

Attn. the Proper Officer  
Eastern Pearl Pty Ltd (ACN 095 570 862)  
7 Wyalong Street  
BURWOOD NSW 2134

By express post and by email

1 November 2023

# Building Work Rectification Order

## Section 33 of the Residential Apartment Buildings (Compliance and Enforcement Powers) Act 2020

Eastern Pearl Pty Ltd (ACN 095 570 862) is being given this Building Work Rectification Order ("Order") in relation to 13-15 Porter Street, Ryde NSW 2112 [SP96601] ("the Building").

Eastern Pearl Pty Ltd is required to cause building work to be carried out to remediate the potential serious defects as set out in paragraphs 8 to 55 of this Order.

Failure to comply with this Order is a criminal offence.

### Background

1. The Department of Customer Service (**the Department**) administers the *Residential Apartment Buildings (Compliance and Enforcement Powers) Act 2020* (**the Act**).
2. Under section 33 of the Act, if the Secretary of the Department or their authorised delegate has a reasonable belief that building work was carried out in a manner that could result in a serious defect in the Building or that the Building has a serious defect, they may order the developer to rectify building work to remediate the serious defect or potential defect.
3. David Chandler is an authorised delegate of the Secretary of the Department.
4. Eastern Pearl Pty Ltd (ACN 095 570 862) is the developer of the residential apartment building known as 13-15 Porter Street, Ryde 2112 (**the Building**) for the purposes of section 4(a) of the Act.
5. Under section 3 of the Act a 'serious defect' in relation to a building, means –
  - a. a defect in a building element that is attributable to a failure to comply with the performance requirements of the *Building Code of Australia*, the relevant Australian Standards or the relevant approved plans, or

- b. a defect in a building product or building element that
    - i. is attributable to defective design, defective or faulty workmanship or defective materials, and
    - ii. causes or is likely to cause—
      - (A) the inability to inhabit or use the building (or part of the building) for its intended purpose, or
      - (B) the destruction of the building or any part of the building, or
      - (C) a threat of collapse of the building or any part of the building, or
  - c. a defect of a kind that is prescribed by the regulations as a serious defect, or
  - d. the use of a building product (within the meaning of the *Building Products (Safety) Act 2017* in contravention of that Act.
6. Under section 6(1) of the *Design and Building Practitioners Act 2020* a building element means any of the following:
- a. the fire safety systems for a building within the meaning of the Building Code of Australia,
  - b. waterproofing,
  - c. an internal or external load-bearing component of a building that is essential to the stability of the building, or a part of it (including but not limited to in-ground and other foundations and footings, floors, walls, roofs, columns and beams),
  - d. a component of a building that is part of the building enclosure,
  - e. those aspects of the mechanical, plumbing and electrical services for a building that are required to achieve compliance with the Building Code of Australia,
  - f. other things prescribed by the regulations for the purposes of this section.

### Decision to issue a building work rectification order

7. I, David Chandler, am the decision maker for this Building Work Rectification Order (**the Order**). I have decided to issue the Order because I have formed a reasonable belief under section 33(1) of the Act that building work at the Building has serious defects as set out in this Order.

### Description of serious defects

#### 8. Defect 1 – water penetration at the Podium

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the Podium of the Building, it was observed that there is water seepage and leachate evident at the wall above the elevator, and efflorescence below the slab.

The failure to prevent water penetration is a serious defect because it is a defect in a building element that is attributable to a failure to comply with **National Construction Code Building Code of Australia (BCA) Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Performance Requirement FP1.4, Weatherproofing** which states:

*A roof and external wall (including openings around windows and doors) must prevent the penetration of water that could cause -*

*(a) unhealthy or dangerous conditions, or loss of amenity for occupants; and*

*(b) undue dampness or deterioration of building elements.”*

**BCA Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Deemed-to-Satisfy Provision F1.4 External above ground membranes** is a pathway that can satisfy BCA Volume One, Performance Requirement FP1.4. BCA Volume One, Deemed-to-Satisfy Provision F.1.4. references Australian Standard (AS) 4654.1 and 4654.2.

**AS 4654.2 Waterproofing Membranes For External Use Above Ground Use, Section 2 Design and Installation, 2.8 Termination of membranes, 2.8.1.1 Height**, which states:

*“Where the membrane termination is to prevent water entry, the finished height of the membrane above the finished surface level shall be sufficient to prevent water, including wind driven, flowing over the top of the membrane.”*

#### **9. Defect 2 – water penetration in the Carpark at B1**

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the Carpark at Basement 1 (B1) of the Building, it was observed that there was water seepage at the concrete walls and Dintel walls.

The failure to prevent water penetration is a serious defect because it is a defect in a building element that is attributable to a failure to comply with the **BCA Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Performance Requirement FP1.3 Rainwater drainage systems**, which states:

*“A drainage system for the disposal of surface water resulting from a storm having an average recurrence interval of —*

*(a) 20 years must—*

*(i) convey surface water to an appropriate outfall; and*

*(ii) avoid surface water damaging the building”*

**BCA Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Performance Requirement FP1.4 Weatherproofing**, which states:

*“A roof and external wall (including openings around windows and doors) must prevent the penetration of water that could cause -*

*(a) unhealthy or dangerous conditions, or loss of amenity for occupants; and*

*(b) undue dampness or deterioration of building elements.”*

#### **10. Defect 3 – inadequate surface water drainage system adjacent to the GF units**

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the Ground Floor (GF) units of the Building, it was observed that the overflow relief gully is not installed in the surface water drainage system at the external areas adjacent to the GF units.

The inadequate surface water drainage system is a serious defect because it is a defect in a building element that is attributable to a failure to comply with the **BCA Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Performance Requirement FP1.3 Rainwater drainage systems**, which states:

*“A drainage system for the disposal of surface water resulting from a storm having an average recurrence interval of —*

*(a) 20 years must—*

- (i) convey surface water to an appropriate outfall; and*
- (ii) avoid surface water damaging the building”*

**BCA Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Deemed-to-Satisfy Provision F1.0** is a pathway that can satisfy Performance Requirement FP1.3. Deemed-to-Satisfy Provision F1.0 references AS 3500.3.

**AS 3500.3 Plumbing and Drainage – Stormwater Drainage, Section 5 Surface Drainage Systems Design Clause 5.3.1.1 Roof areas**, which states:

*“Stormwater from roof areas shall be collected and conveyed in gutters and downpipes (...) and, during periods of high rainfall intensity or blockage of the roof drainage system, be discharged through overflow devices to —*

*(a) site stormwater drains or channels; ...”* **Defect 4 – inadequate fall gradient at the lift lobby at the Podium**

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the Podium of the Building, it was observed that there was surface water ponding at the lift lobby due to an inadequate fall gradient.

The inadequate fall gradient is a serious defect because it is a defect in a building element that is attributable to a failure to comply with the **BCA Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Performance Requirement FP1.3 Rainwater drainage systems**, which states:

*“A drainage system for the disposal of surface water resulting from a storm having an average recurrence interval of —*

*(a) 20 years must—*

- (i) convey surface water to an appropriate outfall; and*
- (ii) avoid surface water damaging the building”*

**BCA Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Deemed-to-Satisfy Provision F1.0** is a pathway that can satisfy Performance Requirement FP1.3. Deemed-to-Satisfy Provision F1.0 references AS 3500.3.

**AS 3500.3 Plumbing and Drainage – Stormwater Drainage, Section 5 Surface Drainage Systems Design Clause 5.3.1.1 Roof areas**, which states:

*“Stormwater from roof areas shall be collected and conveyed in gutters and downpipes (...) and, during periods of high rainfall intensity or blockage of the roof drainage system, be discharged through overflow devices to —*

*(a) site stormwater drains or channels; ...”*

## 12. Defect 5 – inadequate waterproofing installation at the Rooftop

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the Rooftop of the Building, it was observed that the upward termination of the waterproofing membrane fails to achieve the required height above the anticipated water level, and that the waterproofing membrane is penetrated by bolts, screws, and other fixings.

The inadequate waterproofing installation is a potential serious defect because it is a defect in a building element that is attributable to a failure to comply with the **BCA Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Performance Requirement FP1.4 Weatherproofing**, which states:

*“A roof and external wall (including openings around windows and doors) must prevent the penetration of water that could cause –*

*(a) unhealthy or dangerous conditions, or loss of amenity for occupants; and*

*(b) undue dampness or deterioration of building elements.”*

**BCA Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Deemed-to-Satisfy Provision F1.4 External above ground membranes** is a pathway that can satisfy BCA Volume One, Performance Requirement FP1.4. BCA Volume One, Deemed-to-Satisfy Provision F.1.4 references AS 4654.2.

**AS 4654.2-2012 Waterproofing Membranes for External Above Ground Use - Design and Installation, Section 2 - Design and installation**, states:

*“All pipes, ducts and vents should be located within a collar mechanically fixed to the substrate as an extension to the penetration. Alternatively, a collar may be cast into the substrate to form the penetration. A separate collar should be used for each penetration”.*

**AS 4654.2-2012 Waterproofing membranes for external above-ground use – Design and installation, Section 2 - Design and installation, 2.8 Termination of membranes, 2.8.4 penetrations**, states

*“Any fixings that penetrate the membrane shall be sealed. The sealant shall be compatible with the surface material. Where backing rods are used to support the sealant, they shall be a minimum 12mm.”*

## 13. Defect 6 – inadequate surface water drainage system on the Rooftop

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the Rooftop of the Building, it was observed that:

- a. the roof drainage is not adequately installed, for reasons including that the drain grates are not connected to the drain outlets.
- b. water is ponding on ducts and capping, flowing into the top hats section.
- c. water is ponding on services ducts, and there is evidence of corrosion.
- d. the sealant for the exhaust is not adequately protected from water damage.

The inadequate surface water drainage system is a potential serious defect because it is a defect in a building element that is attributable to the **BCA Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Performance Requirement FP1.3 Rainwater drainage systems**, which states:

*“A drainage system for the disposal of surface water resulting from a storm having an average recurrence interval of —*

*(a) 20 years must—*

*(i) convey surface water to an appropriate outfall; and*

*(ii) avoid surface water damaging the building”*

**BCA Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Performance Requirement FP1.4 Weatherproofing**, which states:

*“A roof and external wall (including openings around windows and doors) must prevent the penetration of water that could cause -*

*(a) unhealthy or dangerous conditions, or loss of amenity for occupants; and*

*(b) undue dampness or deterioration of building elements.”*

**BCA Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Deemed-to-Satisfy Provision F1.4 External above ground membranes** is a pathway that can satisfy BCA Volume One, Performance Requirement FP1.4. BCA Volume One, Deemed-to-Satisfy Provision F.1.4 references AS 4654.2.

