

## Low-cost exhibition **display techniques**

**A map, a vase, a kete – whatever objects you exhibit, you want them to be a pleasure to view. You also want to avoid the possibility of damage to them. This guide suggests practical techniques for displaying objects attractively and securely at little cost.**

### **Essential** planning

Before you decide how to display the objects, plan the exhibition space. Designing on paper costs nothing, and might save you time and money later.

Draw a floor plan of the space to scale, then if possible draw a plan of the wall space as well. Mark on your plan where the main components of the exhibition might fit – stands of different heights, cases, wall-mounted objects. Where will each object be placed?

Which objects will you group together? Are there valuable objects that need to be displayed in cases for security reasons? Which objects require stands? How high will the stand need to be? Will the object require bracing, so that it is secure if the stand is knocked or if there's an earthquake? What items will you hang on walls? Do they need support or framing?

Designing the space might save you the trouble of making a case for an object then finding that you have no room for it.

For more on planning an exhibition, see *He Rauemi Resource Guide* 10: 'Exhibitions at Your Place'.

### **I N S I D E**

- 2 Starting points
- 3 Perspex – a clear winner
- 7 A multi-purpose display case
- 8 Displaying objects upright
- 9 Displaying works on paper
- 12 Making labels
- 13 Other low-cost solutions
- 14 Audio and video technology
- 15 Installing the show
- 16 Security
- 17 Sourcing exhibition materials
- 18 Further reading





## Starting points

### The best objects

Make sure that your objects are the best available – the strongest, the most varied, and the most appropriate for the purpose of the exhibition. Look for photographs, paintings, documents, and newspaper articles that you might include as well.

### Handle with care

Handle each object as little as possible, and always wear gloves. Make a condition report on each one, noting any damage. (For more on condition reports, see *He Rauemi Resource Guide 26: 'Condition Reporting'*).

### Assess the requirements

How are you going to display each of these objects? Before you decide, ask yourself:

- What is it made of?
- Is it strong enough to handle?
- What are its vulnerable points?
- Is light going to fade or weaken it?
- Can it be damaged by people, bugs, dust or vibration?
- Will it be affected by temperature or humidity?
- Is it your only example, or can it be rotated with others the same or similar?
- Would it be better to use a replica or copy of the object?

For an overview of conservation techniques to prevent your objects deteriorating either in storage or on display, see *He Rauemi Resource Guide 5: 'Preventive Conservation'*.

### Start with what you've got

When you are planning how to display each object, start with materials you already have or can get at no cost.

- Can you reuse or recycle materials from previous exhibitions?
- Does a large museum near you have old furniture or lighting which needs a good home?
- Are there any old-style shop fittings around your town? They can make fine display furniture.

But be careful. If it doesn't meet the requirements of your display, don't use it.

# Perspex – a clear winner

Perspex is a wonderfully versatile material. You can buy it clear or coloured, in sheets, rods, and tubes. You can cut it and drill it with standard woodworking tools. It's ideal for cases, shelves, and supports, and if you take good care of it you can use it over and over again.

Perspex can be glued, but this is difficult to do well and requires specialist adhesives and machining to achieve a perfect result. You may need to ask an acrylic specialist to do the job for you.

**Handling tip:** Perspex scratches easily. Clean it with an anti-static cleaner such as Pledge, and remove serious scratches with Brasso.

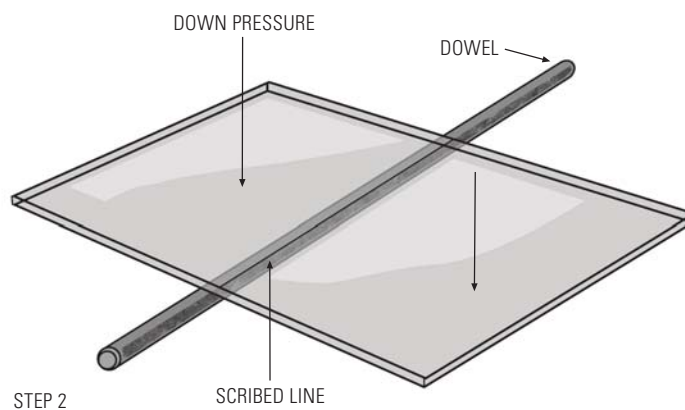
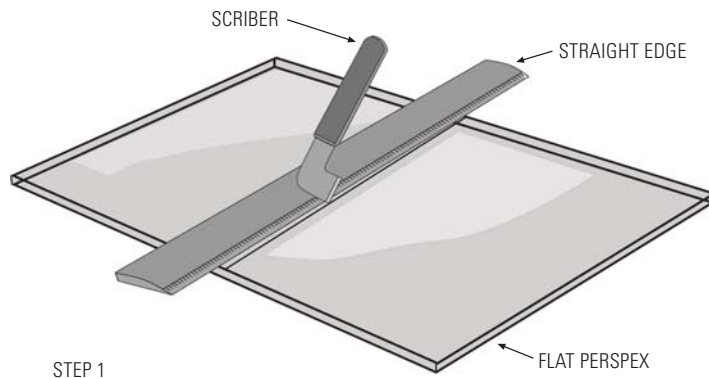
## Cutting perspex

Perspex comes in sheets of various thicknesses. You might use thin perspex (2–3mm) when you are framing a document. For cases, shelves, and display stands you will need to use thicker sheets.

You can cut thin perspex by scribing and breaking it.

