

**Review of the design for the
proposed alterations and
additions to the parking
garage of the dwelling house
at 42 Upper Clifford Avenue,
in Fairlight, NSW**

Traffic Engineering Review

August 2020

**Jody Phillips & Simon John Phillips, of 42 Upper
Clifford Avenue, in Fairlight, NSW**

DA2020/0706

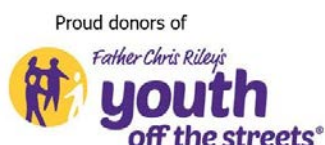
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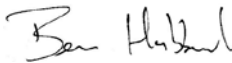
Author: Zoran Bakovic

Signed:



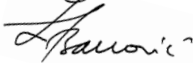
Reviewer: Ben Hubbard

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Approved by: Zoran Bakovic

Signed:



Date: 17 August 2020

Distribution: Jody Phillips & Simon John Phillips; Traffic Engineering Centre (file)

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1. Introduction and Scope of work

Traffic Engineering Centre Pty Ltd was commissioned by Jody Phillips & Simon John Phillips, to review the design for the proposed alterations and additions to the parking garage of the dwelling house at 42 Upper Clifford Avenue, in Fairlight, NSW (refer to Figure 1.1).

The current Australian Standards relevant to the assessment of the proposed car parking facility include:

- AS 2890.1:2004 – Parking Facilities Part 1: Off-street car parking
- Manly Development Control Plan - Clause 4.1.6



Figure 1.1: Development site - Locality map

[Source: nearmap]

As listed in the Northern Beaches Council's letter dated 28 July 2020, the following conditions which must be satisfied before the approval of the DA:

- a) The proposed garage must comply with clause 4.1.6 of the Manly DCP in terms of the proposed width;
- b) Considering the grade of the existing footpath, which cannot be altered, and the proposed nil setback for the garage, the proposed grades must comply with AS2890.1:2004, in terms of access and parking of vehicles.

2. Assessment

Table 2.1 lists the drawings that have been provided for the purpose of this assessment.

Table 2.1: Drawing list

Drawing number	Rev	Description
DA15Rev 1	1	DETAIL GARAGE PLAN
DA16 Rev 1	1	DETAIL GARAGE SECTIONS SHEET 1
DA17 Rev 1	1	DETAIL GARAGE SECTIONS SHEET 2
DA18 Rev 1	1	DETAIL GARAGE SECTIONS SHEET 3
DA19 Rev 1	1	DETAIL STREET ELEVATION GARAGE
DA20 Rev 1	1	SWEPT PATH ANALYSIS EAST ENTER
DA21 Rev 1	1	SWEPT PATH ANALYSIS EAST EXIT
DA22 Rev 1	1	SWEPT PATH ANALYSIS WEST ENTER
DA23 Rev 1	1	SWEPT PATH ANALYSIS WEST EXIT

Traffic Engineering Centre assessed the above design drawings for the proposed parking infrastructure at 42 Upper Clifford Avenue, in Fairlight, NSW. The assessment was undertaken as a desktop review and a site inspection that checked the design compliance with the relevant standards.

2.1 Compliance with Clause 4.1.6 of the Manly DCP

Traffic Engineering Centre has checked the compliance of the design to the Clause 4.1.6 of the Manly DCP and, in particular, the Clause 4.1.6.1:

4.1.6.1 Parking Design and the Location of Garages, Carports or Hardstand Areas See also paragraph 3.1.1 Streetscape.

a) The design and location of all garages, carports or hardstand areas must minimise their visual impact on the streetscape and neighbouring properties and maintain the desired character of the locality.

Seemingly, the design **complies** with the **paragraph (a)** as the location of the proposed, and the existing garages minimise their visual impact on the streetscape and neighbouring properties and maintain the desired character of the locality.

b) Garage and carport structures forward of the building line must be designed and sited so as not to dominate the street frontage. In particular: i) garages and carports adjacent to the front property boundary may not be permitted if there is a reasonable alternative onsite location; ii) carports must be open on both sides and at the front;

Seemingly, the design **complies** with the **paragraph (b)** as the proposed garage structures forward of the building line is designed and sited so as not to dominate the street frontage.

c) The maximum width of any garage, carport, or hardstand area is not to exceed a width equal to 50 percent of the frontage, up to a maximum width of 6.2m. Manly Development Control Plan 2013 Amendment 11 - last amended 28 August 2017. Note: The width of any parking structure

considered under this paragraph is to be measured along the elevation of the structure that fronts the street.

