BEFORE THE COMMISSIONERS ON BEHALF OF DUNEDIN CITY COUNCIL

IN THE MATTER	of Application for Resource Consent under Section 88 of the Resource Management Act 1991
BY	**NZ HORIZON HOSPITALITY GROUP LIMITED**
	LUC 2017-48 and SUB 2017-26

SUPPLEMENTARY STATEMENT ON BEHALF OF ANTONI FACEY

GALLAWAY COOK ALLAN
LAWYERS
DUNEDIN

Solicitor on record: P J Page
Solicitor to contact: D A McLachlan
P O Box 143, Dunedin 9054
Ph: (03) 477 7312
Fax: (03) 477 5564
Email: phil.page@gallawaycookallan.co.nz
Email: derek.mclachlan@gallawaycookallan.co.nz

INTRODUCTION

1. This response to the Request for Information has been prepared based on two sets of plans. The difference between the two sets of plans relates to the levels of the hotel below the foyer entry floor level.

2. The first set of plans dated 8 August 2017 deals with the carparking arrangement as it had generally been shown at the hearing. All general issues related to the proposal have been dealt with in this set of plans.

3. The second set of plans dated 9 August 2017 deals with the carparking arrangement with the hotel being set back slightly into the ground reducing the basement carparking level. The proposal is generally similar with all internal access arrangements being similar to the first set but some minor amendments to the circulating perimeter roadway that change the entrance to the carpark. Comments on the common issues are given in discussion of the first set of plans and are not restated.

4. Both of the options are clearly compliant with relevant guidelines and workable.

5. As discussed previously, AS2890.2 2002 "Commercial Vehicle Parking" was not adopted as an NZ standard. The preface to the standard states "After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard." Clearly, there are differences in either the approach of the standard or the vehicle fleet between NZ and Australia. Hence, compliance with AS2890.2 is not mandatory in NZ and is used for guidance only.

6. Further it should be noted that RTS 18 "*New Zealand on road tracking curves for heavy vehicles 2007"* was produced specifically for use with the NZ vehicle fleet. It was released some 5 years after AS2890.2 and has therefore included consideration of AS2890.2. RTS 18 acknowledges AS2890.2 and states "*Note that New Zealand design vehicles can be different from those used in Australia and so these documents should be used with care.*"

FIRST SET OF PLANS DATED 8 August 2017

Gradients around the perimeter road.

7. The following table has been prepared for the levels and gradients around the perimeter road. The table begins at 0 on the footpath in the centre of the Moray Place access and ends at 130 on the footpath at the Filleul Street access. Grades and levels are calculated to 2 decimal places.

Distance	Level	grade	grade (%)	difference between grades (%)
0	120.50			
9	121.30	1:11.2	8.89	
16	121.60	1:23.3	4.29	4.60
23	121.65	1:140	0.71	3.57
46	121.10	1:41.8	-2.39	3.11
58	120.10	1:12	-8.33	5.94
65	119.90	1:35	-2.86	5.48
72	119.28	1:11.3	-8.86	6.00
107	114.10	1:6.8	-14.80	5.94
114	113.45	1:10.8	-9.29	5.51
121	113.23	1:31.8	-3.14	6.14
130	112.50	1:12.3	-8.11	4.97

8. As can be seen from column 3 of the table, no grade exceeds 1:6.5 as required by AS2890.2. The right hand column shows that no change of grade exceeds 6.14%. AS2890.2 allows for grade changes of up to 6.25%. Therefore, it is clear that a viable option compliant with AS2890.2 has been shown.

Moray Place entrance

9. Based on the LIDAR data provided on the Dunedin City Council website, the uphill gradient on Moray Place is approximately 1:7 (14.2%). This gradient leads well towards the lower uphill gradient on the site entrance. The access will be a relatively smooth curve into the site with effectively an uphill right hand curve into the site with some transition across the footpath. As intended, the final design will be checked with a template from AS2890.2 to ensure ground clearances are achieved.

10. The left hand turn into the site for coaches and service vehicles will be more problematic with the downhill gradient on Moray Place combining with the uphill access into the site creating a deep sag curve. This will be further investigated during detailed design to determine if an entry arrangement can be constructed that can mitigate the sag curve. If not, the left turn into the site for heavy vehicles will be banned and the entry designed to prevent these vehicles entering from the south (downhill).

