SUBMISSION TO THE AUSTRALIAN BUILDING CODES BOARD (ABCB)

PRELIMINARY IMPACT ASSESSMENT IN RELATION TO THE BCA & THE TERMITE MANAGEMENT STANDARDS (AS 3660.1 & AS 3660.3)

(AS REQUESTED BY THE GENERAL MANAGER OF THE ABCB, MR. IVAN DONALDSON)

BACKGROUND

The Termite Action Group (TAG) has been assisting Consumers who have had problems with Termite Management since August 1999 when TAG was formed in response to the termite problems being experienced by residents of the Brisbane suburb of Forest Lake.

The Group Co-ordinator of TAG and author of this submission (Mr. Andrew Campbell) has relentlessly pursued these problems that are being experienced by the wider Australian community since the discontinuance of the highly persistent and effective cyclodiene (organochlorine chemistries) insecticides from 30th of June, 1995.

These organochlorine chemistries included Aldrin, Dieldrin, Chlordane and Heptachlor amongst others, and were high vapour pressure chemistries that provided long-term proactive efficacy against subterranean termite ingress into building structures and, in fact, allowed for the provision of 'slab-on-ground' methodology in building construction.

The Northern Territory should be applauded for the stance it took by providing a building note **(See Attached Building Note for the NT)** which applied the mowing strip to assist termite management systems. This was not a perfect solution, but did attempt to address some of the inadequacies inclusive of the provision of finished ground height to delineate an inspection zone. The 'concrete capping strip', as applied in Queensland to chemical systems only, was an aberration of this concept that fails from the outset by counteracting chemical systems as a 'bridging' agent.

The discontinuance of the low-cost effective organochlorine chemistries was ill-considered in relation to a replacement technology that could achieve a similar degree of termite management. The organophosphate chemistry (Chlorpyrifos) and synthetic pyrethroid chemistry (Bifenthrin) replacements for organochlorine chemistries were low vapour pressure alternatives that were not nearly as persistent or effective chemical termiticides as their high vapour pressure predecessors.

Application rates for these replacement technologies have failed for a multitude of reasons that include, but are not limited to, inconsistent applications with regular occurrences of both under-spraying and over-spraying of these chemical replacements. These commonplace practises have caused many soil-borne termiticide treatments to be proven totally ineffective as termite management systems.

The application of termiticides through reticulation systems has also provided less than satisfactory applications that generally fail to perform to an appropriate level. The 'Christmas Tree' effect, along with 'stripping' of the active constituent, and the many documented problems that relate to alkalinity, microbial activity, sunlight, moisture retention, moisture depletion, soil movement, etc. all relate to the failings of these systems.

The Australian Pesticide & Veterinary Medicines Authority (APVMA), when it was previously known as the National Registration Authority (NRA), put in place a user agreement system that was supposed to audit the movement and placement of termiticides used in pre-construction termite management, and act as a means of 'checks and balances' on chemical termiticides. The APVMA responsibility continued up until termiticides were purchased and passed over the counter at a retail outlet where State authorities then had the continuing responsibility for the termiticides and the subsequent applications thereof.

This means of audit was broadly understood to be the "User Agreement Returns System" which, despite a wealth of evidence as to the total demise of the system, continues to exist with few, if any, returns being furnished by participants. The APVMA continue to advise that this system of audit remains in place despite the abundance of evidence to the contrary that clearly demonstrates this is most certainly not the case. This system, has

indeed, comprehensively failed as a means of providing a 'checks and balances' audit of chemical termiticide use.

What provides further testament to this situation is the rapid growth of the post-construction area of the termite management industry which is presently burgeoning at unprecedented rates. The abject failure of a multitude of pre-construction methodologies that were promoted as 'termite protection', but were unable to provide any real defence against termites, continues to fuel this growing problem. The degree of failures is also recorded by current affairs programs on television and newspaper articles that have recorded the multitude of problems that homeowners have experienced in relation to termites.

The documentation of these problems has required that the author of this document travel extensively throughout Australia so as to study and review construction methodology, termite entomology and the many varied forms of management systems and products utilised throughout Australia and the world. It has also required the author of this document to have a full understanding of the regulatory processes, testing protocols and the many and varied aspects of a multitude of institutions, authorities and government agencies involved in construction and termite management.

The Australian Environmental Pest Managers' Association (AEPMA), in recognising the qualifications of the author, subsequently engaged TAG to evaluate many of the termite management products and systems in the market place. This study exposed several major deficiencies in the methodologies that were employed in the market place and also clearly demonstrated that the Standard (AS 3660.1 & AS 3660.3) by which these products were evaluated was flawed from the outset.

In January 2007, TAG provided the ABCB with a "Proposal For Change" (PFC) document and subsequently presented a power-point presentation to the ABCB National Technical Summit in Hahndorf South Australia on matters of concern relating to key elements of the PFC document.
(See Attached PFC Document)

It should be noted that the power-point presentation provided to the ABCB National Technical Summit was extremely controversial and addressed several major issues that related to the current regulatory and policy settings of both the BCA and the relevant Standards. There were absolutely no

questions from the floor, and the contents of the "PFC" remain unchallenged despite the gravity of the issues therein. The written advice provided by the ABCB was that TAG should approach Standards Australia on these matters, this being despite the inalienable fact that several matters raised in the "PFC" pertained directly to provisions in the Building Code of Australia (BCA).
(See Attached ABCB Letter)

The major problem is that no termite management system currently used in the preconstruction market is capable of providing a satisfactory level of protection that would be able to provide any comfort to an Australian Homeowner. Furthermore, hundreds of thousands of Australian homes are entirely at risk because of misleading representations have been made that understate the 'level of risk', whilst overstating the level of 'protection' provided by many of these products and systems. Many systems and products that function as termite monitoring systems are improperly represented to the Australian homeowner as being termite barriers.