**AS 4654.2-2012 Waterproofing Membranes for External Above Ground Use - Design and Installation, Section 2 - Design and installation, 2.5 Substrate 2.5.2 Falls**, which states

*“Falls in finishes shall ensure water drains to the drainage outlet. Water shall not be retained on the finished surface with the exception of residual water remaining due to surface tension. The fall should be in the structural substrate or formed by the screed over the structural substrate. NOTE: Falls for surface drainage should be no flatter than 1 in 100.”*

#### **14. Defect 7 – inadequately sealed air-conditioning penetration at the Rooftop**

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the rooftop areas of the Building, it was observed that the air-conditioning unit fixings penetrating the waterproofing membrane are inadequately sealed and are corroded.

The inadequately sealed air-conditioning penetration is a potential serious defect because it is a defect in a building element that is attributable to a failure to comply with the **BCA Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Performance Requirement FP1.4 Weatherproofing**, which states:

*“A roof and external wall (including openings around windows and doors) must prevent the penetration of water that could cause (a) Unhealthy or dangerous conditions, or loss of amenity for occupants; and (b) Undue dampness or deterioration of building elements.”*

Deemed-to-Satisfy Provision F1.4 is a pathway that can satisfy the BCA Volume One, Performance Requirement FP1.4. Deemed-to Satisfy Provision F1.4 references AS 4654.2.



**AS 4654.2 Waterproofing membranes for external above-ground use – Design and installation, Section 2 - Design and installation, 2.8 Termination of membranes, 2.8.4 penetrations,** states:

*“Any fixings that penetrate the membrane shall be sealed. The sealant shall be compatible with the surface material. Where backing rods are used to support the sealant, they shall be a minimum 12mm.”*

**15. Defect 8 – inadequate slab fall gradient for stormwater drainage within the basement carpark**

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the basement carpark of the Building, it was observed that the slab fall gradient is inadequate for stormwater drainage.

The inadequate slab fall gradient is a potential serious defect because it is a defect in a building element that is attributable to a failure to comply with the **BCA Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Performance Requirement FP1.3 Rainwater drainage systems**, which states:

*“A drainage system for the disposal of surface water resulting from a storm having an average recurrence interval of —*

*(a) 20 years must—*

*(i) convey surface water to an appropriate outfall; and*

*(ii) avoid surface water damaging the building”*

**BCA Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Deemed-to-Satisfy Provision F1.0** is a pathway that can satisfy BCA Volume One, Performance Requirement FP1.3. Deemed-to Satisfy Provision F1.0 references AS 3500.3.

**AS/NZS 3500.3-2015 Plumbing and Drainage—Stormwater Drainage, Section 5 Surface water drainage system – Design, 5.3 Layout – General criteria** states:

*“5.3.2 Other than roof areas*

*Stormwater from other than roof areas shall be collected and conveyed via stormwater channels and inlets to site stormwater drains.”*

*“5.3.3 Ponding*

*Except for on-site stormwater detention (OSD) systems, ponding of stormwater shall only occur temporarily at sag pits conforming to Clause 5.4.10.1...”*

**16. Defect 9 – inadequate waterproofing of the Planter boxes**

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the Planter boxes of the Building, it was observed that the construction of the planter boxes waterproofing and overflow (drainage to stormwater system) had insufficient membrane height (minimum of 100 mm above the soil level) and drainage. There is water ingress behind the waterproofing membrane and water is accumulating on the base of the Planter boxes, causing structural damage, “concrete cancer” and mold inside the stair.

The inadequate waterproofing of the Planter boxes is a potential serious defect because it is a defect in a building element that is attributable to a failure to comply with **BCA Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Performance Requirement FP1.4 Weatherproofing**, which states:

*“A roof and external wall (including openings around windows and doors) must prevent the penetration of water that could cause -*

*(a) unhealthy or dangerous conditions, or loss of amenity for occupants; and*

*(b) undue dampness or deterioration of building elements.”*

Deemed-to-Satisfy Provision F1.4 is a pathway that can satisfy BCA Volume One, Performance Requirement FP1.4. Deemed-to-Satisfy Provision F1.4 references AS 4654.2

**AS 4654.2-2012 Waterproofing membranes for external above-ground use – Design and installation, Section 2 - Design and installation, 2.13 Planter boxes**, which states in part:

*“The membrane shall be sealed to the drainage outlet. It shall extend vertically to a height of 100 mm above the soil or fill level”.*

#### **17. Defect 10 – water penetration at the Fire Stair at B3**

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting Basement 3 (**B3**) of the Building, it was observed that there is water ponding and water penetration at the Fire Stair, resulting in pocks and staining marks.

The failure to prevent water penetration and to provide an adequate drainage system is a potential serious defect because it is a defect in a building element that is attributable to a failure to comply with the **BCA Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Performance Requirement FP1.3 Rainwater drainage systems**, which states:

*“A drainage system for the disposal of surface water resulting from a storm having an average recurrence interval of —*

*(a) 20 years must—*

*(i) convey surface water to an appropriate outfall; and*

*(ii) avoid surface water damaging the building”*

**BCA Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Performance Requirement FP1.4 Weatherproofing**, which states:

*“A roof and external wall (including openings around windows and doors) must prevent the penetration of water that could cause (a) Unhealthy or dangerous conditions, or loss of amenity for occupants; and (b) Undue dampness or deterioration of building elements.”*

#### **18. Defect 11 – incomplete fire compartment wall at B1**

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting B1 of the Building, it was observed that there was an incomplete fire compartment wall close to the Carpark entrance.



The incomplete fire compartmentation is a serious defect because it is a defect in a building element that is attributable to a failure to comply with the **BCA Volume One, Section C Fire Resistance, Part C1.1 Fire-Resisting Construction, CP8**, which states:

*“Any building element provided to resist the spread of fire must be protected, to the degree necessary, so that an adequate level of performance is maintained—*

*(a) where openings, construction joints and the like occur; and*

*(b) where penetrations occur for building services.”*

**19. Defect 12 – inadequate fire-resistant sealing of service penetrations throughout the Building**

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the Building, it was observed that the service penetrations in the ceilings and the walls have inadequate fire-protection.

The inadequate fire protection of service penetrations is a serious defect because it is a defect in a building element that is attributable to a failure to comply with the **BCA Volume One, Section C Fire resistance, Performance Requirement CP8**, states in part:

*“Any building element provided to resist the spread of fire must be protected, to the degree necessary, so that an adequate level of performance is maintained—*

*(a) where openings, construction joints and the like occur; and*

*(b) where penetrations occur for building services”.*

Deemed-to-Satisfy Provision C3.15 is a pathway that can satisfy BCA Volume One, Performance Requirement CP8. **BCA Volume One, Section C Fire Resistance, Part C3 Protection of openings, Deemed-to-Satisfy Provision C3.15 Openings for service installations**, states:

*“Where an electrical, electronic, plumbing, mechanical ventilation, air-conditioning or other service penetrates a building element (other than an external wall or roof) that is required to have an FRL with respect to integrity or insulation or a resistance to the incipient spread of fire, that installation must comply with any one of the following:*

*(a) Tested systems*

*(i) The service, building element and any protection method at the penetration are identical with a prototype assembly of the service, building element and protection method which has been tested in accordance with AS 4072.1 and AS 1530.4 and has achieved the required FRL or resistance to the incipient spread of fire.”*

**20. Defect 13 – inadequate fire damper installation at B1**

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the Carpark, outside the bin room, in B1 of the Building, it was observed that fire dampers are not installed where services penetrate the fire-rated walls.

The inadequate fire damper installation is a serious defect because it is a defect in a building element that is attributable to a failure to comply with **AS 1682.1 Fire, smoke and air**

**dampers, Part 1 Specification, Section 1 Scope and General, 1.8 Installation instructions, which states:**

*"Installation instructions shall be in accordance with the instructions provided to the testing authority for the purpose of the damper test or installation variations for which a testing authority has assessed and has given the opinion that satisfactory performance will be achieved.*

*Where the damper's closure is reliant upon an actuator, the details of the actuator torque required to open, close and seal motorized dampers shall be provided in the installation instructions."*

**Appendix A Performance criteria for damper installations, states:**

*"Where fire dampers and combination fire smoke dampers are installed, the performance criteria for the installation are as follows:*

- (a) Construction of the penetration in the building element shall be in accordance with the building element manufacturer's instructions and an assessment or test report.*
- (b) Installation of the damper shall be in accordance with the damper manufacturer's installation instructions, an assessment or test report.*
- (c) The damper shall be retained in the fire-resisting structure in which it is installed so that it cannot be dislodged in a fire scenario or during normal usage.*
- (d) The damper shall be installed with adequate clearance for expansion during a fire such that it will not damage the building element or prevent closure.*
- (e) Damper casing or mounting sleeve shall not extend beyond the face of the wall or floor by more than 150 mm on either side, except in the case of a motorized fire damper (smoke damper), where the maximum extension on the motor side only shall be 250 mm.*
- (f) A breakaway joint shall be installed to connect the fire damper to the duct. The method of attachment of ductwork to the fire damper, shall be such that any or deformation or collapse of the ductwork in a fire, does not dislodge the fire damper or adversely affect its operation or performance (refer to Appendix C).*
- (g) Any device or fitting adjacent to a fire damper (e.g. tamper proof grill, volume control damper, etc.) shall be installed so that any deformation or collapse of such items in a fire does not dislodge the fire damper or adversely affect its operational performance.*
- (h) Where installed in a slab, fire dampers shall have FRL insulation, or the duct above shall be insulated to prevent ignition of adjacent materials.*
- (i) Where construction continues after dampers have been initially commissioned dampers shall be inspected again, debris removed, and operation checked.*
- (j) Convenient access shall be provided to release and reset of the damper mechanism for maintenance and to allow for inspection, cleaning and removal of debris as necessary".*

**21. Defect 14 – inadequate fire sprinkler installation below the ducts in the Carpark at B1**

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the Carpark in B1 of the Building, it was observed that there are insufficient fire sprinklers installed below the ducts the fire sprinklers that are installed are incorrectly spaced.

