



Disability Access Review

The Ribbon Hotel, Serviced
Apartments and Retail

31 Wheat Road, Sydney

8 December 2015

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Disability Access Review for DA Approval The Ribbon Hotel, Serviced Apartments and Retail – Darling Harbour

Disability Consultancy Services Pty Ltd (DCS) has been requested to review the Grocon Darling Harbor building Design Development plans the designed by Hassell to assess its compliance with access provisions in the Disability Discrimination Act (DDA) 1992, its Access to Premises Standard 2010 and referenced documents from the SAI Global Access and Mobility Standards and egress in National Construction Code (NCC) 2015.

The new building, called 'The Ribbon', is located at 31 Wheat Road in the south section of Darling Harbour on Harbour St between the Cockle Bay Darling Park developments to the north east, Darling Quarter to the south and Convention Centre to the west. It is nestled between important Sydney roadways and activates new spaces adjacent to and within the building.

The design shows a 23 storey building plus a plant level including Hotel and Serviced Apartments with amenities that include gyms, pools, function and food and beverage facilities. The innovative building faces the Harbor with premium views of the precinct in the higher levels. Its innovative roof has a twisting organic form with curves and opaque roof panels that will create a landmark building like no other in Sydney.

DDA and the Premises Standard

The Disability Discrimination Act 1992 (DDA) makes disability discrimination unlawful and aims to promote equal rights, opportunity and access for people with disabilities. As Commonwealth legislation, in a hierarchy of legislative power, it overrides State and local government guidance on access.

Since May 2011, all new buildings must meet the standards set out in the DDA's Access to Premises Standard. The Standard is integrated with the Building Code of Australia (National Construction Code) to reflect and reinforce each other. The Premises Standard is a performance code with deemed-to-satisfy provisions and also accepts alternative building solutions similar to the BCA.

The purpose of the Premises Standard is to give developers, including designers and builders, certifiers and managers, certainty that if they comply with its requirements, they have met the DDA.

The Ribbon, as a multi-use development, falls under several of the Building Classifications from the Premises Standard Part A4, including Class 3 – hotel, Class 5 – offices, Class 6 - eating areas, Class 9b – assembly building – the cinema and function centre, Class 10a – the toilet facilities adjacent the Ribbon building and Class 10b – the two swimming pools for the serviced apartments and the hotel.

Each of these classes has general building access requirements to meet under the Access to Premises Standard which will be elaborated in the specific design review.

Individual complaints may still be brought by people with disability if they feel they have been discriminated against, either directly or indirectly but demonstrated compliance with the Standard will render a complaint made under the DDA ineffective.

Review Methodology

This access review tests the plans against requirements of the DDA's Premises Standard and provides information for further compliant design at contract documentation stage. Meeting the Premises Standard is the highest level of access compliance. Meeting these overarching federal Standards implies meeting others. When a suggestion comes from the realm of best practice, this will be noted.

This DDA review chronicles elements that provide access compliant with the Premises Standard and AS1428 provisions. In terms of creating a fully accessible building that works well for people with sensory impairments, this review also references a new draft standard, AS1428.4.2 which is still open for comment and review. References to this draft are indicative of requirements which will most likely be adopted during the period of construction and commissioning the building. They are given as a way of future-proofing the development as much as possible by seeing the direction of new access standards, although AS1428.4.2 is still in a development and approval process.

Recommendations for further work at design development stage are formatted in **bold font**.

Disability Design Challenges in The Ribbon Hotel, Service Apartment and Retail Building

Creation of this unique shaped building depends on substantial columns supporting the mass above. Large inclined columns at ground level and within the building pose some degree of challenge for people with vision-loss who may not be able to detect these as hazards. The AS1428.4.1 requirement for a 2m vertical clearance around overhead hazards such as the inclined columns will be an important element of the design refinement. The columns also need to have 30% luminance contrast from the surrounding surfaces to assist in safe wayfinding.

The large building will host many different functions at ground level. It is important that signage be adequate scale, bright and colourful to indicate each facility and that there be a variety of information and direction signage to complement this. Management of table and chair clutter around the retail areas is going to be vital so that pedestrian accessways of at least 3m width without barriers are established. Door entries into individual tenancies need to comply with width and contrasting requirements so they become easy for all to use.

Another challenge for this multi-storey building is the selection of lifts. Many new buildings prefer to use the destination control lifts to maximise efficiency. This may be considered to provide lifts for the complex. A destination control lift uses a control panel in approaches to the lift lobby. Instead of using an external call button to hail a lift, a person inputs a destination floor on a central touch screen which then visually displays which lift car to board. An audio cue of varying pitch and length is given at the lift entry door to indicate an arriving car and travel direction.

Some panels offer a "disabled" button with functions such as slower door times and audio announcements at the selection touch screen. There are no control buttons within the lift car and only optional audio announcements of which floor the doors have opened at and a visual indication of which floors the lift will be stopping at.