- Mark on the perspex where you want to cut it.
- With a scriber or a sharp blade, score along the mark using a straight edge.
- Place the perspex over a piece of dowel with the scribed line exactly above the dowel.
- With both hands, apply pressure on either side of the dowel to break the perspex.

You can cut thicker perspex on a sawbench using a blade with a lot of teeth. Or you might want to get a specialist to cut it.

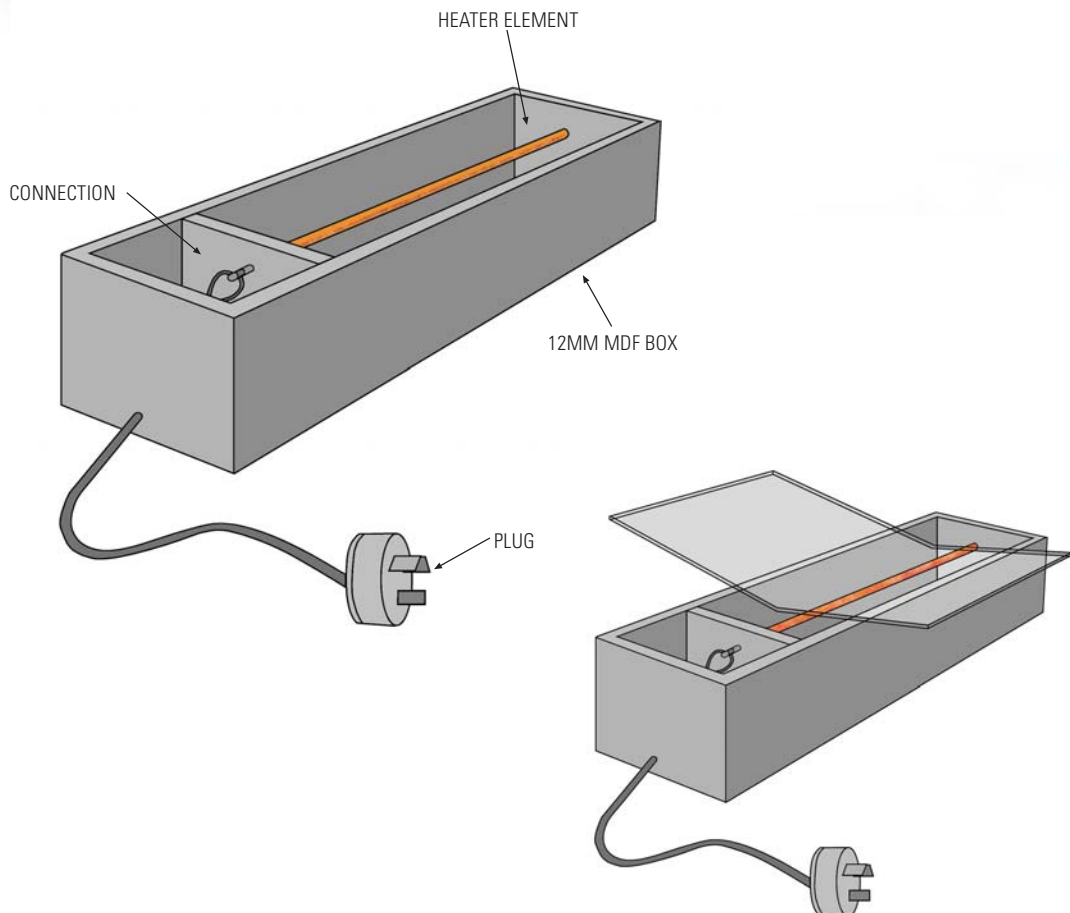


## Bending perspex

Perspex bends when it is heated. You can make your own simple perspex bender with a solid element from an old bar heater, a customwood box, and a helpful electrician.

### Making a perspex bender

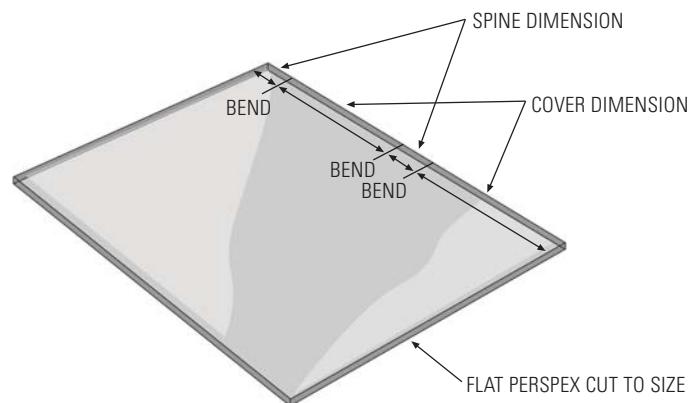
- Take your heater and a diagram of the perspex bender to an electrician. You may want to get advice on how to remove the element from the heater so that the wiring isn't damaged, and on how big the box should be to accommodate it.
- Construct a rectangular open-topped box out of customwood (MDF). The size will depend on the element you are using, but it needs to be approximately 110mm wide and 100mm deep, and long enough to accommodate the element and the connection.
- Have the box wired safely by an electrician. For safety, cover the area of the connection.