The inadequate fire sprinkler installation is a serious defect because it is a defect in a building element that is attributable to a failure to comply with the **BCA Volume One, Section E1 Fire Fighting Equipment, Deemed-to-Satisfy provision E1.5 Sprinklers**, which states:

*“A sprinkler system must—*

*(a) be installed in a building or part of a building when required by Table E1.5; and*

*(b) comply with Specification E1.5.”*

Table 1.5 provides that sprinklers are required for Class 7a occupancy in fire compartments where more than 40 vehicles are accommodated.

**AS 2118 Automatic Fire Sprinklers, Part 1 General Requirements, Section 5 Spacing and Location of Sprinklers, Clause 5.4.4 Beams and Joists**, which states:

*“Light fittings, bulkheads and ducts in close proximity to the ceiling shall be treated as beam or joists.*

*Where deflectors of sprinklers are above the level of the bottom of the beams or joists (because of the limitation imposed by Clause 5.4.3), the sprinklers shall be at such distances therefrom, that undue interference with the sprinkler discharge pattern is avoided.*

*(a) from the side of a beam or joist in relation to the height of the deflector; and*

*(b) above the bottom of the beam or joist.*

*Where the depth of the beam or joist (c) (see Photograph 5.4.4(A)) exceeds 300 mm (combustible ceilings) or 450 mm (non-combustible ceilings) and it is impracticable to position sprinklers at the required distance from the side of the beam, the beam shall be treated as a wall in so far as the sprinklers in the adjoining bay are concerned.*

*Where the depth of beams (or joists) is such that the dimensions specified in Table 5.4.4 cannot be complied with and the beams (or joists) are spaced closer than 1.8 m measured from centre-to-centre of beam, the sprinklers shall be stagger-spaced (Clause 5.2).”*

**AS 2118 Automatic Fire Sprinklers, Part 1 General Requirements, Section 5 Spacing and Location of Sprinklers, Clause 5.7.3 Ducts and Bulkheads** which states:

*“Sprinklers shall be installed under rectangular ducts exceeding 800 mm in width and under circular ducts exceeding 1 m in diameter unless there is at least 150 mm clearance from adjacent walls in which case the width without protection may be 1 m and 1.2 m respectively.*

*Where a duct is erected with the top of the duct less than 500 mm below the ceiling or roof, it shall be regarded as a beam and the requirements of Clauses 5.4.4 and 5.4.5 shall apply (see also Clause 5.4.8).”*

## 22. Defect 15 – inadequate fire hydrant pipework at the GF

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the GF of the Building, it was observed that the sprinkler booster has inadequate pipework support and that the exhaust pipe is located too close to the street, posing a health and safety risk to passing pedestrians.

The inadequate fire hydrant pipework is a potential serious defect because it is a defect in a building element that is attributable to a failure to comply with **AS 2419.1 Fire Hydrants, Section 8 Pipework and Valves, 8.7 Support of Fire Hydrant Pipework, Clause 8.7.2 Pipe Support Design**, which states:

*“Pipework associated with fire hydrant systems shall be adequately supported by either–*

*(a) a pipe support system, the individual components of which comply with the requirements of Clause 8.7.5; or*

*(b) pipe supports and fasteners that are capable of supporting two times the mass of the pipework filled with water plus a mass of 115 kg at each point of support.*

*In addition to providing support for the pipework, pipe-support systems shall be designed to prevent sway in the pipework.*

**AS 1668.2-2012 Clause 3.10.3 Discharges Deemed Objectionable**, which states:

*“Air discharges that are deemed to contain objectionable effluent (see Clause 3.10.1) shall be in accordance with Clause 3.10.2 and -*

*(c) located not less than 6 m from a property boundary (see Notes 1 and 2), any boundary to a public street, any outdoor air intake opening or any natural ventilation device or opening”*

## 23. Defect 16 – fire hydrant system is not protected from corrosion at the GF

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the sprinkler booster at the GF of the Building, it was observed that the fire hydrant pipework and supporting structures were unprotected against corrosion.

The failure to protect the fire hydrant system from corrosion is a potential serious defect because it is a defect in a building element that is attributable to a failure to comply with the **BCA Volume One, Section E Services and Equipment, Part E1 Fire Fighting Equipment, Deemed-to-satisfy Provision E1.3 Fire Hydrants** which states in part:

*(a) The fire hydrant system –*

*(i) Must be installed in accordance with AS 2419.1.”*

**AS 2419.1 Fire Hydrant Installations, Part 1 System Design, Installation and Commissioning, Section 8 Pipework and Valves, 8.6 System Protection and Identification, Clause 8.6.2 Corrosion Protection**, states that:

*“Fire hydrant pipework shall be protected against corrosion (refer AS 2312 and AS 2832.2).”*

## 24. Defect 17– absence of exit signs at the emergency exits at B1

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the fire rated stair at B1 of the Building, it was observed that exit signs are absent at the emergency exits.

The failure to install exit signs is a potential serious defect because it is a defect in a building element that is attributable to a failure to comply with the **BCA Volume One, Section E Services and equipment, Part E4 Visibility in an emergency, exit signs and warning systems, Performance Requirement EP4.2 Identification of exits**, which states in part:

*“To facilitate evacuation, suitable signs or other means of identification must, to the degree necessary –*

*(a) be provided to identify the location of exits; and*

*(b) guide occupants to exits; and*

*(c) be clearly visible to occupants; and*

*(d) operate in the event of a power failure of the main lighting system for sufficient time for occupants to safely evacuate.”*

Deemed-to-Satisfy Provision E4.5 is a pathway that can satisfy BCA Volume One Performance Requirement EP4.2.

**BCA Volume One, Section E Services and Equipment, Part 4 Visibility in an Emergency, exit signs and warning signs, Deemed-to-Satisfy Provision E4.5 Exit Signs**, which states in part:

*“An exit sign must be clearly visible to persons approaching the exit, and must be installed on, above or adjacent to each –*

*(a) door providing direct egress from a storey to –*

*(i) an enclosed stairway passageway or ramp serving as a required exit; and*

*(ii) an external stairway, passageway or ramp serving as a required exit; and*

*(iii) an external access balcony leading to a required exit,”*

**25. Defect 18 – prohibited sprinkler penetration in the fire-isolated exit in the Fire Stair at B1**

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the Fire Stair at B1 of the Building, it was observed that the sprinkler pipe penetrates the fire-isolated exit. It was also observed that the sprinkler pipe does not serve the stairwell and has inadequate fire-resistant sealing.

The prohibited sprinkler penetration in the fire-isolated exit is a potential serious defect because it is a defect in a building element that is attributable to a failure to comply with the **BCA Volume One, Section C Fire Resistance, Part C3 Protection of Openings, C3.9 Service Penetrations in Fire-Isolated Exits** which states:

*“Fire-isolated exits must not be penetrated by any services other than –*

*(c) water supply pipes for fire services”*

**BCA Volume One, Section C Fire Resistance, Part C3 Protection of Openings, C3.15 Openings for Service Installations** states:

*“Where an electrical, electronic, plumbing, mechanical ventilation, air-conditioning or other service penetrates a building element (other than an external wall or roof) that is required to have an FRL with respect to integrity or insulation or a resistance to the incipient spread of fire, that installation must comply with any of the following:*

*(c) Compliance with Specification C3.15*

*(i) The service pipe system comprised entirely of metal (excluding pipe seals or the like) and is installed in accordance with Specification C3.15 and it –*

*(A) penetrates a wall ...”*

**26. Defect 19 – inadequate fire-resistant sealing of services penetrations throughout the Building**

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the Building, it was observed that there was inadequate fire-resistant sealing of services penetration throughout the Building.

The inadequate fire-resistant sealing of service penetrations is a potential serious defect because it is a defect in a building element that is attributable to a failure to comply with **BCA Volume One, Section C Fire Resistance, Part C1.1 Fire-Resisting Construction, Clause 3.1 Fire-resistance of Building Elements**, which states:

*“In a building required to be Type A Construction –*

*(a) each building listed in Table 3 and any beam or column incorporated in it, must have an FRL not less than that listed in the Table for particular Class of building concerned;..*

**27. Defect 20 – failure to backfill metal fire door frames throughout the Building**

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the fire doors in the Building, it was observed that the metal fire door frames sound hollow when tapped.

The failure to backfill the metal fire door frames is a potential serious defect because it is a defect in a building element that is attributable to a failure to comply with the **BCA Volume One, Section C Fire resistance, Performance Requirement CP2**, which states:

*(a) A building must have elements which will, to the degree necessary, avoid the spread of fire—*

*(i) to exits; and*

*(ii) to sole-occupancy units and public corridors; and*

*(iii) between buildings; and*

*(iv) in a building.*

**Specification C3.4 Fire doors, smoke doors, fire windows and shutters, Clause 2. Fire doors** is a pathway that can satisfy BCA Volume One, Performance Requirement CP2. Specification C3.4 references AS 1905.1.



**AS 1905.1 Components for the protection of openings in fire-resistant wall Part 1: Fire resistant doorsets, Section 5 Installation, 5.3 Metal doorframes in masonry walls, 5.3.2 Backfilling of metal door frames**, which states:

*“Unless an alternative method of fixing has been demonstrated by a full-scale standard fire resistance test, metal door frames used in the construction of a fire-rated doorset for masonry construction, frame head and jamb cavities shall be backfilled by thoroughly and progressively grouting with cement mortar, concrete, a non-shrink grout or with material with a temperature of fusion not less than 1000°C”.*

**28. Defect 21 – uneven floor levels / steps in the Hydrant Booster and Sprinkler Valve Room in B1**

On 27 September 2022, authorised officers of the Department conducted an investigation pursuant to section 20 of the Act in the Building. When inspecting the Hydrant Booster and Sprinkler Valve room in Basement 1 of the Building, it was observed that the floor level to the entrance to the Hydrant Booster and Sprinkler Valve Room has steps and is uneven.

