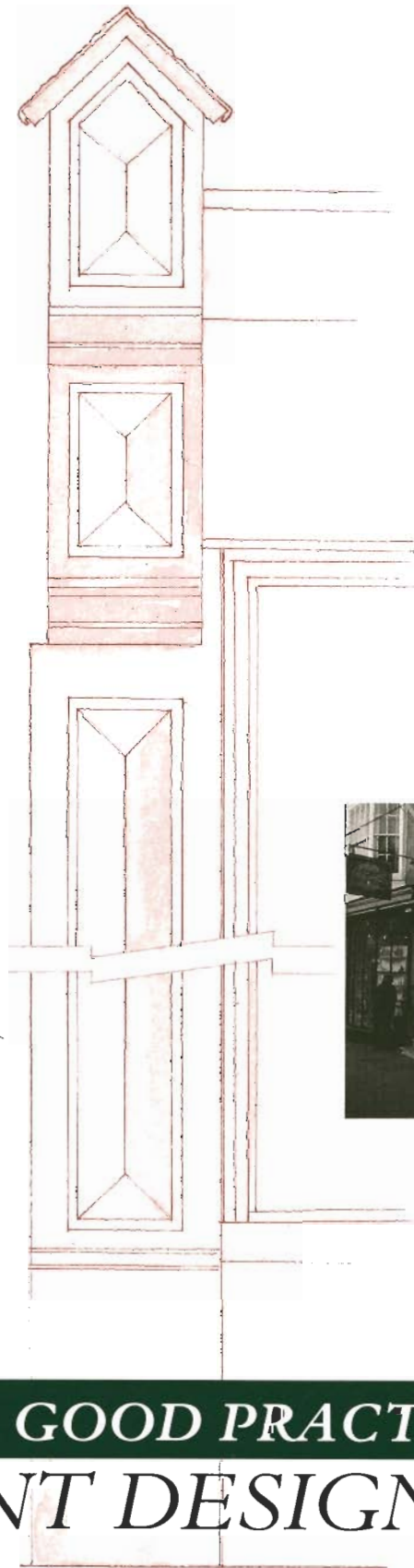
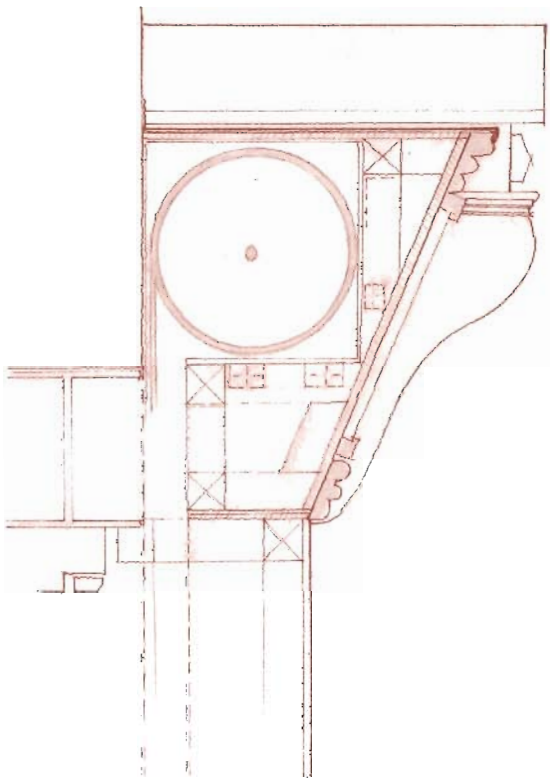


ENGLISH HISTORIC TOWNS FORUM

Land Securities Properties Ltd.



BOOK OF DETAILS & GOOD PRACTICE
in **SHOPFRONT DESIGN**

FOREWORD

In 1991 the EHTF published "Shopfronts & Advertisements in Historic Towns" at a time of growing concern over the quality of our town centre environments. It was intended to act as a catalyst for discussion and co-operation between local authorities and retailers with the ultimate aim of seeing improvement in the environmental quality of our shopping centres.

The document concluded that the design excellence justified in such environments required both skill and sensitivity from all parties.

The enormous interest shown in the document from developers, retailers, conservationists and the media convinced the Forum of the benefit of producing a further good practice guide giving more detailed technical guidance. It is not intended that this document should be followed slavishly in all circumstances, nor is it intended to be a definitive document. It should be studied in conjunction with local traditions and be seen as a context for individual local authority's statements of guidance.

As with other EHTF good practice guides the document stresses the importance of thought and consideration. I commend it to you and hope that you will find it useful and stimulating. If this should be the case I am certain that the hard working team under the skilful guidance of Nigel Green will feel that their efforts have been worthwhile.

Keith J Laidler
Chairman

English Historic Towns Forum

In accordance with the tradition set by original pattern books, details have been deliberately kept to a minimum and scale omitted, to enable designers to interpret the following illustrations in their own way.

The importance of shopfronts to the character of historic towns has already been recognised by the English Historic Towns Forum in the document "Shopfronts and Advertisements in Historic Towns", in which it was stated that "an emphasis on good quality design ... will encourage investment and spending and will bring rewards which will ultimately benefit all of the traders in the centre". *This publication has been produced as an extension to the original document and should be read in conjunction with it.* It is a response to requests from a number of Local Authorities for practical guidance and more detailed information on shopfront construction. Its aim is to promote a high standard of shopfront design within England's historic towns, by offering practical guidance.

