

HOW TO TAKE CARE OF A HERITAGE BUILDING

This information was prepared to help people with the long term maintenance of old houses.

What is Maintenance? Maintenance is a process which helps prevent damage to property and protect it from the effects of ageing and corrosion. Sometimes, it can be just cleaning, painting and preventative action against termites.

Why Do We Need Regular Inspection and Maintenance? All material things such as buildings, fences, roads and drains need regular maintenance. Regular inspections of a house can reveal problems that can be fixed before serious damage occurs. If your house has recently been restored it is especially important to maintain it so it stays in good condition. Building decay is often very gradual. Gutters may begin rusting inside; roof timbers, floor stumps or bearers may be infested by fungi; or tree roots can grow through joints in drains. Moisture - in rain, the air, soil or the walls - is a major threat and if it penetrates a building it can cause havoc. With such silent invasions into your home you could well be unaware of any problem. When gutters start leaking it could be too late and you may need new ones - when timely painting could have saved the expense. Don't wait until it is too late and you need costly repairs and replacements. Regular inspections are a must!

How Does Maintenance Affect Historical Buildings? If you own an historical building, keep in mind that any maintenance work should not affect heritage principles and its historical character (for more details refer to ICOMOS guidelines). It is assumed that any conservation / preservation work on historical buildings is finished and they are now to be maintained in this state.

Maintenance Principles Good maintenance is a matter of good management - which requires familiarity with your house.

First Principle: Get To Know Your House Drawings and sometimes even specifications might be available. If you don't have originals you may have sketches or measured drawings from the conservation process. Check if there are any differences between your drawings and the actual building.

Second Principle: Prepare a Check list for Inspection Formulate a detailed inspection checklist. This forms the basis for your regular inspections. Building elements which may not show any signs of ageing or disrepair should be included.

Third Principle: Keep Full Details of Your Maintenance and Repair Work This could be a file that contains information such as dates, extent of the work, maintenance and repair contracts. It needs to be cross-referenced to the drawings and your check list.

Maintenance Processes Maintenance can be divided into three aspects:

Routine (or cyclical) maintenance: which is carried out following regular inspections;

Minor servicing: say, following minor damage; and

Major servicing: if major repairs are needed. You will need a certain amount of practical expertise for maintenance work or you may decide to leave the inspections to trades people. There are firms specialising in maintenance and repair work and conservation consultants who can diagnose major faults, specify the repairs you will need and supervise the work. Such expert advice is often important when you might be unsure if maintenance or more substantial repair work is needed or how soon it needs to be done. You can also obtain advice from government departments, research organisations or university departments. The following information on items in the check list briefly describes what to

look for when inspecting your house, together with suggestions for simple maintenance. Keep in mind that the list is only an outline and some items do not need to be inspected as often as others. However in every case remember to seek out and remedy the cause, not the symptoms.

How Often Should You Inspect Your House? The number of inspections depends on many factors. Older houses that are poorly drained or suspected to have problems with moisture penetration, for example, naturally need frequent checks. Reserve at least one day a year to inspect a middle-aged house (say around 30 to 50 years) right through. Even younger houses will repay this effort if you tackle occasional problems in good time. On the other hand, you can leave inspections of houses younger than about 30 years for intervals of up to eighteen months or even two years. However, considering the finite life of exposed paint finishes and ferrous metal and timber components, two yearly thorough inspections are essential on practically any home.

What to Look for

The Preliminaries Start the inspection with a walk around the house, preferably after heavy rain. Are there any pools of water or soft ground within, say, five metres of the walls? Water may have come from the roof and could be due to a faulty gutter or downpipe (make a mental note of that). If water stays for some hours after rain this is a sign of poor soil drainage and there is always the chance that it could then slowly find its way to the foundations and underfloor space. If extensions have altered the landscaping around the house and water stays undrained, say, between a paved drive and the walls, such small changes can alter drainage flow and also cause problems.

A Tour Down under: The Underfloor Space Now turn your attention to the space underneath the house. If you are in luck, you will find an access door and a 500 mm space underneath the floor joists. Crawl around with the checklist and a flashlight. It's not easy to get far if the space is untidy and full of all sorts of material and the first maintenance task might be to clear it. A well-ventilated underfloor space is essential and if the space is blocked up this also chokes up ventilation under the floors. However as the underfloor space could be as shallow as 200 mm you may not be able to crawl underneath the house. In this case you can look through the wall vents where even a small draught indicates a well-ventilated space but musty smells can be a sign of dampness.

