

EXPERT WITNESS REPORT

1 Introduction

I, Maison Azdari, have been engaged as an independent building expert witness in relation to water ingress and associated building defects affecting Sample Property, Suburb withheld NSW.

I understand that my primary duty is to the NSW Civil and Administrative Tribunal. I have read and understood the Expert Witness Code of Conduct that applies in these proceedings and I agree to be bound by it.

**NCAT Procedural
Direction 3**

EXPERT EVIDENCE

This Procedural Direction applies to:

Proceedings in which the rules of evidence apply.

Proceedings in the Consumer and Commercial Division involving claims under the *Home Building Act 1989* (NSW) where the amount claimed or in dispute is more than \$30,000.

Proceedings in the Occupational Division for a “profession decision” as defined in cl 29(1) of Sch 5 to the NCAT Act.

Any other proceedings in which the Tribunal directs that this Procedural Direction is to apply

Effective Date:

7 April 2025

Replaces Procedural Direction:

NCAT Procedural Direction 3 (11 September 2024)

Notes:

You should ensure that you are using the current version of this

Procedural Direction. A complete set of Procedural Directions and Guidelines is available on the Tribunal website at www.ncat.nsw.gov.au

Introduction

1. The Tribunal may rely on evidence from expert witnesses to reach a conclusion about a technical matter or area of specialised knowledge that is relevant to an issue to be determined in proceedings. It is important that experts' opinions are soundly based, complete and reliable. This Procedural Direction should be read together with NCAT Procedural Direction 7 – Use of Generative Artificial Intelligence (Gen AI).
2. The Tribunal is bound by the rules of evidence in proceedings in exercise of its enforcement jurisdiction, proceedings for the imposition of a civil penalty in exercise of its general jurisdiction, proceedings under the Legal Profession Uniform Law (NSW) or *Public Notaries Act 1997* concerning a question of professional misconduct and any other proceedings where so required by the relevant enabling legislation ("Evidence Rules Proceedings"), see, for example, s 35, s 38(2) and (3) and Sch 5 cl 20 of the *Civil and Administrative Tribunal Act 2013*. In Evidence Rules Proceedings, it is appropriate to require expert evidence to be prepared and presented in a manner which seeks to ensure its admissibility and usefulness.
3. In proceedings where the Tribunal is not bound by the rules of evidence, the acceptability of expert evidence is a question of weight not admissibility. Nonetheless, if those proceedings involve complex or difficult expert issues, it is appropriate to require expert evidence to be prepared and presented in a manner which seeks to ensure its usefulness.
4. For proceedings to which it applies, this Procedural Direction, read together with applicable requirements set out in NCAT Procedural Direction 7 – Use of Generative Artificial Intelligence (Gen AI) concerning expert reports, sets out a code of conduct for expert witnesses.

Compliance and Other Matters

5. The Tribunal may excuse a party or an expert witness from complying with this Procedural Direction before or after the time for compliance.
6. In Evidence Rules Proceedings, a failure to comply with the code of conduct may, depending on the circumstances, render the report or evidence inadmissible or adversely affect the weight to be attributed to that report or evidence.
7. In non-Evidence Rules Proceedings, a failure to comply with the code of conduct does not render any expert report or evidence inadmissible but it may, depending on the circumstances, adversely affect the weight to be attributed to that report or evidence.
8. Nothing in this Procedural Direction prevents the Tribunal from giving any directions concerning expert witnesses or expert evidence that the Tribunal considers appropriate in any particular proceedings before the Tribunal.
9. This Procedural Direction is made by the President under s 26 of the *Civil and Administrative Tribunal Act 2013*.

Definitions

Word	Definition
NCAT Act	<i>Civil and Administrative Tribunal Act 2013</i>
NCAT Rules	Civil and Administrative Tribunal Rules 2014
Expert witness or expert	A person who has specialised knowledge based on the person's training, study or experience and who gives evidence of an opinion based wholly or substantially on that knowledge.

10. Words used in this Procedural Direction have the same meaning as defined in the NCAT Act and the NCAT Rules.

Application

11. This Procedural Direction applies in:
- (a) Evidence Rules Proceedings or proposed Evidence Rules Proceedings;
 - (b) proceedings or proposed proceedings in the Consumer and Commercial Division involving claims under the *Home Building Act 1989* (NSW) where the amount claimed or in dispute is more than \$30,000;
 - (c) proceedings or proposed proceedings in the Occupational Division for a “profession decision” as defined in cl 29(1) of Sch 5 to the NCAT Act; and
 - (d) any other proceedings in which the Tribunal directs that this Procedural Direction 3 is to apply,
- (together referred to as “Subject Proceedings”).

Parties’ and Experts’ Duties

12. Any party who retains an expert to provide evidence or a report for the purposes of Subject Proceedings in the Tribunal must bring to the expert’s attention the contents of this Procedural Direction, including the experts’ code of conduct and NCAT Procedural Direction 7 – Use of Generative Artificial Intelligence (Gen AI) insofar as Procedural Direction 7 concerns expert reports.

Experts’ Code of Conduct

Application of code

13. This experts’ code of conduct applies in respect of any expert witness engaged or appointed in Subject Proceedings:
- (a) to provide an expert’s report for use in those proceedings; or
 - (b) to give opinion evidence in those proceedings.

General duty to the Tribunal

14. An expert witness has an overriding duty to assist the Tribunal impartially on matters relevant to the expert witness’s area of expertise.

15. An expert witness's paramount duty is to the Tribunal and not to any party to the proceedings including the person retaining the expert witness.
16. An expert witness is not an advocate for a party.
17. An expert witness must abide in a timely way by any direction given by the Tribunal.

Duty to work co-operatively with other expert witnesses

18. An expert witness, when complying with any direction of the Tribunal to confer with another expert witness or to prepare a joint report with another expert witness in relation to any issue, must:
 - (a) exercise his or her independent, professional judgment in relation to that issue;
 - (b) endeavour to reach agreement with any other expert witness on that issue; and
 - (c) not act on any instruction or request to withhold or avoid agreement with any other expert witness.

Experts' reports

19. An expert's report must, either in the body of the report or in an annexure, include the following:
 - (a) an acknowledgement that the expert has read the experts' code of conduct and agrees to be bound by it;
 - (b) the expert's name, address and qualifications as an expert on the issue the subject of the report;
 - (c) where generative artificial intelligence is used for any purpose in preparing the report, the disclosures or identifications required by paragraph [22] of NCAT Procedural Direction 7;
 - (d) reference to any private or business relationship between the expert and the party for whom the report is prepared, and an actual or perceived conflict of interest that may impact on his or her role of which the expert is aware;
 - (e) the letter of instruction or details of the questions or issues the expert has been asked to address in the report, as well as documents or other materials the expert has been asked to consider;
 - (f) the material facts, and assumptions of fact, on which the opinions in