This publication contains a number of examples of details of well designed new shopfronts along with other information about construction, repair and maintenance, which has been brought together in order to provide a convenient source of information suitable for everyday use.

The joy of English shopfront design is the wealth of details and materials employed, but in a guide of this nature only more common practices can be addressed. And only those materials that have wide spread acceptability in historic settings and for which practical advice can usefully be given are covered in this guide. Therefore some traditional materials with a more localised application, and modern materials such as powder coated and anodised aluminium are not covered.

In the same way that the architectural pattern books of the 18th and 19th Century provided guidance on shopfront design and construction, this document is intended to provide a guide for good practice in the design of shopfronts today. *It is not intended to be followed slavishly, nor is it intended to be a definitive document and it should supplement and respect local*

traditions in shopfront design. It is strongly advised that you consult with your Local Planning Authority as to the suitability of any details contained herein. The Authority may also have its own published guidance on local shopfront design.

The History of Pattern Books & Shopfront Design

Architectural pattern books were in common use in the 18th and 19th Century, for example "The Builders Jewel" (1747) and "The City and Country Builders and Workman's Treasury" (1750) by Batty Langley. Such books included both text covering the theory of design, and examples of designs for all elements of architecture. They were general in their coverage and rarely included any specific details relating to complete shopfront design, but gave architectural details of individual components which could be combined for universal use.

Other publications consisted of a number of drawings of shopfronts designed by their respective authors for specific locations. The drawings rarely consisted of more than an elevation with one horizontal section and it would appear that much was left to the skill of the particular craftsman involved in the scheme to interpret the drawings and to incorporate local traditions. In some cases, larger scale details of pilasters and cornices were included. In most cases the drawings did not show the parent building.

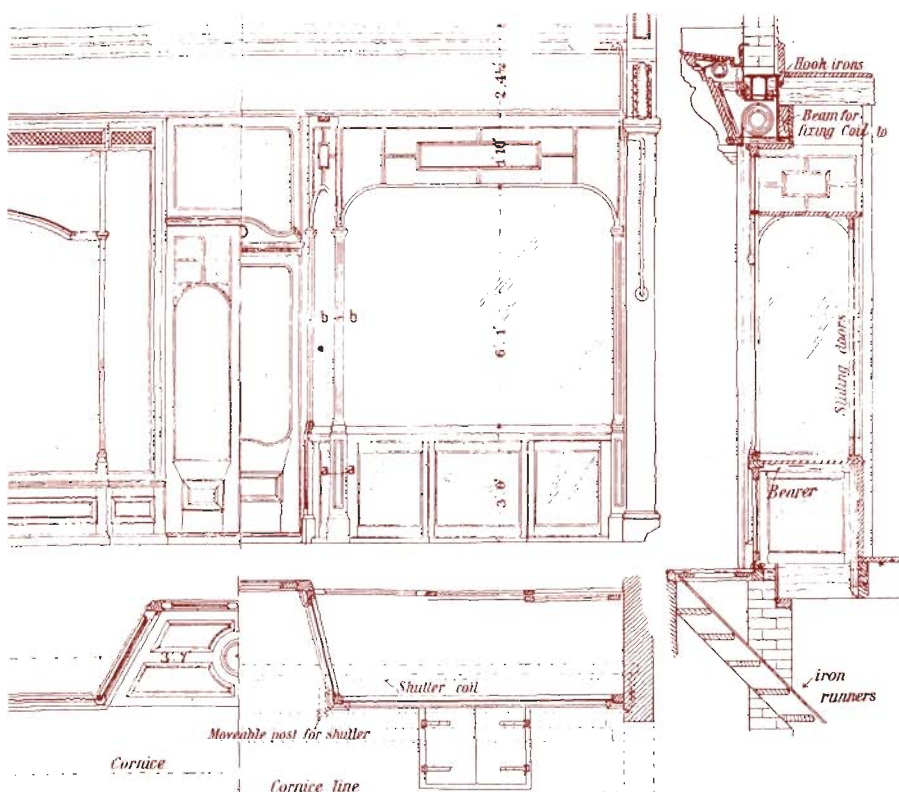
Some later publications did include details of direct relevance to the design of shopfronts, specifically "Modern Practical Joinery" by G. Ellis (first published 1902) which included chapters on Shopfronts, Shutters, Blinds and Finishings. It covered all technical and design aspects, including sample designs suitable for specific

types of shops. This book has fortunately been reprinted and is currently available.

- Most traditional shopfronts are of what could be broadly termed classical design. However, they have rarely conformed to strict classical rules. This is perhaps due to the problems associated with shopfront design, for instance often having to accommodate two doors, one for the shop and the other for rooms above, and of having to allow light into the basement below.
- In the past shopfront design has been influenced by many factors including the need to get light into the shop, hence the popularity of bow windows prior to the introduction of efficient artificial lighting. Indeed, the development of such lighting allowed the design of shopfronts to alter, with deeply recessed fronts and lobby entrances becoming the vogue.
- The depth of the stall riser was determined by the required height for the window display, as specified by the trader who was to use the shop. For instance if it was intended to sell bulky goods, a low stall board (less than 100mm) would allow the goods to be viewed from above and provide ample height for their display. A trader in small articles or perishable goods, for instance a butcher, would wish the goods to be closer to eye level. The stall board would therefore be at 700mm to 1.0m. It is unlikely that the trader would have required the upper

part of the window for display, so this section was often ornamented. It is quite common today for a trader to inherit a shopfront specifically designed for the display of different types of goods.

