



# Thermal Timber Pest Inspection Report

Form: STPDR 1.5.7 – 4th May 2012

This Standard Timber Pest Detection Report (hereinafter called “the Report”) is issued subject to the Terms and Conditions of Inspection and Report set out in Clause A.1 of this document.



**14 Booraba Avenue, Lindfield West NSW 2070**



## General Details

### Client Details

**Client Name:** NOT DISCLOSED

**Client Phone:** NOT DISCLOSED

**Client Email:** NOT DISCLOSED

### Subject Property and General Items

**Subject Property Address:** 14 Booraba Avenue, Lindfield West NSW 2070

**Inspection Date and Time:** 02/09/2013 11:30

**Weather Conditions:** The weather was fine at the time of the inspection.

**Description of Property** The property is an extended single storey timber frame dwelling with a tiled roof. It is built on piers with bearers and joists system.

**Estimated Property Age** Approx. Over 50 years old.

### Accommodation

The occupied property has: 4 Bedrooms, Bathroom, En-suite, Kitchen, Living Area, Laundry and a locked up Garage.

### Inspector for Effective Building & Consultancy

**Thanh Cao** - Over 8 years in the Building industry, Qualifications include Diploma in Building Studies and Construction, Diploma in Quantity Surveying, Property Assessment Surveyor & Building Inspector for Department of Housing and Timber Pest Inspector.

**Mobile No.:** 0449 977 138 **Email:** [service@effectiveconsultancy.com.au](mailto:service@effectiveconsultancy.com.au)

### Report Provided by Effective Building & Consultancy

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**ABN:** 76 115 177 289

**ACN:** 115 177 289

**PLEASE READ THE TERMS AND CONDITIONS IN CLAUSE A.1 OF THIS DOCUMENT**

**SERVICE**

This Report must be read subject to the Terms and Conditions attached.

**PRE-ENGAGEMENT INSPECTION AGREEMENT** As requested and agreed with the Client, the service is a “Standard Timber Pest Detection Report”.

**PURPOSE** The purpose of this inspection is to assist the Client to identify and understand any Timber Pest issues observed at the time of inspection.

**SCOPE OF INSPECTION** This Report only deals with the detection or non-detection of Timber Pest Attack and Conditions Conducive to Timber Pest Attack discernable at the time of inspection. The inspection was limited to the Readily Accessible Areas of the Building & Site (see Note below) and was based on a visual examination of surface work (excluding furniture and stored items), and the carrying out of Tests.

**Note.** With strata and company title properties, the inspection was limited to the interior and the immediate exterior of the particular residence inspected. Common property was not inspected.

**ACCEPTANCE CRITERIA** The building being inspected was compared with a similar building. See Clause A.1 “Service – Acceptance Criteria” for further information.

# Standard Termite Detection Report

This standard Termite Detection Report (hereinafter called “the report”) is issued subject to the Scope, Limitations, Exclusions and Definitions of Inspection and Report set out in Clause A.1 of this document.

**PLEASE READ THE TERMS AND CONDITIONS IN CLAUSE A.1 OF THIS DOCUMENT**

## 1.0 Service Requested as agreed with the client:

- Option 1 - A STANDARD INSPECTION REPORT - Tests were carried out.
- Option 2- A SPECIAL-PURPOSE INSPECTION REPORT – Client requirements to be specified.
- Option 3 - A SUBTERRANEAN TERMITE MANAGEMENT PROPOSAL – In addition to Option 1.

SPECIAL CONDITIONS OR INSTRUCTIONS: **Include a THERMAL imaging inspection.**

## Results of Inspection

**IMPORTANT NOTE:** The client acknowledges that, unless stated otherwise, the Client as a matter of urgency should implement any recommendation or advice given in this Report.

## 2.0 ACCESSIBILITY See also Clause A.2

### 2.1 Readily Accessible Areas Inspected

The inspection covered the following Readily Accessible Areas including:

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> Building Interior | <input checked="" type="checkbox"/> Roof Exterior |
| <input checked="" type="checkbox"/> Building Exterior | <input checked="" type="checkbox"/> Roof Space    |
| <input checked="" type="checkbox"/> Sub-Floor Space   | <input checked="" type="checkbox"/> Outbuildings  |
| <input checked="" type="checkbox"/> The site.         |   |

Additional Comments

**2.2 Areas Not Inspected** - The inspection did not include areas which were not readily accessible, inaccessible or obstructed at the time of inspection. See also Clause A.1 - Limitation 2.

### 2.2.1 Strata or Company Title Properties

Was the inspection of a strata or company title property? **NO**

Was the inspection limited to assessing the interior and immediate exterior of a particular unit? **N/A**. If "YES" see NOTE below.

**NOTE.** Unless the common property is also inspected, this report is confined to the interior and immediate exterior of a unit dwelling only. This may be of limited value to the Client as it does not provide any authority that the unit and its associated premises is free from past, current and observable timber pest risks within the limits otherwise set out in this report.

In addition, the Client may have additional liability for Timber Pest Attack in the common property. This additional liability can only be addressed through the undertaking of a Special-Purpose Inspection Report which is adequately specified.

Additional Comments:

### 2.2.2 Obstructions

Were there any obstruction(s) that may conceal possible timber pest attack? **YES**

Additional Comments:

Parts of the roof timber due to insulation and method of construction allowing only a limited visual inspection.  
Internally by floor coverings and furniture.