11. It is considered that the right turn into the site for coaches and service vehicles is the more important. Most coaches will approach uphill from the north on Moray Place. The coaches will typically have been on the state highway and approaching from this direction anyway so the right turn into the site is the natural movement. The hotel operator will be clear when making bookings that the coach needs to approach uphill from the north. There is no need to rely on left turn access for coaches from the south.

12. I have used the LIDAR information to check the longitudinal gradients of a number of random on road bus stops around Dunedin City. The following list shows those that were considered comparable with the proposed entrance to the site ie 1:8 or steeper. Only those in the uphill direction are considered.

- City Road
- Stuart Street
- High Street at Hope Street. Gradient approximately 1:7.3 (13.6%)
- Highcliff Road
- Larnach Road. Gradient approximately 1:7 (14.3%)
- Signal Hill at Blacks Road
- Junction Road at Adderley Terrace. Note also that the radius at this curve is less than 10 metres with a steep bus stop.
- Athol Place
- Drivers Hill
- Middleton Road at Marewa Street. Gradient approximately 1:6.5 (15.4%)
- Earls Road
- Ryehill Street

13. This list demonstrates that there are a number of bus stops on public roads that have similar gradients to the proposed entrance from Moray Place. Clearly, buses can operate at gradients similar to those that are proposed.

Car park access

14. The car park access has been relocated on the current plans. The car park access door is proposed to be 5 metres wide and the floor level of the carpark is 120.1. The perimeter road has a 1:41.8 (2.39%) fall across the carpark entrance. The road falls from a level of 120.1 to 119.9 across the carpark access.

15. Therefore, the difference in levels between the car park floor level and the perimeter ramp is manageable. The grades as shown will assist with drainage to keep water from flowing from the perimeter road into the basement.

16. A kerb is proposed adjacent to the building near the car park access. It will ensure that all vehicles are negotiating the perimeter road near the boundary furthest from the building while also improving sight distance to the left for a driver exiting the car park. This is the alignment that will set the vehicle up for the best approach to the right hand turn further along the perimeter road.

Loading bay access

17. The loading bay can be accessed by appropriate vehicles that are expected to service the site. Even if the coach parking remains on site (discussed later), servicing of the site is intended to be undertaken between 10am and 2pm. Hence, service vehicles will not be accessing the loading bay at a time when a coach would be parked on site. Checkout is at 10am and coaches will have left before then and would not arrive back until later in the afternoon.

18. The levels across the loading bay access fall from 113.45 to 113.23 across the 7 metre wide access. The loading bay has a level of 113.2. These differences in levels are manageable for vehicles entering the loading bay. If necessary, to ensure trucks approach the loading bay entrance at the optimum angle to minimise the grade change, a kerb can be constructed to ensure that they follow the correct route.