After cleaning out the space and - hopefully - restoring healthy ventilation, turn to the two main items in the underfloor space: the floor supports and the floor itself. The floor supports include the upright fixtures: the piers, stumps and walls and foundations. You will probably also find a damp-proof course which prevents moisture moving up from the base of the wall or pier to the floor. In a masonry wall it is usually found in the brickwork or stonework joint near the underside of the bearer supporting the floor joists. If the damp-proof course has been constructed correctly (if it is continuous over all the pier bases and walls and has sufficient overlap) the rest of the building should be free of damp. However you may have problems with damp if the damp-proof course becomes faulty with age, if 'bridging' occurs when it is covered by rendering or if there are mortar droppings in the brickwork cavity.

In some areas there is also a threat of termite attack. Termites are flying insects that can set up a nest under the house and they can rapidly devour most timbers. If they are present you might see mud tubes on the base of walls and piers which are their communication channels. Timber attacked by termites will give a hollow sound if you tap it with a hammer. Modern building practice demands that termite barriers of galvanised steel plate ('ant caps') are placed, on the underside of the floor frame - although they don't guarantee freedom from termites unless the soil has been chemically treated. However this is also a catch-22 situation as the chemically treated ground can become a long term health hazard.

Termite attack is less likely in well-ventilated, dry spaces. Looking up to the floor, check the boards, bearers, beams and wall plate for obvious structural faults: is everything properly supported or nailed down? Decaying timber is the result of fungi attack. As fungi thrive on wood that has more than 20 per

cent moisture content, check under the shower area for any faulty insulation or flashing. If there are small holes in the wood this is caused by borers but they rarely cause significant structural damage. If there are wires and conduits check that they are securely attached and not hanging loose. Conduit holes penetrating the outer walls should be vermin-proof. Check the water pipes for drips (a cause of gradual moisture build-up) and inspect all metal components for corrosion. When you crawl out the access door or trap door see if it is firmly bolted and if it is also vermin-proof.

The solving of rising damp and termite problems is a detailed topic outside the scope of this general guide. Each solution needs to be carefully researched before any action is taken.

Out and About: Outside Walls

Check each wall surface closely. A wall may face the prevailing wind and be prone to more than its fair share of rain. Another could have a gable and so not be protected by eaves. Again, owing to a leaky gutter, another wall may have become very damp and some brickwork or stonework joints may be eroded. Look for telltale signs of:

- dampness in the base of the wall, perhaps with signs of efflorescence (due to soluble salts surfacing and crystallising when the building dries out), and, possibly because of a faulty damp-proof course, missing pointing below the damp-proof course or saturation from outside;
- mortar missing from courses or worn pointing;
- cracked or decayed sills and/or lintels with worn pointing;
- fretting (lifting of the surface) of stones or bricks; and
- cracks in the wall caused by minor settlement of the foundations.

The solving of masonry problems is a detailed topic outside the scope of this general guide. Each masonry renovation solution needs to be carefully researched before any action is taken.

In brief, when replacing masonry mortars the replacement mortar should be slightly weaker and more permeable than the masonry (stones or bricks) itself. Strong mortars tend to block evaporation from the wall and may cause salt accumulation and fretting in the stone or brick. Cracks in and around masonry sills are best filled with a waterproof mastic sealant which can also be used below the damp-proof course. Stone walls need special care and should not have water taps or garden beds next to them; nor should iron bars or spikes be fixed into stonework. If there are sills and doorways to shed water outwards make sure the water runs away from the wall. Although most brick walls are maintenance free for the life of the building, many buildings develop superficial cracks. When the movement stops the joints can be scraped out and re-pointed while fractured bricks can be cut out and replaced. Inspect special features on masonry walls such as a gable, pediment, plinth string course or cornice for signs of deterioration. Also check if the vents are clean and not choked up with dust.

Do not repair rendered or painted surfaces until first dealing with any underlying structural cracks. Again, note any minor cracks but these are best not touched. If the rendering needs to be repaired it's a good idea to consult a specialist. If the present surface is not original you could possibly restore the original, historic surface. Remember to make sure, however, that the rendering doesn't 'bridge' the damp-proof course. If there are any additions or outbuildings, the external walls may be of frame construction. This is usually a timber stud structure with external weatherboard or panel cladding.