### 2.2.3 Inaccessible Areas

Were there any normally accessible areas that did not permit entry? **NO**

Additional Comments:



**Photos for Obstructions**



### 2.3 Undetected Timber Pest Risk Assessment

Due to the level of accessibility for inspection including the presence of obstructions, the overall degree of risk of **undetected** Timber Pest Attack and Conditions Conducive to Timber Pest Attack were considered: **MODERATE-HIGH**

**RECOMMENDATION:** Where the risk is considered “*Moderate*” or “*Moderate-High*” or “*High*”, a further inspection is strongly recommended of areas that were not readily accessible, and of inaccessible or obstructed areas once access has been provided or the obstruction removed. This may require the moving, lifting or removal of obstructions such as floor coverings, furniture, stored items foliage and insulation. In some instances, it may also require the removal of ceiling and wall linings, and the cutting of traps and access holes. Seek further advice from your Consultant.

Additional Comments:

In my opinion, the susceptibility of the property to timber pests is considered to be MODERATE to HIGH due to evidence of a previous termite damage/activity was found at the rear timber fence and loose timber on the ground in the subfloor.

### 3.0 SIGNIFICANT ITEMS

The following items were reported on in accordance with the Scope of Inspection.

#### 3.1 TERMITES. See also Clause A.3 and Clause A.8.

The genres of species of dry wood or subterranean termites listed in below have the potential to cause significant structural damage. See also Clause A.1 - Limitations No 3 & No 5.

##### 3.1.1 Active (Live) Termites

Were live termites found? **NO**

Was a termite nest found? **NO**

Have any specimens been collected for the purpose of positive identification? **N/A**

The genus of species has been positively identified as:

- |  |   |
|--|---|
| <input type="checkbox"/> <i>Coptotermes</i>              | <input type="checkbox"/> <i>Schedorhinotermes</i>       |
| <input type="checkbox"/> <i>Nasutitermes exitiosus</i>   | <input type="checkbox"/> <i>Heterotermes ferox</i>      |
| <input type="checkbox"/> <i>Mastotermes darwiniensis</i> | <input type="checkbox"/> <i>Cryptotermes species</i>    |
| <input type="checkbox"/> other (explained below)         | <input type="checkbox"/> undetermined (explained below) |

Details - include location of live termites found and any recommendation for further expert advice

### 3.1.2 Subterranean Termite Management Proposal

A proposal in accordance with Australian Standard AS 3660.2 to treat a known infestation and/or help manage the risk of concealed subterranean termite access to buildings and structures.

Is a Subterranean Termite Management Proposal recommended? **YES**

Is this Consultant engaged to provide a management proposal? **NO**. If reply to this question is "YES" see **Note 1**. If reply to this question is "NO" see **Note 2**.

**NOTE 1** - If YES, in addition to this inspection report, a full written Subterranean Termite Management Proposal in accordance with Australian Standard AS 3660.2 must be delivered to the Client. See also Clause A.1 – Exclusion No.1.

**NOTE 2** - If this Consultant is not providing a management proposal, but a proposal is recommended above, then the Client should contact a licensed pest control operator in respect to obtaining a proposal without delay.

Additional Comments

### 3.1.3 Termite Workings and/or Damage

Was evidence of termite workings or damage found? **YES**

The extent of any visible damage appears: **LOCALISED**

Details - indicate the location of all accessible timbers and other materials showing signs of attack, and a description of any termite workings found.

Past termite damage/activity was found at the rear timber fence and loose timbers on the ground in the subfloor.

### RECOMMENDATION

Where evidence of damage to building timbers exists, competent advice (e.g. from a licensed and practicing building contractor) should be obtained to determine the extent of any structural damage and as to the need or otherwise for rectification or repair work. See also *Item 3.5 - Frequency of Future Inspections* recommendation.



**Photos for Termite Workings and/or Damage**



### 3.1.4 Previous Termite Management Program

Was evidence of a possible previous termite management program found? **UNDETERMINED**

NOTE 1. If "YES" provide details and the location of the possible previous termite management program below (including the location of any 'Termite Treatment Notice' affixed at the entrance to a crawl space or some other place where it was protected from damage, e.g. in the case of a slab-on-ground construction, in an external electrical meter box).

NOTE 2. See also Clause A.3 and Clause A.8.

Details:

### 3.1.5 Frequency of Future Inspections

Australian standard AS 3660 recognises that regular inspections will not prevent termite attack, but may help in the detection of termite activity. Early detection will allow remedial treatment to be commenced sooner and damage to be minimised.

The next inspection to help detect termite attack is recommended in **6 MONTHS**.

### 3.2 Chemical Delignification. *See also Clause A.4 and Clause A.8*

Was evidence of Chemical Delignification found? **NO**

The extent of any visible damage appears: **N/A**

Details - include location and any recommendation for further expert advice

### 3.3 Fungal Decay. *See also Clause A.5 and Clause A.8.*

Was evidence of fungal decay found? **YES**

The condition of the timber appears:

The extent of any visible damage appears:

Details - include the location and any recommendation for further expert advise)

Rear Pergola.

Timber decking and timber floors in the subfloor.