Loading bay height

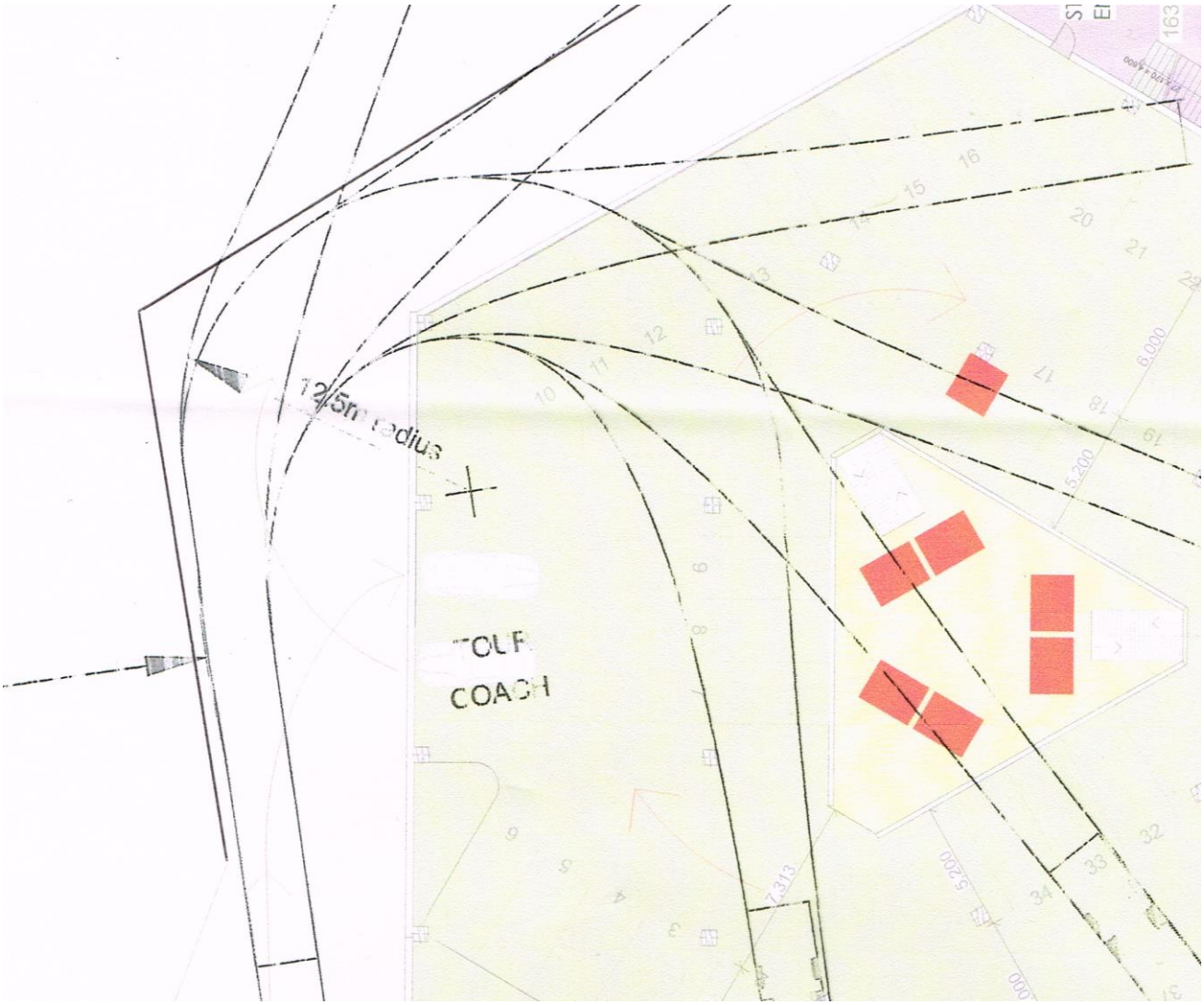
19. The height of the loading bay is irrelevant. The design will provide as much headroom as is possible but this is not a transport facility. It does not need to provide access to every road vehicle. A small group of service vehicles will be required to service the site by specific suppliers. It will be up to the suppliers to ensure that the vehicles they propose to use to service the site will be able to negotiate the access arrangements. If they cannot provide appropriate vehicles, alternative suppliers would be found with appropriate vehicles.

20. However, the loading bay has been redesigned to provide 6.9 metres of headroom including the depth of the carpark floor above. This is likely to provide a headroom of 4.5 metres although it is considered unnecessary.

Swept path on perimeter road

21. Mr Carr has made much of the inability of a coach to negotiate a horizontal curve on the ramp when a coach is parked in the western coach parking space on the ramp to Filleul Street.

22. It is clear from the turning path templates in RTS 18 that a coach can negotiate the curve when there are no coaches present on the ramp. See below.



23. As discussed, the 2GP does not require coach parking to be provided on site. No submissions were made during the district plan review hearings about this requirement. Therefore, the parking clauses not requiring coach parking are likely to become operative. This is considered appropriate because 5 star hotels typically are not required to have coach parking on site and the 2GP has recognised this. Coaches are normally parked off site and coach drivers are understood to prefer to park off site near their accommodation. Hence, long term, coach parks will not be required on site.

24. However, there is a potential timing issue where the 2GP may not be operative prior to the hotel construction. If the hotel is constructed with

marked coach parking spaces and IF the coach drivers use the parks, the hotel operator will manage the coach parking to ensure that the drivers are available to move the coach in the space that restricts movement as required. The space in question is the least desirable for coach drivers and would be the fifth and final space to be occupied IF the other 4 coach parking spaces are occupied.

25. Stacked parking is normally considered acceptable in special cases such as this if coaches are required to be parked on site. The location of the drivers will always be known to relocate the coaches if required.