This concern is highlighted by the figures provided by the Archicentre in relation to a five year cyclical period which assesses the current post-construction termite management problem as costing Australian home owners $910,000,000-00 per annum in treatment and repairs. I am advised by Archicentre that these figures are currently under review and that there is a significant increase that will be noted in their latest assessment.
(See Attached Archicentre Document)

This figure will continue to increase despite many government agencies such as the Dept. of Fair Trading in NSW and Victoria, and also the Building Services Authority in Queensland, refusing to accept the validity of these studies. There appears to be an unhelpful attitude amongst these bureaucracies in covering up the extent of the problem. The reality is that the Archicentre's figures are extremely conservative and clearly understate the true nature of the real problem. A pest management company with branches throughout Queensland advises that their technicians have treated more than 30,000 homes in that state alone over the previous twelve months.

It should be clearly noted from the outset that the author of this document is permanently restrained from making any representations in relation to Termimesh. Therefore, absolutely no comment is made within this

document that either expressly or impliedly relates to the Termimesh product in compliance with that Federal Court Order.
(See Attached Federal Court Minute of Consent Orders)

Chemical Termite Management Systems (CTMS)

A CTMS is defined as a chemically impregnated soil medium externally adjacent to the exterior walls of a building and underneath a building so as to create a chemical treatment zone that either repels termite activity or chemically affects/kills termites that pass into these treated zones. The purpose of a CTMS is to kill, repel or chemically affect termites that attempt to gain access into a structure. The means by which the chemical acts is determined by the active constituent therein.

A CTMS is designed to deny termite access or ingress to a structure by chemically affecting the soil beneath a concrete slab and creating a chemically impregnated soil moat around the perimeter of a structure thereby denying termite access/ingress. This methodology is designed to prevent termites having access/ingress either onto or into the structure without dying, or being chemically effected in the attempt thereof.

The application of chemical termiticides has been a uniquely corrupt area of termite management where the preconstruction area of the industry has been largely maligned and condemned by the post-construction area of the termite management industry as being unethical and immoral.
(See Attached QBT Findings on Pearson & Guardian)

The unscrupulous deeds of almost the entire preconstruction area of the pest management industry are well documented in this abovementioned attached document and shows that entire preconstruction chemical termiticide treatments were often performed at costs that were less than the wholesale price of the chemical termiticide required to perform the treatment in accordance with the provisions of the Standard.

These practises were ingrained and systemic to such a degree that ethical, reputable termite technicians deserted the preconstruction market in droves rather than unscrupulously perform under-applications of chemical termiticide treatments. This circumstance is widely recognised throughout

the pest management industry as categorical fact and is widely evidenced by the supplied references in the QBT Findings document.
(See Attached Cross Reference Document)

The introduction of the less persistent termiticides, after the phasing out of the highly effective and extremely persistent Organochlorine chemistries in June of 1995 was to create a massive dilemma in preconstruction termite management. Organochlorines had been under-applied by preconstruction termite technicians and still achieved reasonable results, whilst the newer more fragile chemistries that were introduced to replace the persistent organochlorine chemistries were unable to achieve the same results at the appropriate rates.

Under-applications of the new introduced chemistries with low vapour pressure failed dismally and the multiple experiences suffered by residents in the suburb of Forest Lake in Brisbane was testament to that situation. The situation was further exacerbated by the authorities turning a blind eye to most of these practises and TAG gained an affidavit to provide a basis for the Queensland Building Tribunal (QBT) to pursue a case against Guardian Pest & Weed Control Services Pty. Ltd. (Guardian) and the principal of Guardian. The situation described in the QBT documentation was a simply a microcosm of what was occurring throughout the chemical termiticide application pre-construction industry in Australia.

Guardian was a major contributor to this problem in South East Queensland, but was only one such fraudulent operator in the systemically corrupt area of the application of pre-construction chemical termiticide treatments. The principal of Guardian was later to advise the QBT that he was quite familiar with the Australian Standards because of his ongoing role on the Technical Committee of H.I.A. Queensland for many years. This is referenced in the attached cross reference document.

Guardian contracted to provide pre-construction chemical termiticide treatments for many of the HIA members, several of which were major project home builders, over a period of many years. The principal of Guardian advised the QBT that he was being undercut on price by many other fraudulent operators in the pre-construction market. This situation was occurring throughout all areas of mainland Australia.

As discussed, attached to this submission are two documents **(1.The QBT Findings on Pearson & Guardian / 2.Cross Reference Document)** which clearly define, articulate and elucidate the problems relating to chemical termiticide application treatments. There are also several marked references to the demise of the APVMA (NRA) User Agreement Returns System and the degradation rates of Chlorpyrifos in soil applications.