Photos for Fungal Decay



**3.4 Wood Borers. See also Clause A.6 and Clause A.8**

Was evidence of wood borers found? **NO**

The wood borer is believed to be:

*Lyctid Borer*  
 *Undetermined*

*Anobiid Borer*  
 *Not Applicable*

The extent of any visible damage appears: **N/A**

Details - include the location and any recommendation for further expert advise)

**3.5 Conditions Conducive to Timber Pest Attack See also Clause A.7 and Clause A.8.**

The Consultant sought evidence of noticeable building deficiencies or environmental factors that may contribute to the presence of timber pests. In respect of moisture management issues, the inspection included the potential for or presence of water or dampness in unintended locations.

**3.5.1 Lack of Adequate Sub-Floor Ventilation**

Was evidence of a lack of adequate ventilation found? **YES**

DETAILS (include the location and any recommendation for further expert advice e.g. from a licensed a building contractor):

Parts of subfloor area.

Photos for Lack of Adequate Sub-Floor Ventilation



### 3.5.2 The Presence of Excessive Moisture

Excessive moisture exists where timbers, soil or areas close thereby hold enough moisture to attract or support termite colony development, fungal growth and wood-decay.

Was evidence of the presence of excessive moisture found? **NO**

Was high moisture readings obtained using a moisture meter? **YES**.

Was evidence of mould growth found? **YES**. If YES see details and mould recommendations below.

DETAILS (include the location and any recommendation for further expert advice e.g. from a licensed a plumbing contractor):

High moisture readings were detected in the walls at various locations.

Moulds present on the surface of ceilings/walls to some of the rooms.

#### **MOULD RECOMMENDATION**

Where evidence of mould growth was noted above, there may be environmental, biological or health issues associated with this report. Any questions concerning such issues due to the presence of mould, the release of mould spores or concerning indoor air quality should be immediately directed to an appropriate qualified inspector. See also Clause A.1 – Limitation No 7.



## Photos for Presence of Excessive Moisture





### 3.5.3 Bridging or Breaching of Termite Barriers and Inspections Zones

'Bridging' is the spanning of a termite barrier or inspection zone so that the subterranean termites are provided with passage over or around that barrier. 'Breaching' is the making of a hole or gap in a termite barrier so that termites are provided with a passage through that barrier.

Was the finished ground or paving level above the adjacent internal floor level or damp-proof-course or obstructing any weep hole or vent face on external walls? **NO**. If "YES" or "undetermined" see details below, Clauses A.7 and A.8.

Was evidence of bridging or breaching including the condition insufficient slab edge exposure found?  
**N/A**

If "YES" or "undetermined" see details below, Clauses A.7 and A.8.

Include any visible evidence of bridging or breaching or slab edges obstructed by:

- |   |  |
|---|--|
| <input type="checkbox"/> Carports         | <input type="checkbox"/> Verandahs               |
| <input type="checkbox"/> Steps/Ramps      | <input type="checkbox"/> Trellis/Fences          |
| <input type="checkbox"/> Cladding         | <input type="checkbox"/> Pipework                |
| <input type="checkbox"/> Paths/Paving     | <input type="checkbox"/> Driveways               |
| <input type="checkbox"/> Earth            | <input type="checkbox"/> Landscaping             |
| <input type="checkbox"/> Additional Slabs | <input type="checkbox"/> Other (explained below) |

DETAILS: include the location and any recommendation for further expert advice, e.g. from a licensed building inspector:

**3.5.4 Untreated or Non-Durable Timber Used in a Hazardous Environment.** This condition may include, but is not limited to, earth-wood or damp masonry-wood contact.

Was evidence of untreated or non-durable timber used in a hazardous environment found? **NO**. If YES or undetermined see details below, Clauses A.7 and A.8.

DETAILS (include the location and any recommendation for further expert advice, e.g. from a licensed building contractor):

### 3.5.5 Other Conditions Conducive To Timber Pest Attack

For example: evidence of non-existent or defective termite shields installed to isolate piers; storage of timber and stored goods under/adjacent to the building; tree stumps and vegetation in subfloor spaces; cracks in concrete slabs or foundations; defective flashings, downpipes and guttering; etc.

Was evidence of any other condition conducive to timber pest attack found? **YES**

DETAILS (include the location and any recommendation for further expert advice, e.g. from a licensed building contractor):

Remove unnecessary excess timbers on the grounds in the sub-floor. Timbers such as this are highly attractive to termite attack.

We strongly recommend the removal of timber used as garden borders. Timbers such as this are highly attractive to termite attack and usually hidden behind the soil. Attention is required.

### 3.6 Major Safety Hazards

For example, the imminent collapse of a structural member and other building elements made unsafe by Timber Pest attack.