- the report are based (a letter of instructions may be annexed);
 - (g) the expert's reasons for each opinion expressed;
 - (h) if applicable, an acknowledgement that a particular issue falls outside the expert's field of expertise;
 - (i) any literature or other materials used in support of the opinions;
 - (j) any examinations, tests or other investigations on which the expert has relied, including details of the qualifications of the person who carried them out;
 - (k) the extent to which any opinion which the expert has expressed involves the acceptance of another person's opinion, the identification of that other person and the opinion expressed by that other person;
 - (l) a declaration that the expert has made all the inquiries which the expert believes are desirable and appropriate (save for any matters identified explicitly in the report), and that no matters of significance which the expert regards as relevant have, to the knowledge of the expert, been withheld from the Tribunal;
 - (m) in the case of a report that is lengthy or complex, a brief summary of the report (to be located at the beginning of the report).
20. If an expert witness who prepares an expert's report believes that it may be incomplete or inaccurate without some qualification, the qualification must be stated in the report.
21. If an expert witness considers that his or her opinion is not a concluded opinion because of insufficient research or insufficient data or for any other reason, this must be stated when the opinion is expressed.
22. If an expert witness changes his or her opinion on a material matter after providing a report, the expert witness must immediately provide a supplementary report to that effect containing the information referred to in subparagraphs (c) to (f) and (h) to (l) of paragraph 19, and, if applicable, subparagraph (g) of paragraph 19.
23. In any subsequent report (whether prepared in accordance with paragraph 22 or not), the expert may refer to material contained in the earlier report without repeating it.
24. Where the expert report relates to the completion or rectification of residential building work under the *Home Building Act 1989* (NSW) or the duty of the owners corporation to maintain and repair property under the *Strata Schemes*

Management Act 2015 (NSW), as appropriate the report of an expert witness must also include the following matters:

- (a) if rectification, demolition, repair or other alteration of property is recommended, the reasons for such recommendation, the scope of the recommended works, and the likely costs involved (including, where relevant, how those costs have been calculated);
- (b) whether any alternative remedy or remedies are a reasonable alternative.

Experts' conclaves, conferences and evidence

- 25. An expert witness must abide by any direction of the Tribunal:
 - (a) to attend a conclave or conference with any other expert witness;
 - (b) to endeavour to reach agreement on any matters in issue;
 - (c) to prepare a joint report, specifying matters agreed and matters not agreed and reasons for any disagreement;
 - (d) to base any joint report on specified facts or assumptions of fact; and
 - (e) to give evidence concurrently with other experts.
- 26. An expert witness must exercise his or her independent, professional judgment in relation to such a conclave or conference and joint report, and must not act on any instruction or request to withhold or avoid agreement.

Armstrong J

President

Issued: 7 April 2025

2 Instructions

I have been instructed to:

- inspect Unit 48 and the adjoining external works along the southern external wall where planter boxes were demolished and remedial works have been carried out,
- review the relevant design documentation, correspondence, council notices and previous expert reports,
- identify and describe any building defects and variations from the regulated design
- provide my opinion on the adequacy of the remedial works that have been undertaken to date, including compliance with the [company withheld] for Unit 48 External Wall dated 12 June 2025,
- comment on the likely cause of the ongoing moisture ingress and internal damage within Unit 48, and
- recommend further remedial works required to achieve durable compliance and to address the moisture issues within the unit. (To be provide in Scott Schedule upon client's request)

3 Qualifications and Experience

I am a building inspector, building consultant and building expert witness with extensive experience in residential and strata developments in NSW, VIC & QLD. I regularly provide expert evidence in relation to construction defects.

Curriculum Vitae – Maison Azdari

Full Name	Maison Azdari
Position	Senior Building Consultant & Expert Witness
Membership	Executive Committee Member – Australian Society of Building Consultants (NSW) Member - Building Dispute Practitioners Society (BDPS) Member- Strata Community Association (SCA) NSW
Summary	Building Consultant and Expert Witness with 21+ years' experience. Expert in defect diagnosis, dispute resolution, and expert reports for legal proceedings.
Core Competencies/Skills	• Expert Witness Reporting (NCAT, VCAT, QCAT) • Defect & Structural Inspections • Dispute Resolution Support • Waterproofing & Ingress Diagnosis • Strata & Remedial Advice • NCC Knowledge • Construction Methods & Materials • Technical Report Writing • Tribunal Experience (NSW, VIC, QLD)
Qualifications/Certifications	• B.Eng Civil Engineering • Qualified Strata Building Bond Inspection Scheme (SBBIS) Inspector – NSW, Fair Trading • Licensed Builder (NSW: 366172C VIC: DBU-41642 QLD: 15151453) • Building Consultant Expert Witness Seminar Attendances • White Card – Construction Induction
Experience	Director – Owner Inspections (2014–Present): • Lead consultant on 1000+ inspections • Expert Witness reports, insurance & dispute matters On site quality assurance officer –Site Supervisor (2004–2010): • Specialised in defect diagnosis and water ingress Site Manager - Residential & Commercial Projects (2001–2004): • Managed construction sites and subcontractors

4 Documents and Information Relied On

In preparing this report I have reviewed, amongst other things, the following documents and information:

- Development Control Order EPA0032/25 and associated correspondence issued by Ku ring gai Council.
- Regulated Design for unit 48 External Wall prepared by [company withheld] .
- Building Defects Report prepared by Leo and [company withheld] .
- [company withheld] defects register and related correspondence including serious defect entries for internal moisture and leaks.
- Emails from Mr Leo Meng of Leo and Associates regarding the planter box demolition, use of brickwork behind the render and the need for additional investigation and façade design input.
- Post treatment report and photographs issued in relation to the remedial works undertaken by 'The Mould Doctor' to the external wall and slab adjacent to Unit 48.
- Site photographs, videos and written instructions provided to me by the unit owners and their legal representatives.
- My own site inspection, photographs and moisture meter readings taken inside Unit 48 and along the external and internal works at the eastern and southern wall.

Where I have relied upon information provided by others I have identified that information in this report. I have not independently verified documents prepared by others unless stated otherwise.

5 The Property and Background

The subject building is a multi unit residential development located at Sample Property , Suburb withheld NSW. Unit 48 is situated on the southern side of Building C and has external walls that directly adjoin an elevated podium slab and planter box area running along the southern elevation.

The development was constructed by [company withheld] , with Poly (Australia) [company withheld] as developer. In August 2024 the builder entered into a Developer Undertaking under section 28 of the Residential Apartment Buildings (Compliance and Enforcement Powers) Act 2020 in relation to “immediate defects” including water ingress issues affecting Unit 48. The Undertaking was accepted by the Secretary in September 2024 and provides for an 18-month rectification program administered by [company withheld] on behalf of Building Commission NSW.

Soon after purchase, the Applicants reported significant water ingress and mould in all three bedrooms and wet areas of Unit 48, associated with planter boxes and the southern external wall. High moisture readings were recorded in April 2024 by [company withheld] and the unit’s master bedroom wall was opened up by the builder for investigation, rendering the master bedroom and ensuite uninhabitable. Throughout late 2024 and early 2025, further inspections by [company withheld] and independent engineers recorded persistently elevated moisture levels despite attempted external waterproofing. The Applicants also raised health concerns, including asthma exacerbation and a hospital admission for pneumonia in February 2025, which they attribute to damp conditions within the lot.

