



# Access Property Services Pty Ltd

## Expert Report

**For A Dispute Between:  
TB v The Builder**

**Subject Property  
Riverview**

**Report Prepared By:  
Access Property Services Pty Ltd  
PO Box 179 Summer Hill 2130**

**Consultant;  
Dominic J. Ogburn**

**Commissioned By;  
TB, Riverview**

**Date Of Report**

Access Property Services Pty Ltd ACN 053 572 768

Signed:

Dated: 9.2.04



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## Reference Documents

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## INTRODUCTION

1. I have been engaged as a consultant to the owner, TB (*the owner*), of the subject property since 11.9.02. In the period leading up to December 2003 I was substantially involved in negotiations between the owner and the *builder* and the *project architect* Mr. AO in attempting to reach an agreement on the builders return to site to complete contracted works and rectify the defects as identified by myself, the architect and as stated in a report dated 17 & 19/7/02 as prepared by Phillips Building Consultants & Inspections P/L.
2. During this period a number of specialist consultants were engaged by the owner to inspect and report on the newly installed windows, which were leaking and the ducted air conditioning system, which was defective.  
These reports were made available to the builder as part of the negotiations. When the negotiations failed and the building contract was terminated, the project architect AO produced a '*Schedule of Building Works*' dated August 2003 (Refer 'A0 25' of architects affidavit), which I assisted in compiling and also reviewed - *Refer Annexure 1*.  
To the best of my knowledge this Schedule represented most of the then known building defects and incomplete building works however it was completed prior to this report.
3. I am advised that the 'Schedule of Building Works' was sent out to some four separate specialist remedial building contractors for tendering purposes. I am advised that the supply and installation of replacement windows was separately tendered out to both manufacturers and installation contractors. I am advised that the supply and installation of the replacement air conditioning system was separately tendered out by G. Reed & Associates P/L on behalf of the owner.  
I am advised that based on submitted building tenders the client engaged a *replacement remedial contractor* 'One Up Developments P/L' in December 2003 - *Refer Annexure 2* for copy of contract. I am advised that based on submitted tenders Fantasy Windows & Granite P/L were awarded the window supply contract and that CBR P/L were awarded the window installation contract. I am advised that based on submitted tenders the air conditioning installation contract was awarded to Riverview Air Conditioning Sales P/L.
4. I have subsequently been retained to provide an expert report on the matters set out in the letter from Massey Bailey Solicitors and Consultants dated 5th January 2004 in relation to a dispute between the owner and the builder in respect of recent building works.
5. Specifically I have been asked to inspect the subject property and provide an expert opinion on the various defects that I observed both prior to and after remedial works had commenced by the new builder.



6. The areas in which I have inspected and reported on are as follows:
- Whether the *builder's works were defective* prior to commencement of the new builder in December 2003.
  - Where necessary to comment in detail on the defective works, to make recommendations as to the rectification of defects and the estimated costs of rectification;
  - The background history and structural engineers report relating to *structural defects* prior to December 2003
  - Where necessary to comment in detail on the defective works, to make recommendations as to the rectification of defects and the estimated costs of rectification
  - The background history and *mechanical engineers report* relating to defects with the air conditioning system as installed by the builder's contractor Aberdeen Air Conditioning.
  - Where necessary to comment in detail on the defective works, to make recommendations as to the rectification of defects and the estimated costs of rectification;
  - The *window installation defects* and issues both prior to and post commencement (in December 2003) by the new builder and the structural engineers report relating to the window defects.
  - Where necessary to comment in detail on the defective works, to make recommendations as to the rectification of defects and the estimated costs of rectification;
  - To make comment on the validity of the builder's Progress claim No 8 and the architect's Progress certificate No 8.
  - To make comment on the validity of the builders application for Practical completion and the architects rejection of same.
  - The discovery of previously *concealed structural defects* in December 2003 and the issues concerning the *Construction Certificate*
  - Where necessary to comment in detail on the defective works, to make recommendations as to the rectification of defects and the estimated costs of rectification;
  - The formation of the architects *specification/ schedule of works* for the rectification and completion of works.
7. To assist in my determination of defects, which may have been covered from visual inspections, I requested that the new builder provide me with a schedule of all defects they discovered upon undertaking rectification works.
- The new builder provided me with a letter dated **13.1.04 (Refer Annexure 3)** outlining the defects they discovered and uncovered in December 2003, together with quoted costs against each defective item.
- I verified all those that I could but not all of the defects noted therein, by inspection. I did not verify Item No7 'Excess use of expanding foam between frame work'.
8. **Qualifications;** I am a building consultant with over 23 years experience in the building industry. I am a licensed builder. I have had some 6 years formal work placed based training in quantity surveying and building estimating. I am a current consumer representative (on behalf of the Australian Consumers Association) member on Australian Standards committee BD 038 for the revision of A.S 3740 1994 (Waterproofing of Wet Areas within Residential Buildings). I am a co-author of a consumer advocacy book 'Your Home' Buying, Selling, Building & Renovating. At the rear of this report and marked **Résumé of Dominic. J. Ogburn** is a detailed resum'e summarising my qualifications and experience.



9. **Code of Conduct Acknowledgement**

10. I acknowledge that I have read the Consumer, Trader and Tenancy Tribunal Chairperson's Directions CTTT CD2003-2 Expert Code of Conduct issued in accordance with section 12(4) of the Consumer, Trader & Tenancy Tribunal Act 2001. I agree to be bound by the code.

11. To the best of my ability I have prepared this report in accordance with the above codes.

12. **Reference Documents:**

In the preparation of this report I have read and or made reference to copies of the following documents;

- a) Lane Cove Council *Construction Certificate* dated 30.5.01 and marked CC55/01.
- b) *SBW-2 Lump sum contract* edition 2 dated 5.9.01 as co signed by the client and the builder noting a date for practical completion of 8.1.02 and a defects liability period of 26 weeks.
- c) Anthony Oliver P/L contract *architectural drawings* CD/01, CD/02 CD/03 CD/04 CD/05 issues A
- d) Architect supplied *Council Specification for Building Approval* dated March 2001
- e) *Partridge Partners* project structural engineers defect inspection reports dated 26.6.03 & 17.12.03
- f) *Romeika & Gatsos* structural engineers report dated 24.9.02 and headed 'Water Leakage & Incorrect Installation of Windows'.
- g) *Graham Reed & Associates* mechanical engineers report dated 24.9.02 for defective air conditioning installation.
- h) *Graham Reed & Associates* fax letter dated 25.1.04 and attached documents including minutes of site meeting dated 28.10.02 and air conditioning contractor quotations.
- i) The new builder contract *Quote 1570\_5* letter dated 19.11.03 outlining various defects remedial works by this contractor as per architect tender schedule.  
The new builder costed breakdown, of their contract sum, letter dated 2.2.04  
The new builder letter dated 13.1.04 outlining various defects that were uncovered during the course of remedial works by the new builder
- j) *Phillips Building Consultants & Inspections P/L* report dated 17 & 19/7/02 for 'Builders Preliminary Defective & Incomplete Work'
- k) *National Building Solutions* Home Warranty Insurer assessment report dated 1.10.03
- l) *AO Affidavit* dated 7.1.04
- m) *AO 'Schedule of Building Works'* dated August 2003
- n) Draft *TB Affidavit* dated February 04
- o) *DP Affidavit* dated 23.12.03
- p) Schedule of *Provisional Sums*
- q) Fax of *The Craftsmen* dated 1.8.01
- r) *Tender* prepared by The Builder dated 1.8.01
- s) *Trend Windows & Doors P/L* co signed (by builder) 'Deed of Indemnity & Release' dated 13.10.03
- t) Architect *minutes of site meetings* No's 1, 2, 3, 4, 5, 6, 7,8,9,10,11,12,13,14,15,16,17,18,19,20, 21, 22, 23, 24,25,28,29, 18.10.02, 13.11.02, 4.12.02 & 5.3.03



13. **Basis of The Report;**
14. The factual assumptions in this report are based on;
- i) Eight inspections of the property since 11.9.02
  - ii) Review of many digital photographs as shown to me by the owner taken during the course of the works
  - iii) The facts contained in the documentation provided to me above.
  - iv) My experience and understanding of the building and construction industry.
  - (v) The facts and assumptions contained in the letter of retainer of Massey Bailey solicitors dated 5th January 2004.
15. I have assumed that the information provided to me as reference documents are true and correct.
16. The builders contract documents are those referred to in clause B4 of the SBW edition 2 Lump Sum Contract for simple building works contract namely, the signed contract, the specification, architectural plans CD01, CD02, CD03, CD04 & CD05 and structural engineers plans S1, S2 and S3 and the builder's correspondence and tender submission.
17. The following work was excluded from the new builder's contract; supply of PC items, external landscaping, paving and associated works, removal and reinstatement of external security shutters, painting (both internal and external), texture coating of external blue board cladding, associated electrical works, supply (Fantasy Windows & Granite P/L) and installation (CBR P/L) of replacement windows, supply and installation of replacement air conditioning service, which was installed by Riverview Air Conditioning Sales P/L.
18. I visited the site with the owner on at least eight occasions between 11.9.02 and 3.12.03 and I have not inspected the as installed electrical service, some structural elements, the air conditioning service, the sub floor other than beneath Living Rm and the pool. I did not inspect a number of structural faults within Bed 1 wall framing and roof tie downs as some wall linings had yet to be removed at my final 3.12.03 inspection.



19. **Report Format**

20. For ease of consideration matters have been addressed in the following order

- **Section 1:** The *window installation defects* and issues both prior to and post commencement (in December 2003) by the new builder and structural engineers report relating to window defects.
- Where necessary to comment in detail on the defective works, to make recommendations as to the rectification of defects and the estimated costs of rectification;
- **Section 2:** Whether the *builder's works were defective* prior to commencement of the works of the replacement new builder in December 2003.  
This section has been broken down into Internal and External elements
- Where necessary to comment in detail on the defective works, to make recommendations as to the rectification of defects and the estimated costs of rectification all of which exclude GST
- **Section 3:** Commentary on the validity of the builders *Progress claim No 8* and the architects *Progress certificate No 8*.
- **Section 3:** Commentary on the validity of the builder's application for *Practical completion* and the architect's rejection of same.
- **Section 4:** The background history and project structural engineers report relating to *structural defects prior to December 2003*
- Where necessary to comment in detail on the defective works, to make recommendations as to the rectification of defects and the estimated costs of rectification all of which exclude GST
- **Section 5:** The background history and mechanical engineers report relating to defects with the *air conditioning system* as installed by the builder.
- Where necessary to comment in detail on the defective works, to make recommendations as to the rectification of defects and comment on the estimated costs of rectification by the air conditioning new contractor;
- **Section 6:** The discovery of the *December 2003 (concealed) structural defects* and the issues concerning the *Construction Certificate*
- Where necessary to comment in detail on the defective works, to make recommendations as to the rectification of defects and comment on the estimated costs of rectification by the new builder
- **Section 7:** The formation of *specification/ Schedule of works* for the rectification and completion of works by a new builder.
- **Section 8:** Report *Conclusion*.

21. In relation to the defective works generally I have read the report of Andrew Phillips dated 17 and 19 July 2002. That document includes a list of items that Mr Phillips identified as defects. During the course of my various site inspections I looked at the defective works, and I agree with many of the noted defective works, many of which I verified.

22. In relation to the defective works generally I have read the Report of National Building Solutions dated 1<sup>st</sup> October 2003. That document includes a list of items that Mr Kavanagh identified as defects. During the course of my various site inspections I looked at the defective works and I agree with the majority of the noted defective works, which I verified.

23. Attached hereto and marked photographs are a detailed photographic report taken by me during my various inspections, most of which are dated. I have referred to the photographic record throughout the report under the relevant defective item.



**LEGEND**

The **weather** just prior to and/ or during our inspection/s was;

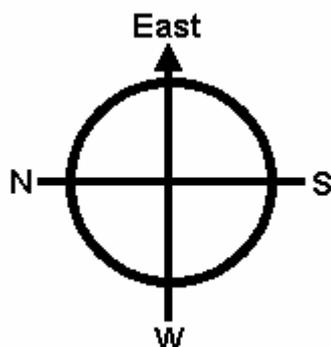
Dry Sunny

Light Showers

Raining

**PROPERTY DIRECTION**

The front of the property faces:

**ABBREVIATIONS/ EXPLANATIONS LEGEND**

<b>A.C.</b>	= Asbestos Cement	<b>H/wd</b>	= Hardwood
<b>A/C</b>	= Air Conditioner	<b>H.W.S.</b>	= Hot Water Service
<b>AL</b>	= Aluminium	<b>L.H.S.</b>	= Left Hand Side
<b>Br/Wk</b>	= Brickwork	<b>L.m.</b>	= Linear Metre
<b>Co-ax</b>	= Coaxial Cable	<b>M.D.F.</b>	= Medium Density Fibreboard
<b>BCA</b>	= Building Code Of Australia	<b>M.C.</b>	= moisture content (expressed as %)
<b>C.I.</b>	= Cast Iron	<b>M</b>	= Metre
<b>C/W</b>	= Cold Water	<b>m<sup>2</sup></b>	= Square Metre
<b>D/P</b>	= Down Pipe	<b>mm</b>	= Millimetre
<b>D.P.C.</b>	= Damp Proof Course	<b>P/Brd</b>	= Plaster Board
<b>D/W</b>	= Dishwasher	<b>Perps</b>	= Perpend
<b>E.L.C.B.</b>	= Earth Leakage Circuit Breaker	<b>R.C.D.</b>	= Residual Current Device
<b>F.C.</b>	= Fibre Cement		
<b>FIB</b>	= Fire Indicator Board	<b>R.H.S.</b>	= Right Hand Side <u>or</u> Rolled Hollow Section.
<b>F.R.L</b>	= Fire Resistance Level		
<b>F.F.L.</b>	= Finished Floor Level /Line	<b>S.C.</b>	= Solid Core
<b>F.R.</b>	= Fire Rated/ Resistance	<b>S.H.S.</b>	= Square Hollow Section
<b>F.W.</b>	= Floor Waste	<b>S.t.</b>	= steel trowel
<b>G.I.</b>	= Galvanised Iron	<b>S/W</b>	= Stormwater
<b>G.P.O.</b>	= General Purpose Outlet	<b>W/M</b>	= Washing Machine
<b>G.F.</b>	= Ground Floor. ( <b>L.G.F</b> ) = Lower Ground	<b>W/P</b>	= Waterproof
<b>H.C.</b>	= Hollow Core	<b>P.V.C.</b>	= Poly Vinyl Chloride
<b>H/W</b>	= Hot Water	<b>F.I.B.</b>	= Fire Indicator Board