There is disquiet in the disability community that these lifts, widely used in Australian cities, may breach the DDA as they do not provide independent access for blind or vision-impaired people. Part D3.3 of the Premises Standard states that: "every passenger lift must comply with Clause E3.6 of the

Access Code.” Table E3.6 (b) references that “lift car and landing control buttons must comply with AS 1735.12”. Destination control lifts do not have control buttons.

The context of the hotel and serviced apartments is important in that as part of the service expected from a 5-star hotel, staff assistance will be provided at a 24 hour first point of contact desk opposite the main entrance. Guests will not carry their own luggage past the hotel doors unless they expressly request to do so. Staff assistance will be offered by anyone who requests assistance to meet their access requirements, including accompanying them on lift journeys.

In 2013, the Australian Building Code Board released its *Information Handbook: Lifts Used During Evacuation*, which reflects on the global change of thinking about evidence for use of lifts by people with disability in evacuation. DCS has supplied the architects with this resource to consider as part of considering lift options for The Ribbon. There is a global trend toward fire safety using lifts which would give a much safer hotel and apartment experience to guests with disability.

Part E4.9 of the National Construction Code 2015 specifies that for Class 3 buildings which could provide accommodation for the aged, children or people with a disability, a sound system and intercom system for emergency purposes should be supplied compliant with AS1670.4. All of the people listed in this clause are potential hotel users and will require this coverage. The building will comply with current egress requirements of the National Construction Code 2015.

Reflective glass is difficult for many people with sensory impairments so at ground level attention to east-west orientation and treatment will be important as a glare minimization strategy.

DDA Premises Standard Part D - Access and Egress

DP1 Performance Requirement			
Access must be provided, to the degree necessary, to enable:			
(a) people to:			
(i) approach the building from the road boundary and from any accessible carparking spaces associated with the building; and			
(ii) approach the building from any accessible associated building; and			
(iii) access work and public spaces, accommodation and facilities for personal hygiene; and			
(b) identification of accessways at appropriate locations which are easy to find.			
Draft Lease Plan ARC-HSL-DD-1060			
ELEMENT	PREMISES STANDARD	POTENTIAL DDA ISSUE	RECOMMENDATION
All Public Domain Works Area	DP1	Approaching the retail and cinema from the surrounding area needs to be considered carefully in terms of wayfinding, paving, and barriers such as steps, terraces, lighting and other outdoor elements.	Attention to creation of effective, accessible wayfinding, including architectural, graphical, tactile features and audible communication will enhance the precinct as a 24 hour destination precinct that works with universal design principles. Provide green grass appropriate for toileting assistance animals. Use AS1428.1:2009 as a basis and augment with references found in the Australian

			Human Rights Commission February 2013 Advisory Note on streetscape, public outdoor areas, fixtures, fittings and furniture.
Accessible drop-off/pick-up locations	DP1(a) (i)	People with disability require a dedicated access drop-off area near the building for drop-offs and pick-ups from taxis or private vehicles	The planned drop-off area adjacent the hotel lobby is the optimum place to locate a dedicated access drop-off zone as it will have surveillance and staff management at all times.
Ground Floor General Arrangement Plan ARC-HSL-DD-1070			
ELEMENT	PREMISES STANDARD	POTENTIAL DDA ISSUE	RECOMMENDATION
<i>S27 – E</i> Southeast corner vehicular entry by the Substation	D3.8 (1)(e) (ii)	The paved footpath crosses the vehicular entry to the parking station with a large angled wall and columns from upper levels at the driveway. The angle of the garden bed tends to send people out onto the roadway. Bollards are present on one side of the crossing but not the other.	For pedestrian safety, the accessway meeting the vehicular entry adjacent the building needs to be denoted by rows of warning tactile ground surface indicators (TGSIs) with 30% luminance contrast (or 45% if using discreet TGSIs) spanning the width of the accessway on both sides of the driveway as there is no standard kerb or kerb ramp. Also it is very important to highlight the access path itself with pavers that continue the pedestrian continuous accessible path of travel and to possibly re-shape the garden bed so that there is a straight alignment for crossing to the hotel entry. For TGSi configuration at vehicular entry, use AS1428.4.1:2009 Figure C12.
<i>S27 – E</i> Eastern external inclined columns in accessway	D3.8 (1)(e) (i)	Pedestrians with vision impairment or who are blind on the accessway east of the hotel entry must be warned about the two large inclined structural columns.	Consider options for shielding the inclined columns in the open public space with no clearly defined continuous accessible path of travel, such as creating raised garden beds around each column. Columns also need to have 30% contrast to the floor surface. A straight line also improves wayfinding for white cane users. The Premises Standard suggests that in absence of such a suitable barrier, TGSi are employed. Use AS1428.4.1:2009 Figure 2.6 (B).
<i>S27 & N19</i> Shared space for vehicles and pedestrians on Wheat Road	D3.8 (1)(e) (ii)	As a shared space, bollards will delineate the vehicle and pedestrian areas along a flat kerb. Some white cane users may miss this signal. There are also different paving materials for pedestrians and vehicles but no indication if they contrast texturally with each other. It would appropriate	There is some debate as to whether TGSi are mandatory for the length of the drop-off road on the east of the building. It is a shared space parallel with the pedestrian accessway, not crossing it. Currently bollards are the only wayfinding device. Best practice is to use a 600mm deep TGSi band as in AS1428.4.1 Figure 2.5(A) to define the pedestrian way from a carriageway at the same grade for maximum protection of pedestrians.