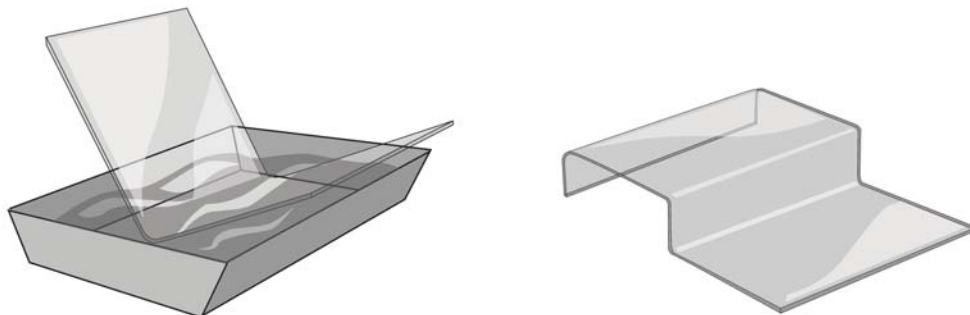
## A simple perspex book stand

If you are going to display a book open, you need to support the spine. A perspex book stand is a simple and effective support for flat display. You can make one using a perspex bender.

- Measure the length of the book. Measure the width of its front cover and spine, then multiply by 2. This will give you the overall dimensions of the book stand. The width of the spine is particularly important, as this is the area where damage will occur if it is not supported well.
- Cut a piece of perspex to these dimensions.
- Mark on it the position of each of the three bends required. Note that the outside leg of the stand and the inner spine support are the same dimension. (See the illustration.)
- Heat the bender until the element is glowing red.
- Place the flat perspex over the bender, with the mark for the first bend positioned above the hot element.
- Leave it until the perspex slumps, but don't allow the perspex to touch the element because it will melt.
- Remove the perspex from the bender and while it is still soft, bend it to the required angle, then plunge it into a tray of cold water. This will instantly set the perspex at the chosen angle.
- Make the next two bends in the same way.



Bending perspex to exhibit books



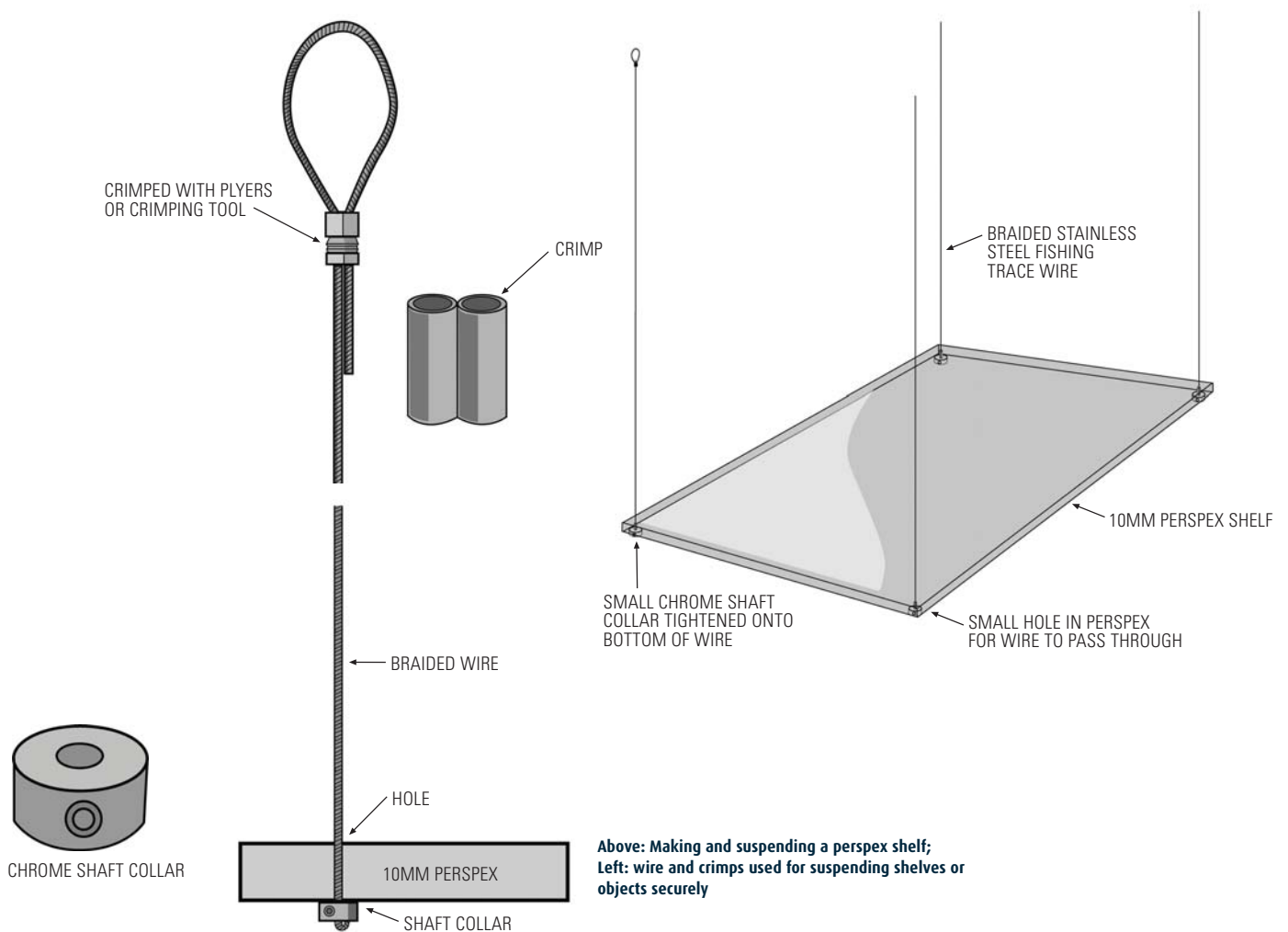
## A transparent shelf

Because light passes through perspex, it can make particularly effective shelves and signage.