## Section 1

### 24. Windows Defects

25. **Background History;** the builders contract included supplying and installing the architect specified powder coated aluminium windows, namely 'Quantum Series' windows, as manufactured by James Hardie Industries. I am advised that since that time James Hardie Industries have since sold the window company to Trend Windows & Doors P/L.
26. The contract specification '*Council Specification For Building Approval*' which forms part of the of Construction Certificate No: CC331/99 approval dated 30.5.2001, states under 'SUBSECTION 480 JUNCTIONS Item 12 JUNCTION WITH BUILDING – WINDOWS' "*FLASHINGS AND WEATHERINGS: Install flashings, weather bars, drips, storm moulds, caulking, pointing or the like so that water is prevented from penetrating the building between the window frame and the building structure...*" [Refer Annexure 1](#)
27. Ogburn's Observations & Investigations; the builder advised me they had made their own inquiries with the manufacturer about the suitability of these windows prior to installation. The builder supplied and installed the specified windows.
- 27A. the minutes of *Site Meeting No 4* dated 24.10.01 state under builder action items "*builder to advise warranty conditions for James Hardie re: Quantum Windows*" [Refer Annexure 4A Site minutes](#). This architect request continued until at least *Site Meeting No 11* dated 16.1.02, the week in which the windows were to be delivered to site - [Refer Annexure 4B Site minutes](#)  
The minutes of *Site Meeting No 14* dated 13.2.02 state under builder action items "*provide flashing beneath window sills to balconies*". [Refer Annexure 4C Site minutes](#).
- 27B. I attach a copy of Trend Quantum Windows conditional Warranty ([Refer Annexure No 5](#)) which states under condition "*a) the product is installed in accordance with the relevant Australian Standards and as per Trend Windows & Doors P/L installation instructions current at the time*" and under condition
28. Owner/ Architect Advice; The owner advised me that after the installation of new windows water had penetrated the internal of the residence in a variety of locations after hosing by a neighbour and himself, which was evidenced by water stains on the floor.
- 28A. the minutes of *Site Meeting No 18* dated 13.3.02 state under builder action items "*review BCA/ code provisions for first floor windows*". [Refer Annexure 4D Site minutes](#)  
The minutes of *Site Meeting No 24* dated 22.5.02 state under Site Inspection Bed 1 items "*daylight visible through head of south windows*". [Refer Annexure 4E Site minutes](#)  
The minutes of *Site Meeting No 25* dated 30.5.02 state under builder action items "*leaking windows to be addressed immediately*". [Refer Annexure 4F Site minutes](#)  
The minutes of *Site Meeting No 29* dated 21.8.02 state under item No 5 "*Architect identified window supply and installation as a major item. Water leakage via defective window/ door units with manufacturers warranty possibly void due to non acceptable installation. Manufacturer's details provided to L.A (the builder) for consideration identifying requirement for perimeter flashings. Proprietor asked of the builder whether window units had been installed with such flashings. Builder did not respond*". [Refer Annexure 4G Site minutes](#)
29. Ogburn's Observations & Investigations; I was subsequently engaged to undertake an inspection and assessment of the window installation, which I undertook in conjunction with the owner and architect on the 11.9.02.



30. All wall and ceiling linings were installed and painted at the time of my initial inspection. This inspection has resulted in additional cost to the owner.
31. Ogburn's Observations & Investigations; On 11.9.02 I undertook, in conjunction with the owner and architect, a series of simple low-pressure water tests (using a fine hose spray). The result of the water testing was that the majority of the windows tested (approximately five window sets) substantially leaked in and around the vertical doors seals and onto the internal sill track, which did not incorporate a drainage facility and water quickly built up and flooded over the sill and onto the internal flooring.
32. Ogburn's Observations & Investigations; **Refer Photo No 1** of the significant water related staining on The structural sheet timber flooring at the sill of west **Sitting-Rm external sliding door**. This window did not incorporate a sill flashing. There was evidence of significant water related staining on the structural sheet timber flooring beneath 1<sup>st</sup> Flr **Bed1** south window, which did not incorporate a sill flashing **Refer Photo No 2**. There was no sill flashing in the 1<sup>st</sup> Flr **Bed1** north window, which had instead been filled with expanding foam sealant **Refer Photos No 3 & 3A**. There was no sill flashing in the 1<sup>st</sup> Flr **Bed1** west window, which had instead been filled with expanding foam sealant **Refer Photo No 4**.  
There was evidence of significant water related staining on the structural sheet timber flooring beneath G.F **Kitchen** west external sliding door, which did not incorporate a sill flashing and had instead been filled with expanding foam sealant **Refer Photo No 5**. There was no evidence of sill flashings beneath the south and west facing G.F **Living** windows **Refer Photos No 6 & 7**.  
These new windows did not incorporate sill flashings.
33. Ogburn's Observations & Investigations; of the windows sills that were accessible for visual inspection none of those windows incorporated **sill flashings**.  
Daylight could be seen through the underside of **Bed 1** west balcony sliding door sill and the structural sheet timber flooring beneath was partially exposed to the weather due to the lack of sill flashing **Refer Photo No 8**.  
A number of window sills (most notably in Bedroom 1) had been sealant filled with expanding polyurethane foam **Refer Photo No 9** in lieu of flashings.
34. Ogburn's Observations & Investigations; A number of the sliding door sills had not been installed level (**Refer Photo No10** showing 0.4% slope in Kitchen west sliding door sill) and some window/door jambs were not plumb (0.3-0.6% as measured by electronic spirit level - **Refer Photo No11** of west **Sitting-Rm sliding door**).
35. Ogburn's Observations & Investigations; the owner showed me a number of digital photographs he had taken of the internal heads on windows before internal wall linings had been installed. I determined from these photos that **head flashings** had not been installed to any of the windows that had been photographed.



36. **Note:** The **BCA Sill and head flashings** requirements are stated in **Clause 3.3.4.9**

(a) A flashing above (head flashing) and below (sill flashing) and opening in a cavity wall

(i) must extend not less than 100mm past each side of the opening and

(ii) must extend across the cavity and have a continuous fall towards the outer leaf or veneer.

(b) A head flashing

(i) in masonry veneer construction, must be turned up not less than 150 mm and fixed to the frame

(ii) in cavity masonry construction, must be turned up not less than 150 mm and built 30 mm into the inner leaf (see Figure 3.3.4.5).

(c) A sill or head flashing may be omitted where the opening is protected by eaves or the like with a width of not less than three times the distance between the location of the flashing and the overhang (see Figure 3.3.4.4).

37. **Note:** The **BCA Weatherproofing and dampness** requirements are stated in **Clause F 2.2.2**  
**A building is to be constructed to provide resistance to moisture from the outside and moisture rising from the ground**

38. Ogburn's Observations & Investigations; Of the windows that I was able to view (either by personal inspection or via owner supplied photographic record) none of them incorporated any **sill or head flashings**, which is in direct contravention of the fundamental minimum requirements of the BCA.
39. Owner/ Architect Advice; I am advised by the architect that upon termination of the builder's contract, the builder had been fully paid for both the supply and installation of all the windows and flashings.

40. **Note;** Clause 8.2 of 'AS 2047 (1999)' Windows In Building (referenced by the BCA) requires that all new door and window frames must be clearly labeled so that they comply with 'AS 2047 and include the following information;

- (1) the manufacturers name,
- (2) the window rating
- (3) water penetration resistance

41. Ogburn's Observations & Investigations; None of the as installed windows incorporated any labeling in accordance with the requirements of 'A.S 2047.1 (1999)'. Given the lack of 'AS 2047.1 (1999)' certification labeling none of the as installed windows comply with the minimum requirements of the BCA.
42. Ogburn's Observations & Investigations; The owner subsequently engaged structural engineers Romeika & Gatsos to complete a joint inspection report (with myself and project architect) on the window installation and also to calculate the relevant terrain category rating for the site. This has resulted in additional cost to the owner.
43. I refer you to **Annexure No 6 Romeika & Gatsos report dated 24.9.02** and headed 'Water Leakage & Incorrect Installation of Windows'.
44. Ogburn's Observations & Investigations; The Romeika & Gatsos report concluded in its recommendation "*given the construction errors, the deficient performance of the installed windows and doors, and that they do not comply with the building standards under the BCA, they should be removed and replaced by an alternative product, that is **properly** (s/p) labelled in accordance with A.S 2047.1 and is installed incorporating adequate head and sill flashings*". To the extent that I am qualified to, I endorse the findings and recommendations of Romeika & Gatsos.



45. Ogburn's Observations & Investigations: On or about 14.9.02 I undertook some research on the window manufacturer's web site ([www.trendwindows.com.au](http://www.trendwindows.com.au)) for the Quantum Window series and determined that;
46. \* The windows did not incorporate any internal sill drainage facility (or sub sill), which was unique, in my experience with aluminium framed windows.
47. On the basis of this I formed the opinion that the windows would rely on the almost complete resistance of all water penetration by the system seals, which were a patented 'Van door' type.
48. \* The windows were required to be installed to quite finite installation tolerances particularly for plumb and level.
49. The manufacturer, Trend Windows, was provided with a copy of the Romeika & Gatsos 24.9.02 report and was requested to attend the site and discuss the defects.
- 49A. The minutes of *Site Meeting Conference* dated 18.10.02 state that the builder had lodged a *Notice of Dispute* on the 15.10.02 to the proprietor and architect as agent and that the "*purpose of the Conference was to attempt to resolve disputed issues or agree on a method of doing so*" - *Refer Annexure 4H Site minutes*.
- 49B. the minutes of *Site Meeting –window units* dated 13.11.02 state under item 7 builder "*began to lightly spray windows – with water entry observed to most units by all parties*", which included Trend Windows managing director Mr CF and senior sales representative (Mr ME).  
CF "*advised of missing submarine seal and misalignment of sashes/ sills in some installations*". *Refer Annexure 4I Site minutes*  
The builder confirmed "*that these stickers (for A.S 2047.1 compliance) were not on windows when they arrived on-site in a plastic wrap*". *Refer item 2 Annexure 4I Site minutes*
50. Ogburn's Observations & Investigations: At the 13.11.02 joint site inspection meeting attended by myself, the owner, the builder, the architect, Trend Windows managing director CF and senior sales representative (Mr ME), Mr E verbally advised me that in his opinion the builder had incorrectly installed some of the windows, as they were out of plumb, not square or not level.
51. Mr E confirmed that of the windows that were accessible to view, there were no sill flashings apparent and that this was contrary to their warranty requirements.
52. Trend Windows confirmed that Quantum series windows have quite finite installation tolerances, which must be achieved in order for wind and rain resistance to be achieved.
53. Trend Windows confirmed my opinion that the windows rely on the almost complete resistance of all water penetration by the system seals, as they had been designed not to allow water ingress.
54. Trend Windows acknowledged that the as installed windows did not incorporate any 'AS 2047.1 (1999)' labeling (for wind and rain resistance).
55. Trend Windows advised me that the use of a hose spray was not indicative of the type of testing used when determining whether the windows comply with the minimum requirements of 'AS 2047.1 (1999)'.  
'
56. Ogburn's Observations & Investigations: I note that the manufacturers current web site recommends, under 'On Site Maintenance and Care' requirements for Quantum XP windows, that a hose "set to a fine spray" should be used to clean any excess acid from frames, which may fall onto them during brick cleaning.



- 56A. Ogburn's Observations & Investigations; The minutes of *Site Meeting – Conference* dated 18.10.02 state under item 4 “*Windows/ Doors- builder advised units would be removed, and flashings to be installed with all surrounds and adjacent surfaces to be rectified at builders cost. Builder advised of Trend response to fix compliance stickers and continue to service units*”  
The minutes of *Site Meeting – Disputed Works* dated 5.3.03 state under ‘New Business’ Item 1 “*Builder agrees for proprietor to purchase new units (windows) with payment by proprietor*”.  
“*Builder generally agrees for proprietor's sub contractor to install new units*”.  
and under ‘Financial’ “*Builder to confirm proposal in respect of (window) refund so that Proprietor can purchase new units without having to pay a second time, which would place an unfair impost upon the Proprietor with regard to additional costs*” [Refer Annexure No 4J Site minutes](#)
57. Ogburn's Observations & Investigations; in subsequent negotiations exclusively between myself the owner and Trend Windows they made an offer to provide a full credit (approx \$19,210) for the complete supply only of all windows, upon their safe return to their factory.  
As the builder purchased the windows from the manufacturer, Trend confirmed they would only provide a credit to the builder who was their client.
58. The conditional window manufacturer offer was formally confirmed in an email dated 3.12.03 from the Trend managing director Mr Colin Forster (to myself) - [Refer Annexure No 7](#).
- 58A. I have sighted the Trend Windows & Doors P/L ‘*Deed of Indemnity & Release*’ to the builder dated 13.10.03 noting that Trend made a conditional requirement of the builder, offering an increased settlement sum of \$22,210.33. - [Refer Annexure No 8](#).
59. Ogburn's Post December 2003 Observations & Investigations; the new builder advised me that upon commencement of rectification works they discovered, when removing all of the builder installed windows, that there were *no head or sill flashings in any of the window installations, as installed by the builder*.
60. This was confirmed to me in the attached costed new builder defect schedule letter [dated 13.1.04. Refer Annexure No 3](#) and I note that at the time of my 3.12.03 inspection all windows had been removed. [Refer example Photo No 60](#) showing no head flashing to Sitting Rm west window.
61. **Conclusion**; In my professional opinion the builder has completely failed to meet the *sill and head flashing requirements* of the BCA Clause 3.3.4.9, the contract specification (sub section 480 Junctions) and good building practice.
62. Water is able to enter the residence in and around the windows, which contravenes BCA Clause F 2.2.2, the contract specification requirements and good building practice.
63. The *complete lack of any sill or head flashings* contravenes the manufacturers warranty requirements and would void such warranty. The builder was requested on multiple occasions by the architect to check and advise on the manufacturers warranty conditions.
64. In my professional opinion many of the windows have not been installed within the manufacturer required installation tolerances and this has substantially contributed to the window seals leaking. The manufacturer stated that some of the windows had not been correctly installed.
65. None of the builder supplied window frames have been labelled (by the manufacturer) in accordance with the minimum requirements of 'AS 2047 (1999)' and as such are *non-complying windows*, which is a breach of the requirements of the BCA. This was confirmed by the manufacturer.