Obviously, the cladding must resist water penetration and so is usually painted. Weatherboards are usually primed and sealed before fixing to make sure they don't absorb further moisture on site. The finished painted surface then needs to be regularly washed to remove dust and dirt, particularly where atmospheric pollution is high. Look at the condition of the surface paint. Is it peeling, flaking or blistering? Is there any mould growth? If the surface needs repainting - or possibly complete paint renewal - seek advice from skilled tradespeople. It is very important that the surfaces are dry before any painting is done.

It is important to remember that preparing the surface - cleaning, removing old paint, priming and/or sealing - is the critical phase of a painting job. This also applies to sheeted wall surfaces, including the cover strips over joints and the corner moulds. If moisture still penetrates the surface after painting repairs or renewal, this could be caused by faulty flashings which are too short or badly placed. Finally, check the wall fittings, see that the light switches work, replace any faulty globes and watch out for any signs of corrosion on ferrous metal pipes and brackets.

Timber Windows The main types of timber windows are double hung, sliding or casement.

Double Hung Windows: have two glazed 'sashes' which slide vertically past one another in rebates in the window frame. These rebates ensure watertightness. Each cord runs over a pulley on top of the casing and supports a metal weight, sufficient to balance the weight of the sash but allowing it to slide up and down with ease. The newer spring balances perform the same function. If the sash cords break or the sashes jam in their tracks and need 'easing', it's advisable to have a joiner work on these as the jamb casings may have to be opened and an unskilled hand can damage them. It's a good idea to oil or grease the pulley bearings every so often. You may get tight sashes to slide again with a smear of soap on the contact surfaces.

Horizontal Sliding Windows: have two or more glazed sashes which slide on rails. They may be hard to move and it's advisable to regularly lubricate the rails.

Casement Windows: are hinged along one vertical stile and the two sashes swing together to close. Outward opening casements tend to be more watertight as the sashes close against a rebate in the frame. An extra weather strip on the bottom rail of the sash is needed for inward opening casements. As each casement sash is only attached to the window frame with hinges along one stile, the weight of the sash and glazing puts great strain on the hinges, their attachment to the frame and sash and on the sash itself. This can cause the middle stile to sink and the two stiles to bind in the centre. Again, a competent joiner can provide advice on remedies.

The sills on the outside of timber windows are vulnerable to weathering and paint usually cracks or flakes here first. They should slope outward and a 'throat' or 'drip' on their underside prevents water running back onto the wall. The stone sill may heave blocked drainage from this timber sill, causing its decay. If the windows need repainting, for the best result remove the sashes from the frame but check how easy they are to slide in case this first needs work. If any surfaces - such as the bottom of sash rails - have not already been painted they will also need to be primed.

If the windows need reglazing this should also be done before painting. First prime the glazing rebate, then spread a thin layer of 'back' putty onto the vertical part where the glass is pressed. The glazier taps glazing sprigs into the rebate to hold the glass while the putty hardens and then spreads the putty into the sash rebate, finishing with a triangular (weather proof) profile on the outside of the window. When the sash (or a glazed door) is polished or varnished, a timber glazing bead is screwed to the inside of the rebate to hold down the glass and, in lieu of the 'back' putty, felt or soft leather is used to back the pane. The outside inspection ends with a look at window fittings and sundry hardware such as Venetian blinds, curtain rods and pelmets and, with this, you will be ready to begin inspecting inside the house.

On the Inside

Rooms Maintenance work needed in a room should be fairly obvious. As the inside of the house is protected from weather, repair is not as critical as that outside. You may find damaged skirtings or broken tiling or surrounds at the floor sumps (the metal grids for draining water). Stick any loose joints of wallpaper down before insects start squatting there. Also ensure that painted or varnished internal window boards are clean and free of moisture. Obviously it is also necessary to check any moving parts such as door locks and hinges which might need lubricating. Check the power points and

switches. The kitchen and bathroom taps might need washers and so might the toilet cistern. S-traps under sinks and basins also need occasional inspection to avoid sudden blockages.

Doors Doors may either be panelled or a flush type.

A panelled door: has a timber frame, filled in by two, three - or even a single - timber or plywood panel. Again, as in the case of casement windows, panelled doors tend to settle on the side away from the hinge and so its frame needs to be rigidly built. Houses that are a few decades old are most likely to have these doors unless they have been replaced.