The uneven floor level is a potential serious defect because it is a defect in a building element that is attributable to a failure to comply with the **BCA Volume One, Section D Access and Egress Performance Requirement DP2**, which states in part:

*“So that people can move safely to and within a building, it must have—*

*(a) walking surfaces with safe gradients...”*

**29. Defect 22 – failure to fire-isolate the Fire Stair at the access to the Fire Pump Room**

On 27 September 2022, authorised officers of the Department conducted an investigation pursuant to section 20 of the Act in the Building. When inspecting the Fire Stair at the access to the Fire Pump Room of the Building, it was observed that the Fire Stair was not fire separated from the adjoining fire compartment.

The failure to fire-isolate the Fire Stair is a potential serious defect because it is a defect in a building element that is attributable to a failure to comply with the **BCA Volume One, Section D Access and Egress Part D2 Construction of Exits Deemed-to-Satisfy Provision D2.4 Separation of rising and descending stair flights** which states:

*‘If a stairway serving as an exit is required to be fire-isolated—*

*(a) there must be no direct connection between—*

*(i) a flight rising from a storey below the lowest level of access to a road or open space; and*

*(ii) a flight descending from a storey above that level; and*

*(b) any construction that separates or is common to the rising and descending flights must be—*

*(i) non-combustible; and*

*(ii) smoke proof in accordance with Clause 2 of Specification C2.5.”*

**30. Defect 23 – failure to provide protective cover for reinforcing steel at the GF and Fire Stair**

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the GF and the Fire Stair of the Building, it was observed that the exposed reinforcing steel lacked the required cover for protection from fire and corrosion.

The failure to provide protective cover for the reinforcing steel is a serious defect because it is a defect in a building element that is attributable to a failure to comply with **AS 3600-2001 Concrete Structures, Section 4 Design for Durability, Part 4.10 Requirements for cover to Reinforcing Steel and Tendons, 4.10.1 General**, which states:

- (i) The cover to reinforcing steel and tendons shall be the greatest of the values determined from Clauses 4.10.2 and 4.10.3 as appropriate, unless exceeded by the covers required by Section 5 for fire resistance."*

### 31. Defect 24 – untreated construction joint at the Podium

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the Podium and Carpark of the Building, it was observed that there is an untreated construction joint at the Podium and that there are water seepage stains at the Carpark at B1 directly below the construction joint at the Podium level.

The untreated construction joint is a potential serious defect because it is a defect in a building element that is attributable to a failure to comply with **AS 3600-2009 Concrete Structures, Section 17 Material and Construction Requirement, Part 17.4 Construction Requirements for Joint and Embedded Items, Clause 17.4.1 Location of Construction Joints**, which states:

- "(a) Construction joints designed in accordance with Clause 14.1.2 shall be located to facilitate the placement of concrete in accordance with Clause 17.1.3."*

**AS 3600 Concrete Structures, Section 17 Material and Construction Requirement, Part 17.4 Construction Requirements for Joint and Embedded Items, Clause 17.1.3 Handling, Placing and Compacting of Concrete**, which states:

- "Concrete shall be handled, placed and compacted so as to ...*

- (c) produce a monolithic mass between planned joints or the extremities of members, or both;..."*

### 32. Defect 25 – inadequate concrete installation at the access to the Rooftop from the Fire Stair

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the access to the Rooftop of the Building, it was observed that there is cracked and drummy concrete at the junction between the concrete beam and the Dintel wall at the access to the Rooftop from the Fire Stair.

The inadequate concrete installation is a potential serious defect because it is a defect in a building element that is attributable to a failure to comply with **AS 3600-2001 Concrete structures, Section 19 Material and construction requirements, Clause 19.5 Tolerance for structures and members** and **BCA Volume One, Section B Structure, Part B1 Structural Provisions, Performance Requirement BP1.1** which states:

- "Structural reliability*

(b) *A building or structure, during construction and use, with appropriate degrees of reliability, must-*

(i) *Perform adequately under all reasonably expected design actions; and*

(ii) *Withstand extreme or frequently repeated design actions; and*

(iii) *Be designed to sustain local damage, with the structural system as a whole remaining stable and not being damaged to an extent disproportionate to the original local damage; and*

(iv) *....”*

### 33. **Defect 26 – corrosion of permanent steel structures at the Rooftop**

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the Rooftop of the Building, it was observed that there is significant corrosion at the top surfaces of the steel members along the eastern side of the Rooftop.

The corrosion of permanent steel structures is a serious defect because it is a defect in a building element that is attributable to a failure to comply with the **BCA Volume One, Section B Structure, Part B1 Structural Provisions, Deemed-to-Satisfy Provision B1.4 Determination of Structural Resistance of Materials and Forms of Construction**, which states:

*“The structural resistance of materials and forms of construction must be determined in accordance with the following, as appropriate:*

(b) *Steel construction –*

(i) *Steel structures: AS 4100...”*

### 34. **Defect 27 – inadequate drainage for the external wall cladding system at the External Façade**

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the External Façade below the parapet at the Podium of the Building, it was observed that pressure equalization slots (weep holes) are not installed in the external wall cladding system, resulting in damage to the external walls and the unit below.

The inadequate drainage for the external cladding system is a potential serious defect because it is a defect in a building element that is attributable to a failure to comply with the **BCA Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, FP1.4 Weatherproofing**, which states:

*“A roof and external wall (including openings around windows and doors) must prevent the penetration of water that could cause—*

(a) *unhealthy or dangerous conditions, or loss of amenity for occupants; and*

(b) *undue dampness or deterioration of building elements.”*

### 35. **Defect 28 – inadequate drainage installation throughout the Carpark B1, B2 and B3**

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the Building, it was observed that the perimeter drains were inadequately installed or entirely absent.

The inadequate drainage installation is a serious defect because it is a defect in a building element that is attributable to a failure to comply with the **BCA Volume One, Section F1 Damp and Waterproofing, Deemed-to-Satisfy Provision F1.1 Stormwater Drainage**, which states:

*“Stormwater drainage must comply with AS/NZS 3500.3.”*

**AS 3500.3 Plumbing and drainage – Stormwater drainage, Section 6 Surface and subsoil drainage systems - installation, 6.4 Subsoil drains, Clause 6.4.1 General**, which states:

*“Subsoil drains shall be laid –*

*(a) so any pipe or geo-composite drain can be flushed out;*

*(b) with protection to prevent damage;*

*(c) with clean-out points for pipes or geo-composite drains-*

*(i) located at their topmost ends (or heads)*

*(ii) located at each change of direction greater than 70°;*

*(iii) ...;*

*(iv) that extend vertically to the top of the paved surfaces or within 300 mm of an unfinished paved surface; and*

*(v) that terminate with a screw cap legibly marked ‘SW’*

*Any pipes and fittings in such drains shall be-*

*(A) cleaned internally prior to installation and commissioning*

*(B) continuously supported by embedment (see clause 6.3.5); and*

*(C) jointed using fittings where applicable.”*

36. **Defect 29 – common exhaust air system serving the bin room, Carpark and toilet at B1**

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting B1 of the Building, it was observed that the bin room, Carpark and toilet are using a common exhaust air system.

The failure to keep exhaust air systems that serve different types of enclosures not of a similar nature separate is a serious defect because it is a defect in a building element that is attributable to a failure to comply with **AS 1668.2 The Use of Ventilation and Airconditioning in Buildings Part 2 Mechanical Ventilation in Buildings, Section 3 Mechanical Ventilation – Exhaust Systems, Clause 3.9 Combination of Exhaust Systems**, which states:

*“Exhaust air systems that serve different types of enclosures shall be kept separate unless they are of a similar nature. Enclosures that are similar in nature may be served by common exhaust systems.”*

**37. Defect 30 – inadequate supply ventilation system for make-up air in the Carpark at B1**

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the Carpark at B1 of the Building, it was observed that there was inadequate air balancing as a result of the inadequate supply ventilation system for make-up air.

The inadequate ventilation system for make-up air is a serious defect because it is a defect in a building element that is attributable to a failure to comply with **AS 1668.2 The Use of Ventilation and Air-conditioning in Buildings Part 2 Mechanical Ventilation in Buildings, Section 4 Ventilation of Enclosures used by Vehicles with Combustion Engines, Clause 4.8 Make-up of Exhaust Air**, which states:

*“The make-up of exhaust air shall be in accordance with Clause 3.8. Where a supply ventilation system for make-up air is provided, it shall have a flow rate of not less than 75% and not more than 90% of the exhaust airflow rate.”*

**38. Defect 31 – inadequate exhaust duct installation on the Rooftop**

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the Rooftop of the Building, it was observed that the exhaust duct is level with the roof, and there is inadequate clearance between the exhaust duct and the roof penetration opening.

The inadequate exhaust duct installation is a serious defect because it is a defect in a building element that is attributable to a failure to comply with **AS 4254.1 Ductwork for Air-Handling System in Buildings Part 2 Rigid Duct, Section 3 External Equipment Installation, Part 3.2 Roof Penetrations**, which states:

*“Roof penetrations by ducts shall have curbs. Ducts that are interrupted at the curb shall overhang the top of the curb or be flashed to divert water over the curb. Ducts that are continuous through the curb shall have flashing that slopes over the curb, which shall be sealed to the duct with fasteners and caulking. Adequate clearances between ducts and roof penetration openings shall be provided.”*

**39. Defect 32 – Inadequate waterproofing of the electrical panel for the lift in lift lobby at the Podium**

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the lifts of the Building, it was observed that the electrical panel for the lift is not adequately waterproofed.

The inadequate waterproofing of the electrical panel is a serious defect because it is a defect in a building element that is attributable to a failure to comply with **AS/NZS 3000-2007 Clause 1.7.4 Damp Situations and Occupational Health and Safety Regulation 2001**, which states:

*Electrical equipment used in damp situations shall be selected and installed to—*

*(a) operate safely near or within a damp or wet environment;*

*(b) provide additional protection against electric shock in locations where the presence of water or high humidity presents an increased risk; and*

*(c) provide adequate protection against damage that might reasonably be expected from the presence of water or high humidity.*

#### 40. **Defect 33 – inadequate ventilation of gas meter cupboards throughout the Building**

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the gas meter cupboards in the Building, it was observed that the gas meter cupboards have inadequate mechanical ventilation.