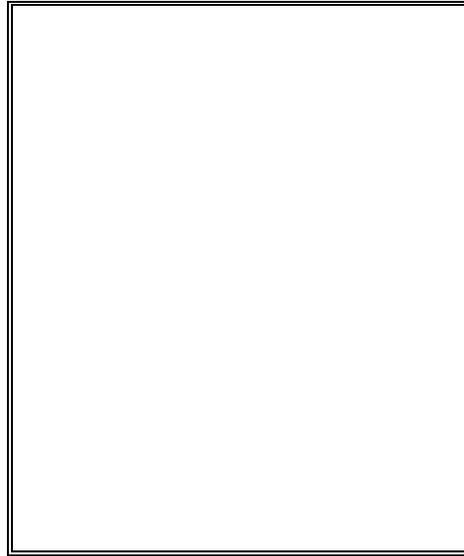


- 65A. the builder agreed at the 5.3.03 site meeting that the window installation was defective and to remove and replace all existing doors and windows and to confirm a proposal in respect of the window supply refund that would alleviate the owner having to pay for the supply of replacement windows.  
*Refer Annexure No 4J Site minutes*
- 65B. The owners substantive concerns and fair and reasonable attitude are expressed in the minutes of *Site Meeting – Disputed Works dated 5.3.03* which state under “*Financial- Mrs Boland expressed on behalf of both herself and her son their desire that the remedial works could proceed amicably and with minimum disruption to their lives, as the events of the past year had placed great stress upon..herself, son and husband and she had no wish or desire whatsoever to be subjected to the previous situation*” and further that “*the proprietor confirmed his continuing commitment to honour his obligations, to negotiate in good faith and at all times to accommodate the builders legitimate concerns. Refer Annexure No 4 J Site minutes*
66. Both the builder and manufacturer failed to advise either the proprietor or myself (whom brokered the agreement for a full window credit refund from the manufacturer) of the existence of a signed ‘Deed of Indemnity & Release’, which significantly offered a further \$3,000 credit to the builder and whom had been paid for their supply and installation.
67. **Recommendation;** Builder to disconnect electrics, then remove / reinstate electric security shutters, then remove and replace all new windows with a type suitable for the terrain category rating (and suitably labelled in accord with 'AS 2047 (1999)', as noted in the Romeika & Gatsos report dated 24.9.02.  
Builder to provide temporary protection of openings and install sill and head flashings and make good all associated internal and external finishes and re paint all damaged surfaces.  
Builder should pay the full window manufacturer proposed refund \$22,210.33 to the owner.
68. In my professional opinion rectification will require complete removal and reinstatement of the window/doors, partial removal of wall and some ceiling linings and skirtings, removal and reinstatement of owner supplied electrically operated security roller shutters (*Refer Photo No12*), removal and reinstatement of texture finished external blue board wall lining and decommissioning of some electrical services together with re painting all damaged all affected surfaces upon completion.
69. I have reviewed the following quotations and invoice for window removal and reinstatement works;  
a) The new builder contract cost break down letter dated 2.2.04 for their contracted works *Refer Annexure No 27* stating under Item Bed 1 a. Window Door Units replacement a cost of \$23,918 (excludes GST, rubbish removal & supervision) for removal of existing windows, internal and external wall linings ready for new windows as detailed on the accompanying letter specifically regarding window costs *Refer Annexure No 27A*  
b) Fantasy Windows & Granite P/L accepted contract quote No 27584 dated 11.11.03 for supply only of new windows at \$26,710.91 (excl GST) *Refer Annexure No 28* and  
c) CBR P/L contract invoice No 186 (dated 17.12.03) for the window and door installation only at a cost of \$5,400 (excl GST) *Refer Annexure No 29*  
The Total Cost of Items a, b & c = **\$56,028.91** which excludes GST, associated electrical works, removal and reinstatement of the security shutter, painting and external texture coating.  
Based on my experience and to the extent that it is relevant the quotations and invoice appear to be reasonable.



SECTION 1

WINDOW DEFECT PHOTOS

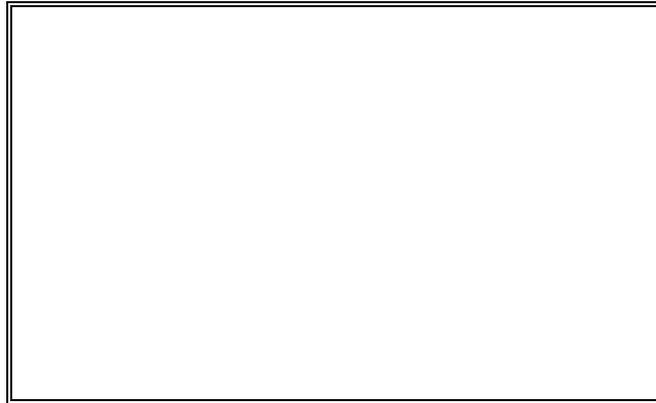


*Photo No 1*

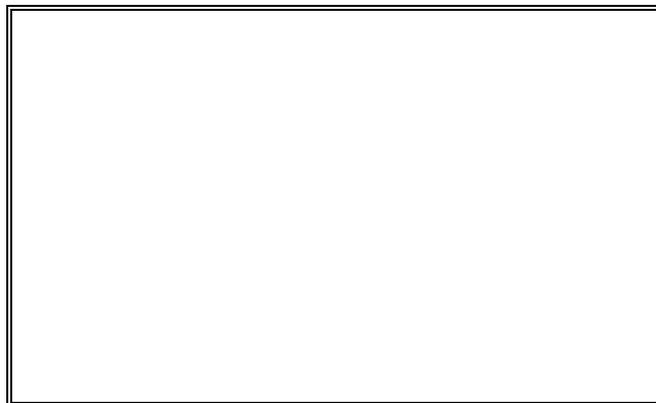


*Photo No 2*





*Photo No 3*



*Photo No 3A*



## Section 2

70. Were the builder's works defective prior to commencement of the works by the new builder, in December 2003 ?
71. For the purposes of this Report I will refer to these defects as the "Pre December 2003 defects" When I refer to the Builder in my recommendation I do not necessarily mean the original builder the Craftsmen but I mean the builder that will be retained to rectify the defective works and complete the works.
72. INTERNAL Pre December 2003 (Defects)
73. **1<sup>st</sup> Flr Entry Lobby & Sitting Rm**
74. Ogburn's Observations & Investigations: Surface setting imperfections evident in new Sitting Rm / Entry lobby ceiling (score marks) between light fitting and A/C Outlet. [Refer example Photo No 13](#) I determined a bow in the ceiling of >20mm using a 2m long straight edge.
75. **Recommendation**; Refer also to **Section 5** of this report regarding subsequent structural defects that were discovered in December 2003 when the new Sitting Rm / Entry Foyer ceiling lining had been removed.  
Builder to undertake all necessary repairs to create a level ceiling, with a painted finish.
76. Refer Clause No 358 of this report regarding estimate of cost.
77. Ogburn's Observations & Investigations; [Refer Photo No 14](#) showing evidence of the significant bow (>8 degrees), within the stainless *steel support post*, at the 1<sup>st</sup> floor stair landing, installed by the builder. It is likely that this bow was caused during the welding process.  
This same defect was noted by project engineer Partridge Partners under Item 1 of their 26.6.03 Final Defects Inspection letter to the architect - [Refer Annexure No 9](#).
- 77A. the minutes of *Site Meeting – Conference* dated 18.10.02 state under "*Stair Post- Builder agreed to rectify at his cost*" [Refer Annexure No 4H Site minutes](#)
- 77B. **Recommendation**; builder to rectify (remove and replace) defective stainless steel post, including making good of all adjoining surfaces and paint finishes.
- 77C. Indicative Estimate Of Costs= \$3,991.
78. Ogburn's Observations & Investigations; [Refer Photo No 15](#) showing evidence of significant strain related bowing within the timber base-plate, of the western *1<sup>st</sup> floor stair landing handrail*, installed by the builder.
79. **Recommendation**; builder to rectify defectively bowed base plate by inclusion of a packer to relieve upward stress, and make level.
80. Indicative Estimate Of Costs = included in Clause 77C



81. Ogburn's Observations & Investigations; [Refer Photo No 16](#) showing evidence of significant moisture related staining within the *entry lobby and stairwell ceilings*. The owner advised me that water was also penetrating in through the Sitting-Rm A/C supply air grille \ duct and I noted that a bucket half of full of water was present beneath same, at the time of my inspection and that the sarking on the western elevation roof had been torn.
82. The new builder advised me in December 2003 that the cause of leak (in their opinion) was due to the installation of a TV cable, which was not sealed at the roof tile penetration and that the sarking beneath was torn.  
I am advised that the builder was not responsible for this work.
83. **Recommendation**; seal TV cable penetrations at roof tile and rectify torn sarking.  
Refer also to the External section of this report regarding other possible leak sources and recommendations
84. Owner/ Architect Advice; owner had complained about slope within the newly installed *Sitting Rm infill structural sheet flooring* particularly at the rear western side.  
This defect was also highlighted in under Item 14.3.3 of the Philips Building Consultants & Inspectors P/L report.
85. Ogburn's Observations & Investigations; the builder's contract included connecting onto and extending the existing Sitting- Rm floor. I measured the slope of both the existing and newly extended flooring, using an electronic spirit level and note that both are out of level by approx 0.5 %.  
Rectification of both would involve extensive demolition work of the existing and re levelling of same, which we do not consider was part of the initial contract.
86. **Recommendation**; attempt sanding flooring at the junction of new and old to improve level transition.
87. Indicative Estimate Of Costs= \$440.
88. Ogburn's Observations & Investigations; I noted that insufficient fixings were used at *Sitting Rm* floor sheet ends resulting in significant deflection movement when live loaded.
89. There was very significant moisture related staining within structural sheet flooring just below the northern external sliding windows \ door, which appeared to have entered at the window perimeter  
[Refer Photo No 1](#).  
Refer also Window Section 4 of this report and also to BRM letter dated 13.1.04.
90. **Recommendation**; install additional floor fixings at sheet ends.
91. Indicative Estimate Of Costs= \$86.
92. Ogburn's Observations & Investigations; The *glass brick window* located within stairwell, may not have a sill flashing installed given the seeming lack of same when viewed through a small hole (in gypsum plaster) at the eastern end.
- 92A. the minutes of *Site Meeting – Disputed Works* dated 5.3.03 state under “*New Business- Builder to review flashing installation to glass brick installation to stair*”. [Refer Annexure No 4J Site minutes](#)
93. **Recommendation**; Builder is to demonstrate that sill and head flashing have been installed, say by removal of the bottom sill trim timber and if not installed should install both head and sill flashings and rectify all associated finishes.
94. Indicative Estimate Of Costs= cannot ascertain cost of flashings until the provision or lack thereof has been determined. Labour to remove and reinstate trims for inspection = \$93.



**95. 1<sup>st</sup> Ensuite Bathroom**

96. Ogburn's Observations & Investigations; Top and bottom of *doors* have not been paint sealed, in accordance with typical manufacturer warranty requirements (refer attached Corinthian door sample warranty requirement).
97. **Recommendation**; builder to remove door and paint seal top and bottom edges (minimum 3 coats).
98. Indicative Estimate Of Costs= \$162.
99. Ogburn's Observations & Investigations; There is scratching evident to the paint finish of sliding door, which appears to be due to the presence of an obstruction within the door cavity - *Refer Photo No17*
100. **Recommendation**; builder to remove cavity obstruction and fill score mark and re paint entire door face.
101. Indicative Estimate Of Costs for painting only complete face of door = \$76.
102. Ogburn's Observations & Investigations; evidence of differential movement cracking within the newly installed wall tile grout, which is particularly evident around the timber framed tiled window reveal and that the vertical corners of shower recess. *Refer example Photo No 18.*
103. **Recommendation**; builder to rake out broken and dislodged grouting and reinstate with sealant filled alternative at the external window reveal corners and the internal vertical corner of shower recess.
104. Indicative Estimate Of Costs = \$288.
105. Ogburn's Observations & Investigations; vanity taps are loose and the silicon sealing between vanity cabinet and wall tiles has been poorly executed.
106. **Recommendation**; builder to secure taps, remove and replace silicon seal.
107. Indicative Estimate Of Costs= \$333.
108. Ogburn's Observations & Investigations; the operative noise of the 'IXL Tastic' ceiling exhaust fan is excessively noisy, when compared with the equivalent in the main bathroom, which the owner advised me was installed by the builder.
- 108A. **Recommendation**; builder to rectify excessive fan noise, possibly by replacement.
109. Indicative Estimate Of Costs= \$300 (replacement).
110. Ogburn's Observations & Investigations; the *frameless shower screen* has a large gap margin (>5mm) at the base. *Refer example Photo No 19.*  
Considerable quantities of water escape, the shower recess, via this gap when water tested.
111. **Recommendation**; builder to install a sweep seal to the base of shower screen.
112. Indicative Estimate Of Costs= \$144.