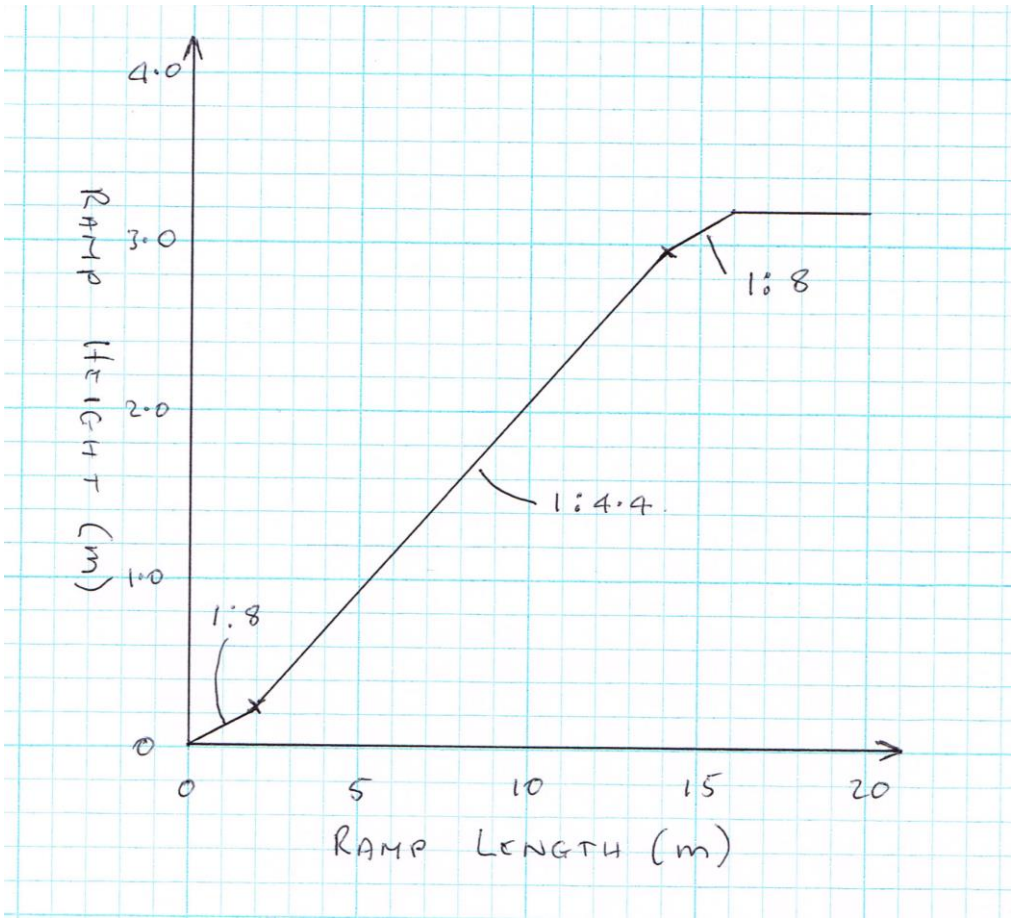
26. This situation will be managed by the hotel operator if required.

Internal car park ramp.

27. The internal car park ramp between the two car parking levels will be extended as necessary to achieve adequate gradients depending on the final depth of floor slab.

