

# NOTES



**Build Back Safer  
using locally  
accessible  
materials and  
techniques**



# CLADDING

While waiting for your timber and tin iron for walls and roof to arrive, the following local materials can be used as the cladding of the roof and walls. Local cladding materials are sometimes changed when infested with borers and termites, affected by fire, struck by cyclone or has lost its durability.

BAMBOO / BITU / ODI / DUVU / *Bambusoideae*

LASTS 5-10 YEARS

**STEP 1** Cut bamboo, trim according to the width and length of the wall.



**STEP 2** Half bamboo & flatten nodes using a hammer.



**STEP 3** Align one half of the bamboo on the ground, overlap the other half horizontally on top of it and begin weaving. NOTE: While weaving, the bamboo should be handled with care.



**STEP 4** Once weaving reaches the other end of the bamboo, add frames to the bamboo before nailing it to the wall.



**TIP**

If you are staying near the coastal area, you can soak your bamboo for 2 weeks to 1 month in sea water before weaving. In the interior like Naitasiri or Namosi, the bamboo needs to be fully matured (3-4 years old) before it can be used. To make the walls stronger, bamboo double walls are recommended where the outside part of the bamboo (green part) is facing outwards or by painting the wall. The wall of the house may last up to 20-40 years with the double walls.



## Local Trees And Its Uses

Please note that timber listed for heavy construction (interior and exterior) are also acceptable for lighter structural application. Timbers listed for heavy construction (exterior) are also acceptable for light exterior structural applications.

Trees	Local Treatment Method	Strength Grade	Pictures
<b>Nokonoko</b> (I-Taukei name)	If used for the exterior, it has to be treated by soaking it in sea water.		
<b>Bauvudi/Bau</b> (I-Taukei name)	Soak in sea water for a month or paint with loose oil.	SD7 	
<b>Mahogany</b>	Chemical Treatment	SD7 	
<b>Pine</b>	Chemical Treatment	S6 	
<b>Sa'a</b> (Rotuman name) <b>Mavu/Vau Dina</b> (I-Taukei name)	Debarked and use on the wall. Big size Sa'a can be halved then used.		
<b>Hahua</b> (Rotuman name)	Debarked and can be used straight away for purlin and rafter. <b>TIP:</b> Nailing will be hard when the Hahua is dry.		
<b>Aftea</b> (Rotuman name)	Debarked and dried for 4-6 weeks before it can be used for Top Plate.		
<b>Pou</b> (Rotuman name)	Bottom part of debarked Pou timber that is driven into the soil is smoked before its used.		
<b>Vavakana/Vavaioa</b> (I-Taukei name)			
<b>Vala/Vutu</b> (I-Taukei name)		S6 	
<b>Vesi</b> (I-Taukei name)		SD2 	
<b>Yaro</b> (similar to Tavotavo) (I-Taukei name)			
<b>Yasiyasi 1&amp;2</b> (I-Taukei name)		SD3 	
<b>Koka/Tea</b> (I-Taukei name)		SD5 	
<b>Mavota</b> (I-Taukei name)		SD4 	
<b>Buabua</b> (I-Taukei name)		SD2 	
<b>Sevua/Nawanawa</b> (I-Taukei name)			
<b>Dilo</b> <b>TIP:</b> Dilo trees with fruits suitable to use (I-Taukei name)			
<b>Dakua Makadre</b> (I-Taukei name)		SD5 	
<b>Laubu</b> (I-Taukei name)		SD3 	

# FASTENERS

GAULO / SOVA / ULA

LASTS 10-20 YEARS

Gaulo is a kind of wild creeper or climber, it can be easily found but is hard to harvest because it grows around other tall trees and tangles itself on it.

**STEP 1** Gaulo is harvested and taken to the village to be stripped.

**STEP 2** Once stripped, one end of the stripped vine is sharpened for easier penetration through the thatching, it also holds the thatching together to the wall studs.



**TIP**

Two people are needed for the wall thatching as one will be inside the house and the other outside to pass the vine (gaulo) back and forth to each other. We can change the gaulo (if you want to) once the nails/strappings have arrived or if you want change the walls of your home that is made from local material i.e. tabakau, bamboo and so on.

# CLADDING

GASAU / REED / *Eulalia Japonica (Griminaeae)*

LASTS 5-10 YEARS

**STEP 1** Cut gasau, remove the leaves and pile into bundles. Thickness of the wall will depend on how much gasau you can wrap your arms.

**STEP 2** Once you have determined the thickness, gather that exact amount of gasau that you can wrap your arms around and align them onto the frame of the wall.

**STEP 3** Sew the gasau to the frame using any of the local fasteners. The sewing will start from whichever corner the stacking begins. One end of the fastener will be sharpened for easier penetration through the pile of gasau. Gasau bundles are tied to the stud and noggins.

**STEP 4** Add another pile of gasau to the previous sewn-in layer where the sewing is continued right until the end of the wall. Wall frames can be nailed from the outside of the house to the inner wall frame of the house (contemporary house) to prevent water, borers, termites and wind and so on from entering the house through the sides.