As measured on the scaled design plans, the width of the parking garage is 6.2m wide (refer to Figure 2.1), which **complies** with the **paragraph (c)**. However, as the frontage is 10.5m wide (refer to Figure 2.1), it means that the garage does exceed, by approximately 9.5%, a width that equalise 50 percent of the frontage, which makes it **non-compliant** with the **paragraph (c)**.

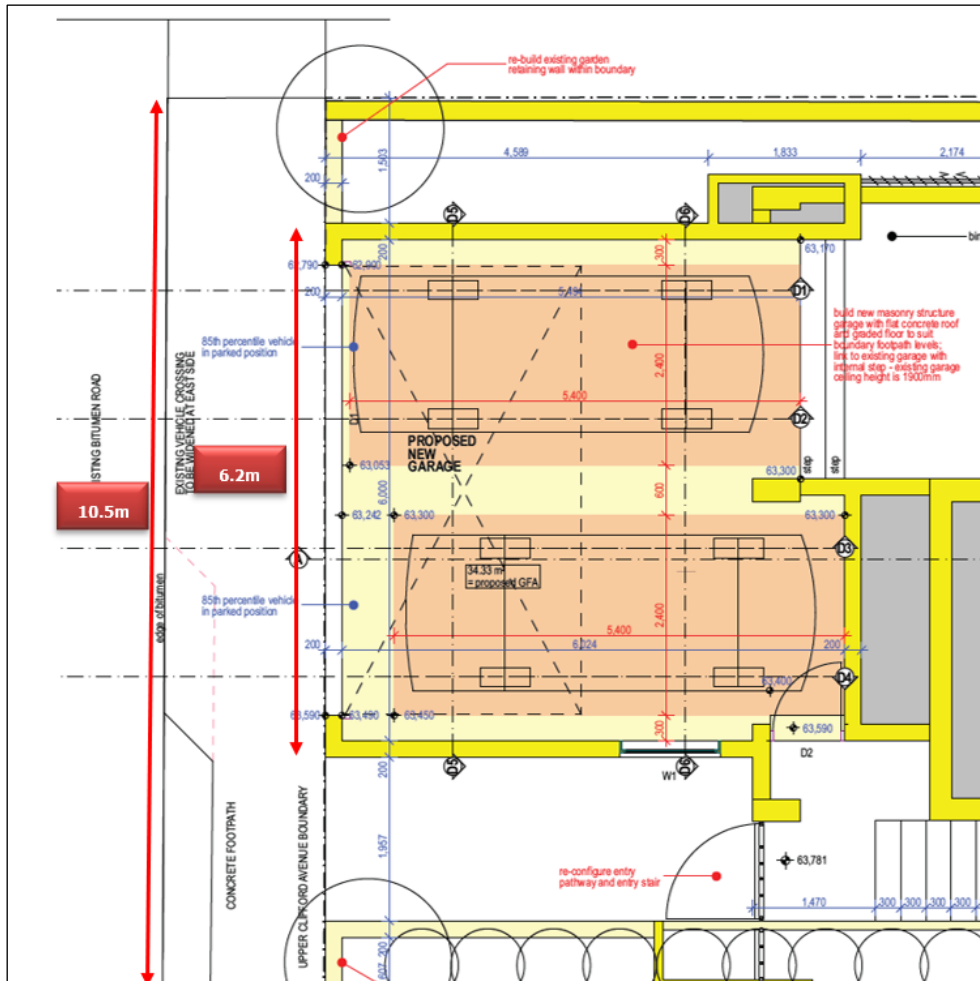


Figure 2.1

(Source: Stewart Design Studio)

d) In relation to the provision of parking for dwelling houses, Council may consider the provision of only 1 space where adherence to the requirement for 2 spaces would adversely impact on the streetscape or on any heritage significance identified on the land or in the vicinity. See Schedule 3 of this plan for parking and access requirements and paragraph 3.2.5.1 in relation to general exceptions to parking requirements for items of the environmental heritage listed at schedule 5 of the LEP.

