

TERMITE SYMPOSIUM

TERMITE CONTROL IN TORONTO: THE FIRST INTEGRATED URBAN PEST MANAGEMENT PROGRAM ON A MUNICIPAL SCALE

by

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During a recent trip to Nebraska where I was asked to audit the termite control operations of a midwestern pest control company, I happened to illustrate a point I was trying to get across to some service technicians by making reference to the severe termite problem in the City of Toronto. I could tell by the comments made by one of the more seasoned technicians, and also by the disbelief showing on the faces of the other technicians - they found it hard to believe that termites could be a problem in such a northerly latitude as that occupied by Toronto and the Metro communities.

Allow me to state very clearly at the outset that the Eastern subterranean termite is in Toronto and has already created severe damage to wood form structures and thus to the real property value of Toronto and the Metro area.

The termite control program as it has been carried on in the City of Toronto cannot be compared to any similar program in the United States. However, the control of termites compared generally to termite control in the U.S., reveals that Canadians have had more success in controlling this wood consuming insect than Americans.

Prior to December of 1982, the City of Toronto had attempted two fundamental strategies for the management of the subterranean termite. The two concepts were using a chemical soil barrier without insuring the breaking of wood-soil contact and the most recent concept (enforced since 1977) requiring the placement of a chemical soil barrier after the breaking of wood-soil contact has been carried out.

During the five years 1977 to 1982, retreatment of a structure occurred in less than one-third of one percent of all houses treated in Toronto. For the years 1966 to 1976, retreatment was required in approximately one percent of the structures previously treated. No similar data are compiled for the U.S. It is believed that the percent retreatment in the U.S. is as high as six percent in the southeastern states and at least three

percent for the rest of the U.S. I submit: the difference between Canadian and U.S. figures is not merely the result of increased pressure put on wood form buildings by termites in ever increasing southerly latitudes. But, the result is also due to Canadians insisting on the separation of wood elements of construction from contact with the soil. Although, only enforced in Toronto in 1977, this practice was generally applied at the inception of the termite control program in the City in the early 1960's. In the U.S. remedial control has in most cases all but replaced the breaking of wood-soil contact.

With such an excellent record of successful termite control in the City of Toronto, what more could be done and why was an offer tendered in 1982 to hire a consulting entomologist to work with the City's Department of Buildings and Inspections? My evaluation carried out in early 1983 showed two reasons why help was sought by the City. First of all, the pest control industry in the Toronto area was pointing out the continued "spread" of the Eastern subterranean termite across the City and the industry seemed to be able to acquire the ears of both the electronic and the printed media. This put a great deal of pressure on City Hall. Secondly, the cost of the Provincial and City grant programs to homeowners required by City law to do termite control on infested buildings had almost doubled in less than ten years.

The program as it stood in 1982 can be generally described as follows:

- Building inspections were done on a call basis -- or homeowners called for an inspection when they suspected their homes were termite infested.
- City inspectors had a minimum of formal wood destroying organisms training.
- Processing of grants-in-aid paperwork had become bogged down in City Hall.
- The City of Toronto called upon the Province for ever increasing amounts of monies to support the termite control program.
- Pretreatment of soil beneath new construction was not yet being enforced in Toronto.
- Disposal of infested construction timber was being carried out without any clear and enforceable controls as to how this should be done.
- Real estate transfer inspections had not been mandated by either City or Provincial Law.
- No basic research or applied research was being carried out on the subterranean termite problem as it existed in Toronto and the surrounding Metro area.
- A mythology had developed that infested houses should be

kept a secret by homeowners lest the property's value suddenly fall. (This was a strange belief in that it seemed to boil down to -- a property value falling versus the roof of the building falling?!)

- Termites destroyed living trees - was also commonly believed to be a fact, although there were no data to support this concept.

What program then was developed to solve some or all of these problems?