Was evidence of any item or matter (within the Consultant's expertise) that may constitute a present or imminent major safety hazard observed? **NO**

Details - including the location and any recommendation for further expert advise .e.g. from a licensed building contractor

-

**Photos for Conditions Conducive to Termite Attack**



#### **4. CONCLUSION**

The following Timber Pest remediation actions are recommended:

1. Treatment of Timber Pest Attack is required: **YES**
2. In addition to this Report a written subterranean termite management proposal to help manage the risk of future subterranean termite access to buildings and structures is: **RECOMMENDED**
3. Removal of Conditions Conducive to Timber Pest Attack is necessary: **YES**
4. Due to the susceptibility of the property to sustaining Timber Pest Attack the next inspection is recommended in: **6 MONTHS**

**Your attention is drawn to the advice contained in the Terms & Conditions of the Report including any special conditions or instructions that need be considered in relation to this Report.**

#### **5. RISK MANAGEMENT OPTIONS *See also Clause A.8***

#### **6. ADDITIONAL COMMENTS**

Please note: Termite activity signed at timber fence and loose timbers in the subfloor, it is likely that the area affected by previous termite infestation can be extensive and there is likely to be some concealed damages to timber wall framing. As most of the timber structures are concealed, invasive inspection (included removal of part insulation/skirting/wall boards to reveal concealed timber framing) will be required to determine extent of termite structural damages and repairs if any.

#### **CERTIFICATION**

This document certifies that the property described in this Report has been inspected by the Termite Detection Consultant in accordance with the level of service requested by the Client and the Terms and Conditions set out in Clause A.1 of this Report, and in accordance with the current edition of the Report Systems Australia (RSA) Handbook *Timber Pest Detection Reports 'Uniform Inspection Guidelines for Timber Pest Detection Consultants'*.

# Thermal Imaging Report

## Summary

There is no evidence of live termite activity discovered with a thermal image camera inspection throughout the dwelling at 14 Booraba Avenue,, Lindfield West, NSW, 2070. This inspection was carried out with a full visual termite inspection.

Summary information is supplied to allow a quick and superficial overview of the inspection results. Summary information is NOT the Report and cannot be relied upon on its own.

Summaries must be read in conjunction with the full Report and not in isolation from the report. If there should happen to be any discrepancy between anything in the Report and the Summary, the information in the Report shall override that in the Summary.

## Equipment

The inspection was carried out using a Bullard T3MAX thermal image camera.



## Contact

Please feel free to contact the inspector Thanh Cao, who carried out this inspection. His contact details are: **mobile** 0449 977 138 **office** 1300 765 556. Often it is very difficult to fully explain situations, problems, access difficulties, building faults or their importance in a manner that is readily understandable by the reader.

Should you have any difficulty in understanding anything contained in this report then you should immediately contact the inspector and have the matter explained to you. If you have any questions at all or require any clarification then contact the inspector prior to acting on this report.

To discuss invoicing or other matters, please call our office on the details listed:

**t:** 1300 765 556 | **f:** 02 8088 4396

**Email:** [service@effectiveconsultancy.com.au](mailto:service@effectiveconsultancy.com.au)

## The Scope

The purpose of this report is to identify live termite activity to the dwelling by means of the use of a thermal imaging camera (Bullard T3MAX).

### **Important Limitations of Thermal Imaging**

The thermal image can be obstructed by various materials within a building and can also indicate a thermal reaction to many objects other than termites.

Thermal imaging will not generally indicate non-active termite damage.

The equipment relies on the heat generated by colonies of live termites and may not expose very minor activity of limited numbers of termites.

The equipment requires interpretation of the image by the operator to determine if any heat source is termite activity or another heat source, such as electrical equipment or hot water.

### **Restrictions to the Inspection**

There were some minor impediments to the inspection such as furniture, but generally a full thermal inspection was carried out.

### **The Result**

During the inspection there was no thermal evidence found of active termites.



Photos for Thermal Imaging Option





## A.1 TERMS AND CONDITIONS

### SERVICE

As requested by the Client, the inspection carried out by the Timber Pest Detection Consultant ("the Consultant") was a "Pre-Purchase Standard Timber Pest Detection Report".

**PURPOSE** The purpose of this inspection is to assist the Client to identify and understand any Timber Pest issues observed at the time of inspection.

**SCOPE OF INSPECTION** This Report only deals with the detection or non-detection of Timber Pest Attack and Conditions Conducive to Timber Pest Attack discernible at the time of inspection. The inspection was limited to the Readily Accessible Areas of the Building & Site (see Note below) and was based on a visual examination of surface work (excluding furniture and stored items), and the carrying out of Tests.

**Note.** With strata and company title properties, the inspection was limited to the interior and the immediate exterior of the particular residence inspected. Common property was not inspected.

Unless noted in "Special Conditions or Instructions", this Report assumes that the existing use of the building will continue.

This Report only records the observations and conclusions of the Consultant about the readily observable state of the property at the time of inspection. This Report therefore cannot deal with:

- (a) possible concealment of defects, including but not limited to, defects concealed by lack of accessibility, obstructions such as furniture, wall linings and floor coverings, or by applied finishes such as render and paint; and
- (b) undetectable or latent defects, including but not limited to, defects that may not be apparent at the time of inspection due to seasonal changes, recent or prevailing weather conditions, and whether or not services have been used some time prior to the inspection being carried out.

These matters outlined above in (a) & (b) are excluded from consideration in this Report.

If the Client has any doubt about the purpose, scope and acceptance criteria on which this Report is to be based please discuss your concerns with the Consultant before ordering the Report or on receipt of this Report.

The Client acknowledges that, unless stated otherwise, the Client as a matter of urgency should implement any recommendation or advice given in this Report.

### LIMITATIONS

The Client acknowledges:

1. This Report does not include the inspection and assessment of matters outside the scope of the requested inspection and report.

