	10	4	0	0	0	12	6	2	34
17:00	9	5	0	0	0	11	6	1	32
17:30	10	4	0	0	0	11	9	1	35
18:00	12	4	0	0	0	11	9	1	37
18:30	2	4	0	2	0	10	10	0	28
19:00	0	4	1	0	0	8	10	0	23
No of spaces	17	10	14	15	16	13	32	15	132

Time	Number of vacant parking spaces								Total
	Parking Location								
6:00	16	8	12	15	16	0	32	15	114
6:30	15	8	11	15	16	1	18	15	99
7:00	11	7	13	15	16	1	21	14	98
7:30	13	6	12	14	16	2	21	14	98
8:00	10	6	13	15	16	2	22	13	97
8:30	8	4	13	15	16	3	24	14	97
9:00	12	4	13	15	16	2	24	13	99
9:30	7	3	13	14	16	1	25	12	91
10:00	8	3	11	15	15	1	25	12	90
10:30	8	3	12	15	16	1	26	12	93
14:30	11	3	13	14	16	4	26	12	99
15:00	9	4	13	15	16	4	27	10	98
15:30	10	6	13	15	16	2	26	9	97
16:00	9	6	14	14	16	1	26	14	100
16:30	7	6	14	15	16	1	26	13	98
17:00	8	5	14	15	16	2	26	14	100
17:30	7	6	14	15	16	2	23	14	97
18:00	5	6	14	15	16	2	23	14	95
18:30	15	6	14	13	16	3	22	15	104
19:00	17	6	13	15	16	5	22	15	109





ROADS AND MARITIME SERVICES
VALIDATION TRIP GENERATION SURVEYS
CHILD CARE CENTRES
ANALYSIS REPORT



In summary, the analysis of data highlighted the following facts:

- Average trip rates should not be utilised for planning purposes.
- Good linear and non-linear relationships were established between the Centre peak hour vehicle trips AM and PM, Centre vehicle trips (in+out) during AM peak hour on adjacent road and the independent variable “number of licensed places for children” for all centres except OSHC.
- Good linear and non-linear relationships were established between the peak parking accumulation and the independent variable “total building GFA” for LDCC and PS centres.
- It is noted that the current rate of parking provision in the RMS (2002) Guide, based on 1992 data, is 1 parking space per 4 children. For comparison with this rate, the Peak Parking Accumulation formula from Table 4.2 was used for a range of numbers of children places. The resulting calculations indicate the following average rates:
 - Centres with 20 to 35 children – 1 space per 4 children
 - Centres with 40 to 65 children – 1 space per 5 children
 - Centres with 70 to 100 children – 1 space per 6 children

4.3 Comparison with 1992 data

- In this study, the sample sizes for each type of the centre were smaller than those in the 1992 study. However, analysis of the combined 2015 data for LDCC and PS centres returned reliable regression equations. In the 1992 study these types of child care centres were analysed separately.
- The following graphs show comparisons of trip generation and parking demand trend lines for regression analysis of LDCC and PS centres. Graphs for 1992 LDCC and PS data were overlaid separately on the combined 2015 LDCC/PS data.

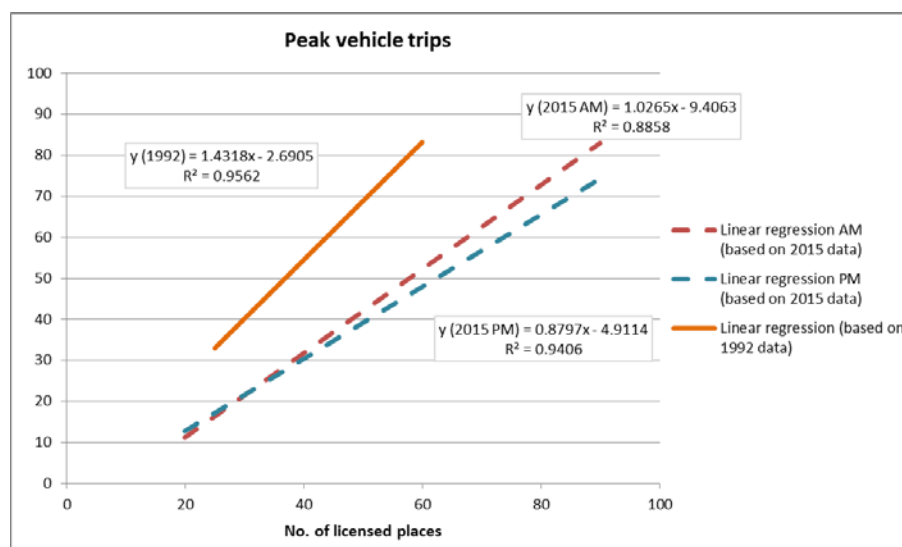


Figure 4.1 Centre peak hour vehicle trips vs. Number of licensed places – comparison of 1992 PS and 2015 LDCC/PS data.

- Peak trip generation of PS centres in 1992 was generally higher and the rate of its increase with the increase of the centre capacity was greater than those from the 2015 LDCC/PS data.