		to provide more ground-based textural and contrast safety information even in this low-speed environment.	If TGSIs are not used, a similar width band of 30% contrasting colour with highly textured pavers to create a contrasting horizontal shoreline is highly recommended set behind the bollards along the length of the bollard array. Information in Draft AS1428.4.1_2015 Figure 2.3.
<i>E5</i> Hotel Entry	D3.2 (2)(a)	Hotel entry is via sets of automatic doors between a large weather lobby airlock. This is best practice in universal entry, especially as many guests will come with luggage.	The Hotel entry needs to be clearly visible from side and front approaches and framing to include 30% luminance contrast frames to surrounding material. See AS1428.1 Clause 13.1. Adjacent glass and the automatic doors itself will require glazing strips as in AS1428.1 Clause 6.6 and frame contrast as in Clause 13.1. The airlock matting must be fully compressed and level. See AS1428.1 Clause 7.4.2.
<i>E1-E4</i> Hotel lobby	D3.8 (a) and (b)	The hotel lobby hosts a very wide feature staircase, escalators and six lifts to access upper levels. They are spread across the lobby span but all conveniently located in the large space.	Compliant features all well located. Ensure staircase has appropriate handrails and both staircase and escalators have compliant warning TGSIs with information directories and signage easily located.
<i>N16-E1</i> Concierge desk position and design	Draft AS1428.4.2 Clause 2.7 (c)	point of contact will be a 24 hour manned concierge desk with the function of practically assisting all guests, particularly those with vision impairment or blindness.	The desk itself should have accessible heights recommended in AS1428.2 Clause 24 and hearing augmentation facilities. See AS1428.5. Information directories and clear large pictogram signage will also be important for independent navigating to escalators and lifts.
<i>N13-N1</i> Retail tenancy door openings	AS1428.1-2009	Banks of outward opening single doors are shown as the openings for each retail tenancy. Outward opening doors can create problems of detection and of hazard for blind and vision-impaired people using the wall as a shoreline. Opening the walls portals with stacking doors may be a safer option than a series of distinct single doors.	Review door opening design in terms of visibility and safety. Ensure all doors comply with AS1428.1 with glazing strips as in Clause 6.6 and 30% luminance contrasting door frames as in Clause 13.1. All doors must also meet the 850mm clear width opening.
<i>N13-N1</i> Columns in tenancies	D3.8 (1)(e) (i)	Several tenancies have the inclined column going up through its floor plate. Issues of vertical clearance to 2m need resolving.	All columns need to be contrasted 30% to their surrounding floor surface to increase visibility. Where other fitout solutions are not employed, use TGSIs to denote the 2m vertical hazard shown in AS1428.4.1:2009 Figure 2.6 (B).

N7 – N8 Retail tenancy 02	DP1 (a) (iii)	Current plan does not show either stairs or lift access to upper mezzanines of Tenancy 02. This does not meet Premises Standard requirements to provide access to work and public spaces in new buildings.	Provide stairs and lift alternative to each separate tenancy with a mezzanine storey.
N13-N1 Retail/food tenancies to west and north	Best practice	Currently some delineation or blades are proposed on the retail building facade which break up the solid wall of the podium level. A solid building line is easier for white cane users than one broken with blades or fins jutting out, assisting them to shoreline safely around the perimeter.	Be aware of City of Sydney by-laws for placement of tables and chairs away from building edge to provide clearance for white cane users to detect the edge for shore-lining. If blades remain as wall features as well as doors that swing outwards, create a 3m wayfinding path with a textural surface around the retail tenancies with contrasting and textured paving materials to highlight the safe pedestrian accessway between outdoor furniture and the building edge. Refer to Draft AS1428.4.2 Clause 2.6.
Southwest corner separate tenancies with amenities	CPTED principles	Potential for entrapment exists for sanitary facilities entry corridor behind the exhaust structures which blocks views of people entering and exiting and gives a hiding structure.	Consider more direct access to all toilet and parent room facilities on the exterior faces to ensure safety and visibility in activated spaces, away from internal column supports. Ensure premium access levels to these toilet and first aid facilities at the south end of Darling Harbor.
Western entry and emergency exit doors to IMAX foyer	D3.2 (2)(a)	Entry is via four sets of double doors all opening outwards with four additional single leaf doors as emergency exits and departure doors. All door leafs meet minimum requirements to provide an 850mm clear width per leaf.	In terms of best practice, consider automating one or more of these IMAX entry doors to improve access or changing them to become automatic sliding door openings to assist people with many types of impairments have easier entry to the IMAX.
IMAX entry	D3.3	IMAX entry to Level 01 and exit from Level 01 is via lifts, escalators and stairs all co-located to provide equity for ambulant and non-ambulant customers.	Ensure stairway meets AS1428.1 Clause 11 and stairs and escalators have compliant warning TGSi.