**113. 1<sup>st</sup> Flr Main Bathroom**

114. Ogburn's Observations & Investigations; *Refer Photo No 19* of combination *frameless shower screen*/ bath and note the varying large gap margin (>5mm) between the bottom of shower screen and top of bath. Considerable quantities of water escaped the shower recess, via this gap when water tested.
115. **Recommendation**; builder to install a sweep seal to the base of shower screen.
116. Indicative Estimate Of Costs= \$92.
117. Ogburn's Observations & Investigations; Evidence of differential movement cracking within the newly installed wall tile grout, which is particularly evident around the timber framed tiled window reveal and the vertical corners of shower recess. *Refer example Photo No 18*.
118. **Recommendation**; builder to rake out broken and dislodged grouting and reinstate with sealant filled alternative at the external window reveal corners and the internal vertical corners of shower recess.
119. Indicative Estimate Of Costs= \$209.
120. Ogburn's Observations & Investigations; the hinged *air lock entry door* has not been adjusted correctly and has large varying gap margins between the door leaf and lower jamb.
121. **Recommendation**; builder to adjust door.
122. Indicative Estimate Of Costs= \$52.
123. Ogburn's Observations & Investigations; Top and bottom of entry sliding door has not been paint sealed, in accordance with typical manufacturer warranty requirements (refer attached Corinthian door sample warranty requirement).
124. **Recommendation**; builder to remove door and paint seal top and bottom edges (minimum 3 coats).
125. Indicative Estimate Of Costs= \$162.
126. Ogburn's Observations & Investigations; There is *severe water hammer* evident within the vanity and shower hot water taps (when used). The tap sets to both the vanity and bath are loose. There is a broken tile adjacent to bath and the silicon sealing between vanity cabinet and wall tiles has been poorly executed.
127. **Recommendation**; rectify all noted defects including excessive water hammer, which may involve extensive supply pipe fixing in concealed spaces.
128. Indicative Estimate Of Costs= \$322.
129. Owner/ Architect Advice; owner advised me that at the commencement of the renovation project the existing main *bathroom window* incorporated a *flyscreen*, which the builder had removed.
130. Ogburn's Observations & Investigations; The flyscreen is missing.
131. **Recommendation**; I am unable to determine if the builder had removed the flyscreen but if responsible builder should replace.
132. Indicative Estimate Of Costs= \$85.
133. Owner / Architect Advice; owner advised me that the full flush function of the W.C. appears to be inadequate.
134. Ogburn's Observations & Investigations; By comparison with the other newly installed 1<sup>st</sup> Flr W.C, it does appear that the water reservoir is set low.



135. **Recommendation;** builder to adjust W.C. cistern so that it fills completely.
136. Indicative Estimate Of Costs= \$58.
137. Owner / Architect Advice; the owner advised me that he considered that there was *inadequate water pressure*, since the builder had installed a water pressure reducer on the house supply line without the owners agreement and in an apparent attempt to offset multiple leakages that had commenced at various water pipe joints.
138. Ogburn's Observations & Investigations; I tested the water pressure and consider same acceptable. The cold supply water was discoloured and this may be associated with rusting supply pipes.
139. **Recommendation;** no work required.
140. Indicative Estimate Of Costs= NIL.
141. Owner / Architect Advice; the owner complained about *intermittent back pressure* related gurgles being evident within the W.C. pan water, when the bath was emptied.
142. Ogburn's Observations & Investigations; I am not a hydraulic expert and briefly tested same. I was unable to emulate the alleged problem and note that the bath waste is a small 40 mm diameter type.
143. **Recommendation;** further investigation required by licensed plumber.
144. Indicative Estimate Of Costs= \$173 (inspection only).
145. **Owners Office (Bed 3)**
146. Ogburn's Observations & Investigations; the floor mounted sliding door guide is missing and as a result of same the door is grinding up against the cavity during operation and which has resulted in damage to be paint finish of same.
147. **Recommendation;** builder to install floor mounted door guide and re paint entire door face.
148. Indicative Estimate Of Costs= \$175.
149. Ogburn's Observations & Investigations; there are gaps in excess of 5mm between the airlock entry door (D3) leaf and jamb (on striker plate side) at full closure, which is in excess of the minimum requirements of A.S 2689 1984, (permits a 3mm max gap around perimeter of door, with a large gap at base (up to 35mm) for ventilation)..
150. **Recommendation;** builder to replace door and completely paint.
151. Indicative Estimate Of Costs= \$354.
152. Owner / Architect Advice; owner advised that at the commencement of the renovation project the existing office window incorporated a *flyscreen*, which the builder had removed.
153. Ogburn's Observations & Investigations; the flyscreen is missing.
154. **Recommendation;** I am unable to determine if the builder had removed the flyscreen but if responsible builder should replace.
155. Indicative Estimate Of Costs= \$85.



156. Ogburn's Observations & Investigations; Top and bottom of entry sliding door has not been paint sealed, in accordance with typical manufacturer warranty requirements (refer attached Corinthian door sample warranty requirement).
157. **Recommendation**; builder to remove door and paint seal top and bottom edges (minimum 3 coats).
158. Indicative Estimate Of Costs= \$162.
159. Owner / Architect Advice; owner advises that during the course of the project builder had run a dedicated site fax phone line in through the sliding section of this office window and that as a result of same, the sliding and locking operation of which are now completely defective.
160. Ogburn's Observations & Investigations; the sliding and locking operation of this window is completely defective and the lower rollers are worn.
161. **Recommendation**; I am unable to determine if builder was responsible for said damage, however in our opinion it is possible. If this is the case the builder should rectify.
162. Indicative Estimate Of Costs= \$152.
163. **Bed 1**
164. Ogburn's Observations & Investigations; moisture related staining was evident within the northern central ceiling at junction with cornice .
165. **Recommendation**; builder to determine cause of leak and rectify.  
Refer also Window, Steel Framed balconies and Structural Faults sections of this report for further comment on Bed 1 defects.
166. Indicative Estimate Of Costs= \$163.
167. **Bed 2**
168. Ogburn's Observations & Investigations; there are gaps in excess of 4mm between the door leaf and jamb (on striker plate side) at full closure, which is in excess of the minimum requirements of *A.S 2689* 1984, (permits a 3mm max gap around perimeter of door, with a large gap at base (up to 35mm) for ventilation).
169. **Recommendation**; builder to replace door and completely paint.
170. Indicative Estimate Of Costs= \$354.
171. Ogburn's Observations & Investigations; Top and bottom of entry door has not been paint sealed, in accordance with typical manufacturer warranty requirements (refer attached Corinthian door sample warranty requirement).
172. **Recommendation**; builder to remove door and paint seal top and bottom edges (minimum 3 coats).
173. Indicative Estimate Of Costs= \$162.



**174. Internal Stairwell**

175. Ogburn's Observations & Investigations; the *stairwell soffit* and abutting gypsum wall lining (within Kitchen) has been poorly set and is generally incomplete with unacceptable gaps at junctions - [Refer Photo No20](#). This is incomplete contracted work.
176. **Recommendation**; Builder to complete setting of plasterboard and rectify gaps by installing timber trims and sealant, ready for painting. Builder to rectify as agreed.
177. Indicative Estimate Of Costs= \$460.
178. Owner / Architect Advice; owner advises that the builder had split a mid flight stair tread during construction.
179. Ogburn's Observations & Investigations; a mid flight stair tread is broken.
180. **Recommendation**; I am unable to determine if the builder was responsible for same. Replace/ repair stair tread.
181. Indicative Estimate Of Costs= \$202.

**182. Kitchen**

183. Ogburn's Observations & Investigations; the newly constructed gypsum stud wall lining of the *Kitchen/ stairwell SE wall* has evidence of a significant bow (>12mm) across its horizontal face at the northern end and is defective, the bow is >+4mm across the face [Refer Photo No21](#).
184. The minutes of *Site Meeting – Disputed Works* dated 5.3.03 state under “*New Business- Builder confirmed wall and trims to Kitchen to be rectified, all at Builders cost*”. [Refer Annexure No 4J Site minutes](#)
185. **Recommendation**; Refer also to December 2003 Concealed Structural Faults under **Section 6** Clause 355 of this report for further comment on this defect.
186. Indicative Estimate Of Costs= \$759 costed as per Clause 357 recommendation.
187. Owner / Architect Advice; owner advised me that the builders contracted work required recessing an existing *refrigerator water supply* outlet into the Kitchen/ stairwell SE stud wall. This is confirmed in architect instruction No 12 dated 15.5.02 (last item) [Refer Annexure No 10](#)
188. Ogburn's Observations & Investigations; there is a water supply pipe protruding out through the wall face, which has not been correctly terminated and no recess has been formed in the stud wall. [Refer Photo No22](#).
189. **Recommendation**; I have assumed that this item is within the builders contract and as such in my opinion this work is incomplete. Builder complete formal tap termination of refrigerator water supply, which is to be recessed in the stud wall.
190. Indicative Estimate Of Costs= cost included in Clause 186 estimate.



**191. Guest W.C**

192. Ogburn's Observations & Investigations; I am advised that the builder was given a contract variation to install a new *ceiling access trap* (located beneath main bathroom bath waste) within the ceiling of the Guest W.C. [Refer Photo No23](#)

A ceiling access trap has been installed however given the type (drop in panel) it is essentially inoperative and access cannot readily be gained to the bath waste above.

193. The minutes of *Site Meeting – Disputed Works* dated 5.3.03 state under “*New Business- Builder confirmed W.C ceiling to have enlarged and operable access panel at Builders cost*”. [Refer Annexure No 4 J Site minutes](#)

194. **Recommendation**; the access trap is defective, builder to replace with a hinged type, as agreed.

195. Indicative Estimate Of Costs= \$322.

196. Ogburn's Observations & Investigations; The *eastern wall lining* of Guest bathroom was incomplete.

197. **Recommendation**; builder to complete wall lining.

198. Indicative Estimate Of Costs= \$98.

199. Owner / Architect Advice; owner advises that the builder had broken the *existing W.C cistern lid* during construction and that it had been thrown out.

200. Ogburn's Observations & Investigations; The Guest bathroom W.C cistern cover was missing.

201. **Recommendation**; I am unable to determine whether the builder was responsible for the missing W.C cistern cover.

202. Indicative Estimate Of Costs= \$121.

**203. Garage ceiling**

204. Owner / Architect Advice; the owner advised me that the builder had caused damage via three holes in the *Garage ceiling* when undertaking the building works, which included installation of ceiling insulation.

205. Ogburn's Observations & Investigations; three holes and/ or splits are evident in the previously painted Garage ceiling, which appears to have occurred from above within the roof cavity. [Refer Photo No 24.](#)

206. In my professional opinion it is likely that the damage was caused by the builder when carrying out works within the roof void particularly as the main roof access hole is located in the Garage.

207. **Recommendation**; I am unable to determine if the builder caused the damage, however given my experience and the builder's work practises I am of the opinion that it was unlikely to be any one else's responsibility.

If the builder is responsible then the damaged ceiling should be repaired and the paint finish reinstated.

208. Indicative Estimate Of Costs= \$362.

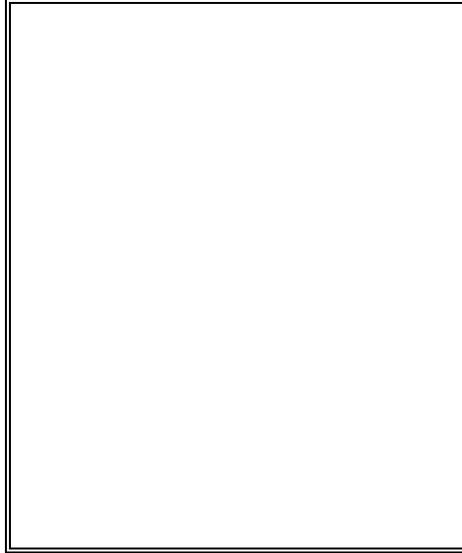


**209. Dining Rm ceiling**

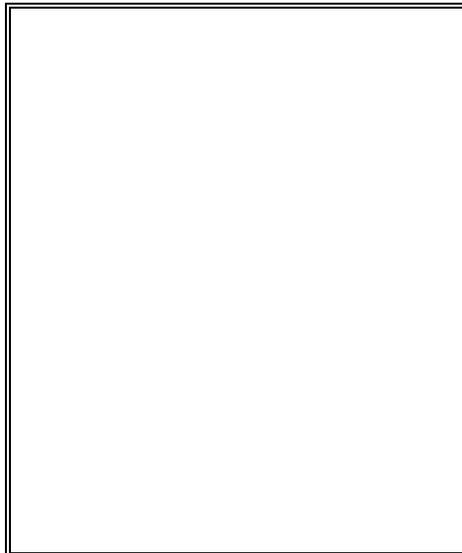
210. Owner / Architect Advice; the owner advised me that the builder had caused hole damage to the *Dining Rm ceiling*, when one of his workers fell through same during the works.
211. Ogburn's Observations & Investigations; a large hole exists in the Dining Rm ceiling, which appears to be consistent with some one falling through. *Refer Photo No 25*
212. **Recommendation**; I am unable to determine if the builder caused the damage, however given my experience and the builder's work practises I am of the opinion that it was unlikely to be any one else's responsibility.  
If the builder is responsible then the damaged ceiling should be replaced and the paint finish reinstated completely to achieve uniform cover.
213. Indicative Estimate Of Costs= \$489.



SECTION 2 Pre December 2003 INTERNAL DEFECT PHOTOS



*Photo No 13*



*Photo No 14*



**214. EXTERNAL Pre December 2003 (Defects)****215. Entry Driveway**

216. Owner/ Architect Advice: [Refer Photo No26](#) of the missing and cracked damaged wall mounted *driveway entry lights*, which the owner advised that the builder damaged, when backing supply trucks in.
217. Ogburn's Observations & Investigations: A light fitting is missing and the brick pier beneath same has been dislodged and is loose and the opposite light fitting has been cracked and inexpertly sealant repaired.
218. **Recommendation**; I am unable to determine if builder was responsible for said damage, however in my opinion it would appear likely the builder cracked the light fitting notably because, as advised by the owner, he had sealant repaired the cracked light fitting. If this is the case the cost of reinstatement with an acceptable equivalent, including rectifying dislodged brick pier ought to be recovered from the original builder.
219. Indicative Estimate Of Costs= \$696 includes two new light fittings.
220. Owner / Architect Advice: [Refer Photo No27](#) of the lower *driveway\entry grated drain*, I am advised that the builder partially damaged the recessed grated end of same during construction and then had subsequently patch repaired it, rendering the drain grate impossible to remove.
221. Ogburn's Observations & Investigations: due to recent cement patch repairs at the grate drain recessed edge, some sections of the grated drain cannot be removed.
222. **Recommendation**; builder to rectify cement edging to permit full grated drain removal.
223. Indicative Estimate Of Costs= \$136.

**224. Entry Awning/ Doorway Patio**

225. Ogburn's Observations & Investigations: The owner provided me with photos taken during construction showing a partially welded cantilevered steel support beam and relocated roof framing under purlin and strut, of newly constructed cantilevered entry awning, which were in my professional opinion structurally defective.  
I recommended to the owner to engage the project engineer to inspect.  
The project engineer was engaged (at additional expense to the owner) to inspect the above noted steel support beam and roof framing and advise on the structural adequacy of same.  
Refer enclosed Partridge Partners P/L engineer's 26.6.03 report [Refer Annexure No 9](#) for requisite repairs.
226. **Recommendation**; Builder to undertake project engineers recommended repairs.
227. Indicative Estimate Of Costs= \$328.
228. Ogburn's Observations & Investigations: Evidence of significant differential movement cracking within finished painted of the cantilevered awning (e.g. rear upper fascia/ eaves lining) including poorly aligned trims at soffit lining joints.
229. **Recommendation**; builder to rectify by reinstating trims and application of sealant filled joints and repainting.
230. Indicative Estimate Of Costs= \$365.



