PO Box 215 Bondi NSW 2026 | ph.: +61 2 9332 2024 | fax.: +61 2 9332 2022 | mob.: +61 (0)4 1497 8067 | email: o.s@tefconsult.com.au | www.tefconsult.com.au

# TRAFFIC AND PARKING IMPACTS REPORT FOR A DEVELOPMENT APPLICATION FOR A PROPOSED BOARDING HOUSE AT NO. 51 JAMISON ROAD, KINGSWOOD NSW 2747

| | |
|---|---|
| **Property address** | 51 Jamison Road, Kingswood NSW 2747 |
| **Client** | Liquid Design |
| **Prepared by** | O. Sannikov, MEngSc (Traffic Engineering), MIEAust, PEng, FAITPM |
| **Date** | 12/12/2017 |
| **Job No.** | 17106 |
| **Report No.** | 17106 01 |

| Item | Report |
|---|---|
| **Site location** | • Refer to **Figure 1.** |
| **Existing land use** | • Single storey residential dwelling |
| **Proposed development** | • Boarding house (under AHSEPP 2009)<br>◦ 29 units total<br>▪ 1 manager room<br>▪ 28 one bedroom units<br>◦ Basement car park<br>▪ A total of 7 car parking spaces<br>• 6 standard car spaces<br>• 1 accessible car space<br>▪ 6 bicycle parking spaces<br>▪ 6 motorcycle parking spaces |


**Figure 1. Site location.**

| Item | Report |
|---|---|
| **Street characteristics** | **Existing traffic and parking situation**<br>• Refer to **Figure 2.**<br>• The key roads around the proposed development are described below.<br>  ◦ Jamison Road<br>  ▪ Local collector<br>  ▪ Unrestricted parking<br>  ◦ Somerset Street<br>  ▪ Local collector<br>  ▪ Metered parking<br>  ◦ Stafford Street<br>  ▪ Local collector<br>  ▪ Metered parking<br>  ◦ Stapley Street<br>  ▪ Local road<br>  ▪ Unrestricted parking<br>• Other streets in the surrounding area are local/local collector roads. Street conditions are typical for a low density residential area.<br>  ◦ General speed limit is 50 km/h on local streets around the site. |


**Figure 2. Street characteristics.**

| Item | Report |
|---|---|
| | **Public Transport** |
| | • The site has average public transport provision. Refer to **Figure 3.** |
| **Bus** | • The closest bus stop is located on Jamison Road (approximately 50 metres from site location). |
| | • There is also another bus stop 400 metres away on Derby Street. |
| | ◦ There are 4 bus routes within walking distance. |
| | ◦ Bus route 770 |
| | ▪ Penrith to Mount Druitt via St Marys |
| | • 6 services operate during the AM peak |
| | • 5 services operate during the PM peak |
| | ▪ Mount Druitt to Penrith via St Marys |
| | • 5 service operates during the AM peak |
| | • 5 services operate during the PM peak |
| | ◦ Bus route 774 |
| | ▪ Penrith to Mount Druitt via Nepean Hospital |
| | • 6 services operate during the AM peak |
| | • 5 services operate during the PM peak |
| | ▪ Mount Druitt to Penrith via Nepean Hospital |
| | • 6 service operates during the AM peak |
| | • 6 services operate during the PM peak |
| | ◦ Bus route 775 |
| | ▪ Penrith to Mount Druitt via Erskine Park |
| | • 6 services operate during the AM peak |
| | • 7 services operate during the PM peak |
| | ▪ Mount Druitt to Penrith via Erskine Park |
| | • 5 services operate during the AM peak |
| | • 7 services operate during the PM peak |
| | ◦ Bus route 776 |
| | ▪ Penrith to Mount Druitt via St Clair |
| | • 6 services operate during the AM peak |
| | • 6 services operate during the PM peak |
| | ▪ Mount Druitt to Penrith via St Clair |
| | • 7 services operate during the AM peak |
| | • 5 services operate during the PM peak |
| | • The AM peak was considered to be between 6:30 a.m. and 9:30 a.m. and the PM peak was considered to be between 3:30 p.m. and 6:30 p.m. |

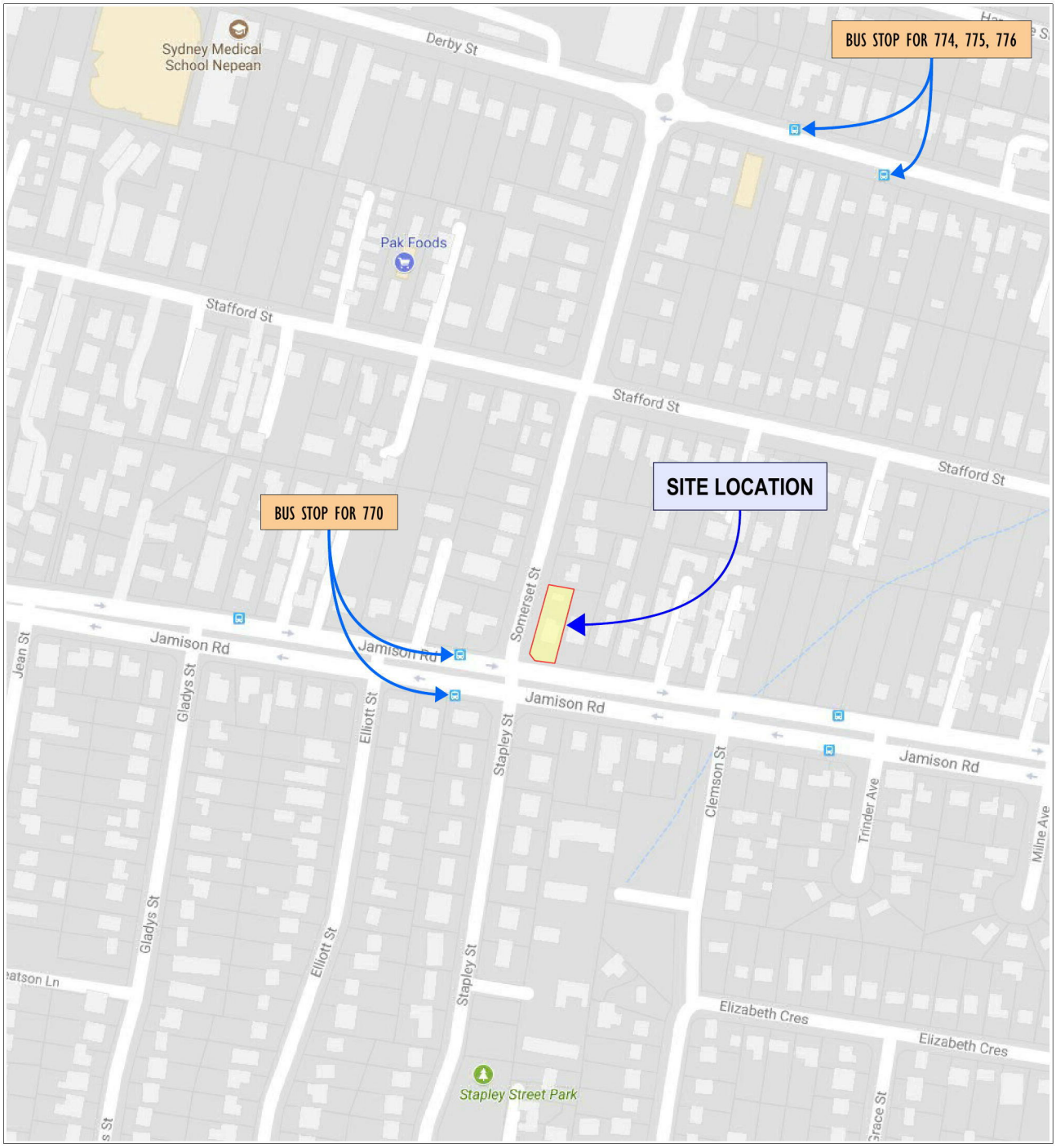



**Figure 3. Public transport.**

| Item | Report |
|---|---|
| | **Surveys and survey results** |
| **Parking survey** | • An on-street parking accumulation survey was conducted on Wednesday 25th of October 2017 from 3:30 p.m. to 7:00 p.m. and Thursday 26th of October 2017 from 6:30 a.m. to 10:00 a.m. |
| | ◦ Refer to **Figure 4** for survey locations. |
| | ◦ The study area represents a walking distance of up to 250 metres (convenient) from the site location. |
| **Survey results** | • Refer to **Table 1** for survey results |
| | ◦ Area 1a-1b (Jamison Road on the same side of the site location) |
| | ▪ AM peak occurred at 10:00 a.m. |
| | ▪ PM peak occurred at 3:30 p.m. |
| | ▪ The survey results indicated that there were at least 23 spaces vacant throughout the day (to a maximum of 36) on Jamison Road on same side as the site location. |
| | ◦ Areas 1a-6 (all areas within 250 metre walking distance) |
| | ▪ AM peak occurred at 10:00 a.m. |
| | ▪ PM peak occurred at 3:30 p.m. |
| | ▪ The survey results indicated that there were at least 61 spaces vacant throughout the day (to a maximum of 115) within a 250 metre walking distance from site location. |
| | ◦ The AM and PM peak parking demand generally occurred at the same time throughout all areas. |