A perspex shelf is a stylish way of displaying objects which can be viewed from all angles. It can be suspended from the top of a display case or from the ceiling – but keep it small. Perspex shelves will bend if they are too long or are carrying too much weight.

In the application, include:

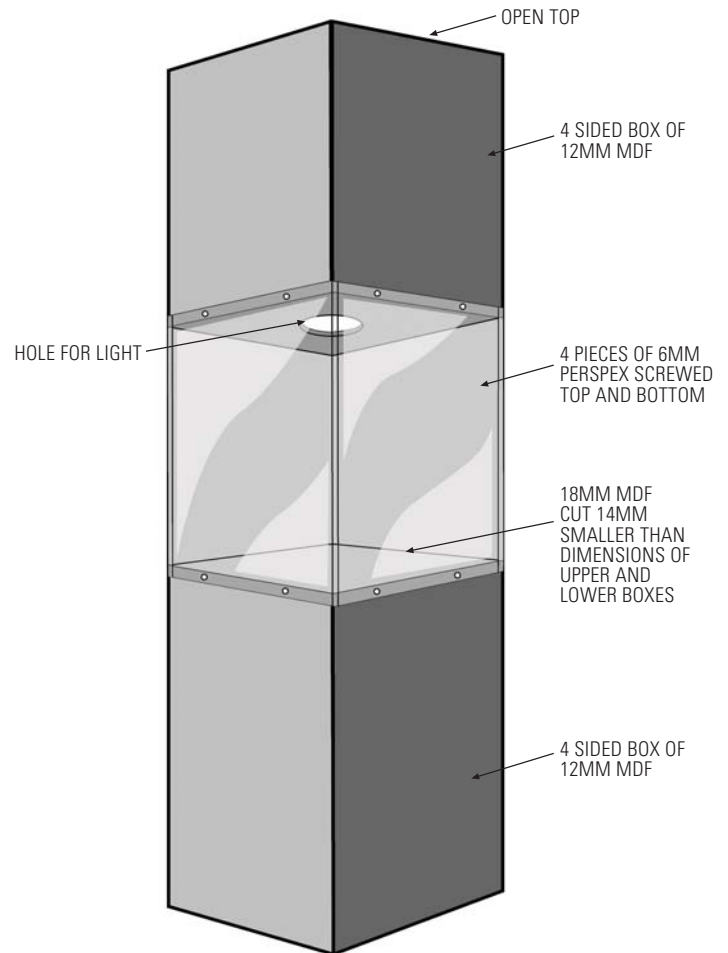
- Decide what size you want your shelf to be.
- Cut a piece of 10mm perspex to the correct size. Cut four pieces of braided stainless steel fishing trace wire to the required length.
- Drill a small hole in each corner of the perspex for the wire to pass through.
- Secure the wire below the perspex – make a loop in the end of the wire, pass the loop through a shaft collar, and tighten the grub screw.
- If you are hanging the shelf in a display case, pass the wire through holes drilled in the top of the display case. Fasten the ends of the wire with a crimp.
- Alternatively, form a loop in the top of each wire using a crimp, then hook them over screw hooks inserted in the ‘ceiling’ of the display case.
- You can hang the shelf from the ceiling of the room in the same way.



## A multi-purpose display case

This rectangular case has a base and top section of customwood (MDF) and a central display section of perspex. It is free-standing, and can be made to any size and height you choose.

- Decide on the dimensions of your case (the illustration will help you here). Each section has the same width and depth, but the height of each can vary.
- Construct two boxes for the top and base, open at one end and to the required size, using 12mm customwood. Glue, staple, or nail with panel pins. Reinforce the corners with glue blocks.
- From 18mm customwood, cut two squares 14mm smaller (length and breadth) than the outer dimensions of the two boxes. This measurement will allow a 6mm rebate for each perspex panel, and an additional 2mm to allow for paint and ease of fit.
- Fit each of these squares to the outside end of the top and base boxes. Screw them from inside the box, or glue them and nail from the outside.
- Plane or sand 2mm (at a 45° angle) off all sharp edges on each box.
- Fill, sand and paint the two customwood boxes with a sealer and two coats of acrylic paint. Use a roller for an even finish.



**Build a simple display stand**

- Cut four sides of 6mm perspex. Two will be the same outside measurement (depth and breadth) as the customwood boxes, and two will be 12mm narrower to allow a butt joint at the corners.
- Assemble the display case by attaching three sides of perspex between the upper and lower boxes. The perspex will fit into the rebate, flush with the outside of each box. Attach each piece of perspex with two screws at each end. The last piece of perspex is attached after the objects have been placed in the case.
- A light fitting can be installed in the top box.

When you build display cases, make sure the inside is accessible for exhibition staff to carry out maintenance.

## Cutting glass

Cutting glass is simple, but you need a good quality glass cutter, lubricated with oil, and you must not apply too much pressure.

