BUILDING CODE OF AUSTRALIA + ACCESS REPORT
PROPOSED MIXED USE BUILDING
141 WALDRON ROAD, CHESTER HILL NSW

Report Number & Revision:	MSA1067AA-REV02
Prepared For:	WALDRON ROAD PROJECTS c/- CMT ARCHITECTS
Date of Issue:	29.03.2017

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EXECUTIVE SUMMARY

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This report has assessed the design documentation for the proposed mixed use commercial & residential building to be located at 141 Waldron Road, Chester Hill NSW under the provisions of the Building Code of Australia (BCA), including relevant provision for "Access for People with Disabilities".

It is understood that this report will be submitted to Council as part of the Development Application for the proposed works.

The primary purpose of the report is to assess the proposed/new development works against the BCA and identify any significant non-compliance matters in comparison to the current Deemed-to-Satisfy (DTS) provisions of the BCA.

Subject to the implementation of the recommendations (as provided in Section 3.0), the proposed development is considered to achieve compliance with the significant design requirements of the current BCA.

The following will need to be addressed via Performance Solution:

1. D1.4 – *Exit Travel Distances*:
    a. Basement 2 – there are points on the floor of the storeroom area to the western side which are more than 20m from a 'point of choice' to 2 alternative exits.
    b. Basements 1 & 2 – the path of travel to 'Stair 2' requires passing through the central carparking bay. It is recommended that a 1m wide dedicated pathway be provided OR a performance solution considered.
2. D1.5 – *Distance between alternative exits* - The distance between alternative exits (Stair 1 & Stair 06) on level 1 exceeds 45m (approx. 50m).
3. D1.7 – *Travel via fire isolated exits:*
    a. The exits discharging on the southern side of the building – egress west along the driveway to Campbell Hill Road. The path of travel from the exits (shown in red below) passes within 6m of the southern external wall.
    b. Stair 4 discharges into the lobby at ground floor level (which is not permitted under Clause D1.7. The exit must typically discharge to the street or to 'open space'.
4. D2.11 – *Fire Isolated Passageways* - The southern wall of Stair 5 at ground floor level is required to achieve a FRL of not less than 90/90/90.
5. D2.17 – *Handrails*- The fire isolated stairs to include 'offset' treads, so as to allow for AS1428.1-2009 compliant handrails.
6. D2.20 – Swinging Doors - The doors from fire stair 5 swing against the direction of egress at ground floor level.
7. D3 – *Access for people with a disability* – Refer to Table 3
8. E1.3 – *Fire Hydrants* - The location of the fire hydrant booster does not satisfy AS2419.1.

1.0 INTRODUCTION

This report has assessed the design documentation for the proposed mixed use commercial & residential building to be located at 141 Waldron Road, Chester Hill NSW under the provisions of the Building Code of Australia (BCA), including relevant provision for "Access for People with Disabilities".

It is understood that this report will be submitted to Council as part of the Development Application for the proposed works.

1.1 Basis of Report

The key basis of this report is to address compliance with the significant requirements of the Building Code of Australia (BCA) and relevant disabled access provisions relevant to the new building works.

The scope of services is limited to assessment against Sections C - **Fire Resistance,** Section D - **Access & Egress**, Section E - **Services & Equipment** & Section F - **Health and Amenity,** of the BCA, and relevant Access Provisions as detailed in Section 1.2 below.

1.2 Assessed Information

This report is based on the following:

- Desktop assessment of Architectural Plans prepared by CMT Architects submitted to MSA on the 22.03.2017
- The National Construction Code – Building Code of Australia (BCA), prepared by the Australian Building Codes Board. *Note: a Reference to the "BCA" in this report is a reference to the Building Code of Australia 2016.*
- The Guide to the BCA, prepared by the Australian Building Codes Board.
- Relevant provisions of AS1428.1-2009 "Design for Access and Mobility – Part 1: General Requirements for Access New Building Works" published by Standards Australia
- Bankstown Council DCP (in terms of Access Requirements)

1.3 Purpose of Report

The purpose of this report is to assess the following:

- Assessment of the proposed works under the current BCA and relevant Disabled Access Provisions and detail any significant departures (or those which have the ability to affect the current design);
- Provide recommendations to best address any significant departures from the requirements of BCA and relevant Disabled Access Provisions

1.4 Limitations of Report

- The assessment is limited to a desktop assessment only, and has not included site assessment or physical assessment of the property in any way.
- Some requirements of the BCA are recognised as being interpretive in nature. Where these matters are encountered, interpretations are made in accordance with MSA policy. Specific relevant interpretations relevant to this assessment are included in Section 2.3 "BCA Interpretation Notes".
- Assessment beyond the compliance matters ascertainable on the current documentation is beyond the scope of this report.
- Section J Energy Efficiency Assessment is beyond the scope of this report.
- Reporting on hazardous materials, OH&S matters or site contamination
- Detailed assessment of any engineering matters – e.g.: structural, electrical, hydraulic, mechanical, fire
- Heritage significance
- Environmental or planning issues
- Requirements of statutory authorities
- Provision of any Construction Certification under Part 4A of the Environmental Planning & Assessment Act 1979

2.0 BUILDING CHARACTERISTICS

2.1 Building Description

The proposed 5 storey development comprises:

- 2 Level of basement carparking; and
- 1 Level of retail tenancies and carparking (ground floor); and
- 8 levels of Residential sole occupancy units (Ground to eighth floor).

2.2 BCA Assessment Data

The following BCA assessment data is relevant to the proposal under the current BCA (based on plans provided)

Table 2.2 BCA Assessment Data

BCA Building Classification:	7a (basement carparking) 6 (retail tenancies) 7b (storage)* 2 (residential sole occupancy units) **In the carparking levels where the cumulative floor area of the storage component is less than 10% of the total floor area of the storey in which it is located, it can be classified 7a. This assessment is based on the assumption that the aggregate floor area of the storage in each basement level will comprises less than 10% of the floor of the basement level in which it is located – this will need to be verified at CC stage.*
Rise In Stories	8
Type of Construction	Type A
Floor Area Limitations for Type of Construction	Floor area and volume limitations have not been exceeded – for Type A construction. *Note the limitations do not apply to the class 2 portion of the building, or sprinkler protected Class 7a carparks.*
Effective Height	The rise in storeys as defined in the BCA –*the vertical distance between the floor of the lowest storey included in the calculation of rise in storeys and the floor of the topmost storey (excluding the topmost storey if it contains only heating, ventilating, lift or other equipment, water tanks or similar service units).* The RL of the lowest storey included in the rise in storeys in the case (i.e. the ground floor is **32.1** The RL of the floor of the top most storey* is **54.50**. This equates to an effective height of **22.4** (i.e. more than 12m, but less than 25m) *This should be verified at CC stage.*

2.3 BCA Interpretation Notes

- ***Effective Height –*** *Refer to comments in Table above*
- ***Breezeways*** *– The breezeways are considered to be open balconies as opposed to 'enclosed' public corridors*

3.0 BCA / ACCESS ASSESSMENT & RECOMMENDATIONS

The following table provides a 'clause by clause' assessment of the proposed development against the requirements of the BCA and relevant Disabled Access Provisions:

Non-compliances with the DTS provisions or issues requiring further information have been highlighted in blue.