231. Ogburn's Observations & Investigations; *Refer Photo No28* of the lower section of newly installed *entry door/ frame and F.C threshold*.  
There is no evidence of a *sill flashing* beneath the entry door/ side light frame and the proposed floor tiling over the F. C. sheeting is likely to exacerbate the potential for moisture entry by raising the height of the finished surface above the base of door frame, which may lead to accelerated soft rot. The builder has inappropriately attempted to externally seal the junction of door frame base and F.C floor with a bead of silicone *Refer Photo No29*.
232. Ogburn's Observations & Investigations; *Refer Photo No29* of the flashing beneath the door threshold and the timber support behind it  
This flashing has not been adequately terminated up the vertical timber support face and nor has been adequately sealed, it is defective.
233. **Recommendation**; builder to install adequate flashings to underside of door frame at F.C floor and install suitable liquid applied flashing beneath door threshold.
234. Indicative Estimate Of Costs= \$736.
235. Ogburn's Observations & Investigations; There is a vertical gap >6 mm between *entry door* and jamb (striker plate side), which is in excess of the minimum requirements of A.S 2689 1984, (permits a 3mm max gap around perimeter of door, with a large gap at base (up to 35mm) for ventilation). *Refer Photo No30*.
236. **Recommendation**; builder to rectify perimeter entry door gaps so that they fall within the minimum requirements, which is likely to require door replacement or edge trims and re apply lacquer finish.
237. Indicative Estimate Of Costs= \$331.
238. Ogburn's Observations & Investigations; The aluminium angle trim frame surround of the northern glass brick sidelight (of entry door) protrudes out from the timber surround by some 4-5mm and has unsightly varying gap margins. None of the remaining perimeter trim edges have been sealant filled against the timber frame.
239. **Recommendation**; builder to rectify all the above noted defects, which may require trim replacement and achieve a flush finish all round.
240. Indicative Estimate Of Costs= \$164 (sealant fill).
241. Owner / Architect Advice; The owner advised me that the position of the *entry door video camera*/door chime outlet wiring is much too high and not as verbally specified to the builder.
- 241A. The minutes of *Site Meeting No20* dated 17.4.02 state under New Business items "*entry door details agreed. Select furniture and tiling*".
242. Ogburn's Observations & Investigations; the entry door video camera/door chime outlet wiring is installed too high and would not be effective in its operation.  
There is no weather bar provided under the entry door as requested within the minutes of *Site meeting No 23* dated 15.5.02 under 'Proprietor' *Refer Annexure No 4 K Site minutes*.
243. **Recommendation**; builder to install video wiring and correct height and install new cover trim. Builder to complete installation of weather bar under entry door.
244. Indicative Estimate Of Costs= \$316.



**245. Guttering & Downpipes**

246. Ogburn's Observations & Investigations; [Refer Photo No31](#) showing a section of the newly installed newly aluminium *gutter leaf guard*, which appears to be incorrectly installed (in a downward rear facing direction) as the leaves are being trapped within it.
247. **Recommendation**; builder to remove and then correctly install gutter leaf guard in accordance with manufacturer's requirements.
248. Indicative Estimate Of Costs= \$437.
249. Ogburn's Observations & Investigations; Architect instruction No 10 dated 3.5.02 (last item) confirms the builders installation of new guttering and leaf guard - [Refer Annexure No11](#)  
There is evidence of significantly *impact and or scratched damaged* newly installed colorbond *guttering*, which is most apparent on the rear elevation in the following locations;  
B1 SW corner  
Sitting Rm above balcony at internal corner  
Southern elevation above barbecue  
There is also evidence of inadequate silicon sealing, particularly at the internal gutter joining brackets.
- 249A. Ogburn's Observations & Investigations; the minutes of *Site Meeting – Conference* dated 18.10.02 state under "*gutters/ D/P- Builder confirmed damaged sections to be replaced at builders cost*" [Refer Annexure No 4H Site minutes](#)
250. In my professional opinion the said damage is consistent with ladders being placed against guttering and/ or damage that would occur during installation.
251. **Recommendation**; builder to replace all defective and damaged guttering and adequately silicon seal all gutter joining brackets.
252. Indicative Estimate Of Costs= \$897.
253. Ogburn's Observations & Investigations; the newly installed *downpipe* base at the SW corner of house has not been sealed at its junction with the stormwater pipe. [Refer Photo No32](#).
254. **Recommendation**; incomplete work builder to seal junction of downpipe and stormwater.
255. Indicative Estimate Of Costs= \$37.
256. Owner/ Architect Advice; the owner advised me that the newly installed SW metal *downpipe*, which extends over two stories and incorporates a metal horizontal lower section, creates disturbing noises during periods of rain as the rainwater hits the lower horizontal metal section. [Refer Photo No33](#).
257. Ogburn's Observations & Investigations; the newly installed two storey metal *downpipe* incorporates a metal horizontal lower section, which would generate significant noise when it rains.
258. **Recommendation**; I am not aware of any standard that relates to such installations, however I consider that it would be good building practice to try to eliminate such an annoyance and this could be achieved by the installation of water proof acoustical dampening at the base of vertical drop or by replacing the horizontal section of downpipe with a uPVC alternative.
259. Indicative Estimate Of Costs= \$155.



**260. Roof**

261. Owner/ Architect Advice: The owner advised me of *multiple leakage points* (through the ceiling and down wall face) within the Entry lobby/ Sitting Rm and B1 ceiling over bed, evidence of which we observed during our inspection (*Refer example Photo No 16*).
262. Ogburn's Observations & Investigations: I inspected the roof which consisted of cement roof tiles (with sarking beneath) and appears to be approximately 20 years old. The builder has reused existing roof tiles for the newly constructed cantilevered awning and installed sarking. These roof tiles have been installed at approximately 21° pitch, which is just above the minimum slope requirements, as recommended by manufacturers.
263. I determined various potential water entry points including but not limited to the following, noting that the area roof beneath the solar pool heating panels was not accessible for visual inspection;
- \* Significantly cracked roof ridge capping tiles *Refer example Photo No 34*.
  - \* A number of roof tiles that are either cracked at the corners or have previously cracked and been sealant filled including behind chimney and on the eastern side of newly installed cantilevered awning
  - \* A roof ventilator installed (by owner engaged contractor) on the western roof elevation, does not appear to be adequately sealed around the flashing. *Refer Photo No 35*.
  - \* There is a tear within the sarking on the western elevation over Sitting-Rm roof, which the builder extended.
  - \* The pre-existing roof tiles have been installed at approximately 23° slope (near minimum) and maybe allowing wind driven rain to enter beneath the tile edges.
264. **Recommendation**; a licensed roofer should be engaged to inspect and rectify all of the above noted defects including as follows, seal up torn sarking, replace faulty roof tiles, re-point roof ridge capping tiles, inspecting the area of substantially concealed roof tiles beneath the previously installed solar pool heating panels and adequately seal the roof ventilator penetration.
265. Indicative Estimate Of Costs= Nil.

**266. Front External Steps**

267. Owner/ Architect Advice: The architect advises that the builder was responsible for damaging a number of sandstone flagging step treads on a stair near the driveway, during construction.
268. Ogburn's Observations & Investigations: I inspected this stair and refer you to example *Photo No 36* noting that there are a number of dislodged step treads and that the lowest step tread has a large corner section broken away.
269. **Recommendation**; I am unable to determine if builder was responsible for said damage, however in my professional opinion it is possible given these steps would probably have been used (by the builder) as a main access way to the basement area during construction. If this is the case the builder should be requested to rectify by stabilising the loose stair treads and replacing the broken stair tread.
270. Indicative Estimate Of Costs= \$443.



**271. External Brick Sill (Basement Level)**

272. Owner / Architect Advice; owner advised me of the near level *external brick sill at the SW corner* of the G.F Lounge room (installed by builder) noting that it was different from the sloping adjacent sill type.
273. Ogburn's Observations & Investigations; I inspected this brick sill/s and note that the southern elevation sill is near level, whilst the adjoining western elevation sill is a near level at the southern end and has a slope of some 15 degrees at the northern end (i.e. differing slope). The builder has installed a flashing beneath the brick sill on the western elevation but I was unable to determine if it returned back under the window sill and therefore effective.
274. **Recommendation**; builder to rectify near level southern elevation sill and differently sloping brick west elevation sill, with a uniformly and sufficiently sloping type (20mm min fall), to match the adjoining, by re using existing bricks.
275. Indicative Estimate Of Costs= \$696.
276. Ogburn's Observations & Investigations; a sealant filled vertical *construction joint* has been poorly installed in the eastern external wall face at the SE corner of Living Rm. [Refer Photo No 37](#). I do not consider the sealant filled joint to be in accordance with good building practice.
277. **Recommendation**; builder to remove and replace sealant filled joint.
278. Indicative Estimate Of Costs= \$163.

**279. Steel Framed Balconies**

280. Ogburn's Observations & Investigations; I'm advised that the builder supplied and installed the new *steel framed cantilevered balconies* of Sitting Rm and Bed 1. Architect instruction No 15 dated 26.6.02 (item 3) states that the staining to balcony steel decking has occurred as a result of "*the sheeting not being prepared prior to electro plating or the electro-plating has reacted with something other than water*" [Refer Annexure No 12](#). The balcony decking is a seeming zinc/ gal finished perforated steel, which has been pop rivet secured. The *finish* on both the Sitting Rm & Bed 1 steel decking is very poor as they are significantly blemished and stained. [Refer Photos No 38 & 39](#). I consider the defectively blemished finish to have occurred either due to chemical damage or was supplied with the defective finish by the builder's supplier. A single section of the decking at the Sitting Rm eastern end was not adequately secured and was partially loose.
281. Many significant surface *rust stains* are evident on the steel joists beneath the decking (adjacent to rivet fixings). In my opinion this rusting has occurred partly because the builder failed to remove frass when drilling out pop rivet fixings, which has subsequently rusted and stained the steel joists ([Refer Photos No 40 & 41](#)).
282. The builder has spot applied a cold galvanic paint finish to the various welded joints of steel sections including at the junction of stainless steel balustrade posts, which looks unsightly, is incomplete and provides inadequate protection, which has promoted rusting [Refer Photo No 42](#). A significant and sharp burr is evident on a central S/S handrail support [Refer Photo No 43](#).
- 282A. the minutes of *Site Meeting – Disputed Works* dated 5.3.03 state under "*New Business- Builder confirmed decking to be rectified at no cost to the proprietor*". [Refer Annexure No 4J Site minutes](#)



283. **Recommendation;** I consider the steel framed balconies to be significantly defective. Builder to remove all perforated steel decking (Sitting Rm & Bed1) and have re finished achieving new blemish free zinc/ gal finish. Remove all rust stains, then completely paint the entire steel structure (excluding S/S balustrading), with cold galvanic paint to achieve a uniform finish. Builder to fix re finished steel decking ensuring that all existing rivet fixing holes are utilized, so as to avoid further rust staining potential and unsightly conspicuous fixing holes and that all panels are adequately secured, as agreed. Builder to grind off burr on central S/S handrail support.
284. Indicative Estimate Of Costs= \$3,410.
285. Ogburn's Observations & Investigations; the newly installed *Sitting Rm balcony eaves soffit* (at internal corner) has been installed approximately 1.5% (>10mm) out of level by the builder and is defective *Refer Photo No 44*. The out of level eave has resulted in the external louvre shutter (beneath same) to be installed with an unsightly 10mm thick gypsum plaster packer at one end. There is also significant moisture related staining evident to this eaves soffit.
286. Ogburn's Observations & Investigations; A significant vertical gap is apparent at the junction of external *Sitting Rm balcony western wall cladding and brickwork*, which is partially covered by a quad mould. *-Refer Photo No 45*.
287. **Recommendation;** builder to sealant fill vertical gap at the junction of external Sitting Rm balcony and wall cladding. Builder to disconnect power and have manufacturer remove external louvre shutter and reinstate sloping Sitting Rm eaves lining so that it is level, re install louvre shutter (without packers) and make good paint finish. Determine cause of leak and rectify.
288. Indicative Estimate Of Costs= \$1,570.
289. **G.F Study**
290. Ogburn's Observations & Investigations; a significant vertical gap is apparent at the external the junction of external SE brickwork and the newly installed (by builder) F.C sheet cladding infill. *Refer Photo No 46*.
291. **Recommendation;** builder to rectify both noted gap by sealant filling.
292. Indicative Estimate Of Costs= \$163.

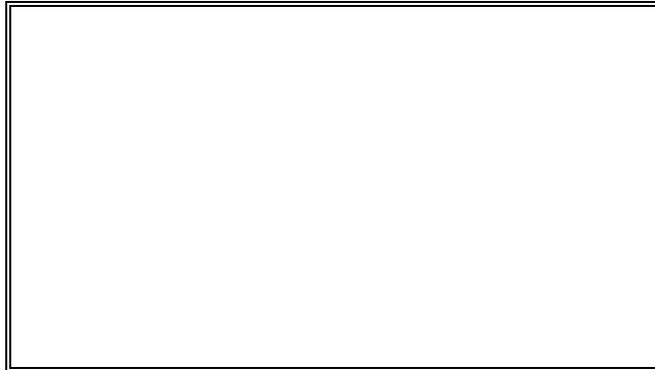


**293. Sub Floor**

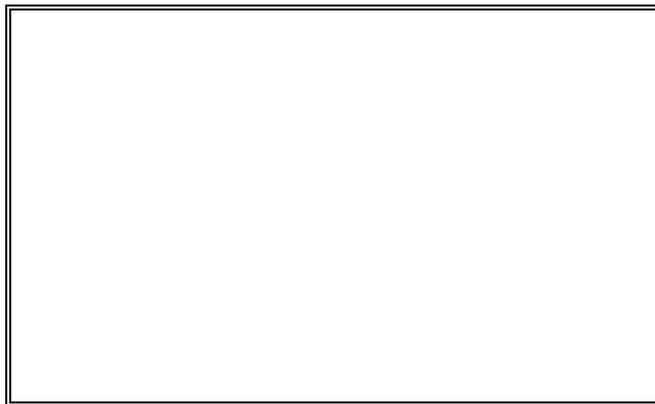
294. Ogburn's Observations & Investigations; a number of existing brick piers (beneath *Living Rm*) do not incorporate adequate termite shields.  
The builder installed a *new brick pier* in the NW corner, which does not incorporate a termite shield, as required by the BCA. *Refer Photo No 47.*  
Refer also **Section 6** Structural Faults Clauses 316 and 320 of this report regarding a missing support pier under structural column SC8.
295. **Recommendation**; owner to install adequate termite shields (to a single pier) in accord with good building practice.
296. **Recommendation**; builder to install adequate termite shielding to newly installed brick pier in accord with the BCA and good building practice.
297. Indicative Estimate Of Costs= Refer Clause 321 for costing.
298. Ogburn's Observations & Investigations; much of the newly installed floor framing (beneath Lounge Rm) has been inexpertly packed in order to achieve level and again no attempt was made to install termite shields. *Refer Photo No 48*
299. **Recommendation**; builder should correctly pack framing and install termite shield when doing so.
300. Indicative Estimate Of Costs= \$107.



