

# INFORM

INFORMATION FOR HISTORIC BUILDING OWNERS

## External Timber Doors



## Introduction

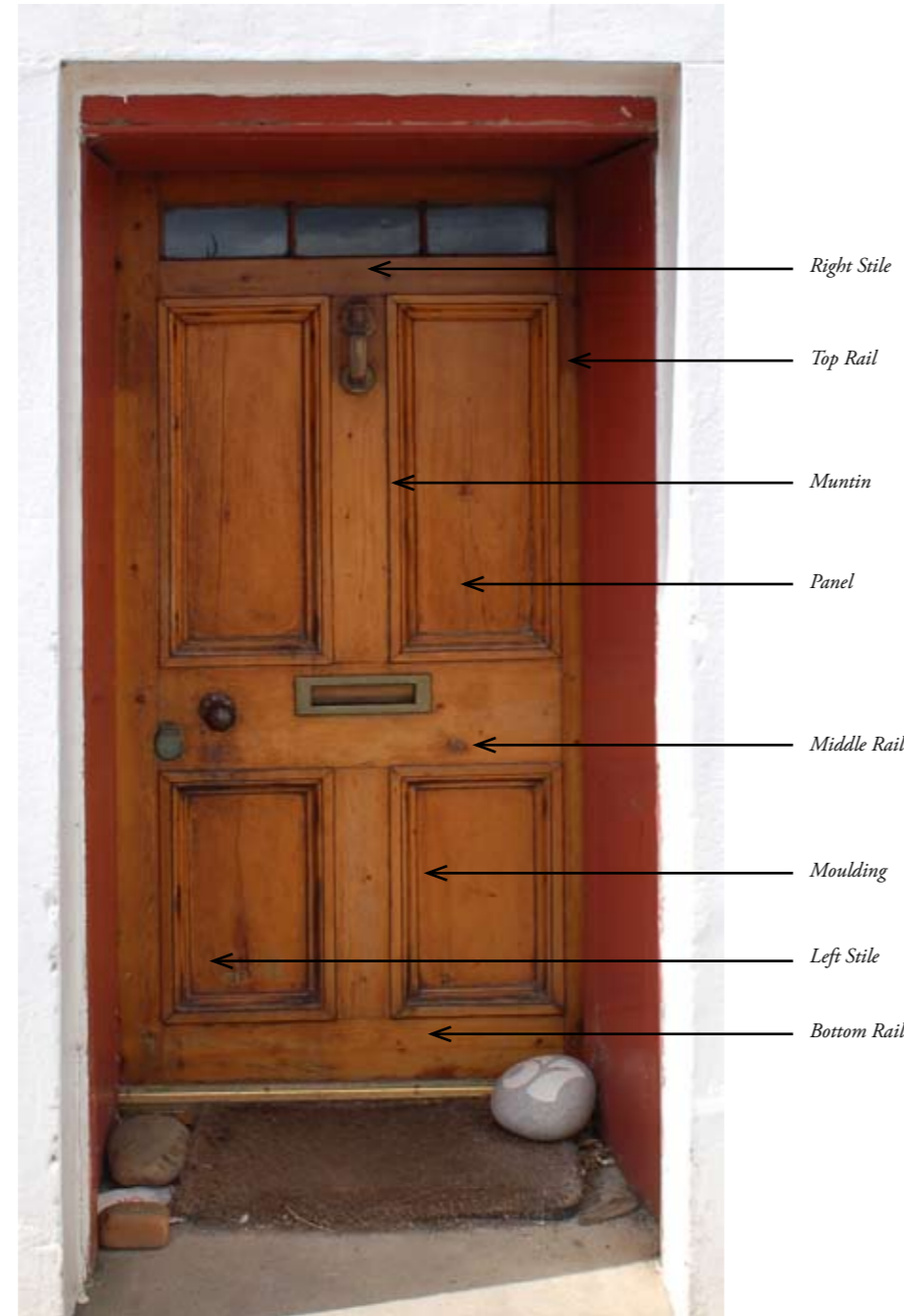
Original timber doors are an important aspect of the character and authenticity of a Scottish home. Their proportions and positions, together with the detail of mouldings and panelling are important elements in the significance of a building. Due to the nature of their continual use, being moving parts of a building, they are also subject to significant wear and tear. This INFORM guide gives a brief history of Scottish doors, explains door construction, the recognition of faults and offers direction on suitable methods of repair.

