



**Structural Works & Variation Register**  
**Address: 82 & 84 Bower Street, Manly**  
**Pacific Plus Constructions Pty Ltd**

**Basis Types**

Type 01 - Structural  
 Type 02 - Safety  
 Type 03 - Compliance

This element of retained structure was assessed by the consulting engineer and deemed to be structurally inadequate.  
 This element of retained structure was assessed by Pacific Plus Constructions and Partridge Engineers and deemed to be unsafe.  
 This element of retained structure was assessed by Pacific Plus Constructions and deemed to be not compliant to retain, and consequently had to be replaced.

Item No.	Project	Variation Type	Variation Reference	Description	Location	Date Submitted	Date Approved	Basis	Detailed Description	Referenced Supporting Documents	Architectural & Structural Drawing Reference	Drawing Revision Date	Referenced Australian Standard or Code
<b>84 Bower Street, Manly</b>													
1													
2	84 Bower Street, Manly	Head Contract Variation	84 Bower Street - VAR 02	VAR 02 - Demolition & Removal of Party Wall at High Level	Existing Ground Floor Roof Space	27/05/2019	28/05/2019	Type 02 - Safety	Demolition and removal of the existing party wall gable top at high level, originally concealed in the roof space as per the <b>Site Instruction Report from Partridge Engineers</b> dated 13/05/19.  The gable top to the party wall was determined to be unsafe to retain, as it was located 9+ metres above ground level and the roof loads had been released.	VAR 02 - Removal of Existing Party Wall at High Level.pdf Site Inspection Report 13th May 2019 - Party Wall.pdf	CD-A-204 Rev K - Sections	23/05/2019	N/A
3	84 Bower Street, Manly	Head Contract Variation	84 Bower Street - VAR 03	VAR 03 - Demolition & Removal of External Common Retaining Wall	External yard between Gridlines 1 & 2	27/05/2019	28/05/2019	Type 02 - Safety	Demolition and removal of the existing external common retaining wall on the boundary of 82 & 84 Bower Street, as per item 2 in the <b>Site Instruction Report from Partridge Engineers</b> dated 13/05/19.  This external retaining wall was not core filled, and did not have reinforcement steel or adequate footings to retain the load from the earth at 82 Bower Street. This wall posed an immediate safety risk to ongoing demolition and excavation workers.	VAR 03 - Demolition & Removal of Existing Common Retaining Wall on Boundary.pdf Site Inspection Report 13th May 2019 - Party Wall.pdf	CD-A-023 Rev G - Demolition Plan - Ground 2 Gridlines 1 - 2	23/05/2019	N/A
4	84 Bower Street, Manly	Head Contract Variation	84 Bower Street - VAR 04	VAR 04 - Removal of Damaged Floorboards	Lower Ground Floor - entire floor	28/06/2019	2/07/2019	Type 01 - Structural Type 03 - Compliance	Removal and disposal of damaged floorboards to the Lower Ground Floor level due to being unusable for the purpose of new flooring install.  Floorboards were deemed to be structurally inadequate for re-use and could not be retained as they would not comply with the BCA.	VAR 04 - Removal of Existing Timber Floorboards to Lower Ground Floor.pdf VAR 04 - Supporting Documentation.pdf Email from ST2 confirming removal of floorboards 11.06.19.pdf	CD-A-021 Rev Q - Demolition Plan - Lower Ground Gridlines 2 - 4	23/05/2019	NSW Guide to Standards and Tolerances 2017 - Dept Fair Trading - Page 60, Item 15.8
5	84 Bower Street, Manly	Head Contract Variation	84 Bower Street - VAR 08	VAR 08 - Additional Brick Walls to Lower Ground Floor	Lower Ground Floor external walls along Western Boundary	4/09/2019	16/09/2019	Type 01 - Structural Type 02 - Safety Type 03 - Compliance	The external walls along the western boundary to the Lower Ground Floor were determined to be unsuitable for re-use, DPC was non-existent or rusted, cavity wall was not tied and walls were built off bedrock - no footing existed. Cavities were cross filled with mortar and debris. Not plumb or straight.	Variation Price Submission VAR 08 - replacement of Brick Walls to Lower Ground Floor.pdf 84 Bower st - LG front demo to be retained.jpg 84 Bower st - LG front wall - existing 1.jpg 84 Bower st - LG west masonry wall.jpg 84 Bower st - LG western wall - mark up.jpg 84 Bower st - structure mark up 1.jpg	CD-A-101 Rev Q - GA Lower Ground Plan Western external wall running North/South	30/10/2019	AS 4773.2 - 2010 Masonry in Small Buildings Construction - Section 5 Item 3 - Section 10.2 - Section 10.5