DP4 Performance requirement

Exits must be provided from a building to allow occupants to evacuate safely, with their number, location and dimensions being appropriate to:

- (a) the travel distance; and
- (b) the number, mobility and other characteristics of occupants; and
- (c) the function or use of the building; and

- (d) the height of the building; and
- (e) whether the exit is from above or below ground level.

Ground Floor General Arrangement Plan ARC-HSL-DD-1100			
ELEMENT	PREMISES STANDARD	POTENTIAL DDA ISSUE	RECOMMENDATION
Ground floor exit doors	DP4	All doors on the ground floor of The Ribbon swing outward or have two-way in/out swing	Exit door swings are compliant.
S26-S27 – E Fire Stair Egress Signage	NCC D3.6 (a) (ii)	In this multi-storey building, it is vital that blind and vision-impaired people have safety information at each exit door with tactile information of their vertical location in the building.	Follow requirements in the NCC D3.6 (a) (ii) to identify each fire exit door with a raised tactile Braille sign that identifies the floor level number and the word “Exit”.
N7-N9a Serviced Apartment Fire Stair Egress	DP4	The people in serviced apartments evacuate through central fire stairs down to a dog-leg corridor on the ground level exit on the north side of the building through double doors.	The middle corridor of the exit corridor is 2300mm wide and will support a quick exit from the 154 serviced apartments.
Hotel, serviced apartment, retail tenancies & IMAX lifts	ABCB 2013 Handbook Lifts used during Evacuation	Each of the lifts to upper floor functions could have a double function of access and also be used for evacuation of people with mobility impairments.	Investigate criteria for designing lift shafts and cars capable of evacuating people with mobility impairments and provide for the serviced apartment, hotel, retail tenancy and IMAX lifts as a comprehensive exit strategy based on ABCB non-mandatory Handbook.
Upper Floor Accommodation Plans		ARC-HSL-DD-1101-1112	
Hotel and apartment floor plans	Best practice	Overnight accommodation of a high turnover population means there is a need for smoke-isolated fire egress space on any upper floor in case of emergencies.	Look at creating smoke-isolated chambers around the lift cores with glass doors to provide safe haven zones in upper floors for people who use mobility aids or who have ambulant disabilities and cannot use stairs to evacuate.

DP6 Performance requirement

So that occupants can safely evacuate the building, accessways to exits must have dimensions appropriate to:

- (a) the number, mobility and other characteristics of occupants; and
- (b) the function or use of the building.

Upper Floor Accommodation Plans			
ELEMENT	PREMISES STANDARD	POTENTIAL DDA ISSUE	RECOMMENDATION
Upper levels	BCA 2013	Selection of destination control lifts would make these lifts unsuitable for people who are blind or vision impaired.	Review options with fire safety planners for lift selection to select lifts that appropriately manage egress risks for people with disabilities on upper floors, including both physical and sensory impairments.

DP8 Performance Requirement

Carparking spaces for use by people with a disability must be:

- (a) provided, to the degree necessary, to give equitable access for carparking; and
- (b) designated and easy to find.

Limitation Clause DP8 does not apply to a building where:

- (a) a parking service is provided; and
- (b) direct access to any carparking spaces by the general public or occupants is not available.

The Ribbon will offer a parking service with car stacking technology.

Ground Floor General Arrangement Plan ARC-HSL-DD-1100			
ELEMENT	PREMISES STANDARD	POTENTIAL DDA ISSUE	RECOMMENDATION
Accessible carparking	D3.5 (a)	Although Clause D3.5 (a) states that accessible carparking is not required where there is a parking service, it is important for people with disabilities to be able to drop and pick up their cars in the same area as others.	All long-term parking will be via a valet service to the car stacker. Accessible drop-off for the valet service will be at the porte cochere area immediately outside the Hotel entry.

DP9 Performance requirement

An inbuilt communication system for entry, information, entertainment, or for the provision of a service, must be suitable for occupants who are deaf or hearing impaired.