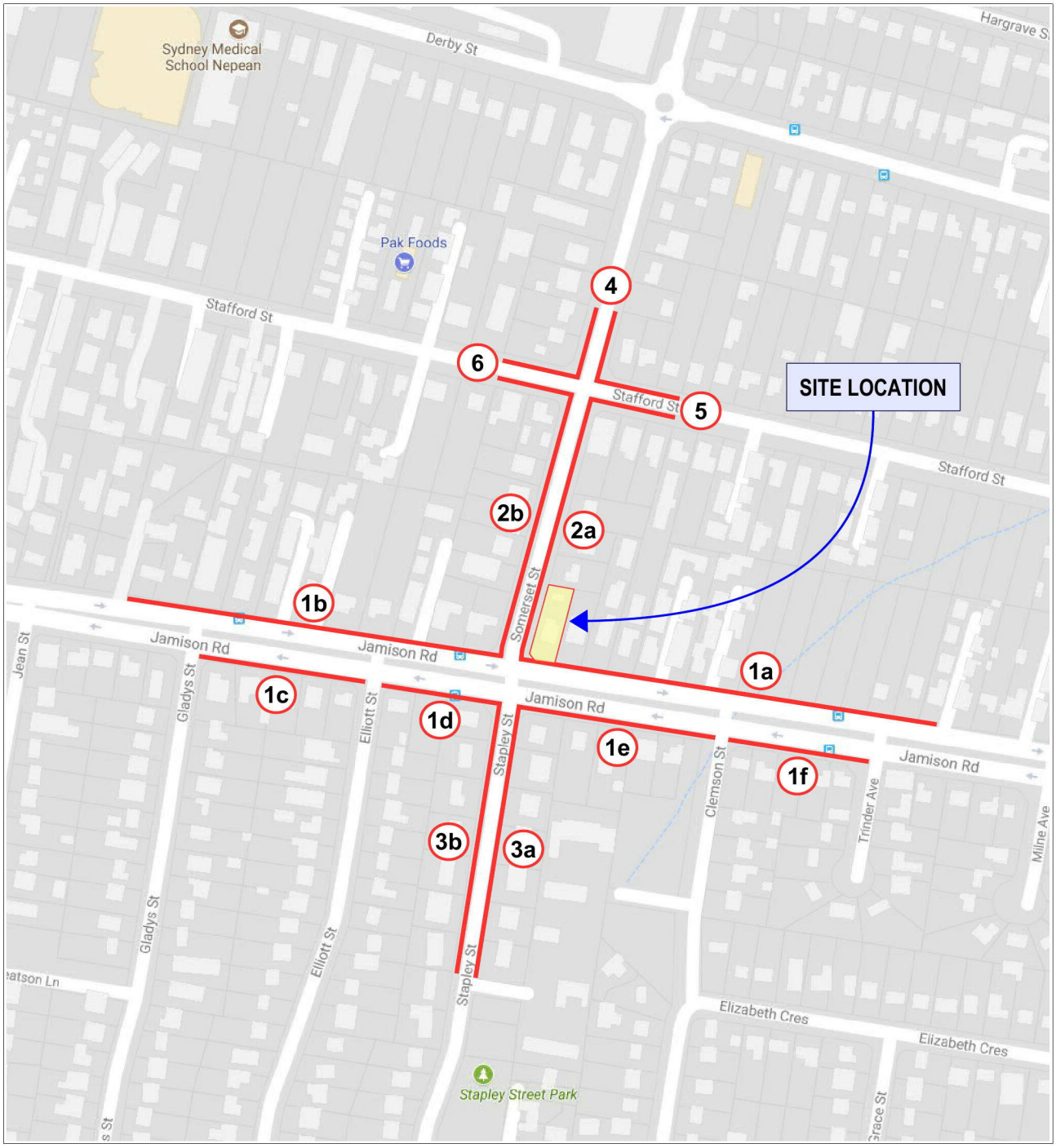



**Figure 4. Parking survey locations.**

**Table 1. Parking survey results.**

| | Number of parked cars | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Parking Location | | | | | | | | | | | | | Total | |
| Time | 1a | 1b | 1c | 1d | 1e | 1f | 2a | 2b | 3a | 3b | 4 | 5 | 6 | 1a-1b | 1a-6 |
| 6:30 | 8 | 4 | 1 | 0 | 2 | 0 | 0 | 3 | 0 | 1 | 10 | 4 | 2 | 12 | 35 |
| 7:00 | 9 | 4 | 1 | 0 | 2 | 0 | 6 | 7 | 0 | 1 | 11 | 5 | 5 | 13 | 51 |
| 7:30 | 8 | 4 | 1 | 0 | 2 | 0 | 7 | 11 | 0 | 1 | 11 | 5 | 5 | 12 | 55 |
| 8:00 | 6 | 4 | 1 | 0 | 2 | 0 | 15 | 13 | 0 | 1 | 11 | 5 | 5 | 10 | 63 |
| 8:30 | 10 | 7 | 1 | 0 | 3 | 0 | 15 | 14 | 0 | 2 | 11 | 5 | 5 | 17 | 73 |
| 9:00 | 11 | 7 | 1 | 0 | 2 | 0 | 15 | 14 | 0 | 4 | 11 | 5 | 5 | 18 | 75 |
| 9:30 | 13 | 8 | 1 | 1 | 2 | 0 | 15 | 14 | 1 | 4 | 11 | 5 | 5 | 21 | 80 |
| 10:00 | 13 | 9 | 1 | 1 | 2 | 0 | 15 | 14 | 2 | 6 | 11 | 5 | 5 | 22 | 84 |
| | | | | | | | | | | | | | | | |
| No of spaces | 27 | 19 | 7 | 3 | 10 | 5 | 15 | 14 | 13 | 11 | 11 | 5 | 5 | 46 | 145 |

| | Number of vacant parking spaces | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Parking Location | | | | | | | | | | | | | Total | |
| Time | 1a | 1b | 1c | 1d | 1e | 1f | 2a | 2b | 3a | 3b | 4 | 5 | 6 | 1a-1b | 1a-6 |
| 6:30 | 19 | 15 | 6 | 3 | 8 | 5 | 15 | 11 | 13 | 10 | 1 | 1 | 3 | 34 | 110 |
| 7:00 | 18 | 15 | 6 | 3 | 8 | 5 | 9 | 7 | 13 | 10 | 0 | 0 | 0 | 33 | 94 |
| 7:30 | 19 | 15 | 6 | 3 | 8 | 5 | 8 | 3 | 13 | 10 | 0 | 0 | 0 | 34 | 90 |
| 8:00 | 21 | 15 | 6 | 3 | 8 | 5 | 0 | 1 | 13 | 10 | 0 | 0 | 0 | 36 | 82 |
| 8:30 | 17 | 12 | 6 | 3 | 7 | 5 | 0 | 0 | 13 | 9 | 0 | 0 | 0 | 29 | 72 |
| 9:00 | 16 | 12 | 6 | 3 | 8 | 5 | 0 | 0 | 13 | 7 | 0 | 0 | 0 | 28 | 70 |
| 9:30 | 14 | 11 | 6 | 2 | 8 | 5 | 0 | 0 | 12 | 7 | 0 | 0 | 0 | 25 | 65 |
| 10:00 | 14 | 10 | 6 | 2 | 8 | 5 | 0 | 0 | 11 | 5 | 0 | 0 | 0 | 24 | 61 |