Seemingly, the **paragraph (d)** does **not apply** for the subject development.

2.2 90-degree angled parking space

Dimensions of the proposed 2 (two) 90-degree angled parking spaces parking spaces were measured [on the scaled plans] and calculated to be 2.4m wide and 5.4m long (refer to Figure 2.2).

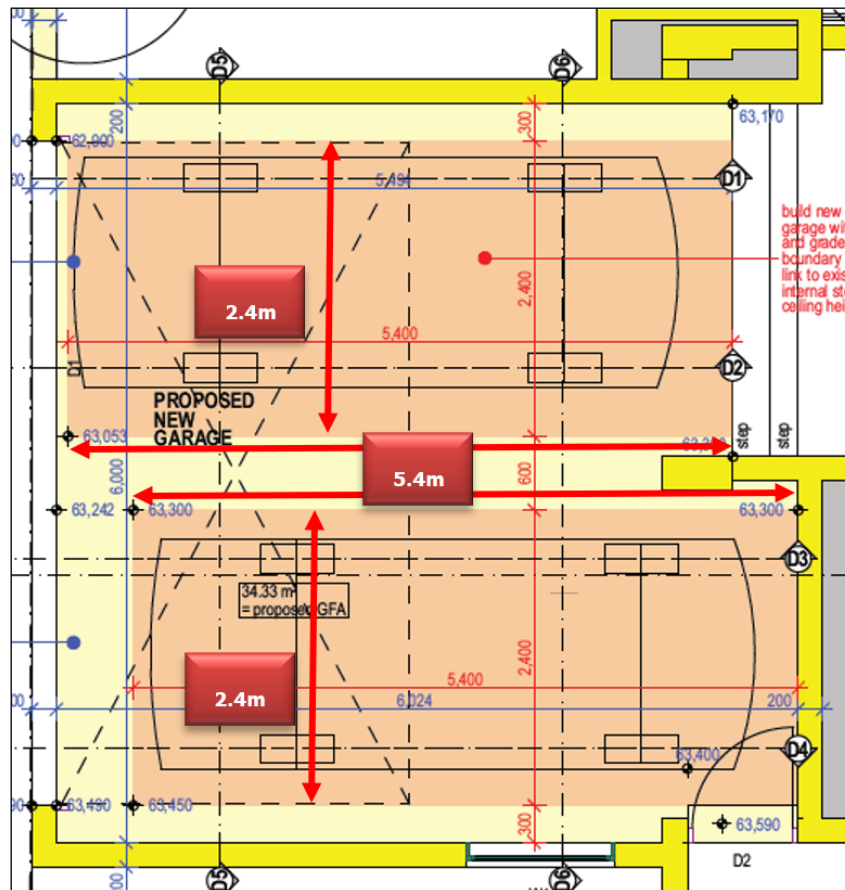


Figure 2.2: The proposed 90-degree angled parking space

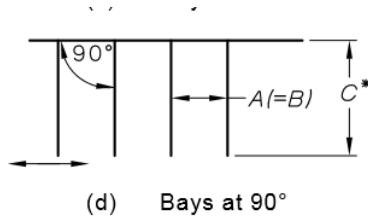
(Source: Stewart Design Studio)

The proposed parking space fully complies with the minimum spatial requirements for the parking envelope as required per the AS 2890.1:2004 (5.4m x 2.4m for a 'residential' or 'domestic' parking space – refer to Tables 2.1 & 2.2).

User class	Required door opening	Required aisle width	Examples of uses (Note 1)
1	Front door, first stop	Minimum for single manoeuvre entry and exit	Employee and commuter parking (generally, all-day parking)
1A	Front door, first stop	Three-point turn entry and exit into 90° parking spaces only, otherwise as for User Class 1	Residential, domestic and employee parking
2	Full opening, all doors	Minimum for single manoeuvre entry and exit	Long-term city and town centre parking, sports facilities, entertainment centres, hotels, motels, airport visitors (generally medium-term parking)
3	Full opening, all doors	Minimum for single manoeuvre entry and exit	Short-term city and town centre parking, parking stations, hospital and medical centres
3A	Full opening, all doors	Additional allowance above minimum single manoeuvre width to facilitate entry and exit	Short term, high turnover parking at shopping centres
4	Size requirements are specified in AS/NZS 2890.6 (Note 2)		Parking for people with disabilities

