



TEYS AUSTRALIA ABATTOIR WAGGA WAGGA, NSW

PROPOSED NEW SWITCHROOM, TEMPORARY WORKSHOP AND PLATE FREEZER ALTERATIONS AND ADDITIONS TO EXISTING ABBATOIR

BCA 2019 Amdt 1 DEVELOPMENT APPLICATION REPORT

Prepared By: McCarthy Consulting Group (NSW) Pty Ltd

Client : WILEY & Co. Pty Ltd

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REVISION STATUS AND APPROVAL					
REVISION	DATE	STATUS	WRITTEN	CHECKED	APPROVED
Ø	4/12/2021	FINAL	BAT	BG	-

Executive Summary

McCarthy Consulting Group (NSW) Pty Ltd have been engaged to review the Development Application drawings prepared by WILEY & Co. Pty Ltd of the proposed alterations and additions to the existing Teys Australia Abattoir located at Dampier Street, Wagga Wagga. This report details the findings of an assessment of the relevant provisions of Building Code of Australia (BCA) 2019 Amdt 1 in order to identify which areas of the design will be documented as DtS or Performance Solutions in order to comply with the BCA 2019 Amdt 1 in accordance with Part A2.1 BCA.

As part of its considerations of the development application it is understood that the consent authority will give consideration to the level of fire and life safety within the existing areas of the existing building impacted by the proposed works in accordance with Section 94 of the Environmental Planning and Assessment Act 1979, the purpose of this report is to assist the consent authority with this determination. In this regard it is to be noted that all new building works will be required to absolutely comply with the Performance Requirements of BCA 2019 Amdt 1.

1.0 Introduction

This report has been prepared at the request of Wiley & Co. Pty Ltd on behalf of Teys Australia as part of a development application for the proposed alterations and additions to the existing abattoir facility located at Dampier Street, Wagga Wagga to be submitted to the NSW Minister for Planning.

The following drawings prepared by Wiley & Co. Pty Ltd cover the extent of the proposed development:-

DRAWING NO.	REV	DATE	DESCRIPTION
00A001	6	25/11/2021	OVERALL SITE PLAN
00A002	6	25/11/2021	SITE PLAN - PART
14A000	4	25/11/2021	COVER PAGE
14A101	3	5/11/2021	GROUND FLOOR PLAN
14A201	4	25/11/2021	ELEVATIONS - NORTH & SOUTH
14A301	4	25/11/2021	BUILDING SECTIONS
35A000	11	25/11/2021	COVER PAGE
35A004	14	25/11/2021	PART SITE PLAN
35A101	12	25/11/2021	PLATE FREEZER FLOOR PLANS
35A102	13	25/11/2021	CONVEYOR FLOOR ROOM & CONTROL ROOM FLOOR PLANS
35A103	6	25/11/2021	PLATE FREEZER TOP OF CEILING & ROOF PLANS
35A201	12	25/11/2021	PLATE FREEZER ELEVATIONS - EAST & WEST
35A202	12	25/11/2021	PLATE FREEZER ELEVATIONS - NORTH & SOUTH
35A301	13	25/11/2021	CONVEYOR ROOM SECTION
35A302	6	25/11/2021	CONVEYOR ROOM SECTION
35A303	5	5/11/2021	PLATE FREEZER SECTION
35A304	6	25/11/2021	PLATE FREEZER SECTION
35A305	6	25/11/2021	PLATE FREEZER & VESSEL SECTION

2.0 Subject Building

The existing abattoir is a combination of co-joined and separate structures that have been added over the life of the building to form a complete processing facility. The existing buildings on the site house the following processing areas:

Cold Meat store, Slaughter and Offal, Boning room, Administration Buildings, Male and Female Amenities, Stock office, Canteen, Supervisors Office, Guard House, Skins Shed, Render Building, Engine Room and boiler, Workshop, carton Store, Chemical Store and Plantrooms. It should be noted the existing Skin Shed, By Products Building, Engine Room and Boiler House, Main Store, carton Store and Plastic/Cardboard Store, Male and female Amenities, Administration, Stock office and Canteen buildings are not considered to be part of the Large Isolated Building and thus not burdened by the relevant provisions of the BCA for those areas.