SECTION 2 Pre December 2003 EXTERNAL DEFECT PHOTOS



*Photo No 26*



*Photo No 27*



*Photo No 28*



## SECTION 3

## 300. Progress Claim No8

302. Ogburn's Observations & Investigations; I have been asked to consider and to make comment on the validity of the builders Progress claim No 8 and the architects Progress certificate No 8. The minutes of *Site Meeting No 25* dated **30.5.02** state under builder action items "*leaking windows to be addressed immediately*". *Refer Annexure No 4F Site minutes*
303. On the **19.6.02** the builder applied for *Progress claim No 8* (\$19,809.86) to the architect *Refer pages 57-67 of Darren Phillips Affidavit* dated 23.12.03 in *Annexure No 13*  
 Progress claim No8 was for "works properly completed" since the proceeding claim and included a claim for 92% completion of contract sum (\$179,454 excl GST) - *Refer page 59 of Darren Phillips Affidavit* dated 23.12.03 in *Annexure No 13*  
 Progress claim No8 included a claim for the 98% completion of contract Joiner (\$39,418) which includes the supply and installation of Quantum series windows. - *Refer pages 46-529 of Darren Phillips Affidavit tender dated 2.8.01 Trade Breakup Description pg 2 Joiner in Annexure No 14*  
 Progress claim No8 included a claim for the 100% completion of contract Variation No 6 (\$6,811.20) namely the "*Revised detail external decks*" - *Refer pages 60 & 61 of Darren Phillips Affidavit* dated 23.12.03 in *Annexure No 13*  
 Progress claim No8 included a claim for the 100% completion of contract Variation No 7 (\$11,858.00) namely the installation of *Air Conditioning* - *Refer pages 60 & 61 of Darren Phillips Affidavit* dated 23.12.03 in *Annexure No 13*  
 Progress claim No8 included a claim for the 100% completion of contract Variation No 8 (\$2,953.50) namely the "*Gutters & Downpipes*" - *Refer pages 60 & 61 of Darren Phillips Affidavit* dated 23.12.03 in *Annexure No 13*
304. An architect fax letter to the builder dated **18.6.02** states under item 4 "*the proprietor over the weekend hosed down his newly installed windows and was alarmed to observe water on the inside of his house. It seems that despite some assurance offered by the window manufacturer that everything was ok, everything is not ok*". *Refer Annexure No 15*
- 304A. The minutes of *Site Meeting No 28* dated **19.6.02** state under General Business items 3,5,2 & 7  
 \* "*Window rectification under way realignment, weather seals, joints filling and testing*".  
 \* "*External metalwork to be rectified including painting and remove stains to deck sheets*".  
 \* "*A/C top man on site. Boots and grilles to be installed. Water discharge from a/c unit spilling over feet of unit advised as normal builder to provide letter for system compliance with codes and standard*"  
 \* "*Gutter section and leaf guard to be completed*"  
*Refer Annexure No 4L Site minutes*



305. Ogburn's Observations & Investigations;  
The architect issued Progress certificate number 8 on the 24.6.02 for the sum of \$21,662.39 which included an additional "payment amount of \$2,122.50 for "electrical extras as assessed". Refer pages 68-70 of Darren Phillips Affidavit dated 23.12.03 in Annexure No 16  
On this progress certificate the architect states that;  
\* "following an inspection of the works 23.6.02 the proprietor again expresses his bitter disappointment and growing concern with the nature of the window installation" and  
\* "of concern is that in operating some window and door units the sliding action is stiff, resulting in some instances the jam section of the frames moving away from the wall – inadequate number of fixings?" and  
\* "a gentle hose of the windows for cleaning reveals water still entering the house- either via the windows units or their surrounds"  
\* "What can the proprietor do?"
306. Ogburn's Observations & Investigations; considering the builders Progress claim No 8 (dated 19.6.02), some of the works claimed as part of Progress Claim No.8 were defective and incomplete.
307. I base my opinion on the following;  
\* some of the fully claimed works had not been "properly completed" as was noted in the aforementioned architect fax letter dated the 18.6.02 and the minutes of Site meeting No28, which was held on the same day that Progress Claim No 8 was submitted.  
\* Given the states (by architect defects at the at this meeting Site meeting No28) I am of the opinion that the builder would have been aware of the leaking windows, defective air conditioning, incomplete guttering and defective balcony decking and that they had not been properly completed and therefore should not have fully claimed these items.  
\* the builder claimed some 98% of Joiner (total of \$39, 418 representing approximately 22% of the contract sum) and which includes the supply and installation of Quantum windows, that were still leaking the day before and on the day of the claim "window rectification was under way" including realignment weather seals, joints filling.  
It would appear that subsequent "testing" (for leaks) had yet to be completed.  
Under these circumstances I consider a claim of 98% of Joiner to be excessive as this major building component had not been "properly completed".  
\* the builder claimed some 100% of Variation No 7 Air conditioning (\$11,858.00 representing approximately 28% of then total variations to date sum) and on the day of the claim the A/C sub contractors' top man was on site and that boots and grilles were to be installed. Under these circumstances I consider a claim of 100% to be excessive for this significant building component, which had not been "properly completed".  
\* the architects subsequent Progress certificate No8 determination dated 28.6.02 made note (on the progress certificate) of either incomplete and/ or defective works associated with a number of the claimed sums including the owners concerns with regards continuing window leakages.  
\* The total claimed value of the improperly completed and/ or defective works in Progress claim No 8 was some \$59,381.64, which represents more than 26% of the claimed value of executed works (\$220,557.86).  
In summary then the builder was entitled to be paid substantially less in relation to progress claim No 8.



### 308. Practical Completion

309. Ogburn's Observations & Investigations; I have been asked to make comment on the validity of the builders application for Practical completion and the architects rejection of same. On the 4.7.02 the builder in a fax letter to the architect seeks payment for Progress claim No 8 and applies for *Practical completion* of the works pursuant to clause 9.1 of the contract and request release of half the retention fund – *Refer pages 71 and 72 of Darren Phillips Affidavit* (dated 23.12.03) – *Refer Annexure No 16*.
310. Ogburn's Observations & Investigations; Subsequent to this the architect issued a response letter on the 5.7.02 stating with regards to payment of Progress claim No8 (item 1) that it *"is a matter to be addressed between your company and the proprietor"* *Refer page 73 of Darren Phillips Affidavit* (dated 23.12.03) in *Annexure No 17*.  
With regards the builders application for Practical Completion the architect states (item 2) that in his opinion *"Practical Completion contemplates the works to be fit for occupation by the proprietor"*. The architect then lists a number of incomplete and/ or defective works that *"would preclude the works as being fit for occupancy"* as follows;
- \* The "unpleasant" internal house temperature after running the A/C service on full ball, which was *"hovering about 12 degrees C"* and noting *"something is not right"*
  - \* *"The proprietor does not accept your offer that he should place towels adjacent to windows, which allow water penetration"*
  - \* *"The balcony flooring (subject to your investigations) will I believe have to be replaced, thus denying the proprietor use of the balconies"*.
- Refer page 73 of Darren Phillips Affidavit* (dated 23.12.03) in *Annexure No 17*.

311. **Note** 'Standards Australia Glossary of Building Terms' defines **Practical Completion** as;  
*"The stage reached when a project has been essentially completed and is fit for its intended purpose, except for minor omissions and defects that do not prevent its use, and with test required under the contract having been carried out"*.

312. **Conclusion**; it is my professional opinion that given the architects and owners noted incomplete and/ or defective works, at the time of the builder's application for Practical Completion, the works were not practically complete and that the architect was correct in denying same. Additionally I consider that the builders Progress claim No8 was excessive as some of the claimed works including the window installation, balcony decking and air conditioning, had not been "properly completed".



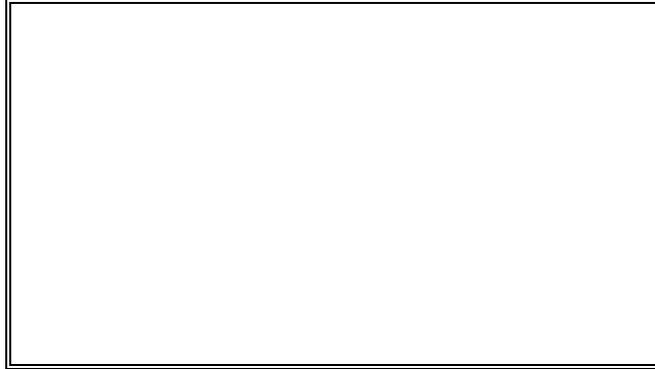
## Section 4

### 313. Structural Defects (Pre December 2003)

314. **Background History;** Partridge Partners P/L were the appointed project structural engineers during the course of the renovation works and were responsible for all structural design drawings and were requested to provide certification of the works.
315. **Ogburn's Observations & Investigations;** during my June 2003 inspection of the property I determined what appeared to be a number of structural faults relating to the following components built by the builder;
316. \* Inadequate strutting of the cantilevered front awning  
\* Inappropriate 40mm square timber packing of structural steel column base plate at external wall of Kitchen \ Family Rm (basement level), in direct contact with the ground. *Refer Photo No 49*  
\* Missing brick supporting pier to structural steel column SC8, the base plate of which fixed through a 80mm thick path slab with No4 bolts, which were loose *Refer Photo No 50*  
\* Inadequate strutting of roof framing at the western side of Bed 1. *Refer Photo No 51*
317. As a result of these observations I recommended that the owner engage the project engineer to inspect and assess the faults.
318. Partridge Partners P/L were engaged (by the owner at additional expense) to do this review and I refer you to the accompanying Partridge Partners P/L Final Defects Inspection report dated *26th June 2003* within *Annexure No 9*.
319. **Ogburn's Assumption;** I'm not expert in the field of determining structural faults and have relied upon the accompanying structural engineers (Partridge Partners P/L) reports dated 26.6.03 for a full determination of all structural defects and assume same to be correct.
320. **Recommendation;** Builder to complete all defect repairs, as recommended by structural engineer.
321. Indicative Estimate Of Costs = \$926 and covers only Items 2, 3 & 4 of Partridge Partners reported defects. Item 1 is costed in Clause 77 C. I have not provided a cost estimate for Item 5.



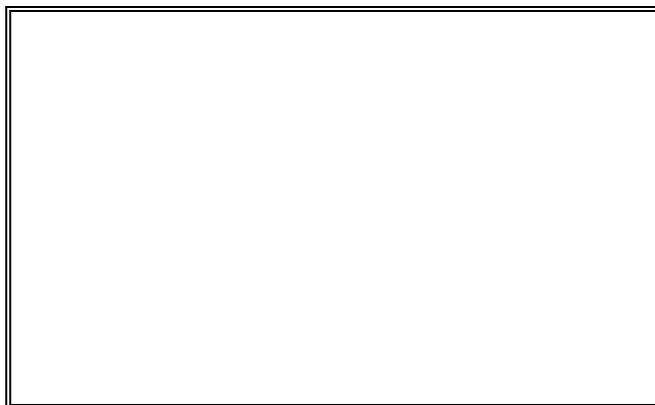
SECTION 4 Pre December 2003 STRUCTURAL DEFECT PHOTOS



*Photo No 49*



*Photo No 50*



*Photo No 51*



## Section 5

### 322. Mechanical Services (Air Conditioning) Defects

323. **Background History;** the owner advised me that the builder was requested to provide a contract variation quotation to supply and install a fully ducted reverse cycle air conditioning system, to replace the existing aged service.  
The owner's evidence is that determination of the size and type of air conditioning system was left to the builders preferred contractor Aberdeen Air Conditioning and that the builder submitted a variation quotation on or about 19.2.02, for the sum of \$11,858.00, Architect instruction No 6 dated 26.2.02 (item 1) confirms the acceptance - *Refer Annexure 18*
324. The owner's evidence is that upon completion of the new air conditioning system its operation was substantially defective.
325. The aforementioned 17 & 19.7.02 building report by Phillips Building Consultants & inspections P/L listed eight defective items relating to the A/C installation on page 23 under Air Conditioning - *Refer Annexure 19.*
326. The architect had listed under item 'AO5' dated 9.8.02 of his affidavit Item 4 "the defective installation of the air conditioning system" - *Refer Annexure 20.*
327. I recommended that the owner engage mechanical engineer Mr Graham Reed (G. J. Reed & Associates) to inspect and report on the as installed air conditioning system.  
G.J. Reed & Associates were engaged (by the owner at additional expense) to do this review.  
I refer you to the accompanying G. Reed & Associates Defects Inspection report dated **24.9.03** within *Annexure 21.*
328. Ogburn's Assumption; I am not expert in the field of mechanical services and have relied upon the accompanying mechanical engineers G. J. Reed & Associates report dated 24. 9.03 for a full determination of all mechanical services faults associated with the air conditioning system as installed by the builder, as known at the time and assume same to be correct.
329. Ogburn's Assumption; I am advised by the owner that a copy of the G. J. Reed & Associates report dated 24.9.03 was provided to the builder prior to the termination of his contract.
330. Ogburn's Observations & Investigations; So as to assist in clarifying what occurred after the issuance of said report (to the builder) I requested G.J. Reed & Associates to compile a written chronology of events leading up to the contracting of alternative replacement air conditioning contractor, Riverview Air Conditioning Sales P/L, together with copies of the various quotations and the associated costs for all related consultancy services by G.J. Reed & Associates, who were engaged by the owner at additional expense.
331. Ogburn's Observations & Investigations; I refer you to the G. J. Reed & Associates P/L fax letter and supporting correspondence dated **25.01.04** to myself including minutes of site meeting held with the builder dated 28.10.02 in *Annexure 22.*
332. Ogburn's Assumption; I was not involved in the mechanical services defects rectification or discussions with the builder regarding same and have relied upon the accompanying mechanical engineers G. J. Reed & Associates P/L letter **25.01.04** as being true and correct.