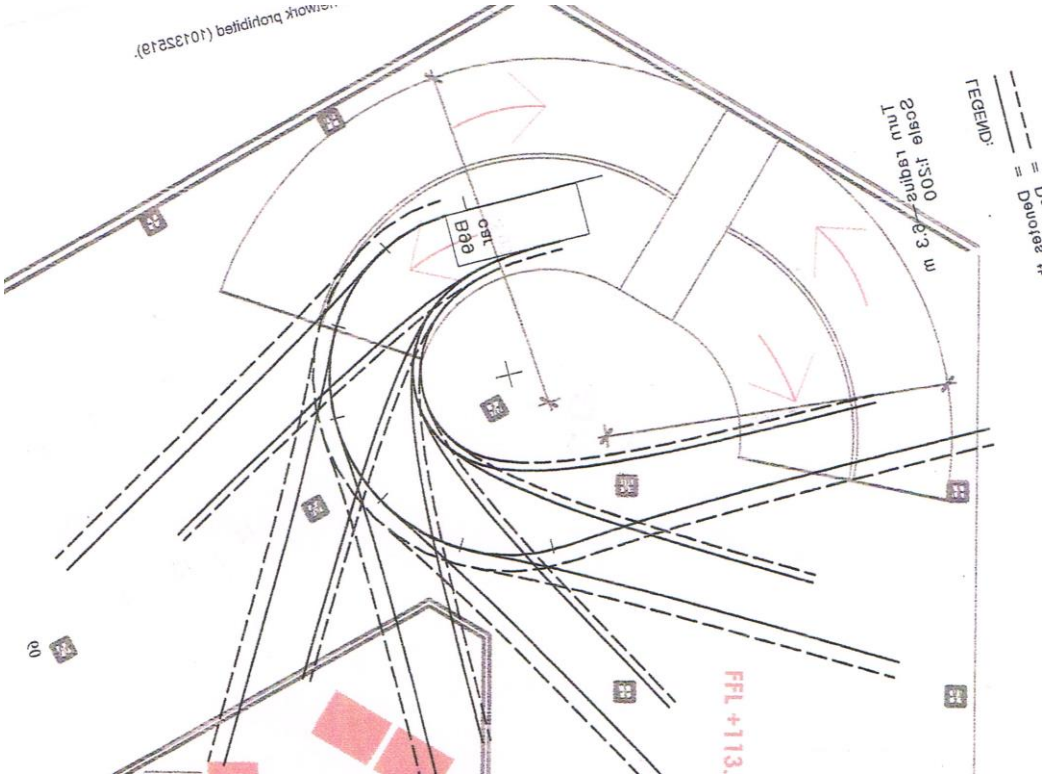
28. Since the car park will be operated by valets, it is considered as a private car park. ASNZS2890.1-2004 “Parking Facilities-Off Street Car Parking” allows a gradient on the ramps of up to 1:4 (25%) in these situations if the length of ramp is less than 20 metres. The critical ramp is the inside radius of the uphill ramp where the measured length of the ramp is 16 metres. The difference in floor levels is currently proposed to be 3.2 metres. Allowing for transition ramps of 1:8 (12.5%) at each end of the ramp, the steepest part of the ramp would be 22.5%. This is within the requirements of AS2890.1. The downhill ramp is longer but will have a shallower gradient as a result of the increased length.

29. Given that it is unlikely that the difference in levels between floors will be as great as 3.2 metres in final design, the gradients calculated above can be considered as maximum or worst case.



Swept path on internal car park ramp

30. The internal car park ramps have been redesigned to demonstrate that they can operate as a two lane, two way ramp with generous width. The swept paths on the internal car park ramp have been checked and it is demonstrated that the cars can easily negotiate the curves on the ramp and the entry and exit to the ramp. The most critical case is shown below using he B99 car swept path from AS2890.1.



Coach parking

31. As discussed previously, coach parking will not be required by the Dunedin City District Plan when the 2GP becomes operative. If the timing is suitable and the 2GP becomes operative before construction, the coach parks will not be provided. While the coach parking has been shown for compliance purposes, it is not expected that it would be used even if provided since coach drivers are used to taking the coaches away for cleaning and maintenance then parking the buses off site at other hotels/motels where they are staying for the night. If the coach parking has to be provided on site until the 2GP becomes operative and coach drivers decide to use the parking, the hotel can manage the various conflicting demands for the coach parking spaces.

32. Since coach parking has caused so much trouble, with hindsight, I should not have included any coach parking and argued against it being required on the basis that it is not required now for effective operation of the site and that it will not be required in the future when the 2GP becomes operative.

33. However, if the commissioners were of a mind to direct that the coach parking spaces not be marked in anticipation of the 2GP becoming operative, this would be the preferred solution.

Parking space numbers

34. There has been debate about the parking space numbers that need to be provided. I continue to consider it reasonable to calculate the on site parking requirements in the way that I have done originally. That is to assume that all of the apartments and penthouses are available for the hotel to manage as hotel rooms with a similar parking requirement to the hotel. This is particularly appropriate in light of the new reduced parking requirements for a hotel in the 2GP. Assuming the parking requirement clause of the proposed 2GP becomes operative, there will be an excess of car parking spaces provided on site regardless of the method of calculation.

35. There are currently proposed to be 84 carparking spaces on site. This may increase as the design progresses and the column layouts are finalised.