Chlorpyrifos, an Organophosphate, was the initial replacement for the discontinued Organochlorines. This chemistry was arguably more toxic than the Organochlorines at point of application and was beset with problems of longevity from the outset. Alkalinity, sunlight, soil composition, high moisture content, low moisture content, high clay content and high carbon content are all factors that impact on the life of this chemistry's active life in a soil medium.

It should be noted that this chemistry retains APVMA registration and is still being used despite its many failures as a termiticide. Chlorpyrifos is being removed from use in the USA and is now being dumped at low prices in Australia. This chemistry should not be relied upon as a termiticide in a soil medium and should be immediately deregistered as a termiticide by the APVMA. This is underlined by the health risks and problems being experienced by workers who have been exposed to applications of this toxic chemistry.

Most soil treatments involved under-applications, over-applications or non-applications of chemical termiticides. An explanation is required for 'over-applications' as it is hard for a lay-person to understand how financial benefit might be derived from this practise. In brief, the soil area that was to be treated was hand-sprayed with a solution that contained the appropriate amount of chemical and about 10% to 15% of the water required that was necessary to groom the soil in an appropriate manner. These illicit practises provided for an extremely dangerous and toxic rate of application.
(See Attached Job Sheet Showing Excessive Volume of Treatments)

Over-applications of termiticides were extremely common and caused health issues for operators and associated trades such as concretors. This practise allowed preconstruction termite technicians to be able to complete several times the amount of work that they could normally perform. These practises were dangerous, ineffective and fraudulent practise that put at risk the homes of ordinary Australians. There are multiple references in the QBT

documentation that evidences that hand-sprayed termiticide soil barriers were rarely provided in accordance with the Standard.

The abject failure of the NRA (APVMA) "User Agreement Returns System" and the failure to audit meant that the entire process of hand-sprayed chemical termiticide applications was doomed from the outset.

Summary for CTMS

CTMS are **:** **-** Designed for external use from the structure in soil mediums
Generally applied in soil under and/or around the structure
Designed to keep termites off the structure and stop entry
Required to be replenished at regular intervals
Dependent on an appropriate soil medium for efficacy

CTMS can : - Be inventively bridged or breached by termites
Fail through installation and application problems
Breakdown and fail in adverse soil conditions
Be disturbed by dogs, floods and cable/pipe installations
Require regular inspections to review their persistency

Reticulated Chemical Termite Management Systems (RCTMS)

There was another means of applying chemicals in soil that involved the use of a reticulated system whereby the chemical termiticide was introduced into the soil medium under and around structures via hoses, tubes or flat tape (such as irrigation tape with emitters). These systems have been utilised extensively throughout Australia, with the owner of one system advising that he was aware of 240,000 applications of his particular system.

The problem with most reticulation systems are diverse and relate to issues of system hydraulics, pressure and dispersion rates thereof. Some of these systems operate under high pressure, whilst other systems operate at very low pressure. The CTMS problems related in the previous section with regards to appropriate soil medium are all revisited in this scenario. The life of the plastic componentry and the capacity for the system to demonstrate the ability to distribute chemical termiticide throughout a soil medium, in accordance with the Standard, all become issues.

The flat tape system that was initially converted from irrigation tape to underslab use is a case in point. This system has the CodeMark certification which mandates its use in Australia. This system operates at such minimal pressure that you can easily blow the emitters off the system simply by turning a household tap on to flush or test the system. There is no way of knowing this has occurred unless you remove the slab to review the componentry.
(See Attached ALTIS Document)

Chemical termiticides generally comprise of emulsifiers, solvents and an active constituent. Hand-spraying these chemical termiticides allows all of the chemical composition to be spread uniformly across the area to be treated. When the chemical termiticide is emitted from a hole in a tube, it is not unusual to get chemical termiticide spread to a point that is 1500 mm from the pipe. It needs to be carefully noted, however, that generally only within the first 100-150mm from the emission point on the pipe will there be any active constituent through 'stripping' of the chemical in the soil.

A termiticide generally consists of emulsifiers, solvents and active constituent. The active constituent in chemical termiticides used in soil mediums is generally designed to bond with soil particles at the earliest possible opportunity. This means that whilst the soil appears to receive a liberal spread of chemical termiticide, the active ingredient is 'stripped' out quickly and is generally only transmitted to a very small area. The actual treated area is often totally inadequate and the treatment rendered ineffective.

The failure of spread of the active constituent in chemical termiticides from application through reticulation systems is further compromised by the dubious hydraulics of systems in the market place. The most senior manager of the largest private pest management company in Australia recently advised the State Director of the ACCC in Brisbane, that they had concluded independent tests with adverse findings on a reticulation system for which they had provided many thousands of installations to Australian Homeowners.

Further advice to the ACCC was that the testing they had commissioned by an Australian University confirmed their suspicions that the system did not work and had serious flaws in its hydraulics. This was despite the

reticulation system having received the CodeMark certification from the relevant Authorities which mandates the use of a building product or system throughout Australia. It is noted that the pest management company involved no longer installs or services this particular system, but that this CodeMarked system continues to be installed throughout Australia.