Limitation Clause DP9 does not apply to an inbuilt communication system used only for emergency warning purposes.

Ground Floor General Arrangement Plan ARC-HSL-DD-1100			
ELEMENT	PREMISES STANDARD	POTENTIAL DDA ISSUE	RECOMMENDATION
Augmented hearing provisions	D3.7 (1) – (4)	Consideration hearing augmentation systems is to be documented at	This is a specialist technical area. The project would be well advised to seek advice from specialist contractors. Use

		appropriate locations, particularly in the IMAX cinema and reception desks. Information directories, screens, kiosks and other information devices need to work for people with both visual and hearing impairments.	AS1428.5 – 2010 as the basis for planning hearing and communication systems for the many various functions of the building.
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Premises Standard - Part D3 Access for People with Disability

Part D3 of the Premises Standard specifies requirements for access for people with a disability to buildings by classification. This means that people with disability can work, shop, eat, swim, exercise, watch films and sleep in premises designed without barriers to their participation. The review will now assess the plans against the classification requirements with recommendations in **bold font**.

‘The Ribbon’ has functions that relate to several classes:

Class of Building	Access Requirements
Class 3 - residential	From the accessible pedestrian entrance to accessible sole-occupancy units. To and within not less than one of each type of room or space for common use by residents, including sauna, gymnasium, swimming pool, shop, public viewing area...or the like
Class 5 - office	To and within all areas normally used by the occupants
Class 6 - retail	To and within all areas normally used by the occupants
Class 9b - cinema	
An assembly building not being a school or an early childhood centre	To wheelchair seating spaces provided in accordance with clause D3.9. To and within all other areas normally used by the occupants, except that access need not be provided to tiers or platforms of seating areas that do not contain wheelchair seating spaces
Class 10a – Sanitary facilities	
Non-habitable building located in an accessible area intended for use by the public and containing a sanitary facility, change room facility or shelter	To and within: (a) an accessible sanitary facility; and (b) a change room facility; and (c) a public shelter or the like
Class 10b – swimming pool	To and into swimming pools with a total perimeter greater than 40m

CLASS 3 – ARC-HSL-DD-1101, 1105 - 1112.1 - Levels 01, 05 – 21 Hotel and Serviced Apartments		
Hotel Front Desk location	Podium Level 01 hosts a large front desk function adjacent the Signature Bar and Lobby. These open and noisy spaces can make acoustics very difficult for people checking in and out of the hotel.	Consider acoustic treatment of the high space in terms of floor surfaces, sound absorption materials and general wayfinding for vision impaired people making their way up escalator and stairs to finding the Front Desk. Hearing augmentation would assist at the Desk.

Hotel sole-occupancy units (SOU)	The Premises Standard provides legal requirements to meet the DDA in terms of accessible room numbers and location.	The projected number of hotel room keys is 400. Under the formula given in Table D3.1, this would equal 16 accessible SOUs for the hotel function of The Ribbon. The rooms need to reflect the range of hotel rooms provided in terms of amenity and pricing.
Serviced apartment SOUs	Table D3.1 of the Premises Standard also applies to the number of accessible serviced apartments.	Currently the plan is designed for 159 serviced apartments, including single and double bedrooms. That equates to 8 accessible SOUs which need to represent each of the types of rooms available in terms of variety of views, proximity to facilities and price ranges.
Location of SOUs	For both the hotel and serviced apartment accessible designs, the Premises Standard Table D3.1 requires that no more than two SOUs required to be accessible can be located adjacent each other.	Pairing accessible SOUs near the lift bank is an asset in terms of access, particularly if the egress provisions are centred around the lift lobbies. Pair accessible SOUs as a module on various floors as in Table D3.1.
Toilet layout in accessible SOUs	It makes sense to pair the accessible rooms and to provide left and right-hand toilet pan layouts on each floor selected. Toilets do not have to look institutional and new products are catering for removable but durable use in access fit-outs.	The Access Code F2.4(g) states that where there is more than one accessible SOU, alternate left and right-handed sanitary facilities must be provided. Meet AS1428.1 requirements but this may be done through providing reinforced walls for grabrails and using removable products depending on guest requirements as long as the space is provided.
Room layout in accessible SOUs	There are many elements to consider when creating a layout for access. Circulation space in and around the bed and other furniture is crucial.	Ensure all doors in accessible rooms require only a 20N force to operate. Provide kitchenette and desk access. Ensure all controls are at 1000mm and set back 500mm from corners. Low hanging racks in wardrobes are useful. AS1428.1 and AS1428.2 provide details of compliance.
Corridors	All the upper levels have extended corridors leading to windows over the city. In effect these are dead ends. In terms of safety, it is important that a wheelchair user could execute a 360° turn when they reach these corridor ends.	It is understood that each of the SOUs has an indented entryway. This creates somewhat more space in the corridors. But it is also important to identify that the design meets the 360° turning circle for a wheelchair turn of 2250mm x 2250mm from AS1428.2 Clause 6.3. The bare minimum turn would be 180° which involves a 1540mm wide x 2070mm area to turn. See AS1428.1 Clause 6.5.3.
Double storey SOUs in serviced apartments	The plan shows designs for some serviced apartments with facilities spread over two levels.	It is acceptable to have two storeys as long as the core features of a bedroom and bathroom are available on the main accessible level.
Gymnasium	The hotel gym and the apartment gym look to have ample space for equipment. Card access to the gyms needs to be set back from any corner by 500mm.	As best practice, vision impaired people prefer not to have large walls of mirrors so opaque walls are preferred for glare minimisation. Also layout of equipment on contrasted colour floor surface is a boon to wayfinding in gym use.

