276-294 Wellington Road Mulgrave

Regulatory Report

Prepared by Sampson Wong
SWA Consulting
M. 0439 313 574
E. sampson@swaaust.com

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EXECUTIVE SUMMARY

This report is intended to provide a review of the compliance requirements of the proposed development, in relation to the Regulatory framework, of the Building Act, Regulations and National Construction Code.

The following key issues have been identified (refer to the relevant sections of the report for further details);

1. Clarify capacity of the existing structure and fire services
2. Clarify what fire services are to be added to the building
3. Clarify the number of disabled accessible units are to be provided
4. Please clarify disabled access from the site boundary, to the main entry and disabled car space to the main entry and to disabled units
5. Please clarify location of boundaries and location of external openings in relation to
6. Please clarify location of existing fire services
7. Fire Engineering required to vary;
    a. Exit travel distances
    b. Use of spiral stair
    c. Openings
    d. Length of corridors
    e. Fire rating
8. The spiral stair issues, will need fire engineering approval and please clarify whether the supplier has a performance solution for its use in public areas, but ultimately the decision will come down to whether the FRV will permit their use for their staff to access with their full gear on to access their equipment etc
9. Clarify the mode of rental and whether there are any shared accommodation or board houses

1.0 INTRODUCTION

The proposed development is for 2 storey development

Number of Storeys	2
Rise in Storeys	2
Classification	3
Type of Construction	Type B
Effective Height	3.6m

Summary of Floor Areas and relevant populations where applicable:-

Part of Project	Classification	Floor Area (m^2)	Volume (m^3)	Assumed Population
Ground	3	4500	15000	n/a
1st Floor	3	950	4000	n/a

The report utilises the applicable provisions of the Building Act 1993 (as amended), the Building Regulations 2018 and the Building Code of Australia 2022. The report is intended as an overview of the relevant provisions of the Building Code of Australia for assistance only. Detailed drawings and associated review will still be required as the final design is developed.

This report is based upon the review of the following documentation:

Architectural drawing prepared by Idle Architecture, Drawing Numbers 202504.

Upgrade to Existing Buildings

The amount of building works proposed to be undertaken exceeds more than 50% of the original building volume of the building, and therefore, the building regulations requires the existing building to be assessed against current requirements. However, the relevant building surveyor has discretion to accept the existing arrangements, provided a reasonable level of safety, health and amenity for the occupants within the building is maintained.

As it is a change of use, we will make some investigation into the capacity of the existing building and elements.

2.0 REGULATORY

2.1 Town Planning Permit:

A Town Panning Permit will be required for the development. A copy of the permit and associated endorsed drawings will be required prior to the issuing of the Building Permit for that component of works. The endorsed drawings and all relevant conditions will need to be satisfied and accurately reflect the building/construction drawings.

2.2 Heritage Act Approval:

Clarify if the building is on the heritage register and if Approval from Heritage Victoria is required to be obtained.

2.3 Copy of Certificate of Title:

A copy of the Certificate of Title and associated plan of subdivision is required. Where it is proposed to construct any part of the building over, under or within an easement, the consent of the relevant authority and Council is required prior to the issue of the Building Permit.

2.4 Storm Water Discharge / Council Consents:

The approved storm water discharge point will be required from Council.

Property information will be required in order to determine if the property is in a flood zone, overland flow or is subject to termites.

3.0 FIRE PROTECTION

3.1 Fire Compartment Arrangements:

The BCA stipulates three levels of fire resistant construction, which is based upon the Rise in storeys and Class of Building. Each of these types of construction has maximum floor area and volume limitations.

Based upon the rise in storeys and use of the Building, it is required to be Type B Construction.

The building has been assessed on the basis of the following fire separation / compartmentation within the development;

- Fire compartmentation of the building at each floor level and at each SOU

3.2 Fire Resistance:

The building should be constructed generally in accordance with the relevant provisions of Specification C1.1 of the BCA applicable to Type B Construction, which requires the following fire ratings:

The existing structure and fire rating would had achieved 90 minutes, clarification required on the existing construction of structure

External Walls	90/90/90
Fire Walls	90/90/90

Fire Stair / Shaft Walls	90/90/90
Main Apartment Corridor	60/60/60
Walls Bounding Apartments	60/60/60
Service Shaft Walls	60/60/60
Floors	90/90/90
Walls, Beams, Columns Supporting Floors	90/-/-
Walls, Beams, Columns Supporting Roof	-/-/-
Roof	Non combustible