The Toronto termite problem provided a natural setting in which to apply the principles of Integrated Pest Management or I.P.M. City by-laws required treatment of termite infested buildings. A basic working principle of I.P.M. had already been instituted -- I.P.M. in the U.S. is wholly confined to controlling or managing agricultural pests of crops such as cotton, corn, soybeans, and many others. In this management concept, insect pests in cotton, for example, are allowed to exist as long as their population numbers remain beneath a level that will not cause an economic loss in the yield of that crop. The economic threshold level as it is termed, is determined by an evaluation of yield loss versus the cost of applying control measures. Factors such as crop maturity and weather as well as other less important variables are also considered in determining what the threshold level should be.

In Toronto, a termite infested house must be treated. It is at this point -- an infested house -- that the economic threshold level has been exceeded. However, how would one be able to control spread of this insect if detection by the City depended solely on the call of a homeowner who suspected infestation? How can one control spread if geography is not also controlled? It was imperative that a systematic inspection of every home in Toronto be instituted. The inspection then, in I.P.M. terms, would sample systematically for an economic infestation level.

The underlying basis of the new control program then, is to, block by block carry out house to house inspections for termites. In order to implement this ambitious program, all City Buildings Inspectors had to have a verifiable level of expertise in the inspection of wood-form structures to detect subterranean termites. The training requiring two years to implement and carry out has now been completed. A block by block inspection program has been designed and a small pilot program was carried out in the summer of 1983. The most severely infested areas of the City have been identified and these areas are the centers or hubs for ever expanding block by block inspections and subsequent control-treatments to be carried out over the next several years. Although, every infested structure will be treated, the attached house on either side will also be treated, whenever possible. This is critical since such a large number of houses in Toronto are attached or semi-detached row houses. This geographical approach will eventually result in termite free zones. It has been recommended that reinspection of untreated houses be carried

out every three years especially in known termite infested areas of the City.

Inspection reports are being computerized to ultimately reduce the paperwork load on inspectors and management personnel. This systems approach to data gathering is also another working principle of Integrated Pest Management.

The breaking of wood-soil contact will continue to be required prior to chemical soil treatment and is the only non-chemical technique currently available to be used in this Integrated Urban Management Program.

An Advisory Board to the Commissioner of Buildings and Inspections has been established to provide expertise from industry, academia and government to aid the Commissioner in the decision making tasks of the termite pest management program. One of the first tasks of this Board is to aid the City in the development of an endowed Chair of Urban Entomology to be established at the University of Toronto within the Faculty of Forestry. One of the primary responsibilities for the professional occupying this Chair will be the termite and other wood destroying insect problems of Toronto. In addition, ongoing technical training of Building Inspectors can be supplemented by the University's new expert.

Well, I am still not sure whether termites do much damage to healthy trees in Toronto. And, I found it would take many years to undo the belief that "...if my house has termites, it's better not to know..." I didn't reduce the monetary burden on the Province for funds to do termite control. In fact, I may have played a role in increasing that demand for more money. Real estate transfer inspections have pluses and minuses, so this practice will develop naturally as homeowners see the need to not buy a pig-in-a-poke.

One of the most fundamental principles of I.P.M. is to reduce the chemical burden on the land. Since no current non-chemical control agent exists to control the subterranean termite in the soil, pesticides will have to be used until a non-chemical technology is developed. In the Toronto program, pretreatment of new structures - which is now enforced - will curtail the termite problem in the future. For a while, the chemical burden will increase until manageability of infested geography is achieved. But eventually, only infested properties will be treated. More than enough work will be available to the pest control industry while program manageability is being acquired. Unneeded preventive treatment, as currently practiced, will most probably be curtailed by the program process. Of course, pressure treated wood is already required by the Ontario Building Code. Soon, however, this chemical treatment will be weighed against the value of preserving the world's cheapest most workable building material. All in all, the termite control program now instituted in Toronto is in reality an Integrated Management program to control a pest by sound decision making. It is made possible only by the municipal by-laws. The by-laws give rise to the answer to the key question -- When has the economic threshold been

exceeded. In this case, the threshold is exceeded -- if the structure is infested by termites.

With the soon-to-be support of a Canadian resident expert on urban pest management research, perhaps, by the turn of the Century (depending on the political factor over which no one has control), the termite problem in Toronto will be manageable.