The failure to install adequate mechanical ventilation is a serious defect because it is a defect in a building element that is attributable to a failure to comply with the **BCA Volume One, Section F Health and Amenity, Part F4 Light and Ventilation, Deemed-to-Satisfy Provision, Clause F4.5 Ventilation of Rooms**, which states:

*“(b) A mechanical ventilation or air-conditioning system complying with AS 1668.2”*

**AS 1668.2 The Use of Ventilation and Air conditioning in Buildings, Part 2 Mechanical Ventilation in Buildings, Section 1 Scope and General, Clause 1.1 Scope, Note 8**, states:

*“Requirements for ventilation in relation to the safe operation of gas appliances are covered in AS 5601.1”*

**AS 5601 Gas Installations, Part 1 General Installations, Section 5 Means of Compliance – Installing Consumer Piping, Part 5.13 Ventilation of Gas Equipment, Clause 5.13.14 Mechanical Ventilation**, states:

*“Where the ventilation for the enclosure is to be provided by mechanical means, this shall be directly to outside and the system shall comply with Table 5.8. Fan motors shall be remote from the exhaust duct (indirect drive) or be rated to operate in a Zone 1 hazardous area (see AS 60079.10.1)*

*Where a combination of natural and mechanical ventilation is to be used to ventilate an enclosure –*

*(a) exhaust air shall be provided by mechanical means; and*

*(b) no open flued gas appliance shall be installed in the enclosure”*

#### 41. **Defect 34 – inadequate sump pit installation in the Carpark at B1**

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the Carpark at B1 of the Building, it was observed that the drain sump pit is constructed from a PVC storage container and is of inadequate capacity, resulting in the overflow of water and causing damage to the Building.

The inadequate sump pit installation is a potential serious defect because it is a defect in a building element that is attributable to a failure to comply with the **Fire Hydrant Block Plan**, which states that the pump requires a pit capacity of 10L/s @700kPa. It is also attributable to a failure to comply with the **BCA Volume Three, Section C Sanitary Plumbing and Drainage Systems, Part C1 Sanitary Plumbing Systems, Deemed-to-Satisfy Provision Clause C1.3 General Requirements**, which references AS 3500.2.

**AS/NZS 3500.2 Plumbing and Drainage, Part 2 Sanitary Plumbing and Drainage, Section 12 Pumped Discharge, Part 12.5 Wet Wells, Clause 12.5.1 General** which states in part:



*“Wet wells shall be fit for purpose and installed in an accessible location.”*

**42. Defect 35 – inadequate drain front of the Exit egress at the staircase**

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the Exit egress of the Building, it was observed that the piped drainage system in front of the evacuation route at the staircase is inadequate.

The inadequate piped drainage system is a potential serious defect because it is a defect in a building element that is attributable to a failure to comply with the **BCA Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Deemed-to-Satisfy Provision, F1.1 Stormwater Drainage**, which references AS 3500.3.

**AS/NZS 3500.3-2015 Plumbing and Drainage Part 3: Stormwater Drainage, Section 5 Surface Drainage Systems – Design, Part 5.2 Design, Clause 5.2.2 General Criteria**, which states:

*“Piped systems shall meet the minimum diameter, cover and gradient criteria specified in this Standard. Such systems shall be arranged so that any overflows will not pond against or enter into buildings.”*

**43. Defect 36 – inadequate duct sealing of air-conditioning system in the Carpark at B1**

On 27 September 2022, authorised officers of the Department conducted an inspection pursuant to section 20 of the Act in the Building. When inspecting the Carpark of B1 of the Building, it was observed that hydraulic pipes penetrate the air ducts of the air-conditioning unit. It was also observed that the air duct panel is constructed of potentially flammable material. The capacity of the air ducts cannot be determined to accurately test for air leakage.

The inadequate duct sealing is a serious defect because it is a defect in a building element that is attributable to a failure to comply with the **BCA Volume One, Section J5.2b Clause 2 Sealing of Ductwork** which states:

*“(a) Ductwork in an air-conditioning system must be sealed against air loss in accordance with the duct sealing requirements of AS 4254 Parts 1 and 2 for the static pressure in the system.”*

**AS 4254-2012 Clause 2.2.4 Air Leakage**, states:

*“All duct systems with a capacity of 3000 L’s or greater shall be tested for air leakage. Duct systems with a capacity of 3000 L’s or greater shall be tested for air leakage at a static pressure of a minimum of 1.25 times the calculated design operating pressure in the tested duct section. Leakage shall not exceed 5% of the design air quantity for the duct system.”*

**Building Work to be Carried Out**

**NOTE: The Design and Building Practitioners Act 2020 applies to the remediation work under this order. In brief, it requires that there be declared designs by registered practitioners before building work commences and that the designs be uploaded to the NSW Planning Portal. Any variations made to the building work must be reflected in the declared and uploaded designs.**

44. Eastern Pearl Pty Ltd (ACN 095 570 862) (**Developer**) must carry out building work, or cause building work to be carried out as follows:

- a. **Remediate Defect 1 by:**

Developer to prevent water entry into building in accordance with BCA Volume One Section F Health and Amenity, Part F Damp and Weatherproofing, Performance Requirement FP1.4, AS 4654.1 Waterproofing Membrane Systems for Exterior Use Above Ground Level Materials, and AS 4654.2 Waterproofing Membranes for External Use Above Ground Use.

Developer to make good any consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

**b. Remediate Defect 2 by:**

Developer to prevent water entry into the Building in accordance with BCA Volume One, Section F Health and Amenity, Part F Damp and Waterproofing, Performance Requirements FP1.3 and FP1.4.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

**c. Remediate Defect 3 by:**

Developer to provide a compliant stormwater drainage system to external areas at GF in accordance with the BCA Volume One, and AS 3500.3.

Developer to make good any consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

**d. Remediate Defect 4 by:**

Developer to carry out rectification of the Podium surface drainage defects in accordance with AS 3500.3 and the BCA Volume One.

Particular attention to be given, but not limited to, ensuring the following:

1. The drain has compliant falls.
2. The new overflows satisfy the design requirements of AS3500.3.
3. The membrane is terminated within the overflows and against the walls to comply with AS 4654.2.
4. The discharge points for the overflows do not cause a nuisance to the residents or the general public.

Developer to make good any consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

e. **Remediate Defect 5 by:**

Developer to carry out rectification of the waterproofing defects to comply with the BCA Volume One and AS 4654.2.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

f. **Remediate Defect 6 by:**

Developer to carry out rectification of the roof drainage installation defects to comply with the BCA Volume One and AS 4654.1 Waterproofing Membrane Systems for Exterior Use Above Ground Level Materials, and AS 4654.2 Waterproofing Membranes For External Use Above Ground Use, and AS 3500.3 –2015 Plumbing and Drainage – Stormwater Drainage, Section 5 Surface Drainage Systems – Design.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

g. **Remediate Defect 7 by:**

Developer to carry out rectification of the waterproofing defects to comply with the BCA Volume One and AS 4654.2.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

h. **Remediate Defect 8 by:**

Developer to carry out rectification of the Carpark fall gradient to comply with the BCA Volume One.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

i. **Remediate Defect 9 by:**

Developer to carry out rectification of the waterproofing defects to comply with the BCA Volume One and AS 4654.2 Waterproofing membranes for external above ground use.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

j. **Remediate Defect 10 by:**

Developer to prevent the uncontrolled penetration of water into the fire stairs to comply with BCA Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

k. **Remediate Defect 11 by:**

Developer to carry out rectification of the protection of openings and penetrations to comply with the BCA Volume One, Section C Fire Resistance, Part C1.1 Fire-Resisting Construction.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

l. **Remediate Defect 12 by:**

Developer to carry out rectification of the protection of service penetrations to comply with the BCA Volume One, Section 3 Fire resistance, Part C3 Protection of openings, Deemed-to-Satisfy Provision C3.15 Openings for service installations.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

m. **Remediate Defect 13 by:**

Developer to carry out rectification of the defective fire damper installation to comply with the BCA Volume One, Section C, CP2 Spread of Fire and AS 1682.1 – 2015 Fire, smoke and air dampers.

Particular attention to be given to, but not limited to, following the manufacturer's installation.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

n. **Remediate Defect 14 by:**

Developer to install sprinkler system to comply with AS 2118 Part 1 General Requirements, Section 5 Spacing and Location of Sprinklers and BCA Volume One, Section E1 Fire Fighting Equipment, Part E1.5 Sprinklers.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

**o. Remediate Defect 15 by:**

Developer to Install adequate structural bracing for the hydrant booster assembly with relevant testing and to comply with AS 2419.1 Fire Hydrants, Section 8 Pipework and Valves, 8.7 Support of Fire Hydrant Pipework, Clause 8.7.2 Pipe Support Design.

Developer to relocate the exhaust pipe in compliance with AS1668.2-2012 C 3.10.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

**p. Remediate Defect 16 by:**

Developer to carry out rectification of the protection of fire hydrant pipework to comply with AS 2419 and the BCA Volume One, Section E Services and Equipment, Part E1 Fire Fighting Equipment.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

**q. Remediate Defect 17 by:**

Developer to install the required exit signs to comply with the BCA Volume One, Section E services and Equipment, Part 4 Visibility in an Emergency, Exit Signs and Warning Signs, Deemed-to-Satisfy Provision E4.5 Exit Signs.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

**r. Remediate Defect 18 by:**

Developer to:

1. Engage a passive fire protection specialist to undertake comprehensive inspection of the entire building to ascertain the complete scope of works for remediation.
2. Rectify the pipework installation to comply with the BCA Volume One, Section C Fire Resistance, Part C3 Protection of Openings, Clause C3.9 Service Penetrations in Fire-Isolated Exits.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

s. **Remediate Defect 19 by:**

Developer to:

1. Engage a passive fire protection specialist to undertake comprehensive inspection of the entire Building to ascertain the complete scope of works for remediation.
2. Seal up openings with compliant fire-related material and system to achieve the minimum FRL as stated in the BCA Volume One, Section C Fire Resistance, Part C1.1 Fire-Resisting Construction, Clause 3.1 Fire-resistance of Building Element.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

t. **Remediate Defect 20 by:**

Developer to:

1. Engage a passive fire protection specialist to undertake comprehensive inspection of the entire Building to ascertain the complete scope of works for remediation.
2. Rectify the door frames in accordance with AS 1905 and the BCA Volume One, Section C Fire Resistance, Specification C3.4 Fire doors, smoke doors, fire windows and shutters.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

u. **Remediate Defect 21 by:**

Developer to rectify the inconsistent floor levels to comply with the BCA Volume One, Section D Access and Egress Performance Requirement DP2.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

v. **Remediate Defect 22 by:**

Developer to rectify the non-compliant installation to comply with BCA, Volume One, Part D2 Construction of Exits, Section D2.4 Separation of rising and descending stair flights.