Table 2.1: Classification of off-street car parking facilities

(Source: AS 2890.1:2004, Table 1.1)



User class (Note 1)	A (Note 3)	B	C ₁	C ₂	C ₃	Aisle width (Note 4)
1	2.4	2.4	5.4	4.8	5.4	6.2
1A	2.4	2.4	5.4	4.8	5.4	5.8
2	2.5	2.5	5.4	4.8	5.4	5.8
3	2.6	2.6	5.4	4.8	5.4	5.8
3A	2.6	2.6	5.4	4.8	5.4	6.6
3A	2.7	2.7	5.4	4.8	5.4	6.2
4	(See Note 5)					

Table 2.2: Dimensions for Bays at 90° - off-street angle parking space

(Source: AS 2890.1:2004, Figure 2.2)

Conclusion: Based on the dimensions shown on the design drawings, we are of opinion that the dimensions of these 90-degree angled parking spaces fully comply with the minimum spatial requirements for the parking envelope, as per AS 2890.1:2004.

2.3 Vehicular Crossing

The **vehicular crossing** is measured [on the scaled plans] and calculated to be 5.3m wide (refer to Figure 2.3), thus it fully **complies** with the minimum standard requirements for access driveway width of 3.0m for the class of parking facility '1A' ('residential' and 'domestic') as per AS 2890.1:2004 (refer to Tables 2.3 & 2.4).

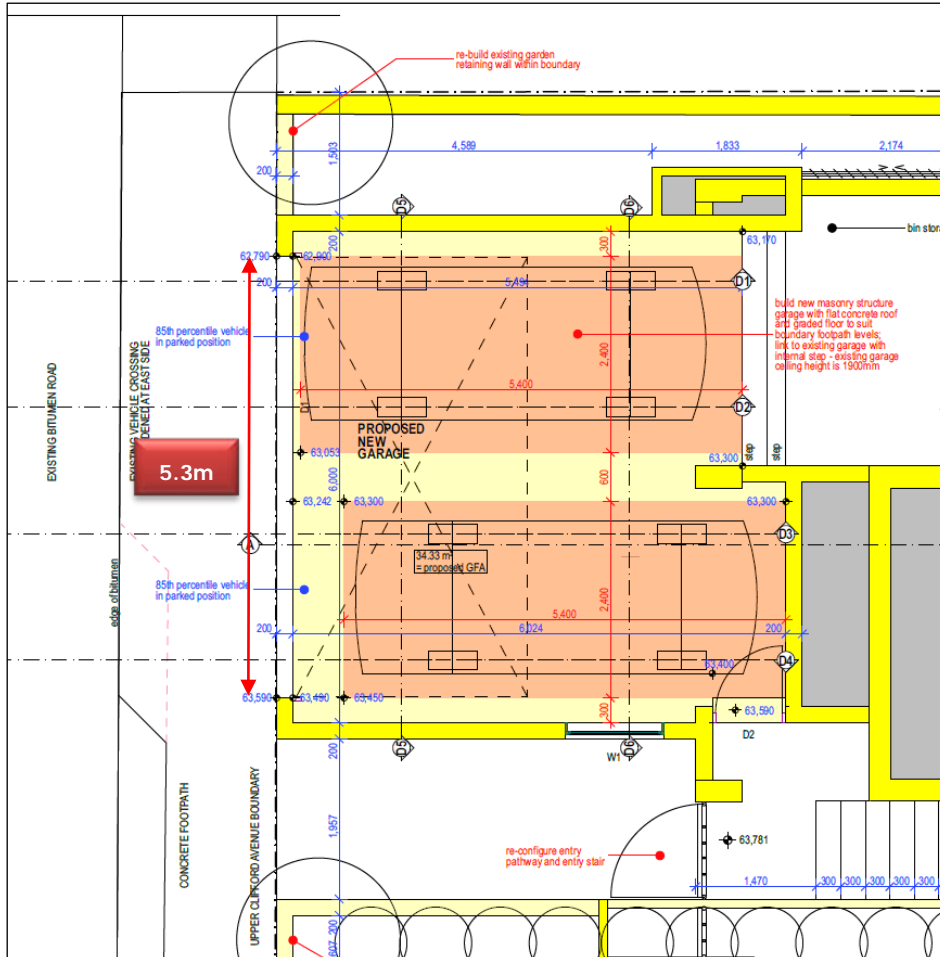


Figure 2.3: Vehicular-crossing's width
 (Source: Stewart Design Studio)

