accessibility solutions (NSW) PTY LTD

ACCESSIBILITY REPORT

LOT 9
WENTWORTH POINT

12TH NOVEMBER 2012

INTRODUCTION

This report has been prepared to provide an expert opinion concerning the functionality and compliance of the subject car spaces having regard to AS4299, AS2890.6 and Council's DCP requirements pertaining to adaptable housing.

In particular, whether 3800mm width parking spaces comply with AS4299 and that the car park layout of the adaptable spaces provides appropriate spatial layouts to also satisfy the intent of AS2890.6.

This report provides a detailed review of accessible parking standards which covers the subjects of;

- Historical development of accessible parking Standards.
- The various vehicles and most common adaptations used by people with disabilities.
- Proportional estimates of most common types of vehicle adaptions.
- Most appropriate parking designs within adaptable housing contexts having regard to the above matters.
- Overall suitability of the accessible parking within this development.

The review considers the following Standards and Codes:

- AS2890.1-1993 – Off-Street Parking.
- AS2890.1-2004 – Off-Street Parking.
- AS2890.6-2009, Off-street parking for people with disabilities.
- Disability (Access to Premises – Buildings) Standards 2010.
- National Construction Code.

The following pages provide examples of the parking to be allocated to the adaptable apartments within the proposed development.

ACCESS ASSESSMENT

HISTORICAL DEVELOPMENT OF ACCESSIBLE PARKING STANDARDS

People with disabilities, mobility aids and car modifications.

1. In 2009 the Australian Bureau of Statistics Disability survey 44460 DO 004 Table 4.1 *Persons With a Disability, Living arrangements by use of aids or equipment* reported that;
   - 517,000 people used walking sticks, canes, crutches and walking frames
   - 128,600 people used a manual wheelchair
   - 17,100 people used an electric wheelchair
   - 32,900 people used a scooter
   - 15,000 people used a specially modified car or car aids
2. People using manual mobility aids (645,000) compared to powered aids (50,000) equate to almost 13:1 or 92.8% to 7.2%.

Background to Accessible Parking

3. Historically, parking spaces for people with disabilities have been designed to accommodate people who use a mobility aid such as a wheelchair, scooter, walking frame or crutches.
4. The use of the mobility aid beside a vehicle and the physical process of a person transferring between the car and mobility aid requires more width than a regular car space and hence the development of 3200mm width parking bays as specified in 1993 version of AS2890.1 for *Off-Street Parking.*
5. In addition to their mobility aid, people with physical disabilities will use a motor vehicle which best suits their needs and in some cases this may include modifications or attaching appliances to the motor vehicle.
6. Some early examples include;
   - Roof mounted wheelchair hoist
   - Roof mounted Flocon hoist
   - Portable sliding board for direct transfer to a wheelchair
7. In recent years more advanced technology based examples include;
   - Wheelchair lift mounted in the car boot
   - Swivel car seats (e.g. Turny Seat)
   - Ramp or platform hoist mounted at the rear of the vehicle
   - Ramp or platform hoist mounted at the side of the vehicle
8. These changes in mobility transport adaptations have resulted in the development of new Australian Standard for parking in 2009.
9. With respect to the develpopment of AS4299 – *Adaptable Housing*, this Standard is was generally based around detached and semi-detached dwellings AS4299 adopted the principles

of AS2890.1 (1993) in determining that a single enclosed garage shall be 3800mm minimum width, which was based on 3200mm plus 300mm on each side where a wall exists.

10. The second parameter was a 6000mm minimum length to facilitate access to the rear of the vehicle for people using a wheelchair to access the boot for either unloading goods or possibly their wheelchair.
11. The third parameter was a minimum height clearance for entering a roofed parking area of 2200mm and 2500mm internally for unloading a roof mounted wheelchair hoist.
12. AS4299 also specifies a level parking area (up to 1:40) and by cross referencing to AS2890.1 and an accessible path of travel to a dwelling entrance.
13. The aim of AS4299 is to provide a parking space that can be used for various methods of transfer in and out of a vehicle by people who use a wheelchair, whether it be from either side, rear or side ramp/hoist system and possibly a roof mounted wheelchair hoist, which is described in clauses 3.7.1, 3.7.2 and 3.7.3 of AS4299.
14. A fundamental aspect of AS4299 is the objective to provide housing that requires minimal modification to suit the largest range of life cycle needs and people with varying abilities. Conversely the design is not required to be totally accessible at initial construction but "adaptable".
15. This report provides further commentary and illustrations to derive the most appropriate car parking for adaptable housing.

