



BUILDING NOTE

NUMBER 25-2004

31 August 2004

USE OF UNTREATED SOFTWOODS IN BUILDING

Background

Untreated softwoods are not usually durable timbers, and use in Western Australia is normally limited to areas protected from the weather, such as wall, floor and roof framing. Untreated softwoods are also susceptible to attack from insects such as termites and some borers, but this is not usually a problem in Western Australia when appropriate barriers are used for termites and destructive borers are not native.

The European house borer has been detected in parts of the Shire of Mundaring from Darlington to Chidlow and from Mahogany Creek to Parkerville. The State Government is taking urgent steps to determine the limits of this infestation and whether it is practical to eradicate it. It appears the borer has been present for some years in this area. It has mainly been detected in dead pine trees and branches, but an infestation has been found in one house where infested beams were used. If eradication is possible, it will take at least 10 to 15 years to carry out. It is possible that greater publicity will lead to additional infestations being identified in other areas.

The European house borer is a threat to the use of untreated softwoods in construction, as the adult beetle can penetrate into roof spaces and other parts of buildings, and the larvae can cause serious structural damage in susceptible timbers.

The European house borer

The European house borer *Hylotrupes bujulus* Linnaeus, is a destructive pest of seasoned coniferous timber, including pine, fir and spruce. The European house borer has a relatively long larval period of 2 to 10 years. This enables the pest to infest a range of coniferous woods undetected and has contributed to its spread to other parts of the world in timber and timber articles. Adult beetles are strong fliers and are believed to have a flight range of up to 800 metres.

The most obvious signs of European house borer are:

- Adult beetles that are dark brown to black and appear slightly flattened. Beetle wings are usually black, but may have distinctive white patches. Behind the head there are two raised, black, shiny knobs, which are like eyes. Adults are about 18-25mm long with antennae about half that length.
- Characteristic oval-shaped holes on the surface of infested timber from which the adult beetle has emerged. The holes are about 5mm by 10mm in size.
- Frass, a mixture of wood dust and droppings, can sometimes be found on the floor below infested timber where adult beetles have emerged from holes.
- Boring larvae tunnel through the timber leaving galleries, which are frequently tightly packed with frass. These galleries rarely break through the timber surface and are seldom detected, however, long blister-like swellings under the surface may be evident.
- Galleries (tunnels) and larvae in pine wood that has either been planed or sawn.

Other evidence to indicate European house borer timber infestation includes the presence of:

- A soft scraping sound made by the larvae as they feed which can often be heard at night and may be audible from some distance.
- European house borer larvae within the timber. Larvae are long and shaped like a tapered tube with a large flat head. The larvae are between 19-41mm long and around 7.5mm wide at maturity. Larvae can be identified by a row of three microscopic black eyes on each side of the head.
- Batches of up to between 30 to 200 eggs are laid in crevices or cracks in timber.

Susceptible Timbers

European house borer attacks pines, firs and spruce. The main timbers in use in Western Australia that are likely to be attacked by European house borer are Radiata and Pinaster pine, Oregon (Douglas fir) and also many of the imported softwood timbers, such as Baltic Pine. These timbers are much less susceptible to damage when they have been treated by appropriate chemicals, the most common being copper chrome arsenic (CCA).

Evidence of the pest can be found in living trees with dried out branch stubs and damaged branches and trunks, dead trees and logs. In buildings, European house borer infests roof timbers, but is also known to infest architraves, door frames and timber articles such as pine furniture.

Effect of Borer Damage

The larval stage of the borer eats the timber, creating tunnels through the wood containing powdery waste material. Repeated infestations of European house borer will seriously weaken or destroy timber structural members and may lead to collapse or significant distress to beams or roof and wall framing.

Precautions for New Buildings

It is recommended that building owners, designers and builders constructing buildings in the Shire of Mundaring should not use untreated pine or other susceptible timbers until the extent of the infestation has been determined and a decision is made on whether eradication is possible. In particular, untreated pine should not be used in critical structural members such as beams, rafters, underpurlins and struts, or in unsealed areas such as roof spaces where regular inspection is not practical.