Please note the external wall is required to be non combustible and this is for every element, including insulation will require a 1530.1 test report to permit

Bin chute fire rating is 90/90/90, self closing fire door is required to the chute as well as the room or cupboard (as this will be requested by FRV)

Verification is required of the existing building, that elements requiring fire rating will get the required fire rating, or if fire engineering will be adopted for the variations

Other passive fire protection issues that will need to be addressed in detailed documentation phase include:

- Lift Motor Rooms,
- Emergency Power Supply,
- Emergency Generators,
- Electricity Supply,
- Boilers or Batteries,
- Hydrant Pump Rooms,
- Sprinkler Pump Rooms

The above areas are to be separated from the remainder of the building by construction achieving a minimum fire resistance level of 120 minutes.

3.3 Fire Hazard Properties:

The fire hazard properties of fixed surface linings and mechanical ductwork will also need to be addressed within the detailed documentation phase pursuant to specification C1.10 Building Code of Australia.

3.4 Vertical Separation of openings in external walls:

As building is only type B building, so spandrels not required to be provided

3.5 Public Corridors: Class 2 and 3 Buildings:

Public corridors exceeding 40m in length to be divided into intervals of not more than 40m by smoke proof walls.

3.6 Protection of Openings:

The prescriptive provisions of the BCA stipulate that openings within structural elements required to have an FRL shall be protected as follows:

- Any external opening within 3m of the boundary protected by -/60/- fire rated construction, or externally located wall wetting sprinklers;

- Penetrations through fire rated floors to be protected either by a tested prototype (eg fire collar, fire damper, etc) or be installed within a fire rated shaft achieving the required FRL of 90/90/90
- Any penetration through a wall or room required to have an FRL is to be protected either by a tested prototype (eg fire collar, fire damper, etc) or be installed within a shaft achieving the required FRL of 90/90/90
- Self-closing -/60/30 fire doors to the doors opening to the fire isolated stairs

Note that where fire dampers, fire collars, etc are utilised, allowance needs to be made for access hatches to be provided within the walls/ceilings to ensure that maintenance access if provided.

Fire engineering is required to permit openings within 3.0m of the title boundary

4.0 ACCESS AND EGRESS

4.1 Egress:

The egress provisions for the proposed building are provided by the following exits:

- Non Fire Isolated Stairs
- External Doors

The following issues arise as part of the design which requires fire engineering;

1. Swing of exit doors
2. Exit travel distances exceed the max permitted

Other detailing issues that will need to be addressed include:

- Door Hardware
- Exit Door Operation
- Stair Construction
- Handrail and Balustrade construction

4.2 Exit Travel Distances:

The location of exits should not exceed:
Ground

- 20m to a single exit or point of choice and where two exits are provided, a maximum of 40m to one of those exits; and
- exits shall be located to not be more than 60m apart and not closer than 9m

Level 1

- 6m from an exit or from a point of choice
- Alternate exits not more than 45m apart

Fire engineering is required for the exit travel distances

And as spiral stairs are proposed, ultimately fire engineering is required and it will come down to negotiation with the fire brigade as to whether they will permit the use of the spirals, as they will need to be satisfied that they can use the stairs with their equipment on.

4.3 Dimensions of Exits:

Minimum dimensions of 1000mm and 2000mm height to be provided within exits, with the paths of travel should provide a minimum width of 1000mm (note that all maintenance access, cat walks, etc may comply with AS1657 in which case a 600mm clear width is required).

The exit width provided is 3.0m.

The total aggregate exit width within the building caters for 320 occupants.

Doorways are permitted to contain a clear opening width of 750mm with a height of 1980mm as part of egress requirements. Access for persons with disabilities however requires a clear doorway opening width of 850mm (i.e minimum 920 mm doors).

4.4 Balustrading and Handrail:

Balustrading to a height of 1000mm with a maximum opening of 125mm in any direction should be provided adjacent to balconies, landings, corridors etc where located adjacent to a change in level exceeding 1000mm.

Where it is possible to fall more than 4m to the finished floor / ground surface below, the balustrade shall not contain any horizontal or near horizontal members that facilitate climbing.

5.0 SERVICES AND EQUIPMENT

5.1 Fire Hydrants:

A system of Fire Hydrants is required to be provided, please provide pressure and flow calculations for review.

Pressure and flow information will be required to confirm the required pressures and flow to the system, depending on the type of hydrant to be utilized;

- Attack hydrant (within fire stair) 350 kPa
- Hydrants on a pump station, 700 kPa

The flow requirements depend on the size of the fire compartment and type of building, for this project the requirements are 10L/s with 2 hydrants operating.

