

Replacing a timber shingle roof

Heritage construction skills



Keystone
TASMANIA

REPLACING A TIMBER SHINGLE ROOF

In this case study, Graham Green (Bushman) describes the process of replacing a timber shingle roof.

Context

Graham is splitting timber shingles and fixing them to the roof of the Miller's Cottage (Callington Mill, Oatlands).



Miller's Cottage (Callington Mill, Oatlands)



Significance

Traditional timber splitting and roof shingling skills are important in the restoration of heritage properties for the following reasons:

- The quality and finish of a roof plays an important role in defining the character, integrity and heritage value of a property
- The use of inappropriate roofing fabric can compromise the character, integrity and heritage value of a property.



Replacing a timber shingle roof



Challenges

There are a number of challenges associated with replacing a timber shingle roof:

- Sourcing suitable timber for shingles
- Determining a suitable length, width and thickness for shingles
- Calculating how many shingles you will need for the job
- Working with fully seasoned (dry) shingles and green shingles.



Sourcing suitable timber



Splitting to a suitable size

Solutions

There are a few handy 'tricks of the trade' to deal with the challenges listed above:

- Eucalyptus is the best timber for shingles (e.g. black peppermint)
- Always split shingles to roughly the same size as the ones you are replacing (e.g. 480mm long x 125mm wide by 10mm thick)
- You will typically need about 50 shingles per square metre of roof
- Leave a gap (5-10mm) between dry shingles to allow for expansion, and butt green shingles together to allow for shrinkage.



Calculating shingle numbers



Fixing dry shingles

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Step 1 - Planning

- Photograph roof in original state for future reference
- Obtain historical data (if available)
- Obtain project data (e.g. work plan and specifications)
- Determine original roof design
- Determine suitable timber for shingles
- Determine suitable length, width and thickness for shingles
- Determine appropriate fixing method of shingles
- Calculate material quantities required for job
- Complete safe work method statement.



Determining length, width and thickness for shingles



Step 2 - Splitting timber

- Select tools and equipment (e.g. chainsaw, axe, maul, wedges, froe, bittel, splitting block, bench saw)
- Source suitable timber for shingles
- Test timber for suitability
- Cut trunk into sections with chainsaw
- Cut each section into billets with axe
- Remove heart-wood from billets with axe
- Place billet in splitting block and split in half with froe and bittel
- Repeat process for each half billet until shingles are 5-10mm thick
- Remove sap-wood from shingles with bench saw
- Stack shingles to dry until needed.



Splitting timber with froe and bittel



Step 3 - Preparing roof face

- Erect scaffolding
- Install safe access routes and fall arrest system
- Select tools and equipment (e.g. sarking, pinch bar, hand saw, drop saw, hammer, nails)
- Remove worn/damaged shingles and battens
- Remove protruding nails and store for future reference
- Check condition of rafters and top plate, and replace as required
- Drape sarking over rafters
- Replace battens with appropriate spacing to allow for shingle length
- Confirm roof face meets work plan and specifications
- Photograph roof face for future reference.



Removing damaged shingles and battens



"It is important to keep traditional skills alive"

Graham Green (Bushman)

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Step 4 - Fixing shingles

- Select tools and equipment (e.g. casing axe, hammer, nails)
- Fix shingles to battens with nails (two per shingle), starting from the verge and moving up to the ridge
- Allow appropriate gap between shingles
- Allow appropriate offset/overlap between each course of shingles
- Split and cut shingles to form junctions with walls and roof surfaces
- Cap ridges and hips
- Confirm finished roof meets work plan and specifications
- Discuss ongoing maintenance with property owner
- Photograph roof in finished state for future reference.



Fixing shingles to battens

Result

- The roof is watertight
- The original roof design has been retained and preserved
- The roof is aesthetically acceptable to the property owner.



Original roof



Finished roof

Background

This case study supports the development of heritage trade skills in Tasmania. It is part of a broader set of support materials that have been developed by Keystone Tasmania.

Acknowledgements

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Want to learn this heritage trade skill?

If you are interested in learning how to replace a timber shingle roof, contact Keystone Tasmania to register your interest in a training course.

❖ 03 6223 7804

❖ email@keystone.com.au

❖ www.keystone.com.au