With the exception of the clauses marked 'does not comply', the proposed development shows a general ability to comply with the deemed-to-satisfy (DTS) provisions of the Building Code of Australia within the constraints of the current design.

Furthermore, there are several clauses where compliance cannot be determined from the current plans (i.e. those marked as 'Compliance Required' in Section 3.0 of this report). It should be noted that compliance with these items is not expected to necessitate significant design changes, and therefore can be addressed at Construction Certificate (CC) Stage, e.g. either in the CC architectural plans, or in a BCA Compliance Specification.

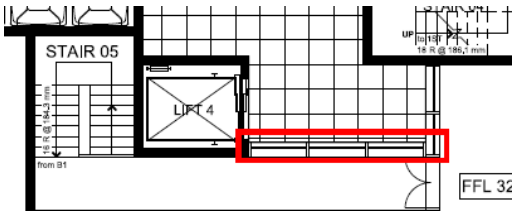
Table 3.0 –BCA Clause by Clause Assessment

BCA DEEMED-TO-SATISFY PROVISION	Complies	Does Not Comply	NA or Informational	Compliance Required	COMMENTS/RECOMMENDATION
SECTION B STRUCTURE					
Part B1 Structure				X	All buildings and structures should be designed by appropriately qualified structural engineers in accordance with Part B1 of the BCA and AS 1170 (SAA Loading Code), AS 1684, AS 1720, AS 2870, AS3600, AS4100 and/or other relevant structural codes. *Certification to this effect is required (at CC Stage)*
Clause B1.4 Glazing				X	All glazing must be selected and installed in accordance with AS2047 & AS1288. *A plan or spec notation to this effect is required. (at CC Stage)*
SECTION C FIRE RESISTANCE					
Part C1 Fire Resistance & Stability					
C1.1 Type of Construction Required				X	The building elements are required to meet the requirements of **Type A** construction under BCA Specification C1.1. *Note the following FRLs generally required for each classification:* • *Class 7a – 120mins* • *Class 7b (where provided)– 240mins* • *Class 6 – 180mins*

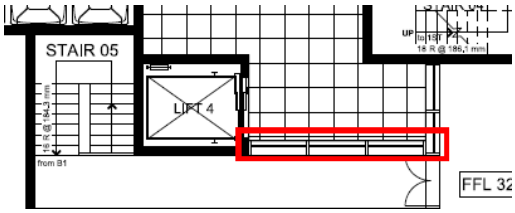
BCA DEEMED-TO-SATISFY PROVISION	Complies	Does Not Comply	NA or Informational	Compliance Required	COMMENTS/RECOMMENDATION
					• *Class 2 – 90mins* *Details for the proposed construction material and FRL's should be provided on the architectural plans, and where necessary on the structural plans (at CC stage).*
C1.2 Calculation of Rise In Stories			X		The building will have a rise in storeys of 8 (refer to comments in Part 2.2 of this report).
C1.3 Buildings of Multiple Classifications			X		The top floor of the building is occupied by a class 2 part. Therefore for the purposes of determining the required type of construction, the whole building is treated as a class 2 building.
C1.4 Mixed Types of Construction			X		The building will be of Type A construction throughout
C1.5 Two Storey Class 2, 3 or 9 buildings			X		The building has a rise in storeys of more than 2, and contains class 6 & 7 parts – therefore this concession cannot be applied.
C1.6 Class 4 Parts			X		The building contains no class 4 parts.
C1.7 Open Spectator Stands			X		The building is not an open spectator stand.
C1.8 Lightweight Construction			X		Any proposed fire rated lightweight construction must be confirmed as complying with Specification C1.8 by the Structural Engineer (not currently indicated on the plans).
C1.9 -			X		Clause deleted.
C1.10 Fire Hazard Properties				X	Fire hazard properties must comply with C1.10 for floor, wall and ceiling linings, or be considered non-combustible. *Details to be provided at CC Stage*
C1.11 Performance of External Walls in Fire			X		The proposed design does not contain tilt-up panels.
C1.12 Combustible materials			X		Noted - Informational clause only
Part C2 Compartmentation & Separation					
C2.2 General Floor Area & Volume Limitations	X				Floor areas and volumes of fire compartments are less than the maximum allowed for Type A construction.
C2.3 Large Isolated Buildings Note requirements of NSW C2.3			X		The building is not considered to be a 'large isolated building'.
C2.4 Requirements for Open Space			X		As above
C2.5 Class 9a & 9c Buildings Note requirements of NSW C2.5			X		The building is not a Class 9a or 9c building
C2.6 Vertical Separation of openings in external walls				X	Vertical separation of opening in external walls must be provided in accordance with this clause. Vertical separation must be in the form of:

BCA DEEMED-TO-SATISFY PROVISION	Complies	Does Not Comply	NA or Informational	Compliance Required	COMMENTS/RECOMMENDATION
					• 'Vertical spandrels' which must be non-combustible, have a FRL of at least 60/60/60, and a height of at least 900mm. At least 600mm must be above the surface of the intervening floor; OR • Horizontal Slab separation (e.g. balcony) – which must have a FRL of not less than 60/60/60 and extend outwards of the opening not less than 1100mm and horizontally not less than 450mm from the side of the opening. Specific attention should be paid to the following areas: *1.* The sides of the breezeways should be provided with spandrel protection (this could be achieved via a masonry balustrade) *2. General – dimensions of spandrels to be nominated on CC level plans. Scaled dimensions indicate general compliance is achieved.*
C2.7 Separation by Fire Walls				X	See comments in C2.8 below.
C2.8 Separation of Classifications in the same storey				X	The different classifications in the ground floor level must be fire separated from one another by a fire wall achieving the higher FRL (for the classifications concerned). E.g. a wall separating a retail shop (Class 6) from a carparking area (Class 7a) must achieve a FRL of not less than 180/180/180. *Details for the proposed construction material and FRL's should be provided on the architectural plans, and where necessary on the structural plans (at CC stage).*
C2.9 Separation of Classifications in different stories				X	The floor which separates the storeys of differing classifications must achieve the FRL not less than that required for the lower storey. E.g. a floor separating a retail part (Class 6) from a residential part (Class 2) above must achieve a FRL of not less than 180/180/180. *Details for the proposed construction material and FRL's should be provided on the architectural plans, and where necessary on the structural plans (at CC stage).*
C2.10 Separation of lifts shafts				X	The proposed lift shafts must have a FRL in accordance with the requirements of Table of Specification C1.1 (relevant for the classifications concerned) Openings for landing doors and services must