The flush door: has a similar frame: two stiles and top, middle and bottom rails. In between the main rails there is filling or rails to which the flush lining is glued. This design makes flush doors more rigid than panelled doors. Entrance or verandah doors often have glazed panels with rebated stiles and rails. These panels, in turn, may also be divided by rebated glazing bars. If they are painted, the glazing is held with putty, while if they are varnished, it is held with glazing beads. Check the paint and varnish on the doors and glazing bars.

Ceilings: Next check the ceilings in each room. Do the light fittings and decorations need dusting or cleaning? Are the vents clear of obstructions? If fireplaces are being used, make sure that the chimney is not obstructed. A well turned out fireplace and mantelpiece add to the room's beauty.

Walls: Finally check the wall surfaces of the rooms. Though protected from the weather they may still show signs of moisture. It may appear from condensation in unventilated corners; from rain penetrating the ceiling from the roof or perhaps a faulty (or even missing) damp-proof course may let moisture rise in the wall. Such problems are symptoms of faulty construction which needs to be first fixed before repairing and repainting any damaged surface. Ventilation can be improved by adding wall or ceiling vents or inserting louvre panels in fixed windows; perhaps the roofing and flashing needs work and a damp-proof course can be repaired or you may need to install a new system.

When all causes of damp are repaired, remember to wait until the surface is completely dry before repainting it. You may also strike problems where different materials meet at a joint, for example where tiling joins on to the splashboard of a sink. In this instance the seal of the joint can sometimes dry out and craze and water may drip down the wall. While you may note problem spots, it is still advisable to call in skilled tradespeople to carry out the actual job of maintenance. A skilled operator can time the various phases of, say, the painting and judge the amount of sealing and finishing required for a given surface. If repairs are poorly done they could easily turn out a waste of time and money and the problems could reappear in a short time.

Up Top

The Roof Space We spend our life inside the house, between two almost hidden areas: the underfloor space and the roof space. Although you may rarely enter either space there may be insects, vermin and the occasional marsupial - perhaps possum - living there that may sometimes remind you of their existence. With your light ready, lift the trapdoor in the ceiling (it usually has a sliding cover) and, from the top of a ladder, take a good look around. In a pitched roof, the structure of the ceiling is at eye level, while above you is the roof framing and the underside of the roofing (tiles or slates). Direct the light down onto the ceiling structure. This consists of a series of timber beams, the ceiling joists. The ceiling lining is fastened to the underside of the joists unless battens run between them, in which case the lining is fastened to the underside of the battens. The space between the joists and the lining may be filled with insulation batts. If you have ceiling joists with extra large spans they are supported by 'hangers'.

Ensure that the roof space is tidy. It must be clear of all loose material that might have been stored there as this can be a fire hazard. In any case, the ceiling joists cannot carry superimposed loads. Also check the electric wiring, which could be the old rubber-insulated type. If it is, it's a good idea to ask an

electrician to fully inspect the system. Now shine the light up to the roof framing. You will see the rafters are supported at their base by a wall plate which rests on top of the masonry or timber frame wall. The two rafters from each side come together at the top, or ridge, against the ridge beam. Longer rafters are supported with intermediate struts down to the partition walls or the house frame. However in more recent roof structures you may find there are stronger trusses which don't need intermediate strutting. Collar ties connect opposing pairs of rafters, usually at every alternate pair. Purlins ('under purlins') run horizontally along the roof, supporting the rafters which, in turn, support the tile battens that follow the slope of the roof. A waterproof barrier called sarking is often laid over the rafters and fitted into the eaves gutter.

Check here for the following problems:

- If the rafters and/or purlins sag under the load of the roofing, this may be because an original lightweight roofing - perhaps corrugated iron - has been replaced by tiling. In this case you can add more strutting, replace the deflected rafter(s) or even add extra purlins.
- If shrinkage of unseasoned timber has caused the joints, nails or bolts to work loose, you may need to do some tightening or to put in some extra connectors: this can be time consuming to fix.
- The most serious fault that can occur in the roof space is for the roof to 'spread' under its weight. This may be due to insecure tying. This sideways movement may also move the external wall tops outwards and you should watch for this when checking outside the house. Repairing this is a delicate operation. The wall plates must first be secured to the walls. Steel tie rods are then attached to the plates and tensioned with the aid of turnbuckles. This job obviously needs special equipment and expert operation. While you are in the roof space also check for faulty or slipped tiles or flashing as well as any equipment in the area.