AS2890.1 (1993) – Off Street Parking

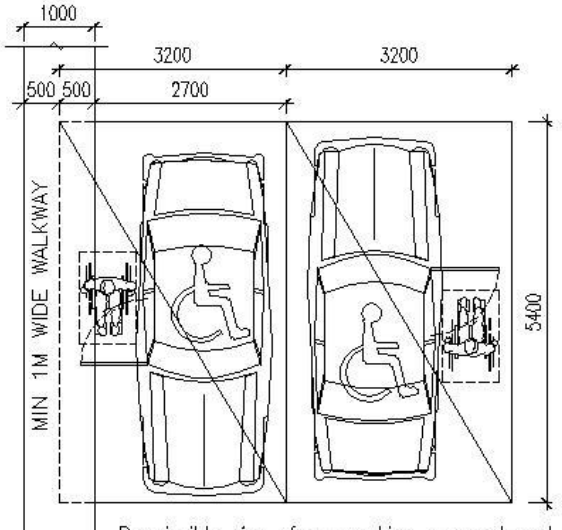
16. The following provides a description of the vehicle adaptations and spatial dimensions required by people with disabilties using these vehicles.
    - Wymo or Flo-Con roof mounted hoists require the door to be opened to the widest stop to allow a person to transfer from the car seat to their wheelchair, or similarly a direct transfer using a slide board or possibly a swivel car seat.
    - These methods have been the most common and favoured by people using manual wheelchairs, which led to the development of the 3200mm width parking space as specified in AS2890.1 (1993) Figure 2.6.

Wymo Hoist

Flo-Con Hoist

- The 3200mm width as specfied by AS2890.1 (1993) was the minimum required for an accessible parking space with no walls or obstructions directly adjacent and assumes that there is a 300mm minimum overlap to an adjoining space.
- Where a wall or similar obstruction exists then clause 2.4.1(b)(ii) of AS2890.1 (1993) required an additional 300mm be provided. This is a general rule for all parking spaces including accessible spaces.
- Hence, AS2890.1 specification for a single enclosed garage for a **non-accessible** space was 3000mm or 3800mm for an **accessible** single garage or car space bounded by two walls.

17. AS2890.1 (1993) also included the concept of the shared area which permitted a 1000mm width pedestrian pathway between two 2700mm width accessible parking spaces which equated to 6400mm overall width.
18. The same provision requiring an extra 300mm when adjoining a wall or obstruction is maintained in the 2004 version of AS2890.1 in clause 2.4.1(b) for off-street parking.



Permissible size of car parking spaces based requirements of Figure 2.6 of AS2890.1–1993

19. However, "off-street" accessible parking for people with disabilties is now specifed by AS2890.6, which is referenced by Part D3.5 of the National Construction Code (NCC) and Disability (Access to Premises – Buildings) Standards 2010 (APS) as they relate to public buildings and public car parks.
20. The NCC and APS specifically exclude private residential parking.

Adaptable Housing AS4299 (1995)

21. The development of the adaptable housing standard in 1995 adopted the principles of AS2890.1 (1993), which are expressed in clause 3.7, and summarised as follows.
    - *The car parking space shall be at least 3.8M wide, to facilitate adeqate space for a person in a wheelchair to get in and out of the car in an enclosed garage.*
    - *It was thought that 3.8M would also facilitate the use of a side loading ramp or hoist.*
    - *A vertical entry height clearance of 2.2M and 2.5M internally was deemed necessary to roof mount a wheelchair hoist and operate it within a garage or carport.*
    - *The length of a garage should be at least 6.0M which could be reduced to 5.4M if a level hardsurfaced area is provided at the same grade as the parking space.*
    - *A level surface up to a 1:40 gradient.*
    - *Provision of automatic garage doors or gates was considered desirable.*
22. As the name of the Standard implies the designs of "adaptable" dwellings are predicated on

the capability to make alterations to a dwelling and associated parts to accommodate people with various types of disabilties, which is emphasised in Section 2 – *Objectives and Performance Requirements.*

23. With respect to parking, clause 3.7.2 of the Adaptable Housing standard permits the dimensional requirements maybe reduced if an area outside the parking bay is "provided" or "can be provided in the future".