333. Ogburn's Observations & Investigations; Mr. Graham Reed met (on site on the 28.10.02) with the builder and the builders air conditioning contractor Aberdeen Air P/L in an attempt to discuss the findings. I refer you to the enclosed minutes of that site meeting dated 28.10.02 as prepared by G.J. Reed & Associates P/L -*Refer Annexure 22.*
334. The minutes of *Site Meeting – Disputed Works* dated 5.3.03 state under “*New Business- Builder confirmed previous offer for air conditioning system to be upgraded to comply with performance specification of consultant (G.J. Reed & Associates) with builder to pay all costs*” - *Refer Annexure No 4 J Site minutes*
335. Ogburn's Observations & Investigations; I am advised that subsequent to the termination of the builders contract the owner instructed G.J. Reed & Associates to source tender quotations from two alternative air conditioning contractors, to the standard detailed in their 24.9.03 report, which they obtained.
336. Ogburn's Observations & Investigations; I refer you to air conditioning quotations from the following two contractors *Refer Annexure 22;*
337. Professional Air Conditioning Services P/L dated 10.9.03= **\$19,410 excluding GST**, which excludes power to each unit and warranty of existing work and materials.
338. Riverview Air Conditioning Sales P/L dated 10.9.03 = **\$18,927.70 including GST**, which excludes power to each unit, building, patching, painting and making good.
339. Ogburn's Observations & Investigations; I am advised that based on the recommendation of G. J. Reed & Associates P/L, the owner contracted to Riverview Air Conditioning Sales P/L, for the amount of **\$18,927.70.**
340. I am of the opinion that this contract basically included removal and reinstatement of all existing supply ductwork, ceiling diffusers, floor grilles and return air grilles, supply and installation of one new condensing unit and fan coil unit and the relocation of one existing fan coil unit.
341. Ogburn's Assumption; I am not expert in the field of mechanical services and have relied upon the accompanying mechanical engineers G. J. Reed & Associates report for a full determination of all air conditioning defects and assume same to be correct.
342. **Recommendation**; Builder to complete all defect repairs, as recommended by mechanical engineer. I have viewed the quotations of Riverview Air Conditioning P/L and based on my experience to the extent that it is relevant the quotations appear to be reasonable.



## Section 6

### 343. December 2003 Concealed Structural & Other Defects Discovery

344. Ogburn's Observations & Investigations; The contract specification '*Council Specification For Building Approval*', which forms part of the Construction Certificate No: CC331/99 approval dated 30.5.01, states under Subsection 060 Administration, #11 Inspection – Preliminaries: "*Covering up: If the Specification requires notice of inspection to be given in respect of any part of the work, that part shall not have further work placed on it or be covered up or put out of view without prior approval.*"
345. Ogburn's Observations & Investigations; after the commencement (December 2003) by the new builder, I again inspected the project at the owners request on 3.12.03, in conjunction with the architect, the owner and the new builder representative Mr. Rick Simmons.
346. Ogburn's Observations & Investigations; At that inspection some areas of *Bed 1 and 1<sup>st</sup> Flr Sitting Rm* wall and ceiling linings had been removed. This exposed some sections of the upper Bed 1 south wall and 1<sup>st</sup> Flr Sitting Rm ceiling framing, and wall framing, both of which had previously been concealed.
347. I discovered a number of what I consider to be structural defects within newly constructed framing as follows;
- \* Lack of tie downs at the junction of roof / wall framing at the exposed southern wall of Bed1 *Refer Photo No 52* and at the exposed western Sitting Rm wall *Refer Photo No 53*,
  - \* Inadequate connection between some roof rafters and upper wall plates at the southern wall of Bed1
  - \* Inadequate strutting of under purlin over Sitting Rm and possibly inadequately sized (90mm) soft wood load bearing wall framing within the western Sitting Rm wall *Refer Photo No 54*
348. As a result of these observations I recommended that the owner engage the project engineer to inspect and assess the faults. Partridge Partners P/L were engaged (by the owner at additional expense) to carry out this review and I refer you to the accompanying Partridge Partners P/L Final Defects Inspection report dated *17th December 2003 Refer Annexure No 23*.
- 348A. **Recommendation**; builder to complete all work repairs as recommended by structural engineers.
- 348B. Indicative Estimate Of Costs: I have viewed the quotations of the new builder as submitted in their letter dated 13.1.04 *Refer Annexure 3* pertaining to structural defects (Item 2 = \$4,200, Item 5= \$190, Item 6= \$340, Item 8= \$485 & Item 9 = \$385: Total Items = \$5,600 excl GST) and based on my experience to the extent that it is relevant the quotation appears to be reasonable..
349. I also determined poor quality, *soft type mortar* (low cement content), within external basement *brickwork at the SW corner. Refer Photo No 54A*  
**Recommendation**; builder to reinstate basement SW external brickwork, using mortar of adequate strength and hardness.  
Refer also Partridge Partners P/L Structural Inspection report dated *17th December 2003 Refer No 23*.
- 349A. Indicative Estimate Of Costs = Included in Clause 348B item 9.



350. Ogburn's December 2003 Observations & Investigations [Refer Photos No 55, 56 & 57](#) showing the exposed ceiling joists of *Sitting Rm*, which were trimmed down as part of the original contract works for the installation of hanging beam above, which are cut short and are neither correctly supported at the support plates, nor sitting flush and level at the underside.  
I determined the previously noted > 25mm bow in the *Sitting Rm* ceiling was being caused by the incorrectly aligned and inadequately supported ceiling joists.
351. Ogburn's December 2003 Observations & Investigations [Refer Photos No 58 & 59](#) showing three structurally termite damaged ceiling joists, which were inadequately (structurally deficient) patch repaired by the builder using non-continuous timbers skew nail through the damaged joists, in addition to variation extra works to the contract (VO5 \$2,141.70 & V 20 \$5,870.22) – [Refer page 61 of Darren Phillips Affidavit](#) (dated 23.12.03) in [Annexure No 13](#).
352. **Recommendation;** in my professional opinion the above noted defects have resulted in a bowed ceiling, which is structurally deficient. Had the builder obtained the necessary inspections as per the requirements of the Construction Certificate prior to the covering up of the works, the defect would have been discovered by the certifier and rectified at the builder's cost.
353. In my opinion in order to adequately rectify the noted engineer's defects, the ceiling framing would essentially need to be re built. Refer also the new builder letter dated 13.1.04 Item 3 [Refer Annexure 3](#).
354. Indicative Estimate Of Costs: I have viewed the quotation of the new builder as submitted in their letter dated 13.1.04 [Refer Annexure 3](#) for *Sitting Rm* ceiling framing defects (Item 3 = **\$4,980 excl GST**) and based on my experience to the extent that it is relevant the quotation appear to be reasonable.
355. Ogburn's Observations & Investigations; the gypsum stud wall lining of newly constructed *Kitchen/ stairwell south wall* had been removed and the wall framing was exposed.  
[Refer Photo No 60](#) showing a structural steel SHS column located within this stud wall, set forward of the surrounding timber wall framing, which had not been packed out to form a straight surface prior to the application of lining board.
356. In my opinion the lack of packing and proud steel column face are the cause of the aforementioned (>12mm) bowing in the gypsum wall lining. Had the builder obtained the necessary inspections as per the requirements of the Construction Certificate prior to the covering up of the works, the defect would have been discovered by the certifier and rectified at the builder's cost.
357. **Recommendation;** builder to remove wall lining and pack out all stud wall framing to promote a straight and even surface, reinstate wall lining with refrigerator tap recess and sand ready for paint.
358. Indicative Estimate Of Costs= already costed under Clause 186.
359. Owner Advice; I am advised by the owner that the stainless steel balustrade wiring of the *steel framed balconies* has commenced rusting significantly. I have not witnessed this alleged defect.
360. **Recommendation;** owner should either photograph said rusting or I be engaged to inspect and report on same.



**361. Construction Certificate (Issues)**

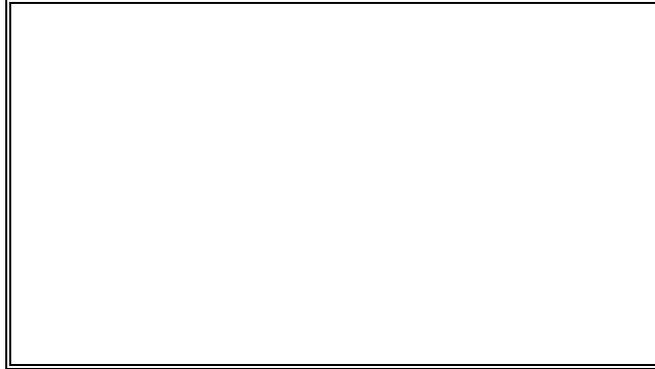
362. Ogburn's Observations & Investigations; At my 3.12.03 site inspection I requested the project architect provide me with copies of the Construction Certificate and all certification as provided by the Principal Certifying Authority (PCA) and/or the builder.
344. The architect provided me with a copy of *Construction Certificate No: CC331/99* and *No: CC55/01* issued by Lane Cove Council and both dated 30.5.01 (*Refer Annexure No 26*). Council are the PCA.
363. I reviewed both the permission to build documents and note that some of the stated Construction Certificate inspection requirements are;
- 363A. *Construction Certificate No: CC331/99* Under Item 10 (56)' 48 hours prior notice to be given for the inspection of  
(1) "all timbers including roof timbers before they are covered"  
(2) completion
- 363B. *Construction Certificate No: CC55/01* Under Item 11 (56)' 48 hours prior notice to be given for the inspection of  
(1) "all timbers before they are covered" and  
and  
Under Item 13'  
"All timbers complying with the timber framing Code A.S. 16 84-79 "
364. Ogburn's Observations & Investigations; The contract specification '*Council Specification For Building Approval*', which forms part of the Construction Certificate No: CC331/99 approval, states under Subsection 060 Administration, #11 Inspection – Preliminaries:  
"Covering up: If the Specification requires notice of inspection to be given in respect of any part of the work, that part shall not have further work placed on it or be covered up or put out of view without prior approval." *Refer Annexure No 1*
365. The minutes of *Site Meeting No1* dated 26.9.01 state under builder action items "builder to note Council conditions re. signboards/ inspections etc". *Refer Annexure 4 M Site minutes*
366. It became clear that in breach of the Construction Certificate stated requirements and contrary to instructions issued by the project architect, the builder had failed to organize inspection and obtain certification of the works from the principal certifying authority as listed on the Construction Certificate, for "all timbers", namely Lane Cove Council.
367. In my experience it is accepted industry practice for the builder to organize these minimum inspections, as the works progress, so that final certification (149D certificate) and a Certificate of Occupancy can be issued by the principle certifying authority (PCA).  
Failure to comply with all the Development Approval conditions\inspection requirements is a breach of the DA conditions.
368. As failure to have the minimum Construction Certificate inspection requirements undertaken would result in refusal by the PCA to issue a final certificate (149D certificate) and/or Certificate of Occupancy for the subject property, I recommended to the architect that the PCA be asked if they would accept 'as built' certification by the project engineer in lieu of their own.



369. The architect advised me that the PCA would accept the project engineer's alternative 'as built' certification, for "all timbers", and also that the builder had supposedly organized an inspection, by the PCA, of the bathroom waterproof membranes.  
There is no waterproof membrane inspection requirement within the C.C.
370. I note that at this stage all wall, floor and ceiling linings had been installed (and painted) by the builder and as a result most timbers were concealed.  
The engineers' inspection would necessitate partial removal of wall, floor and ceiling linings, so that the minimum inspections could be undertaken.
371. I am advised that the new builder was subsequently instructed to remove significant sections of wall, ceiling and floor linings within the newly constructed areas to facilitate the engineer's detailed inspection. This has resulted in additional cost to the owner. I understand that these additional works will be paid as a variation to the new builder.
372. The owner subsequently engaged project engineer Partridge Partners P/L to attend the property and inspect the exposed newly constructed timber elements.  
This has resulted in additional cost to the owner.
373. I refer you to Partridge Partners P/L Structural Inspection report dated *17th December 2003 Refer Annexure No 23*, which details many structural defects, that were discovered as a result.
374. Ogburn's Assumption: I'm not expert in the field of structural faults and have relied upon the accompanying structural engineers, Partridge Partners P/L, report dated 17.12.03 for a full determination of all structural faults and assume same to be correct.
375. **Conclusion;** In my professional opinion it was the builder's responsibility to organize the necessary inspections and obtain certification of the works in accordance with the Construction Certificate (C.C) and Development Approval (DA) consent conditions, architects instruction and the contract specification. N  
Not only has the work not been certified, parts of the works to be certified are structurally defective and required significant repairs. Had the builder obtained the necessary inspections as per the requirements of the Construction Certificate prior to the covering up of the works, the defect would have been discovered by the certifier and rectified at the builder's cost.
376. In relation to the final certification of the works currently being carried out by the new builder , this issue is ongoing and is yet to be finalized with Lane Cove Council and the project engineers; as such I cannot reach a final opinion as at the writing of this report.  
I may need to confirm my final opinion when this issue is fully resolved.
377. **Recommendation;** builder to rectify all structural defects in accordance with engineers Partridge Partners P/L report dated 17.12.03.
378. Refer *Annexure 3* the new builder variation fee estimate letter dated 13.01.04
379. Indicative Estimate Of Costs: included in Clause 348B & 354.
380. I am advised that the builder has as yet to provide any of the required certification and warranty documents. The minutes of *Site Meeting No5* dated 31.10.01 state under builder action items "*builder to confirm window warranties*" and under Proprietor "*builder to advise membrane warranties for bath/ ensuit*". Refer *Annexure No 4 N Site minutes*