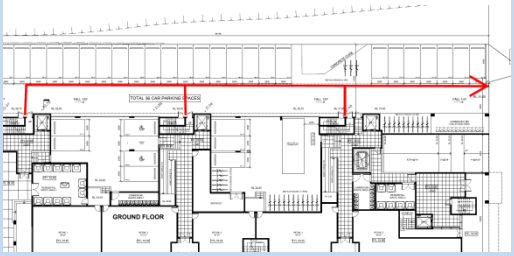
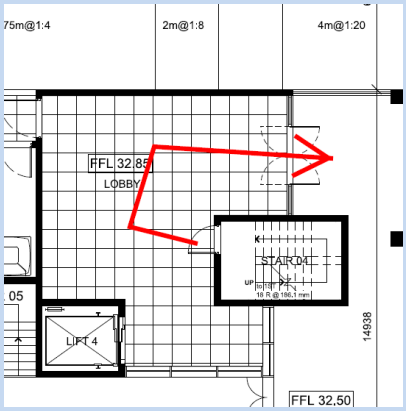
BCA DEEMED-TO-SATISFY PROVISION	Complies	Does Not Comply	NA or Informational	Compliance Required	COMMENTS/RECOMMENDATION
					be protected in accordance with the requirements of BCA Part C3. *Details for the proposed construction material and FRL's should be provided on the architectural plans, and where necessary on the structural plans (at CC stage).*
C2.11 Stairways and lifts in one shaft	X				The lifts appear to be located in their own shafts.
C2.12 Separation of Equipment				X	Any equipment specified by this clause must be separated by 120/120/120 construction, including boilers, batteries, diesel pumps etc. Full details of equipment to be provided (note fire hydrant pump rooms are likely to be required) *Details to be provided at CC stage. Particular attention should be paid for the requirement for a fire hydrant pump room.*
C2.13 Electrical Supply				X	Electrical switch-rooms harvesting emergency equipment required to operate in the emergency mode must be fire separated by 120/120/120 construction from the remainder of the building. *Details to be provided at CC stage.*
C2.14 Public corridors in Class 2 & 3 Buildings				X	The 'public corridors' (being the enclosed corridors as defined in the BCA) in the class 2 components do not exceed a length of more than 40m.
Part C3 Protection of Openings					
C3.2 Protection of openings in external walls Note NSW C3.2 ((a) deleted)			X		Openings in external walls which are located less than 3m from a fire source feature (being the southern and western allotment boundaries), must be protected in accordance with Clause C3.4. *The external walls are typically setback more than 3m from the side/rear boundaries.*
C3.3 Separation of external walls and associated openings in different fire compartments				X	Where external walls of the different fire compartments at ground floor occur, they required to be protected. *Details demonstrating compliance with the above to be provided at CC stage.*
C3.4 Acceptable Methods of Protection			X		Openings required to be protected under Clause C3.2 (or C3.3) above must be protected as follows: (i) Doorways— (A) internal or external wall-wetting sprinklers as appropriate used with doors that are self-closing or automatic closing; or (B) /60/30 fire doors that are self-closing or automatic closing.

BCA DEEMED-TO-SATISFY PROVISION	Complies	Does Not Comply	NA or Informational	Compliance Required	COMMENTS/RECOMMENDATION
					(ii) Windows— (A) internal or external wall-wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position; or (B) /60/ fire windows that are automatic closing or permanently fixed in the closed position; or (C) /60/ automatic closing fire shutters. (iii) Other openings— (A) excluding voids — internal or external wall-wetting sprinklers, as appropriate; or (B) construction having an FRL not less than /60/. (b) Fire doors, fire windows and fire shutters must comply with Specification C3.4. *Details of the protective measures should be provided in the CC documentation. Where drenchers are proposed, hydraulic details should be provided.*
C3.5 Doorways in Fire Walls				X	Doorways in fire walls are generally required to achieve the FRL not less than that required for the fire wall (except that the insulation value can be reduced to not less than 30minutes) *Details demonstrating compliance to be provided at CC stage.*
C3.6 Sliding Fire Doors			X		There are no sliding fire doors proposed.
C3.7 Protection of Doorways in horizontal exits			X		There are no horizontal exits proposed.
C3.8 Openings if fire isolated exits				X	Doorways serving the fire isolated exit must be protected with a self-closing fire door achieving a FRL of not less than -/60/30. Where the window in the external wall of a fire isolated exit is within 6m and exposed to a window or other opening in a wall of the same building it must be protected externally in accordance with Clause C3.4. It must be noted that the southern wall of Stair 5 at ground floor level is required to achieve a FRL: 

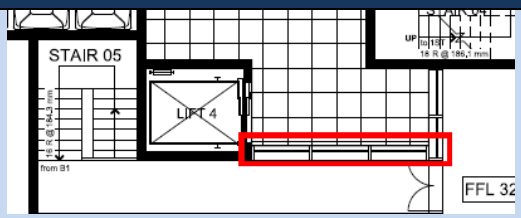
BCA DEEMED-TO-SATISFY PROVISION	Complies	Does Not Comply	NA or Informational	Compliance Required	COMMENTS/RECOMMENDATION
					Details demonstrating compliance to be provided at CC stage.
C3.9 Service Penetrations in fire-isolated exits				X	Service penetrations in fire exits must comply with this clause. Generally only electrical wiring and water supply pipes for fire services are permitted within the exits. *Details to be provided at CC stage.*
C3.10 Openings in Fire isolated lift shafts				X	The entrance doorways must be protected with fire doors (achieving a FRL of not less than -/60/- which comply with AS1735.11 and are set to remain in the closed position (except when discharging or receiving passengers) The lift indicator panels and the like must be backed with construction achieving a FRL of not less than -/60/60 – if it exceeds an area of 35,000mm^2 *Details to be provided at CC Stage.*
C3.11 Bounding Construction Note NSW C3.11 Bounding Construction: Class 2, 3, 4 and 9b buildings				X	The entrance doorways of the sole occupancy units, which open onto a 'public corridor' must be protected with a self-closing fire door achieving a FRL of not less than -/60/30. Where the path of travel to an exit necessitates passing by the external wall of another unit – that part of the wall must be of concrete or masonry construction. Any doorways must be protected with a self-closing tight fitting solid core door, not less than 35mm thick. Any window opening must be protected internally in accordance with Clause C3.4 – or have a sill height of not less than 1.5m from FFL. (It is noted occupants egressing along open balconies are typically provided with a choice in travel direction to 2 alternative exits and are therefore not *required* to pass by the external wall of a particular unit). *Details to be submitted at CC stage.*
C3.12 Openings in floors and ceilings for services				X	Services penetrations must be protected in accordance with this clause. See C3.15 below also. *Details to be provided at CC Stage.*
C3.13 Openings in Shafts				X	Openings in shafts required to be fire rated to be protected in accordance with this Clause. *Details to be provided at CC Stage.*
C3.14			X		Blank.
C3.15 Openings for Service Installations				X	Services must be protected against the spread of fire when penetrating any building element that is required to be fire-rated (i.e., separating floor/wall/shaft). All cable penetrations through floors or fire