- Ventilation was also an important factor to those trading in perishable goods. It could be achieved through the provision of opening fanlights, ventilators in the sashes or pierced metal panels being incorporated into the design, amongst other devices. It was also important that such shopfronts were simple in design with no small or intricate mouldings that would be difficult to clean.
- The introduction of plate glass allowed shopfronts to increase in height, encouraged by the lifting of excise duty on glass in 1845. However, large expanses of glass were considered unfashionable by the start of this century, being seen to convey an image of low quality goods.
- It should be remembered that the design of shopfronts has always been influenced by fashion, and the prevailing architectural trend of the time. It is therefore not uncommon for a building to have a later shopfront of differing architectural style that is within complete harmony with the building. Notwithstanding this, it is important that shopfronts should not disregard the architecture above and around them.



Typical pattern book shopfront elevation
 ("Modern Practical Joinery, G. Ellis)

The Use of Timber in Shopfronts

- Historically timber has been the traditional material for shopfront construction and has proved both versatile and durable. However, the type of timber used, its quality, durability and appearance can have a considerable bearing on the visual appearance and maintenance characteristics of the shopfront and should be carefully considered at the initial specification stage.

HISTORICAL CONTEXT

- Earlier pattern books gave very clear guidelines on shopfront construction and also referred specifically to the type of wood to be used. Timbers traditionally used were teak, oak, black-walnut and mahogany, chosen because of their aesthetic and practical qualities.

TIMBER SELECTION

- The majority of traditional shopfronts were constructed in softwoods and painted. But occasionally a tropical hardwood was used and finished with a glossy varnish, hardwood was never painted. However because of their

durability and the poor quality of many softwoods available today, some hardwoods are being used for shopfronts. Because of their natural oils and large pores it can be extremely difficult to properly paint

many hardwoods. Many hardwoods today come from highly questionable sources in both environmental and social terms. However the

issue of producing sustainable sources of hardwood that are properly accredited, means that new sources are becoming available. It would be impossible to list all sources or timber types in a guide of this nature, but before specifying a hardwood it is essential to ensure:

- *its suitability for external use*
- *its ability to take a painted finish*
- *its origins are environmentally acceptable*

- Advice on the sources of different timber can be gained from The Good Wood Guide or other Friends Of The Earth publications or from several other organisations promoting sustainable timber production.

- Many of today's softwoods are grown relatively quickly. They are generally less dense and contain more sapwood and less heartwood, so many are not of a quality suitable for shopfront design. Furthermore, some softwoods are also of environmentally sensitive origin. Selection of softwood should therefore be made on the basis of:

- *its suitability and durability for outside use*
- *its workability and whether it can meet the detailed specification*
- *its moisture content and likelihood of movement*
- *its ability to take a finish that will look good and last*

- Most shopfitters do not show a preference for a particular species of wood, but will select a timber from their regular suppliers taking the above into account together with costs. Before specifying a particular timber it is essential to ensure that a source of the correct quality is available locally.

- The variety and availability of modern timbers is now extensive. Whilst it would be impractical to catalogue the qualities of each and every type, it is important for specifiers to be aware of the general characteristics and workability of



Shopfront constructed in Columbian Pine and primed with aluminium primer

timbers. The foremost authority in this country on timbers is TRADA (Timber Research and Development Association), which has produced a number of technical pamphlets on the properties, uses, qualities and availability of timber. Of particular interest are:

- a) TRADA Wood Information Section 2/3 Sheet 10 "Timbers their properties and uses" This incorporates a comprehensive table on species in relation to timber type, colour, density, moisture movement, permeability, availability and price.
- b) TRADA Wood Information Section 2/3 Sheet 6 "Wood Decorative and Practical".
- In specifying timber it is important to be aware of the class of timber to be used, its moisture content, its likely durability and the external

finish to be applied. Four classes of timber are defined for use in joinery. The nature of the work will determine the appropriate class.



Winchester

TIMBER MOVEMENT & MOISTURE CONTENT

- Moisture content is one of the most important aspects of joinery specification. The degree of water content in timber will vary between species. As water is actually a chemical constituent of wood and not just a contaminant it is important to be aware of the moisture content and the resultant movement or shrinkage characteristics when specifying timber. Where movement tolerances are critical, it would be clearly advisable to use a timber with low movement qualities. Broadly speaking a moisture content of between 13-20% is considered acceptable and should be specified accordingly.

PLYWOOD

- The construction of stallrisers often involves the use of plywood. Where acceptable to the Local Authority, it is essential to ensure that a suitable grade of plywood for exterior use is specified and that it has received an adequate preservation treatment prior to priming and painting. Plywood construction itself imposes a restraint on only one surface of the outer veneer and moisture movement will cause fine cracks which

will severely reduce paint durability. Surface cracking is particularly marked in Douglas Fir and Birch. Plywoods with resin treated paper overlay provide the only effective surface for painting. If Birch or Fir faced plywood is used without such an overlay, then below average paint performance must be expected.