2. The inspection only covered the Readily Accessible Areas of the Building and Site. The inspection did not include areas which were inaccessible, not readily accessible or obstructed at the time of inspection. Obstructions are defined as any condition or physical limitation which inhibits or prevents inspection and may include – but are not limited to – roofing, fixed ceilings, wall linings, floor coverings, fixtures, fittings, furniture, clothes, stored articles/materials, thermal insulation, sarking, pipe/duct work, builder's debris, vegetation, pavements or earth.

3. The detection of drywood termites may be extremely difficult due to the small size of the colonies. No warranty of absence of these termites is given.

4. European House Borer (*Hylotrupes bajulus*) attack is difficult to detect in the early stages of infestation as the galleries of boring larvae rarely break through the affected timber surface. No warranty of absence of these borers is given. Regular inspections including the carrying out of appropriate tests are required to help monitor susceptible timbers.

5. This is not a structural damage report. Neither is this a warranty as to the absence of Timber Pest Attack.

6. If the inspection was limited to any particular type(s) of timber pest (e.g. subterranean termites), then this would be the subject of a Special-Purpose Inspection Report, which is adequately specified.

7. This Report does not cover or deal with environmental risk assessment or biological risks not associated with Timber Pests (e.g. toxic mould) or occupational, health or safety issues. Such advice may be the subject of a Special-Purpose Inspection Report which is adequately specified and must be undertaken by an appropriately qualified inspector. The choice of such inspector is a matter for the Client.

8. This Report has been produced for the use of the Client. The Consultant or their firm or company are not liable for any reliance placed on this report by any third party.

## EXCLUSIONS

The Client acknowledges:

1. This Report does not deal with any timber pest preventative or treatment measures, or provide costs for the control, rectification or prevention of attack by timber pests. However, this additional information or advice may be the subject of a timber pest management proposal which is adequately specified.

## DEFINITIONS

**Timber Pest Attack** means Timber Pest Activity and/or Timber Pest Damage.

**Timber Pest Activity** means telltale signs associated with 'active' (live) and/or 'inactive' (absence of live) Timber Pests at the time of inspection.

**Timber Pest Damage** means noticeable impairments to the integrity of timber and other susceptible materials resulting from attack by Timber Pests.

**Major Safety Hazard** means any item that may constitute an immediate or imminent risk to life, health or property resulting directly from Timber Pest Attack. Occupational, health and safety or any other consequence of these hazards has not been assessed.

**Conditions Conducive to Timber Pest Attack** means noticeable building deficiencies or environmental factors that may contribute to the presence of Timber Pests.

**Readily Accessible Areas** means areas which can be easily and safely inspected without injury to person or property, are up to 3.6 metres above ground or floor levels, in roof spaces where the minimum area of accessibility is not less than 600 mm high by 600 mm wide and subfloor spaces where the minimum area of accessibility is not less than 400 mm high by 600 mm wide, providing the spaces or areas permit entry. The term 'readily accessible' also includes:

(a) accessible subfloor areas on a sloping site where the minimum clearance is not less than 150 mm high, provided that the areas is not more than 2 metres from a point with conforming clearance (i.e. 400 mm high by 600 mm wide); and

(b) areas at the eaves of accessible roof spaces that are within the consultant's unobstructed line of sight and within arm's length from a point with conforming clearance (i.e. 600 mm high by 600 mm wide).

**Timber Pest Detection Consultant** means a person who meets the minimum skills requirement set out in the current Australian Standard AS 4349.3 Inspections of Buildings. Part 3: Timber Pest Inspection Reports or state/territory legislation requirements beyond this Standard, where applicable.

**Building and Site** means the main building (or main buildings in the case of a building complex) and all timber structures (such as outbuildings, landscaping, retaining walls, fences, bridges, trees and stumps with a diameter greater than 100 mm and timber embedded in soil) and the land within the property boundaries up to a distance of 50 metres from the main building(s).

**Timber Pests** means one or more of the following wood destroying agents which attack timber in service and affect its structural properties:

(a) *Chemical Delignification* - the breakdown of timber through chemical action.

(b) *Fungal Decay* - the microbiological degradation of timber caused by soft rot fungi and decay fungi, but does not include mould, which is a type of fungus that does not structurally damage wood.

(c) *Wood Borers* - wood destroying insects belonging to the order 'Coleoptera' which commonly attack seasoned timber.

(d) *Termites* - wood destroying insects belonging to the order 'Isoptera' which commonly attack seasoned timber.

**Tests** means additional attention to the visual examination was given to those accessible areas which the consultant's experience has shown to be particularly susceptible to attack by Timber Pests. Instrument Testing of those areas and other visible accessible timbers/materials/areas showing evidence of attack was performed.

**Instrument Testing** means where appropriate the carrying out of Tests using the following techniques and instruments:

(a) *electronic moisture detecting meter* - an instrument used for assessing the moisture content of building elements;

(b) *stethoscope* - an instrument used to hear sounds made by termites within building elements;

(c) *probing* - a technique where timber and other materials/areas are penetrated with a sharp instrument (e.g. bradawl or pocket knife), but does not include probing of decorative timbers or finishes, or the drilling of timber and trees; and

(d) *sounding* - a technique where timber is tapped with a solid object.

## A.2 ACCESSIBILITY

Unless specified in writing, the inspection only covered the Readily Accessible Areas of the Building and Site.