The building is required to be provided with a booster assembly as part of the fire hydrant requirements. The booster is required to be located attached to the building at the main entry. If remote from the building at the main vehicle entry or with sight of the main entry of the building within 20m of a hardstand area.

We suggest a pressure test be conducted now to verify whether the fire services out of the main will provide sufficient pressure and flow for the fire services or whether a pump and tank system required to be provided.

And whether there is a system of internal or external hydrants are to be used.

FRV report and consent required for the following;

- Booster location
- Booster protection
- Protection of front tenancy
- Mag flow meter
- Sprinkler control valve location
- Pump room location

5.2 Fire Hose Reels:

Not Required, a system of portable fire extinguisher maybe provided in lieu of

5.3 Automatic Sprinkler Protection:

Not Required unless the following parameters are exceeded;

Shared accommodation building: A Class 3 building that is a boarding-house, chalet, guest house, lodging-house, backpacker accommodation or the like, or a residential part of a *hotel offering shared accommodation* (but is not a *residential care building (Vic)*, a motel or a residential part of *school*, *health-care building* or detention centre) having—

(a) more than one *sole-occupancy unit* of which any *sole-occupancy unit* has sleeping facilities capable of accommodation 3 or more unrelated persons; or

(b) Sleeping facilities capable of accommodation 13 or more unrelated persons.

5.4 Smoke Hazard Management:

Smoke hazard management provisions required within the building are as follows:

One of the following active fire safety systems

- Automatic air pressurisation in accordance with BCA specification E2.2b, or
- Zone smoke control, or
- Smoke detection and alarm system, or
- Sprinkler System

5.5 Lift Installation:

The passenger lifts to be installed are to be:-

- Fitted with warning signs, fire service controls in accordance with AS1735.2
- Be provided with the following in order to satisfy disabled lift minimum requirements:
  - A handrail in accordance with AS1735.12,
  - Minimum internal floor dimensions as specified in AS1735.12,
  - Fitted with a series of door opening sensory devices which will detect a 75mm diameter or across the door opening between 50mm and 1550mm above floor level,
  - Have a set of buttons for operating the lift located at heights above level complying with AS1735.12

5.6 Exit Signs and Emergency Lighting:

Emergency Lighting and Exit Signs indicating exit location paths of travel to exits to be provided in accordance with AS2293.

Details are required to be provided for review.

Emergency lighting details are to be provided for our review.

6.0 HEALTH AND AMENITY

Each apartment is required to be provided with the following:

- A kitchen sink and facilities for the preparation and cooking of food; and
- A bath or shower; and
- A closet pan and wash basin; and
- Clothes washing facilities comprising at least one wash tub and space for a washing machine; and
- Clothes line of at least 7.5m, or space for one heat operated drying device within the same space as the clothes washing.

6.1 Floor Wastes:

Floor wastes to be provided within bathrooms and laundries where located above another sole occupancy unit. The floor shall be sloped towards these wastes.

Please note under BCA2022, where a floor waste is provided regardless of whether it is required, if provided the entire flood must slope to the waste (of the room)

6.2 Light and Ventilation:

Natural light and ventilation is to be provided to all habitable rooms at a rate of 10% and 5% of the floor area of the rooms respectively.

6.3 Sound Transmission and Insulation:

Building elements between different SOU's should provide the following R_w levels.

Location	Notes	Sound Insulation Requirement
Walls separating habitable rooms		$R_w + C_{tr} \geq 50$
Walls separating habitable room and kitchen or bathroom	Wall must be of Discontinuous Construction	$R_w + C_{tr} \geq 50$
Floor separating habitable rooms	Impact isolation required	$R_w + C_{tr} \geq 50$ $L_{n,w} + C_I \leq 62$
Duct, soil, waste or water supply pipe, including pipes that is located in a floor or wall cavity, serves or passes through more than one room	Adjacent habitable room or Adjacent non-habitable room	$R_w + C_{tr} \geq 40$ or $R_w + C_{tr} \geq 25$
Door to habitable room		$R_w \geq 30$

* Please note for walls requiring impact resistance an air gap between leafs of the wall construction is required to be provided.

7.0 ENERGY EFFICIENCY

7.1 Energy Efficiency:

The proposed site will be located in a climate zone 6.

Due to special nature of the building some energy provisions may not be appropriate.