ADHESIVES

- Good joinery with traditional jointing details, will not require excessive strengthening, and where an adhesive is used to give additional stability it should be sufficiently flexible to allow for any natural movement in the timber, and should not cause any build up or pockets of moisture.
- Two kinds of adhesive are commonly used in shopfront construction, poly vinyl alcohol (PVA) and resins. PVA's will allow some movement but will be ineffective if the joint is put under strain. Resins will form a stronger bond but will allow no movement, and are often impervious. There are a number of proprietary adhesives on the market and great care is required in their selection and proper understanding of exactly how they are expected to perform.

EXTERIOR FINISHES

- The two main considerations in determining the exterior finish of shopfronts are its location and the appearance of finish required. The traditional approach has been to favour a painted finish. In deciding this issue care should be taken to respect local tradition, especially in Conservation Areas where modern varnished or wood stain finishes may not be appropriate. The main finishes which are available for the exterior treatment of timber shopfronts are preservatives, paint, varnishes and woodstains:-

Preservatives

- These are not usually designed or expected to double as exterior finishes but can be used in conjunction with paints or exterior wood stains to prolong the life of the timber. Their primary function is to penetrate and be retained in a shell of the outer few millimetres of timber to guard against stain, decay, mould growth and insect attack. Surface treatments such as paints and exterior wood stains will not alone give this protection so that susceptible timbers must usually be given an adequate preservative treatment prior to the application of the finish. One of the most effective forms of treating timber is to have it vacuum pressure treated after it has been cut to size. Any cuts or joints should be treated with preservative in situ.

Paint

- The traditional paints for use on exterior woodwork were leadbased and there is little doubt that the durability of these products was very good. Because of concerns about the toxicity of the lead pigmentation, the availability of lead based paints has declined markedly and legislation now prohibits its use on all but certain historic buildings.
- Exterior quality paints are now available in solventborne and waterborne types. Some of these have a rather higher level of moisture permeability than the general purpose paint systems; they are described as "microporous", "breathing", or "ventilating". They are generally better equipped to resist the passage of liquid water but allow it to escape more freely from the wood as vapour. This helps maintain the wood at a low moisture content.
- The key to satisfactory paint adhesion and durability lies in ensuring adequate preservative treatment, using aluminium primers and careful preparation of the timbers, and understanding the qualities of the timber being used. For example common softwood timbers (pines, spruce and fir) contain natural resins in knots which can exude and mar painted surfaces. Some hardwoods may also exude resins with the same results although it is less likely that hardwoods would be painted in preference to softwoods. The final appearance of painted hardwood is much more irregular than softwood because the hardwood has larger pores which absorb the paint. Additionally other woods, such as teak may contain oils which interfere with the drying, hardening and adhesion of paint. Aluminium primers remain the principal treatments for reducing staining with exudation but they do not necessarily eliminate the risk with dark coloured paints. When light colours are to be used knotting is usually effective. Where glazing is installed using linseed oil putty, the putty should be applied to a primed surface and not onto bare wood. Where glazing beads are used, the edges of the beads should be rounded before painting to reduce the risk of early paint failure.
- Primed timber should be given at least two coats of undercoat and depending on the depth and gloss of finish required, one coat of top coat.
- Many modern paints are glossier than original paint finishes. To produce a more traditional finish they can be either lightly sanded or washed down with a solution of pumice and water. Alternatively semi gloss paints are available.
- Painted surfaces should be regularly washed with mildly soapy water; this is the only regular maintenance required. Depending on its location, exposure to sunlight and weather, and the quality of the original finish, a shopfront will need repainting every 3-5 years. Unless there has been a failure of the original finish a light rub down and one coat of gloss should be sufficient. If, however paint needs stripping, then it should not be burnt off or hot air used as this can damage the timber. A solvent based stripper is usually preferred.

Varnishes

- Varnishes are essentially paints without pigments. Traditionally they have been used for small external timber components where a high gloss natural finish is required. However, the maintenance liability of varnishes is considerable requiring a maintenance interval of only two years under full exposure conditions. Breakdown of the varnish film due to weathering exposes the timber beneath and over time can give a very unsatisfactory irregular discoloration of the timber. Modified conventional varnishes are currently available, with improved toughness, application properties, gloss and, in the case of ultraviolet filtering additives, may improve durability of the varnish. (e.g. polyurethane - alkyd or silicone alkyd types).

Exterior Wood Stains

- Exterior wood stains have been widely used in the U.K. since the 1960's. They work primarily by shedding liquid water from a water repellent surface whilst allowing moisture vapour to pass into and out of the timber, i.e. they allow the timber to "breathe". Because they shed liquid water they are more suited to a vertical application than horizontal and therefore, in order to ensure evenness of weathering, additional coats will need to be applied to horizontal surfaces to compensate.
- Specifications for ancillary components may have to be changed if wood stain is to provide the final finish. For example glazing using standard linseed oil putties is generally not suitable and bead glazing either with nonsettable mastics or with gaskets is preferable. There is also a need to use aluminium, stainless steel or other corrosive resistant fastenings to avoid discoloration from metal corrosion. Maintenance of stained surfaces is fairly easy, usually involving only a washdown to remove contamination from weathering and any loose particles, followed by one or more coats of the wood stain.



Winchester

REPAIR OF TIMBER SHOPFRONTS.

