VDM CONSULTING ENGINEERS
Civil – Structural

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12 February 2025

Our ref: 2502-02
Your ref.: EPA2024/0179

General Manager
Northern Beaches (Pittwater) Council
PO Box 882
Mona Vale NSW 1660
Australia

ENGINEERING COMPLIANCE CERTIFICATE

STRUCUTRAL WORKS ON AN EXISITNG DWELLING

Address: ***47 Plateau Rd, Bilgola Plateau, NSW, 2107***
Type of Building Work: ***Residential***
Subject of this short report: ***Certificate of Adequacy***

1. Introduction

This certificate is based on the requirements of Northern Beaches (Pittwater) Council as the certification for the construction of additions at the above address; please refer to Figures 1 & 2.

The inspection/assessment of the additions and alterations, was based on visual evaluation method without altering the existing structure. Typically, if there are defects such as: differential movement, overloading of structural members, considerable deflections, cracks, floors or walls out-of-plumb, raising damp, etc, further investigation is required.

The structural components associated with the construction at the above address have been, inspected and checked by VDM Consulting Engineers Pty Ltd, using the following Australian Standards and references;

- AS/NZS 1170.0:2002: *Structural design actions – General principles,*
- AS/NZS 1170.1:2002: *Structural design actions – Permanent, imposed and other actions,*
- AS/NZS 1170.2:2011: *Structural design actions – Wind actions,*
- AS 1170.4:2007: *Structural design actions –Earthquake actions in Australia,*
- AS 1684:2010: *Residential timber framed construction,*
- AS 1720.1-2010: *Timber structures: Part 1 - Design methods,*
- AS 2870:2011: *Residential slabs and footings – Construction,*
- AS 3600:2018: *Concrete Structures Codes,*
- AS3700:2018: *Masonry structures,*
- AS 3959:2018: *Construction of buildings in bushfire-prone areas,*
- Building Code of Australia (BCA),
- Northern Beaches (Pittwater) Council: *DCP, LEP 2014,*
- AS4100:2020: *Steel structures,*
- AS/NZS 5131:2016: *Structural steelwork – Fabrication & erection*
- Principles of structural mechanics.

2. Loadings

Loads used for the analysis included:

- Dead load (DL) – concrete slabs - 4.25kPa (417 kg/m^2) self weight,
- Dead load – roof – $\frac{1.8}{A} + 0.12(kPa)$ but not less than 0.25 kPa
- Live load (LL) – 1.5kPa (153 kg/m^2),
- Live load (LL) – 3.0kPa (306 kg/m^2), Balconies
- Wu = $p_{u,e}$ =1.16kPa and Ws = $p_{s,e}$ = 0.64 kPa
- Concrete self weight (sw) – 25 kN/m^3 (2,548 kg/ m^3) includes steel reinforcement
- Steel - f_s = 300MPa
- Timber = 5.3kN/m^3 (softwood), 10.63kN/m^3 (hardwood),
- Concrete – f'_c = 25MPa

Combination factors:

- Short term ψ_s = 0.7
- Long term ψ_l = 0.4
- Earthquake ψ_E = 0.3 Hazard factor - Z = 0.08

Strength factors	Serviceability factors
• Dead load – 1.2,	1.0
• Live load – 1.5,	1.0

3. Site inspection

The dwelling was inspected on 28th January, 2025 supporting posts, floor, walls and roof framing, connections, tie-downs and wind bracing.

4. Conclusion

No significant defects were found during the inspection. VDM hereby certifies that, the structural components associated with the additions and alterations at the above address, comply with the above-mentioned standards and regulations.

This report, assessment, analyses and certification has been based on areas inspected in the section of the property in consideration, any attempt to place these comments elsewhere shall require further analysis to ensure the integrity, adequacy and stability of the structure is maintain.

I am an appropriately qualified and competent person in the areas of Structural / Civil Engineering, related to the alterations & additions and as such can certify that the performance of the structural system is satisfactory.