Mark the cutting line on your glass with a felt pen. Then line up a suitable straight edge just inside your mark, hold the cutter in a vertical position and gently scribe down the straight edge. You can then break the glass over the edge of your straight edge or over the edge of a table.

Glass up to 6mm thick cuts easily. However, old glass is difficult to cut successfully.

## Displaying objects upright

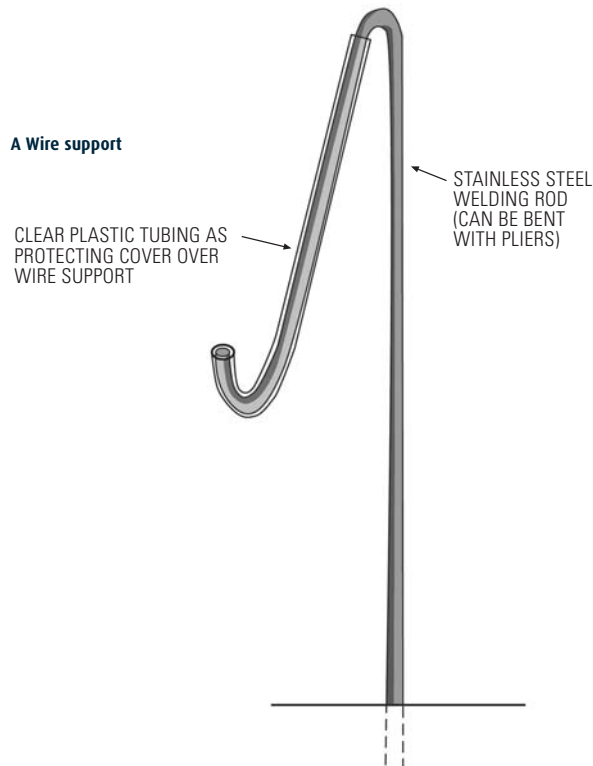
You can display many small flat objects, such as a cup and saucer, without any additional support. But you might want to display a dinner plate, for instance, in a more upright position so that it can be better seen. This will require a support strong enough to take the weight of the plate but small enough to be hidden behind it.

You can bend perspex to create a form that will hold the plate securely at the right angle.

### Wire support

You can bend stainless steel rod or aluminium rod with pliers to create a support, but you need to coat it to prevent damage to the surface of the object. Clear plastic tubing threaded on to the rod provides a simple and effective coating.

When you are making a support, try it against the object to make sure the two fit together. But be very careful not to damage the object or make any marks on the surface.



## Making a cradle

A cradle holds an object securely, preventing any kind of movement, including vibration. It can also be used to display the object at the best viewing angle.

The material used for a cradle will depend on the size of the object.

Steel or timber may be needed for a cradle to hold a very large heavy object. You may need to get such a cradle made by an engineer.

For a very large cradle where there may be issues of public safety, have your design approved by a consulting engineer.

There are various materials suitable for a small cradle:

- Etherfoam is an inert (safe) rigid foam, available in white or black and in a variety of thicknesses. It can be shaped with a sharp knife to make a cradle that will support all kinds of objects. If you need to cover the cradle, you can use washed unbleached calico.
- Foamcore can also be easily cut with a craft knife and bent by hand. It is available in a range of colours and thicknesses.
- Perspex can be used to make a cradle, for example as a book stand. Or it can be fashioned to support tall objects like a bottle or a walking stick.
- Museum board is an acid-free rigid board that will support paper objects such as letters, music, books, watercolour paintings – anything that can be displayed flat.

## Displaying works on paper

Works on paper include watercolours, photographs, pastels, newspaper cuttings, manuscripts, and letters. They can easily be damaged by insects, dust, and people. If they are to be displayed outside a case they will need to be matted and framed in some way.

### Matting a work on paper

A matt is made of two pieces of acid-free cardboard – these form the backing board and the top 'window'.

- Fix the work to the backing board by two 'hinges' of archival tape, attached to the top of the work as illustrated on page 10.
- Cut a 'window' in the top board. It needs to be smaller than the work to be displayed.
- Tape the top edges of backing board and top board together.
- Put the matt into a frame or mount it behind perspex.

Always use good quality archival materials: *acid-free* is the key word. There are various archival materials available – tissues, boards, tapes, and glues – but they are not cheap and need to be used carefully. Often you can buy board by the sheet from a good picture framer, otherwise you will have to buy a packet of ten sheets or more from a supplier of conservation materials.

Never do anything that is not reversible. Never glue anything except a label on to a board.

## Holding a document in position in a display case

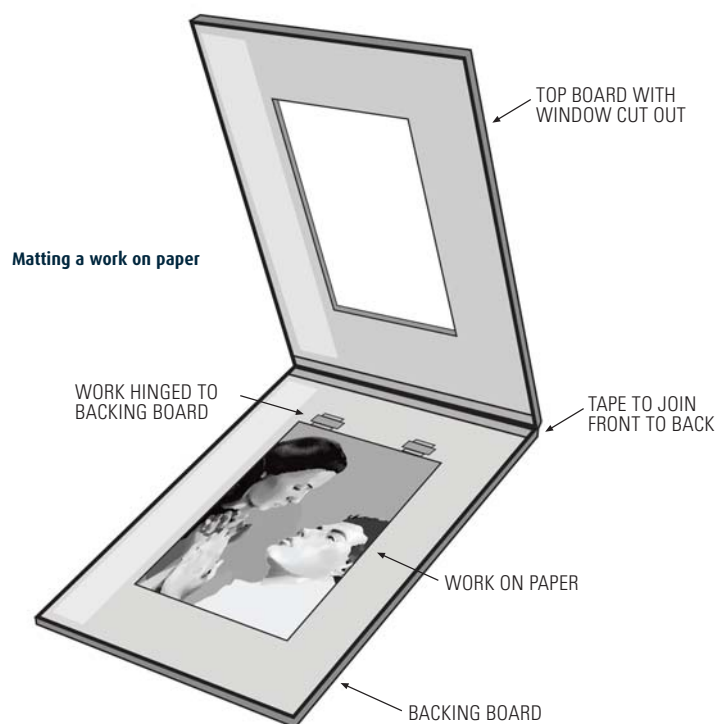
You may need to display a document in a display case, either flat or vertically. You can hold the document securely in place with corners made of Mylar, a clear polyester film.