Class of parking facility (see Table 1.1)	Frontage road type	Access facility category				
		Number of parking spaces (Note 1)				
		≤25	25 to 100	101 to 300	301 to 600	>600
1,1A	Arterial	1	2	3	4	5
	Local	1	1	2	3	4
2	Arterial	2	2	3	4	5
	Local	1	2	3	4	4
3,3A	Arterial	2	3	4	4	5
	Local	1	2	3	4	4

NOTES:

- 1 When a car park has multiple access points, each access should be designed for the number of parking spaces effectively served by that access.
- 2 This Table does not imply that certain types of development are necessarily suitable for location on any particular frontage road type. In particular, access to arterial roads should be limited as far as practicable, and in some circumstances it may be preferable to allow left-turn-only movements into and out of the access driveway.

Table 2.3: Selection of access facility category

(Source: AS2890.1: 2004, Table 3.1)

metres			
Category	Entry width	Exit width	Separation of driveways
1	3.0 to 5.5	(Combined) (see Note)	N/A
2	6.0 to 9.0	(Combined) (see Note)	N/A
3	6.0	4.0 to 6.0	1 to 3
4	6.0 to 8.0	6.0 to 8.0	1 to 3
5	To be provided as an intersection, not an access driveway, see Clause 3.1.1.		

Table 2.4: Access driveway width

(Source: AS2890.1: 2004, Table 3.2)

Conclusion: Based on the measurements, undertaken on the provided scaled plans, we are of the opinion that the access driveway/vehicular crossing width fully complies with the standard requirements as per AS 2890.1:2004.

2.4 Condition

"Due to the grade of the existing footpath which cannot be altered and the proposed nil setback for the garage, it is unlikely that the proposed grades will comply with AS2890.1:2004 in terms of access and parking vehicles."

According to the AS 2890.1:2004, Paragraph 2.6.2, the maximum **gradient** of **domestic driveways** should be **1 in 4 (25%)**, while the associated **access driveway** across a property line should be **1 in 20 (5%)**.

According to the design for the longitudinal surface profile of the proposed driveway (refer to Figure 2.4), we are of the opinion that both the proposed parking spaces (with the gradient of 5% - 270mm fall over 5400mm length) do comply with the standard requirements, as per AS 2890.1:2004.