As part of the rectification program the planter boxes along the southern wall of Unit 48 were demolished around March 2025, exposing brickwork, services and the podium slab. Following inspections on 21 February and 16 May 2025, Ku-ring-gai Council issued Development Control Order No. EPA0032/25 on 13 June 2025 to the Owners Corporation. The order requires reinstatement of the area outside Unit 48 generally in accordance with the approved development consent, including waterproofing of the exposed external wall and services, reinstatement of ground levels, landscaping and drainage, and the provision of completion certificates by 26 September 2025.

On 24 May 2025 Leo & Associates inspected the complex for the Owners Corporation and reported ongoing water ingress defects to the podium slab, basement shoring walls, fire stairs and roofs. In relation to Unit 48, the report notes that the proposed waterproofing scope prepared for the exposed southern wall lacked sufficient detail and recommends a revised regulated design and further investigation of possible moisture sources. A regulated design for weatherproofing the Unit 48 external wall was subsequently issued by [company withheld] Consulting Engineers on 12 June 2025.

On 15 July 2025 the Applicants commenced proceedings in NCAT (Case 2025/00271004) against the Owners Corporation.

6 Investigations Undertaken

I have undertaken the following investigations in preparing this report:

- A visual inspection of the external works along the wall adjacent to Unit 48, including both the western section where a concrete slab is present and the eastern section where excavation was undertaken alongside the capping beam and shoring wall.
- A visual inspection of the internal areas of Unit 48, including the living room and the south facing bedrooms, with particular focus on the external wall lines adjoining the demolished planter boxes.
- Non invasive moisture testing of internal wall and floor finishes using a handheld moisture meter. Multiple readings of 100% on the meter scale were obtained at the lower portions of the external walls in the living room and bedrooms and within the built in robe.
- A review of photographic records taken during the demolition and reconstruction works to the external wall and slab, as provided by the owners.
- A detailed review of the [company withheld] for Unit 48 External Wall, with particular attention to the step by step waterproofing methodology set out in clauses 2.1 and 2.2.
- A comparison between the regulated design requirements and the condition of the works observed during my site inspection. A summary of this comparison is provided in Appendix A.

My inspection was limited to areas that were safely and reasonably accessible at the time. Certain construction elements, including waterproofing membranes within the slab build up and behind rendered finishes, were not directly visible. Where items are concealed I have had to rely on available photographs, documentation and logical inference.

7 Factual Observations

The key factual observations from my inspection and document review are in Appendixes A & B.

8 Analysis and Opinion

In forming my opinions I have considered the condition of the external and internal building elements, the design documentation and the applicable statutory and technical requirements. My opinions are based on the balance of probabilities having regard to my training and experience.

8.1 Compliance with [company withheld]

The [company withheld] for Unit 48 External Wall provides a detailed sequence of works for weatherproofing the wall in both the western and eastern sections. The design relies on a fully bonded sheet waterproofing membrane, correctly terminated to both slab and wall, in combination with damp proof courses, flexible sealant joints, pressure equalisation slots, falls, joints and drainage.

On the information available to me, the works carried out on site do not comply with key aspects of that design. In particular:

- Photographs provided to me show that a waterproofing material has been applied at the wall and slab interface. However, based on its appearance, it does not resemble the specified fully bonded PVC weldable sheet membrane, and the available photographs also do not show characteristics typical of a torch-on sheet membrane. On the information available, the installed waterproofing therefore does not demonstrate compliance with the regulated design requirement for an approved fully bonded PVC weldable or torch-on sheet membrane.
- There is no evidence that the waterproofing system has been terminated in accordance with the regulated design, including termination into the required saw cuts (including the saw cut located 300mm from the wall in the western section and the side termination at 50mm above the bottom of the capping beam) and termination into the horizontal joint between the brick dwarf wall and Hebel panels, with the specified mechanical and chemical fixings.
- The damp proof course between the brick dwarf wall and Hebel panels has not been folded down over a sheet membrane prior to rendering, which is inconsistent with the design intent and reduces the effectiveness of the damp proofing.
- Horizontal joints that should be formed as flexible sealant joints with backing rods have instead been filled and covered with rigid render. This is contrary to the specification and to good practice for differential movement between dissimilar materials.
- Control joints in the Hebel cladding have not been reinstated with backing rods and flexible sealant in accordance with the Hebel Panel Installation Guide.
- Saw cut and expansion joints within the new slab surface, required to accommodate movement and to provide sealed joints, could not be identified.

- There is insufficient clearance in places between the top of the new concrete slab and the termination level of the intended wall waterproofing, contrary to the design note that the slab is not to be higher than one hundred millimetres below the termination point.

Based on these matters I consider that the remedial works completed to date do not achieve the performance intent of the [company withheld] and cannot be relied upon to provide durable weatherproofing to the external wall of Unit 48.

8.2 Likely cause of ongoing dampness and internal damage

The pattern of moisture ingress described in earlier reports and confirmed during my inspection is consistent with water penetrating the external wall and slab interfaces at or below the previous planter box level and tracking into the wall cavities and internal finishes. The continuing high moisture readings after demolition of the planter boxes indicate that the remedial works have not effectively re established a continuous waterproofing barrier.

In my opinion the primary mechanisms contributing to the ongoing dampness within Unit 48 are:

- the inadequacy and non-compliance of the installed waterproofing system at the external slab surfaces and upstands, including apparent use of a membrane type that does not match the specified PVC weldable or torch-on sheet membrane and the absence of demonstrated compliant terminations,
- lack of properly detailed membrane terminations to the slab edge and into the joint between the brick dwarf wall and Hebel wall,
- improper formation of damp proof courses and failure to integrate the damp proof course with the membrane system,

These mechanisms are consistent with the earlier findings of [company withheld], Leo and Associates and the observations recorded by the owners, which all identify inadequate waterproofing detailing and high internal moisture as serious defects affecting Unit 48.

8.3 Reasonableness of the remedial work

Given the existence of a regulated design prepared by a registered design practitioner and lodged under the Design and Building Practitioners legislation, it is reasonable to expect that the builder and any supervising professional would implement that design closely or, if modifications are proposed, issue a revised regulated design and compliance declaration.

On the information available to me, this has not occurred. Significant departures from the design have been introduced during construction without any documented design changes provided to me. The departures relate to fundamental aspects of the waterproofing system, rather than minor detailing.

In my opinion, the remedial work undertaken to the external wall and slab adjacent to Unit 48 does not reflect the standard of care and skill reasonably expected undertaking remedial waterproofing works to a residential strata building.

8.4 Impact on habitability and risk

The continuing presence of very high moisture levels within the external walls of the bedrooms and living room presents several risks to the occupants, including:

- progressive deterioration of wall linings, timber framing and finishes,
- potential growth of mould, with associated health implications for occupants,
- corrosion of metal fixings and services within the wall cavities, and
- further damage to floor finishes, skirtings and joinery at the base of affected walls.

Until the sources of water ingress are properly addressed and the internal walls are allowed to dry to normal equilibrium levels, Unit 48 is at risk of ongoing damage and may not perform as a healthy residential environment.

9 Recommended Rectification Scope

Based on my observations and opinions above, I recommend that qualified contractor to redo the work according to the regulated design document.