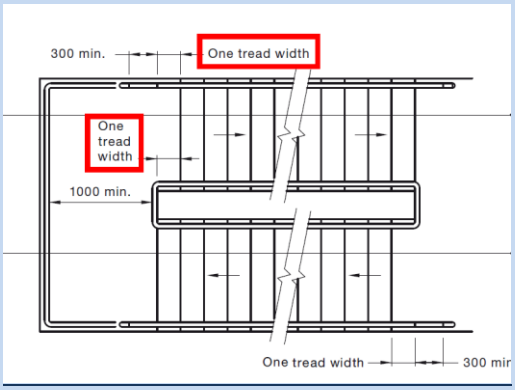
BCA DEEMED-TO-SATISFY PROVISION	Complies	Does Not Comply	NA or Informational	Compliance Required	COMMENTS/RECOMMENDATION
					walls must be fire stopped in accordance with BCA C3.15 and AS1530.4. *Details to be provided at CC Stage.*
C3.16 Construction Joints				X	Fire-rated mastic or other approved product tested to AS1530.4 is required to seal gaps in fire rated construction. *Details to be provided at CC Stage.*
C3.17 Columns protected in lightweight construction to achieve FRL			X		There does not appear to be any columns subject to this clause. *To be confirmed by structural engineer at CC stage.*
SECTION D ACCESS & EGRESS					
Part D1 Provision for Escape					
D1.2 Number of Exits required Note NSW D1.2	X				D1.2 requires that at least 2 exits be provided from each basement storey, and not less than 1 exit from each above ground storey. The design generally complies in this regard.
D1.3 When Fire Isolated exits are required	X				Fire isolated exits are generally provided as required. It is assumed that the southern wall of Stair 5 at ground floor level can achieve FRL of not less than 90/90/90:  *Note comments in Clause D1.7 in relation to the discharge of fire stairs.*
D1.4 Exit Travel Distances		**X**			Basement & retail areas – there must be no points on the floor more than 20m from an exit, or a 'point of choice' to alternative exits. (and the maximum distance to the nearest exit must not exceed 40m) Class 2 – unit entrance doors- must be no more than 6m from an exit or a 'point of choice' to alternative exits Class 2 – Other areas (common areas) - – there must be no points on the floor more than 20m from an exit, or a 'point of choice' to alternative exits. **Non-compliance to be addressed** The following issues are noted • Basement 2 – there are points on the

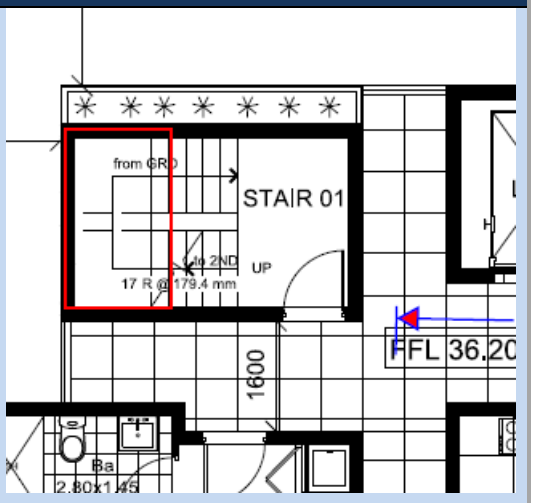
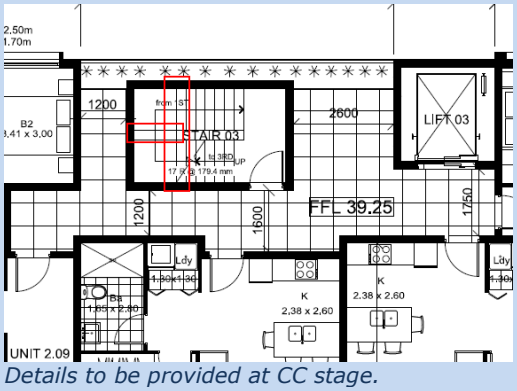
BCA DEEMED-TO-SATISFY PROVISION	Complies	Does Not Comply	NA or Informational	Compliance Required	COMMENTS/RECOMMENDATION
					floor of the storeroom area to the western side which are more than 20m from a 'point of choice' to 2 alternative exits. • Basements 1 & 2 – the path of travel to 'Stair 2' requires passing through the central carparking bay. It is recommended that a 1m wide dedicated pathway be provided OR a performance solution considered
D1.5 Distance Between Alternate Exits Note NSW D1.6		**X**			The distance between alternative exits must be: • In the class 6/ 7 parts – Not less than 9m and not more that 60m apart • In the class 2 part – Not less than 9m and not more than 45m apart. **Non-compliance to be addressed** • The distance between alternative exits (Stair 1 & Stair 06) on level 1 exceeds 45m (approx. 50m).
D1.6 Dimensions of Exits and paths of Travel to Exits				X	Exits and paths of travel to exits are required to be unobstructed for a width of no less than 1000mm wide and a height of no less than 2000mm – see D2.17 also. *Note comments in D1.4 above in relation to egress layout in basement levels.* The exit doors are required to be not less than 750mm clear. (note that doors in an accessible pathway must be not less than 850mm clear - refer to Part D3 of the report for further details) *Details to be provided at CC stage.*
D1.7 Travel via Fire Isolated Stairs		**X**			The fire isolated exits must discharge directly to the road/street, or to 'open space' or to a covered area permitted by BCA D1.7 (b) (ii) or (iii). Where the path of travel from a fire exit necessitates passing within 6m of the external wall of the building measured at right angles to the path of travel) – then that part of the wall must achieve a min FRL of 60/60/60 and any openings in that wall must be protected internally in accordance with BCA C3.4. **Non-compliances to be addressed:** • The exits discharging on the southern side of the building – egress west along the driveway to Campbell Hill Road. The path of travel from the exits (shown in red below) passes within 6m of the southern external wall.

BCA DEEMED-TO-SATISFY PROVISION	Complies	Does Not Comply	NA or Informational	Compliance Required	COMMENTS/RECOMMENDATION
					 • Stair 4 discharges into the ground floor lobby – which is not permitted under BCA D1.7. 
D1.8 External Stairways or ramps in lieu of Fire Isolated Stairs			X		There are no external stairs being used in lieu of fire isolated exits.
D1.9 Travel by non-fire-isolated stairs			X		All stairs are typically required to be fire isolated.
D1.10 Discharge from Exits Note NSW D1.10				X	The path of travel between the exits and open space appear to be generally on-grade. Additional bollards are required to be provided to the final egress doors from the fire exits on the southern side of the building. *Details to be provided at CC stage.*
D1.11 Horizontal Exits			X		There are no horizontal exits relied upon for the purposes of this assessment
D1.12 Non-required stairways, ramps or escalators			X		There are no 'non-required' stairs or ramps
D1.13 Number of Persons Accommodated Note NSW Table D1.13 Area per person according to use			X		Informational clause only.
D1.14 Measurement of Distances			X		Informational clause only.
D1.15 Method of Measurement			X		Informational clause only.
D1.16 Plant Rooms and lift Motor Rooms: Concession			X		Informational clause only.
Part D2 Construction of Exits					