## Brief history of timber doors

Traditional Scottish external timber doors were made of pine or, occasionally, hardwoods, such as oak. Many were highly decorated, with imposing surrounds of columns, canopies and classically inspired pediments. The functional requirements were to provide:-

- Access to the property (when unlocked).
- Privacy
- Strength and stability
- Resistance to weather.
- Security.
- Resistance to the passage of heat.
- Resistance to the passage of sound.

In many properties the use of storm doors, that opened into a small vestibule which would lead to a further set of glazed doors was common. In the winter these storm doors offer protection against the harsh climate and in summer they can be fully opened to display the often impressive vestibule area. The Industrial Revolution allowed for easier and cheaper transportation of raw materials which led to mass production of doors and standardisation of designs. Towards the end of the eighteenth century developments in lock technology such as the invention of the first Chubb Detector Lock meant that traditional doors could be made more secure. During the Georgian period, many houses were built with doors that incorporated fanlights above the main entrance. Fanlights allowed greater light to enter hallways and were often extremely ornate in their construction. In the later 19th century the use of greater detailing and moulding was introduced, with arches and circles common designs. By the 1870s the use of decorative glass became commonplace. After the First World War period doors were often replaced with simpler designs and following the Second War mouldings were covered over with solid wood or plywood panels. Doors were usually painted to reflect changing tastes or where high quality hard woods were used they could be varnished or oiled as a finish.



Parts of a traditional constructed door.

## External timber door construction.

Traditional timber doors were often the work of highly skilled craftsmen. The basic components included:-

- Vertical framing members called stiles which run the full height of the door to carry the locks on one side and the hinges on the other.
- Horizontal framing members called rails at top and bottom, usually with a middle rail and additional horizontal rails to give added strength.
- Further vertical framing members called muntins which run between the horizontal rails.
- Panels filling the spaces between the stiles, rails and muntins usually flat but sometimes incorporating a raised pattern or fielding to give additional modelling.
- In all but the most simply detailed work, mouldings around the edge of the panels, ranging in design from beads cut into the edge of flush panels to the most elaborate applied mouldings.

Doors were constructed using mortice and tenon joints tightened up throughout by the use of small wedges drawn into the tenon. The panels were held in place by being inserted into grooves cut in the door framing members. This construction allows the timber panels to move slightly as the timber expands and contracts with climatic changes in temperature and humidity.

## Common faults in timber doors.

Common faults which occur include:-

- Binding when the door and the frame rub together due to the timber swelling as a result of climatic changes. This may also be caused by a build-up of paint and prevents the door from shutting smoothly.
- Wet rot at the bottom of the door where it comes into contact with wet stonework. If the paintwork has been poorly maintained this also allows water to penetrate the timber and cause decay.
- Faulty or loose hinges causes the door to sag leading to creaking or rubbing against the frame.
- Joints becoming loose due to swelling and shrinkage that occurs in timber during seasonal changes.
- Split door panels due to shrinkage or impact damage.
- Wear and tear can also occur to the handle and the fixings of the handle to the door.

Split or cracked panelling can be repaired.



Parts of a Traditional constructed door.

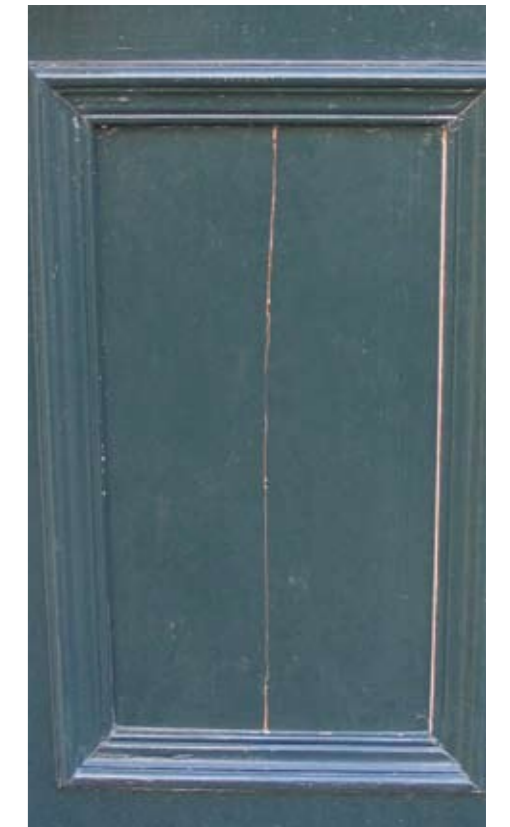
## Methods of repair.