The inspection did not include areas which were inaccessible, not readily accessible or obstructed at the time of inspection. Areas which are not normally accessible were not inspected and include - but not limited to – inside walls, the interior of a flat roof or beneath a suspended floor filled with earth.

**Building Interior** The Consultant did not move or remove any ceilings, wall coverings, flooring, floor coverings (including carpeting), furnishing, equipment, appliances, pictures or other household goods. In an occupied property, furnishings or household items may be concealing evidence of timber pest attack which may only be revealed when the items are moved or removed.

**Building Exterior, Roof Exterior and Site** The Consultant did not move or remove any obstructions such as wall cladding, awnings, trellis, earth, plants, bushes, foliage, stored materials, debris or rubbish. Due to the 'secretive' nature of timber pests, it is possible that hidden damage may exist in concealed areas, e.g. wall framing. Damage may only be found when the obstruction is removed. In the case of buildings constructed on concrete slabs, if the edge of the slab or any weephole or vent at the base of external walls is concealed by pavements, gardens, lawns or landscaping then it is possible for termites to gain undetected entry into the building. The building of gardens or planting of shrubs close to the perimeter of the building can promote and conceal termite entry points. The storage of cellulose materials such as building materials and firewood in close proximity to the ground or building may encourage termite activity.

**Roof Space** Obstructions such as roofing, stored articles, thermal insulation, sarking and pipe/duct work may be concealing evidence of timber pest attack which may only be revealed when the obstructions are moved or removed. Also, bodily access should be provided to the interior of all accessible roof spaces. In accordance with Australian Standard ASS 4349 the minimum requirement is a 400mm by 500 mm access manhole.

**Subfloor Space** Subfloor areas should be kept free from all vegetation (including tree stumps) and other cellulose material which may encourage timber pest activity. Also, storage of materials in subfloor areas is not recommended as it reduces ventilation and makes inspection difficult. Obstructions may be concealing evidence of timber pest attack which may only be revealed when the obstructions are moved or removed. Bodily access should be provided to all accessible subfloor areas with the minimum requirement being a 500 mm x 400 mm access manhole. In the case of suspended floors, if the clearance between the ground and structural components is less than 400 mm, then the ground should be excavated to provide the required clearance, subject to maintaining adequate drainage and support to footings. If the subfloor has been sprayed for subterranean termites or if the area is susceptible to mould growth, appropriate health precautions must be followed before entering the area. Also, special care should be taken not to disturb the treated soil. Always seek further advice from the Consultant.

## A.3 TERMITES

**General Description of Attack** Timber hollowed beneath; some cracking at the surface of timber; earthen channels present; or pale faecal spots present.

**IMPORTANT NOTE.** As a delay may exist between the time of an attack and the appearance of telltale signs associated with the attack, it is possible that termite activity and damage exists though not discernible at the time of inspection.

**Treatment** After discovery of an active infestation, it is imperative that the species of termite is accurately identified before costly (and sometimes unnecessary or inappropriate) methods of treatment are initiated. Only economically important species which are known to attack timber structures should be treated.

In the case of economically important species, it is important that the termite workings are not further disturbed until the proposed method of control has been determined by a licensed pest control operator. Premature attempts to repair or replace infested timber may cause the termites to withdraw from the area temporarily, thereby hindering effective treatment. Any repair or replacement of infested timber should be carried out after the appropriate treatment has been completed.

Where evidence of active termites is detected within a building or within 50 metres of any building, it must always be assumed that the termites may also be active in areas of the property not inspected. Accordingly, where the termites are known to be of economic significance, a further (more invasive) inspection is strongly recommended of areas which were inaccessible, not readily accessible or obstructed at the time of inspection.

**Termite Workings and Damage** Where evidence of damage to building timbers exists, competent advice (e.g. from a licensed or registered building contractor) should be obtained to determine the extent of any structural damage and as to the need or otherwise for rectification or repair work. Where evidence of inactive termites is located within the building, it is possible that termites are still active in areas of the property not inspected and they may continue to cause damage. A further more invasive inspection is strongly recommended of areas which were inaccessible, not readily accessible or obstructed at the time of inspection.

Where evidence of an inactive termite infestation exists, it is not possible, without benefit of further investigation and inspections over a period of time, to ascertain whether any infestation is active or inactive. Continued, regular, inspections are essential.

Where evidence of termite attack exists to any trees or tree stumps a more conclusive search should be undertaken. This may require the tree or stump to be drilled to determine the existence of a termite nest. In addition, the soundness and stability of any standing trees identified as being affected by termite attack should be confirmed. Always seek further advice from the Consultant.

**Previous Treatments** Where evidence of a possible termite treatment was located, the Client should obtain and keep on file all relevant documents pertaining to the extent of the treatment, any service warranties and advice in regard to the building owner's obligation to maintain the treatment and/or barrier. If evidence of a previous treatment of termite infestation is noted, and appropriate documentation is not available, the Client must assume that the termite infestation may still be active in areas of the property not inspected. Accordingly, a re-treatment may be required. Always seek further advice from the Consultant.

**Frequency of Future Inspections** Australian Standard AS 3660 recognises that regular inspections will not prevent termite attack, but may help in the detection of termite activity. Early detection will allow remedial treatment to be commenced sooner and damage to be minimised.