CLASS 5 - ARC-HSL-DD-1100, 1101, 1102, 1104 Level Ground External, 01, 02, 04 – Board rooms, meeting room and offices		
Lift banks	The west and east wings each have a bank of 6 lifts spanning the office and podium areas. Destination control lifts may leave the building open to a DDA complaint from blind or vision-impaired staff in upper levels as they are difficult for independent operation.	Discuss options with lift providers and ensure some form of equitable use is possible to all office and meeting room functions. Whatever type is selected, ensure the lift internal and external controls (if any) comply with AS1735.12 and Table E3.6(b) of the Premises Standard, which specifies the requirement for audible information within all lift cars and other criteria.
Internal columns	For any spaces that have internal columns, some form of warning will be required to a vertical height of 2m and visual contrast of their presence to the floor surface.	Plan for protection up to a vertical clearance height of 2m for any inclined columns in upper storeys, including contrasting TGSi. Discreet TGSi must contrast by 45% to the floor material selected to meet AS1428.4.1 Clause 2.2 (b). Vertical columns also require a 30% luminance contrast.
N10-N16 Back of house narrow corridor	A long 36m corridor for staff has only an estimated 1500mm width. The Premises Standard D3.3 (c) (i) indicates accessways must have passing spaces at a maximum of 20m intervals where a direct line of sight is not available.	Consider how to design a passing space of 1800mm using a small portion of the services area so that a passing space 1800mm wide and 2000mm long is created. See AS1428.1:2009 Figure 3.
Hearing augmentation in meeting rooms and board rooms	Hearing augmentation is required under D3.7 (1) of the Premises Standard in meeting rooms and board rooms with inbuilt amplification. Depending on the mode chosen, a loop should cover 80% of the floor area and a system using receivers to cover 95%.	Select the mode of delivery of hearing augmentation and comply with the Premises Standard D3.7 (2). Display of the type of hearing assistance is mandated to be signed outside each room in raised and tactile signs (D3.6). See AS1428.5:2010 Figures 5.2 (A) and (B) for detailed examples of text and pictograms to incorporate.
Soft floor coverings	If using carpet in the board and meeting rooms, it is important to limit the pile height for mobility aid users.	Adhere to AS1428.1 Clause 7.4.1 requirements for carpet pile, edge trim and backing thickness heights.

CLASS 6 - ARC-HSL-DD-1100, 1101, 1103, 1104, 1112.1 Ground and Upper Levels		
Kitchens, Bars, Restaurants and Serving Areas	Each function needs to have access within as well as into spaces and appropriate fittings. This applies to all occupants who use the spaces, including visitors, employees, employers and owners. Accessible design means that staff with disability can be easily employed at all points of the building as well as	Consider using universal design principles for all internal fit-outs of The Ribbon. Recent experience with this approach at the Adelaide Oval has seen wide acceptance of low counters at all service points, including bars, eateries, merchandise counters, making staff less bunkered behind bulwarks. The open contemporary style embeds access for everyone, staff included, in the design