This certificate shall not construe as relieving any other party of their responsibilities, liabilities or contractual obligations.

CERTIFICATION
Responsibility for this report is acknowledged as follows:
Name of person signing – Mario F. Benitez *BE(UTS-Struct) CPEng. MIEAust. (418917), MIPENZ (111943), DEP0003222*
Position – Senior Structural Engineer
Name of responsible firm for and on behalf of person is signing for – VDM Consulting Engineers Pty. Ltd.

Digitally signed by Mario F. Benitez
DN: cn=Mario F. Benitez, o=VDM Consulting Engineers P/L, ou, email=vdm1@optusnet.com.au, c=AU
Date: 2025.02.12 11:18:35 +11'00'

Signature

Figure 1 – additions in general

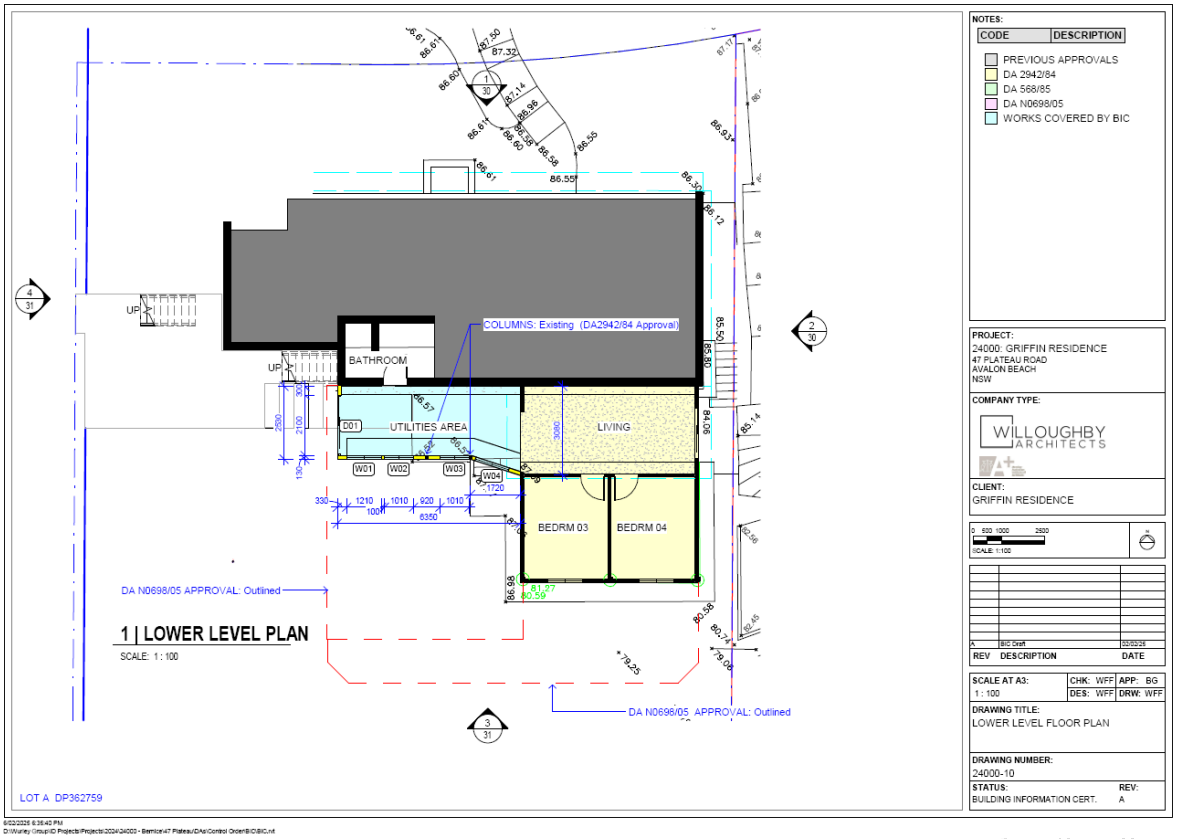

Figure 2 – Lower-level additions