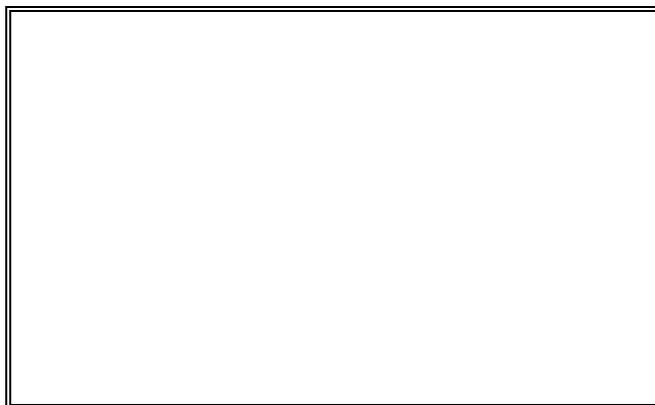
SECTION 6 December 2003 CONCEALED DEFECT PHOTOS



*Photo No 49*



*Photo No 50*



*Photo No 51*



## Section 7

381. **The formation of the specification/ schedule of works for the rectification and completion of works.**
382. **Background History;** upon termination of the builders contract (in August 2003), I am advised that the owner instructed the project architect to complete a specification \ Schedule of Works for both the defective or incomplete builders works, as known at the time, so that the works could be tendered out to a replacement contractor.
383. I was instructed to assist in the review and partial formation of this document, which significantly was completed prior to the completion of this expert report and also prior to the discovery in December 2003 of the substantial concealed structural defects and the issues relating to the Construction Certificate, as previously noted in **Section 5**.
384. I am advised that prior to this, the owner had instructed mechanical engineer G. Reed & Associates P/L to tender out the rectification of the defective A/C works.
385. I am advised that the owner in conjunction with the architect undertook research for a suitable replacement window type and to source various quotations from window manufacturers.
386. I am advised that the owner in conjunction with the architect undertook to source quotations from the various window manufacturers' preferred installation contractors.
387. I am advised that the owner chose to exclude all air conditioning rectification work, supply and installation of the replacement windows from the specification \ schedule of works, as the contract for these works were to be let separately. I am also advised that this was dealt with by Provisional Sums within the Schedule of Works.
388. I am advised that the owner chose to exclude all internal/ external painting, texture coatings and the removal/ reinstatement of external security roller shutters and electrical works from the specification \ schedule of works, as the contract for these works were to be let separately. I have reviewed these quotations which appear reasonable to me.
389. I assisted the owner and architect in finding two suitable specialist remedial building contractors for the tendering process.
390. I also assisted the owner and architect in finding some suitable window manufacturers and at least one preferred window installation contractor.
391. The architect produced a *Schedule of Building Works dated August 2003*, which I reviewed and made partial amendments to, prior to its completion and sending out to the various building contractors for tender. *Refer Anthony Oliver Affidavit* (dated 7.1.04) *Annexure No 24*.
392. It is my opinion that the subject schedule was substantially produced by the architect using his knowledge of defects as determined by;
- himself
  - my own findings
  - the findings of Phillips Building Consultants and Inspectors P/l in their report dated 17.7 & 19.7.02
  - the findings of structural engineers Romeika & Gatsos in their report dated 24.9.02
  - the findings of structural engineer Partridge Partners P/L in their report dated 26.6.03



393. I was subsequently advised by the owner that One Up Developments P/L were the successful tenderer based on their quotation dated 19.11.03 (Issue No 5 via BRM Sutherland) for the sum of **\$78,364.00**  
*Refer Annexure No 25.*

This contract quotation does not include;

- the additional variation works involved in opening up and rectifying the defective structural works (by the builder), discovered in December 2003
- the installation of a waterproof flashing beneath the main entry door threshold

All of these works are deemed to be variations to the contract by the new builder and as advised will be submitted as variation extras when fully determined.

394. *Refer Annexure No 3* the new builder (via BRM P/L) variation fee estimate letter dated 13.01.04

394A. I will not be in a position to review the reasonableness of the costs incurred by the new builder until such time as the works have been completed and the architect has made a determination pursuant to clause 12.6 of the building contract with the builder.



## Section 8

### 395. CONCLUSION

396. With respect to the builders works, based on what I have seen and discovered and given my building experience, it is my professional opinion that hardly one substantive 'as-built' element, (constructed by the builder), was executed properly or in accordance with good building practice and in some crucial instances (for example window installations) are in breach on the minimum requirements of the BCA, the contract specification and referenced Australian Standards.
397. Based on my more than 25 years experience in the construction industry, the standard of works (as executed by the builder) was one of the poorest I have ever witnessed.
398. In my considered opinion the amount paid to date (to the builder) for the standard of works received was excessive. This is evidenced by the various offers by the builder to rectify the substantially defective works such as the air conditioning system, window installations, external balcony decking, damaged, incomplete/defective guttering and access panel to guest W.C ceiling, which he never undertook. In addition there are significantly incomplete contract works and recently discovered concealed structural defects, which could have been avoided had the builder completed his obligation to have the works inspected by the Principal Certifying Authority, which he failed to do.
399. The conditions that the owners have had to endure since September 2001 have been intolerable including having to sleep on the floor for an extended period without effective air conditioning and could have been avoided had the 'Craftsmen' been a competent builder and genuinely willing to return to the property and both rectify the very substantially defective and incomplete works, which in my opinion were demonstrated to the builder, in a clear and cordial manner, both by myself and the owner using of the services of independent expert reports, all of which the builder was provided.
400. It is my opinion, the owner, in his requests of the builder was not unreasonable and has made every conceivable endeavour to attempt to reach an amicable outcome with the builder in very difficult circumstances. It appears to me that all of those attempts failed due to the builder's reluctance to return to site and to complete his contractual obligations pursuant to the building contract.



# Résumé of Mr. Dominic J Ogburn of Access Property Services P/L

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## Objective

***Professional Building Consultant & Construction Managers***

## Experience

**1991 – 2004**

Access Property Services P/L

Building Consultancy & Construction Management

### Building Consultancy

- \* Pre and post purchase building surveys of new and old, semi commercial and residential properties, including specializing in final building defect surveys on multi unit residential buildings and their common areas for Owner's corporations.
- \* Building diagnostics
- \* ACA Consumer representative committee member of A.S 3740 (wet area waterproofing)
- \* Expert witness and building dispute resolution
- \* Report submission and presentation on Sydney Aircraft Insulation pilot project to the Senate Select Committee for aircraft noise.
- \* Heritage surveys including SCEGGS Darlinghurst for H. Tanner & Ass
- \* Instrumental in the completion of the 2002 NSW Building Inquiry
- \* Act as construction manager on larger residential building renovation projects and in assisting owner builders in smaller similar projects
- \* Author of web based owner builder education course.
- \* Have assisted the NSW Office Of Fair Trading in revising and implementing 2003 new residential building contracts.
- \* Assist a variety of Architects in developing residential design projects and frequently take on their traditional superintendent role



### ***Some Projects Completed As Construction Manager For APS***

Scope of works determination, sourcing contractors, designers, budget provision, contract administration and programming for a variety of smaller and up market residential refurbishment's including;

- 4/4 Milsons Rd Cremorne contract value \$0.50 Mil 02'
- 16 - 20 Hereward St Maroubra (67 Units) Contract value \$1.5 Mil 97' 98'
- 4 Seaview Av Hardboard contract value \$0.40 Mil 99'
- 452 Glenmore Rd Paddington contract value \$0.25 Mil 99'
- 78 Adelaide St Woollahra contract value \$0.40 Mil 02'
- 52 Shellcove Rd neutral Bay contract value \$1.10 Mil 02'

### **Some Multi Unit Residential Buildings Inspected For Owners Corporations**

- Republic 2- Darlighthurst
- The Altair Kings -Cross
- The Mondrian - Alexandria
- Colgate Palmolive – Balmain
- Cape Cabarita – Breakfast Pt
- The Regis Towers – Sydney
- Top Of The Town - Darlighthurst

### **1980 –1991 Stuart Brothers Pty Ltd (*builders*)**

(Mar 80' - Aug 85') ***Trainee Supervisor, Q.S & Estimator***

(Aug 85' - Mar 91') ***Senior Construction Manager***

Formal work based training in quantity surveying and construction estimating

Total responsibility of letting and administering contracts

Construction programming and cost controlling and reporting

Variation compilation

Construction Litigation of a number of claims up to \$2Mil

Client/ architect liaison on both lump sum and cost plus contracts for commercial and residential projects

### ***Some Projects Completed As Construction Manager For Stuart Bros***

- \* The Wintergarden (Rose Bay) \$7.5Mil luxury residential development
- \* 50 Miller St Nth Sydney two stage complete refurbishment of 11 storey commercial building Contract value = \$11 Mil.
- \* The Glebe Estate D & C of No 22 dilapidated houses for the Dept Of Housing Contract value = 2.5Mil
- \* Perpetual Trustees Head Office Hunter St. Restoration and refurbishment Contract value \$0.85 Mil.
- \* Restoration of 652 - 662 George St The Rocks for Sydney Cove Redevelopment Authority Contract Value \$0.45 Mil
- \* Commonwealth Bank Refurbishment's incl development and implementation of their initial Auto Bank Service.
- \* Similar operation for State Bank ATM service



**Other Qualifications or Achievements**

1985 Dept Of Industrial Relations certificate for Construction Safety Training

1989 MBA Site Safety Committee Training Certificate.

1998 Accredited Mediator with DFT & LEADR

1985 Fully Licensed builder (Lic No89515C )

1996 Associate Member Of the Australian Institute Of Building

2002 ACA nominated consumer representative to Australian Standards for revisions to A.S 3740 1996 (wet area water proofing) current sitting member

2003 OH&S Induction Training Course (Green card)

2004 Author of "Your Home buying selling renovating building' (consumer advocacy book) publishers Allen & Unwin.

1979–1981 NSW Institute Of Technology

**Education**

B. Appld Science Building (part time) completed 3 years of 6 year course.

1981–1984 Sydney Technical College

- Completed and awarded Building Certificate (Revised Course).

**References**

Robert Pufflett of Flower & Samios (architects) Ph 9660 9977

Virginia Zanarini of V. Zanaini & Ass (architects) Ph 9389 7989

Ron Jarvin of Prentice Jarvin solicitors Ph 9368 7955

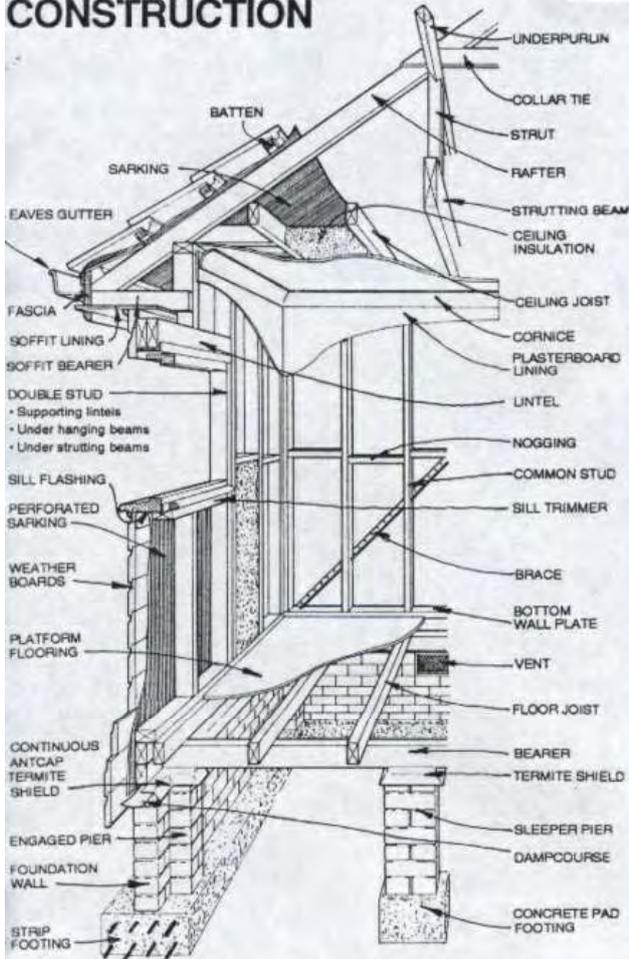
Mark Cahill (Barrister) Ph 9221 8216

Robert Newlinds (Barrister) Ph 9223 6279

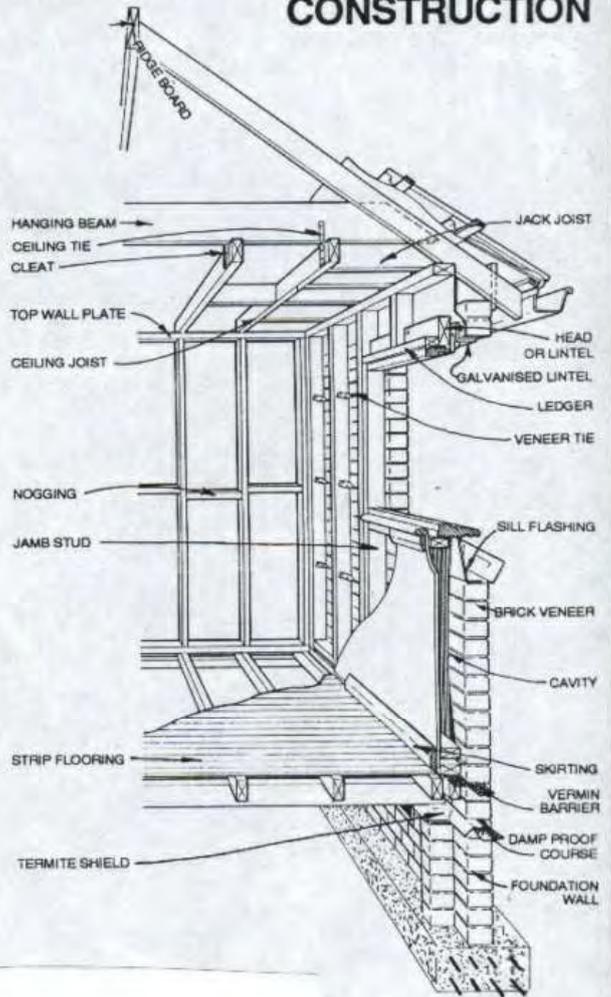


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