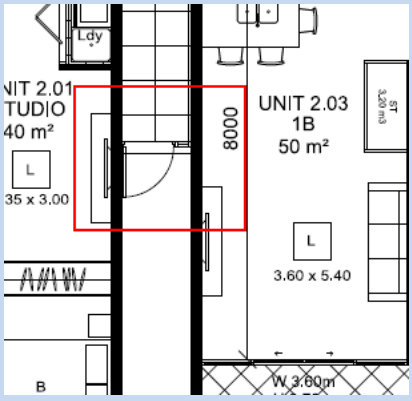
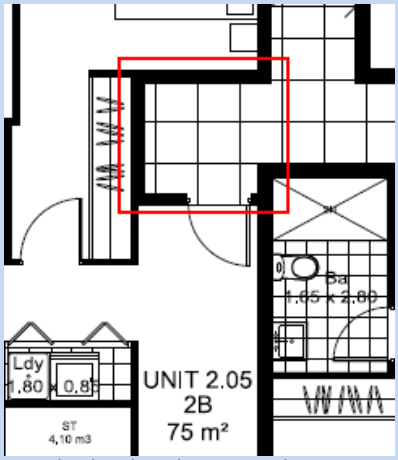
BCA DEEMED-TO-SATISFY PROVISION	Complies	Does Not Comply	NA or Informational	Compliance Required	COMMENTS/RECOMMENDATION
D2.1 Application of Part Note NSW D2.1			X		Informational clause only.
D2.2 Fire-Isolated stairways and ramps				X	The fire isolated stairs must be of non-combustible construction and be design such that if there is local failure it will not cause structural damage to or impair the fire resistance of the shaft. *Details to be provided at CC stage.*
D2.3 Non-fire Isolated stairways and ramps				X	The non-fire isolated stairs are subject to this clause. (assumed to be concrete – complies)
D2.4 Separation of Rising and Descending Stairs				X	The rising and descending flights are generally separated at ground floor level – so that there is no direct connection between the rising and descending stair flights. Note - Separating construction to be smoke proof. *Details to be provided at CC stage.*
D2.5 Open Access ramps and balconies			X		There are no open access ramps or balconies required to be provided for smoke hazard management.
D2.6 Smoke Lobbies			X		Smoke lobbies are not required to be provided.
D2.7 Installations in Exits and Paths of Travel				X	Electrical distribution and telecommunications, boards etc. where located in a path of travel to an exit, must be enclosed in non-combustible construction, with openings suitably smoke sealed. *Details to be provided at CC stage.*
D2.8 Enclosure of Space Under Stairs and ramps			X		There are no such enclosures indicated on the plans.
D2.9 Width of Stairs			X		Informational clause only.
D2.10 Pedestrian Ramps			X		There are no ramps proposed.
D2.11 Fire-Isolated Passageways		**X**			The FRL of the fire isolated passageways must generally meet the FRL of the fire stair which it serves – however where the wall of the passageway adjoins a part of the building required to have a higher FRL (e.g. a wall between a fire passageway and a retail tenancy), the higher FRL should be provided. **Non-compliances to be addressed:** • The southern wall of Stair 5 at ground floor level must achieve FRL of not less than 90/90/90:

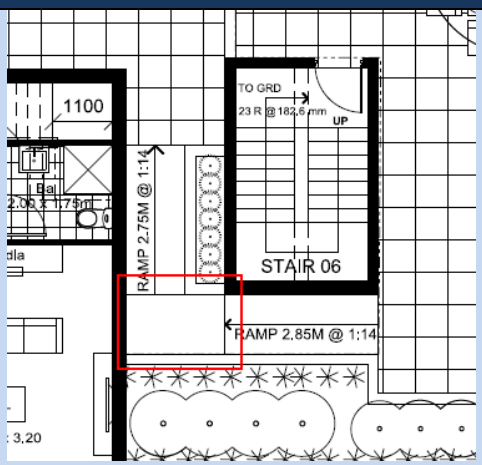
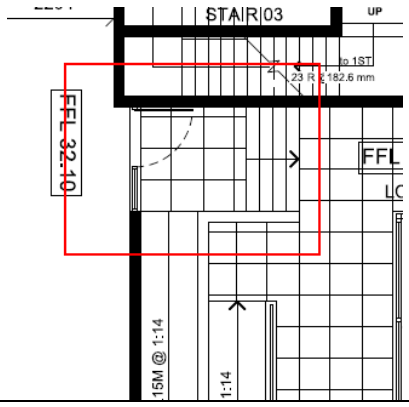
BCA DEEMED-TO-SATISFY PROVISION	Complies	Does Not Comply	NA or Informational	Compliance Required	COMMENTS/RECOMMENDATION
					
D2.12 Roof as Open Space			X		There are no roofs being relied upon for 'open space'
D2.13 Goings & Risers Note NSW D2.13				X	The construction of all stairs must be in accordance with this Clause. *Details to be provided at CC stage.*
D2.14 Landings				X	Landings appear to be provided as required, however full details should be provided at CC stage. *Details to be provided at CC stage.*
D2.15 Thresholds Note NSW D2.15				X	The threshold of a doorway must not incorporate a step or ramp at any point closer to the doorway than the width of a doorway (unless the door opens to a road or open space or a balcony) *Details to be provided at CC stage.*
D2.16 Balustrades and other Barriers Note NSW D2.16				X	Balustrades must be provided in accordance with this Clause. The following general requirements are applicable ○ Balustrades to balconies and landings must be not less than 1,000mm in height ○ Balustrades to the sides of stairs must be not less than 865mm high, measured along the nosing line ○ Balustrades must not have any openings which would allow a 125mm sphere to pass through ○ Balustrades serving a floor which is more than 4m above the surface beneath must not incorporate 'climbable elements' in the zone between 150mm and 760mm above the floor ○ Balustrades are also required to operable windows where the sill height is less than 865mm and it is possible for a person to fall more than 4m. ○ Balustrades in fire isolated stairs must comply with BCA Clause D2.16 (g) & (h) (i) (no opening >300mm & where rails are used the rail must not permit a 150mm sphere to pass through the nosing line and the bottom rail, openings between rails not to exceed 460mm) *Details to be provided at CC stage.*

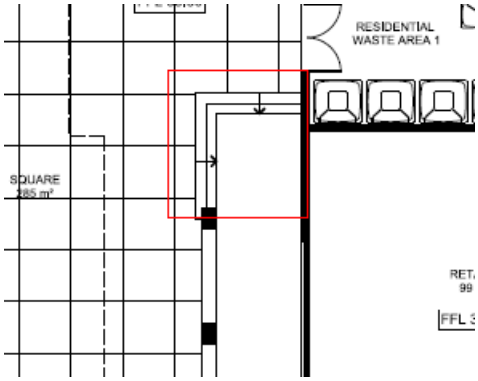
BCA DEEMED-TO-SATISFY PROVISION	Complies	Does Not Comply	NA or Informational	Compliance Required	COMMENTS/RECOMMENDATION
D2.17 Handrails		X			A handrail is required to at least one side of every stairway or ramp (except for stairs/ramps serving a change in elevation of less than 1m) The handrail must be continuous between stair flight landings and have no obstructions that will tend to break a hand-hold (except for newel posts , ball type sanctions or the like) *Note the additional handrail requirements in Part D3* The height of the handrail must be not less than 865mm above the nosing line of the stairs or ramp surface. As the fire isolated exits serve areas required to be accessible – they must be provided with handrails – designed and constructed to comply with Clause 12 of AS1428.1-2009. This generally requires the staggering of risers/treads at landings to allow the handrail to maintain a continuous height throughout the flight (see extract below). Particular attention to be paid to quarter landings (these are not typically practical) *Details to be provided at CC stage.*  **Non-compliance to be addressed** • The handrails throughout all fire stairs must be provided with handrails – designed and constructed to comply with Clause 12 of AS1428.1-2009 (this requires modification to the current design).