- Great care should be taken to ensure the retention of existing traditional timber shopfronts. There should therefore always be a presumption in favour of repair rather than replacement, especially on listed buildings and in Conservation Areas. In that context, a traditional joinery repair is always preferable to a repair using modern fillers. Where a new piece of timber has to be 'let in' to an existing shopfront, care should be taken to ensure a match between the old and new timber, and existing mouldings should always be replicated. Even on small areas it is preferable to cut out damaged or rotted timber and replace with new, rather than resort to resin repairs or glue and sawdust amalgams. These, where used, should be regarded as temporary measures only, since their physical qualities differ so much from timber and they expand and contract at different rates to the timber thereby increasing the danger of water becoming trapped behind them.

The Use of Stone in Shopfront Construction

- The majority of shopfronts in this country have been of timber construction, but occasionally alternative materials have been employed, such as stone, and their popularity has varied on a regional basis. In certain parts of the country, where stone has been the traditional building material, many examples of historic stone shopfronts survive. However it is usually the case that stone forms the framing material into which timber details are set. In the modern context, stone is rarely used as a shopfront material except perhaps where the opportunity arises on a new stone fronted building to harmonise details between ground and upper floors.
- It is extremely important to ensure that new stonework is coursed and bedded in traditional fashion and does not appear as stone cladding. Consequently planning or listed building applications for stone shopfronts should include details of coursing, setting of quoins, keystone, jointing and mortar mix.



Traditional Cotswold stone and timber shopfront

DESIGN IN RELATION TO UPPER FLOORS

- Unfortunately, many shopfronts, historic and modern, are designed in isolation from the building in which they are set, and consequently the component materials of the main facade are ignored. Where stone fronted buildings appear in shopping streets it is important in designing a shopfront to pay attention to the design and materials of the upper floors. It is important to ensure that shopfront design reflects the character, scale, texture and colouring of stonework with that of the upper floors.

REPAIR/REPLACEMENT OF NATURAL STONE

- Full details of repairs to natural stone are well documented in John Ashhurst's book "Practical Building Conservation - Volume 1 - Stone Masonry." In undertaking repairs it is important to correctly identify and to apply recommended cleaning techniques or matched repairs. Some stone has a natural sedimentary bed and must be laid to that line if it is to weather properly. Free stone is the most versatile material as bedding is not a consideration. But where any natural stone has been used, the correct mortar mix and width of the joints are essential considerations.

Cleaning/Removal of Paint/Graffiti

- Various methods of masonry cleaning exist and may be summarised as follows:-
 - a) Washing - principally for limestone, marble and polished granite.
 - b) Mechanical - principally sandstones, but often as a supplementary method on limestone and marble.
 - c) Chemical - principally sandstones but sometimes as a supplementary method on limestone and marble.
 - d) Special cleaning techniques such as poulticing - all materials.
- It is highly recommended that specialist advice be sought when applying any of the above cleaning techniques in order to avoid irreparable damage to the face of the stone.
- Paint removal from stone can be more problematic but the following systems have been successful:-
 - a) Conventional methylene chloride (paint stripper) in thick poultice under a plastic film.
 - b) Proprietary poultice - stripper based on caustic soda (sodium hydroxide). The poultice must be lifted off dry, not washed off, and the wall thoroughly washed after the poultice has been removed.
 - c) Hot air stripping.
 - d) Steam lance in association with strippers.
- Unfortunately graffiti is a problem which seems to be prevalent in many of our historic shopping centres and it can be particularly damaging visually on stone surfaces. Various proprietary systems are currently available for its removal but again specialist advice should be sought as the wrong choice of system can have very unfortunate effects on the stone surface. Most paints used in graffiti can usually be removed

from the surface of the stone but it is much more difficult to remove pigment which has been carried into the pores by a solvent, and sometimes the use of a solvent paint remover can in itself make matters worse by driving the pigment more deeply into the stone, e.g. by the application of cellulose thinners to a freshly applied cellulose paint graffiti. Hence the need for caution and specialist advice.

RECONSTITUTED STONE

Reconstituted stone as an alternative to natural stone is a viable material, and texture and colour can be fairly well matched. However the weathering characteristics of reconstituted stone are very different from that of natural stone and it is inadvisable to mix the two in a single scheme or to substitute reconstituted stone for natural stone in a repair. In using reconstituted stone it is advisable to ensure that it is fully cured before

using on site.

Difficulties can occur in using undercured stone in that arrises will be soft and consequently easily damaged.

It is equally

important to ensure a satisfactory mortar/stone mix for repairs to reconstituted stone, otherwise unsightly patch repairs will detract considerably from the overall appearance of the shopfront.

STONE CLADDING

- ✦ The introduction of stone cladding is not normally recommended, but where individual circumstances dictate it, great care needs to be taken over its selection in terms of colours and texture.
- ✦ It is extremely important that planning or listed building applications for such material incorporate detailed drawings of the coursing of the stone which should follow traditional practice thereby disguising the presence of cladding. When stone is used for cladding the details of lintels and openings must be carefully considered and should not defy structural logic.

USE OF POLISHED GRANITE

- Polished granite is sometimes used in stallrisers and pilasters and can be very harsh in appearance, giving an unprofiled flat surface, and is frequently of large slabs. Sometimes its extensive usage precludes any opportunity to embody local styles or traditions into a shopfront and the result can be unfortunate and bland. A more appropriate use might be below stallriser level between stallriser and pavement as a means of protecting timber stallrisers from weathering.

In Victorian times granite stallrisers would tend to be broken up with decorative grilles or etched lettering.