The Roof

You can often survey the roof on a single-storey house from the ground and binoculars will give you an even better view. The next best thing is to lean an extension ladder gently against the gutter and check the gutter, flashings and any other visible features. Besides the danger to yourself, if you climb on to the roof to walk around you can also break the tiles or slates. If you want to inspect the roof closely, hire a 'cherry picker' for a couple of hours. If you have had signs of a leak, the first job is to find its source. It could be from a slipped tile, a corroded slate nail which allowed a slate to move or moisture could simply be moving up through the dust between slates and dripping into the roof space by capillary action. Loose slates can be re-nailed and secured with copper clips. If existing slate fixing nails are rusted, it might be a good idea to re-roof as soon as possible with terracotta or cement tiles and include sarking.

Apart from your full house inspections, regularly clean the gutters and clear the downpipes to avoid corrosion from plant material. Also check all metal flashings, such as the valleys, for corrosion. Although copper fittings may be durable and virtually trouble free, they may still be affected by acidic products from moss and lichen and they need to be kept clean of this. Hip and ridge tiles and verges at gables are bedded in mortar which could crack and get dislodged. Tiles provide good ventilation for the roof space and even sarking is often not continuous at the ridge. Eaves and gable ventilation, too, is important for air movement through the roof space. This may be due to insecure tying. This sideways movement may also move the external wall tops outwards and you should watch for this when checking outside the house. Repairing this is a delicate operation. The wall plates must first be secured to the walls. Steel tie rods are then attached to the plates and tensioned with the aid of turnbuckles. This job obviously needs special equipment and expert operation. While you are in the roof space also check for faulty or slipped tiles or flashing as well as any equipment in the area.

Chimneys

Chimneys are rather inaccessible which explains why they are often neglected. With their exposed position, their bricks may deteriorate and the mortar joints can fail. Check if the flashings around the base of the stack and at the joint with the roof are watertight. If you are using the fireplace, the bricks could also be affected by sulphate attack. If the chimney needs repair the usual solution is to re-build it

and fit watertight metal flashings at the base. This brings you back to the matter of painting metal fittings. Along with downpipes, eaves gutters, for example, need to be painted (when they are clean and dry) with a protective paint or with bitumen if they are very deteriorated. Although copper is more expensive, it will look more in keeping with the character of an historic house and repay its extra cost by being maintenance-free.

The Stairs

In mansions of the past, the stairs greatly contributed to a grand architectural image. For example, in Elizabeth Bay House at Potts Point, Sydney, an oval inner court flanked by stairs and covered with a glazed dome fulfils the role of a mini-atrium. On the upper floor, doors open from a gallery into the rooms. On a more modest scale, the stairs may still be a feature in a terrace house. If well cared for, along with balusters and handrails, the stair structure and its details (strings, treads and risers) can be an attractive asset to the house.

Stairs are usually built from timber boards assembled like a box or case, giving the term 'staircase'. The main frame is made up of the two sloping strings on either side, into which horizontal treads and vertical risers are housed. Often risers are joined to treads by cutting tongues in the edge of the riser and fitting them into grooves cut into the back of the treads. If the weight of people using the stairs makes the bottom of the riser lift out of its groove you may get a creaking stair. This can be helped by inserting screws into the joints every 150 mm. Where stairs are wider than usual, you may also find an extra string (also known as a 'carriage') in the centre between the two main strings. Apart from stiffening the structure, it supports the sloping ceiling on the underside of the stair, the 'soffit'. You will usually find the soffit is made from timber panelling or plasterboard. The nosing of the tread usually projects about 32 mm from the face of the riser. If it juts out further than this, however, it can split away from the tread. If you check it for cracks or wear occasionally, minor repairs can be made in good time.

Finally check the cleanliness and finish of the stairs. If they are carpeted, they need to be vacuum cleaned regularly. Paint, stain and/or polish on the stairs and balusters also needs to be regularly inspected and cleaned - and renewed when necessary. Remember that finishes protect the timber from variations of moisture and serve as an insurance against early cracking.

Outside The Grounds Inspection of the grounds includes that of the outside facilities (such as terraces, balconies and paths), the important matter of drainage and, finally, services such as water and electricity.