6													
7	84 Bower Street, Manly	Head Contract Variation	84 Bower Street - VAR 13	VAR 13 - Reconstruction of Party Wall in Blockwork	Lower Ground Floor, Ground Floor and Level 1 Party Wall	-	-	Type 02 - Safety	The Party Wall is detailed on the level 1 Architectural Floor plans as "existing". The only existing element was the gable roof extension, which was removed in VAR 02 due to structural and safety concerns.	VAR 013 - Marked up Drawing.pdf	CD-A-103 Rev Q - GA Level 1 Plan Common Party Wall running between Gridlines 2-4	30/10/2019	N/A
8	84 Bower Street, Manly	N/A	N/A	Restoration and re construction of floor structure - Lower Ground Floor	Lower Ground Floor	-	-	Type 01 - Structural Type 03 - Compliance	The existing 4x2 hardwood joist spacing was outside the current code. The existing bearers were undersized and spaced outside the current code. The floor structure was out of level up to 60mm across the floor level.  Bearers that were not rotten or termite effected were reinstated.	84 Bower st - existing floor structure - lower ground 1.jpg 84 Bower st - existing floor structure - lower ground 2.jpg 84 Bower st - existing floor structure - lower ground 3.jpg 84 Bower st - existing floor structure - lower ground 4.jpg 84 Bower st - reconstructed floor structure - lower ground 1.jpg 84 Bower st - reconstructed floor structure - lower ground 2.jpg 84 Bower st - reconstructed floor structure - lower ground 3.jpg	CD-A-101 Rev Q - GA Lower Ground Plan Gridlines 2 - 4	30/10/2019	AS 1684 - 1999 - Australian Framing Code NSW Guide to Standards and Tolerances
9	84 Bower Street, Manly	N/A	N/A	restoration and re construction of floor structure - Ground Floor	Ground Floor	-	-	Type 01 - Structural Type 03 - Compliance	The existing 250 x 50 Oregon floor joists were badly termite affected and filled with a 75-100mm layer of compacted sand and soil for insulation. Joists not rotten or termite effected were stripped out, restored and reinstated.	84 Bower st - existing floor structure - ground 1.jpg 84 Bower st - existing floor structure - ground 2.jpg 84 Bower st - existing floor structure - ground 3.jpg 84 Bower st - existing floor structure - ground 4.jpg 84 Bower st - existing floor structure - ground 5.jpg 84 Bower st - reconstructed floor structure - ground 1.jpg 84 Bower st - reconstructed floor structure - ground 2.jpg	CD-A-102 Rev R - GA Ground Plan Gridlines 2 - 4	30/10/2019	AS 1684 - 1999 - Australian Framing Code NSW Guide to Standards and Tolerances
10	84 Bower Street, Manly	N/A	N/A	Additional Termite Protection Works	Lower Ground Floor, Ground Floor, Party Wall	13/08/2019	14/08/2019	Type 01 - Structural Type 02 - Safety Type 03 - Compliance	It was assessed and determined by a licensed termite protection contractor (Terminesh Home & Commercial), that both structures at 82 & 84 Bower Street had active termites. As a result, the existing structures had to be completely separated from the new structures with Kordon protection, including all retained wall and floor elements in direct contact with the ground.  Consequently, all remaining suspended timber floor and timber wall structures were required to be replaced to achieve compliance under the BCA and relevant structural framing codes.	Variation Price Submission - CSA 02 - Additional Termite Works.pdf Termi Home & Commercial Quote - 05.08.19.pdf 84 Bower st - existing floor structure - lower ground 1.jpg 84 Bower st - existing floor structure - lower ground 3.jpg	CD-A-101 Rev Q - GA Lower Ground Plan CD-A-102 Rev R - GA Ground Plan Gridlines 2 - 4	30/10/2019	AS 8660.1 - 2000 - Termite Management New Building Work