BCA DEEMED-TO-SATISFY PROVISION	Complies	Does Not Comply	NA or Informational	Compliance Required	COMMENTS/RECOMMENDATION
					  *Details to be provided at CC stage.*
D2.18 Fixed Platforms, walkways and ladders			X		Informational clause only noting fixed platforms, walkways and ladders for access can be in accordance with AS1657 to service areas.
D2.19 Doorways & Doors Note NSW D2.19	X				Swinging or sliding doors have are proposed as required.
D2.20 Swinging Doors		**X**			The final egress doors are required to swing in the direction of egress as required (or are sliding). The swing of doorways opening into the fire stair must not encroach more than 500mm into the required width of the exit (1m), or encroach by more than 100mm when fully open. *Details to be provided at CC stage.* **Non-compliance to be addressed:** • The door from Stair 5 at ground floor level swing against the direction of egress.
D2.21 Operation of Latch				X	All exit doors and doors in a path of travel to an exit must be readily operable without a key

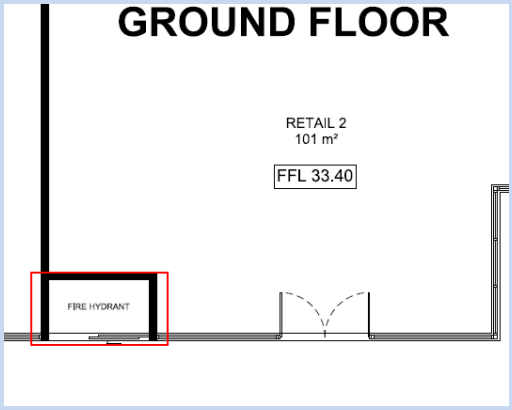
BCA DEEMED-TO-SATISFY PROVISION	Complies	Does Not Comply	NA or Informational	Compliance Required	COMMENTS/RECOMMENDATION
Note NSW D2.21					from the side that faces a person seeking egress by a single handed downward action or pushing action on a single device which is located between 900mm and 1100mm above the floor. *Details to be provided at CC stage.*
D2.22 Re-entry from Fire isolated exits			X		This clause does not apply to the subject building.
D2.23 Signs on Doors				X	Signage to be provided to fire egress doors as required by this clause. *Details to be provided at CC stage.*
D2.24 Protection of openable windows				X	This clause applies to all windows serving a bedroom in the class 2 parts. Where the window (serving a floor more than 2m from the surface beneath) has a sill height of less than 1.7m, the openable portion of the window must be fitted with: A device to restrict the window openings; or A screen with secure fittings *(refer to Clause D2.24 for requirements)* Note balustrading may also be required to windows *(refer to Clause D2.24 for requirements)* *Details to be provided at CC stage.*
Part D3 Access for People with Disabilities					
D3.1 General Building Access Requirements		**X**			Access is required to be provided as follows: **Class 2 parts (common areas only) –** from a pedestrian entrance required to be accessible to at least one floor containing sole occupancy units and to the entrance doors of each sole occupancy unit on that level AND where levels are served by a passenger lift, to all unit entrances and common areas of the levels served by a lift. An accessible path of travel between the street and the building appears to be available – the junction at the street boundary should be detailed to ensure the level change is in accordance with AS1428.1-2009 As each level is served by a passenger lift, access must be provided to the entrance doorway of all units. The circulation spaces to the doorways of the units should be provided in accordance with AS1428.1-2009. **The following needs to be addressed:**

BCA DEEMED-TO-SATISFY PROVISION	Complies	Does Not Comply	NA or Informational	Compliance Required	COMMENTS/RECOMMENDATION
					• General handrails to all common stairs and ramps should be detailed on the plans (note handrails need to be provided to each side of each stair/ramp & incorporate extensions and terminations in accordance with AS1428.1). Care should be taken to ensure that handrail extensions do not • Access to the entrance door to Unit 2.02, 2.03, 2.05 etc as shown in examples below does not satisfy AS1428.1-2009 – as it does not permit a 180 degree turn to be provided in front of the doorway (at least 1540mm x 2070mm is required)   • The landing between the ramps adjacent stair 6 at level 1 needs to be enlarged to allow for 90 degree turn in accordance with AS1428.1-2009 – generally 1.5m x 1.5m is required.

BCA DEEMED-TO-SATISFY PROVISION	Complies	Does Not Comply	NA or Informational	Compliance Required	COMMENTS/RECOMMENDATION
					 *Clause 9.16 of Bankstown Council's DCP states: Residential flat buildings, serviced apartments and shop top housing with 10 or more dwellings must provide at least one adaptable dwelling plus an adaptable dwelling for every 50 dwellings in accordance with AS 4299– Adaptable Housing.* *Therefore not less than **3 units must be Class A or B Adaptable Units** – Details demonstrating compliance to be submitted.* **Class 6 parts** – access must be provided to and within all areas normally used by the occupants. On grade access appears to be provided between Chester Hill Road and each of the retail tenancies. **The following issues need to be addressed** • The base of the ramp & doorway (adjacent stair 3 at ground floor level will need to be enlarged to provide AS1428.1 compliant circulation space (not requirement for extended handrails to the base of the ramp) 

BCA DEEMED-TO-SATISFY PROVISION	Complies	Does Not Comply	NA or Informational	Compliance Required	COMMENTS/RECOMMENDATION
					• Access between the 'square' and the retail level (as shown below) must be provided by lift of or ramp, where the square serves as a pedestrian entrance to the retail areas.  **Class 7a Parts** – access must be provided to any level containing accessible carparking spaces. Access between the basement levels and the building is provided by way of passenger lifts – Generally complies/ramps. *Full details must be submitted at CC stage*
D3.2 Access to Buildings		X			An access way must be provided to the building from: ■ the main points of pedestrian entry at the allotment boundary ■ from another accessible building connected by a pedestrian link ■ any accessible carparking space on the allotment
D3.3 Parts of building to be accessible				X	The stairways (other than the fire isolated stairways) are required to comply with Clause 11 of AS1428.1-2009. Ramps (other than the fire isolated stairways) are required to comply with Clause 10 of AS1428.1-2009. *Details including locations of handrails must be provided at CC stage.*
D3.4 Concessions			X		The concessions granted by this clause are not applicable to the subject development.
D3.5 Accessible Carparking				X	Not less than 1 accessible space for each 50 retail spaces must be provided. Although accessible carparking for the class 2 portion is not required under the BCA, not less than 1 accessible space per adaptable unit must be provided to satisfy AS4299.

BCA DEEMED-TO-SATISFY PROVISION	Complies	Does Not Comply	NA or Informational	Compliance Required	COMMENTS/RECOMMENDATION
					Access is generally provided to the Class 7a component containing carparking spaces via the passenger lift. *The number of proposed accessible spaces is generally in accordance with the above requirements. Details for the **accessible carparking spaces** to be provided (in accordance with AS2890.6-2009)* *Full details must be submitted at CC stage.*
D3.6 Signage				X	Signage in accordance with Specification D3.6 must be provided the exit doors at each level & must state "Exit" and "Level" followed by the floor level number. Signage must also be provided to facilities *Details to be provided at CC stage.*
D3.7 Hearing Augmentation			X		There is no hearing augmentation required or proposed (assumed).
D3.8 Tactile Indicators				X	Tactile indicators must be provided to the ramps and non-fire isolated stairways. In general, tactile indicators must be provided to warn people with a vision impairment that they are approaching, a stairway, ramp or area with a ceiling height or obstruction less than 2m (except for a doorway) *Details to be provided at CC stage.*
D3.9 Wheelchair seating spaces in Class 9b assembly buildings			X		There are no class 9b parts proposed.
D3.10 Swimming Pools			X		There are no pools proposed.
D3.11 Ramps			X		There are no ramps subject to this clause.
D3.12 Glazing On Accessways				X	Glazing to comply where required *Details to be submitted at CC stage*
SECTION E SERVICES & EQUIPMENT					
Part E1 Fire Fighting Equipment					
E1.3 Fire Hydrants		**X**			As the floor area of the building is considered over 500m^2, the building must be provided with Fire Hydrant coverage in accordance with BCA E1.3 and AS2419.1-2005. Attention should be paid to the location of the fire hydrant pump room (which is required to be accessed via open space or from a fire isolated exit). The pump room is also required to be fire separated from the remainder of the building in construction achieving a FRL of not less than 120/120/120. *A hydraulic engineer should provide full design*