24. Conversely, a resident who has a 3800mm X 6000mm space who does not require the overall area for disability related purposes may use part of that space for other purposes such as storage, workshop or other utility use.

AS2890.6 (2009) – Off Street Parking for People with Disabilities

25. In the development of AS2890.6 (2009) the Standard has incorporated changes which aim to accommodate newer technology in vehicle adaptations and the shift towards people with disabilities using powered wheelchairs and scooters, which is acknowledged in the Preface and clause A2.1.

26. AS2890.6 specifies the Shared Area for transfers to be 2400mm width beside the vehicle or 2400mm length at the rear of the vehicle which envisages up to 1200mm for the ramp or platform hoist and a similar 1200mm manoeuvring area for a wheelchair or scooter.

27. The shared area is also considered adequate for people who are ambulant with large mobility aids such as walking frames, crutches and some lower limb prothetics.

28. Thus AS2890.6 provides for a combination of dedicated parking and shared areas for other purposes such as a walkway.

29. Examples of vehicle mounted ramps and hoists appear below, which illustrate a need for greater space to allow the ramp or platform hoist to deploy and then the transfer area for a person using a wheelchair to manoeuvre when boarding or alighting from the vehicle.

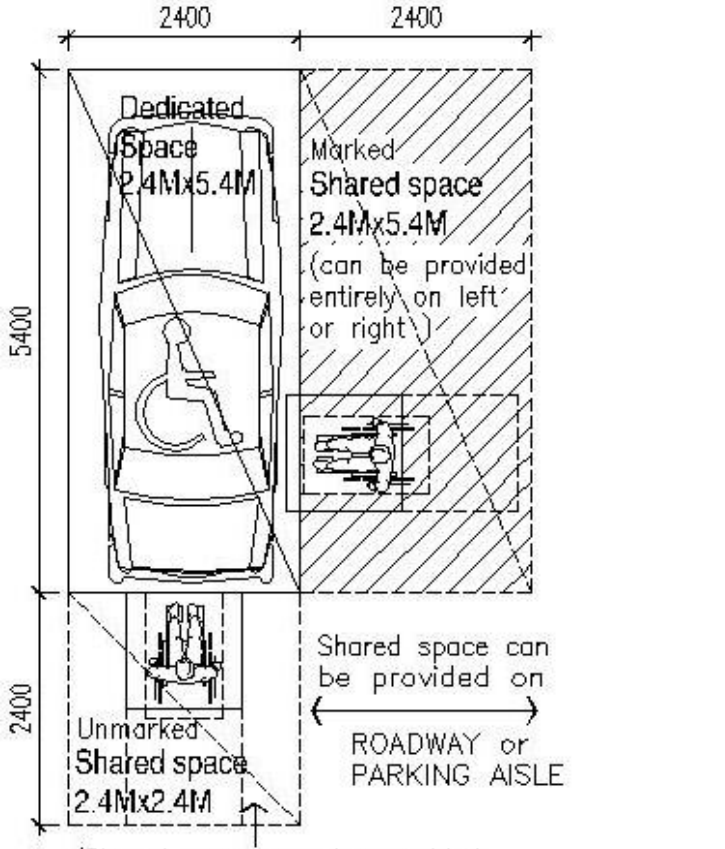
Side Loading Platform Hoist

Side Loading Ramp

Rear Loading Ramps

Rear Loading Platform Hoists

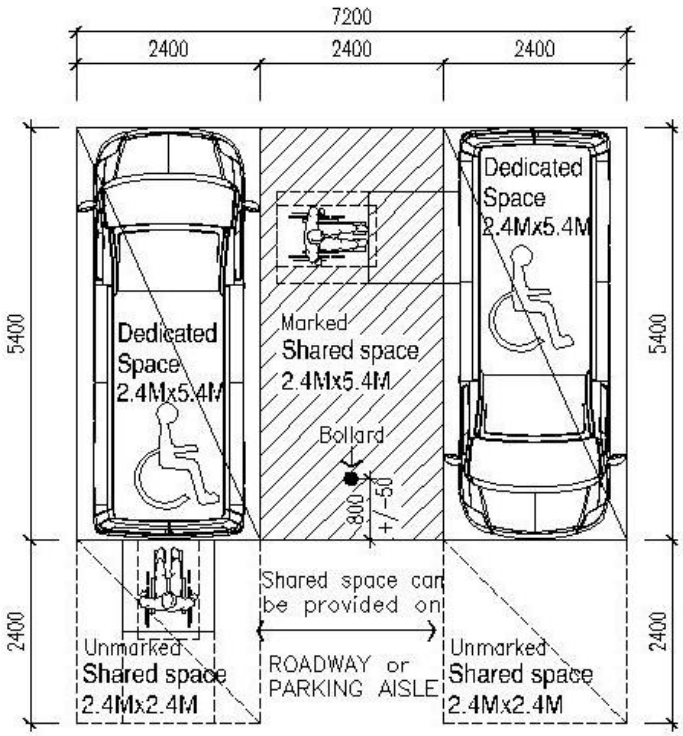
30. Figure 2.1 of AS2890.6 shows Shared Areas at the rear and side of the vehicle, which requires;
    - 4800mm total width X 5400mm length for side loading vehicles,
    - 7800mm total length by 2400mm width for rear loading vehicles.
31. To maximise the use and benefit of the shared area Figure 2.2 of AS2890.6 illustrates two accessible parking spaces utilising the same "shared area", which could also be a walkway to a building entrance of similar.
32. While AS2890.6 can accommodate all types of vehicle adaptations it is recognised that side loading ramps and platform hoists are more likely to be required by people using electric wheelchairs or scooters, which represents the smallest proportion of people with disabilities using mobility aids (7.2% by the ABS).



Permissible size of car parking spaces based on requirements of Figure 2.1 of AS2890.6–2009