Inspections at intervals not exceeding twelve (12) months are recommended. Where the termite risk is high or the building type susceptible to termite attack, more frequent inspections (3-6 months) should be undertaken.

## A.4 CHEMICAL DELIGNIFICATION

**General Description of Attack** Surface of timber appears very hairy; and wood and 'hairs' separate.

**Economic Significance** Chemical Delignification of wood in service is only rarely encountered and then only in certain areas. Small dimensional timber members such as roof tiling battens may collapse when the wood becomes defibrated. However, in large dimensional timber members such as rafters, bearers and joists, delignification takes many years to affect the strength of timber to the point of collapse.

Where evidence of Chemical Delignification exists, competent advice (e.g. from a licensed or registered building contractor) should be sought to determine the extent of any structural damage, and as to the need or otherwise for rectification or repair work.

## A.5 FUNGAL DECAY

**General Description of Attack** *Decaying* wood contains sufficient moisture to retain its original shape and may have sufficient strength to withstand normal loads. In contrast *decayed* wood is reduced both in moisture content and size as indicated by cracking either along or across the grain or fibres coming apart in a stringy manner. *Decayed* wood will have undergone considerable strength reduction.

**Economic Significance** Fungal decay can cause at one extreme, structural failure of the affected timber, and at the other purely superficial surface damage. The most critical determination is that of which timber is affected and *decaying*, because decay will most likely spread (unless sources of moisture are quickly removed). Affected and *decayed* timber may warrant timber replacement, but the rot should not spread unless a new moisture source becomes available in that area.

Where evidence of *decayed* timber exists, competent advice (e.g. from a licensed or registered building contractor) should be sought to determine the extent of any structural damage, and as to the need or otherwise for rectification or repair work. It is important to correct any condition conducive to attack prior to replacing decayed wood.

Where evidence of *decaying* timber exists, competent advice (e.g. from a licensed or registered building contractor) should be sought to remove the condition(s) conducive to attack, and to determine the extent of any structural damage, and as to the need or otherwise for rectification or repair work.

Where the full extent of damage or the overall condition of the timber is *undetermined* a further inspection is strongly recommended by a competent person (e.g. from a licensed or registered building contractor). This may require monitoring of the timber over a period of time and include the assessment of conditions conducive to attack in different weather conditions (e.g. to determine the adequacy of existing drainage).

**Management Program** Remove any conditions conducive to attack (e.g. lack of ventilation or the presence of excessive moisture). Regular inspections are recommended at intervals not exceeding 12 months. Always seek further advice from the Consultant.

## A.6 WOOD BORERS

**General Description of Attack** As the attack proceeds, borer larvae eat through the wood leaving a dust called 'frass'. Ejection of the frass occurs through the adult beetles flight (exit) holes, and it is usually present beneath any timber that has been attacked. The presence of frass however, does not indicate whether the attack is active or not. Borer larvae cannot be sighted unless the susceptible timber is broken open.

**IMPORTANT NOTE:** As a delay may exist between the time of an attack and the appearance of telltale signs associated with the attack, it is possible that borer activity and damage exists though not discernible at the time of inspection.

**Economic Significance** Evidence of borer activity is rarely cause for alarm, but rather for careful consideration of three main points, namely the identification of the particular borer responsible, whether the infestation is still active, and the extent of the damage. Full consideration should be given to each of these items before any action is taken.

The following wood borers cause damage most frequently encountered by building owners.

**The Lyctid Borer** The most common lyctid borer in Australia is *Lyctus brunneus* (powder post beetle). Attack usually takes place during the first six to twelve months of the service life of timber. However, the powder post beetle is not considered a significant pest of timber and treatment of infestation is not usually required. As only the sapwood of certain hardwoods is destroyed, larger-dimensional timbers (such as rafters, bearers and joists) in a building are seldom weakened significantly to cause collapse. In small-dimensional timbers (such as tiling and ceiling battens) the sapwood may be extensive, and its destruction may cause collapse. This may require the support or replacement of the affected battens. Competent advice (e.g. from a licenses or registered building contractor) should be sought to determine the extent of any structural damage, and as to the need or otherwise for rectification or repair work.

**The Anobiid Borer** There are many different species of Anobiid borer, the most frequently encountered being *Anobium punctatum* (furniture beetle) and *Calymmaderus incisus* (Queensland pine beetle). Attack mainly occurs to softwoods especially pine timbers such as floorboards that have been in service for at least ten years. Should any structural timbers be attacked by Anobiid borers it is often difficult to determine what extent the borer damage has weakened such timbers and replacement is often the only way of ensuring safety from collapse.

In the case of **Anobiid borers**, once an attack is initiated it is unlikely to cease or die out of its own accord without some sort of eradication treatment. Therefore, unless proof of treatment is provided, evidence of an attack must always be considered active. Although a chemical treatment is an option, replacement of infested timbers with non-susceptible, or treated timber, is the most effective method of treatment. Before any option is considered, competent advice (e.g. from a licensed building contractor) should be sought to determine the extent of any structural damage, and as to the need or otherwise for rectification or repair work.

**Other Borers** A further (more invasive) investigation is strongly recommended to determine whether infestation is still active and to positively identify the borer species responsible for the attack. Always seek further advice from the Consultant.