36. However, if the commissioners are of a mind to, a condition could be placed on the consent restricting the number of apartments and penthouses that the hotel can accept for management to a number consistent with the operative District Plan calculations assuming the submitters calculation method. This will allow for the numbers to vary as the design progresses.

SECOND SET OF PLANS DATED 9 August 2017

Gradients around the perimeter road.

37. The following table has been prepared for the levels and gradients around the perimeter road. As with the first set of plans, the table begins at 0 on the footpath in the centre of the Moray Place access and ends at 130 on the footpath at the Filleul Street access. Grades and levels are calculated to 2 decimal places.

38. The new car park access is between chainage 77 and 82.

Distance	Level	grade	grade (%)	difference between grades (%)
0	120.50			
9	121.30	1:11.2	8.89	
16	121.60	1:23.3	4.29	4.60
23	121.65	1:140	0.71	3.57
46	121.10	1:41.8	-2.39	3.11
53	120.51	1:11.9	-8.43	6.04
68	118.42	1:7.2	-13.93	5.50
75	117.75	1:10.4	-9.57	4.36
82	117.50	1:28	-3.57	6.00
89	116.85	1:10.8	-9.29	5.71
107	114.10	1:6.5	-15.28	5.99
114	113.45	1:10.8	-9.29	5.99
121	113.23	1:31.8	-3.14	6.14
130	112.50	1:12.3	-8.11	4.97

As can be seen from column 3 of the table, no grade exceeds 1:6.5 as required by AS2890.2. The right hand column shows that no change of grade exceeds 6.18%. AS2890.2 allows for grade changes of up to 6.25%. Therefore, it is clear that a second viable option compliant with AS2890.2 has been shown.

Car park access

39. The car park access has been relocated on the current plans. The car park access door is proposed to be 5 metres wide and the floor level of the carpark is 117.1. The perimeter road has a 1:31.3 (3.2%) fall across the carpark entrance. The road falls from a level of 117.66 to 117.5 across the carpark access.

40. The difference in levels between the car park floor level and the perimeter ramp is manageable. The ramp down to the car park level can be provided on the perimeter road. The circulating perimeter road is some distance from the building and will pass the building at chainage 88 which is about 200mm below the level of the car park floor.

41. A kerb is proposed adjacent to the building near the car park access. It will ensure that all vehicles are negotiating the perimeter road near the boundary furthest from the building while also improving sight distance to

the left for a driver exiting the car park. This is the alignment that will set the vehicle up for the best approach to the right hand turn further along the perimeter road.

Loading bay height

42. The height of the loading bay is again irrelevant. The design will provide as much headroom as is possible but this is not a transport facility. It does not need to provide access to every road vehicle. A small group of service vehicles will be required to service the site by specific suppliers. It will be up to the suppliers to ensure that the vehicles they propose to use to service the site will be able to negotiate the access arrangements. If they cannot provide appropriate vehicles, alternative suppliers would be found with appropriate vehicles.

43. However, the loading bay has been designed to provide 7.2 metres of headroom including the depth of the courtyard floor above. This is likely to provide a headroom of at least 4.5 metres although it is considered unnecessary.

ROUNDABOUT DESIGN

44. The roundabout design is an issue common to both options detailed above. The design will be the same regardless of whatever option is chosen for the hotel design.

45. The roundabout has not yet had detailed design applied to it so the detailed issues such as sight distance cannot be accurately assessed. However, I have made some assessments from the plans to demonstrate that compliance can be achieved. This should not be considered to be a design solution since there will be a considerable amount of discussion with DCC staff to ensure they are satisfied with the design as workable. To date, they have only had high level input into the scheme design process.

46. It is also considered that the potential design of the roundabout should not be restricted by detailed conditions. Roundabout design is developing and currently for example there are roundabouts that have been constructed in Wanaka and Wellington with only a painted central island or a small raised area that is easily traversable by all vehicles in

place of the central island. This suggests that deflection may be considered less important by the industry than previously when retrofitting small roundabouts onto existing constrained intersections but controlling the speed environment around the roundabout may be more important. While I do not expect that a painted roundabout would be appropriate at the Moray Place/Filleul Street intersection, some of the principles from the new roundabouts may be applicable. Constraining the design would prevent new information and techniques from being included in the design. Note that these designs do not appear in the AUSTROADS design guide and should be considered trials.