33. Within Australia there is a only a handful companies that undertake vehicle modifications to install side loading ramps and hoists compared to many more that install less complex adaptations.

34. At this point in time it is estimated from surveying these companies that possibly less than 5% of all modified vehicles and car adaptations prtovide side loading ramps and hoists.



Example of two accessible parking spaces with one common shared area based on requirements of Figure 2.3 of AS2890.6–2009

35. Within the USA ewhere the majority of this technology was first developed and vehocle adaptations are more common the Amercians With Disabilities Act Accessibility Guidelines (ADAAG) specifies that 1 in 6 of all accessible parking spaces shall be 4800mm width which are referred to as Van Accessible spaces.

36. This is clear recognition that the demand for the ultra wide accessible parking spaces is a minority, which validates the Australian experience.

APPROPRIATENESS OF THE ABOVEMENTIONED STANDARDS WITHIN AN ADAPTABLE HOUSING CONTEXT.

37. When applying a particular Standard design within the context of Adaptable Housing it is evident that private car parking can be configured in a number of ways, which could include, but are not limited to;

- Single and double enclosed garages within low density housing
- Double car allocation unenclosed within a basement or outdoor car park (90 degree)
- Single carport parking (90 degree) with adjoining walls or fences
- Single carport parking (90 degree) unencumberd by adjoining walls
- Double carport parking (90 degree) with adjoining walls or fences
- Double carport parking (90 degree) unencumberd by adjoining walls
- Parallel parking unenclosed within a basement or outdoor car park
- Single car space unenclosed within a basement or outdoor car park (90 degree)

38. For various reasons as stated above regarding the varying needs and abvilities of people with disabilities it is difficult to say that one single Standard design is better than another for an across the board design.

39. For example a universal single space could arguably be determined as 4800mm width x 7800mm length x 2500mm height to accommodate all types of vehicles and modifications used by people with disabilities. However, this would be impractical in the vast majority of residential developments and be more likely to occur in a custom designed scenario.