10 Summary of Conclusions

In summary and on the balance of probabilities, my conclusions are as follows:

- Unit 48 has experienced significant water ingress and high internal moisture levels for an extended period, affecting the bedrooms and living room walls adjoining the former planter boxes.
- The recent demolition of the planter boxes and remedial works have not resolved the moisture issues. High moisture readings remain present at the lower portions of the external walls inside Unit 48.
- The remedial works carried out to the external wall and slab adjacent to Unit 48 do not, in my opinion, comply with important elements of the [company withheld] for Unit 48 External Wall and do not meet the performance intent of that design.
- The inadequacy and non-compliance of the installed waterproofing system, including apparent use of a membrane type that does not match the specified PVC weldable or torch-on sheet membrane, lack of demonstrated compliant terminations (including to the 300mm offset saw cut in the western section and the side termination to the capping beam), lack of flexible joints and incorrect treatment of damp proof courses are likely causes of the continuing moisture ingress.
- The remedial work, as executed, does not reflect the standard of care and skill reasonably expected of competent contractors and practitioners engaged to rectify serious waterproofing defects in a residential strata building.
- Further comprehensive rectification work, done and certified by appropriate practitioners and implemented in accordance with that design, is required to provide a durable solution and to restore Unit 48 to a condition that is reasonably fit for occupation as a dwelling.

11 Expert Witness Declaration

I have made all inquiries that I consider appropriate and that no matters of significance that I regard as relevant have, to my knowledge, been withheld from the Tribunal.

I have read and agree to be bound by the Expert Witness Code of Conduct applicable in the NSW Civil and Administrative Tribunal.

I acknowledge that I have an overriding duty to assist the Tribunal impartially and that this duty overrides any obligation to the party retaining me.

I have no personal or business relation with any of the involve parties.

I believe that the facts stated in this report are true and that the opinions expressed are genuinely held by me. The reasoning in support of my opinions is set out in this report.

Appendix A - Comparison of regulated design and as built works

Based on my observations, and acknowledging the limitations where works are now concealed, I summarise the items of non compliance or uncertain compliance with the [company withheld] Regulated Design as follows.

2.1 WEATHERPROOFING OF THE WALL IN THE WESTERN SECTION OF THE WORKS

2.1 (1)

Remove / grind off damaged coatings and finishes on the Hebel Panel wall up to the level of the windowsill. Provide straight orthogonal saw cuts along the extremities of the removed finishes for the full depth of the finish, as required. Do not overcut. Any accidental overcuts shall be inspected by the Engineer and then filled with non-shrink grout in accordance with the Engineer's instructions.

HOLD POINT: The Engineer to inspect.

Expert comment

The damaged coatings and finishes to the Hebel wall have been removed and ground back to the windowsill level. However, I have not been provided with the Engineer's hold point inspection report, so I am unable to confirm whether the saw cuts and any repairs to overcuts comply with the regulated design.



2.1 (2)

Clear out all existing control joints. Remove all existing sealants and backing rods, as required, and open up the joints. Ensure the open joints are clean from any impurities, straight and even width.

HOLD POINT: The Engineer to inspect.

Expert comment

I have not been provided with the Engineer's inspection report for this hold point. As the joints are now concealed by finishes, I am unable to confirm whether the control joints were properly cleaned out, prepared and reinstated in accordance with the regulated design.



2.1 (3)

Open up a joint between the bottom of the Hebel panel wall and the brick dwarf wall below. If there is no existing joint in this location, saw cut the mortar / grout between the Hebel panel and the brick dwarf wall for the full depth of the Hebel panel and minimum 10mm wide. Ensure, the cut is straight and even. Clean any remaining impurities and dust.

Expert comment

This location has been covered at the time of my inspection. I have not been provided with any photographs or an Engineer's inspection report demonstrating how this joint was formed. I therefore cannot comment on whether the joint was created and cleaned in accordance with the regulated design.



2.1 (4)

Pressure water clean the concrete slab along the building wall to achieve concrete surface clear from any dust, dirt, grease and other impurities.

Expert comment

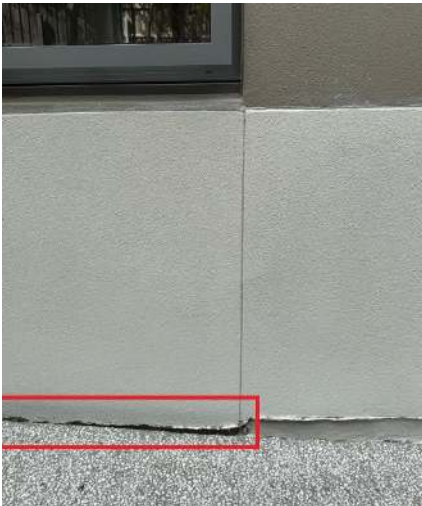
This preparatory step is now concealed by subsequent works. No photographic evidence or inspection records have been provided. I am therefore unable to verify whether the concrete slab was pressure cleaned and prepared in accordance with the regulated design.

2.1 (5)

Install minimum 10mm x 10mm flexible sealant fillet along the junction between the top of the concrete slab and the face of the brick dwarf wall.

Expert comment

A flexible sealant fillet has not been installed at the junction between the slab and the brick dwarf wall. Also, there is a gap between the building slab and the pathway which is a water trap which can be source of future moisture issues. This gap is non-compliant with [company withheld] Regulated Design



2.1 (6)

Provide a 10mm wide x 20mm deep saw-cut in the concrete slab running parallel to, and at the distance of, 300mm away from the building wall.

Expert comment

This element may now be concealed by subsequent concrete works and finishes. However, in the photographs provided to me, I cannot identify the specified saw cut located 300mm from the wall, nor any evidence of the membrane being turned into that saw cut and sealed as required by the regulated design. Also there are evidence of the damaged areas in the waterproofing. No Engineer's inspection report or construction photographs have been provided to demonstrate compliance.



2.1 (7)

Clean and prepare the concrete surface in accordance with the waterproofing manufacturer's instructions. Provide primers, as required.

HOLD POINT: The Engineer to inspect.

Expert comment

The brand and type of waterproofing system used have not been disclosed to me, so I cannot confirm whether the required surface preparation and priming are compatible with the manufacturer's instructions. In addition, the Engineer's hold point inspection report has not been provided. I therefore cannot verify compliance with this requirement.

2.1 (8)

Provide an approved fully bonded PVC weldable or torch-on sheet waterproofing membrane to the concrete surface along the external wall of the building and folded up the wall to the level of the bottom of Hebel panels.

Expert comment

Photographs provided to me show that a waterproofing treatment has been applied in some parts of the concrete but still sections of the concrete are exposed without any visible membrane. For the applied waterproofing sections, however, based on its appearance, it does not resemble a PVC weldable sheet membrane and the available photographs do not show characteristics typical of a torch-on sheet membrane, for example lap seams and torch-applied detailing. The observed application appears more consistent with a liquid-applied and/or bituminous coating with a reinforcement or protection layer. On this basis, the works do not demonstrate compliance with the requirement for an approved fully bonded PVC weldable or torch-on sheet waterproofing membrane.



2.1 (9)

For the termination point along the concrete slab, fold the membrane minimum 20mm into the saw cut in the slab and secure in place before filling the saw-cut with an approved flexible sealant.

Expert comment

Even allowing that a waterproofing treatment has been applied, there is no evidence that the membrane has been folded into the required saw cut in the slab and sealed as specified. The available photographs do not show the membrane turned into a saw cut and the saw cut filled with an approved flexible sealant, and no Engineer's hold point inspection report has been provided to verify this termination detail.