Developer to make good any resultant consequential damage.



Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

w. **Remediate Defect 23 by:**

Developer to conduct remedial rectification work to the structural concrete slab in co-ordination with the suitable protective coating to protect the steel structure against corrosion and fire.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

x. **Remediate Defect 24 by:**

Developer to rectify the defect to comply with AS 3600 Concrete Structures and the BCA Volume One, Section B Structure, Part B1 Structural Provisions.

Developer to waterproof the concrete joint such that water cannot penetrate the building in accordance with Australian Standard AS4654.2.

Developer to propose and execute an approved rectification methodology to the cracked concrete structure.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

y. **Remediate Defect 25 by:**

Developer to rectify the structural defects to comply with AS 3600 Concrete Structures and the BCA Volume One, Section B Structure, Part B1 Structural Provisions, Performance requirements BP1.1 and clause B1.4.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

z. **Remediate Defect 26 by:**

Developer to rectify exposed steel members to comply with AS 4100 and the BCA Volume One, Section B Structure, Part B1 Structural Provisions, Clause B1.4 Determination of Structural Resistance of Materials and Forms of Construction.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

aa. **Remediate Defect 27 by:**

Developer to prevent the collection of moisture in the external wall cavity and resultant water ingress into the internal spaces to comply with BCA Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, FP1.4.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

**bb. Remediate Defect 28 by:**

Developer to carry out rectification of the sub-surface and surface drainage defects to comply with the BCA Volume One, Section F1 Damp and Waterproofing, Part F1.1 Stormwater Drainage and AS 3500.3 Plumbing and drainage – Stormwater drainage and the approved plans.

Particular attention to be given to, but not limited to, ensuring drainage pipework is fitted with clean out / maintenance provisions.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

**cc. Remediate Defect 29 by:**

Developer to provide separate exhaust systems for different groups of enclosures as stated in clause 3.9 of AS 1668.2-2012.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

**dd. Remediate Defect 30 by:**

Developer to provide air systems in the Carpark as stated in clause 3 and 4 of AS 1668.2-2012.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

**ee. Remediate Defect 31 by:**

Developer to demonstrate compliance with AS 4254 Duct for Air-Handling System in Buildings Part 2 Rigid Duct, Section 3 External Equipment Installation, Part 3.2 Roof Penetrations.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

**ff. Remediate Defect 32 by:**

Developer to:

Provide adequate protection against electrical shock and damage due to water/humidity.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

**gg. Remediate Defect 33 by:**

Developer to install an adequate mechanical ventilation system for the gas meter cupboard to comply with AS 1668, AS 5601 and the BCA Volume One, Section F Health and Amenity, Part F4 Light and Ventilation, Deemed-to-Satisfy Provision, Clause F4.5 Ventilation of Rooms.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

**hh. Remediate Defect 34 by:**

Developer to install drain sump pit to ensure compliance with Clause 12.5.1 of AS 3500.2-2015 and BCA Volume Three, Sanitary Plumbing and Drainage Systems.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

**ii. Remediate Defect 35 by:**

Developer to provide a compliant stormwater drainage system to exit egress in accordance with AS 3500.3 and BCA Volume One, Section F Health and Amenity, Part F Damp and Waterproofing, Performance Requirement FP1.3.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

**jj. Remediate Defect 36 by:**

Developer to rectify the system to comply with AS 4252.2-2012 section 2 and AS 1668.1-2015, including the thickness and material used.

Developer to make good any resultant consequential damage.

Developer to demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer compliance certificates and any third-party inspection reports.

#### **Period for Compliance with Order**

45. The work specified in paragraph 44 of this Order must be completed within 180 days of the date of this Order.

#### **Conditions of this Order**

46. Eastern Pearl Pty Ltd (ACN 095 570 862) must notify Joshua Jackett in writing, by email sent to [ocaudits@customerservice.nsw.gov.au](mailto:ocaudits@customerservice.nsw.gov.au) within 2 business days of the work required by this Order being completed.

#### **Duration of this Order**

47. This Order remains in force until it is revoked by the Secretary.



David Chandler  
**NSW Building Commissioner**  
**Department of Customer Service**

# REASONS FOR THE ORDER

## Reasonable belief and serious defects

1. I, David Chandler, an authorised delegate of the Secretary of the Department, have formed a reasonable belief for the purposes of section 33(1) of the Act in relation to Defects in the Order, that in the Building has serious defects.
2. **Defect 1** The failure to prevent water penetration as described above in paragraph 8 of the Order is a serious defect in a building element (waterproofing) because it fails to comply with the BCA (specifically, Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Performance Requirement FP1.4 and Deemed-to-Satisfy Provision F1.4) and AS 4654.2 Waterproofing Membranes For External Use Above Ground Use (specifically, Section 2 Design and Installation, 2.8 Termination of membranes, 2.8.1.1 Height). I have formed this belief after reviewing a copy of section 1.1 of the Audit Report dated 16 November 2022. I have also reviewed photographs of the water seepage stains at the floor below the Podium and at the GF elevator to the Podium, and a photograph of efflorescence on the slab soffit at the Carpark.
3. **Defect 2** The failure to prevent water penetration as described above in paragraph 9 of the Order is a serious defect in a building element (waterproofing) because it fails to comply with the BCA (specifically, Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Performance Requirements FP1.3 and FP1.4). I have formed this belief after reviewing a copy of section 1.2 of the Audit Report dated 16 November 2022. I have also reviewed photographs of water seepage behind the concrete perimeter wall, at the loading bay behind the Dintel wall and at the cold joint at Basement 1.
4. **Defect 3** The inadequate drainage as described above in paragraph 10 of the Order is a serious defect in a building element (waterproofing) because it fails to comply with the BCA (specifically, Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Performance Requirement FP1.3 and Deemed-to-Satisfy Provision F1.0) and AS 3500.3 Plumbing and Drainage (specifically, Part 3 Stormwater Drainage, Section 5 Surface Drainage Systems – Design Clause 5.3.1.1 Roof areas). I have formed this belief after reviewing a copy of section 1.3 of the Audit Report dated 16 November 2022. I have also reviewed photographs of the external area adjacent to the GF units depicting the inadequate drainage.
5. **Defect 4** The inadequate surface drainage system as set out in paragraph 11 of the Order is a serious defect in a building element (waterproofing) in that it fails to comply with the BCA (specifically, Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Performance Requirement FP1.3 and Deemed-to-Satisfy Provision F1.0) and AS 3500.3 Plumbing and Drainage (specifically, Part 3 Stormwater Drainage, Section 5 Surface Drainage Systems – Design Clause 5.3.1.1 Roof areas). I have formed this belief after reviewing a copy of section 1.4 of the Audit Report dated 16 November 2022. I have also reviewed a photograph of surface water ponding at the Podium lift platform, and a photograph depicting that the fall gradient is in the opposite direction of the drain.
6. **Defect 5** The inadequate waterproofing installation as described above in paragraph 0 of the Order is a potential serious defect in a building element (waterproofing) because it fails to comply with the BCA (specifically, Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Performance Requirement FP1.4 and Deemed-to-Satisfy Provision F1.4) and AS 4654.2 Waterproofing membranes for external above ground use (specifically, Section 2 Design and Installation 2.8 Termination of membranes). I have formed this belief after reviewing a copy of section 1.5 of the Audit

Report dated 16 November 2022. I have also reviewed a photograph depicting the waterproofing membrane penetrated by bolts, screws and other fixings.

7. **Defect 6** The inadequate surface water drainage system as described above in paragraph 13 of the Order is a potential serious defect in a building element (waterproofing) in that it fails to comply with the BCA (specifically, Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Performance Requirements FP1.3 and FP1.4) and AS 4654.2 (specifically, Waterproofing membranes for external above ground use, Section 2 Design and installation, 2.5 Substrate, 2.5.2 Falls). I have formed this belief after reviewing a copy of section 1.6 of the Audit Report dated 16 November 2022. I have also reviewed a photograph of uninstalled roof drains, photographs of water ponding on the Rooftop, including on ducts and cables, and a photograph depicting that the sealant for the exhaust is not adequately protected from water damage.
8. **Defect 7** The inadequately sealed air-conditioning penetrations as described above in paragraph 14 of the Order is a potential serious defect in a building element (waterproofing) in that it fails to comply with the BCA (specifically, Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Performance Requirement FP1.4 Weatherproofing, and Deemed-to Satisfy Provision F1.4) and AS 4654.2 Waterproofing Membranes for External Above Ground Use (specifically, Section 2 - Design and installation). I have formed this belief after reviewing a copy of section 1.7 of the Audit Report dated 16 November 2022. I have also reviewed a photograph depicting the presence of corrosion of the air-conditioning unit fixings.
9. **Defect 8** The inadequate slab fall gradient as described above in paragraph 15 of the Order is a potential serious defect in a building element (waterproofing) that is required to achieve compliance with the BCA (specifically, Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Performance Requirement FP1.3 Weatherproofing, and Deemed-to-Satisfy Provision F1.3) and AS 3500.3 Plumbing and Drainage (specifically, Stormwater Drainage, Section 5 Surface water drainage system – Design, 5.3 Layout – General criteria). I have formed this belief after reviewing a copy of section 1.8 of the Audit Report dated 16 November 2022. I have also reviewed a photograph of the presence of water ponding at the Carpark as a result of the inadequate slab fall gradient.
10. **Defect 9** The inadequate waterproofing system at the planter boxes as described above in paragraph 16 of the Order is a potential serious defect in a building element (waterproofing) in that it fails to comply with the BCA (specifically, Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Performance Requirement FP1.4 Weatherproofing and Deemed-to-Satisfy Provision F1.4) and AS 4654.2 Waterproofing membranes for external above-ground use – Design and installation, Section 2 - Design and installation, 2.13 Planter boxes. I have formed this belief after reviewing a copy of section 1.9 of the Audit Report dated 16 November 2022. I have also reviewed photographs of the inadequate waterproofing system at the planter boxes.
11. **Defect 10** The failure to prevent water penetration and to provide an adequate drainage system as described above in paragraph 17 of the Order is a potential serious defect in a building element (waterproofing) that is required to achieve compliance with the BCA (specifically, Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, Performance Requirement FP1.3 and FP1.4). I have formed this belief after reviewing a copy of section 1.10 of the Audit Report dated 16 November 2022. I have also reviewed a photograph of the water ponding at the Fire Stair and water ponding in the perimeter drain at the landing of the staircase.
12. **Defect 11** The incomplete fire compartmentation as described above in paragraph 18 of the Order is a serious defect in a building element (fire safety systems) that is required to achieve compliance with the BCA (specifically, Volume One, Section C Fire Resistance,



Part C1.1 Fire-Resisting Construction, CP8). I have formed this belief after reviewing a copy of section 2.1 of the Audit Report dated 16 November 2022. I have also reviewed a photograph of the incomplete fire compartmentation at B1.