At this stage there is no evidence that the European House Borer is established in other parts of the metropolitan area or in other parts of the State. However, it is possible that infestations will be reported or found as part of the survey to determine the extent of the infestation in the eastern hills and its control. If widespread infestations are found, it may be impractical to eradicate the borer and formal measures may be needed to restrict the structural use of untreated softwoods in other areas.

Precautions for Existing Buildings

It is recommended that building owners in the Mundaring Shire should check for the presence of untreated pine or other susceptible species and regularly inspect the timber for evidence of infestation, such as exit holes and powdery residue. It is particularly important to check roof spaces and structural members. If any indication of borer damage is found, building owners should contact the Plant Pest Hotline on free call 1800 084 881 to organise an expert examination.

At this stage there is no evidence that the European house borer is established in other parts of the metropolitan area or other parts of the State. However building owners should make sure regular maintenance inspections or inspections by pest controllers include inspection of roof spaces and timber structural members for evidence of infestation. If any indication of borer damage is found, building owners should contact the Plant Pest Hotline on free call 1800 084 881 to organise an expert examination.

If European house borer is detected, fumigation of the building may be necessary. Fumigation will destroy existing infestations, but will not provide immunity against future infestation.

Action by Building Surveyors

Building surveyors considering building licence applications for the Shire of Mundaring or neighbouring districts should advise the applicants, builders and building owners of the presence of European house borer with the recommendation not to use untreated pine or other susceptible species for structural members.

A copy of the attached Advisory Note should be on display at local authority offices and libraries, and should be included with documentation provided with a building licence. Copies of the Advisory Note can be obtained from the Department of Housing and Works by:

Telephone: 9222 4563

E-mail: buildingcontorl@dhw.wa.gov.au

To Report Possible Infestation

For further information, or to report a possible infestation contact the Plant Pest Hotline on free call 1800 084 881.



Peter Gow

EXECUTIVE DIRECTOR OFFICE OF POLICY AND PLANNING

Building Notes are produced by the Department of Housing and Works (DHW) primarily to inform building surveyors and the building industry. The information contained in this Note is intended for general guidance only and must not be relied upon in any particular set of circumstances. To ascertain your precise rights and obligations, you should consult a building surveyor or other appropriate professional or refer to the applicable legislation.

Copies of Building Notes may be obtained from the DHW at 108 Adelaide Terrace, East Perth or by accessing the Department's web-site at www.dhw.wa.gov.au.



Advisory Note

USE OF UNTREATED SOFTWOODS IN BUILDING

Background

Untreated softwoods are not usually durable timbers, and use in Western Australia is normally limited to areas protected from the weather, such as wall, floor and roof framing. Untreated softwoods are also susceptible to attack from insects such as termites and some borers, but this is not usually a problem in Western Australia when appropriate barriers are used for termites and destructive borers are not native.

The European house borer has been detected in parts of the Shire of Mundaring from Darlington to Chidlow and from Mahogany Creek to Parkerville. The State Government is taking urgent steps to determine the limits of the infestation and whether it is practical to eradicate it. It appears the borer has been present for some years in this area. It has mainly been detected in dead pine trees and branches, but an infestation has been found in one house where infested beams were used. If eradication is possible, it will take at least 10 to 15 years to carry out. It is possible that greater publicity will lead to additional infestations being identified in other areas.

The European house borer is a threat to the use of untreated softwoods in construction, as the adult-beetle can penetrate into roof spaces and other parts of buildings, and the larvae can cause serious structural damage in susceptible timbers.

The European house borer

The European house borer *Hylotrupes bujulus* Linnaeus, is a destructive pest of seasoned coniferous timber, including pine, fir and spruce. The European house borer has a relatively long larval period of 2 to 10 years. This enables the pest to infest a range of coniferous woods undetected and has contributed to its spread to other parts of the world in timber and timber articles. Adult beetles are strong fliers and are believed to have a flight range of up to 800 metres.