2.1 (10)

For the termination point in the wall, fold the waterproofing membrane minimum 30mm into the joint between the brick dwarf wall and the Hebel wall above, and secure mechanically and chemically to the bottom edge of the joint.

HOLD POINT: The Engineer to inspect.

Expert comment

Based on the photographs provided, the waterproofing treatment at the wall interface appears to be finished with surface sealant and/or render rather than a membrane folded minimum 30mm into the joint and mechanically and chemically secured as specified. No Engineer's hold point inspection report or photographs have been provided demonstrating the required termination into the joint between the brick dwarf wall and Hebel panels. Compliance cannot be demonstrated.



2.1 (11)

Install an aluminium or hd galv. steel angle / over-flashing in the saw cut for the termination point on the side of the capping beam as well as in the brick dwarf wall to cover the termination of the waterproofing membrane. For the termination point on the wall, the over-flashing is to comply with AS4654.2 requirements.

Expert comment

I could not see any aluminium or hot dip galvanized steel angle or over-flashing installed in the locations specified. There is no visible over-flashing element that would protect a membrane termination in the wall or slab, which indicates this requirement has likely not been met.



2.1 (12)

Install an approved sheet DPC in the joint between the top of the brick dwarf wall and Hebel panels. Extend into the cavity behind the Hebel panel minimum 10mm past the rear face of the Hebel panel and minimum 20mm past the external face of the Hebel panel wall. Fold down the protruding part of the DPC 20mm along the face of the wall over the waterproofing membrane. HOLD POINT: The Engineer to inspect.

Expert comment

Because the cavity behind the Hebel panels is not accessible, I cannot confirm whether the DPC has been extended 10mm past the rear face of the Hebel panel. From the front, I observed that the DPC projects approximately 20mm beyond the face of the Hebel; however, it has not been folded down over any waterproofing membrane prior to rendering. The render has been applied while the DPC remains unfolded, which is inconsistent with the regulated design intent.

2.1 (13)

Provide a backing rod in the joint between the dwarf brick wall and the Hebel panels minimum 20mm back from the front face of the wall.

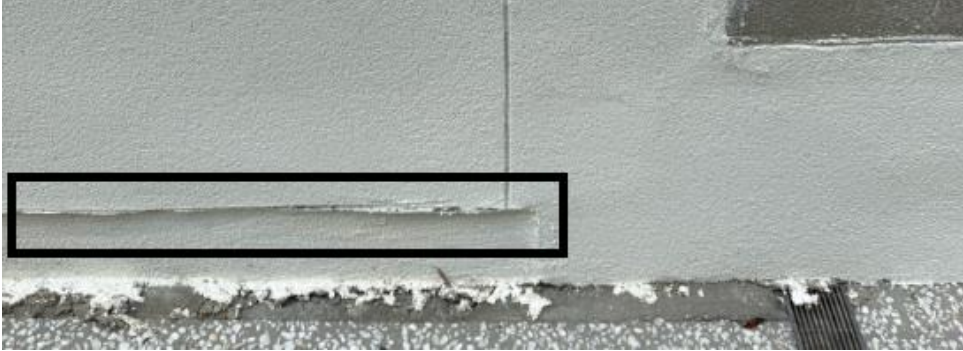
Expert comment

At the time of inspection this joint was fully covered by render. The presence or absence of a backing rod cannot be visually verified and no evidence has been supplied to demonstrate that a backing rod was installed at the correct depth. I am therefore unable to comment on compliance.

2.1 (14) Provide an approved flexible sealant in the joint between the brick dwarf wall and Hebel panel wall.

Expert comment

The joint between the brick dwarf wall and the Hebel wall has been filled and covered by rigid render rather than by an exposed flexible sealant joint. A flexible sealant system is required at this interface to accommodate movement. In my opinion, this requirement has not been met and the current render finish is inappropriate for this joint.



2.1 (15) Install pressure equalisation slots at the bottom of Hebel panel wall in accordance with the Hebel panel supplier requirements and recommendations.

Expert comment

Installed, but the saw cuts are not covered. These cuts need to be filled by approved material (approved by Hebel) to protect the Hebel steels from corrosion.



2.1 (16)

Fill any remaining voids in brick wall with non-shrink grout.

HOLD POINT: The Engineer to inspect.

Expert comment

The brick dwarf wall is covered by render, I cannot comment on it. No hold point inspection report has been provided.

2.1 (17)

Provide builders plastic over the entire top surface of the existing concrete slab between the building and the footpath pavement slab.

Expert comment

The top of the concrete is exposed without any cover. No photographic evidence or as-built confirmation has been supplied, so compliance cannot be verified.



2.1 (18) Install SL 82 reinforcing mesh over the existing concrete slab. Use plastic chairs to achieve concrete covers noted below.

HOLD POINT: The Engineer to inspect the slab reinforcement before concrete placement.

Expert comment

Photographs provided by the owner appear to show reinforcement placed over the existing slab prior to the new pour. However, I have not been provided with the Engineer's inspection report for this hold point and I could not verify reinforcement cover on site. My opinion that reinforcement is present is therefore based solely on the limited photographic evidence available.

2.1 (19) Pour minimum 130mm thick concrete wearing slab with SL82 reinforcing mesh (top). Provide minimum 1:100 falls in the top surface of the slab to the existing drainage points. Minimum concrete compressive strength at 28 days to be 32MPa. Slump to be 80mm. Minimum cover to reinforcement – 40mm. Provide broom finish for the slab surface.

Expert comment

Surface falls towards the drainage points are visibly present and generally consistent with the specified minimum 1:100 fall. I am unable to confirm concrete compressive strength, slump or reinforcement cover, as no test results or compliance documentation have been provided.



2.1 (20) The top surface of the new slab along the external wall of the building is not to be higher than 100mm below the termination point for the waterproofing.

Expert comment

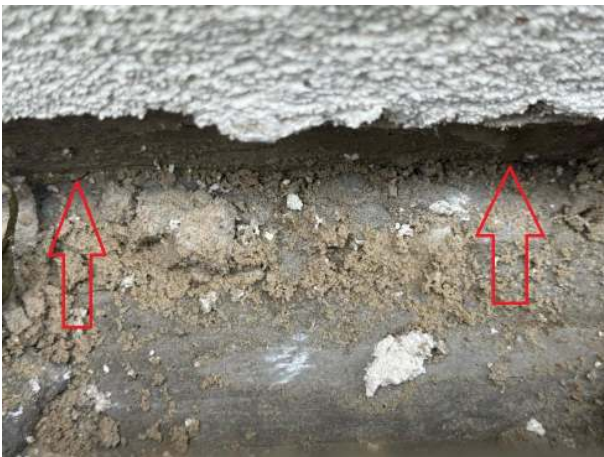
There are sections of the new slab where the finished surface is noticeably closer than 100mm to the proposed waterproofing termination level on the wall. This reduced clearance increases the risk of splash back and moisture ingress into the wall system. In my opinion these areas do not comply with the regulated design and require rectification.



2.1 (21) Provide expansion joint at junction between new and existing slab. Install 10mm thick compressible material in the joint to the level of 10mm below the top surface of the slab.