- Place the document on a rigid backing board.
- Cut strips of Mylar film to the required width and length.
- Lay a strip diagonally across each corner. Fold the ends and secure them to the backing board with adhesive tape.

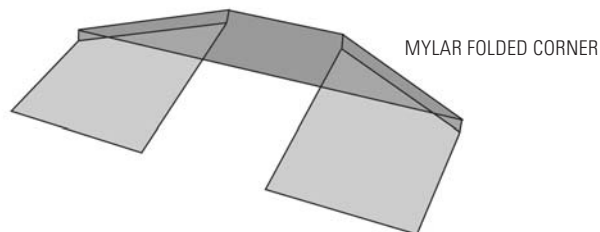
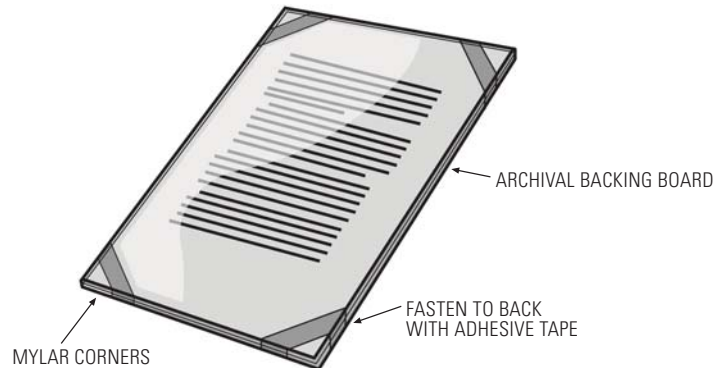
## Sealing a document in clear film

You might have a fragile document which you want to be viewed from both sides. Enclosing the work in a clear film protects it and allows it to be handled, while also allowing both sides to be visible.

- Take two sheets of Mylar film. Rule them to size: they need to be the size of the document plus 40mm on every side, to create a border.
- Cut both sheets to this size.
- Apply a thin strip of good quality double sided adhesive tape along each edge of one sheet.
- Carefully place the document in the centre of the sheet, then place the second sheet on top of it.
- Working from one end, press the top sheet to the bottom sheet, expelling the trapped air as you stick it down.



### Holding a document in position



### Make a photocopy mural

You can create a simple and effective mural by making A3 laser copies of newspaper cuttings, photographs, or engravings, then cutting and pasting them to customwood to form an A1 size. These are very successful, low cost, and can be produced in both colour and black and white.

For details on how to make a photocopy mural, see *He Rauemi Resource Guide 10: 'Exhibitions at Your Place'*.

# Making labels

The objects in the exhibition tell the story. The labels put the story into words. They need to be attractive, easily readable, and capture the look of the exhibition. Font, text size, type of headings, the material the labels are made of – all of these will enhance the exhibition.

Materials you can use for labels include: cardboard, perspex panels, customwood panels, foamcore.

## Producing text

How are you going to produce the labels? Some options are photocopied text, computer-cut vinyl lettering, or digitally printed panels. Each has its advantages.

- Photocopied paper labels can be made on a standard photocopier. These can be glued to a firm backing board such as cardboard, customwood, or foamcore.
- Computer-cut vinyl lettering is produced by most signwriters. It can be applied very effectively to most backing materials including perspex and foamcore.
- Digitally produced panels are more specialised: they require a computer-generated file created by a graphic designer, which is then digitally produced by a printer. This is likely to be the most expensive of the three options.

## Adhesives

There are a number of adhesives available to glue paper labels on to a backing board:

- PVA glue. Cheap and readily available, this can be used with customwood and cardboard. But take care when you are using it. Because it is wet, it can smudge some inks on paper.
- Spray adhesive in a can. This is quick and can be used with customwood, cardboard, perspex, and foamcore, but it is both messy and toxic.
- Scotch repositionable tape. This is like a double-sided tape that deposits a layer of adhesive on a surface. It is more expensive but is clean and does not stick immediately, so the position of the label on the backing material can be adjusted. It can be used with wood, cardboard, perspex, and foamcore.
- Gluestick. This does not give as strong a bond as other adhesives, but will adequately stick paper to cardboard.

The simplest way to produce a label is to photocopy the text on white or coloured paper, then mount it on cardboard with gluestick or PVA glue.

Use an adhesive that is readily available in case you run out and need to buy more urgently.

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Labels are for people who are walking. They need to be clearly presented, and at a height where people can easily read them.

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## Other low-cost solutions

### Lighting and highlighting

Effective lighting can greatly enhance the look of your exhibition. Start with what you have. What can you re-use from other exhibitions – particularly lighting tracks or fittings?