47. The plan to date shows only the extreme internal circulating island to accommodate a turning coach. A concentric circular roundabout ring of 8 metres radius is proposed around the central circulating island at a lower level to provide a split level roundabout. This outer ring will be fully mountable for trucks and coaches to use to complete their turns safely while cars would be discouraged from using this area to manoeuvre. Hence, deflection is developed and maintained for all vehicles to ensure that the roundabout operates at a low speed. Allowing encroachment like this is a standard method of roundabout design as shown in Figure 4.11 of AUSTROADS “Guide to Road Design part 4B-Roundabouts” reproduced below. The encroachable concentric area is considered to be the radius of the roundabout and the radius is therefore 8 metres.

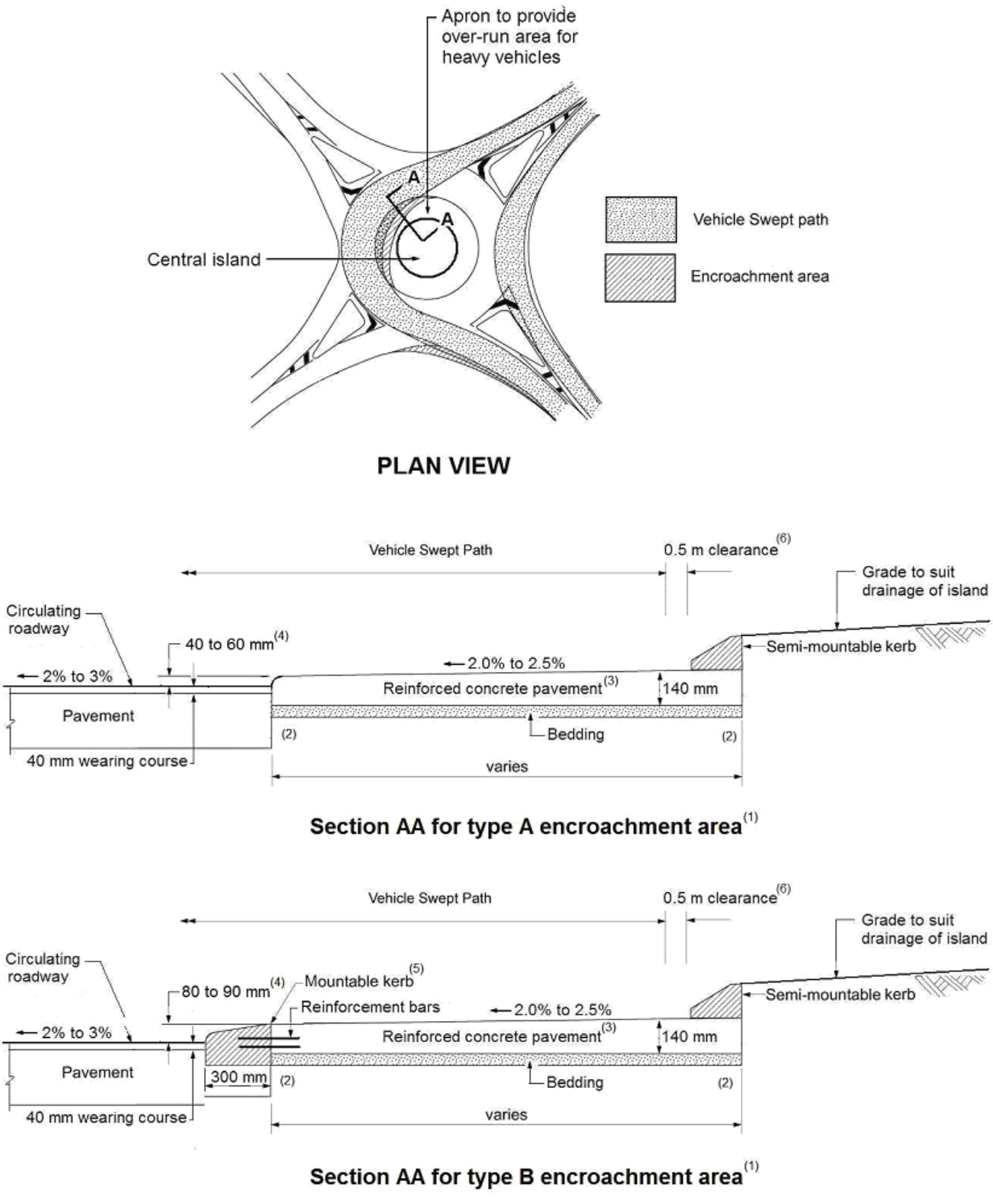


Figure 4.11 from AUSTROADS - Typical encroachment area detail at a roundabout

48. Speeds on the approaches to the roundabout will also be constrained by the urban design which is intended to create a generally low speed, pedestrian friendly environment on Moray Place.