The problem with the hydraulics of some reticulation systems is denoted with the term "Christmas Tree Effect". The area treated finishes well short of the end of the pipe and branches out widely near the injection point. The "Christmas Tree" shape is the area treated with chemical, and a tree trunk shape therein would then more clearly demonstrate the area where the active constituent is applied through 'stripping'. In real terms, a significantly small area of what was required to be treated is actually treated. These systems are concealed in the ground under concrete slabs, and the full ramifications of their failures will continue to emerge over time.
(See Attached 'Christmas Tree Effect' Document)

The major problem relates to the fact that most, if not all, reticulation systems in the market place fail to perform the function that they were designed to perform. (**i.e.** - The spread of chemical termiticide through an appropriate soil medium in accordance with the Standard's requirements).

Physical Termite Management Systems (PTMS)

The inalienable fact is that all physical termite management systems (inclusive of the concrete slab) are simply finite termite shielding devices which are required to maintain their structural integrity so as to redirect termite movement to the perimeter of the building. When, and if, this occurs, then the termite movement needs to be detected through the inspection process. Hopefully, this will occur prior to termites gaining extensive access to the building. This demonstrates why these supposed 'termite barriers' should **only** be considered to be 'termite monitoring systems'.

A PTMS is defined as a physical impediment to termite movement that is integrated into, or part of, the construction of a building. A PTMS may be constructed from a range of materials that may, or may not, include chemical additives, impregnation or enhancements. The purpose of these systems is

to deny access to termites below the point where the system is sandwiched in brickwork. No PTMS is a termite barrier because they are all able to be bridged by termites.

The concrete slabs, in 'slab-on-ground' construction, in concert with PTMS addendums, force any termite movement to the perimeter of the system. Both the termite movement from under the slab, and the termite movement that emanates from outside the perimeter, generally arrive in this perimeter area. The termite movement lays siege to the obstruction (concrete and brickwork) to put extensive and/or intensive pressure on the construction. The inspection zone and the ground areas directly thereunder are therefore under extremely high termite pressure from the outset.

The termite inspection process is generally conducted on an annual basis at which point the termite technician, as part of the inspection, checks the external perimeter '75 mm' inspection zone on typical 'slab-on-ground' construction. In an overwhelming majority of cases, the inspection zone generally has obstructions such as built up gardens, foliage, pathways and other such nuances that generally obstruct a comprehensive visual inspection.

Because most PTMS are, in part, encased in the mortar joint, it is virtually impossible to check as to whether or not the PTMS has retained its integrity and the inspection process does not ascertain any details in relation to the possible breakdown of the PTMS. The concrete slab and other componentry such as parge, frisbees, etc., (**i.e.** ***The various items that combine to form the finite shielding required to redirect termite movement to the perimeter inspection zone where it can be observed and chemically treated***) are generally unable to be visually inspected.

It needs to be noted that the moisture cavity area in 'slab-on-ground' construction can be exceedingly corrosive and may cause varying forms of corrosion to metal sheeting encased in mortar joints. The metal in these systems can suffer stress and/or crevice corrosion in going from a covered to an uncovered situation. This is a commonplace occurrence with the outward manifestation of the corrosion process being clearly demonstrated by rust weeping on the external brickwork. The initial use of aluminium sheeting was an abject failure that corroded and deteriorated 'in situ'.
(See Attached Corrosion Pictures)

What needs to be noted is that the Standard (AS 3660.1) clearly states in the foreword that, ***"The Standard contains no procedures or details on durability, maintenance and inspection issues".*** The CSIRO, and other noted authorities, including Queensland Building Codes, have a real problem in relation to the durability issue. **ALL** inspection and durability issues need redress in the Standard and the BCA. A ten year warranty for a PTMS that should last the lifetime of the structure provides little comfort for the Australian home owner. Also, many of these systems and products fail one of the initial premises of the BCA which requires materials used in construction **'*to be fit for the purpose for which they are designed*'**.

It should be further noted that a termite inspection could be conducted in a morning, whilst termite foraging might occur later in the day so as to allow termites to climb over the termite monitoring system and access timbers in the structure. If this occurs, the termite colony has unimpeded access to the structural timbers for twelve months prior to the conducting of the next annual inspection. What this means is that these PTMS are extremely limited and relatively ineffective as termite monitoring systems, whilst comprehensively failing as termite barriers.

The terms ***'the purpose of termite barriers is to deter concealed access by termites into a building'*** as per the opening statement in the foreword of AS 3660.1 and that which is supplied in the BCA under Section 3.1.3.1 'Explanatory Information' as ***'The intent of these requirements is to provide for a termite barrier that will ensure that termites will not enter a building by a concealed route'***; both effectively reinforce a patently false premise that these systems are termite barriers in the first instance. Termite monitoring systems can not be barriers as denoted by their mode of action.

If termites are able to go over, around or bridge the termite management system in any manner, it is obviously not a termite barrier. Furthermore, to reinforce the fact that these systems are not termite barriers, it is a matter of record that absolutely no physical termite management system is able to provide a 'bridging warranty'! In brief, it should be noted in relation to termites that an inert object is not a barrier to an active biology.