Improve the quality of your existing lighting. You can reduce damage from ultraviolet light by fitting UV sleeves over fluorescent lights and applying UV film to windows.

### What's the best lighting to use?

The most effective lighting currently available is halogen, often used in houses as downlights. It is cheap, is generally low voltage, and creates dramatic effects. You can spotlight your object or flood it with a variety of beam angles and different wattages.

However, halogen lights generate a lot of heat and put out high levels of ultraviolet light – both are very damaging to objects. The light source in all cases must be isolated from your objects by being outside the display case. This prevents extreme heat building up inside the case. It also allows easier access for changing lamps.

Get good advice from another museum or gallery or from an electrician or your lighting supplier. It will save you money in the long run.

Remember that all light causes damage to objects, and daylight is more damaging than artificial light. Check your light levels with a lux meter – you can buy one or borrow one from another museum.

### Colour adds life and drama

Maybe you don't want to paint the whole exhibition space. In that case, consider painting one wall or one panel, or even one strip down one wall. Consider using other finishes on the walls or sections of walls – timber, wallpaper, fabric, weaving, or corrugated iron.

Be bold with colour. Use deep rich shades. Consider painting ceilings black.

You can create a strong visual impact inexpensively, using a block or wall of strong colour, large photographic images, or some dramatic lighting.

## Audio and video technology

Technology can give an extra dimension to an exhibition. Music enhances a mood. Personal stories on a CD are easy to produce and cost-effective.

If you are going to use technology, plan to include it from the start. If space allows, provide seating. But use technology sparingly. Remember, once you commit yourself to any technology you must ensure that it is always in working order. No one appreciates 'out of order' signs. Make sure that all equipment is accessible for maintenance.

DVD players are very affordable and are reasonably maintenance-free. They can give you sound, still images, and moving images.

Use auto-rewind cassette players.

Repeat your video on a three-hour tape. Keep originals of tapes and videos – and a spare.

Think about where to position your players and monitors. They need to be secure (both from theft and damage), at the right height for operating and viewing, but out of reach of prying hands. If necessary mask the controls.

### A simple stand for a video monitor

Make a three-sided customwood box, with a shelf for the monitor. (The size of the box will be determined by the size of the monitor and the height you want the screen to be.) Cut a window in the box exactly the same size as the screen and positioned directly in front of the screen.

Place the open side of the box against a wall.

This design allows for easy access for maintenance, masks the controls so that they cannot be changed, and makes the monitor more secure.

Technology has a down side. Videos break down, television sets wear out, cassette players begin to eat your tapes. Make sure you have a budget for replacements.

# Installing the show

Once you've made the cases, shelves, cradles and supports you need, it's time to install the show.

## Assembling the stands

Gather together all the materials you plan to use for stands. You can choose from a variety of materials - bricks, old tea boxes, timber or small cupboards. Stands give height and add interest and variety to an exhibition.

If you paint a stand, make sure the paint has time to cure before you position your object, and always place an inert material such as Eversote between the object and the painted surface. This will protect the object from sticking to the paint.

## Placing the objects

Put all the tools and materials you need for the installation work, in an area close to the exhibition space. Use archival materials wherever possible: museum board, Eversote, etherfoam, and acid-free tissue.

Assemble the objects for the exhibition in another area but within view.

Brief all the people involved in the installation.

Prepare all of your stands and supports first and install them into their place in the display space.

Then position the objects. Wear clean cotton or disposable gloves when you are handling the objects, and be prepared to change your gloves often. You may want to try the objects in various positions, and you may need to modify some of your pre-made supports or even make new ones on the spot, so have a variety of materials handy.

Stand back and take a good long look. Ask others what they think. Be prepared to make small changes in the display.

Create a panel to thank everyone who may have contributed to the exhibition in some way.

# Security

Museum security is a state of mind. It costs nothing to make sure that all staff and volunteers are alert to any suspicious activity.

In addition, ask yourself:

- Is your building secure?
- Are your visitors monitored, by the staff or by camera?
- Who is checking on the displays, and how many times a day?
- Have you photographed every part of the exhibition – for your records as well as a security measure?

There are many affordable options for securing your building, and your displays. For example, audible alarms are a good deterrent. Discuss your needs with a local security company.

## Displaying your object securely

You don't want to come into the exhibition and find an empty display stand, or a piece of china on the floor in pieces. You can take a number of simple steps to lessen the risk of theft and damage.

Enclose any precious object in a perspex box. This will protect it from both damage and theft.

Secure framed paintings and photographs with stainless steel braided wire. Attach the wire to the back of the frame and to the wall behind the work with screw eyes fixed to each surface. This is especially important for very small works, and some will need to be displayed behind a perspex cover.

Anchor freestanding objects such as bowls with museum putty. This will protect them against earthquakes as well as theft.