| | Number of parked cars | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Parking Location | | | | | | | | | | | | | Total | |
| Time | 1a | 1b | 1c | 1d | 1e | 1f | 2a | 2b | 3a | 3b | 4 | 5 | 6 | 1a-1b | 1a-6 |
| 15:30 | 12 | 11 | 2 | 2 | 7 | 0 | 8 | 12 | 3 | 2 | 7 | 2 | 0 | 23 | 68 |
| 16:00 | 11 | 10 | 2 | 2 | 6 | 0 | 7 | 11 | 3 | 2 | 8 | 3 | 0 | 21 | 65 |
| 16:30 | 11 | 8 | 3 | 2 | 6 | 0 | 5 | 7 | 3 | 2 | 8 | 2 | 0 | 19 | 57 |
| 17:00 | 8 | 7 | 2 | 2 | 4 | 0 | 5 | 6 | 3 | 2 | 6 | 2 | 0 | 15 | 47 |
| 17:30 | 9 | 7 | 2 | 2 | 2 | 0 | 4 | 5 | 2 | 1 | 7 | 2 | 0 | 16 | 43 |
| 18:00 | 5 | 6 | 2 | 1 | 2 | 0 | 2 | 6 | 2 | 1 | 6 | 3 | 0 | 11 | 36 |
| 18:30 | 6 | 5 | 2 | 1 | 2 | 0 | 1 | 5 | 2 | 2 | 3 | 1 | 0 | 11 | 30 |
| 19:00 | 8 | 5 | 3 | 1 | 2 | 0 | 1 | 4 | 2 | 2 | 5 | 1 | 0 | 13 | 34 |
| | | | | | | | | | | | | | | | |
| No of spaces | 27 | 19 | 7 | 3 | 10 | 5 | 15 | 14 | 13 | 11 | 11 | 5 | 5 | 46 | 145 |

| | Number of vacant parking spaces | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Parking Location | | | | | | | | | | | | | Total | |
| Time | 1a | 1b | 1c | 1d | 1e | 1f | 2a | 2b | 3a | 3b | 4 | 5 | 6 | 1a-1b | 1a-6 |
| 15:30 | 15 | 8 | 5 | 1 | 3 | 5 | 7 | 2 | 10 | 9 | 4 | 3 | 5 | 23 | 77 |
| 16:00 | 16 | 9 | 5 | 1 | 4 | 5 | 8 | 3 | 10 | 9 | 3 | 2 | 5 | 25 | 80 |
| 16:30 | 16 | 11 | 4 | 1 | 4 | 5 | 10 | 7 | 10 | 9 | 3 | 3 | 5 | 27 | 88 |
| 17:00 | 19 | 12 | 5 | 1 | 6 | 5 | 10 | 8 | 10 | 9 | 5 | 3 | 5 | 31 | 98 |
| 17:30 | 18 | 12 | 5 | 1 | 8 | 5 | 11 | 9 | 11 | 10 | 4 | 3 | 5 | 30 | 102 |
| 18:00 | 22 | 13 | 5 | 2 | 8 | 5 | 13 | 8 | 11 | 10 | 5 | 2 | 5 | 35 | 109 |
| 18:30 | 21 | 14 | 5 | 2 | 8 | 5 | 14 | 9 | 11 | 9 | 8 | 4 | 5 | 35 | 115 |
| 19:00 | 19 | 14 | 4 | 2 | 8 | 5 | 14 | 10 | 11 | 9 | 6 | 4 | 5 | 33 | 111 |

| Item | Report |
|---|---|
| **Planning control document 1** | • State Environmental Planning Policy (Affordable Rental Housing) 2009 (AHSEPP 2009)<br>◦ Division 3 – Boarding houses |

| **Requirement** | **Compliance** |
|---|---|
| **26 Land to which Division applies** | |
| This Division applies to land within any of the following land use zones or within a land use zone that is equivalent to any of those zones:<br>(a) Zone R1 General Residential,<br>(b) Zone R2 Low Density Residential,<br>**(c) Zone R3 Medium Density Residential**,<br>(d) Zone R4 High Density Residential,<br>(e) Zone B1 Neighbourhood Centre,<br>(f) Zone B2 Local Centre,<br>(g) Zone B4 Mixed Use. | |
| **29 Standards that cannot be used to refuse consent** | |
| (2) A consent authority must not refuse consent to development to which this Division applies on any of the following grounds:<br>(e) parking if:<br>(i) in the case of development in an accessible area—at least 0.2 parking spaces are provided for each boarding room, and<br>(ii) in the case of development not in an accessible area—at least 0.4 parking spaces are provided for each boarding room, and<br>(iii) in the case of any development—not more than 1 parking space is provided for each person employed in connection with the development and who is resident on site | |
| **Car parking rates** | **Car parking provided** |
| The site is 400 metres from a bus stop (used regularly between 6 a.m. and 9 p.m. Monday to Friday, and 8 a.m. to 6 p.m. weekends) on Derby Street and is therefore in an accessible area.<br>• 0.2 spaces per boarding room<br>◦ 0.2 x 28 = 5.6, say **6 spaces**<br>• parking requirement for employees is maximum limit, no parking is required | 7 car parking spaces are provided<br>Complies and exceeds<br>It is also noted that there are substantial parking opportunities on street. Surveys conducted by TEF Consulting indicate that there were at least 23 spaces vacant throughout the day (to a maximum of 36) on Jamison Road alone (same side as the site location).<br>There were at least 61 spaces vacant throughout the day (to a maximum of 115) within a 250 metre walking distance from site location.<br>• Refer to previous section 'Surveys and survey results' for results and further discussion. |
| (4) A consent authority may consent to development to which this Division applies whether or not the development complies with the standards set out in subclause (1) or (2). | |
| **30 Standards for boarding houses** | |
| (1) A consent authority must not consent to development to which this Division applies unless it is satisfied of each of the following:<br>(h) at least one parking space will be provided for a bicycle, and one will be provided for a motorcycle, for every 5 boarding rooms. | |
| **Bicycle/motorcycle parking required** | **Bicycle/motorcycle parking provided** |
| • 1 space per 5 boarding rooms<br>◦ 1 x 28/5 = 5.6, say **6 spaces each for bicycles and motorcycles** | 6 motorcycle spaces provided<br>6 bicycle spaces provided<br>Complies |

| Item | Report |
|---|---|
| **Planning control document 2** | • Penrith City Council<br>◦ Penrith Development Control Plan 2014<br>▪ Part C10 – Transport, Access and Parking<br>▪ Part D2 – Residential Development |

| Requirement | Compliance |
|---|---|
| **10.1 Transport and Land Use** | |
| 1) A Transport Management and Accessibility Plan (TMAP) is to be prepared for all significant developments (see Appendix F3 – Submission Requirements for further details). The TMAP is to address the objectives and controls in this section. | Not applicable |
| 2) New development that will have potential significant public transport patronage (especially residential, commercial and employment generating uses) is to be located close to existing or proposed transport nodes or networks. | Complies |
| 4) Public transport use is to be enhanced by providing good pedestrian connections from places of residence or employment to transport networks or nodes. | Complies |
| **10.2 Traffic Management and Safety** | |
| **1) Traffic Studies**<br>Traffic studies may be required for some developments. Check with Council about whether a traffic report is required to support your proposal. | |
| d) Any Traffic Report or Traffic Impact Statement is required to address the following issues: | |
| i. The objectives of this section relating to transport and land use; | Complies |
| ii. The objectives of this section relating to traffic management and safety; | Complies |
| iii. The objectives and controls of this section relating to traffic generating developments; and | Complies |
| iv. The issues set out in Appendix F3 – Submission Requirements of this DCP. | Complies |
| **2) Road Safety** | |
| a) Each development should demonstrate how it will: | |
| i. Provide safe entry and exit for vehicles and pedestrians which reflect the proposed land use, and the operating speed and character of the road; | Complies |
| ii. Minimise the potential for vehicular/pedestrian conflicts, providing protection for pedestrians where necessary; | Complies |
| iii. Not restrict traffic flow or create a hazard to traffic on roads in the vicinity of the development; | Complies |
| iv. Provide suitable off-street parking facilities to accommodate vehicles generated by the development; and | Complies |