The graded stone particle barrier featured in Section 7 of AS 3660.1 even provides the following information in advertising material under the heading "Economical", that it has "***a low initial price with no on-going retreatment or inspection costs***". This is a patented proprietary system that is endorsed

by both the ABCB and Standards Australia in the provisions of the BCA, the ABCB Certificate of Conformity, and Section 7 of AS 3660.1 respectively. Further reading of the attached document provides ample evidence of the validity of these claims which mislead ordinary Australian homeowners.
(See Attached Granitgard document)

The testing of PTMS products and systems was generally conducted in confined zones whereby bridging was unable to occur because of finite testing regimes. The testing regime did not relate to the practical application of the product or system and simply tested the breaching aspects of the product or system. Finite systems were accorded ad infinitum status that could not be justified through practical application. Termites simply go around and/or over PTMS and do not need to breach the PTMS to attain entry into a structure.

All PTMS operate according to the principles of the ant cap which was the very first PTMS in operation. The ant cap is not designed to stop the progression of termite movement. The ant cap is simply designed for the purpose of redirecting the termite movement into the open where it might be detected more readily during regular inspections thereof. All PTMS are designed primarily as termite monitoring systems and would therefore, by definition, require very regular inspections.

When termites go under, over and/or around ant caps to attack bearers, joists, floorboards and other timber components of a structure; it needs to be noted carefully that the ant cap has fulfilled its function. The ant cap has exposed the termite movement whilst being bypassed by the termite movement. In every case of PTMS application, the function is not to stop the termite movement but only to expose the termite movement and therefore, barrier status is unable to be countenanced as a function of a PTMS.
(See Attached Ant Cap PDF)

The severe limitations of PTMS combined with the inability of manufacturers and system installers to be able to provide 'bridging warranty' is a major problem. This is further exacerbated by the slogan advertising and representations which freely discuss termite protection, poison-free methodology and the permanency of these systems. These are the often repeated sales pitches which do not in any way equate to the actual performance of these products and systems.

The final paragraph at the end of the preface in AS3660.1 advises that ***"Future editions of this Standard will not include proprietary or patented systems. While reference will be made to the existence of such systems, each system manufacturer must demonstrate compliance with the performance criteria of this Standard, where required".*** This paragraph clearly demonstrates that the current Standard contravenes the national competition policy.

PTMS are relied upon by Australian homeowners as a means of termite protection when there is little or no real protection offered. The multitude of PTMS applications that have occurred over the previous 20 years will further fuel the current problem to provide billions of dollars of termite post-construction work for many years to follow. The application of this methodology will continue to yield and accelerate major ongoing problems based on the results produced to date.

Summary for PTMS

PTMS are **: -** Termite Monitoring Systems only
Generally integrated into the construction of a dwelling
Able to be bridged by termites within hours
Unable to provide 'bridging' warranty (Limited Warranty)
Generally designed to consist of several composite materials

PTMS can : - Be bridged or breached by termites
Corrode where metal sheeting is utilised
Fail to provide a warranty that reflects 'life of building'
Provide little, if any, real defence against termites
Require very regular and constant inspections to work

Termite Baiting Systems (TBS)

The use of termite baiting systems has become a more common and widespread practise with the failure of many of the physical, chemical and reticulation systems discussed herein. Termite baiting systems provide mixed results that sometimes may provide a solution dependent on a vast range of factors. TBS are indiscriminate and may get the target species, or they may affect other termite species in the environment.

Termites often progress past termite baiting systems and proceed to forage in a building structure. Termite baiting systems are generally remedial or preventative measures and are often used where either the cost of a chemical termite management system is prohibitive or otherwise logistically difficult to emplace. Sometimes, because of certain construction methodologies, it is the only means by which some means of defence is afforded a structure. It needs to be immediately recognised that termite baiting systems are not a means of protection and are simply a bait to attract and poison termite colonies. Termite baits are often bypassed.

What does need to be understood with termite baiting systems is that despite the fact that they may provide toxicants to the target species, they often strike other termite colonies in the local environment. It needs to be further noted that termites are a base provider of a healthy environment and that excessive baiting in several suburbs has created a very unhealthy and termite depleted environment. There needs to be some environmental controls on the current unregulated baiting process. Termites are a base food stock in nature that recycles, fertilises and aerates soil. In fact, termites are a prerequisite for a healthy environment.

TBS are : - A post-construction methodology only
Often bypassed by termites
Indiscriminate in their action
Often able to impact heavily on a healthy environment

Timber Treatments

The Standard for timber preservative treatments (AS 1604), which is referenced by AS 3660.1, sets out a series of timber treatments that achieve the various ratings (H1-H6 referred to as "hazard classes") dependent on the specific service conditions applicable to the use of the timber. This also includes colour coding and branding to differentiate between the six different hazard classes.

The preferred treatments set out in the Standard include Copper Chromium Arsenic (CCA), Ammoniacal Copper Quaternary (ACQ), Copper Azole (CuAz), Creosote and Light Organic Solvent Preservative (LOSP). The

LOSP treatments may utilise a range of chemical actives such as Tributyltin, Permethrin, Cypermethrin, Deltamethrin and/or Bifenthrin as their insecticidal active in the formulation.

