

ARCHICENTRE AUSTRALIA TECHNICAL INFORMATION SHEET

RE-STUMPING

This technical information sheet constitutes a vital part of Archicentre Australia's recommendations to you. Failure to observe the provisions of the warning sheet could lead to premature deterioration of the building.

Re-stumping, also known as re-blocking in Victoria, is a multi-million-dollar business in Australia and unfortunately very few people are aware of the many potential pitfalls in this trade.

In some States, houses with timber floors built more than 50 years ago will mostly have their floors supported on timber stumps. The life expectancy of these stumps can vary from 20 to more than 80 years depending on the type of timber, soil conditions and external influences such as surface drainage and insect attack.

In the course of its assessments, Archicentre Australia has found that up to 80% of timber stumped homes investigated needed immediate re-stumping.

CHECKING YOUR STUMPS

Before undertaking renovation work on older homes, it is essential to check the condition of the stumps. Many people have watched in dismay as newly completed alterations have been virtually destroyed as the structure subsides.

In brick houses, where the bearers are generally supported on brick piers at the walls, rotten stumps will cause a 'trampoline' effect in the centre of rooms. Contrary to popular belief, the condition of stumps in weatherboard homes cannot be definitively established by jumping on the floors. If the stumps have rotted evenly, the floors may appear firm; however, they will almost always slope away from brick fire-places. Other symptoms are crooked door and window frames.

It should be remembered that these symptoms are only evident after the stumps have failed completely. A house may appear quite sound during a visual inspection but could start to sink shortly afterwards if the stumps have just reached failure point.

Stumps deteriorate most quickly in wet conditions and generally the worst stumps are usually around the perimeter and those with the highest and most prominent water marks. The condition of stumps can be ascertained by scratching away 50mm to 100mm of soil from the base of the worst stump to check its condition below the ground.

If only a few appear deteriorated, individual replacement may be the best solution. However, if more than 20 to 30 of stumps show serious deterioration, total re-stumping should be considered.

Bulky sub-floor heating or air-conditioning ducts can often hamper proper investigation of stumps and supporting walls. Walls and stumps are sometimes carelessly removed when ducts are installed, without it being immediately obvious, leading to later structural problems.

If you are contemplating installing sub-floor central heating or cooling, the possibility of this happening to you should be considered.

RENOVATING

While your stumps may be serviceable and not in need of immediate replacement, if you are contemplating renovation, and your home is supported on ageing timber stump, it may be prudent to include the cost of re-stumping the whole of the property in your initial renovation budget.

The stumps should then be independently assessed prior to the renovation works, as re-stumping at a later date will inevitably cause cracking of wall and ceiling linings and possibly affect fitouts including joinery, which may prove even more costly to rectify if the works are undertaken after a renovation is completed.

SELECTION OF STUMPS - VICTORIA

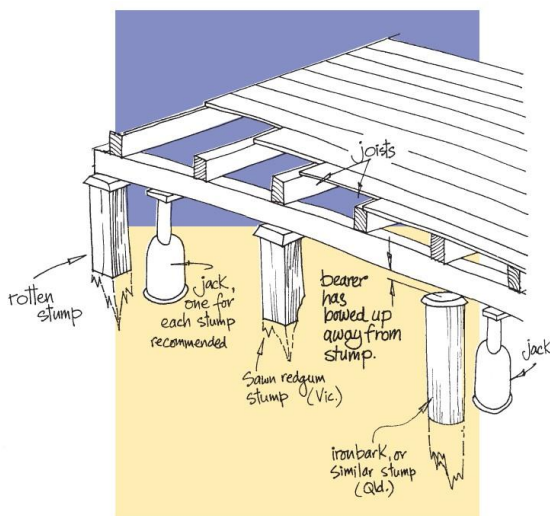
The first decision to make is to choose the most suitable type of new stumps.

In the past, timber stumps, like Victorian red gum were quite commonly used. The apparent reason for their use was that they were still sometimes cheaper than concrete. Apart from them being subject to ongoing rot and termite attack, a further disadvantage is that timber stumps cannot be as firmly secured to the bearers as concrete stumps so that re-levelling may not be quite as accurate. Cyprus Pine was often selected for its termite resistant qualities, however, it is not "termite-proof" and care must be taken to ensure that the environmental conditions which are conducive to termite attack, such as damp soils, poor drainage and ventilation and other timbers in contact with the soil, have been eliminated or are actively managed.

Concrete stumps are available in several types – and should be used. The concrete stump with the most positive form of connection is the one with a 10mm diameter threaded rod at the top secured with a poured concrete pad footing. The threaded rod allows the stump to be bolted to the floor frame preventing both upward and downward movement. The stump commonly a concrete sole plate or pad, which will provide protection against long term footing settlement.

A further advantage is that by tightening the nut after the concrete pad has set, and by partially cutting the bowed bearers at their high points, high spots in the floor can be pulled down.

Concrete stumps will last indefinitely except in extremely damp conditions where the metal reinforcement in the stump rusts and expands, causing weakness.



ABOVE: First Stage of Re-stumping - If sub-floor access is limited it may be necessary to remove several floorboards to gain access to the stumps.

