Department of Customer Service

Attn. the Proper Officer
Iridium Developments Pty Ltd
ACN 615 947 307
Suite 101, 2 Burbank Place
NORWEST NSW 2153

Service: By registered post and by email 27 April 2023

Building Work Rectification Order

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

Iridium Developments Pty Ltd ACN 615 947 307 is being given this Building Work Rectification Order ("Order") in relation to 49 Gerrale Street, Cronulla NSW 2230 (SP103713) ("the Building").

Iridium Developments Pty Ltd ACN 615 947 307 is required to cause building work to be carried out to remediate the potential serious defects as set out in paragraphs 8 to 20 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. Ms Elizabeth Stewart is an authorised delegate of the Secretary of the Department. With the consent of the owners corporation, an authorised officer of the Department along with a third party consultant engaged by the Department attended the Building (**Investigator**) on 13 October 2022. The Investigator prepared a report on serious defects in the Building (**Audit Report**).

4. **Iridium Developments Pty Ltd ACN 615 947 307** is the developer of the residential apartment building at 49 Gerrale Street, Cronulla NSW 2230 (**SP103713**) (the Building) for the purposes of section 4 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) Act2017*) in contravention of that Act.

6. Under s 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, Elizabeth Stewart, am the decision maker for this Building Work Rectification Order **(the Order**). I have considered the Audit Report and have decided to issue the Order to **Iridium Developments Pty Ltd ACN 615 947 307** because I have formed a reasonable belief under s 33(1) of the Act the Building has a serious defects as set out in this Order.

Descriptions of serious defects

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.

8. Defect 1 – Waterproofing

Description of serious defect	Applicable performance requirements	Remediation work to be carried out or caused to be carried out by the Developer	Time period for compliance
When inspecting the Basement Level and B2 fire stairs of the Building, the Investigator observed the following: 1. Uncontrolled water penetration within the Basement Level B2 SW Fire Stairs; 2. A steel angle 'spoon drain' was observed to some perimeter walls at floor level within B2 SW Fire stairs, however water ingress on the fire stairwell was not connected to the spoon drain; 3. Spoon drain to B2 NE Fire stair not was constructed to all external wet walls. Water ingress was possible; 4. The B2 to B1 driveway ramp on the northern side of the property showed evidence of uncontrolled water penetration. Moisture staining from perimeter wall water ingress shown on ramp. I have formed the view that the uncontrolled water penetration as described above is a serious defect because it is a defect in a building element (waterproofing) that is attributable to a failure to comply with the following:	**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."* This constitutes a defect as it causes or is likely to cause the inability to inhabit or use the building (or part of the building) for its intended purpose.	Developer to: 1. prevent the uncontrolled water penetration into the Basement fire stairs and basement levels (if any) in accordance with the BCA Volume One; 2. 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.	Within 180 days of issuance of this Order.

9. Defect 2 – Waterproofing			
Description of serious defect	**Applicable performance requirements**	**Remediation work to be carried out or caused to be carried out by the Developer**	**Time period for compliance**
The Investigator made the following observations in relation to Unit 101 and the external façade and western bedroom of the Building: I have formed the belief that the water ingress issues as described above is a serious defect because it is a defect in a building element (waterproofing) that is attributable to a failure to comply with the following:	**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."* This constitutes a defect as it causes or is likely to cause the inability to inhabit or use the building (or part of the building) for its intended purpose.	Developer to: 1. prevent the penetration of water into habitable units in accordance with BCA Volume One; 2. demonstrate compliance of remediation works by providing evidence including but not limited to comprehensive photographs of work in progress, installer Building & Practitioner compliance certificates and any third-party inspection reports.	Within 180 days of issuance of this Order.