A new class 2 (apartment) building must achieve an average house energy rating of at least an average of 6 stars for sole occupant units and not less than 5 stars

Lighting must not exceed 5W/m^2 inside and 4 W/m^2 in the balconies etc.
The air conditioning and mechanical are required to follow J5.0 as follows:

Air Conditioning

- Be capable of being inactivated in each Sole Occupancy Unit.
- Where motorised dampers, be close when system is inactivated
- Have any supply and return ductwork installed
  - Heating or Cooling only R1.0
  - Heating and Cooling R1.5

- Where ductwork is conveying cold air, a vapour barrier must be installed on the outside of the insulation.

When an air conditioning system provides mechanical ventilation as well and the capacity exceeds 35 kwr (in climate zone 4-8), the system must be equipped with an outdoor air economy cycle.

Serving more than 1 Sole Occupant Unit:

Each Sole Occupant Unit to be able to thermostatically control the temperature of each zone or Sole Occupant Unit.

Not control temperature by actively mixing heated or chilled air by more than a change in temperature of 7.5k.

Air Flow Rate:

When the air flow rate exceeds 1000L/s, it must be designed so the total motor shaft power of the fans do not exceed the following;

Air-conditioning sensible heat load (W/m^2 of the floor area of the conditioned space)	**Maximum fan power (W/m^2 of the floor area of the conditioned space**	
	For an air-conditioning system serving not more than $500m^2$	**For an air-conditioning system serving more than $500m^2$**
Up to 100	4.1	6.4
101 to 150	7.3	10.4
151 to 200	10.5	14.1
201 to 300	17.1	21.5
-301 to 400	23.6	28.4

Requirements do not apply to packaged Air Conditioned Units, exhaust systems, high efficiency air filters, or energy reclaim systems.

Mechanical:

- Be capable of being inactivated.
- When serving a conditioned space, not provide ventilation in excess of 20% of the rate of required (as determined) other than to;

(i) Balance the required ventilation, due to exhaust ventilation
(ii) Part of an exhaust system in a health care building
(iii) As free cooling, with air conditioner switched off i.e. when external temperature is less than indoor temperature.

Air Flow Rate in Excess of 1000 L/S

- Comply with the fan to motor shaft power to air flow ratio.

(i) an energy reclaim system that preconditions outside air or L/s without filters;
(ii) the ability to modulate the system in pursuant to the number of occupants in lieu of the maximum or 0.75 L/s where filters are installed.

Air Conditioned Packaged Units

Must have an energy efficiency ratio of (Watts);

- 65 kWr to 95 kWr2.7
- 95 kWr to more 2.8

Within the sole occupancy units 5 stars for all dwellings in the building and a minimum house energy rating of at least 3 stars for each dwelling in the building. Details of the associated assessment of an accredited person are to be submitted as part of the detailed design.

8.0 ACCESS FOR PEOPLE WITH DISABILITIES

8.1 Applicability:

The following is required to be provided with disabled accessible space;

Apartment (Class 3 buildings)

- From the pedestrian entrance to at least 1 floor containing Single Occupancy Units and to the entrance door of all Single Occupancy Units on that floor, and to at least one type of each common facility, such as gyms, shops, laundries (shared), gaming rooms etc.

- Where a 1428.1 compliant lift or ramp is provided in addition to the above and access is required to and within all spaces, and to the entrance of doors to single occupancy units on the levels, served by the lift or ramp.

Where individual class 3 Single occupancy units are provided:

1 to 10 single occupancy units	To and within 1 accessible single occupancy units
11 to 40	To and within 2 accessible single occupancy units
41 to 60	To and within 3 accessible single occupancy units
61 to 80	To and within 4 single occupancy units
81 to 100	To and within 5 single occupancy units
101 to 200	To and within 5 single occupancy units and 1 for every 25 single occupancy units over 100
201 to 500 single occupancy units	To and with an accessible single occupancy units, plus 1 for every 30 units in excess of 200 units
More than 500	To and with an accessible single occupancy units, plus 1 for every 50 units in excess of 500 units

* Not more than 2 required accessible units may be located adjacent to each other
And
* where more than 2 single occupancy units are required to be accessible, they must be indicative of the range of units/rooms available.

8.2 Access to buildings:

Access must be provided to a site from;

1. The main points of pedestrian entry at the allotment boundary

2. From another building (required to be accessible) linked by a pedestrian link
3. From any accessible car parking spaces

And to the actual building, access must be provided via the main principal entrance and;

1. Not less than 50% of all pedestrian entries (including the principal entrance) and
2. In buildings over 500m^2 in floor area, a non accessible entrance must not be located more than 50m from an accessible entrance.