It needs to be noted that the vast proportion of these timber treatments are performed by either Koppers or Osmose entities that have a significant monopoly in relation to the provision of the CCA, ACQ and LOSP timber treatments. The formulation of the AS 1604 "Specification for Preservative Treatment" Standard which relates to all forms of timber treatments and is referenced by AS 3660.1 is somewhat evidenced by the discussions in the CCA Report.
(See Attached CCA Report/ Refer to Page 33, Section 6.4 headed "Standards Australia)

The abovementioned report and the damning comments therein are given further substance by the attached letter from the National Secretary of the TPAA who describes the TPAA and its members as being environmentally conscious and points out that preservative treated timber, as used all over the world, has excellent green credentials. He fails to state that the use of CCA products has been severely curtailed in many parts of the USA, the European Union, Canada and Japan. In fact, CCA treatments have been banned altogether in Denmark, Switzerland, Vietnam and Indonesia.
(See Attached Letter to GECA August 07)

In comparing the CCA Report with the TPAA Letter to the GECA, you might arrive at the conclusion that the only thing that is "green" about the CCA treatment is the colour of the wood once treated. The CCA treatment is being gradually substituted by the ACQ treatment which is arguably far more toxic than the CCA treatment. The TPAA claims in their letter to the GECA are somewhat at odds with statements of fact in the CCA Report which relates to Sections 6.1 European Union and 6.2 North America on pages 30 and 31 respectively.

These treatments create timber that cannot be disposed of by traditional means at the end of service life. Their use requires special conditions that need to be met with regards handling and material use.

LOSP treatments

The provision of LOSP treatments has been a cause for concern given that the treatment is an envelope treatment which provides a maximum 25 year warranty on extrapolated data. The warranty is voided by saw cuts that expose the untreated timber inside the envelope area.

Advice was provided by the national secretary of the TPAA that a timber structure for the average dwelling construction would have approximately 1140 cut ends and that approximately 1100 of those would butt up to other LOSP timber sections to provide treated cover for those areas. The obvious surmisal from this advice is that there are areas where termites could achieve entry. Experience tells us that if there are any entry points, termites can and will find them. Termite managers advise that this is the case from their field experience.

There is a move in NZ to deregister the LOSP treatment because of health issues relating to degassing of the treatment 'in situ' as well as material handling issues for plant treatment operators and building workers pertaining to solvents used in the LOSP process. Many other countries, most specifically those in Europe, are moving towards discontinuing LOSP technology.

Furthermore, the efficacy of the treatment is coming under further scrutiny, as have been the principle providers of CCA & LOSP treatments in Australia. The successful court actions embarked upon, in New Zealand by the Commerce Commission and in Australia by the ACCC, against cartel behaviour in both countries is clear testimony to past misdemeanours in the timber treatment industry. The Koppers and Osmose companies had a significant monopoly in regard to these timber treatments.
(See Attached Documents : NZ Commerce Commission, NZ Cartel Behaviour and ACCC Cartel Action)

LOSP treatments are, in fact, coming under increasing world-wide scrutiny for reasons of toxicity, safety and environmental guidelines.

CodeMark

The recently introduced CodeMark system has provided seven separate certificates of conformity for termite management systems since its inception. They relate to four chemically enhanced termite monitoring systems, two reticulation systems, and one termite collar (frisbee) that fits over a pipe penetration and is incorporated into the concrete slab to form part of the finite shielding relating to a termite monitoring system.

Three of the four chemically enhanced termite monitoring systems have descriptive terms '**termite protection'** and/or '**physical termite barrier'** mentioned on their respective certificates at various and prominent junctures. **The CodeMark certificate of conformity which mandates the use of these products and systems states that these products and systems all comply with the various subsections pertained to in the BCA.**

The discussion under reticulated termite management systems addresses both reticulation systems that have been accorded CodeMark certificate of conformity status and clearly demonstrates chemical distribution problems that may exist. The CodeMark system relies to a large extent on the data sourced and supplied by the applicant and fails to independently assess or test certain critical areas relating to the hydraulics of reticulation systems. In brief, there is no real devil's advocate in the process of application for CodeMark certification.

The CodeMark certificate of conformity generally fails to properly assess products and systems in an appropriate manner. The discussion therein the certificates of conformity engendering terms such as 'termite barriers' and 'termite protection' clearly evidences this situation. Many operatives within the termite management industry discuss the CodeMark certificates as being a 'standing joke' that are not worth the paper that they are printed upon.

The author of this document was threatened with legal action by a representative of the JAS-ANZ CodeMark scheme in relation to making all such representations. The JAS-ANZ CodeMark representative, whilst having technical knowledge and procedural knowledge relating to documentation, etc., had very little understanding of termites, termite management systems, termite and building inter-relationships, etc. It would certainly help if the personnel in organisations involved in the provision of

certification for termite management systems had some small understanding of their subject matter from the outset.

It is further noted that ***the certificate of conformity is issued under an arrangement with JAS-ANZ and that the ABCB does not in any way warrant or represent that the product that is the subject of the certificate of conformity conforms with the BCA, nor accepts any liability arising out of the use of the product.*** Who does take responsibility is the obvious question.

This entire process literally puts at risk the homes of ordinary Australians with the cavalier attitudes engendered in the freely used misnomers such as 'termite barriers' and 'termite protection' in these certificates that clearly do not exist. This scheme is a sham as far as providing any real assistance or certainty for Australian home owners and should be reformatted to provide technical correctness or be discontinued immediately.