| Item | Report | |
|---|---|---|
| | **Requirement** | **Compliance** |
| | v. Identify the need, where apparent, for any additional on-street traffic facilities or road works which may be required to maintain the safe and efficient movement of vehicles and pedestrians. | Not applicable |
| | b) Where feasible, vehicle access for developments should be from service roads/lanes. | Not applicable |
| | c) The design of direct vehicular access to developments should consider the traffic impacts on the surrounding road network. This may require the provision of deceleration, acceleration, right turn lanes and road widening, as necessary. | Complies |
| | d) Provision must be made for all vehicles to enter and leave properties in a forward direction other than for single dwellings. | Complies |
| | e) The layout and design of parking areas must minimise vehicle to pedestrian impacts, especially where heavy vehicle access to loading docks is proposed. | Complies |
| | **10.5 Parking, Access and Driveways** | |
| | **10.5.1. Parking** | |
| | **1) Provision of Parking Spaces** | |
| | a) Parking provided on site is to meet AS 2890 and where appropriate, AS 1428. | Complies |
| | b) For any proposed development, Council will require the provision of on-site car parking to a standard appropriate to the intensity of the proposed development as set out in Table C10.2 below. | Refer to the previous section **'Planning control document 1'**<br>State Environmental Planning Policy (Affordable Rental Housing) 2009 (AHSEPP 2009) overrides DCP requirements for car parking rates and calculations. |
| | g) Where relevant, development shall provide on-site loading facilities to accommodate the anticipated heavy vehicle demand for the site. | No loading facilities are proposed.<br>A residential boarding house is not expected to generate any heavy vehicle demand for the purpose of loading/unloading. |
| | k) Car parking and associated internal manoeuvring areas provided over and beyond the requirements of this DCP shall be calculated as part of the development's gross floor area. | Noted |
| | n) For all residential development at least one car parking space for each dwelling shall be covered the second space may be "stacked" or "tandem" or located on a driveway. | Complies |
| | **3) Additional Controls for Residential Developments** | |
| | a) On-site parking for residential developments, including the residential component in a mixed use development, is to be accommodated wholly in a basement parking area unless the applicant can demonstrate to Council's satisfaction that the site's unique conditions prevent the parking from being located in a basement structure. | Complies |
| | **5) Design of Parking and Manoeuvring Areas** | |
| | a) Car space dimensions must comply with the relevant Australian Standards. | Complies |

| Item | Report | |
|---|---|---|
| | **Requirement** | **Compliance** |
| | b) The movement of pedestrians throughout the car park should be clearly delineated and be visible for all users of the car park to minimise conflict with vehicles. The car parking and manoeuvring layout should be in accordance with the provisions of AS 2890.1 - 2004. | Complies |
| | c) Provision of parking spaces for disabled persons should be in accordance with the Access to Premises Standards, the Building Code of Australia and AS2890.. | Complies |
| | d) Council will require all car parking areas to be constructed of hard standing, all weather material, with parking bays and circulation aisles clearly delineated. | Complies |
| | e) Vehicle access is to be integrated into the building design as to be visually recessive. | Complies |
| | h) Large car parking areas (more than 5 vehicles) should be visually separated from access roads and from the buildings they serve by planting and other landscaping and should not be visually prominent from public roads, either through separation or screening. | Complies |
| | i) All vehicles must be able to enter and leave the site in a forward direction without the need to make more than a three point turn. | Complies |
| | j) Council may require the provision of internal directional signs to assist site visitors in locating parking areas. | Noted |
| | k) For residential development, other than a single residence, the minimum space width shall provide for full door opening in accordance with Table B1 of AS2890.1 – 2004. | Complies |
| | l) The design of the car park should ensure that passive surveillance is possible and, where appropriate, incorporate active measures such as cameras and security patrols. Car parks should be designed to minimise dark areas through the provision of appropriate lighting. | Complies |
| | m) Access to security parking shall be designed to ensure the access mechanism is accessible to the vehicle driver on the entry side of the driveway. | Complies |
| | n) Provision should be made for all vehicles to enter and exit a secure (i.e. boom-gated) area in a forward direction. | Complies |
| | q) Vehicular ramps less than 20m long within developments and parking stations must have a maximum grade of 1 in 5 (20%). Ramp widths must be in accordance with AS2890. | Complies |
| | r) Access ways to underground parking should be sited to minimise noise impacts on adjacent habitable rooms, particularly bedrooms. | Complies |
| | y) All potential entrapment points should be avoided, e.g. under stairs, blind corners and wide columns. Adequate lighting and mirrors should be used when certain design features are unavoidable. | Complies |

| Item | Report | |
|---|---|---|
| | **Requirement** | **Compliance** |
| | aa) Council may require a development to cater for vehicles larger than the minimum specified above where the development is for uses such as a transport depot, warehouse, etc. All service vehicles must enter and exit the development site in a forward direction. | Noted |
| | **10.5.2. Access and Driveways** | |
| | **1) General Requirements** | |
| | a) The road access to the site should provide for safe entry to and exit from the site. All vehicles must enter/exit the site in a forward direction. (This does not apply to single dwellings). | Complies |
| | b) The entry and exit from the site should provide for appropriate traffic sight distance in both directions, in accordance with the provisions of AS2890.1 and 2 - 2004 for car parking and commercial vehicles respectively. | Complies |
| | c) The design of the development driveway should take into consideration the traffic volumes of the surrounding road network. | Complies |
| | d) Driveways should be: | |
| | i. Provided from lanes and secondary streets rather than the primary street, wherever practical; | Complies |
| | ii. Located taking into account any services located within the road reserve, such as power poles, drainage inlet pits and existing street trees; | Complies |
| | iii. Setback a minimum of 6m from the perpendicular of any intersection of any two roads; and | Complies |
| | iv. Located to minimise noise and amenity impacts on adjacent residential development. | Complies |
| | e) The driveway crossing and access roads shall be designed in accordance with the provisions of AS2890.1 and 2 - 2004 for car parking and commercial vehicles respectively. | Complies |
| | f) Driveway widths must comply with the relevant Australian Standards. | Complies |
| | g) Driveway grades, vehicular ramp width/grades and passing bays must be in accordance with the relevant Australian Standard (AS2890.1). | Complies |
| | h) Access to basement parking shall have an entry threshold a minimum of 300mm above the top of the kerb. The threshold shall be increased within areas of flooding or local overland flows to a minimum of 300mm above the flood level. The design of the development shall ensure that floodwater cannot enter the car park in a 1% Annual Exceedance Probability (AEP) flood event. | Not applicable |
| | i) The required threshold should be set within the property to prevent cross fall greater than 4% within the footway area. | Not applicable |
| | j) No direct access will be permitted to the M4 Western Motorway. | Complies |

| Item | Report | |
|---|---|---|
| | **Requirement** | **Compliance** |
| | **6) Responding to Topography** | |
| | a) Natural contours should be followed when designing and constructing driveways. Driveways should be located to retain as much of the property's vegetation as practicable. | Complies |
| | **10.7 Bicycle Facilities** | |
| | **2. Provision of Bicycle Parking Spaces** | |
| | a) For commercial developments providing employment for 20 people or more, bicycle parking is to be in secure and accessible locations, and provided with weather protection, in accordance with AS2890.3:1993 Bicycle Parking Facilities. | N/A |
| | b) The following associated facilities are to be provided: | |
| | i. Change and shower facilities for cyclists are to be conveniently located close to the bicycle storage areas; and | The proposed development is a residential boarding house, as such private bathrooms are provided on site for each individual unit. |
| | ii. Where the building is to be strata-titled, the bicycle storage facilities and shower/change facilities are to be made available to all occupants of the building. | N/A |
| | c) Applicants should comply with the suggested bicycle parking provision rates for different land use types in the document 'Planning Guidelines for Walking and Cycling' (NSW Government 2004). | Refer to the previous section **'Planning control document 1'**<br>Complies with State Environmental Planning Policy (Affordable Rental Housing) 2009 (AHSEPP 2009) for bicycle parking rates. |
| | **3. Design of bicycle spaces** | |
| | a) Bicycle parking spaces must: | |
| | i. Be provided in accordance with AS2890.3:1993 Bicycle Parking Facilities; | Complies with AS 2890.3 - 2015: Parking Facilities Part 3: Bicycle Parking Facilities |
| | ii. Be located to provide convenient access from surrounding bicycle routes and main building entrances; | Complies |
| | iii. Not interfere with reasonable access to doorways, loading areas, access covers, furniture, services and infrastructure; | Complies |
| | iv. Not cause a hazard; and | Complies |
| | v. Be adequately lit during periods of use. | Complies |
| | **4. Bicycle Rails, Storage and Signage** | |
| | a) A bicycle rail must: | |
| | i. Be securely fixed to a wall or to the floor or ground; | Complies |
| | ii. Be in a highly visible location for bicycle security (when not in a compound); | Complies |
| | iii. Be in a highly visible location for bicycle security (when not in a compound); | Complies |
| | iv. Be of a shape that allows a cyclist to easily lock the bicycle frame and wheels; and | |