10. Defect 3 – Waterproofing			
Description of serious defect	**Applicable performance requirements**	**Remediation work to be carried out or caused to be carried out by the Developer**	**Time period for compliance**
When inspecting the external balcony of that part of the Building known as Unit 101, the Investigator observed the following: 1. The balcony membrane was observed to have an active service conduit (likely electricity) installed under the finished liquid membrane, and the conduit location did not allow the water to sufficiently drain away to the drainage system; 2. The pedestal's paver pad was observed to be installed directly on top of the conduit. This installation was noted by the Investigator to have the ability to cause damage to the membrane. I have formed the belief that the insufficient waterproofing system as described above is a serious defect because it is a defect in a building element (waterproofing) that is attributable to a failure to comply with the following:	The insufficient waterproofing system installation demonstrates a failure to comply with the **Australian Standard 4654.2-2012 Waterproofing Membrane for External Above-Ground Use-Installation, Section 2 – Design and installation, Part 2.5 Substrate, 2.5.2** as the works have been carried out with poor quality of workmanship and the work has not been completed in a proper and workmanlike manner. The waterproofing membrane installation demonstrates a failure to comply with the **Australian Standard 4654.2-2012 Waterproofing Membrane for External Above-Ground Use-Installation, Section 2 – Design and installation, Part 2.5 Substrate, 2.5.2**, which states in part: *"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".* This constitutes a defect as it causes or is likely to cause the inability to inhabit or use the building (or part of the building) for its intended purpose.	Developer to: 1. Prevent the ponding of water and deterioration of the membrane and damage to service conduit in accordance with the BCA Volume One; and 2. 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.	Within 120 days of issuance of this Order.

11. Defect 4 – Waterproofing			
Description of serious defect	**Applicable performance requirements**	**Remediation work to be carried out or caused to be carried out by the Developer**	**Time period for compliance**
When inspecting the podium slab located at the entrance of the Building, the Investigator observed that the location of all expansion joints in the podium slab, tiling and planter boxes was not able to be located or ascertained. I have formed the belief that the inadequate installation of the podium slab as described above is a serious defect because it is a defect in a building element (waterproofing) that is attributable to a failure to comply with the following:	The installation demonstrates a failure to comply with **Australian Standard 3700 - 2011 Masonry structures, Section 12 Construction, 12.4 Workmanship section 12.4.3 - Movement control joints,** which states *"Expansion joints (closing control joints) and articulation joints shall be clean and free from any hard or incompressible material for the full width and depth of the joint before joint filling material (if any) is inserted."* This constitutes a defect as it causes or is likely to cause the inability to inhabit or use the building (or part of the building) for its intended purpose.	Developer to: 1. rectify the defect in accordance with the BCA Volume One and Australian Standard 3700 – Masonry Structures; 2. demonstrate compliance of remediation works by providing evidence including but not limited to Structural engineers' inspection report, repair recommendations comprehensive photographs of works in progress, engineers' approval/signoff on post rectification.	Within 120 days of issuance of this Order.

12. Defect 5 – Fire Safety Systems

Description of serious defect	Applicable performance requirements	Remediation work to be carried out or caused to be carried out by the Developer	Time period for compliance
When inspecting the Basement Level B1 of the Building, the Investigator observed that some of the fire sprinklers were installed above service pipes (and were consequently obstructed). I have formed the belief that the inadequate sprinkler installation as described above is a serious defect because it is a defect in a building element (fire safety systems) that is attributable to a failure to comply with the following:	**Australian Standard 2118.1: 2017 Automatic fire sprinkler systems Part 1: General systems, Section 5 Spacing and location of sprinklers, Clause 5.7.8**, which states: *"Where there are obstructions such as girders, ducting, cable trays, pipe racks and continuous lighting less than 800 mm and more than 300mm wide that are either wholly or partly within the required clear space specified in Clause 5.7.7, there shall be a line of sprinklers located on both sides of the centre-line of the obstruction. Where the obstruction is less than 300 mm wide, the radial distance from the sprinkler deflector to the nearest point of the obstruction shall be not less than 4 times the height or width of the obstruction, whichever is greater".* This constitutes a defect as it causes or is likely to cause the inability to inhabit or use the building (or part of the building) for its intended purpose.	Developer to: 1. carry out the rectification of the fire sprinklers in accordance with the Australian Standard 2118.1: 2017 Automatic fire sprinkler systems Part 1: General systems; 2. 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.	Within 120 days of issuance of this Order.