And where a pedestrian entry contains multiple doors, the following is required;

- Entrance containing not more than 3 doors, at least one of the door leaves must be accessible.
- Where an entrance contains more than 3 doors, not less than 50% of the door leaves must be accessible.

A door is considered to be accessible if it is automatic (open and closing) or is more than 850mm in clear opening width and contains the required door circulation space.

8.3 Accessibility within Building:

Within the building the following are required;

- Door circulation space as per AS1428.1 Clause 13.3
- Doorways must have a clear opening of 850mm;
- Passing spaces (1.8m wide passages) must be provided at maximum of 20m intervals
- Within 2.0m of end access ways/corridors, turning areas spaces are required to be provided.
- Carpet pile height of not more than 11mm to an adjacent surface
- Any glazed capable of being mistaken for a doorway or opening must be clearly marked (or contain chair rail, hand rail or transom as per AS 1288 requirements)

8.4 Car parking:

Is to comply with AS 2890.6 and where less than 5 spaces are provided (in total), disabled car parking bays need not be marked.

Required to be provided at the following rates

Calculating by multiplying the total number of parking space by the percentage of total accessible Single occupancy units/bedrooms to the total number of single occupancy units or bedrooms.

8.5 Tactile indicators:

Tactile indicators are required to be provided to warn occupants of all stairs (except Fire Isolated stairs) and ramps regardless of public nature or private environment and where an overhead obstruction occurs less than 2.0m above the finished floor level.

Exemptions apply in aged care facilities to include a down button to handrails in lieu of tactile indicators.

Reference should be made to Section 8.7 for locations.

8.6 Lifts:

Lifts compliant to 1428.1 must be provided, where required to be provided, with a minimum size of 1100 x 1400mm in size – with appropriate handrails and auditory commands.

8.7 Stair locations:

Stairs shall be constructed as follows:

a) Where the intersection is at the property boundary, the stair shall be set back by a minimum of 900mm so that the handrail TGSIs do not protrude into the transverse path of travel.
b) Where the intersection is at an internal corridor, the stair shall be set back in 300mm, so the handrails do not protrude into transverse path of travel.
c) Stairs shall have opaque risers.
d) Stair nosing shall not project beyond the face of the riser and the riser may be vertical or have a splay backwards up to a maximum 25mm.
e) Stair nosing profiles shall-
    a. Have a sharp intersection;
    b. Be rounded up to 5mm radius; or
    c. Be chamfered up to 5mm x 5mm
f) At the nosing, each tread shall have a strip not less than 50mm and not more than 75mm deep across the full width of the path of travel. The strip may be set back a maximum of 15mm from the front of the nosing. The strip shall have a minimum luminance contrast of 30% to the background. Where the luminous contrasting strip is affixed to the surface of the tread, any change in level shall not exceed a difference of 5mm.

8.8 Accessible sanitary facilities:

In a building:

An accessible unisex sanitary facility must be located so that it can be entered without crossing an area reserved for one sex only and provided in accordance with 1428.1 and must contain a closet pan, washbasin, shelf or bench top and adequate means of disposal of sanitary towels and as per following.

In every accessible sole-occupancy unit provided with sanitary compartments within the accessible sole-occupancy unit, not less than 1; and At each bank of sanitary compartments containing male and female sanitary compartments provided in common areas, not less than 1

At each bank of toilets where there is one or more toilets in addition to an accessible unisex sanitary compartment at that bank of toilets, a sanitary compartment suitable for a person with an ambulant disability in accordance with AS 1428.1 must be provided for use by males and females; and

Where male sanitary facilities are provided at a separate location to female sanitary facilities, accessible unisex sanitary facilities are only required at one of those locations.

An accessible unisex sanitary compartment or an accessible unisex shower need not be provided on a storey or level that is not provided with a passenger lift or ramp complying with AS1428.1

Accessible unisex showers must be provided in accordance with 1428.1 and at the following rates

Accessible unisex showers

Are only required in the following:

a)	In every accessible sole – occupancy unit provided with showers within the accessible sole-occupancy unit, not less than 1; and
b)	1 for every 10 showers or part thereof provided in common areas

8.9 Signage

As part of the detailed design package, specifications will need to be developed indicating:

- Sanitary Facility Identification Signs)note that they are to comply with BCA Specification D3.6 and include the use of Braille, Tactile, etc and be placed on the wall on the latch side of the facility);
- Braille Exit signs required to all doors equipped with an exit sign