Traditional granite stallriser

Use of Cast Iron in Shopfronts

- Cast iron is a material frequently used in traditional shopfront design particularly for mullions, pilasters and transom. However due to the high costs involved it is unlikely that real cast iron would be used to any significant degree in modern shopfront design, although due to its nature it would be relatively easy to duplicate an original shopfront if there was sufficient detail left to make a mould.
- Because they are becoming relatively scarce, where there is an original cast iron shopfront, then every effort should be made to retain and if necessary repair it. The repair and restoration of cast iron components in shopfronts is often technically complex and may well require expert attention.
- Cast iron has been used in shopfronts for small scale decorative work, for window and frontage construction and as a structural component. It is therefore advisable to identify the role of the cast iron in any given shopfront, and seek specialist advice where appropriate before any repairs are undertaken.



Bath

One of the most common problems with cast iron is corrosion. The extent to which this occurs will depend on the make up of the iron, local atmospheric conditions, and the amount of protection it has received over the years. Rust occupies about seven times the volume of that of iron and this relationship can generate detrimental stresses and may also give the impression that more material has corroded than is actually the case.

- The following factors may affect the successful repair or restoration of cast iron elements:-
 - (a) The original type of cast iron and/or methods of production may no longer be readily available.
 - (b) Substitute materials or modern methods of construction will not be contemporary with the original and may detract from it.
 - (c) The quality of the original material and its construction.
 - (d) The method of repair/replacement should respect the period and aesthetic of the building.
- The primary aim should be first to halt deterioration of the iron, to stabilise the material and to ensure the structural integrity of the building. If this cannot be achieved without detrimental aesthetic and safety implications it is probably best to leave the ironwork alone.
- Repair should be based on the principle of minimal disturbance retaining as much existing material as is possible. Repair is preferable to renewal in historic buildings, and this applies to cast iron as much as it does to other materials. It is desirable to use 'reversible' processes where ever possible in order to preserve the integrity of the building as a historical feature.

REPAIR TECHNIQUES

Welding:

- This requires great expertise and careful supervision. Most cast iron can be welded (Malleable, grey, austenitic and spheroidal graphite cast irons) with suitable care. The main problems that have to be overcome are those of the iron not being suitably ductile to allow for the weld materials shrinking upon cooling causing stress and possibly cracking. Certain chemical changes may also occur due to the high temperatures used which will alter the strength of the iron at the weld. It is really necessary to take the elements to a workshop so that they can be preheated/postheated to allow gradual temperature change.

Cold Repairs

- There are a number of repairs that can be carried out on cast iron which require less drastic treatment than welding and they can often be carried out on site or even in situ.
 - (a) Straps holding material together can be used and can often be hidden from view. If these are used externally it will be necessary to

avoid trapping water or causing electrochemical corrosion between metals.

- (b) Threaded studs of a suitable size can hold a fracture together, but if this fracture was caused by or could be exacerbated by stresses this may well not hold for long. In the same way dowelpins can be glued or threaded into a prepared recess or tapped hole.
- (c) Metal "stitching" is a traditional repair for a fracture and is usually strong and easy to perform on site. This method involves realigning the fracture, the creation of a number of slots in the iron across the fracture and then driving material into the slots which is then secured by tapping in studs. The surface can then be sheared or ground making it fairly unobtrusive.

Fillers

There are now a range of fillers suitable for use on cast iron which is corroded or worn but is not structurally unsound. These are mostly epoxy resin based with steel particles (the resin has a different expansion level to that of cast iron and it is therefore essential to use purpose made filler with high steel particle content).

RUST TREATMENT

- Rust can be treated with 'stabilisers' or 'converters' which affect the chemical make up of the rust and prevent further oxidation. These usually take the form of primers which are easy to apply in paint or spray form, although converting solutions are often in the form of acids and require specialised application. It is, of course, necessary to remove as much rust as is practical prior to treatment.

PAINTING

- Painting the iron after treatment is primarily to halt further corrosion, not decoration. For this reason paint must be applied continuously and in sufficient quantity to perform this task. Of course colouring is very important in the restoration of shopfronts and the careful removal of old paint layers might give an indication of original colour schemes.

REPLACEMENT

- In some cases it may be desirable for a new casting to be made. This may be necessary in cases where a component is actually broken or excessively corroded. With small pieces, the original, or a similar component, can be used as a pattern. Due to shrinkage of the cast iron a pattern will have to be made for the production of large pieces or where accuracy is important.

Security

BACKGROUND

- Security in the High Street is an increasingly important issue. It is required to combat three separate elements: theft; vandalism and ram raiding.



York

- The emphasis given to security will depend on many different factors. The shopping area which is lively in the evenings and weekends because of a resident community or

a mixture of businesses which operate outside normal shopping hours, is more likely to deter crime than the High Street which is deserted when the shops are shut. Streets which are well lit and properly laid out are less attractive to the casual thief or vandal and pedestrianised areas often do not lend themselves to ram raiding. Businesses can help themselves by reducing stock within easy reach of a thief, or using dummy stock.

- Measures to make shops secure are not new. In the medieval period, goods would have been sold from open fronted properties which would probably have been shuttered at night. With the development of traditional shopfronts from the late 17th Century, the shop windows would have been secured at night with demountable wooden shutters held in place with iron bars. In the mid 19th Century, wooden or metal rolling shutters became common and were integrated into the shopfront design and usually housed in the entablature. There are many listed shopfronts today that still retain their original shutters. Where evidence exists of original shutters then consideration should be given to their reinstatement.