Recent additions and alterations to the existing building that have been completed included a New Chilled Carton Store, New Carton Palletizing, Load-out, New Gate House, New battery Charging and internal alterations within the existing carcase chillers and cold store areas to facilitate the revised processing arrangements. The floor area of the existing Cold Meat Store, Carcase Slaughter and offal house, Boning room and building is ~19,662m² and therefore exceeds the maximum floor area and volume limitations of the DTS provisions of a Type A constructed building. It is noted due to existing perimeter access arrangements that the existing building does not comply with the DTS provisions of a Large Isolated Building for the purposes of BCA. The proposed alterations and additions to the existing Large Isolated building do not vary the provisions of the BCA that would be applicable to a Large Isolated Building. i.e. the building floor area already exceeds 18,000m².

The proposed additions are comprised of the following areas –

- Plate Freezer
- Control Room
- Conveyor mezzanine
- Switchroom
- Dehumidifier
- Ammonia Vessel Room
- Conveyor Tunnel.

3.0 Limitations and Exclusions

The comments contained within this report have been based upon review of the architectural drawings listed and our familiarity with the existing property.

Excluded from our assessment are any comments in relation to other Authorities including:

- Town Planning Consent from the Minister;
- Occupational Health and Safety Legislation;
- Water, Drainage, Gas and Electrical Supply Authority;
- Telecommunications;
- Work Cover Authority.

4.0 BCA Building Description

For the purposes of the BCA 2019 Amdt 1 the building is described as follow-

4.1 Classification [Cl. A3.2]

- Class 7b – Cold Storage Building
- Class 8 – Boning Room, Active Chillers, Trimming Room, Packing and Load-out Facility, Sales Cooler, Plant Room, Kill Floor, Plate Freezer

4.2 Rise in Stories [Cl. C1.2]

The existing building has a rise in storey of 2. The proposed Plate Freezer additions however are considered to have a rise in storeys of three (3) due the conveyor mezzanine (note not a mezzanine as defined by BCA) being located between the Switchroom and Control Room.

4.3 Type of Construction [Cl. C1.1]

In accordance with the provisions of C1.1 of the BCA 2019 Amdt 1 the building is required to comply with therequirements of Type B construction. The existing building has previously been assessed as a building with a rise in storey of two (2) and thus the proposed additions alter the type of construction of the building unless the proposed additions could be separated from the existing building with a fire wall complying with Clause C2.7 of BCA, due to the operational need to maintain connection via the freezer tunnel is noted this operationally is not possible. Given the presence of insulated panel external walls the proposed addition and existing insulated external walls (being combustible) will need to be addressed as part of a fire engineered Performance Solution.

4.4 Effective Height [Cl. A1.1]

Note only - For the purposes of determining the required services and equipment, the effective heightof the building is less than 12m. The proposed additions do not significantly alter the effective height of the building.

4.5 General Floor Area Limitations [Cl. C2.2]

The floor area of the building currently and following the proposed alterations and additions exceeds the floor area and volume limitations as set out in Table C2.2 for a Type A construction building. BCA provides a DTS concession that describes the building as a Large Isolated Building via the provisions of Clause C2.3 and Table E2.2a BCA2019 Amdt 1which would require the proposed New Plate Freezer areas of the building is required to be provided with the following requirements:-

- Protected with sprinkler system complying with Specification E1.5 BCA2019 Amdt 1 throughout; and
- System of smoke exhaust or smoke and heat vents in accordance with Specification E2.2b or E2.2c; and
- Perimeter emergency vehicular access in accordance with Clause C2.4 BCA2019 Amdt 1.

It is understood the current design of the proposed New Plate Freezer additions proposes:

- A sprinkler system throughout the new areas of the building;
- Per BCA C2.4 at least 6m clear unobstructed perimeter emergency vehicular access around the building (note there are areas at the North East corner of the Plate Freezer that are not proposed to be within 18m of the subject building (to the new works) whilst there may be existing conditions that don't comply they are not subject to this application.
- A smoke hazard management system per the requirements of Table E2.2a will need to be addressed through Fire Engineered Performance Building Solution to demonstrate compliance with Performance Requirements EP2.2, DP4 and CP9 of BCA 2019 Amdt 1 due to the nature of the refrigerated environment of the Plate Freezer and associated areas.