13. **Defect 12** The inadequate fire resistance of service penetrations as described above in paragraph 19 of the Order is a serious defect in a building element (fire safety systems) that is required to achieve compliance with the BCA (specifically, Volume One, Section C Fire resistance, Performance Requirement CP8 and Deemed-to-Satisfy Provision C3.15). I have formed this belief after reviewing a copy of section 2.2 of the Audit Report dated 16 November 2022. I have also reviewed photographs of the sewerage pipes, hydraulic pipes, soffit pipes, pipes penetrating ducts, pipes in the ceiling openings and a pipe at the pump room depicting that the penetrations have inadequate fire-checking.
14. **Defect 13** The inadequate fire damper installation as described above in paragraph 0 of the Order is a serious defect in a building element (fire safety systems) that is required to achieve compliance with the BCA (specifically, Volume One Section C CP2 Spread of Fire and AS 1682.1 Fire, smoke and air dampers, Part 1 Specification, Section 1 Scope and General, 1.8 Installation instructions). I have formed this belief after reviewing a copy of section 2.3 of the Audit Report dated 16 November 2022. I have also reviewed photographs depicting that fire dampers in the bin room of B1 are not installed.
15. **Defect 14** The inadequate fire sprinkler installation as described above in paragraph 21 of the Order is a serious defect in a building element (fire safety systems) that is required to achieve compliance with the BCA (specifically, Volume One, Section E1 Fire Fighting Equipment, Part E1.5 Sprinklers) and AS 2118 Automatic Fire Sprinklers, Part 1 General Requirements, Section 5 Spacing and Location of Sprinklers, Clause 5.4.4 Beams and Joists and Clause 5.7.3 Ducts and Bulkheads, I have formed this belief after reviewing a copy of section 2.4 of the Audit Report dated 16 November 2022. I have also reviewed photographs of the inadequate fire sprinkler installation at the Carpark at B1 and a photograph of the inadequate spacing of the fire sprinklers below the duct.
16. **Defect 15** The inadequate fire hydrant pipework as described above in paragraph 22 of the Order is a potential serious defect in a building element (fire safety systems) that is required to achieve compliance with AS 2419.1 Fire Hydrants (specifically, Section 8 Pipework and Valves, 8.7 Support of Fire Hydrant Pipework, Clause 8.7.2 Pipe Support Design and Clause 3.10.3 Discharges Deemed Objectionable). I have formed this belief after reviewing a copy of section 2.5 of the Audit Report dated 16 November 2022. I have also reviewed a photograph of the Sprinkler Booster assembly depicting the pipework support system and shows that the exhaust pipe is too close to the street.
17. **Defect 16** The failure to protect the fire hydrant system from corrosion as described above in paragraph 23 of the Order is a potential serious defect in a building element (fire safety systems) that is required to achieve compliance with the BCA (specifically, Volume One, Section E Services and Equipment, Part E1 Fire Fighting Equipment) and AS 2419.1 Fire Hydrant Installations (specifically, Part 1 System Design, Installation and Commissioning, Section 8 Pipework and Valves, 8.6 System Protection and Identification, Clause 8.6.2 Corrosion Protection). I have formed this belief after reviewing a copy of section 2.6 of the Audit Report dated 16 November 2022. I have also reviewed a photograph depicting that the fire hydrant pipework is corroded.
18. **Defect 17** The failure to install exit signs as described above in paragraph 24 of the Order is a potential serious defect in a building element (fire safety systems) that is required to achieve compliance with BCA (specifically, Volume One, Section E Services and equipment, Performance Requirement EP4.2 Identification of exits and Deemed-to-Satisfy Provision E4.5 Exit signs). I have formed this belief after reviewing a copy of section 2.7 of the Audit Report dated 16 November 2022. I have also reviewed a photograph depicting that the exit sign at the fire safety door is not installed.

19. **Defect 18** The prohibited sprinkler penetration in the fire-isolated exit as described above in paragraph 25 of the Order is a potential serious defect in a building element (fire safety systems) that is required to achieve compliance with BCA (specifically, Volume One, Section C Fire Resistance, Part C3 Protection of Openings, Clause C3.9 Service Penetrations in Fire-Isolated Exits and Clause C3.15 Openings for Service Installations). I have formed this belief after reviewing a copy of section 2.8 of the Audit Report dated 16 November 2022. I have also reviewed a photograph depicting the sprinkler pipe penetrating the fire-rated stairwell.
20. **Defect 19** The inadequate fire-resistant sealing of service penetrations as described above in paragraph 26 of the Order is a potential serious defect in a building element (fire safety systems) that is required to achieve compliance with the BCA (specifically, Volume One, Section C Fire Resistance, Part C1.1 Fire-Resisting Construction, Clause 3.1 Fire-resistance of Building Elements). I have formed this belief after reviewing a copy of section 2.9 of the Audit Report dated 16 November 2022. I have also reviewed a photograph depicting the inadequate fire-resistant sealing of service penetrations in the Carpark.
21. **Defect 20** The failure to backfill the metal fire door frames as described above in paragraph 27 of the Order is a potential serious defect in a building element (fire safety systems) that is required to achieve compliance with the BCA (specifically, Volume One, Section C Fire resistance, Performance Requirement CP2 and Specification 3.4 Fire doors, smoke doors, fire windows and shutters Clause 2 Fire doors) and AS 1905.1 Components for the protection of openings in fire-resistant wall (specifically, Part 1: Fire resistant doorsets, Section 5 Installation, 5.3 Metal doorframes in masonry walls, 5.3.2 Backfilling of metal door frames). I have formed this belief after reviewing a copy of section 2.10 of the Audit Report dated 16 November 2022. I have also reviewed a photograph of the fire door frame.
22. **Defect 21** The uneven floor levels as described above in paragraph 28 of the Order is a potential serious defect in a building element (fire safety systems) that is required to achieve compliance with BCA (specifically, Volume One, Section D Access and Egress Performance Requirement DP2). I have formed this belief after reviewing a copy of section 2.11 of the Audit Report dated 16 November 2022. I have also reviewed photographs of the uneven and stepped floor levels at the Hydrant Booster and Sprinkler Valve Room.
23. **Defect 22** The failure to fire-isolate the Fire Stair as described above in paragraph 29 of the Order is a potential serious defect in a building element (fire safety systems) that is required to achieve compliance with BCA (specifically, Volume One, Part D2.4 Separation of rising and descending stair flights). I have formed this belief after reviewing a copy of section 2.12 of the Audit Report dated 16 November 2022. I have also reviewed a photograph of the Fire Stair depicting the failure to fire-isolate the access to the Fire Pump Room.
24. **Defect 23** The failure to provide protective cover for the reinforcing steel as described above in paragraph 30 of the Order is a serious defect in a building element (structural systems) that is required to achieve compliance with AS 3600-2009 Concrete Structures (specifically, Section 4 Design for Durability, Part 4.10 Requirements for Cover to Reinforcing Steel and Tendons, 4.10.1 General). I have formed this belief after reviewing a copy of section 3.3 of the Audit Report dated 16 November 2022. I have also reviewed a photograph depicting exposed reinforcing steel on the slab of the Fire Stair at the access to the Fire Pump Room.
25. **Defect 24** The untreated construction joint as described above in paragraph 31 of the Order is a potential serious defect in a building element (structural systems) that is required to achieve compliance with AS 3600 Concrete Structures (specifically, Section 17

Material and Construction Requirement, Part 17.4 Construction Requirements for Joint and Embedded Items, Clause 17.4.1 Location of Construction Joints and Clause 17.1.3 Handling, Placing and Compacting of Concrete). I have formed this belief after reviewing a copy of section 3.6 of the Audit Report dated 16 November 2022. I have also reviewed a photograph depicting the water seepage stains at the floor below the Podium and a photograph of the untreated construction joint in the Carpark.