The most obvious signs of European house borer are:

- Adult beetles that are dark brown to black and appear slightly flattened. Beetle wings are

usually black but may have distinctive white patches. Behind the head there are two raised, black, shiny knobs, which are like eyes. Adults are about 18-25mm long with antennae about half that length.

- Characteristic oval-shaped holes on the surface of infested timber from which the adult beetle has emerged. The holes are about 5mm by 10mm in size.
- Frass, a mixture wood dust and droppings, can sometimes be found on the floor below infested timber where adult beetles have emerged from holes.
- Boring larvae tunnel through the timber leaving galleries, which are frequently tightly packed with frass. These galleries rarely break through the timber surface and are seldom detected however, long blister-like swellings under the surface may be evident.

Other evidence to indicate European house borer timber infestation includes:

- A soft scraping sound made by the larvae as they feed which can often be heard at night and may be audible from some distance.
- European house borer larvae within the timber. Larvae are long and shaped like a tapered tube with a large flat head. The larvae are between 19-41mm long and around 7.5mm wide at maturity. Larvae can be identified by a row of three microscopic black eyes on each side of the head.
- Batches of up to between 30 to 200 eggs are laid in crevices or cracks in timber.

Susceptible Timbers

European House Borer attacks pines, firs and spruce. The main timbers in use in Western Australia that are likely to be attacked by European house borer are Radiata and Pinaster pine, Oregon (Douglas fir) and also many of the imported softwood timbers, such as Baltic Pine. These timbers are much less susceptible to damage when they have been treated by appropriate chemicals, the most common being copper chrome arsenic (CCA).

Evidence of the pest can be found in living trees with dried out branch stubs and damaged branches and trunks, dead trees and logs. In buildings, European house borer infests roof timbers, but is

also known to infest architraves, door frames and timber articles such as pine furniture.

Effect of Borer Damage

The larvae of the borer eat the timber, creating tunnels through the wood containing powdery waste material. Repeated infestations of European house borer will seriously weaken or destroy timber structural members and may lead to collapse or significant distress to beams or roof and wall framing.

Precautions for New Buildings

It is recommended that building owners, designers and builders constructing buildings in the Shire of Mundaring should not use untreated pine or other susceptible timbers until the extent of the infestation has been determined and a decision is made on whether eradication is possible. In particular, untreated pine should not be used in critical structural members such as beams, rafters, underpurlins and struts, or in unsealed areas such as roof spaces where regular inspection is not practical.

At this stage there is no evidence that the European house borer is established in other parts of the metropolitan area or in other parts of the State. However, it is possible that infestations will be reported or found as part of the survey to determine the extent of the infestation in the eastern hills and its control. If widespread infestations are found, it may be impractical to eradicate the borer and formal measures may be needed to restrict the structural use of untreated softwoods in other areas.

Precautions for Existing Buildings

It is recommended that building owners in the Mundaring Shire should check for the presence of untreated pine or other susceptible species and regularly inspect the timber for evidence of infestation, such as exit holes and powdery residue.

It is particularly important to check roof spaces and structural members. If any indication of borer damage is found, building owners should contact the Plant Pest Hotline on free call 1800 084 881 to organise an expert examination.

At this stage there is no evidence that the European house borer is established in other parts of the metropolitan area or other parts of the State. However building owners should make sure regular maintenance inspections or inspections by pest controllers include inspection of roof spaces and

structural members for evidence of infestation. If any indication of borer damage is found, building owners should contact the Plant Pest Hotline on free call 1800 084 881 to organise an expert examination.

If European house borer is detected, fumigation of the building may be necessary. Fumigation will destroy existing infestations, but will not provide immunity against future infestation.

To Report Possible Infestation

To report a possible infestation contact the Plant Pest Hotline on free call 1800 084 881. For advice on building laws contact the Department of Housing and Works on 9222 4563.

31 August 2004