13. Defect 6 – Fire Safety Systems

Description of serious defect	Applicable performance requirements	Remediation work to be carried out or caused to be carried out by the Developer	Time period for compliance
The Investigator made the following observations in relation to the Pump Room located on level B2 of the Building: 1. that there was an unsealed flexible service penetration from the pump room through to the Basement level B2 of the Building; and 2. that there was an exposed flexible service penetration from the pump room to the Basement level B2, with wires showing and the sealant disturbed. I have formed the belief that the inadequate fire-resisting sealing described above is a serious defect because it is a defect in a building element (fire safety systems) that is attributable to a failure to comply with the following:	**BCA Volume One, Section 3 Fire resistance, Part C3 Protection of openings, Deemed-to-satisfy provision C3.15 Openings for service installations**, which states in part: *"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".* **Deemed-to-satisfy provision C3.15 Openings for service installations is a pathway that can satisfy the BCA Volume One, Section C Fire resistance, Performance Requirement CP8, which** 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".* Therefore, as the penetrations do not comply with Deemed-to- satisfy provision C3.15 Openings for service installations, the BCA Volume One Performance Requirement cannot be shown to have been satisfied. This constitutes a defect as it causes or is likely to cause the inability to inhabit or use the building (or part of the building) for its intended purpose.	Developer to: 1. carry out rectification of the protection of service penetrations to comply with BCA Volume One; and 2. 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.	Within 120 days of issuance of this Order.

14. Defect 7 – Fire Safety Systems

Description of serious defect	Applicable performance requirements	Remediation work to be carried out or caused to be carried out by the Developer	Time period for compliance
In the B2 Pump Room of the Building the Investigator observed that the louvres serving the south west B2 pump room wall did not contain a fire separation protection device (e.g. damper). I have formed the belief that the unprotected louvres/penetrations as described above is a serious defect because it is a defect in a building element (fire safety systems) that is attributable to a failure to comply with the following:	**BCA Volume One, Section 3 Fire resistance, Part C3 Protection of openings, Deemed-to-satisfy provision C3.15 Openings for service installations**, which states in part: *"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".* **Deemed-to-satisfy provision C3.15 Openings for service installations is a pathway that can satisfy the BCA Volume One, Section C Fire resistance, Performance Requirement CP8, which** 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".* Therefore, as the penetrations do not comply with Deemed-to-satisfy provision C3.15 Openings for service installations, the BCA	Developer to: 1. carry out rectification of the protection of service penetrations to comply with BCA Volume One; and 2. 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.	Within 90 days of issuance of this Order.

	Volume One Performance Requirement cannot be shown to have been satisfied. This constitutes a defect as it causes or is likely to cause the inability to inhabit or use the building (or part of the building) for its intended purpose.		

15. Defect 8 – Fire Safety Systems

Description of serious defect	Applicable performance requirements	Remediation work to be carried out or caused to be carried out by the Developer	Time period for compliance
The Investigator made the following observations in relation to a variety of locations of the Building: 1. A retro fitted fire collar serving a PVC service pipe penetration within B1 of the Building had not been adequately fastened to the ceiling. 2 of the 4 screw fixings were missing; 2. The service cupboard on level 1 of the Building did not have adequate fire protection installed; 3. The service cupboard on level 4 of the Building did not have adequate fire protection installed; 4. The service cupboard on level 4 of the Building showed the existence of penetrations with a poor sealant on the underside. The Investigator noted that further investigation for the top side protection and adequacy of the system is recommended. 5. The communication cupboard penetrations in level 1 of the Building were observed to have been filled with an expanding foam.	**BCA Volume One, Section 3 Fire resistance, Part C3 Protection of openings, Deemed-to- satisfy provision C3.15 Openings for service installations**, which states in part: *"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-* *(a) 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".* Deemed-to-satisfy provision C3.15 Openings for service installations is a pathway that can satisfy the BCA Volume One, Section C Fire resistance, Performance Requirement CP8, which 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".*	Developer to: 1. carry out rectification of the protection of service penetrations in accordance with the BCA Volume One; 2. provide further advices in respect of the level 4 service cupboard top side protection and the adequacy of the system; 3. 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.	Within 120 days of issuance of this Order.