<b>82 Bower Street, Manly</b>													
11													
12													
13	82 Bower Street, Manly	Head Contract Variation	82 Bower Street - VAR 03	VAR 03 - Demolition & Removal of Party Wall at High Level	Existing Ground Floor Roof Space	27/05/2019	28/05/2019	Type 02 - Safety	Demolition and removal of the existing party wall at high level, originally concealed in the roof space as per Site Instruction Report from <b>Partridge Engineers</b> dated 13/05/19.	VAR 03 - Supporting Documentation.pdf & 84 Bower street - Upper Party wall removal.pdf	82 CD-A-204 Rev M - Sections	27/08/2019	NSW Work Health and Safety Regulation 2017 - Chapter 3, Part 3.1. Clause 34, 35
14	82 Bower Street, Manly	Head Contract Variation	82 Bower Street - VAR 04	VAR 04 - Demolition & Removal of External Masonry Party Wall	External yard between Gridlines 1 & 2	27/05/2019	28/05/2019	Type 02 - Safety	Demolition and removal of the existing common retaining wall on the boundary as per item 2.0 in the site inspection report by Partridge Engineers dated the 13/05/19.	82 & 84 Bower street - Site Inspection Report 1 - Partridge.pdf VAR 04 Supporting Documentation.pdf	CD-A-023 Rev G - Demolition Plan - Ground 2 Gridlines 1 - 2	23/05/2019	NSW Work Health and Safety Regulation 2017 - Chapter 3, Part 3.1. Clause 34, 35
15	82 Bower Street, Manly	Head Contract Variation	82 Bower Street - VAR 05	VAR 05 - Removal of Concrete Slab to Lower Ground Floor	Lower Ground Floor between gridlines 3 and 3	20/06/2019	2/07/2019	Type 01 - Structural Type 03 - Compliance	Rock Hammer works to break up existing concrete, removal of concrete. Cartage to tip and disposal fees - originally drawn as timber framed floor structure - evidenced to be unreinforced concrete slab on ground upon removal of rotten, wet and termite effected timber tongue and groove flooring over.	VAR 05 - Removal of Concrete Slab to Lower Ground Floor.pdf 82 Bower street - LG existing slab location.jpg	CD-A-021 Rev G - Demolition Plan - Lower Ground Gridlines 3 - 4	23/05/2019	N/A



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16													
17	82 Bower Street, Manly	Head Contract Variation	82 Bower Street - VAR 11	VAR 11 - Additional Brick Walls	Eastern boundary to the Lower Ground Floor	13/09/2019	17/09/2019	Type 01 - Structural Type 03 - Compliance	Additional single skin common brick wall to the eastern boundary of the lower ground floor as detailed on Architectural Drawing GA Lower Ground Plan. Add blockwork for reconstruction of the south part of the party wall	82 Bower Mark-up - Additional Brick & Blockwork.pdf	CD-A-101 Rev Y - GA Lower Ground Plan	27/08/2019	AS 4773.2 - 2010 Masonry in Small Buildings Construction
18													
19	82 Bower Street, Manly	Head Contract Variation	82 Bower Street - VAR 14	VAR 14 - Additional Blockwork to Ground Floor	Ground Floor	20/11/2019	-	Type 01 - Structural Type 03 - Compliance	Additional 190 core filled blockwork to the eastern boundary, local to gridline 3 and 4, running North/South - a structural design requirement to carry slab above and provide compliant fire separation to 80 Bower st - Wall originally anticipated to be brickwork - upon demolition found to be termite affected poor quality timber studwork in part clad with bonded asbestos cement sheet	Email from Partridge.pdf	Structural Drawing S4.1 Rev D - Level 1 Slab and Framing Plan Structural Drawing S4.2 Rev D - Detail E	1/06/2019	Structural Design for the project