	catering for a wide-spread of community abilities and shapes.	philosophy that is commercially successful and award winning. Ensure fittings meet AS1428.2 height and reach dimensions to meet the Premises Standard Table D3.1 requirements.
Equitable toilet facilities	Sanitary facilities shown near some of the food and beverage areas do not yet incorporate an access toilet space.	In contract documentation, ensure that for every bank of male and female toilets, there is an adjacent unisex accessible toilet in accordance with Part F2 of the Access Code.
Accessways	AS1428.1:2009 Clause 6 calls for minimum accessways of 1000mm throughout internal spaces. This is particularly important in planning restaurant and other seating areas where food and beverage are consumed.	In planning the fit-out of various eating and drinking facilities within The Ribbon, preservation of 1m circulation as a minimum makes it easier for all customers and staff to move about freely, especially white cane and assistance animal users. More background is available in Draft AS1428.4.2 Clause 2.4.
Soft floor coverings	If carpet is considered as a fitting in any of the premium spaces, it is important to limit the pile height which assists mobility aid users. Soft furnishings do assist in the acoustic environment, aiding people who are hard of hearing.	Adhere to AS1428.1 Clause 7.4.1 requirements for carpet pile, edge trim and backing thickness heights.
Glazing on an accessway	Where there are frameless or fully glazed windows or glazing capable of being mistaken for a doorway, it is important to have compliant glazing strips to warn of a hazard for people with vision impairment.	Create compliant glazing as in AS1428.1 Clause 6.6 designed to meet access requirements and highlight The Ribbon's unique brand.
Glare minimisation	High-end fittings often feature glossy finishes on walls, floors, signs and in fittings. These are difficult surfaces for people with vision impairment as the reflected bright light can hurt people who have many eye conditions.	Consider carefully the need to use high gloss surfaces. Floors especially are much better in non-slip, non-reflective materials which suit all forms of disability better. Lifts are also better to maintain in buffered stainless steel rather than high gloss. Avoid mirrored surfaces which cause disorientation. See Draft AS1428.4.2 Clause 3.2.5 for further background.

CLASS 9b - ARC-HSL-DD-1100-1102 Ground, Levels 01-02 IMAX and Level 04 Ballroom		
IMAX entry and exit lifts	The plan shows two lifts at the IMAX cinema, one for entry and one for exit following the one-way normal circulation of IMAX cinema management. This is an excellent part of the design and will increase audiences of people with disability, friends and family.	In a large public facility it is also important that the lifts are long enough to accommodate a stretcher for evacuation. Keep rear lift wall free of handrails to provide length and adjust side handrail height to not directly conflict with stretcher heights. Ensure that the lifts on either side of the IMAX complex meet Premises Standard Table E3.6 (b) for passenger lifts which reference AS1735.12 features.

Stairs and escalators	For public safety, it is important that stairs and escalators incorporate the best in accessible design, including yellow nosings on the front of escalator steps and sides.	AS1428.1:2009 provides technical guidance on compliance with stair design, including stair nosing profile, tread dimensions and contrast, handrail design and use of TGSi. See AS1428.1 Clauses 11 and 12.
Signage	Prominent directional signage will be required to assist patrons to find the stairs, escalator and lifts which are largely set behind columns.	Signage other than for sanitary facilities and hearing augmentation is not covered by the Access Code but remains open to complaint under the DDA. Use best practice principles of size of text by comfortable viewing distance, height of placement, reflectivity, luminance contrast, arrow style, pictograms, illumination, etc. See Draft AS1428.4.2 for more information
Wayfinding innovation	The IMAX offers an opportunity to integrate ideas from the new wayfinding draft standard, AS1428.4.2 about wayfinding between entries, internal accessways, exits and lifts. Given the multi-cultural nature of Sydney, this may also be an opportunity to incorporate multiple languages in key signage.	Incorporate detectable floor surfaces and/or shorelines to assist all people to move between the key elements of circulation. Colours, change of materials and textures could make this both an innovative access feature and a functional way to move crowds more quickly through dedicated accessways. Information and directional signage at entrances and information points will also help. See Draft AS1428.4.2 Clauses 4.1 and 4.2.
IMAX concession and bar counters	A vital access element at the movies is the concession counter to buy tickets, food and beverage.	Design all customer service counters at an accessible height of 870mm maximum as in AS1428.2 Clause 24. Hearing augmentation is also required if the ticket office is screened from the service provider. See D3.7 of the Premises Standard.
Columns in circulation spaces	Inclined columns are prominent in the Foyer and large retail area on the ground floor.	Use a combination of TGSi and luminance contrasting to increase safety. Avoid reflective surfaces that can hurt the eyes of vision-impaired people in brightly lit spaces.
IMAX cinema accessible seating space numbers	Table D3.9 of the Premises Standard gives a formula for calculating the number of wheelchair seating spaces in Class 9b buildings. For a cinema of 450 seats, it calls for 3 seats up to 151 customers, then 1 space for each additional 50 seats.	There are 9 accessible seating spaces for the IMAX. The Design Development plan is compliant with Table D3.9. Seats are at the preferred viewing location and none are in the first row which is prohibited under the Premises Standard. The space allocated for accessible seating also provides room for an assistance animal.
IMAX accessible seating distribution	The grouping of the wheelchair seating spaces is to be not less than 1 single space and not less than 1 group of 2 spaces and not more than 5 spaces in any other group.	The IMAX design aims to give wheelchair users a premium experience by locating spaces at the optimal viewing distance from the large screen on the cross-over level and ensuring that the majority of seats (7 of the 9) are located centrally. The other two are still considered in an excellent viewing position.