I have formed the belief that the penetration details as described above is a serious defect because it is a defect in a building element (fire safety systems) that is attributable to a failure to comply with the following:	Therefore, as the penetrations do not comply with Deemed-to-satisfy provision C3.15 Openings for service installations, the BCA Volume One Performance Requirement cannot be shown to have been satisfied. This constitutes a defect as it causes or is likely to cause the inability to inhabit or use the building (or part of the building) for its intended purpose.		

16. Defect 9 – Fire Safety Systems

Description of serious defect	Applicable performance requirements	Remediation work to be carried out or caused to be carried out by the Developer	Time period for compliance
When inspecting the Basement Level B1 of the Building it was observed by the Investigator that the fire emergency exit signs were not visible from the direction of certain areas of the Basement Level 1. I have formed the belief that the positioning of the exit signs on Basement Level B1 not being readily visible as described above is a serious defect because it is a defect in a building element (fire safety systems) that is attributable to a failure to comply with the following:	**BCA Volume One, Section E Services and equipment, Part E4 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; and* *(a) door from an enclosed stairway, passageway or ramp at every level of discharge to a road or open space; and* *(b) horizontal exit; and* *(c) door serving as, or forming part of, a required exit in a storey required to be provided with emergency lighting in accordance with E4.2.;"* Deemed-to-Satisfy provision **E4.5 Exit signs is a pathway that can satisfy the BCA Volume One, Section E Services and equipment, 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".* Therefore, as the location of the exit sign serving the fire pump room does not comply with Deemed-to-Satisfy provision E4.5 Exit signs, the BCA Volume One Performance Requirement cannot be shown to have been satisfied. This constitutes a defect as it causes or is likely to cause the inability	Developer to: 1. carry out rectification of the exit sign location in accordance with the BCA Volume One. 2. 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.	Within 120 days of issuance of this Order.

	to inhabit or use the building (or part of the building) for its intended purpose.		

17. Defect 10 – Structural Systems			
Description of serious defect	**Applicable performance requirements**	**Remediation work to be carried out or caused to be carried out by the Developer**	**Time period for compliance**
The Investigator inspected the B1 slab (B2 soffit) and made the following observations: 1. Uncontrolled cracking to the underside of B1 (B2 soffit) suspended reinforced concrete slab in multiple areas. Crack width was observed to be nominally 0.5mm. Crack length observed to be approximately 12m in one location; 2. The uncontrolled cracks appeared to be through the full depth of the slab. Some cracks appeared to be previously partly rectified; however, further crack growth was observed to be evident in the previously rectified areas. I have formed the belief that the uncontrolled cracking as described above is a serious defect because it is a defect in a building element (structural systems) that is attributable to a failure to comply with the following:	**BCA Volume One, Section B, Structure and the Australian Standard 3600. The Deem to satisfy provisions of the BCA Volume One Section B1.4, Determination of structural resistance of materials and forms of construction** states the following: *"The structural resistance of materials and forms of construction must be determined in accordance with the following, as appropriate:* *(b) Concrete:* *(i) Concrete construction (including reinforced and prestressed concrete): AS 3600."* The **Australian Standard 3600 Concrete structures, Section 2 Design procedures, actions and loads, 2.3, Design for serviceability, 2.3.3, Cracking** states: *"2.3.3.1 General* *Cracking in concrete structures shall be controlled so that structural performance, durability and appearance of the structure are not compromised."* This constitutes a defect as it causes or is likely to cause the inability to inhabit or use the building (or part of the building) for its intended purpose.	Developer to: 1. shall prepare and carry out a rectification methodology to the observed uncontrolled cracking in consultation with a nominated structural design engineer to comply with AS3600; 2. ensure the crack repair methodology is capable of sustaining future anticipated building movement and control of cracking throughout the service life of the structure. 1. 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.	Within 160 days of issuance of this Order.