20	82 Bower Street, Manly	Head Contract Variation	82 Bower Street - VAR 15	VAR 15 - Reconstruction of Party Wall in Blockwork	Lower Ground Floor, Ground Floor and Level 1 Party Wall	-	-	Type 02 - Safety	The Party Wall is detailed on the level 1 Architectural Floor plans as 'existing'. The only existing element was the gable roof extension, which was removed in VAR 03 due to structural and safety concerns.	VAR 015 - Marked up Drawings.pdf	CD-A-101 Rev Y - GA Lower Ground Plan Gridlines 2-4	27/08/2019	AS 4773.2 - 2010 Masonry in Small Buildings Construction
21	82 Bower Street, Manly	Head Contract Variation	82 Bower Street - VAR	Additional Structural Steel Columns	Lower Ground Floor - North end	-	-	Type 01 - Structural Type 03 - Compliance	The Architectural Drawings detailed 'existing brick piers' to the North end of the Lower Ground Floor which didn't exist. This are was discovered to be termite affected timber framed walls, which were deemed to be structurally inadequate and unsafe to retain.  The existing timber was removed and two additional structural steel columns were fabricated and installed to achieve compliance.	Additional Structural Steel Columns Mark-up.pdf	CD-A-101 Rev Y - GA Lower Ground Plan Gridline 4 along North facing wall	27/08/2019	AS 4773.2 - 2010 Masonry in Small Buildings Construction
22	82 Bower Street, Manly	N/A	N/A	Reconstruction of floor structure - Lower Ground Floor	Lower Ground Floor	-	-	Type 01 - Structural Type 03 - Compliance	Very limited timber framed structure existed - the majority had been removed some time ago and replaced with low quality mass concrete slab on ground - fortercon was evident in some locations - no termite protection was evident.	82 Bower st - existing floor structure - lower ground 1.jpg 82 Bower st - existing floor structure - lower ground 2.jpg 82 Bower st - existing floor structure - lower ground 3.jpg 82 Bower st - reconstructed floor structure - lower ground 1.jpg 82 Bower st - reconstructed floor structure - lower ground 2.jpg	CD-A-101 Rev Y - GA Lower Ground Plan	27/08/2019	AS 1684 - 1999 - Australian Framing Code NSW Guide to Standards and Tolerances
23	82 Bower Street, Manly	N/A	N/A	Reconstruction of floor structure - Ground Floor	Ground Floor	-	-	Type 01 - Structural Type 03 - Compliance	Consistent with # 84, GF 250 x 50 mm existing Oregon floor joists were badly termite affected and filled with soil and sand as an insulator. They were stripped out, restored and the joists that were re usable were re installed.	82 Bower st - existing floor structure - ground 1.jpg 82 Bower st - existing floor structure - ground 2.jpg 82 Bower st - existing floor structure - ground 3.jpg 82 Bower st - existing floor structure - ground 4.jpg 82 Bower st - existing floor structure - ground 5.jpg 82 Bower st - existing floor structure - ground 6.jpg 82 Bower st - existing floor structure - ground 7.jpg 82 Bower st - reconstructed floor structure - ground 1.jpg	CD-A-101 Rev Y - GA Lower Ground Plan	27/08/2019	AS 1684 - 1999 - Australian Framing Code NSW Guide to Standards and Tolerances
24	82 Bower Street, Manly	N/A	N/A	Additional Termite Protection Works	Lower Ground Floor, Party Wall	13/08/2019	14/08/2019	Type 01 - Structural Type 02 - Safety Type 03 - Compliance	It was assessed and determined by a licensed termite protection contractor (Terminex Home & Commercial), that both structures at 82 & 84 Bower Street had <b>active termites</b> . As a result, the existing structures had to be completely separated from the new structures with Kordon protection, including all retained wall and floor elements.  Consequently, all remaining suspended timber floor and timber wall structures were required to be replaced to achieve compliance under the BCA and relevant structural framing codes.	Variation Price Submission - CSA.02 - Additional Termite Works.pdf Termini Home & Commercial Quote - 05.08.19.pdf	CD-A-101 Rev Y - GA Lower Ground Plan CD-A-102 Rev Y - GA Ground Plan Gridlines 2-4	27/08/2019	AS 3660.1 - 2000 - Termite Management New Building Work  AS 1684 - 1999 - Australian Framing Code NSW Guide to Standards and Tolerances