The Termite Management Standards

The Standard (AS 3660.1) states in the final paragraph of the preface therein that, ***"Future editions of this Standard will not include proprietary or patented systems. While reference will be made to the existence of such systems, each system manufacturer must demonstrate compliance with the performance criteria of this Standard, where required."***

The first paragraph of the foreword in the Standard (AS 3660.1) states that, ***"The purpose of termite barriers is to deter concealed entry by termites into a building, above the termite barrier. Termites can build around barriers but their workings, or evidence thereof are then in the open where they may be detected more readily during regular inspections."***

The second paragraph of the foreword simply states that, ***"This Standard contains no procedures or details on durability, maintenance and inspection issues."***

Essentially, these two paragraphs form the flawed premise upon which the Standard is based, and this advice is subsequently entrenched by the third paragraph, which advises as follows, ***"Where barrier systems for termite***

management of a building are to be installed, the designer should complete all construction details giving due consideration to the above before works commence. The requirements for an effective termite barrier can then be established for the particular site conditions and for any building characteristics."

Discussions with senior management at Standards Australia confirmed that these three paragraphs present a significant problem and it is the author's view that the Standards should not be called upon by the BCA until such time as a new Standard is formulated that addresses these issues in a more considered and substantive manner.

It further needs to be noted that the Standard fails to note application rates for varying soil types as was denoted in the previous Standard thereby allowing over-applications of chemical termiticide to occur. A letter from the AEPMA attests to this fact. The letter was written by the past national executive director of the AEPMA who is currently the national secretary of the TPAA. These two positions were held concurrently over a period of time by the same person.
(See Attached AEPMA Chlorpyrifos Letter)

It is also noted that AS 3660.1 fails to provide testing protocols for chemical termiticides registered for preconstruction by the APVMA since the publishing of the Standards.

The Concrete Slab (AS 2870 & AS 3600)

The concrete slab, in almost all cases where 'slab-on-ground' construction is utilised, forms the major component in a termite management system. It needs to be noted that termite managers do not provide this component of the 'termite monitoring system'. Seldom are concrete slabs constructed in accordance with the Standards with regards to curing, compaction, temperature, water content, vibration, etc.

In 1995, when organochlorines were discontinued, the concrete slab suddenly became recognised as a termite barrier. This was despite cracking that regularly occurs and the waffle pods, used in raft slab construction, emitting carbon dioxide which attracts termites. In effect, suburbs of homes

in areas where the waffle pods were applied extensively were actually creating suburbs of termite attractant bait stations.

Many concrete slabs were constructed with 'block-outs' under wet areas such as baths and showers. These 'block-outs' involved forming areas where no concrete slab was placed to cut costs and to allow baths and showers to be recessed into these voids. Many major project home builders over many tears were regularly providing this concrete slab methodology without understanding the severe ramifications it held in relation to the provision of unhindered termite access.

The introduction of the slab as a 'termite barrier' failed to be reflected in the provisions of AS 2870 and AS 3600. The provisions therein for curing, mpa, vibration, temperature, compaction, etc. all require strict enforcement to maintain, as best as possible, the structural integrity of this major component of the finite shielding that is a critical element of the 'termite monitoring system'.

Slab edge protection where the external perimeter vertical face edge is utilised as an inspection zone and is prepared by concretors as a critical part of a termite monitoring system. The termite management system is signed off by a pest technician which is testament to the current piecemeal approach which fails to delineate the varying responsibilities of the on-site tradespersons.

The Problem

The BCA and the Standard (As 3660.1) both utilise the term "termite barrier" which is wrong and misleading in context, connotation and imputation. In recent meetings with stakeholders and operatives from all areas of termite management, there was universal agreement that the term "termite barrier" was wrong or inappropriate in relation to both PTMS and CTMS. No-one was able to support the contention that these systems were "termite barriers".

The BD-074 that wrote the Standard was comprised of several members who, whilst not directly representing an employer or benefactor, were actively representing their interests in having their system or product figuring prominently, or included in, the dictates of the Standard. This

includes the provision of unrealistic expectations to Australian Homeowners through the representation of their products and systems as “termite barriers”.

Many products and systems integrated into buildings are often damaged or bridged by the works of subsequent on-site trades who have little interest and knowledge in relation to termite management systems. The integrity of the systems is often compromised from the outset prior to commencing their service life and, because they are integrated into the structure where they are unable to be viewed, they are often ‘breached’ without any externally visible sign of termite movement.

Discussions in advertising centred on the “termite barrier” status provided by the Standard with terms such as ‘chemical-free’, ‘termite protection’ and ‘protection for life’ all being engendered in slogan advertising. In real terms, these slogans became oft repeated lies that failed as quickly as their systems in holding back termite activity. Misinformation and limited warranties combined to frustrate Australian home owners with subsequent termite activity providing damage bills they can ill afford.

Granitgard advised in its advertising that inspections were not required to maintain your warranty. Inspections were absolutely essential so as to view where ‘bridging’ by termites might be occurring. No bridging warranty was ever provided by Granitgard which continues to hold an ABCB Certificate of Conformity.
(See Attached Granitgard Document)

There is a propendency by manufacturers and suppliers of PTMS, and agents thereof, to have their systems equated with chemical termite management systems. These two very different forms of termite management need to be reviewed under very separate headings which are as follows :

a) Physical Termite Management Systems.
(This relates to all PTMS)

b) Chemical Termiticide Treatment Zones.
(This relates to all CTMS)

The third heading that would be required deals with non-termite susceptible structural elements **(NTSSE).** This deals with steel, concrete,

treated timber, etc. that have proven efficacy in being resistant to the ravages of termites. This is an area where inroads can be made and where technology should provide answers in the future. We need to co-exist with termites for a healthy environment, but we do not want termites consuming Australian homes.