5.0 Fire Safety Measures

The following essential fire safety measures are existing within the existing building. Where the proposed new works do not propose to satisfy the standard of performance listed in the schedule below a Performance Solution will need to be developed to address a standard not referenced in the current BCA.

Statutory Fire Safety Measure	Design/Installation Standard	Existing Measure
Automatic Fail Safe Devices	BCA Clause D2.21	✓
Automatic Fire Detection & Alarm System	BCA Spec. E2.2a & AS 1670 - 2015.	✓
Automatic Fire Suppression Systems	BCA Spec. E1.5 & AS 2118.1- 2017	✓
Building Occupant Warning System activated by the Sprinkler System	BCA Spec E1.5 Clause 8 and 8.7 (a) or Clause 8.7(b) of AS 1670 – 2015	✓
Emergency Lighting	BCA Clause E4.4 & AS/NZS 2293.1 - 2015	✓
Emergency Evacuation Plan	AS 3745 - 2010	
Exit Signs	BCA Clauses E4.5, E4.6 & E4.8 and AS/NZS 2293.1 - 2015	✓
Fire Control Centres and Rooms	BCA Spec E1.8	✓
Fire Hose Reels	BCA Clause E1.4 & AS 2441 – 2005	✓
Fire Hydrant Systems	Clause E1.3 & AS 2419.1 - 2005	✓
Perimeter Vehicular Access	BCA Clause C2.4	✓
Portable Fire Extinguishers	BCA Clause E1.6 & AS 2444 – 2001	✓
Required Exit Doors (power operated)	BCA Clause D2.19(d)	✓
Smoke exhaust	BCA Clause E2.2a & AS 1668.1- 2015	

Note:

The existing building is the subject of a Fire Engineered Performance Solution Report prepared by Omnii Fire Consultants Rev. 1 dated January 2019.

5.0 BCA 2019 Amdt 1 Assessment

Following is an assessment of the relevant DtS provisions of BCA 2019 Amdt 1 of the proposed alterations and additions to the existing Teys Australia Abattoir building located at Dampier Street Wagga Wagga.

Clause	Comment
Part A3.2 Classification	The building is classified as containing Class 7b and 8 parts. The proposed New additions will be considered Class 7b additions to the building.
B1.2 Loads	Design certification will be required to be provided by a registered practising structural engineer verifying that the structural elements are designed in accordance with the BCA and relevant Australian Standards as part of the Construction Certificate Application package.
B1.3 Materials and forms of construction	General requirement is that termite treatment shall be in accordance with AS 3660 where primary building elements are proposed that are subject to attack. It has been advised that the building is steel and concrete thus termite barrier requirements are not applicable.
C1.1 Type of Construction	The New Plate freezer additions is required to be constructed in accordance with Type B construction. Note loadbearing external walls within 18m of a fire source feature require a FRL in accordance with Table 4 of Specification C1.1.
C1.2 Calculation of Rise In Storeys	The existing building is considered to have a rise in storey of two (2). The proposed plate freezer additions proposed has a rise in storey of three (3).
C1.8 Lightweight Construction	Where lightweight construction is proposed for fire rated elements. Certification that the installation is in accordance with Specification C1.8 BCA2019 Amdt 1. is required to be provided to the Principal Certifying Authority prior to issue of the Occupation Certificate.
C1.10 Early Fire Hazard Properties	General note only: Installation certification of compliance with early fire hazard indices of materials which would include all floor and wall coverings in accordance with Specification C1.10 BCA 2019 AMDT 1. i.e. carpet and vinyl is required to be provided to the Principal Certifying Authority prior to issue of the Occupation Certificate. This clause may not be applicable pending if any linings are installed IE. Vinyls.
C2.2 General Floor Area Limitations	As the building will have a floor area of greater than 18,000m ² it is assessed as a Large Isolated Building. The proposed additions do not alter the status of the building as a Large Isolated Building.
C2.3 Large Isolated Buildings	It is understood the proposed new Plate freezer will benefit from an extension of the existing sprinkler system throughout, perimeter
	access for fire fighting appliances to the additions to the existing building will be provided and the requirements of smoke hazard management will be addressed as a Fire Engineered Performance Building Solution to demonstrate compliance with the Performance Requirements of BCA 2019 Amdt 1 given the nature of the proposed additions and the proposed form of construction.
C2.4 Requirements for open space	The proposed works do not alter the existing emergency vehicular access arrangements in this area of the existing building and will be addressed as a Fire Engineered Performance Building Solution to demonstrate compliance with the Performance Requirements of BCA 2019 Amdt 1 .

