



Heritage Advisory Service

HSPN 02. ROOFING & RAINWATER GOODS

Roofs and their cladding materials constitute an enormous part of the visible environment, to the extent that in heritage areas, they are critical to the character of the environment and in particular, its consistency of built form. The roofs of heritage buildings and new buildings in heritage areas therefore have potential to impact both positively and adversely on the area. For this reason, the characteristic roofs of heritage buildings and their materials are highly valued. Conversely, uncharacteristic and obtrusive roof forms and materials are a matter of concern.

1.0 SLATE ROOFS

Permits will not generally be given for the removal of original slate roofs to dwellings or commercial buildings. Slate roofs may be repaired or re-laid without a permit, but any change in the pattern, colour and size will require a permit.

Every effort needs to be made to retain slate roofs. They are a special, but vulnerable element of the heritage environment that could be lost incrementally unless every case is pursued. Numbers of new slate roofs are never likely to exceed the removal of those now existing. The principal concern of building owners will be cost, especially as the type of slate that is appropriate in heritage situations is usually Welsh grey or coloured slate (~\$250/sq m new), cf. Spanish black slate (~\$150/sqm new). However, more often than not all that is required is to strip and re-nail the existing slate with a few additional s/h slates at about \$80/sq m overall. Prices (2003) for other new roofing materials are Zinalume, ~\$30; Z600 Galvanised iron, ~\$35; Colorbond, ~\$35; concrete tiles, \$40 and Terra cotta tiles, ~\$55. When obtaining quotes such works, it is important to insist on strip and re-nail as the first option and to use a reputable skilled slate contractor. The following firms are suggested:- Roof Service Company – 9397 2055 or Scottish Roofing Services - Ph. 9798 7267.

Part of the charm of slate roofs is the patina of mosses and lichens that form on them. It is important to note that these do no harm to the slates and cleaning should generally be avoided.

Flashing and capping of slate roofs was traditionally in lead, ridge cappings being formed over a timber roll elevated above the surface (see sketch). Common practice nowadays is to use galvanised iron, which is acceptable, but Zinalume and Colorbond should never be used. Sometimes, in the early 20th century, capping of slate roofs was done in terra cotta, with cresting and finials. This should only be done when repeating a previous form.

2.0 CORRUGATED IRON ROOFS

It is internal policy in the Planning Department not to accept the use of Zinalume (too bright for too long) and Colorbond (too artificially uniform in colour and texture)). We will always recommend the use of double dipped galvanised iron (comparable to early gal iron) that has a very long life and is about the cost of Colorbond (see above).

The recommended iron is Fielder's Z 600 double smelted galvanised iron. This is on .42 gauge steel with 2 ounces per sq foot of coating. Z 450 is a cheaper option that is superior to other galvanised iron. This is on either .42 or .48 gauge steel. Fielders provide a 15 yr warranty on the material and a 10 yr warranty on the whole of the works if carried out by an Approved Heritage Contractor.

Curved verandah roofs should always be in heavy gauge iron. Fielders also make properly fluted small corrugation steel sheets (mini-orb). Fielders is also able to create the authentic deep corrugations 19mm - 3/4" of bygone eras. Called '3/4" Corrugated', this profile is available in short sheets up to 10 feet in length and is also useful for repairing early roofs.

O'Boyles Roofing (Mark O'Boyle) 0412 397 588 and System Roofing (Mark Higgins) 0412 538 652 are recommended by Fielders. Fielders Melbourne, 9300 7700 (www.fielders.com.au).

3.0 TILED ROOFS

Terra cotta tiling was introduced in the late Victorian/Early Federation period. At this stage, it was invariably unglazed and this type of tile should be used for all pre-WW 1 buildings. Often there was a colour variation in tiles based on the degree of firing and this variation was frequently used as a deliberate mix on roofs to obtain a less uniform effect. This variation is also an important characteristic of early tiled roofs and the uniformity of new modern tiles should be avoided. Some tiles become brittle, but for the most part, tiles remain waterproof regardless of age. Second-hand tiles are always available, are just as good as new and should always be used for heritage buildings

The concrete tile was introduced in the Interwar period. Early concrete tiles commonly had a smooth pigmented surface, but this was vulnerable to the elements and is now rarely seen on early buildings, except in protected areas or when the tiles are lifted. Typically these were red or pale green.

4.0 ROOF GUTTERS AND DOWN PIPES

Roof gutters are very important to the look of heritage buildings. In the Victorian and Federation periods, they were designed as parts of cornices with strong horizontal modelling defining the junction of the roof and wall, eg, the roof gutter is the upper element of the typical eaves decoration found on Victorian dwellings from cottage to mansion. Gutter profiles varied according to the period of construction. Proper choice of gutter profile produces the final touch to building detail. Always look for any remaining original gutters on the house before making a choice. A general guide is provided at the end of this Note.

Gutters to hoods and small roofs were generally of similar profiles, but smaller in section. Larger section gutters are available for very large roof areas (Creeks Metal Industries 9722 5555).

Downpipes should be circular (usually 75mm) for all buildings up to the Post war period. A flattened conical transition should be used with Ogee and Ovolo gutters. Cranks back to the wall should be in straight sections unless early moulded lead alloy is used. Rainwater heads need only be used where significant amounts of water are involved or where catching water from a box gutter. The design of these is also specific to period.

Fixings are also important.

All eaves gutters carried on a gutter board or exposed rafter ends should have a timber mould (see period/style) below the gutter to align and help support the gutter.