40. Therefore due consideration should be given to the type of residential development context in which the parking is provided and have regard to issues of:

    - Single detached housing on single alotments.
    - Terrace and villa housing with attached garages, carports and private landscaping.
    - Basement parking within residential flat buildings and common strata areas.
    - Outdoor communal carparks within multi-unit development and common strata areas.
    - Proportion of people using electric wheelchairs and scooters who may require the wider 4800mm width compared to manual wheelchair users and other devises of crutches, sticks and walking frames.
    - Recognition that AS4299 is intended to accommodate all people with disdabilities not just people with physical disabilites.

41. Consequently, the "best width" in the overwhelming majority of cases for people with disabilities and purhasers of adaptable housing is 3800mm as stated within AS4299, which provides the most flexible use of an area compared to 2400mm shared area who no resident can "own".

42. It is evident that the Shared Areas would have to be identified on title as common space and managed by the body corporate and in my opinion there is signifcant potential for misuse by allowing cars to park in shared areas and eventual loss entirely. The designation of 3800mm width spaces provides the greatest sureity for property owners.

43. If AS2890.6 designs are applied as a single design requirement for multiple spaces attached to adaptable apartments then arguably the multiple "shared areas" create a less effective and less sustainable use of the space.

44. The number of people with physical disabilities using vehicles with side loading ramps and platform hoists that require an AS2890.6 design represent the smallest proportion of overall users, estimated to be less than 5% in Australia.

45. Arguably the widespread use of AS2890.6 within the context of Adaptable Housing in multi-unit development is contrary to the objectives of AS4299 in terms of **adapting a building to be accessible "when required by a resident"**.

46. While AS2890.6 was developed for public car parking as referenced by the NCC and Access to Premises Standards, which specifically exclude private housing accommodation and having due regard to the above factors this review reaffirms that the parking requirements of AS4299 should be the primary Standard applied to adaptable housing designs.

47. AS4299 parking requirements should especially be provided within multi-unit development, where a variety of parking configurations can be fqacilitated in open plan basement car parks on an as needs basis proportional to the demand.

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Consultancy Profile & Statement of Expertise

Accessibility Solutions consultancy offers a range to services to provide advice for clients to develop new and modify existing buildings, facilities and services to be accessible to people with disabilities to comply with legislation and regulations relevant to people with disabilities.

Relevant legislation and regulations that underpins advice includes the Disability Discrimination Act (DDA) Building Code of Australia, Australian Standards 1428, DDA Premises Standards, DDA Transport Standard, State Environment Planning Policy No. 5 Housing for Older People or People With a Disability (SEPP 5) / Seniors Living Policy, SEPP 65 – Residential Flat Buildings Design Code and various local government DCP's.

The scope of services provided by Accessibility Solutions includes:

- Plan Appraisals and design advice
- Access Reports for development applications and construction certificates
- Expert Reports for Court evidence
- Access Auditing of existing buildings, facilities, transport conveyances and infrastructure
- Policy and document reviews and development of Disability Action Plans
- Staff training in access auditing

The services consider issues concerning people with all types of disability including; physical; vision; hearing, intellectual and other cognitive impairments that may affect access for people with a disability consistent with the Disability Discrimination Act.

As principle consultant Mark Relf has considerable experience and expertise in a wide range of access related projects and is a recognised Access Adviser approved by the NSW Ageing and Disability Department and has attained accreditation with the Association of Consultants in Access Australia for the purposes of providing advice concerning access to the built environment and services for people with disabilities.

His expertise has been gained over 20 years working in management and advocacy roles within the disability sector and since 1994 providing advice to clients on access issues. Mark also participates on various key committees concerning access for people with disabilities. His qualifications and affiliations are:

- Accredited Member of the Association of Consultants in Access Australia.
- Member, Standards Australia ME/64 Committee responsible for the AS1428 suite and AS4299 – Adaptable Housing.
- Member, NSW Heritage Office's – Fire, Access and Services Advisory Panel.


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CERTIFICATE OF MEMBERSHIP

THIS IS TO CERTIFY THAT
Mark P Relf
WAS ADMITTED AS AN
Accredited Member
OF THE ASSOCIATION OF CONSULTANTS IN ACCESS, AUSTRALIA INC.
ON THE Tenth DAY OF October, 2000
PRESIDENT
SECRETARY
MEMBERSHIP NO. 74