BCA DEEMED-TO-SATISFY PROVISION	Complies	Does Not Comply	NA or Informational	Compliance Required	COMMENTS/RECOMMENDATION
					documentation prior to the issue of a Construction Certificate, which confirms that a fire hydrant system has been designed in accordance with BCA Clause E1.3 and AS2419.1-2005. **Non-compliance to be addressed** The fire hydrant booster is not provided with shielding as required by AS2419.1 (see location below 
E1.4 Fire Hose Reels				X	Fire hose reels are required to serve the class 6 and 7 parts of the building in accordance with AS2441-2005. *A hydraulic engineer should provide design documentation prior to the issue of a Construction Certificate, which confirms that a fire hose reel system has been designed in accordance with BCA Clause E1.4 and AS2441-2005* Required fire hose reels must be located within 4m of an 'exit'.
E1.5 Sprinklers				X	A sprinkler system is required to be provided throughout the carparking fire compartments which accommodate more than 40 vehicles under Table E1.5 and in accordance with AS2118.1-1999. *A hydraulic or fire services engineer must provide design details and certification at CC stage.*
E1.6 Portable Fire Extinguishers				X	Portable fire extinguishers must be provided throughout in accordance with AS2444-2001. *Details to be submitted at CC stage.*
E1.8 Fire Control Centre			X		A fire control centre is not required to be provided in accordance with Specification E1.8.
E1.9 Fire Precautions during construction				X	Required: PFE coverage required during construction.

BCA DEEMED-TO-SATISFY PROVISION	Complies	Does Not Comply	NA or Informational	Compliance Required	COMMENTS/RECOMMENDATION
					Details to be submitted at CC stage.
E1.10 Provision for Special Hazards			X		It is assumed that the building will not incorporate any additional hazards.
Part E2 Smoke Hazard Management					
E2.2 General Requirements Note: NSW Table E2.2b Specific Provisions Note NSW Specification E2.2a Smoke Detectors and Alarms Systems				X	The building is required to be provided with the following in relation to smoke hazard management: 1. The class 2 part of the building must be provided with a smoke detection and alarm system in accordance with Specification E2.2a (clause 3 or 4 and 6); and 2. The mechanical ventilation to the class 7a part, must comply with Clause 5.5 of AS1668.1-1998. *An electrical/fire services engineer (as appropriate) should provide design details and certification at CC stage.*
E2.3 Provision for Special Hazards			X		It is assumed that the building will not incorporate any additional hazards.
Part E3 Lift Installations					
E3.2 Stretcher Facility in Lifts				X	Stretcher facilities comprising a space which is able to accommodate a patient lying on it horizontally by providing a clear space not less than 600mm wide x 2000mm long x 1400mm high. *Details to be submitted at CC stage.*
E3.3 Warning Against the use of lifts in Fire				X	Warning signage must be provided near every call button for the lifts in accordance with this Clause. The sign must state: **"DO NOT USE LIFTS IF THERE IS A FIRE"** In 10mm high capital letters or 8mm high lower case letters *Details to be provided at CC stage.*
E3.4 Emergency Lifts			X		Emergency lifts are not required as the building has an effective height of less than 25m.
E3.5 Landings	X				Access and egress via the lift landings is generally in accordance with the DTS provisions of Section D.
E3.6 Passenger Lifts				X	The lifts are required to be 'accessible' under the provisions of Part D3 – i.e. be one of the types identified in Table E3.6a and have accessible features in accordance with Table E3.6b, and not rely on a constant pressure device for its operation if the lift car is fully enclosed. The size of the lift car should be not less than 1400 wide x 1600mm deep. *Details to be provided at CC stage.*

BCA DEEMED-TO-SATISFY PROVISION	Complies	Does Not Comply	NA or Informational	Compliance Required	COMMENTS/RECOMMENDATION
E3.7 Fire Service Controls				X	Required to be provided as the lift serves a storey with an effective height of *more* than 12m. *Details to be provided at CC stage.*
E3.8 Aged Care Buildings			X		The building is not an aged care building.
E3.9 Fire Service Recall Operation Switch				X	Required to be provided as the lift serves a storey with an effective height of *more* than 12m. *Details to be provided at CC stage.*
E3.10 Lift car service drive control switch				X	Required to be provided as the lift serves a storey with an effective height of *more* than 12m. *Details to be provided at CC stage.*
Part E4 **Emergency Lighting, Exit Signs and Warning Systems**					
E4.2 Emergency Lighting Requirements				X	Emergency lighting in accordance with AS2293.1-2005 is required throughout the building. *Design Engineer to certify their design meets BCA and AS2293.1-2005 at CC stage.*
E4.3 Measurement of Distance			X		Informational
E4.4 Design and Operation of Emergency Lighting				X	See E4.2.
E4.5 Exit Signs				X	Exit signage is required to serve the building in accordance with AS2293.1-2005. *Design Engineer to certify their design meets BCA and AS2293.1-2005 at CC stage.*
E4.6 Direction Signs NSW E4.6 Direction Signs				X	Where an exit is not apparent to an occupant, directional signage is required to be installed.
E4.7 Class 2 & 3 Buildings & Class 4 Parts: Exemption			X		The exemptions allowed by this clause are noted and can be applied to the class 2 parts.
E4.8 Design & Operation of Exit Signs				X	Compliance Required to AS2293.1-2005
E4.9 Sound Systems and Intercom Systems for Emergency Purposes			X		A sound system and intercom system for emergency purposes is not required to be provided in the subject building, as the building has an effective height of more than 25m.
SECTION F **HEALTH & AMENITY**					
Part F1 **Damp & Weatherproofing**					
F1.1 Stormwater Drainage				X	
F1.5 Roof coverings				X	
F1.6				X	