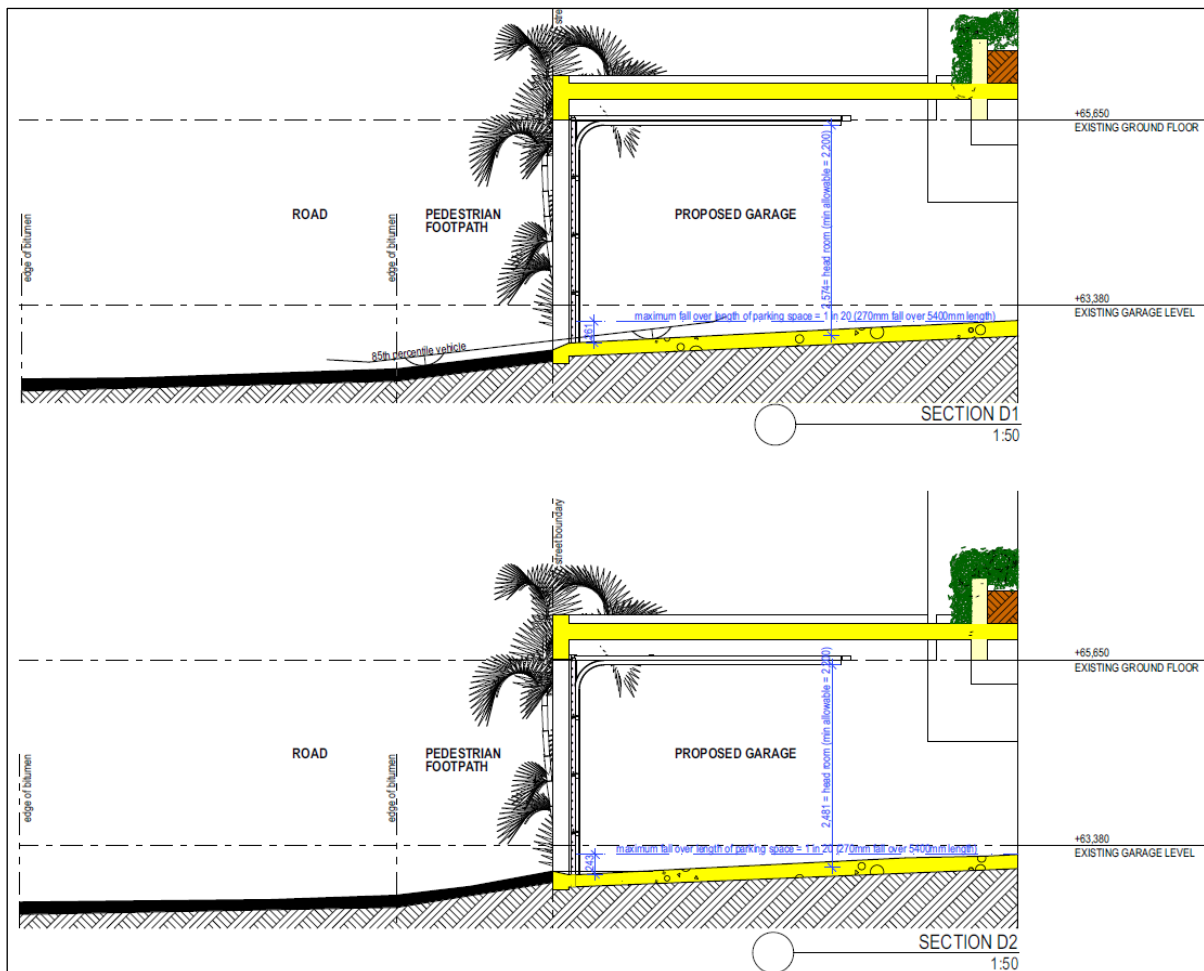


Figure 2.4: Gradient

(Source: Stewart Design Studio)

Conclusion: Based on the measurements undertaken on the provided scaled plans, we are of the opinion that the access driveway and the garage width fully comply with the standard requirements as per AS 2890.1:2004.

At the moment, the grade of the existing footpath is almost exactly the same as the grade of the current driveway (refer to Photos 2.1 & 2.2).



Photo 2.1: Gradient of the footpath adjacent to the existing footpath
(Photo: traffic Engineering Centre Pty Ltd)



Photo 2.2: Gradient of the current driveway
(Photo: traffic Engineering Centre Pty Ltd)

While, seemingly, the proposed cross gradients of the parking garage and the longitudinal gradient of the adjacent footpath are seemingly the same or at least very similar (as they appear to be parallel - refer to Figure 2.5), there is nothing in AS2890.1:2004 to indicate what is the required cross gradient of a driveway for a parking garage.

The Standard AS2890.1:2004 only indicated the minimal longitudinal gradients of domestic driveways and not their cross gradients.