18. Defect 11 – Structural Systems			
Description of serious defect	**Applicable performance requirements**	**Remediation work to be carried out or caused to be carried out by the Developer**	**Time period for compliance**
When inspecting the B1 fire stairs in the north east area of the Building, it was observed by the Investigator that there was an inadequate height clearance within the north east fire stairwell level B1. The Investigator measured the head height to be 1.989m from the top of the bottom stair nosing to the soffit slab height. A caution sign" stating "*low head height mind your head"* was observed to be installed. I have formed the belief that the inadequate ceiling height as described above is a serious defect because it is a defect in a building element (structural systems) that is attributable to a failure to comply with the following:	The inadequate ceiling height demonstrate a failure to comply with the **BCA Volume One, Section F Health and amenity, Deemed-to-satisfy provision F3.1 Height of rooms and other spaces**, which states in part: *"The height of rooms and other spaces must be not less than—* *(f) in any building—* *(iii) above a stairway, ramp, landing or the like — 2 m measured vertically above the nosing line of stairway treads or the floor surface of the ramp, landing or the like; and* Therefore, as the B1 NE fire stairwell does not comply with Deemed-to- satisfy provision F3.1 Height of rooms and other spaces, the BCA Volume One Performance Requirement cannot be shown to have been satisfied. This constitutes a defect as it causes or is likely to cause the inability to inhabit or use the building (or part of the building) for its intended purpose.	Developer to: 1. Carry out rectification of the fire stairs in accordance with the BCA Volume One; 2. 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.	Within 120 days of issuance of this Order.

19. Defect 12 – Building Enclosure			
Description of serious defect	**Applicable performance requirements**	**Remediation work to be carried out or caused to be carried out by the Developer**	**Time period for compliance**
When inspecting the external façade of the Building, generally, the Investigator observed that water had entered the interior of the Building at the wall/floor junction of the external cladding and the concrete slab at the ground level of the Building. I have formed the belief that water which has penetrated the Building and has not been prevented from causing undue dampness and the deterioration of the Building as described above is a serious defect because it is a defect in a building element (building enclosure) that is attributable to a failure to comply with the following:	The water which has penetrated the building and has not been prevented from causing undue dampness and deterioration of the building demonstrates 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."* This constitutes a defect as it causes or is likely to cause the inability to inhabit or use the building (or part of the building) for its intended purpose.	Developer to: 1. rectify wall floor joint and cladding junctions/joints in accordance with AS4654.2; 2. make good any resultant consequential damage; 3. 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.	Within 180 days of issuance of this Order.

20. Defect 13 – Building Essential Services			
Description of serious defect	**Applicable performance requirements**	**Remediation work to be carried out or caused to be carried out by the Developer**	**Time period for compliance**
When inspecting the service risers in the Building, the Investigator observed that there was insufficient ventilation at the gas meter cupboards throughout the Building. I have formed the belief that the insufficient ventilation at the gas meter cupboards as described above is a serious defect because it is a defect in a building element (building essential services) that is attributable to a failure to comply with the following:	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 in part: ***Clause F4.5 Ventilation of Rooms*** *"(b) a mechanical ventilation or air-conditioning system complying with AS 1668.2"* Wherein, **AS 1668 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 that: ***Clause 1.1 Scope, Note 8*** *"Requirements for ventilation in relation to the safe operation of gas appliances are covered in AS 5601.1"* Wherein **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 that: ***Clause 5.13.14 Mechanical Ventilation*** *"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 closure"* This constitutes a defect as it causes or is likely to cause the inability to inhabit or use the building (or part of the building) for its intended purpose.	Developer to: 1. Developer to install adequate mechanical ventilation system for gas meter cupboard accordance with 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. 2. 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.	Within 120 days of issuance of this Order.

Conditions of this Order

21. **Iridium Developments Pty Ltd** must notify Chris Lentholm, in writing, by email sent to projectintervene@customerservice.nsw.gov.au within 2 business days of the work required by this Order being completed.

Duration of this Order

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

Elizabeth Stewart
Director Legal Operations
Department of Customer Service

REASONS FOR THE ORDER

Reasonable belief and serious defects

I, Elizabeth Stewart, an authorised delegate of the Secretary of the Department, have formed a reasonable belief for the purposes of s 33(1) of the Act in relation to Defects 1 to 13 in the Order, that the Building has serious defects.