There is currently a concerted effort by sections of the industry to enshrine the term **"Termite Risk Management Measure"** in the Standard and also the BCA. It is the firm belief of the author of this document that this will only serve to further confuse the overall situation by continuing to serve the commercial interests of manufacturers and installers of these products and systems at the expense of Australian home owners. These products and systems need to be identified and appropriately labelled from the outset to stop the occurrence of any confusion or misrepresentation.

A 'termite risk management measure' may be a concrete slab, a termite monitoring system, a chemical pre-treatment or a NTSSE. A range of these measures would be required to form an overall 'termite risk management strategy'.

Managing physical systems is achieved only but through the inspection process which prequalifies these systems as termite monitoring systems and this singular fact should be represented from the outset to prevent any form of misrepresentation being made in relation to their action. If a home owner is sold a termite monitoring system, it is difficult to evade the inspection requirements implicit therein. It would also be difficult to sell the concept of protection as that being something engendered by a monitoring system. A proper perspective would be conveyed to Australian homeowners who are the end user of these products and systems.

An ACCC director has expressed the view, based on information supplied by TAG, ***"That consumers could be left with termite systems that provide inadequate protection, or left with systems that have limitations they do not understand, due to a complexity of regulations, industry descriptions, testing and approval processes and product descriptions that are consistent with regulations but are unclear to ordinary consumers. The possibility that consumers are left with termite systems that they are required to service or support in ways they do not understand, or systems that do not really provide the level of protection expected, means that many consumers are living with risks they do not appreciate. Those risks could mean the***

loss of the most significant investment most consumers make, and such risks cannot be adequately lessened through traditional means like insurance. The need for proper testing criteria and reliable performance assessment of termite systems is crucial for the well being of Australian home owners".

The above statement provided by the ACCC director shows that there is a 'demonstrated need' for clarity to be provided in the regulatory wording and documentation. All systems that have an inspection zone as a prerequisite to their mode of action can only but be 'termite monitoring systems" and should be more accurately described as a termite monitoring measure.

The BCA

Volume One of the BCA includes residential dwellings with single common access separated by floors and should comply with and/or incorporate similar references to Volume Two of the BCA. The NT reference on page 86, Volume One of the 2008 BCA (**i.e. NT. B1.4(i)**) should be removed and the ammendment referenced be incorporated and applied unilaterally in both Volumes of the BCA so as to apply to all Australian States and Territories.

The inclusion of (XV) Termite Actions in Draft Provisions of Part 2.1 of Volume Two of the BCA needs to be also inserted in the provisions of Volume One of the BCA and implemented immediately. **All** B 1.4 provisions (i.e. (i) (A) – (F) & (ii) (A) – (D)) need inclusion in both Volumes of the BCA. Buildings covered by both Volumes of the BCA have equal susceptibility to the actions of termites.

Part 3.1.3 of Volume two of the BCA needs to be headed **"Termite Risk Measures Strategies"** and then discuss under **'Explanatory Information'**

(1) ***A range of termite risk management measures that incorporate, but are not limited to, PTMS, CTMS and NTSSE.***

(2) ***the limitations of PTMS as monitoring systems that operate through a constant and regular inspection process.***

(3) ***all CTMS are designed to impede and/or kill and/or chemically effect termite movement attempting to ingress a structure.***

(4) ***that NTSSE are termite resistant materials that are not necessarily termite proof but do provide some resistance to the workings thereof***

(5) ***that a range of PTMS and/or CTMS and/or NTSSE may be employed as termite risk management measures so as to provide an overall termite risk management strategy for the building or structure.***

The ABCB should insist that any and all future editions of Termite Standards should clearly define systems and products used in termite management according to their mode of action, and that where an inspection zone is required they should conform to a labelled instruction advising that they are a termite monitoring system. This heads off any claims that they act as a barrier or are able to provide protection. The ABCB needs to reinforce this aspect with JAS-ANZ and CodeMark to give all parties some certainty in the process.

Conclusion

The implementation of these guidelines should assist in providing clarity to all parties involved in termite management. Good building techniques, careful sub-trade management and appropriate advice to potential home owners all form part of the overall guidelines required to produce a reasonable defence strategy against termites.

At present, there is a failure through misrepresentation and misunderstanding for the termite problem to be addressed. The guidelines provided herein are necessarily general and broad for the most part to provide the basis from which the problem stems and to further demonstrate the multi-facetted areas that contribute to the problem.

A large contributing factor is commercial interests superceding consumer interests and the imposition of commercial outcomes through Standards by special interest groups as has been previously noted by productivity commission reviews. This has impinged heavily on the rights of consumers to provide them with a no-win situation.

The author of this document has had at all times as his over-arching responsibility, the consumer interest as his primary concern in proceedings over the previous nine years of research on this subject. The immense injustice that currently exists must be addressed and righted to give parity to all parties involved in the process of termite risk management.