BCA DEEMED-TO-SATISFY PROVISION	Complies	Does Not Comply	NA or Informational	Compliance Required	COMMENTS/RECOMMENDATION
Sarking					
F1.7 Waterproofing of wet area				X	
F1.9 Damp-proofing				X	*Details demonstrating compliance with this Part will be required at CC stage.*
F1.10 Damp-proofing of floors on the ground				X	
F1.11 Provision of Floor Wastes				X	
F1.12 Sub Floor Ventilation				X	
F1.13 Glazed Assemblies				X	
Part F2 **Sanitary & Other Facilities**					
F2.1 Facilities in residential buildings				X	The required facilities appear to have been provided in each unit. It should be noted that each unit is required to be provided with a laundry tub. *It is noted that caretaker's facilities are required as there are more than 10 class 2 sole occupancy units. Caretaker's facilities comprising a closet pan and washbasin are provided at or near ground level.* *Full details to be provided at CC stage.*
F2.2 Calculation of number of occupants and fixtures			X		Noted.
F2.3 Facilities for Class 3 to 9 Buildings				X	Facilities must be provided for the class 6 retail parts. The number & type of facilities depends on the use of the tenancies. The common accessible unisex facility would be suitable for up to 10 staff. Sufficient space should be allocated for the required facilities. *Details to be provided at CC stage.*
F2.4 Facilities for People with Disabilities				X	Accessible facilities are required to be provided for the Class 6 component. The layout of the facility must be in accordance with AS1428.1-2009 *Details to be provided at CC stage.*
F2.5 Construction of Sanitary Compartments				X	In enclosed sanitary compartments, where the distance between the closet pan and the nearest part of the doorway of an inwards swinging door is less than 1.2m, the door must be fitted with lift off hinges. *Details to be provided at CC stage.*
F2.6 Interpretation: Urinals and washbasins			X		Noted.
F2.7 Microbial Control Note NSW F2.7 (Clause Deleted)			X		Clause Deleted in NSW.
Part F3					

BCA DEEMED-TO-SATISFY PROVISION	Complies	Does Not Comply	NA or Informational	Compliance Required	COMMENTS/RECOMMENDATION
Room Sizes					
F3.1 Height of Rooms and other spaces	X				2400mm required to habitable rooms and 2100mm to non-habitable including sanitary compartments. *The elevations indicate general compliance in this regard.*
Part F4 Light & Ventilation					
F4.1 Provision of natural light		X			Natural light is required to be provided to habitable rooms of the Class 2 parts in accordance with this Clause.
F4.2 Methods and extent of natural lighting				X	Natural light must be provided to all habitable rooms in the class 2 portion. The light must come from windows with a light transmitting area of not less than 10% of the floor area of the area which they serve. *A full window schedule should be submitted to demonstrate compliance.* *Particular attention should also be paid to windows where the sill height is required to be raised (under Clause C2.6/D2.24).* *In addition, where a window provides natural light to a room, and faces a boundary – the window must be set back not less than 1m and not less than 50% of the square root of the height of the wall.* *It appears that general compliance can be achieved.* *Full details to be provided at CC stage.*
F4.3 Natural light borrowed from adjoining room			X		Borrowed natural light is not proposed to be utilised.
F4.4 Artificial lighting				X	Artificial lighting must be provided in accordance with this Clause and the requirements of AS1680.0-2009. *Details to be provided at CC stage.*
F4.5 Ventilation of Rooms Note NSW F4.5				X	Any room occupied by a person for any purpose must be provided with either natural or mechanical ventilation in accordance with AS1668.2-1991. *Details to be provided at CC stage.*
F4.6 Natural Ventilation				X	Informational - Natural ventilation (if relied upon) must constitute 5% of the floor area of the area serving and open to a suitable outdoor, covered open area or adjacent shared room with suitable natural ventilation openings. *Attention should be paid to rooms which are required to have limited window opening sizes (e.g. under Clause C3.11 or D2.24)*

BCA DEEMED-TO-SATISFY PROVISION	Complies	Does Not Comply	NA or Informational	Compliance Required	COMMENTS/RECOMMENDATION
					Details to be provided at CC stage.
F4.7 Ventilation borrowed from adjoining room			X		If ventilation is borrowed from an adjoining room, the adjacent room must have a ventilating area that is 5% of all rooms being served. It appears that the building will not rely on 'borrowed' natural ventilation.
F4.8 Restriction of position of water closets and urinals			X		The bathrooms are typically not required o be provided with an airlock. *Details to be provided at CC stage.*
F4.9 Airlocks			X		See comments in Clause 4.8 above.
F1.11 Carparks			X		The mechanical ventilation system serving the carpark must comply with AS1668.2-1991. *Details to be provided at CC stage.*
F4.12 Kitchen local exhaust			X		There are no commercial kitchens proposed on the current plans.
Part F5 Sound Transmission					
F5.2 Determination of airborne sound insulation ratings				X	A form of construction required to achieve a sound insulation rating may achieve be determined in accordance with AS/NZS 1276.1 or ISO 717.1 or comply with Specification F5.2
F5.3 Determination of impact sound insulation ratings				X	Walls in the class 2 & 3 parts, where required to have an impact sound insulation rating must be of discontinuous construction i.e. provided with a 20mm cavity between the leaves *Details to be provided at CC stage.*
F5.4 Sound Insulation of floors between units				X	The floor separating storeys must comply with F5.4 of the BCA (Rw + Ctr (airborne) not less than 50 and Ln,w+Cl (impact) of not more than 62). *Details to be provided at CC stage.*
F5.5 Sound insulation of walls between units				X	Walls between residential SOUs must achieve an Rw + Ctr (airborne) not less than 50 and a Rw (airborne) if it separates a SOU from a plant room, lift or stair shaft, public corridor or the like – or parts of a different classification. Noting, discontinuous construction is also required (i.e. 20mm cavity) to separate a bathroom, sanitary compartment, laundry or kitchen in one sole-occupancy unit from a habitable room (other than a kitchen) in an adjoining unit. *Details to be provided at CC stage.*
F5.6 Sound insulation rating of services				X	Service pipes must be sound insulated in accordance with this clause. *Details to be provided at CC stage.*
F5.7 Sound isolation of pumps				X	Flexible couplings must be used at the point of connection between service pipes and circulating pumps.

BCA DEEMED-TO-SATISFY PROVISION	Complies	Does Not Comply	NA or Informational	Compliance Required	COMMENTS/RECOMMENDATION
					Details to be provided at CC stage.
F5.8 Walls between a bedroom and kitchen or laundry in a Class 9c building			X		There are no Class 9c parts in the subject building
SECTION J ENERGY EFFICIENCY					
ENERGY EFFICIENCY & BASIX CERTIFICATE				X	Energy Efficiency Consultant to review – MSA recommends BECA paul@beca.net.au

4.0 CONCLUSION

This report has assessed the design documentation for the proposed mixed use commercial & residential building to be located at 141 Waldron Road, Chester Hill NSW under the provisions of the Building Code of Australia (BCA), including relevant provision for "Access for People with Disabilities".

It is understood that this report will be submitted to Council as part of the Development Application for the proposed works.

The primary purpose of the report was to assess the proposed development works against the BCA and identify any significant non-compliance matters in comparison to the current Deemed-to-Satisfy (DTS) provisions of the BCA.

The table contained in Section 3.0 provides a full schedule of BCA compliance. With the exception of the clauses marked 'does not comply' (highlighted in blue), the proposed development shows a general ability to comply with the deemed-to-satisfy (DTS) provisions of the Building Code of Australia within the constraints of the current design.

Furthermore, there are several clauses where compliance cannot be determined from the current plans (i.e. those marked as 'Compliance Required' in Section 3.0 of this report). It should be noted that compliance with these items is not expected to necessitate significant design changes, and therefore can be addressed at Construction Certificate (CC) Stage, e.g. either in the CC architectural plans, or in a BCA Compliance Specification.

Further professionals may also be required to fully confirm detailed BCA compliance (at CC Stage).