1. **Defect 1 –** The uncontrolled water ingress which has penetrated the Building as described in paragraph 8 of the order, is a serious defect because it is a deficiency in a building element (waterproofing) that are required to achieve compliance with the performance requirements as particularised in paragraph 8 of the order. I have formed this belief after reviewing a copy of the Audit Report dated 28 October 2022, section 1.1 in which I also observed photographs which clearly depicted uncontrolled water egress to the B2 South West Fire Stairs (together with an existing spoon drain and drainage provision with its adequacy unknown), and the spoon drain construction (B2 North East Fire Stairs) not having been installed for full perimeter walls along with a photograph which depicted the B2 to B1 ramp on the northern side of the property showing evidence of uncontrolled water penetration and as otherwise particularised in section 1.1 of the Audit Report and paragraph 8 of the order.

2. **Defect 2** – The water ingress as described in paragraph 9 of the Order, is a serious defect because it is a deficiency in a building element (waterproofing) that are required to achieve compliance with the performance requirements as particularised in paragraph 9 of the Order. I have formed this belief after reviewing a copy of the Audit Report dated 28 October 2022, section 1.2 in which I also observed photographs which depicted close up images of previous investigation works and/or repairs to external cladding elements, planter box elements and waterproofing elements in respect of Units 101 and 102, along with a photograph showing evidence of previous water ingress to Unit 101's western bedroom and as otherwise particularised in section 1.2 of the Audit report and paragraph 9 of the Order.

3. **Defect 3** – The insufficient waterproofing system installation and as described in paragraph 11 of the Order, is a serious defect because it is a deficiency in a building element (waterproofing) that are required to achieve compliance with the performance requirements as particularised in paragraph 10 of the Order. I have formed this belief after reviewing a copy of the Audit Report dated 28 October 2022, section 1.4 in which I also observed photographs which depicted a general view of the external balcony of Unit 101 of the Building, along with a close up view of a conduit under membrane and a pedestal chair installed directly on top of the conduit (again on the external balcony of Unit 101 of the Building)and as otherwise particularised in section 1.4 of the Audit Report and paragraph 10 of the Order.

4. **Defect 4** – The installation issues identified on the podium slab entrance of the Building of the Building and as described in paragraph 12 of the Order, is a serious defect because it is a deficiency in a building element (waterproofing) that are required to achieve compliance with the performance requirements as particularised in paragraph 11 of the Order. I have formed this belief after reviewing a copy of the Audit Report dated 28 October2022, section 1.5 in which I also observed a photograph which depicted the podium slab entrance tiled area and planter box construction, with the area in which expansion joints might usually be located as circled in red and as otherwise particularised in section 1.5 of the Audit Report and paragraph 11 of the Order.

5. **Defect 5** – The inadequate sprinkler provisions in the Basement Level B1 of the Building and as described in paragraph 12 of the Order, is a serious defect because it is a deficiency in a building element (fire safety systems) that are required to achieve compliance with the performance requirements as particularised in paragraph 13 of the Order. I have formed this belief after reviewing a copy of the Audit Report dated 28 October 2022, section 2.1 in which I also observed photographs which depicted fire sprinklers being installed directly above service pipes and as otherwise particularised in section 2.1 of the Audit Report and paragraph 12 of the Order.

6. **Defect 6** – The inadequate fire-resist sealing in the Pump Room located on level B2 of the Building and as otherwise described in paragraph 13 of the Order, is a serious defect because it is a deficiency in a building element (fire safety systems) that are required to achieve compliance with the performance requirements as particularised in paragraph 16 of the Order. I have formed this belief after reviewing a copy of the Audit Report dated 28 October 2022, section 2.4 in which I also observed photographs which depicted unsealed flexible service penetrations from the Pump Room through to the Basement level B2 of the Building, together with photographs of an exposed flexible service penetration from the Pump Room to the Basement Level B2 of the Building, with the sealant disturbed and as otherwise particularised in section 2.4 of the Audit Report and paragraph 13 of the Order.