**Management Program** Wherever practical, remove any conditions conducive to attack (e.g. Anobium borer thrives in badly ventilated subfloor areas). Regular inspections are recommended at intervals not exceeding 12 months. Always seek further advice from the Consultant.



## A.7 CONDITIONS CONDUCIVE TO TIMBER PEST ATTACK

**Lack of Adequate Subfloor Ventilation** Inadequate ventilation provides a condition suitable for timber pest infestation. For example, subterranean termites thrive in damp humid conditions typical of those provided in a poorly ventilated subfloor space. Where evidence of a lack of adequate ventilation has been identified in the report, the Client should seek competent advice (e.g. from a licensed or registered building contractor) in regard to upgrading ventilation.

**The Presence of Excessive Moisture** Ground levels around the building should be maintained in such a way to minimise water entering under the building. Also the ground surface in subfloor areas should be kept graded to ensure that moisture does not pond or accumulate in any area. Where necessary, sub-surface drains should be installed and maintained to assist with drainage around and under the building. Likewise, the presence of excessive moisture can often be directly related to ventilation limitations and the resultant high humidity.

Also, plumbing oversights and defects such as a leaking drain or tap will provide a microclimate conducive to timber pest attack.

Where necessary, the Client should seek competent advice (e.g. from a licensed or registered plumbing contractor) to determine the adequacy of existing drainage and remove any conditions conducive to the presence of excessive moisture.

The building may need to be monitored over a period of time to detect or confirm a damp problem. The presence of dampness (including moisture) is not always consistent as the prevailing and recent weather conditions at the time an inspection is carried out may affect the detection of damp problems. Importantly, precipitation at or near the time of inspection does not necessarily guarantee that a damp problem will automatically be evident due to such circumstances as prevailing wind conditions or intensity of rainfall. The absence of any dampness at the time of inspection does not necessarily mean the building will not experience some damp problems in other weather conditions. Likewise whether or not services have been used for some time prior to an inspection being carried out will affect the detection of dampness.

**Bridging or Breaching of Termite Barriers and Inspection Zones** Physical and/or chemical barrier systems are installed to impede concealed subterranean termite entry into buildings. However, termites may easily enter the building if the barrier is bridged or breached.

With a concrete slab building it is essential that the edge of the slab be permanently exposed. An inspection zone of at least 75 mm should be maintained so that termites are forced into the open where they can be detected more readily during regular inspections. In the case of physical sheet material barriers, a minimum inspection zone of 75 mm should be maintained from the sheet material to the finished ground. Importantly, the edge of the slab or sheet material should not be rendered, tiled, clad or concealed by flashings, adjoining structures, paving, soil, turf or landscaping.

Where perimeter termite barriers have been installed, the building owner should ensure that the integrity of the barrier remains intact and that the inspection of possible termite entry points is not impaired. This is especially important where an exposed slab edge is used as an inspection zone around the building (if the edge of the slab or any weepholes at the base of external walls are concealed by pavements, gardens, lawns or landscaping then it is possible for termites to gain undetected entry).

Also, bridging often occurs when items such as attachments to buildings allow termites to gain access to the building over or around a termite barrier. Where attachments to buildings such as steps are not provided with a termite barrier or cannot be easily inspected, they should be separated by a clear gap of at least 25 mm from the main structure. Where it is not possible to separate attachments from the main building, regular inspections of these areas should be undertaken.

In addition, termite barriers are often breached by the installation of services. Any disturbance of the barrier should be promptly repaired.

Where evidence of bridging or breaching exists, to minimise risk of infestation seek further advice from the Consultant.

**Untreated or Non-Durable Timber Used in a Hazardous Environment** To reduce the risk of timber pest attack, it is essential that timber used in a hazardous environment (e.g. in direct contact with the ground or damp masonry) is of sufficient durability and/or is adequately preservative treated. Where evidence of this condition exists, the Client should seek competent advice (e.g. from a licensed or registered building contractor) in regard to the need or otherwise for rectification or repair work.

**Other Conditions Conducive to Timber Pest Attack** If the cause or solution to a problem is not obvious, the Client should seek competent advice (e.g. from a licensed or registered building contractor) in regard to removing any conducive condition.

## **A.8 RISK MANAGEMENT OPTIONS**

To help protect against financial loss, it is essential that the building owner immediately control or rectify any evidence of destructive timber pest activity or damage identified in this inspection report. The Client should further investigate any high risk area where access was not gained. It is strongly advised that appropriate steps be taken to remove, rectify or monitor any evidence of conditions conducive to timber pest attack.

To help minimise the risk of any future loss, the Client should consider whether the following options to further protect their investment against timber pest infestation are appropriate for their circumstances:

Undertake thorough regular inspections at intervals not exceeding twelve months or more frequent inspections where the risk of timber pest attack is high or the building type is susceptible to attack. To further reduce the risk of subterranean termite attack implement a management program in accordance with Australian Standard AS 3660. This may include the installation of a monitoring and/or baiting system, or chemical and/or physical barrier. However, AS 3660 stresses that subterranean termites can bridge or breach barrier systems and inspection zones and that thorough regular inspections of the building are necessary.

**If the Client has any queries or concerns regarding this Report, or the Client requires further information on a risk management program, please do not hesitate to contact the person who carried out this Report.**