SECURITY BY DESIGN

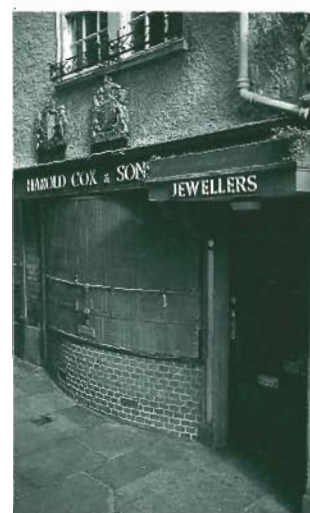
- In designing a new shopfront all aspects of security including items like burglar alarms should be an integral part of the design to avoid a "tacked on" effect. Traditional shopfronts with smaller paned glass, transoms, mullions and stallrisers can be more difficult to break into than large areas of unrelieved glazing (and smaller panes of glass are cheaper and easier to replace). Traditional stall risers can be constructed in brick

or concrete concealed behind timber panels to improve the appearance. Mullions can be reinforced with metal T sections to improve strength. Mullions will need to be strong enough to hold the glass and to withstand attack, and potentially they can be the weakest part of the windows if laminated or toughened glass is used.

- Security by design can also be achieved by opening up behind window areas to allow a better view of what is going on inside. This approach is now being widely adopted by High Street Banks and Building Societies.

PHYSICAL DETERRENTS

- If a physical barrier is essential then by far the least damaging approach visually is a lattice grille located behind the glazing, designed to respect the size and shape of the window opening and incorporate a concealed housing. If this is not possible then an opaque glazed transom detail can be used to screen the housing box where it drops below fascia level, or consideration can be given to locating it on the floor, with the grille being drawn upwards instead of down, as was often the case with Victorian shutters. Solid external shutters usually look unattractive and should be avoided. They invite graffiti and flyposting which gives an area a run down, uncared for appearance. Being solid, they hide what is going on inside the shop and have a deadening impact on the street scene. Such barriers are unlikely to be acceptable in historic streets, in Conservation Areas or on Listed Buildings. This is particularly so where the shutter housing projects forward of the fascia, as the shutter itself obscures any architectural feature or detail, or if the shutter and its housing is constructed in untreated metal.



Windsor

- Where security is a major problem and an external shutter is the only solution then consideration should be given to open mesh shutters in preference to solid barriers or a combination of internal grilles behind the glazing and external grilles across recessed areas. Some shutters are available that have perforations, these only give limited views into the shop and then only when the window is lit from behind. Whatever approach is adopted it is important that the shutter does not cover the whole of the shopfront, only glazed areas, and is

integrated into the visual framework of the shopfront i.e. the fascia, pilasters and cill. The shutter or grille should be painted or finished in a manner which complements the rest of the shopfront.

- Any grille or shutter is only as secure as its fixing. How its fixed and what it is fixed to will determine its effectiveness. They also need to be fixed firmly into their runners if they are not to be simply pulled out. Stainless steel grilles are stronger than ordinary metal grilles. Runners to hold a shutter or grille should be 50-60mm deep, and fixed with at least 90mm screws at 200mm intervals.

RAM RAIDING

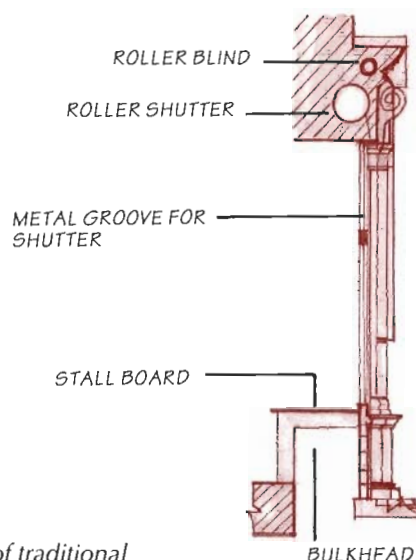
- This is theft by driving a vehicle through shop windows. It is not a new phenomenon but it is spreading and instances have been reported in



Norwich

rural as well as inner city areas. Even metal shutters are no deterrent against a determined thief in a van or lorry. External devices such as concrete planters or bollards are sometimes employed but these can lead to physical obstruction of the highway and visual clutter particularly as they are recommended to be spaced at 1.3 metre centres. The basic principle of design for any such additions is the same as that for the shopfront itself i.e. any extraneous features should be properly related to both the building it fronts and the street as a whole. Generally, a traditional shopfront with a stall riser and appropriately sub divided window area will offer more security against this form of crime than a ceiling to floor plate glass window.

- Some modern security shutters are a combination of steel and transparent polycarbonate. These have a minimal visual impact if housed as previously suggested.



Detail of traditional security shutter

- The problem with security shutters, even when the housing is properly integrated with the shopfront, is their scale and deadening effect on the shopping street. Every effort should be made to reduce the overall size of the area shuttered and consideration given to using appropriate graphics to break up the scale and add interest. In any event the use of plain untreated metal or high gloss finishes should be avoided and a matt finish that complements the colour scheme of the shopfront should be chosen. Colour schemes where the shopfront, fascia and security measures are all the same colour tend to look unnecessarily intrusive.