Expert comment

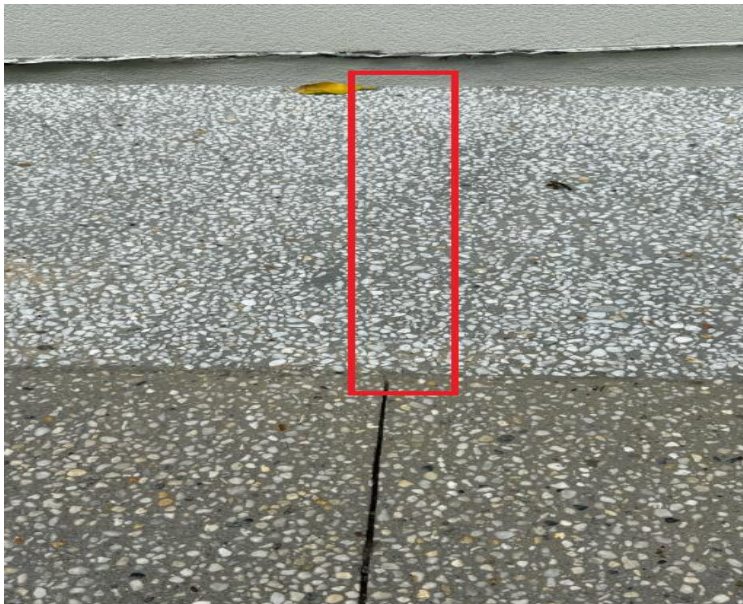
No visible expansion joint was observed at the interface between the new and existing slabs. There is no exposed compressible joint material evident at the slab junction. It appears that this expansion joint detail has not been formed in accordance with the regulated design.



2.1 (22) Provide saw-cut joints within the new slab at 3 metres maximum. Saw cuts to be 5mm wide x 20mm deep and to extend for the full length / width of the slab. Terminate slab reinforcement on both sides of the saw cut. Fill the joints with an approved flexible sealant upon completion.

Expert comment

I did not observe any contraction joints or saw cuts within the new slab surface. There is no evidence of saw-cut joints filled with flexible sealant at the specified centres. I am therefore of the opinion that this structural and waterproofing control measure has not been implemented.



2.1 (23) Cure the concrete after placement in accordance with good construction practice.

Expert comment

I have not been provided with any curing records, site diaries or photographs showing the curing method adopted. As this process is not visually verifiable after the fact, I cannot confirm whether the concrete was cured in accordance with good construction practice.

2.1 (24) Install external-grade drain covers over the existing drains in the slab. Connect the slab stormwater drainage to the existing inground stormwater drainage, as required.

Expert comment

External drain grate has been installed at the slab surface. However, I have not been provided with any plumbing certification or as-constructed information to demonstrate that these drains are properly connected to the existing inground stormwater system or that they perform adequately under design rainfall conditions. I therefore cannot confirm hydraulic adequacy.

2.1 (25) Install pressure equalisation slots at the bottom of Hebel panel wall in accordance with the Hebel panel supplier requirements and recommendations.

Expert comment

As with Item 2.1 (15), The pressure equalisation slots are Installed, but the saw cuts are not covered. These cuts need to be filled by approved material (approved by Hebel) to protect the Hebel steels from corrosion.

2.1 (26) Reinstate finishes / coatings on the Hebel wall in accordance with goods construction practice and Hebel panel supplier requirements and recommendations, and to match the existing.

Expert comment

The Hebel wall has been re-rendered and repainted. The finish does NOT matches the surrounding façade in appearance/colour.

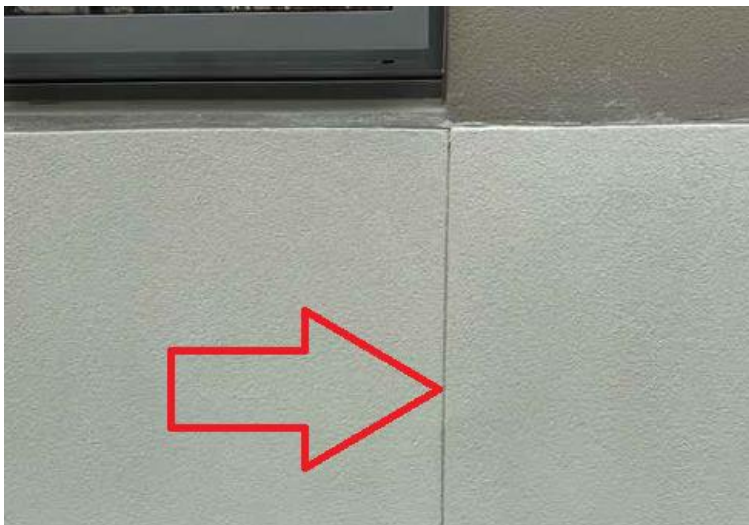


2.1 (27) Reinstate control joints with new backing rods and an approved flexible sealant in accordance with Hebel Panel Installation Guide. Provide a control joint between concrete or Dintel structures and Hebel Panel.

HOLD POINT: The Engineer to inspect.

Expert comment

Control joints are bridged with rigid render and do not present as flexible sealed joints. I have not seen any evidence confirming that backing rods and flexible sealant have been installed consistently in accordance with the Hebel Panel Installation Guide. The absence of the Engineer's hold point inspection report further limits verification.



2.1 (28) Encapsulate the Hebel wall in accordance with the Hebel Panel Installation guide.

Expert comment

Render has been applied over the Hebel wall, which provides a degree of encapsulation and protection. I have not independently verified whether the overall wall build-up fully complies with the Hebel Panel Installation Guide, but the wall surface is now rendered and coated.

2.1 (29) Protect the waterproofing membrane installed on the brick dwarf wall above the new concrete slab, either by rendering, installation of skirting tiles, or similar means.

Expert comment

A protective render has been applied to the brick dwarf wall. However, the waterproofing treatment observed does not appear to be the specified fully bonded PVC weldable or torch-on sheet membrane, and the required terminations have not been demonstrated. In the absence of evidence of a compliant membrane system beneath the render, this requirement has not been satisfied.

2.2 WEATHERPROOFING OF THE WALL IN THE EASTERN SECTION OF THE WORKS

2.2 (1) Clear out all existing control joints. Remove all existing sealants and backing rods, as required, and open up the joints. Ensure the open joints are clean from any impurities, straight and even width.

HOLD POINT: The Engineer to inspect.

Expert comment

The works to the control joints in the eastern section are now concealed by finishes. I have not been provided with the Engineer's hold point inspection report. I therefore cannot comment on whether the control joints were properly cleaned, prepared and reinstated.

2.2 (2) Provide temporary support / propping for the Hebel wall (if required) and clean out thoroughly a joint between the bottom of the Hebel panel wall and the brick dwarf wall below. Remove all broken parts of mortar / masonry from the joint to leave a clean joint.

Expert comment

Any temporary supports, if provided, have been removed and the joint is now concealed. There is no evidence available to confirm the method or quality of joint preparation. Accordingly, I am unable to verify compliance with this requirement.

2.2 (3) Repair the edges of the wall on both sides of the joint to ensure straight horizontal joint of even width of between 10mm and 15mm. If required, use flexible sealant to secure 30x30x3mm aluminium angle to both top and bottom edge of the joint to achieve a straight even-width joint.