SELECTION OF STUMPS - QUEENSLAND

It was once common for Queensland stumps to be made of 300mm diameter ironbark or similar rot-resistant timber. Now CCA (Copper Chrome Arsenate) treated Pine, or concrete stumps are used.

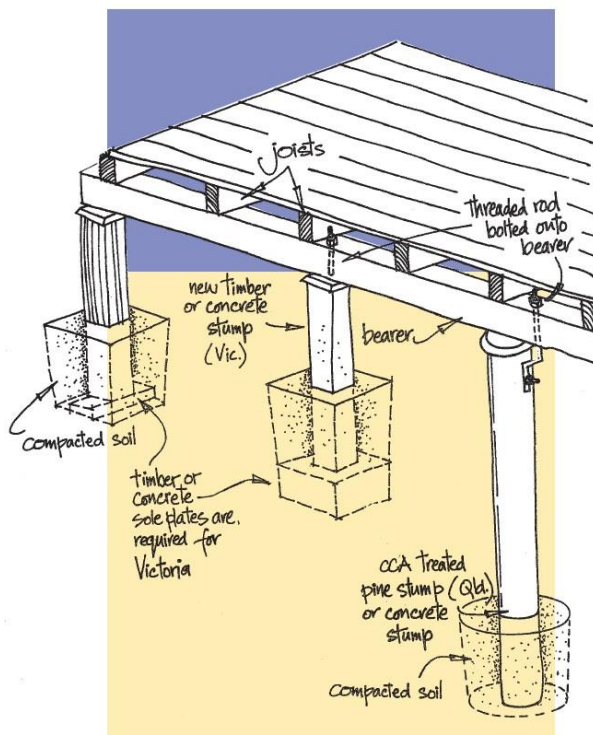
The most positive form of connection to the bearer is a bracket fixed to the stump by a coach screw or bolt. The other end of the bracket is anchored to the bearer by a threaded end and nut. In cases where the ground is unstable (soft), a concrete footing is sometimes poured separately.

Because of high wind stresses, anchor bolts are required at each corner of a Queensland house, around the perimeter every four metres and under bracing walls. These bolts may also be required in high wind areas in other States.

SELECTING THE RIGHT CONTRACTOR

Having chosen the most appropriate stumping system, extreme care should be taken in selecting a reliable and experienced contractor. The contractor should have enough hydraulic jacks to lift the building in one or two sections.

Generally, one jack is required for each stump and there are about 80 stumps in an average 150 sq. metre (16 square) timber house - less for other types of housing like brick veneer (approx. 60). If too few jacks are used, the house will need to be lifted in several sections, which will cause severe and costly damage to internal plaster-work and framing.



ABOVE: The Floor After Re-Stumping - Both concrete and timber stumps.

In choosing the contractor, the following points should be made clear when obtaining quotes. These points should also form the basis of a contract between the client and re-blockers:

- The type of stumps (and pads, if appropriate) to be used;
- The spacing of stumps;
- That on completion the floors will be brought reasonably back to level, say within 10mm;
- That the work will be in accordance with the relevant building regulations;
- That a building permit will be obtained;
- That required insurances are in place - protecting your property against damage while the works are being undertaken is paramount;
- The agreed cost;
- The start and expected completion date; and
- That if floorboards must be removed, to what condition the floor will be reinstated and whose responsibility it is to remove and replace coverings.

When comparing quotations from several contractors, ensure that they all include the same items. The lowest price may only be indicative of a lesser number or poor choice of stumps, which may spell disaster in the long term.

After receiving the quotes, check the bona fides of the contractors by asking them to give you the names and telephone numbers of one or two people for whom they have recently done work. Check that these people are happy with the work, and you may even ring the relevant Building Surveyor to make sure that they too were satisfied with the job.

After the work has commenced, it is essential that it be supervised carefully. The most common faults are:

- Floors not properly re-levelled. This should be thoroughly checked with a spirit level, or preferably, an electronic level;
- Stumps not being securely fixed to bearers, (this may eventually result in a noisy floor);
- Stumps not positioned directly underneath the joining of two bearers;
- Stumps not centrally located over pads, where pads are used;
- Failure to provide ant caps between stumps and bearers.

When new stumps have been installed and the jacks removed, the holes should be back filled with well-compacted earth.

It is not always possible to obtain a perfectly level floor after restumping. With older homes, natural settlement as well as stump deterioration may have been occurring over decades. Such settlement is rarely evenly distributed throughout the building. Your contractor may be unable to accurately re-level without creating obvious discrepancies with the level of built-in joinery, kitchen and bathroom cabinets, fitting and fixtures. Often a compromise is necessary to avoid the need for extensive rectification of existing fit-out or replacement. However, it is important that your contractor informs you of the likely outcome and that the parameters of their work are included in your contract to avoid disappointment.

The final payment to the contractor should be made only after all work has been completed according to the contract and has been found to be satisfactory.

Remember, the best way of avoiding expensive problems is to be aware of them before you undertake repairs and renovations. We have carried out thousands of home assessments for homeowners and prospective buyers, to help you make a realistic appraisal of your property before renovation or repairing.