Outside Extras Hopefully, the verandah and balcony timber floors, together with similar timber elements, are protected against the weather by suitable finishes that need regular inspections and renewal. Often upper floor balconies have slight gaps between their boards for drainage and it's a good idea to check that water doesn't then pool on the ground near the building. Rainwater from balcony roofs and awnings - at the least - should be safely directed into open drains discharging into the drainage system. Inspecting fences, gates, paths and driveways is largely a matter of common sense. However if stone retaining walls don't have any weep holes and if the soil behind them becomes saturated and they can give way. Initial signs are bulges in the top half of the wall. If this is the case, it's best to re-build the wall with plenty of large weepholes and see to it that they don't get clogged.

Where Does the Water Go?

Domestic drainage systems are often vulnerable to problems. Clogged drainpipes are usually caused by pipes moving out of alignment which, in turn, can be caused by a broken joint. This leads to saturation of the supporting soil and settlement of a wall of the building which the pipe passes through. With a break, tree roots can often intrude. They can then simply block the flow or penetrate a joint and start a leak which may, again, lead to failure of the supporting area. This problem calls for help from a drainage expert or plumber. You can check if the roof water downpipe is clear by putting a hose in the

rainwater head and flushing it. Similar flushing will tell you if sumps or gully traps flow freely. If you flush the toilet you can also check the flow through the inspection openings for the sewerage system.

Services

The services listed in the checklist are only a sample: look for signs of corrosion, proper functioning of each item and the quality of the existing finishes. To test the water pressure, turn several taps in the house and garden full on. If the pressure is low it could be from sediment in the pipe system or you may simply not have sufficient supply pressure in the area. If you have problems with any of the services, first consult the relevant authority who will usually refer you to a qualified and registered tradesperson for maintenance or repairs if the fault is within your building or site.

A Final Warning

Any checklist can only be arbitrary and you will certainly find more items which need to be critically assessed. However remember to use caution when entering old buildings that have been vacant for a while as there may be loose boarding and wiring or other items in disrepair. In inspecting a building the main aim is to become aware and familiar with all its parts and with the site and to come to terms with the environment. Inspect your property regularly but remember not to tangle with items which are beyond your capability.

(This information was prepared by Peter Kabaila in 2009, based on guidelines by Prof Emery Balint written for the Heritage Council of NSW in 1989.)

GUIDELINES FOR RESTORERS AND RENOVATORS

By Ian Evans

- 1 Retain the original character of the house. This means preserving its original appearance and interior features.
- 2 Don't 'over-restore'. Make sure the house still looks like an old building after you've finished the job. Some restored houses look like new buildings.
- 3 For major external and internal work stick to materials that were used when your house was built. This rules out modern building materials such as concrete blocks, metal-framed windows and so on. Some unobtrusive use of modern materials, such as laminates in the kitchen, is often necessary.
- 4 Details are important. This includes the type of decorative glass, mouldings on doors, hardware, light fittings and so forth. To explain the reference to glass, you don't introduce leadlight into a building which has never been fitted with it.
- 5 Understand and respect as far as possible the original uses of rooms. Sometimes changes are necessary but try not to alter the interior so completely that all trace of the original interior plan is lost.
- 6 Some houses were never meant to have en-suite bathrooms. Introducing an en-suite to a small house or cottage may cause serious damage to the original character of the building.
- 7 Old houses really come to life when painted in fashionable colours of the period and in the manner of the period. Stick to colours and colour schemes that are known to have been used on houses of your period.
- 8 Floors are best finished in the manner of the period in which your house was built. Avoid too much use of the floor-sander, perhaps limiting it to kitchens and lesser rooms. Modern polyurethane finishes should be avoided. Use finishes such as japan and tung-oil.

9 Fences are very important in enhancing the overall appearance of your property. Look at genuine old fences, observe the way they are designed and constructed and give your contractor detailed, preferably written and/or drawn, instructions on your requirements.

10 Garden design and plantings, especially in the front garden, will best complement your work on the building if you keep it in period with the house. Use plants and garden layouts of the time. Look at original gardens to understand the type of surface used on paths and driveways.

11 Additions and alterations should be in the manner and materials of the period in which your house was built. Extra living space is often best obtained by rear extensions. Hilly terrain often makes it possible to fit new rooms underneath, at the rear of the house, by excavating. Avoid jacking-up timber cottages on level blocks because the result is often most unfortunate.

12 Remember that it's a house, not a museum. You and your family are just as much a part of the history of your house as anyone else. Live in it and enjoy it and, at the right time, pass it on to someone else. Hopefully, it will be in better shape after you have lived there than it was when you arrived.