49. Sight distance at the roundabout has been provided in accordance with Table 3.1 of AUSTROADS 4B. Design speeds on the approaches at a distance from the roundabout are no more than 50 km/hr on each approach and the urban design proposals on Moray Place will reduce these speeds further. Approach sight distance of 55 metres for a 50 km/hr approach speed is required to meet criteria 1 assuming a conservative speed environment of 50 km/hr in this case. The scheme as shown currently provides this sight distance on all approaches.

50. For criteria 2, the eastern Moray Place approach to the roundabout needs to see approaching vehicles on Filleul Street. For this assessment, the roundabout is considered to be similar to a local residential roundabout with constrained speeds. It is not being proposed for traffic capacity reasons but for access and safety.

51. Each approach will have a threshold arrangement near the limit line to provide deflection on the entry to the roundabout and reduce the width of the crossing point for pedestrians. The threshold will include a surface treatment to assist to control traffic speeds. Due to the significant amount of deflection on the roundabout, the speed of a vehicle entering and circulating on the roundabout and turning right from Filleul Street is less than 20 km/hr. There is no straight through movement that can occur at high speed. Therefore, a sight distance of 22 metres is required. 29 metres has been provided past the set back building for the Moray Place eastern approach. Neither Filleul Street nor Moray Place west approach are close to critical. The exit from the hotel has a criterion 2 sight distance of 33 metres assuming the speed on the approach to the roundabout on Moray Place west is limited to 30 km/hr. The sight distance available from the hotel exit is 34 metres.

52. Therefore, both of the sight distance criteria for the roundabout approaches are met. These criteria are considered important to achieve a safe roundabout design.

53. The low speed environment allows cyclists to successfully be part of the traffic mix on the roundabout and share the circulating lane, particularly given the low number of cyclists currently using the intersection.

54. Pedestrians are better accommodated in the roundabout scheme design than they are in the current sign controlled intersection.

55. It is acknowledged that drivers will be unable to turn left from the hotel onto Filleul Street. However, they have direct access to the roundabout and can perform a U turn at the roundabout if they need to drive along Filleul Street.

56. The main issue with the proposed roundabout is the proximity of the hotel exit to the Filleul Street approach to the roundabout. This is non standard but similar situations have been successfully designed for in the past. Constrained situations such as this require specific design. Attached are 3 roundabouts in Timaru with significant constraints that I have designed some 20 years ago and their crash records for the last 20 years. Many of the crashes reported were not related to the roundabout operation but to external factors. Some of the approaches have vertical slopes approaching the roundabouts and some have deficient approach sight distance and deficient sight distance to the right. It can be seen that the roundabouts all have good crash records and have operated relatively safely compared to their previous sign controlled layouts. All were installed to improve safety and accessibility, none were for capacity. All of the roundabouts have similar or higher traffic volumes than those expected in the Moray Place/Filleul Street roundabout.

57. Had compliance with AUSTROADS guidelines been a requirement in their design, none of these roundabouts would have been constructed. Yet all have been extremely successful. They were the subject of specific design.

58. The important point to note is that all the roundabouts were designed to achieve a low entry and negotiation speed using deflection on the approaches where necessary. Therefore if a driver makes an error, other drivers can take corrective action to avoid a conflict. The lower speed environment is the most important factor in creating a safe roundabout design when capacity is not a priority. I have used the same

methodology to prepare the scheme design for the Moray Place/Filleul Street roundabout as I did for the three roundabouts identified below. I am confident that the proposed roundabout will operate safely and efficiently based on my previous experiences of designing roundabouts in constrained areas and the many safety audits I have carried out on other peoples designs. Note also that the design will be approved by the DCC staff who are also experienced in roundabout design and review of designs.

Antoni Facey

Date: 9 August 2017