| Item | Report | |
|---|---|---|
| | **Requirement** | **Compliance** |
| | v. Be located to allow easy access to park, lock and remove the bicycle. | Complies |
| | b) A bicycle compound or a bicycle locker must: | |
| | i. Be located to provide convenient access to other bicycle facilities including showers and change rooms; | Complies |
| | ii. Be fully enclosed; | Complies |
| | iii. Be able to be locked; and | Complies |
| | iv. If outside, provide weather protection for the bicycle. | Complies |
| | **D2 Residential Development** | |
| | **2.5.12 Building Design** | |
| | 3) Basements for car parks should rise no higher than 1.5m above ground provide a minimum 2.2m vertical clearance for vehicles. | Complies |
| | **2.5.20 Accessibility and Adaptability** | |
| | 6) Car parking and garages allocated to adaptable dwellings must comply with the requirements of the relevant Australian Standard regarding parking for people with a disability. | Complies |

| Item | Report |
|---|---|
| | **Traffic impacts** |
| **Traffic generation** | • Base traffic generation rates<br>◦ From RMS (2002) Guide to Traffic Generating Developments<br>▪ Updated statistics from TDT 2013 / 04a |
| | • **Traffic generated by proposed development**<br>◦ 29 units (high density residential – Sydney average)<br>▪ Morning peak hour vehicle trips = 0.19 per unit<br>• 29 x 0.19 = 5.51, say 6 trips during the morning peak hour<br>▪ Evening peak hour vehicle trips = 0.15 per unit<br>• 29 x 0.15 = 4.35, say 4 trips during the evening peak hour |
| **Conclusion** | • Additional traffic generation is very minor and will have no noticeable impact on the existing road network. |

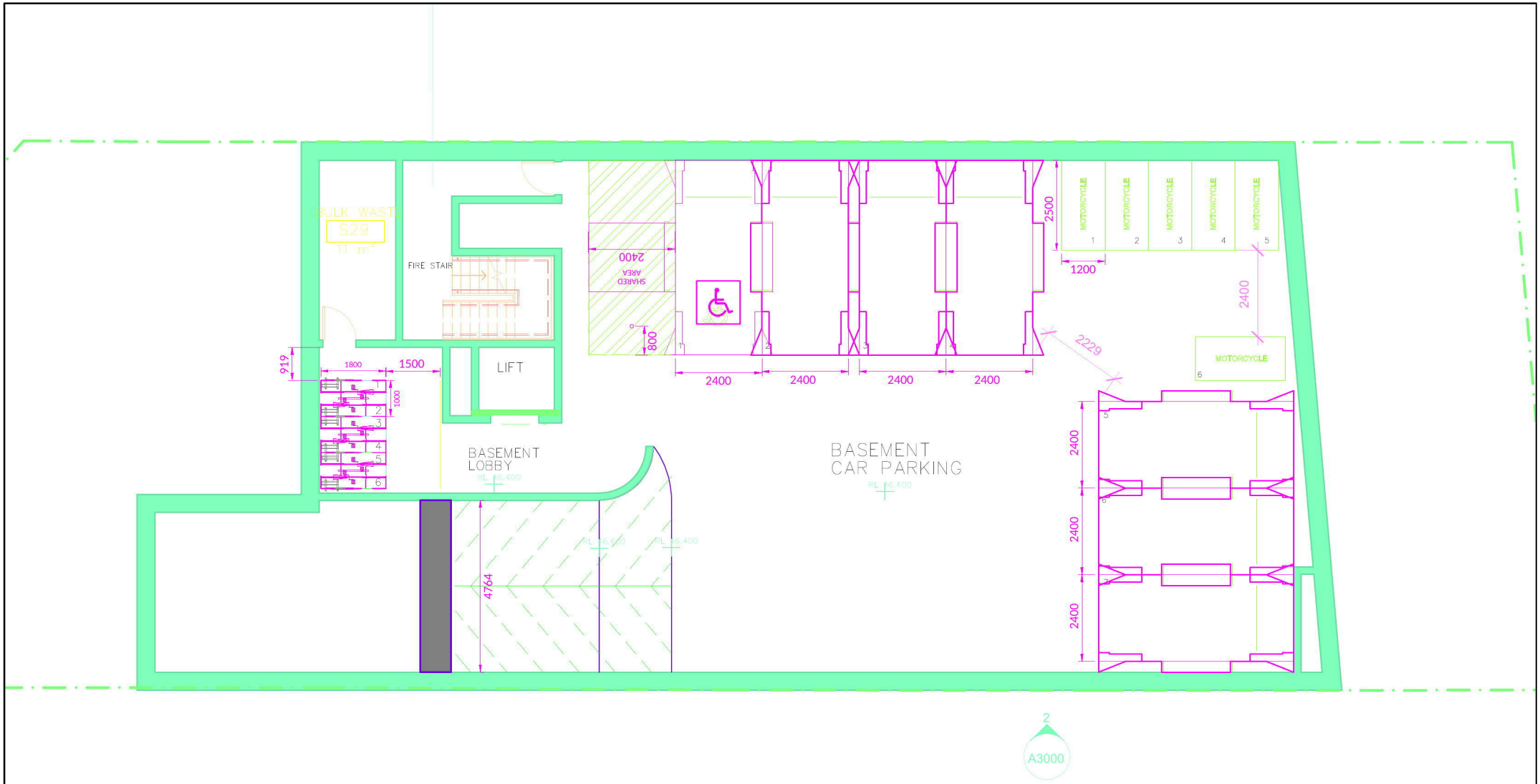
| | | |
|---|---|---|
| **Conclusions** | • | Proposed parking provision<br>◦ Complies with State Environmental Planning Policy (Affordable Rental Housing) 2009 for car, bicycle and motorcycle parking. |
| | • | Traffic impacts<br>◦ The additional traffic from the proposed development will be minimal and will have no noticeable impacts on street network operation. |
| | • | Design of access, car parking and servicing facilities<br>◦ Complies with the relevant Standards |
| | • | The proposed development is supportable on traffic and parking grounds. |

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

**References:**

State Environmental Planning Policy (Affordable Rental Housing) 2009 (AHSEPP 2009)
Penrith Development Control Plan 2014
Guide to Traffic Generating Developments RMS (2002)
Australian Standard AS/NZS 2890.1:2004: Parking Facilities - Off-street car parking
Australian Standard AS 2890.2-2002: Parking Facilities - Off-street commercial vehicle facilities
Australian Standard AS 2890.3:2015: Parking Facilities - Bicycle parking
Australian Standard AS 2890.5–1993 Parking facilities - On-street parking
Australian Standard AS/NZS 2890.6:2009: Parking Facilities - Off-street parking for people with disabilities

**Appendix**
**Car park design checks and vehicle turning diagrams**




LEGEND:

| | | |
|---|---|---|
| JOB 17106 | Rev. A | 18/04/2018 |

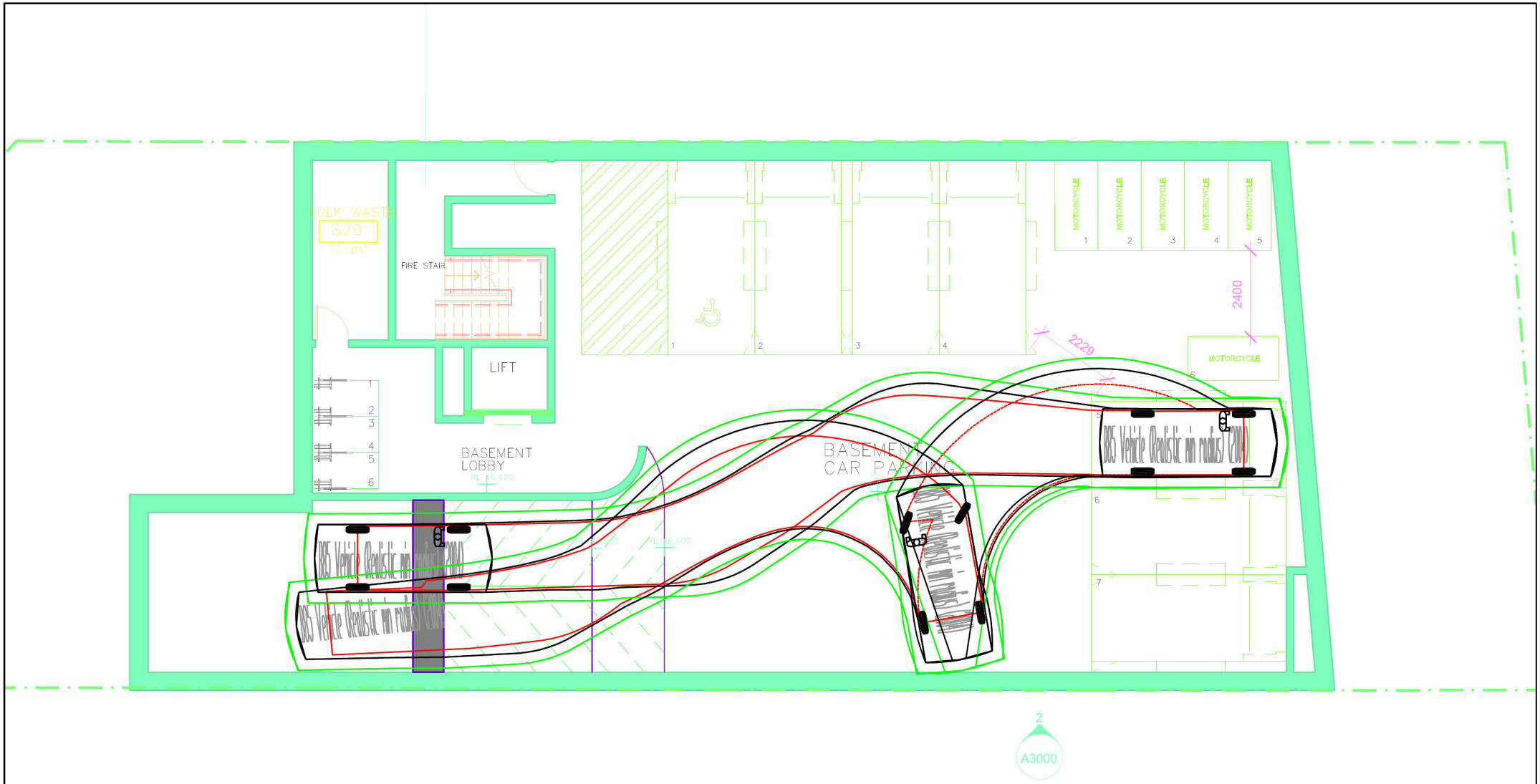
Client:
Liquid Design

51 Jamison Road, Kingswood NSW 2747

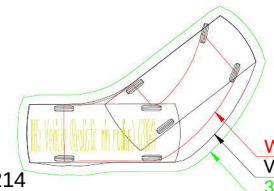
SCALE 1:150@A4
SHEET 01

Proposed car park layout
Design checks as per AS/NZS 2890 series

PO Box 215 Bondi NSW 2026 | ph:+61 (0)2 9332 2024 | fax: +61 (0)2 9332 2022 | mob: +61 (0)414 978 067 | email: o.s@tefconsult.com.au | www.tefconsult.com.au




LEGEND:




TEF CONSULTING

| JOB 17106 | Rev. A | 18/04/2018 |
|---|---|---|

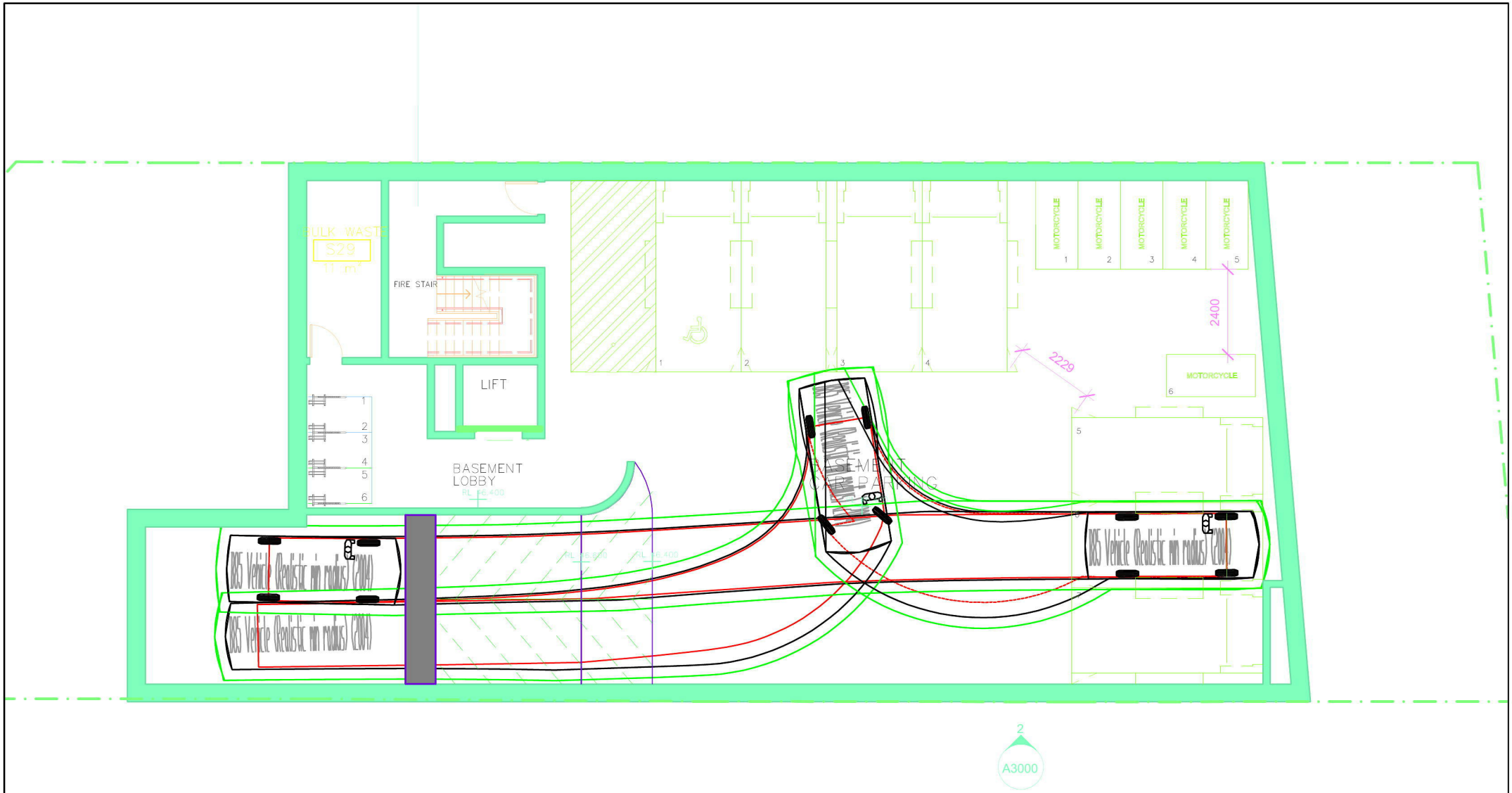
Client:
Liquid Design

51 Jamison Road, Kingswood NSW 2747

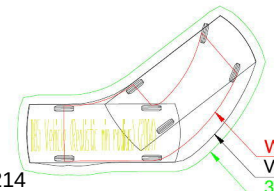
SCALE 1:150@A4
SHEET 02

Proposed car park layout
Design checks as per AS/NZS 2890 series

PO Box 215 Bondi NSW 2026 | ph:+61 (0)2 9332 2024 | fax: +61 (0)2 9332 2022 | mob: +61 (0)414 978 067 | email: o.s@tefconsult.com.au | www.tefconsult.com.au




LEGEND:




| | | |
|---|---|---|
| JOB 17106 | Rev. A | 18/04/2018 |

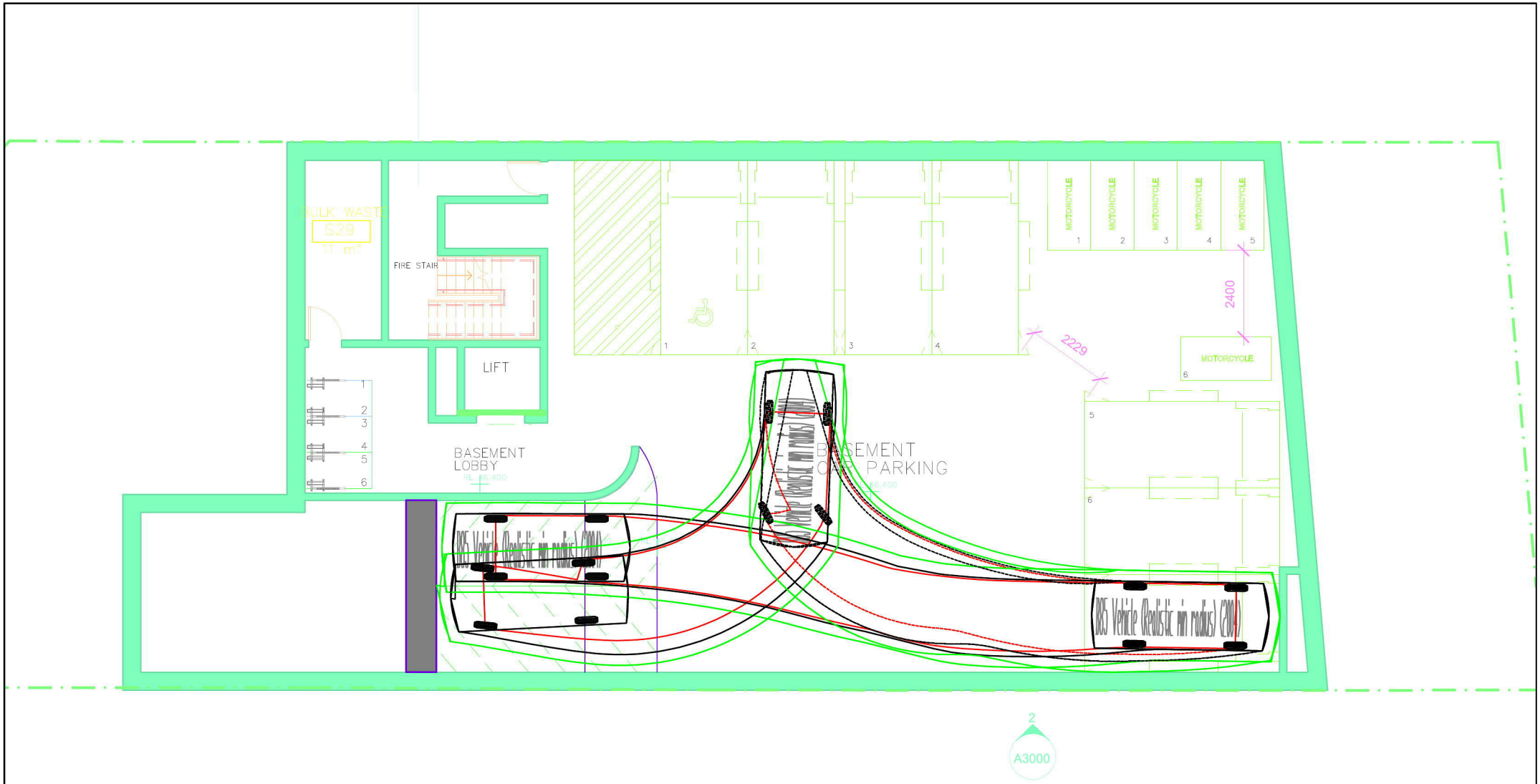
Client:
Liquid Design

51 Jamison Road, Kingswood NSW 2747

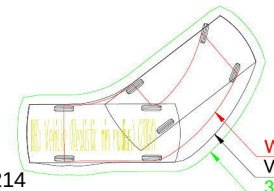
SCALE 1:150@A4
SHEET 03

Proposed car park layout
Design checks as per AS/NZS 2890 series

PO Box 215 Bondi NSW 2026 | ph:+61 (0)2 9332 2024 | fax: +61 (0)2 9332 2022 | mob: +61 (0)414 978 067 | email: o.s@tefconsult.com.au | www.tefconsult.com.au




LEGEND:




| | | |
|---|---|---|
| JOB 17106 | Rev. A | 18/04/2018 |

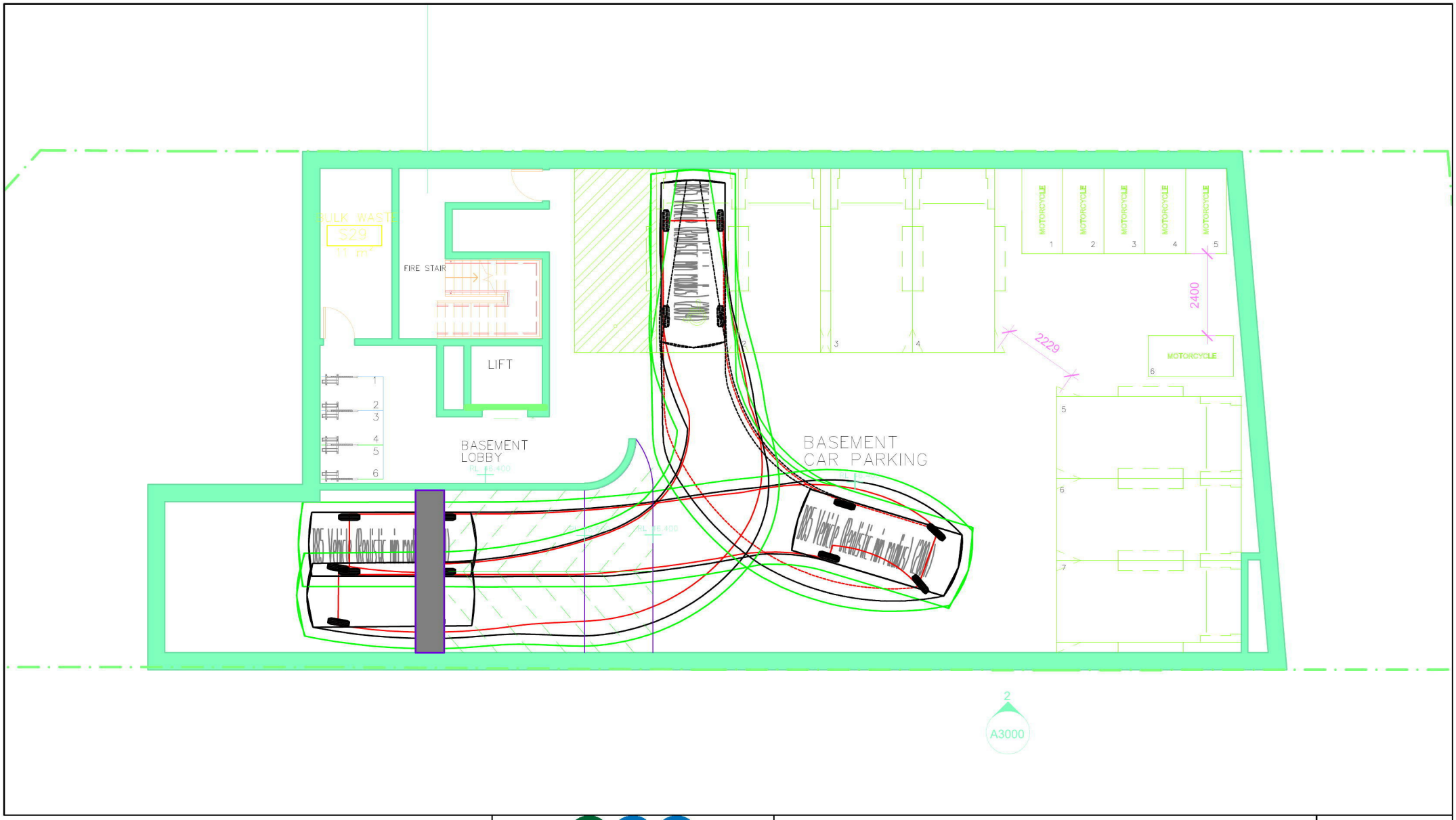
Client:
Liquid Design

51 Jamison Road, Kingswood NSW 2747

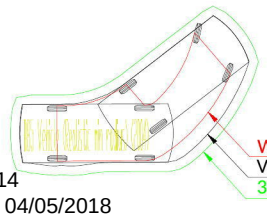
SCALE 1:150@A4
SHEET 04

Proposed car park layout
Design checks as per AS/NZS 2890 series

PO Box 215 Bondi NSW 2026 | ph:+61 (0)2 9332 2024 | fax: +61 (0)2 9332 2022 | mob: +61 (0)414 978 067 | email: o.s@tefconsult.com.au | www.tefconsult.com.au