HOLD POINT: The Engineer to inspect.

Expert comment

No Engineer's inspection report or construction photographs have been provided to demonstrate compliance.

2.2 (4) Pressure water clean the shoring capping beam projecting past the external face of the wall to achieve concrete surface clear from any dust, dirt, grease and other impurities.

Expert comment

This preparatory task cannot be visually verified after completion and no supporting records have been supplied. I therefore cannot comment on whether the shoring capping beam was pressure cleaned in accordance with the regulated design.

2.2 (5) Regulated design requirement

Install minimum 10mm x 10mm flexible sealant fillet along the junction between the top of the concrete slab and the face of the brick dwarf wall.

Expert comment

A flexible sealant fillet is present at the junction between the slab and brick dwarf wall in the eastern section. This appears consistent with the intent of the regulated design, subject to confirmation of product type.



2.2 (6) Excavate along the edge of the capping beam to the bottom of the capping beam, i.e. to the joint between the shoring piles / shotcrete wall panels and the capping beam.

Expert comment

Backfilling has been completed and the excavation is no longer visible. Without photographic evidence or inspection records from the time of works, I cannot verify that excavation was carried out to the correct depth along the capping beam.

2.2 (7) Provide a 10mm wide x 20mm deep saw-cut on the side of the footing / capping beam at the level of 50mm above the bottom of the capping beam.

Expert comment

Because waterproofing details and rendering now conceal the side of the footing and/or capping beam, I could not confirm the presence of the specified saw cut. However, based on the construction photos provided to me by the home owner, it seems the saw cut at the side of the slab is not done.



2.2 (8) Pressure water clean and prepare the concrete surface in accordance with the waterproofing manufacturer's instructions. Provide primers, as required.

HOLD POINT: The Engineer to inspect.

Expert comment

No information has been provided regarding the selected waterproofing system or the surface preparation method. The Engineer's hold point inspection report is also absent. I am therefore unable to confirm that the concrete surface was cleaned, prepared and primed in accordance with manufacturer instructions.

2.2 (9) Provide an approved fully bonded PVC weldable or torch-on sheet waterproofing membrane to the concrete surface along the external wall of the building and folded up the wall to the level of the bottom of Hebel panels.

Expert comment

At the time of my inspection some of the waterproofing details were concealed by render and finishes. Photographs provided to me show that a waterproofing treatment has been applied at the wall and slab interface. However, based on its appearance, it does not resemble a PVC weldable sheet membrane and the available photographs do not show characteristics typical of a torch-on sheet membrane. In addition, there is no evidence that the membrane continues down the side of the footing and/or capping beam and terminates in the required saw cut. Further, the DPC at the brick dwarf wall to Hebel interface has not been folded over any demonstrated compliant sheet membrane, which is inconsistent with the design intent. On this basis, the works do not demonstrate compliance with the specified sheet waterproofing membrane requirement.





2.2 (10)

For the termination point on the side of the footing / capping beam, fold the membrane minimum 20mm into the saw cut and secure in place before filling the saw-cut with an approved flexible sealant.

Expert comment

No evidence has been provided demonstrating that the membrane has been folded into a saw cut on the side of the footing and/or capping beam and sealed as specified. In particular, there is no evidence of the membrane continuing down the side of the slab to the termination level and being turned into the saw cut located 50mm above the bottom of the capping beam. This termination detail therefore has not been demonstrated as implemented.

2.2 (11) For the termination point in the wall, fold the waterproofing membrane minimum 30mm into the joint between the brick dwarf wall and the Hebel wall above, and secure mechanically and chemically to the bottom edge of the joint.

HOLD POINT: The Engineer to inspect.

Expert comment

Based on the photographs provided, the waterproofing treatment at this wall interface does not demonstrate a sheet membrane folded into the joint and mechanically and chemically secured as required. Further, the DPC has not been folded over a demonstrated compliant sheet membrane at this joint. In the absence of the Engineer's hold point inspection report or clear construction photographs of this termination detail, compliance cannot be demonstrated. This is a critical omission from a waterproofing perspective.



2.2 (12) Install an aluminium or hd galv. steel angle / over-flashing in the saw cut for the termination point on the side of the capping beam as well as in the brick dwarf wall to cover the termination of the waterproofing membrane.

Expert comment

I was unable to see any aluminium or galvanised steel angle or over-flashing installed at the locations described. There is no visible flashing that would protect a membrane termination, which is consistent with the apparent absence of a sheet membrane. Compliance with this requirement is therefore not demonstrated.

2.2 (13) Install an approved sheet DPC in the joint between the top of the brick dwarf wall and Hebel panels. Extend into the cavity behind the Hebel panel minimum 10mm past the rear face of the Hebel panel and minimum 20mm past the external face of the Hebel panel wall. Fold down the protruding part of the DPC 20mm along the face of the wall over the waterproofing membrane.

HOLD POINT: The Engineer to inspect.

Expert comment

As with the western section, the rear extension of the DPC into the cavity cannot be confirmed because it is concealed. From the exterior, the DPC is seen projecting approximately 20mm beyond the face of the Hebel panel, but it has not been folded down over any waterproofing membrane before rendering. The render has been completed with the DPC left protruding and unfolded, which is inconsistent with the regulated design.

2.2 (14) Provide a backing rod in the joint between the dwarf brick wall and the Hebel panels minimum 20mm back from the front face of the wall.

Expert comment

The joint is fully covered by render. I cannot see whether a backing rod has been installed, and no evidence has been provided to confirm its presence. Compliance therefore cannot be verified.

2.2 (15) Provide an approved flexible sealant in the joint between the brick dwarf wall and Hebel panel wall.

Expert comment

The joint between the brick dwarf wall and Hebel wall has been finished with rigid render rather than with an exposed flexible sealant joint. The use of rigid render at this movement interface is contrary to the regulated design and is likely to result in future cracking and water ingress.

2.2 (16) Install pressure equalisation slots at the bottom of Hebel panel wall in accordance with the Hebel panel supplier requirements and recommendations.

Expert comment

Installed, but the saw cuts are not covered. These cuts need to be filled by approved material (approved by Hebel) to protect the Hebel steels from corrosion.

2.2 (17) Reinstall control joints with new backing rods and an approved flexible sealant in accordance with Hebel Panel Installation Guide.

HOLD POINT: The Engineer to inspect.

Expert comment

The control joints in this area have been bridged by render and do not present as flexible sealed joints. I saw no exposed flexible sealant or joint profile consistent with the Hebel Panel Installation Guide. In my opinion the control joints have not been reinstated correctly and the omission is significant for both movement accommodation and waterproofing.

2.2 (18) Encapsulate the Hebel wall in accordance with the Hebel Panel Installation Guide.

Expert comment

The Hebel wall in the eastern section has been rendered.

2.2 (19) Protect the waterproofing membrane installed on the brick dwarf wall with cementitious render.

Expert comment

Cementitious render has been applied over the brick dwarf wall. However, the waterproofing treatment observed does not appear to be the specified fully bonded PVC weldable or torch-on sheet membrane, and the required terminations have not been demonstrated. If the waterproofing system beneath the render is not a compliant sheet membrane system installed and terminated in accordance with the regulated design, the protective render alone does not satisfy the intent of this requirement.