# CLADDING

## ROOF AND WALL CLADDING

### TABAKAU / WEAVED COCONUT LEAVES / FROND / PALM LEAF **LASTS 5-10 YEARS**

- STEP 1** Cut tabakau leaves and split in half.
- STEP 2** Weave the tabakau and add on to frame of the house. The weaved tabakau is tied to the studs and noggins of the house.
- STEP 3** Weaved tabakau should be approximately 5 inches apart from the next one that will be added on. Continue adding the weaved tabakau to the wall of the house until it reaches the other end of the wall.
- STEP 4** Add frames to the tabakau wall if used on a contemporary design to hold the wall in place.



WALL

ROOF THATCHING

### MISIMISI / DRIDRIWAI (survives in wet places) **LASTS 5-10 YEARS**

- STEP 1** Cut misimisi leaves (Do not dry it out in the sun)
- STEP 2** Fold the leaves next to each other on top of a timber.
- STEP 3** Once the timber is fully covered, place the covered timber on top of either the purlin or stud (depends on whichever part of the house you are using it for)
- STEP 4** Once the covered timber is on top of either the purlin or rafter, add a gaulo (fastener) on top of it tying to either the stud or purlin
- STEP 5** For walls, add frames to the thatching so it can be easier to nail to a contemporary house and for roofs, add as many purlins as possible to the contemporary house for stronger roofs.



#### TIP

For stronger walls and roofs, add numerous studs and purlins to the house, the nearer the stud and purlins are to each other, the harder it is for the wall or roof to be blown away.

# FASTENERS

## MAGIMAGI (Method 2)

**LASTS 10-40 YEARS**

- STEP 1** Husk coconut.
- STEP 2** Prepare earth oven or *lovo*.
- STEP 3** Bake coconut husk (3-21 days).
- STEP 4** When needed, they are taken out of the oven through a small opening on one side, which is closed after the desired number of segments has been removed.
- STEP 5** Each segment is freed of its outer husk by hand and then is placed back upward on a block of wood and beaten with a wooden mallet to remove bits of flesh, dirt and short strands.
- STEP 6** Tiny pieces of the beaten husk are clumped together then rolled either using your thumb and pointer finger or between your hand and a flat surface. While rolling, you will see pieces coming together forming 1 or 2 strands.
- STEP 7** The clean, long strands are allowed to dry in the sun for about three hours. The good fibre is reddish in color.
- STEP 8** When the dry fibre is pulled apart by the hand, it is ready to be braided soon.

#### TIP

*Sennit (magimagi) is made from the coconut of the largest type called niu magimagi (sennit magimagi). The nut grows to 55 cm long. No other types of nuts are used because their fibre is too short and too brittle. Check regularly every 6 months.*

# FASTENERS

The local materials below are for a quick recovery i.e. it can be used while waiting for your nails and strappings to arrive. Fasteners are sometimes changed when infested with borers and termites or has lost its durability.

MAGIMAGI (Method 1)

LASTS 10-40 YEARS

- STEP 1** Magimagi is made from coconut husk whereby the coconut is cooked in boiling water for 45 minutes.
- STEP 2** Once cooked, the coconut is transferred into a sack and left under a dripping tap so water may drip onto it for about 3 weeks.
- STEP 3** Fully soaked, the coconut is then taken out and the husks are shredded.
- STEP 4** The shredded husk is further beaten or *samu* until it breaks into tiny pieces.
- STEP 5** The tiny pieces of the shredded husk are clumped together then rolled either using your thumb and your pointer finger or between your hand and a flat surface.
- STEP 6** While rolling, you will see the pieces coming together forming 1 or 2 long strands.
- STEP 7** Weaving of the strands will be dependent on the use of magimagi i.e. if used for construction, it will require 20 or more strands of magimagi which should be approximately 8 cm thick and 50-100 metres long.



# CLADDING

ROOF

OTA OR SOGA OR WATA TREE

LASTS 1-2 YEARS

- STEP 1** Cut down leaves and dry it out in the sun.
- STEP 2** Weave the sogla leaves and place it on top of the purlin starting from the bottom of the roof and move upwards that way water cascades down easily.
- STEP 3** Continue placing the weaved leaves one after the other on top of the purlin (Weaved leaves needs to be approximately 1 inch apart from each other).



TIP

*Cladding and joints are sometimes changed when infested with borers and termites or has lost its durability.*

# Trees And It's Uses

Please note that timbers listed for heavy construction(interior and exterior are also acceptable for lighter interior structural application). Timber listed for heavy construction(exterior) are also acceptable for light exterior application.

**LIGHT CONSTRUCTION**  
 Mavota(myristica grandflora (myrsticaceae)) Used as door frames.  
 Aumunu(dacrycapus imbricatus)

**FLOORING**  
 Vala/Vutu  
 Dakua/Makadre

**STRENGTH GROUPS**

SD2 OK TO USE

SD6 OK TO USE

SD8 NOT OK TO USE

Not to be Used: Uto/Kulu/Breadfruit (cocos nucifera)  
 Mocemoce/Vaivai ni Valagi/Raintree (samanae saman)  
 Coconut Trunk/Tolo Ni Niu, (artocarpus altilis)