Where a fault develops in a timber door repairs should be carried out as quickly as possible. Replacement of the whole door should only be considered if it is beyond repair. Whilst a skilled joiner should be able to treat more serious faults, basic repairs can be carried out easily by the householder.

In all instances a careful repair should be less expensive than a total replacement and will extend the doors life:-

- Binding doors can be carefully planed or sanded to allow smoother opening and closing.
- Damaged boards can be removed and replaced with appropriate moulded counterparts which can be manufactured by an experienced joiner.
- Wet rot can be treated by the affected timber being cut away and new treated timber being carefully spliced into position.
- Loose hinges should be tightened. If screw holes are damaged the insertion of small glue-soaked timber dowels into the holes may be necessary to ensure a stronger fixing. Hinges should be kept lightly oiled to eradicate creaking and reduce wear. In some instances the hinges may be so worn they will need to be replaced.
- Loose joints can be repaired by the insertion of new wedges and re-gluing with wood glue. This may require the door to be taken off so that cramps can be used to apply the required pressure to tighten up the loose joint whilst the glue sets.

- Excessive paint build-up can be removed by the use of a hook scraper, care being taken not to scar or gouge the timber.
- Split panels can be repaired by loosening them and re-gluing the broken pieces in situ.
- Original latch mechanisms are usually robust, simply made and capable of repair but where renewal is necessary, ensure that the replacement has a long enough "throw" (this is the distance between the edge of the door and the handle).







*A poor quality repair where a letterbox was present.*

- New mortice locks and rimlocks can be added to upgrade the security of a door
- New sections of timber can be spliced in to repair holes left by ironmongery which has been removed.

New locks can be introduced to a traditional door to improve security.

### **Door replacement.**

Unless severely neglected, it is rare for a door to suffer so much decay that complete replacement is required. In the exceptional circumstances where replacement is necessary the following guidelines should be followed:-

- In all instances the original frame should be preserved. This maintains the character and proportion of the buildings facade.
- The proportions and numbers of panels should be replicated with similar mouldings being used.



*Extra security.*

- Materials, design and paint finish should be matched in a like-for-like replacement. Failure to do this can affect the building's aesthetic appeal and may reduce the property's market value. Original proportions should be maintained as timber doors will always look better on traditional buildings than modern plastic ornamental alternatives.
- Ensure that the new door is properly recessed into the opening. This gives the door better protection from the elements.

- Implement a regular maintenance programme. Doors should be re-painted regularly in accordance with paint manufacturer's guidance with a quality external paint finish before paint becomes too worn or weathered. In normal exposure, standard gloss paint generally requires reapplication every four years.
- All original door ironmongery such as letterboxes, door knockers and handles should be retained where possible. Any replacements should be of a similar style to the period of the house, and its surrounding area.
- Prior consultation with the Local Authority is advised to determine if permission is required. If the building is a Listed property then Listed Building Consent may be required for removal and replacement of an existing door.

### **Energy conservation.**

With the increasing costs incurred in heating, many house owners are concerned with the fact of heat loss through an older door. The easiest, and most cost-effective, way of combating this problem is to install weather stripping around the door frame. This will reduce heat loss and alleviate draught problems. Care should be taken during installation of any weather stripping to ensure that the door still functions properly. The installation of unobtrusive brush barriers, fitted to the underside and bottom rail of the door can also provide excellent draught and noise proofing at very little expense.



*The difference between retaining a traditional door and a poor quality replacement.*



*If not regularly maintained paint will begin to peel from doors leaving them vulnerable to further deterioration.*

## Conclusions

Over the past few decades many traditional timber doors have been inappropriately replaced with modern doors made from materials such as UPVC and aluminium. These products not only alter the character and appearance of a building but it is unlikely that they will last as long as a traditional timber door that has been maintained correctly. By

contrast they are likely to require full replacement at regular intervals as modern doors cannot easily be repaired. Many of Scotland's local authorities now operate a policy that discourages the installation of these products in Listed buildings.

Timber doors properly repaired by qualified joiners will not only enhance a property but will, in time, prove to be a better investment.

## Further Reading and Contacts

Historic Scotland Technical Conservation  
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0131 668 8716

The Victorian Society Guide 1: Doors

A. Jackson and D. Day, *Period House*,  
ISBN 000-7192754

Glasgow West Conservation Trust  
Conservation Manual 13, 1999  
*13 Historic Woodwork*



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