26. **Defect 25** The inadequate concrete installation as described above in paragraph 32 of the Order is a serious defect in a building element (structural systems) that is required to achieve compliance with the BCA (specifically, Volume One, Section B Structure, Part B1 Structural Provisions, Performance Requirement BP1.1) and AS 3600 Concrete Structures (specifically, Section 17 Material and construction requirements, Clause 17.5 Tolerance for structures and members). I have formed this belief after reviewing a copy of section 3.7 of the Audit Report dated 16 November 2022. I have also reviewed a photograph of the poorly placed, cracked and drummy concrete at the access to the Rooftop from the Fire Stair.
27. **Defect 26** The corrosion of permanent steel structures as described above in paragraph 33 of the Order is a potential serious defect in a building element (building enclosure) that is required to achieve compliance with BCA (specifically, Volume One, Section B Structure, Part B1 Structural Provisions, Clause B1.4 Determination of Structural Resistance of Materials and Forms of Construction). I have formed this belief after reviewing a copy of section 4.1 of the Audit Report dated 16 November 2022. I have also reviewed a photograph depicting the corrosion of steel members at the Rooftop.
28. **Defect 27** The inadequate drainage for the external wall cladding system as described above in paragraph 34 of the Order is a potential serious defect in a building element (building enclosure) that is required to achieve compliance with BCA (specifically, Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing, FP1.4). I have formed this belief after reviewing a copy of section 4.3 of the Audit Report dated 16 November 2022. I have also reviewed photographs of the external wall cladding system depicting the absence of weep holes.
29. **Defect 28** The inadequate drainage installation as described above in paragraph 35 of the Order is a serious defect in a building element (building essential services) that is required to achieve compliance with BCA (specifically, Volume One, Section F1 Damp and Waterproofing, Part F1.1 Stormwater Drainage and F1.1 Stormwater drainage) and AS 3500 Plumbing and drainage (specifically, Stormwater drainage, Section 6 Surface and subsoil drainage systems - installation, 6.4 Subsoil drains, Clause 6.4.1 General). I have formed this belief after reviewing a copy of section 5.1 of the Audit Report dated 16 November 2022. I have also reviewed a photograph depicting the inadequate basement parking drain.
30. **Defect 29** The failure to keep separate exhaust air systems that serve different types of enclosures as described above in paragraph 36 of the Order is a serious defect in a building element (building essential services) that is required to achieve compliance with AS 1668.2 The Use of Ventilation and Airconditioning in Buildings (specifically, Part 2 Mechanical Ventilation in Buildings, Section 3 Mechanical Ventilation - Exhaust Systems, Clause 3.9 Combination Exhaust Systems). I have formed this belief after reviewing a copy of section 5.2 of the Audit Report dated 16 November 2022. I have also reviewed a photograph of the common exhaust system shared amongst the bin room, carpark and toilet.
31. **Defect 30** The inadequate ventilation system for make-up air as described above in paragraph 37 of the Order is a serious defect in a building element (building essential services) that is required to achieve compliance with AS 1668.2 The Use of Ventilation and Airconditioning in Buildings (specifically, Part 2 Mechanical Ventilation in Buildings,

Section 4 Ventilation of Enclosures used by Vehicles with Combustion Engines, Clause 4.8 Make-up of Exhaust Air). I have formed this belief after reviewing a copy of section 5.3 of the Audit Report dated 16 November 2022. I have also reviewed photographs of the inadequate ventilation system for make-up air at the basement Carpark.

32. **Defect 31** The inadequate exhaust duct installation as described above in paragraph 38 of the Order is a serious defect in a building element (building essential services) that is required to achieve compliance with AS 4254.1 Ductwork for Air-Handling System in Buildings (specifically, Part 2 Rigid Duct, Section 3 External Equipment Installation, Part 3.2 Roof Penetrations). I have formed this belief after reviewing a copy of section 5.5 of the Audit Report dated 16 November 2022. I have also reviewed a photograph of the Rooftop entryway depicting the inadequate clearance between the exhaust duct and the Rooftop entryway and a photograph of the exhaust duct depicting that it is constructed level with the roof.
33. **Defect 32** The inadequate waterproofing of the electrical panel as described above in paragraph 39 of the Order is a serious defect in a building element (building essential services) that is required to achieve compliance with AS 3000 (specifically, Clause 1.7.4 Damp Situations). I have formed this belief after reviewing a copy of section 5.8 of the Audit Report dated 16 November 2022. I have also reviewed a photograph of a lift depicting that the plant registration certificate is not displayed, and a photograph of the electrical panel for the lift at the Podium depicting that it is in an exposed location.
34. **Defect 33** The failure to install adequate mechanical ventilation as described above in paragraph 40 of the Order is a potential serious defect in a building element (building essential services) that is required to achieve compliance with BCA Volume One, Section F Health and Amenity, Part F4 Light and Ventilation) and AS 1668.2 The Use of Ventilation and Air-conditioning in Buildings (specifically, Part 2 Mechanical Ventilation in Buildings, Section 1 Scope and General, Clause 1.1 Scope, Note 8) and AS 5601 Gas Installations (specifically, Part 1 General Installations, Section 5 Means of Compliance – Installing Consumer Piping, Part 5.13 Ventilation of Gas Equipment, Clause 5.13.14 Mechanical Ventilation). I have formed this belief after reviewing a copy of section 5.11 of the Audit Report dated 16 November 2022. I have also reviewed a photograph of the gas meter cupboard.
35. **Defect 34** The inadequate sump pit installation as described above in paragraph 41 of the Order is a potential serious defect in a building element (building essential services) that is required to achieve compliance with the BCA (specifically, Volume Three, Section C Sanitary Plumbing and Drainage Systems, Part C1 Sanitary Plumbing Systems) and AS 3500.2 Plumbing and Drainage (specifically, Part 2 Sanitary Plumbing and Drainage, Section 12 Pumped Discharge, Part 12.5 Wet Wells, Clause 12.5.1 General) and the Fire Hydrant Block Plan. I have formed this belief after reviewing a copy of section 5.13 of the Audit Report dated 16 November 2022. I have also reviewed photographs of the drain sump pit at the Carpark of B1, and a photograph of the Fire Hydrant Block Plan depicting the required capacity of the drain sump pit.
36. **Defect 35** The inadequate piped drainage system as described above in paragraph 42 of the Order is a potential serious defect in a building element (building essential services) that is required to achieve compliance with BCA (specifically, Volume One, Section F Health and Amenity, Part F1 Damp and Weatherproofing) and AS 3500.3 Plumbing and Drainage (specifically, Part 3: Stormwater Drainage, Section 5 Surface Drainage Systems – Design, Part 5.2 Design, Clause 5.2.2 General Criteria). I have formed this belief after reviewing a copy of section 5.14 of the Audit Report dated 16 November 2022. I have also reviewed a photograph of the external door at the Exit egress depicting the inadequate drainage system.

37. **Defect 36** The inadequate duct sealing of air-conditioning system as described above in paragraph 43 of the Order is a potential serious defect in a building element (building essential services) that is required to achieve compliance with BCA (specifically, Volume One, Section J5.2b Clause 2 Sealing of Ductwork) and AS 4254 (specifically, Clause 2.2.4 Air Leakage). I have formed this belief after reviewing a copy of section 5.15 of the Audit Report dated 16 November 2022. I have also reviewed photographs depicting that the air ducts connecting the air conditioning unit are penetrated by hydraulic pipes without adequate duct sealing.

### Consideration of written representations

38. On 18 January 2023 a notice of intention to issue the Order and a draft copy of the Order was served on the Developer, City of Ryde Council ("**Local Council**"), the Owners of Strata Plan No 96601 ("**Owners Corporation**") and Blakett Maguire + Goldsmith ("**Private Certifier**"). The parties were invited to provide submissions relating to the draft copy of the Order by 1 February 2023.
39. The Owners Corporation did not provide written submissions.
40. The Developer provided the Department with written submissions on 17 April 2023 ("**Developer Representations**") which included the following:
- a. that the original contractor for the construction of 13 – 15 Porter Street, Ryde NSW 2112 ("**Property**") was placed in administration and was the subject of a deed of company arrangement;
  - b. that the Developer was engaging with the Owners Corporation and was a party to a written agreement with the Owners Corporation for the rectification of the alleged defects in the Property;
  - c. that the Developer has taken and continues to take steps to obtain quotations from contractors proposed to be contracted by the Developer to carry out work to rectify the alleged defects;
  - d. that the Order if issued, would unnecessarily cause prejudice to the Developer and the Owners Corporation.
41. The Private Certifier provided the Department with written submissions on 24 January 2023 ("**Private Certifier Representations**") which included the following:
- a. an acknowledgement of receipt of the notice of intention to issue the Order and the draft copy of the Order;
  - b. advices that the Private Certifier had liaised with the Developer regarding the notice of intention to issue the Order and the draft copy of the Order;
  - c. that the Private Certifier had requested to speak with the relevant party within the Department to assist with fielding questions from the Private Certifier.
42. I have reviewed and considered the Developer Representations and the Private Certifier Representations pursuant to section 47 of the Act.
43. I make the following observations in relation to the Developer Representations:
- a. I acknowledge that the Developer and the Owners Corporation have been and continue to engage with one another in relation to the rectification of defects in the Property;



- b. I do not consider that the making of this Order would unnecessarily cause prejudice to the Developer and the Owners Corporation.

**Why is it appropriate to give the Building Work Rectification Order?**

- 44. I have considered all of the circumstances. I accept that the Order requires considerable further construction work that is likely to be costly, and I give this consideration moderate weight. However, the cost to the developer must be balanced against the benefit to the occupiers of the Building in having the Building being:
  - a. appropriately waterproofed so as to prevent unhealthy or dangerous conditions, or loss of amenity to occupants or undue dampness or deterioration of building elements;
  - b. compliant with fire safety standards so as to resist and reduce the spread of fire within the Building; and
  - c. structurally sound so that the Building is protected from the threat of destruction or of collapse, and the Building and all parts of the Building may be used for their intended purpose.
- 45. Considering these potential consequences as outlined in this Order, I give greater weight to the seriousness of the defects and failure to adhere to the Building Code of Australia and the Australian Standards, and the benefits arising from remediating the defects and I find that it is appropriate, in the exercise of my discretion, to require Eastern Pearl Pty Ltd (ACN 095 570 862) to carry out the building work described in paragraph 44 of the Order within the period specified in paragraph 45 of the Order.



### Notes about this Order

- A person is not required to obtain consent or approval under the *Environmental Planning and Assessment Act 1979* to carry out work in compliance with a requirement of a Building Work Rectification Order.
- It is an offence to fail to comply with this Order. The maximum penalty for a company is 3,000 penalty units and in addition, for every day the offence continues, 300 penalty units. For an individual the maximum penalty is 1,000 penalty units and in addition, for every day the offence continues, 100 penalty units.
- You may appeal to the Land and Environment Court against this Order within 30 days after this Order is given, unless the Land and Environment Court grants leave for it to be made after that time. Lodging an appeal does not operate to stop the effect of this Order unless ordered by the Court.
- You are entitled to be given reasons for this Order, unless it has been given in an emergency. The reasons have been included within this Order and are not provided separately.
- The Secretary has given the following persons notice of the making of this building work rectification order:
  - o the relevant local council,
  - o if the local council is not the certifier in relation to the building work—the principal certifier,
  - o if you are not the owner of the land concerned—the owner of the land concerned,
  - o the Registrar-General,
  - o if the order relates to a strata building—the relevant owners corporation,
  - o any other person prescribed by the regulations.
- This Order specifies a time by which, or period within which, the order must be complied with. This Order continues to have effect until it is complied with even though the time has passed, or the period has expired, unless any requirement under this Order is revoked.