C2.12 Separation of equipment	Equipment will be separated by construction having a FRL of 120/120/120 where required.
C2.13 Electricity supply system	Where a substation or MSB is located within the building it will be separated by no less than 120/120/120/ construction.
D1.2 Number of exits required	Due to the size of the building multiple exits are distributed throughout the building. The proposed New Plate Freezer will demonstrate compliance with the relevant Performance Requirements of BCA 2019 Amdt 1 i.e. DP4, EP2.2. and CP9. Via a fire engineering framework consistent with the protocols of BCA 2019 Amdt 1.
D1.4 Exit Travel Distances	Travel distance within the proposed Plate Freezer to a point of choice and to an exit are capable of demonstrating compliance with the Performance Requirements of Part D of the BCA 2019 Amdt 1. The proposed works will be demonstrated to not detrimentally affect the existing conditions within the existing building.
D1.5 Distances between alternative exits	Travel distance within the proposed Plate Freezer to a point of choice and to an exit are capable of demonstrating compliance with the requirements of Part D of the BCA 2019 Amdt 1. The proposed works will be demonstrated to not detrimentally affect the existing conditions within the existing chiller and palletising areas of the existing building.
D1.6 Dimensions of exits	The population of the building will be determined in accordance with Table D1.13 or another appropriate in order to calculate the required aggregate exit width in accordance with DtS BCA 2019 AMDT 1. The proposed works are considered capable of demonstrating compliance with the requirements of Part D of the BCA 2019 AMDT 1
D1.10 Discharge from exits	Appropriate barriers will be provided to maintain egress paths to a public road within open space in accordance with DtS BCA 2019 AMDT 1.
D1.13 Number of persons accommodated	The population of the building will be determined in accordance with Table D1.13 or another appropriate method in order to calculate the required aggregate exit width and sanitary facility requirements in accordance with DtS BCA 2019 AMDT 1.
D2.7 Installations in exits and paths of travel	Where the installation of EDB or communication enclosures they are to be constructed or lined of non combustible materials and all openings smoke sealed.
D2.9 Width of stairways	The proposed works are considered to be capable of demonstrating compliance with DtS BCA 2019 AMDT 1.
D2.19 Doorways and doors	All 'exit' doors to swing in the direction of egress. Note this requirement only applies for dedicated 'exit' doors not doors in the path of travel to exits.
D2.20 Swinging doors	As above.
D2.21	The general requirement of D2.21 is that door furniture (used to unlatch and
Operation of latch	operate doors) are to be single handed action located between 900mm and 1100mm above FFL.
D2.23 Signs on doors	Fire doors are to be appropriately signed in accordance with D2.23 BCA. i.e. "FIRE SAFETY DOOR DO NOT OBSTRUCT" in contrasting lettering not less than 20mm high.