LEGEND:




| | | |
|---|---|---|
| JOB 17106 | Rev. A | 18/04/2018 |

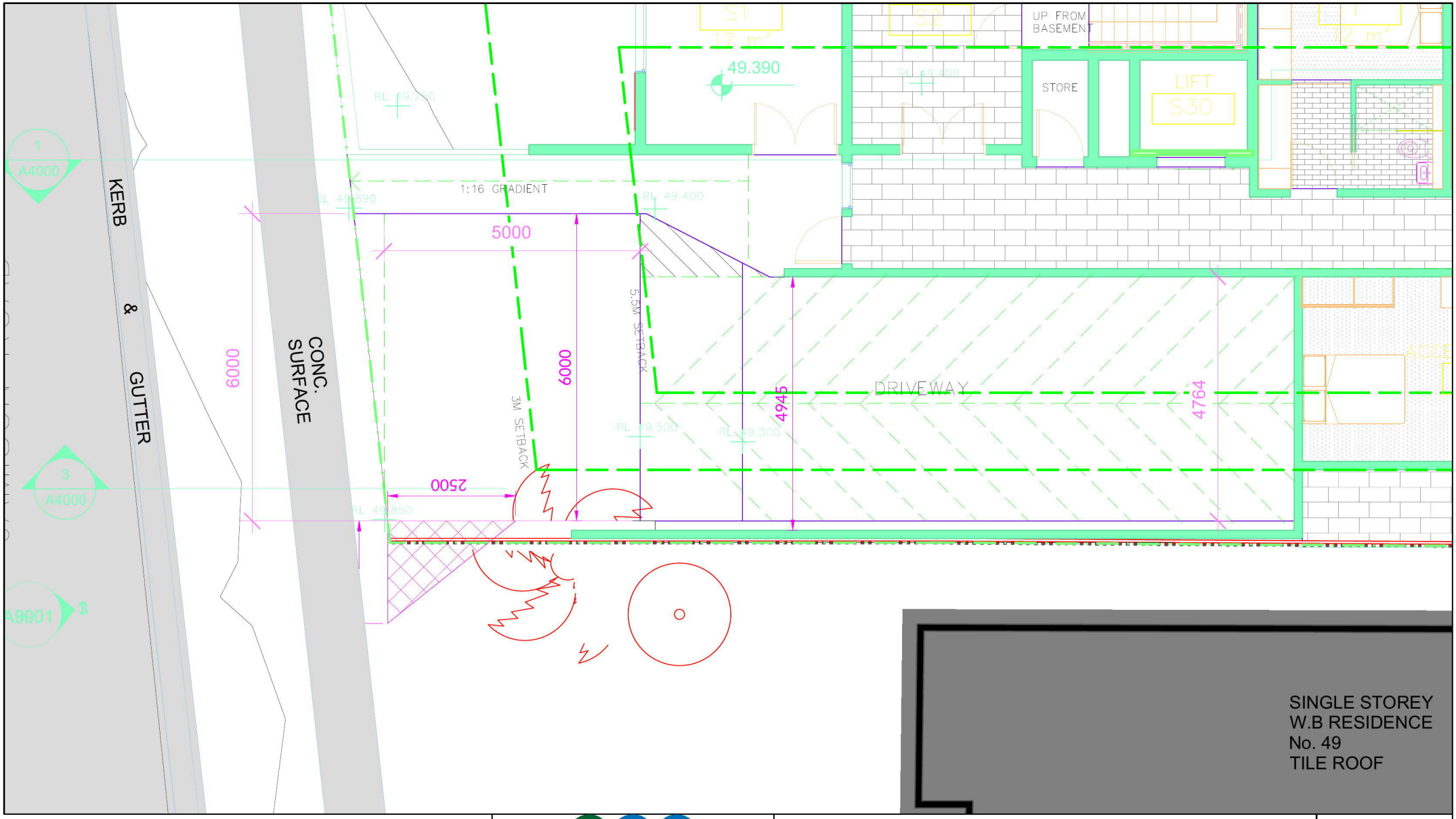
Client:
Liquid Design

51 Jamison Road, Kingswood NSW 2747

SCALE 1:150@A4
SHEET 05

Proposed car park layout
Design checks as per AS/NZS 2890 series

PO Box 215 Bondi NSW 2026 | ph:+61 (0)2 9332 2024 | fax: +61 (0)2 9332 2022 | mob: +61 (0)414 978 067 | email: o.s@tefconsult.com.au | www.tefconsult.com.au

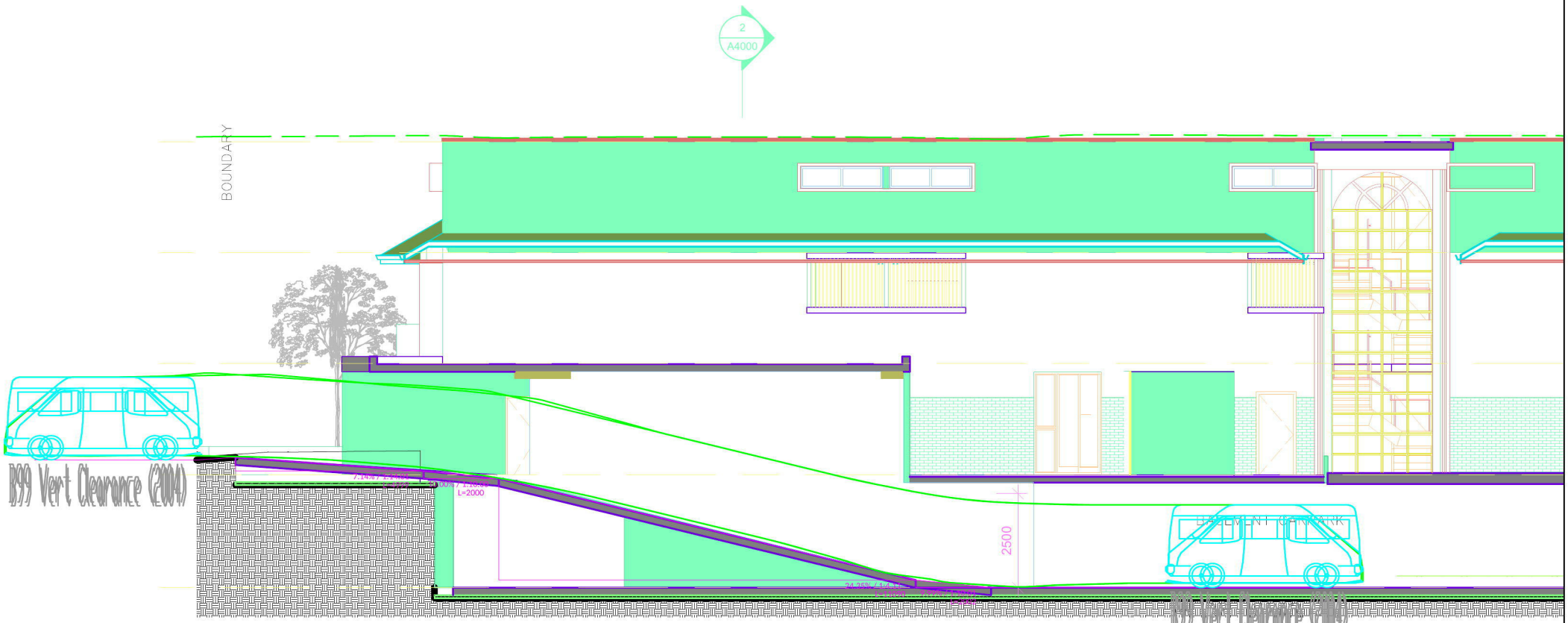



LEGEND:

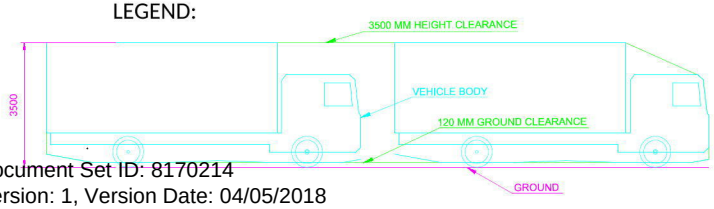
| | | |
|---|---|---|
| TEF CONSULTING | | 51 Jamison Road, Kingswood NSW 2747 |
| JOB 17106 | Rev. A | 18/04/2018 |
| Client: Liquid Design | | Proposed car park layout<br>Design checks as per AS/NZS 2890 series |

SCALE 1:100@A4
SHEET 06

PO Box 215 Bondi NSW 2026 | ph:+61 (0)2 9332 2024 | fax: +61 (0)2 9332 2022 | mob: +61 (0)414 978 067 | email: o.s@tefconsult.com.au | www.tefconsult.com.au




LEGEND:




CONSULTING

| JOB 17106 | Rev. A | 18/04/2018 |
|---|---|---|

Client:
Liquid Design

51 Jamison Road, Kingswood NSW 2747

SCALE 1:150@A4
SHEET 07

Proposed ramp section
Design checks as per AS/NZS 2890 series

PO Box 215 Bondi NSW 2026 | ph:+61 (0)2 9332 2024 | fax: +61 (0)2 9332 2022 | mob: +61 (0)414 978 067 | email: o.s@tefconsult.com.au | www.tefconsult.com.au