		The design for accessible seat grouping complies with the Premises Standard D3.9 (b).
IMAX accessible seating location	D3.9 (b) (iii) states that the location of wheelchair seating is to be representative of the range of seating provided. Attention to equitable access and egress with lifts at north and south ends makes this a very desirable entertainment experience for people with disability.	The cantilevered design of the Darling Harbor IMAX does not allow any lift access to the top tiers for an alternative location. Similarly the front row is not deemed to be a desirable location in an IMAX size screen. The design solution to keep all wheelchair spaces on one level has been made within the limitations of the site but aims to provide a gold level experience with 9 wheelchair seating spaces and companion seating in the best viewing spot and ease of access and egress.
Hearing augmentation in the cinema	Hearing augmentation is required for the cinema. Depending on the mode chosen, a loop should cover 80% of the floor area and a system using receivers to cover 95%.	Select the mode of delivery of hearing augmentation and comply with the Premises Standard D3.7 (2). Display of the type of hearing assistance is mandated to be signed outside the cinema in raised and tactile signs (D3.6). See AS1428.5:2010 Figures 5.2 (A) and (B) for detailed examples of text and pictograms to incorporate.
Public address systems	The IMAX screen must be capable of supplementing any public address system, other a public address system used for emergency warning purposes only.	Explore the use of captions for emergency warning and other purposes to comply with the Premises Standard D3.7 (4) so people who are deaf or hard of hearing are not discriminated against by audio only information.
IMAX accessible toilets	The Sketch Design shows a unisex accessible toilet adjacent the male/female toilet banks on both levels.	Ensure that the two accessible toilets in the IMAX complex have alternated handing, left and right transfer. Consider providing automatic door controls and locks that have come down in price recently with adoption across the country to aid access and security.
Parent Facilities at IMAX toilets	The plan shows baby change facilities incorporated in the unisex accessible toilet.	Meet AS1428.1-2009 Clause 15.2.8.2 for baby change tables if installed. Sign externally with raised tactile Braille pictograms affixed adjacent the latch side.
Ballroom	As an assembly space, the ballroom with flexible walls to create smaller and larger spaces needs to comply with all features mentioned for the IMAX.	Ensure the ballroom has hearing augmentation that can be sub-divided into three or used as a whole. This may drive the choice of modality. It needs to be signed on or near the entry doors.
Columns	The support columns in the Ballroom Prefunction space could be barriers for some people.	Plan that the building support columns will have 30% luminance contrast to floor surface.

CLASS 10a - ARC-HSL-DD-1100 - Ground Floor External Building		
Unisex accessible toilet	Although not planned yet, it is important to design robust and	For a premium experience, consider providing automatic sliding door automatic

facilities in building separate to The Ribbon	equitable facilities with direct access to unisex accessible toilet and ambulant cubicles in male/female as in the office layout.	controls and locks inside and outside the toilet for security and assistance to people with hand mobility or strength issues. Widely used in major shopping centres.
Changing Place Toilet	Community expectation is mounting for popular destinations such as Darling Harbour to host a Changing Place toilet with hoist and adjustable changing bed so people who live with severe disability have a toilet they and their carers can use safely and with dignity.	Investigate partnership with Sydney City Council and or NSW Government to fund a Changing Place toilet in this toilet block to serve the Darling Harbour precinct. Design to specifications provided at www.changingplaces.org.au.
Parent facilities	In design of the parent facilities, consider bench heights, change table, microwave placement and other features that can be used by a parent in a wheelchair.	See AS1428.1 Clause 15.2.8.2 for baby change specifications for access.
First aid facilities	Design as much circulation space as possible in this room.	Consider provision of height adjustable bed to assist children, elderly people and people who may need to transfer from wheelchairs onto the bed.

Class 10b – Pools - ARC-HSL-DD-1111 and 1112.1 - Levels 18 and 21		
Potential pools	The hotel and serviced apartment areas each have a pool. Any pool with a total perimeter of greater than 40m, is required to be accessible.	See Part D5, Accessible water entry/exit for ramp and hoist options for pools greater than 40m in perimeter. A platform pool lift is (Part D5.4) considered the most discreet and dignified lift option. A person in an aquatic wheelchair is wheeled onto a platform, raised, then lowered into the water.
Change rooms	An accessible toilet/shower with storage for an aquatic wheelchair (Subclause D5.6) needs to be provided adjacent the pools larger than 40m in perimeter.	Ensure that access is as close as possible to the entry method and has adequate circulation and features to meet AS1428.1 shower/toilet requirements.

Summary

DCS generally endorses the designs for The Ribbon as a hotel and serviced apartment complex with extensive retail, food and beverage, function centre and IMAX facilities. The Development Application plans incorporate many elements from earlier DDA reviews which provide a solid foundation for the approval stage to assess confidently.

At the Development Application stage, The Ribbon substantially meets DDA Premises Standard requirements. Attention to the above issues and recommendations will improve its accessibility and equity as the project moves into Design Development of this multi-use iconic building.

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