D3.1 General building access arrangements	Due to the nature of the activities and the associated Occupational Health and Safety considerations the proposed new additions and areas of internal alterations will gain the benefit of a concession under Clause D3.4 of the BCA and Access to Premises Standard.
D3.2 Access to building	Due to the nature of the activities and the associated Occupational health and safety considerations the proposed new additions and areas of internal alterations will gain the benefit of a concession under Clause D3.4 of the BCA and Access to Premises Standard.
D3.4 Parts of building to be accessible	Due to the nature of the activities and the associated Occupational health and safety considerations the proposed new additions and areas of internal alterations will gain the benefit of a concession under Clause D3.4 of the BCA and Access to Premises Standard..
E1.3 Fire Hydrants	The existing fire hydrant ring main and system will be extended to the proposed new chilled carton store additions and alterations mate to the existing system to ensure coverage is maintained throughout the proposed works and areas where alterations are to occur in accordance with AS 2419.1 Certification required verifying hydrant coverage and location complies with AS 2419.1 from the hydraulic engineer at Construction Certificate application stage.
E1.4 Hose Reels	Certification required verifying hose reel location and coverage to all new works and areas where alterations to the existing building complies with AS 2441 from the hydraulic engineer at Construction Certificate application stage.
E1.5 Sprinklers	Certification required verifying the existing sprinkler system will be extended to the proposed new Plate freezer areas and where alternations are made to the existing building compliance with the appropriate standards are maintained from the fire services engineer at Construction Certificate application stage.
E1.6 Portable Extinguishers	Certification required from fire services consultant verifying PFE location complies with AS 2444 at Construction Certificate application stage.
E1.8 Fire Control Centres	Existing FCC to remain. The proposed works do not alter the existing approved arrangements on the site.
Table E2.2a / E2.2b and Specification E2.2b Smoke Exhaust Systems	Smoke hazard management to be the subject of a fire engineered Performance Solution addressing Performance Requirements DP4, EP2.2 and CP9 where applicable at Construction Certificate application stage.
E4.2 Emergency Lighting	Certification required from Electrical Engineer verifying the emergency lighting system complies with AS/NZS 2293.1 at Construction Certificate application stage.
E4.4 Design and operation of emergency lighting	Certification required from Electrical Engineer verifying the emergency lighting system complies with AS/NZS 2293.1 at Construction Certificate application stage.
E4.5 Exit signs	Exit signs are to be provided to all exits and indicating direction. Certification required verifying the location and design complies with AS/NZS 2293.1 from the electrical engineer.
E4.8 Design and operation of exit signs	Certification required verifying the location and design complies with AS/NZS 2293.1 from the electrical engineer.
F1.1 Stormwater drainage.	Certification required verifying stormwater drainage design complies with AS/NZS 3500.3.2 from hydraulic engineer at Construction Certificate application stage.

F1.5 Roof coverings	Certification required verifying roof covering complies with AS 1562.1 at Construction Certificate application stage.
F1.6 Sarking	Certification required confirming sarking installed complies with AS/NZS 4200 at Construction Certificate application stage.
F1.7 Waterproofing of wet areas in buildings	Certification required that water proofing to wet areas complies with AS 3740 at Construction Certificate application stage.
F1.9 Damp-proofing	Certification required that the design of damp proofing is in accordance with AS 2870 at Construction Certificate application stage
F1.10 Damp-proofing of floors on the ground.	As above.
F2.3 Facilities in Class 3 to 9 Buildings, Table F2.3	Whilst floor area increases the work population does not therefore no additional toilet facilities required as a result of the addition
F2.4 Facilities for people with disabilities	Whilst floor area increases the work population does not therefore no additional toilet facilities required as a result of the addition
F4.4 Artificial lighting	Electrical engineer to certify lighting designed throughout building complies with AS 1680.1 at Construction Certificate application stage.
F4.5 Ventilation of rooms	Certification required that the design of mechanical ventilation and air conditioning is in accordance with AS 1688.2 required from mechanical engineer at Construction Certificate application stage.

Energy Efficiency [Part J]

Part J Energy Efficiency provisions are relevant to the proposed works, given the size of the proposed additions relative to the existing building it is our opinion, at this time that all areas of new works are to comply with the provisions of the BCA 2019 AMDT 1. Whilst we presume the design team will take a modelled performance based approach, details are required to be provided to the Accredited Certifier prior to the issue of the Construction Certificate demonstrating the proposed method of compliance. However, clearly where existing infrastructure (external walls, lighting, mechanical ventilation) is not being altered there is no requirement to revisit these aspects of the existing development.

As a side note, the air conditioning system/s proposed to the Chilled Carton Store and the Cold Room area (including other areas of that nature) may be considered as a service only used for direct active cooling of those spaces. As such, the addition of the air conditioning to these spaces does not qualify or define those spaces as 'conditioned spaces' for the purposes of determining requirements under Section J [Per BCA A1.1]. That being said, the requirements for building fabric, glazing only relate to the envelope of 'conditioned spaces'.

6.0 CONCLUSION

The above assessment has been carried out in accordance with the provisions of the BCA 2019 AMDT 1 unless otherwise noted. The design of the proposed alterations and additions are considered capable of achieving compliance with provisions of the Building Code of Australia 2019 Amdt 1.