7. **Defect 7** – The unprotected louvres/penetrations in the B2 Pump Room of the Building and as otherwise described in paragraph 14 of the Order, is a serious defect because it is a deficiency in a building element (fires safety systems) that are required to achieve compliance with the performance requirements as particularised in paragraph 17 of the Order. I have formed this belief after reviewing a copy of the Audit Report dated 28 October2022, section 2.5 in which I also observed photographs which showed louvres serving the Pump Room wall that contained no fire separation protection device and as otherwise particularised in section 2.5 of the Audit Report and paragraph 14 of the Order.

8. **Defect 8** – The penetrations and inadequate fire protection in a variety of locations of the Building and as described in paragraph 15 of the Order, is a serious defect because it is a deficiency in a building element (fire safety systems) that are required to achieve compliance with the performance requirements as particularised in paragraph 20 of the Order. I have formed this belief after reviewing a copy of the Audit Report dated 28 October 2022, section 2.8 in which I also observed photographs which depicted:

   (a) a retro fitted fire collar to a PVC service pipe penetration within B1 of the Building with inadequate fixings;

   (b) that the service cupboards on Level 1 and Level 4 of the Building had inadequate fire protection installed;

   (c) that the service cupboard penetrations on Level 4 of the Building had a poor sealant installation; and

   (d) that the communication cupboard on Level 1 of the Building had penetrations with an expanding foam material installed,

   and as otherwise particularised in section 2.8 of the Audit Report and paragraph 15 of the Order.

9. **Defect 9** – The fire emergency exit sign not being readily visible in the Basement Level B1 of the Building and as described in paragraph 21 of the Order, is a serious defect because it is a deficiency in a building element (fire safety systems) that are required to achieve compliance with the performance requirements as particularised in paragraph 16 of the Order. I have formed this belief after reviewing a copy of the Audit Report dated 28 October 2022, section 2.9 in which I also observed a photograph which showed no 'directional' fire exit sign being visible at a mid-point of the driveway and as otherwise particularised in section 2.9 of the Audit Report and paragraph 16 of the Order.

10. **Defect 10** – The uncontrolled cracking in the B1 slab (B2 soffit) of the Building and as described in paragraph 22 of the Order, is a serious defect because it is a deficiency in a building element (structural systems) that are required to achieve compliance with the performance requirements as particularised in paragraph 17 of the Order. I have formed this belief after reviewing a copy of the Audit Report dated 28 October 2022, section 3.1 in which I also observed photographs which showed uncontrolled cracking to the B2 soffit (Underside of B1 slab) of the Building, and uncontrolled cracking of 0.5mm to the Basement 2 soffit (Underside of B1 slab) of the Building and a photograph of a further crack growth following previous rectification works in the Basement 2 soffit of the Building and as otherwise particularised in section 3.1 of the Audit Report and paragraph 17 of the Order.

11. **Defect 11** – The inadequate ceiling height clearance in the B1 Fire Stairs in the north east area of the Building " and as described in paragraph 23 of the Order, is a serious defect because it is a deficiency in a building element (structural systems) that are required to achieve compliance with the performance requirements as particularised in paragraph 18 of the Order. I have formed this belief after reviewing a copy of the Audit Report dated 28 October 2022, section 3.2 in which I also observed a photograph which showed through the use of a red line, the measured head height to be 1.989m from the top of the bottom stair tread to the soffit slab height in the north east Fire Stairwell at Level B1 of the Building and as otherwise particularised in section 3.2 of the Audit Report and paragraph 18 of the Order.

12. **Defect 12** – The water which has penetrated the external façade of the Building and as described in paragraph 25 of the Order, is a serious defect because it is a deficiency in a building element (building enclosure) that are required to achieve compliance with the performance requirements as particularised in paragraph 19 of the Order. I have formed this belief after reviewing a copy of the Audit Report dated 28 October 2022, section 4.2 in which I also observed photographs which showed the typical external facade cladding construction and as otherwise particularised in section 4.2 of the Audit Report and paragraph 19 of the Order.