# *Sourcing* exhibition materials

## **Aluminium rod, for suspending shelves**

Ullrich Aluminium Co Ltd  
118 Wiri Station Rd  
Manukau City  
Ph: (09) 262-6262 / 0800-500-338

## **Archival materials, for safe storage and display**

Conservation Supplies  
(accepts small orders)  
81 Great North Rd  
Warkworth  
Auckland  
Ph: (09) 425 7380  
Email: [info@conservationsupplies.co.nz](mailto:info@conservationsupplies.co.nz)

## **Etherfoam, for supporting objects in storage and display**

Dunlop Flexible Foams  
83 Harris Road  
Greenmount Estate  
East Tamaki  
Auckland  
Ph: (09) 274-5789

## **Eversote, for cushioning objects in storage and display**

Dunlop Flexible Foams  
(see above for details)

## **Perspex, for display stands and shelves in displays**

Display Tactix (2003) Ltd  
9 Omahi Street  
Waikanae 6010  
Ph: (04) 293-3500  
website: [www.displaytactix.co.nz](http://www.displaytactix.co.nz)

## **Small shaft collars for supporting shelves**

Display Tactix (2003) Ltd  
(see above for details)

## **Stainless steel rods**

Mico Metals  
61 Port Road  
Seaview  
Wellington  
Ph: 0800-255-638

## **Foamcore, not acid-free but good for simple supports (available in black or white)**

Stationers

## **Lighting supplies**

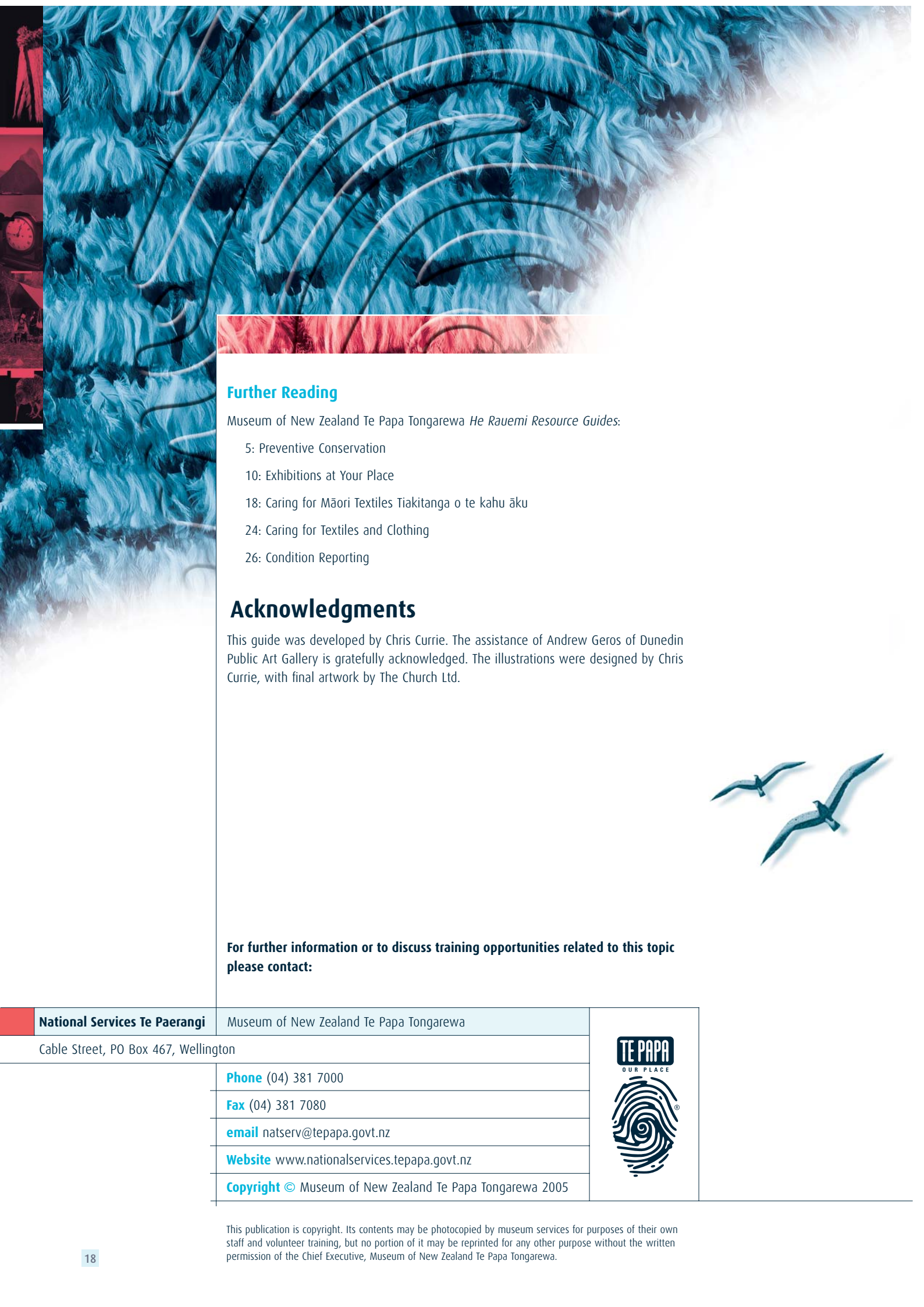
Local electrician

## **Scotch repositionable tape**

Art suppliers, photographic suppliers

## **Stainless steel wire and crimps for suspending shelves etc**

Fishing gear supplies



### Further Reading

Museum of New Zealand Te Papa Tongarewa *He Rauemi Resource Guides*:

- 5: Preventive Conservation
- 10: Exhibitions at Your Place
- 18: Caring for Māori Textiles Tiakitanga o te kahu āku
- 24: Caring for Textiles and Clothing
- 26: Condition Reporting

## Acknowledgments

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**For further information or to discuss training opportunities related to this topic please contact:**

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