The recommended fixings for eaves gutters are gutter screws (or spikes) that go through the whole gutter to the gutter board or rafter end behind. The modern equivalent (less effective) is the concealed bracket. Either of these should be used instead of the common gutter strap, which has no load bearing value and which results in the commonly seen twisted gutter. Examples are shown in the illustrations.

Materials and painting.

Roof gutters and downpipes may be of any metal finish (subject to compatibility with the roof and other rainwater goods, see your plumber for important technical advice), but should always be painted (including Colorbond) to fit the colour scheme of the house.


5.0 MAINTENANCE

Roofs

The greatest threat to heritage buildings is water penetration. Roofs are therefore critical to keeping water out of the building and regular maintenance is a primary requirement to prevent extensive damage to other parts of the dwelling.

When inspecting internally dampness or discolouration of a plaster ceiling is a clear indication of a leak or the presence of a possum in the roof space.

This space as well as the roof top should be inspected regularly to check for leaks. In dry weather, the smell of the roof space often provides clues. Does it smell wet and musty or like dry dust? Ensure that



the roof cavity is adequately ventilated and look for signs of rot in timber structural members. Where water has come through the roof, it will usually combine with dust particles to leave a telltale stain. Always fix the source of the leak before making cosmetic corrections, such as painting over the stain. The best way to determine where water is penetrating is to get into the roof space during a reasonably heavy rainfall and trace drops as they run down rafters.

When inspecting roofing externally be aware that if your weight is not spread evenly there is the potential to damage and cause the very problems you are looking for. Preferably use roof ladders or planks to spread your load. Common entry points for water include seams and joints, especially around flues, vents, skylights and chimneys. The problem may be as simple as a blocked gutter, forcing water to take an alternative route of escape. Sometimes the cladding itself may have corroded through to a hole. It is reasonably common for old corrugated iron to move and gradually increase the size of the nail holes, allowing water penetration. These holes can be resealed using silicone or new nails with neoprene washes. **Never seal the joints of iron roofs** - they are meant to drain.

Galvanised iron, even when rusty, can frequently be painted to increase its life. Basically the paint film replaces the film of galvanising. This will involve wire brushing with a specially profiled brush, rust treatment, priming and a top coat of roof paint. Ensure the process is according to the paint manufacturers instructions.

Verandah roofs

Iron verandah roofs will have frequently been buckled by careless traffic over them. Generally their only framing will be corner rafters. Additional framing will have often been added. This can usually be recognised by its poor quality, including lack of stop chamfers. Buckled iron can be re-rolled if in good condition (rivets need to be removed carefully) or replaced using .82mm gauge iron with 19mm deep corrugations (Fielders 3/4 Corrugated), without the additional framing

Gutters, downpipes and drains

Even more so than the roof itself, poorly maintained gutters, downpipes and drains can have major impacts on a dwelling. Their proper maintenance and repair is essential for the well being of a building. Regular cleaning is the first step. Internal gutters should be a priority.

The main issue is that roof water needs to be conveyed to a safe place, the stormwater system or a tank, rather than being allowed to collect at the perimeter of a building where its effect is invariably negative. Any leak in the sequence of gutter, downpipe to drain is dangerous. Water shed onto a wall, particularly when wind driven, will damage paintwork, rot timber, leach mortar and lead to penetration of the wall construction and eventually damage of internal finishes by falling damp. Persistent falling damp on brick walls (more than normal rain, which has little effect providing the joints are well pointed) leads to concentrations of salts that are difficult to deal with.

At ground level it leads to loss or swelling of the foundation resulting in structural movement and its resultant damage in many forms. This is most marked at the corners of buildings where downpipes usually occur and where their lack of or faulty connection to drains is a common cause of movement at the weakest part of the foundation. Proper drainage is absolutely essential in the Elwood Swamp area where masonry buildings are already very vulnerable due to reactive and inadequate ground conditions.

Therefore gutters and downpipes should be cleaned and replaced as necessary and roof water should be disposed of efficiently through a positive drainage system. Underground drains are best, but impervious surface drains are effective providing they are kept clean.

On site water storage.

Due to reticulated water shortages, the collection of roof water in tanks has again become desirable. This can be done overhead, from roof gutter to top of tank, but pipes are unsightly and vulnerable if they have to travel any distance. A preferred method, allowing the distant location of the tank is to use a sealed system that comes from gutter level, goes underground and then rises again to fill an above ground tank.

Modern technology in the form of sealed plastic pipes allows this “charged” system to work ideally, picking up enough roof outlets to collect sufficient water for an urban sized tank. Ensure that the size of downpipes does not become excessive. On heritage houses it is best to use 80mm sewer grade PVC pipes for the downpipe rather than the larger cheaper sizes available in stormwater grade. The pipes should always be painted for reasons of preservation and aesthetics.

Note that a Planning Permit will be required for the installation of an above ground tank and its associated visible pipe work.

VICTORIAN AND FEDERATION BUILDINGS

Use ogee profile gutters with a timber scotia mould below. Cast iron gutters were used on high quality buildings.

Frequently decorative acroteria cut out of sheet iron were used at the corners and at the ends of valley gutters where an added function was to control water splashing into the gutter.

FEDERATION BUILDINGS

Use ogee profile gutters with an ovolo mould below. Ovolo gutters (no longer available) are also appropriate using a scotia mould below.

INTERWAR BUILDINGS

For Californian Bungalows, Mediterranean villas, etc, use quad or bullnose gutters with scotia or ovolo below. Quad is the more appropriate gutter, but will need to be made specially.

POST WAR BUILDINGS

Immediate post war buildings should generally be treated as for the Interwar period. However, special gutters, sometimes with a splayed front were sometimes used on more consciously modern buildings. Often, gutters were fabricated specially and located behind splayed or vertical fascias.