13. **Defect 13** – The insufficient ventilation in the service risers in the Building and as described in paragraph 26 of the Order, is a serious defect because it is a deficiency in a building element (building essential services) that are required to achieve compliance with the performance requirements as particularised in paragraph 20 of the Order. I have formed this belief after reviewing a copy of the Audit Report dated 28 October 2022, section 5.1 in which I also observed photographs of the service cupboard and gas meter in the cupboard with insufficient ventilation and as otherwise particularised in section 5.1 of the Audit Report and paragraph 20 of the Order.

Period for compliance

14. I am of the view that a time periods set out alongside each serious defect in the Order are reasonable periods for compliance in all the circumstances for the rectification work required by the Order to be carried out. I have formed this belief balancing the risks that the serious defect poses against the period of time it will take to give effect to the rectification work. I am aware that there are residents occupying this location as the Building is completed which will delay rectification work. I am of the view that the time periods as set out in set out alongside each serious defect in the Order are sufficient to conduct the work as particularised set out alongside each serious defect in the Order.

Consideration of written representations

15. I have, as decision maker, considered written representations pursuant to section 47 of the Act. Written representations were received from Iridium Developments Pty Ltd on 23 March 2023. Submissions provided allowed the closure of certain defects included in the draft order so that they have not been included in the finalisation of this order.

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

16. 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 units which comprise the Building in having the Building constructed to the approved plans and in accordance with the Building Code of Australia and the relevant Australian Standards so as to ensure in respect of:

(a) Defect 1 – that the Basement Level and B2 fire stairs of the Building be appropriately weatherproofed and waterproofed so as to prevent the penetration of water, and unhealthy or dangerous conditions, or loss of amenity to occupants or undue dampness or deterioration of building elements;

(b) Defect 2 – that the Unit 101 and the external façade and western bedroom of the Building be appropriately weatherproofed and waterproofed so as to prevent the penetration of water, and unhealthy or dangerous conditions, or loss of amenity to occupants or undue dampness or deterioration of building elements;

(c) Defect 3 – that the Unit 101 external balcony of the Building be rectified so that the falls in finishes ensures that water drains to the drainage outlets and water is not retained on the finished surface with the exception of residual water remaining due to surface tension;

(d) Defect 4 – that the the podium slab located at the entrance of the Building be rectified so that the expansion joints and articulation joints are clean and free from any hard or incompressible material for the full width and depth of the joint before joint filling material is inserted;

(e) Defect 5 – that the inadequate fire sprinkler installation in the Basement Level B1 of the Building be rectified so that the fire sprinklers are not obstructed;

(f) Defect 6 – that the penetrations from the Pump Room located on level B2 of the Building be rectified so as to ensure the penetrations are fire resistant and capable of preventing the spread of fire within the Building;

(g) Defect 7 – that the unprotected louvers and penetrations in the B2 Pump Room of the Building Building be rectified so as to resist the spread of fire within the Building;

(h) Defect 8 – that the penetrations in Level B1 Soffit of the Building be rectified so as to ensure the penetrations are fire resistant and capable of resisting the spread of fire within the Building;

(i) Defect 9 – that the fire emergency exit signs in the Basement Level B1 of the Building be rectified so as to render them compliant and otherwise provide occupants with a clear and safe identification of the location of exits and to guide them to those exits;

(j) Defect 10 – that the uncontrolled cracking in the B1 slab (B2 soffit) of the Building be rectified so as to ensure the structural performance and durability of the Building;

(k) Defect 11 – that the inadequate ceiling height clearance in the B1 fire stairs in the north east area of the Building be rectified so as to render it complaint and otherwise not less than 2 metres in vertical height;

(l) Defect 12 – that the external façade of the Building be appropriately weatherproofed and waterproofed so as to prevent the penetration of water, and unhealthy or dangerous conditions, or loss of amenity to occupants or undue dampness or deterioration of Building elements;

(m) Defect 13 – that the insufficient ventilation in the service risers in the Building be rectified so as to render it complaint and otherwise ensure a combination of natural and mechanical ventilation is used to ventilate the service risers.