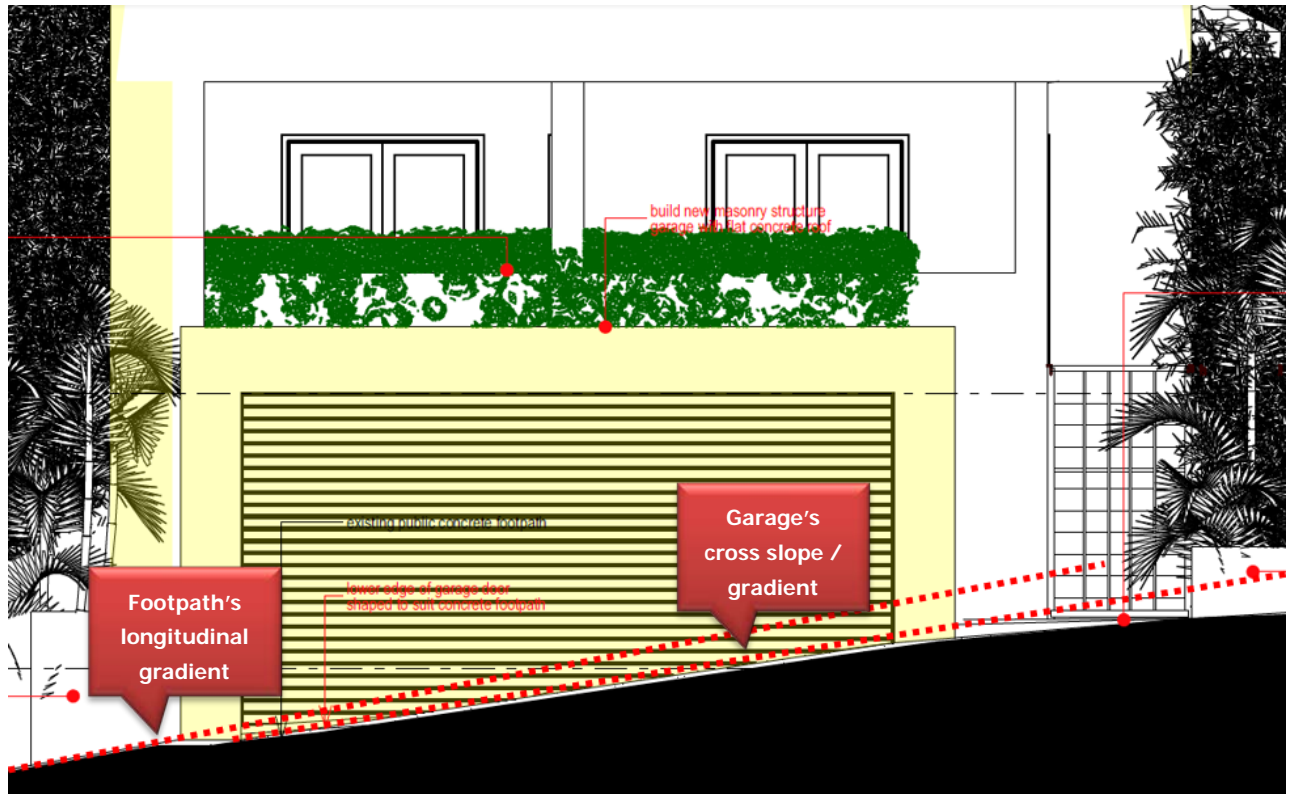


Figure 2.5: Detail Street Elevation Garage

(Source: Stewart Design Studio)

Conclusion: Based on the measurements undertaken on the provided scaled plans, we are of the opinion that the cross gradient of the access driveway/garage and the longitudinal gradient of the adjacent footpath, comply with the standard requirements as per AS 2890.1:2004. At least, the AS2890.1:2004 contains no paragraph or requirements to suggest otherwise.

3. Summary Conclusions

Traffic Engineering Centre Pty Ltd was commissioned by Jody Phillips & Simon John Phillips, to review the design for the proposed alterations and additions to the parking garage of the dwelling house at 42 Upper Clifford Avenue, in Fairlight, NSW.

The current Australian Standards relevant to the assessment of the proposed car parking facility include:

- AS 2890.1:2004 – Parking Facilities Part 1: Off-street Car Parking
- Manly Development Control Plan - Clause 4.1.6

Design for the proposed alterations and additions to the parking garage of the dwelling house at 42 Upper Clifford Avenue, in Fairlight, NSW fully satisfies the standard requirements as per AS 2890.1:2004.

The design also satisfies the standard requirements if paragraphs (a), (b) and (d) of the Clause 4.1.6 of the Manly Development Control Plan.

The only non-compliance is that the frontage is 10.5m wide, which means that the garage does exceed, by approximately 9.5%, a width that equates to 50 percent of the frontage, which makes it non-compliant with the paragraph (c) of the Clause 4.1.6 of the Manly Development Control Plan.




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17 August 2020