2.2 (20) Fill in the excavation on the side of the footing / capping beam with virgin soil or an approved fill material.

Expert comment

The excavation has been backfilled and the external grade reinstated. I cannot confirm the nature or quality of the fill material used, as no documentation has been provided and the material is not visible. The term "approved fill material" is not defined in the regulated design documentation available to me, so I cannot confirm whether the material used would meet that requirement.

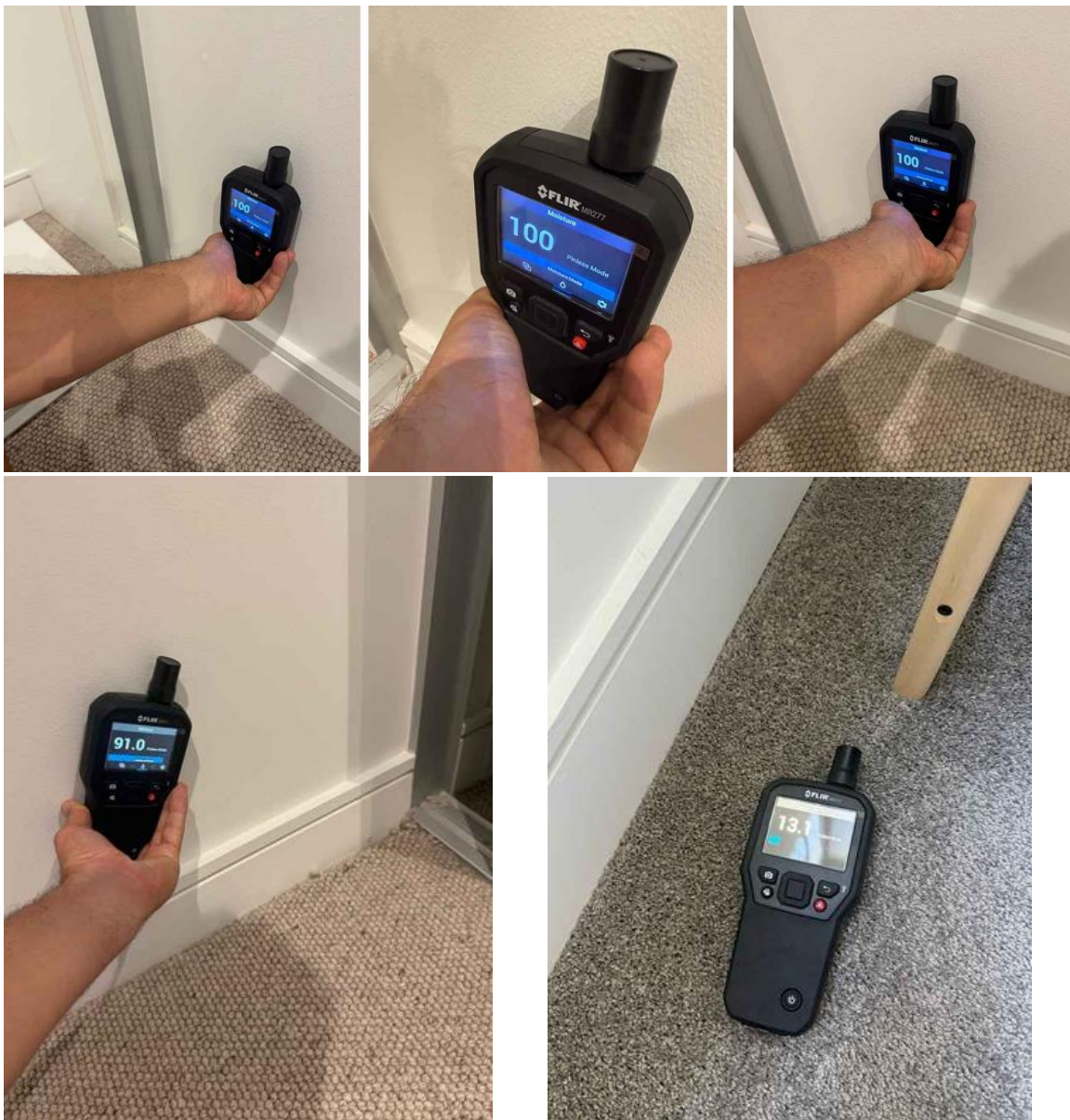
ADDITIONAL EXPERT NOTE REGARDING 20MM SAW CUT IN THE CONCRETE

The regulated design requires a 20mm deep saw cut in the slab to receive the waterproofing membrane termination. In my opinion, this cut may adversely affect concrete durability if it significantly reduces the effective cover to reinforcement, particularly for an external slab potentially subject to aggressive exposure. I recommend that the structural Engineer confirm that the saw cut detail has been checked against the minimum cover requirements for the relevant exposure classification and that the durability of the slab has been appropriately considered.

Appendix B - Moisture meter readings (summary)

The following is a summary of the indicative moisture meter readings recorded during my inspection. Values are expressed as a percentage of the relative scale of the instrument used and are intended to show comparative levels only.

- Living room external wall adjoining former planter box: multiple readings at or near 100% at skirting level and up to approximately one metre above finished floor level.
- Bedroom external walls adjoining former planter box: multiple readings ranging from high to 100% at skirting level and within the lower wall zones.
- Built in robe to bedroom on southern elevation: moisture readings at or near 91-100% along the external wall line.



Appendix C - Responses to paragraph 1.3 of Letter of Instruction

1.3(a) Reason and extent of water ingress into Unit 48

Water is most likely entering through defective or missing waterproofing at the southern external wall and slab or capping beam interface. The extent of ingress affects most of the southern wall line, including the bedrooms, bathroom, living room and associated wall cavities, as evidenced by moisture meter readings in these locations.

1.3(b) Damage caused to Unit 48 due to the water ingress

The water ingress has caused saturation of wall linings (and most likely framing) to the southern external walls. There is also a significant risk of mould growth and associated deterioration of concealed building elements if the moisture is not removed.

1.3(c) Extent to which the water damage has affected the ability to use parts of Unit 48

The bedrooms, bathroom, and living room adjoining the southern wall are affected by moisture conditions and risk of mould, so they are not reasonably fit for normal long term use without rectification.

1.3(d) Works required to prevent further water ingress and or water damage

Further ingress and damage can only be prevented by properly reconstructing the external waterproofing system to the southern wall in accordance with the regulated design, including a continuous sheet membrane, correct DPC lapping, flexible sealed joints, adequate falls and functional drainage. This must be combined with appropriate detailing to wall cavities and cladding so that the entire wall assembly sheds water away from Unit 48.

1.3(e) Scope of works required to rectify the damage caused by the water ingress

Provided in the attached Scott schedule.

1.3(f)(a) Scope of works required to rectify the cause of the water ingress into Unit 48

Provided in the attached Scott schedule.

1.3(f)(b) Scope of works required to rectify the cause of the water ingress into the Common Property

This instruction was later amended by the solicitor and removed from the brief during our phone discussion. As per the amended verbal instruction, the report and Scott Schedule will be limited to the internal and external damages relating to Unit 48 only and will not include any assessment of common property.