GLAZING

- Glass is an integral part of any shopfront design but its qualities and security performance are often overlooked.
- Glass is the traditional material for glazing, and although there are some extremely tough polycarbonate materials available they are prone to scratching and are not usually considered acceptable as a shopfront.
- Increasingly the choice of glazing material is being dictated by the needs for safety and security. Safety has become a requirement in new shopfront design as a result of part N of the 1991 Building Regulations which came into force in June 1992, which makes it mandatory for glazing which the public might come into contact with to;
 - if broken, break in a way unlikely to cause injury or
 - resist impact without breaking or
 - be shielded or protected from impact

Glazing which people might collide with (including floor to ceiling glazed shopfronts) must have 'manifestation' of the glazing to make people aware of its presence, particularly doors. This can be achieved by substantial framing, the use of mullions or attractive graphics or etching on the glass.

There are only two types of glass that properly combine safety with security, laminated or toughened glass.

- i) Toughened glass is up to 5 times stronger than ordinary glass of the same thickness.



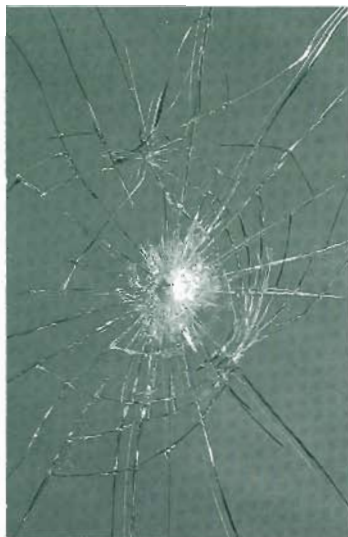
Toughened Glass

But when the glass does break the whole window shatters into thousands of small fragments, which are far safer than the jagged shards of glass created when normal glass is

shattered. One set back with toughened glass is that it has to be cut to exact size before toughening as it cannot be cut or drilled on site. The fact that the whole window tends to fragment into thousands of pieces makes it easier and safer for an experienced thief to enter a premises.

- ii) Laminated glass is an alternative, when this is broken it will only cause cracking or crazing around the point of impact, the remainder of the window stays intact. It can also be cut on site by a specialist, who will cut both sides of the glass and the internal membrane separately.

Laminated glass comes in a variety of thicknesses but generally 6.4mm is considered adequate for safety and 7.5mm for security.



Laminated Glass

- Traditional putty cannot be used with laminated glass and a special glazing compound is used. Silicon based sealants generally have longer life and are more flexible. They are also easier to fix as no mixing is required. But they can cause discolouring and are not very good on timber, so for a traditional painted shopfront, a polysulphide sealant would probably be used which can be painted. The timber and the glass would need priming separately.



Plate Glass

The heavier glasses can still be used in traditional shopfront design and quite delicate glazing bars achieved. The rebate depths necessary are contained in BS 6262 and depend on the thickness of the glass, and its width times the wind loading factor, which is given in special wind loading tables.

Special Design Considerations

- While shopfronts on listed buildings and within historic areas should be in keeping with the proportions of the whole building, they should also attempt to accommodate the needs of disabled people.

Alterations to shopfronts on listed buildings or within historic areas can create access problems which are difficult to resolve because features such as doors, steps and staircases are often an important part of the building's character, which merit retention. Innovative solutions are called for which both increase accessibility and respect the building's character. In some cases it may be necessary to create an additional entrance in a less prominent facade.

Of paramount importance in any scheme, is the quality of chosen materials used and the standard of execution. Traditional materials (such as natural stone, timber, brick, etc.), while not only being more appropriate in historic areas, are also more robust and offer a range of textures which can aid people with disabilities, for example by offering textural clues to people with visual disabilities.

Obviously each shopfront will have to be taken on its own merits and qualities, though the following points should assist the designer in creating an accessible shopfront, where possible.

ENTRANCES

The ideal situation is to have a flush surface rather than a step. However, this may be difficult to achieve and may not be a design feature that is in harmony with the overall context of the elevational design.

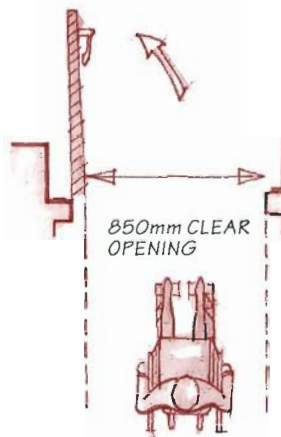
Where an external ramp is felt to be the correct option, the gradient should be no steeper than 1 to 12, preferably shallower.

An internal ramp may provide an alternative, where external works are not appropriate.

Small changes in level between the pavement and the shop floor can be overcome by raising the footpath outside or accommodated within a recessed entrance. External works require the agreement of the local highway authority and are usually financed by the business concerned.

DOORS

Factors which make for properly accessible doorways include:



- Identifiable and user friendly doors; plate glass doors may confuse the partially sighted and may be out of keeping with historic buildings.

- The location and height of letter boxes should also be taken into account.

Door closers which do not require excessive pressures.

Well positioned glazing for good visibility when entering or leaving the premises.

The base of the door handle should not be above 1.04m from the ground.

The door handle should have a minimum clearance from the door frame of 50mm, with a diameter of 45mm.

Preferred clearance through the doorway should be no less than 850mm; allowing pushchairs and wheelchairs to pass through without difficulty.

Further information on standards can be found in the revised Building Regulations, part 'M'.

GLAZED AREAS

The use of stallrisers provides a useful visual cue to partially sighted people, as can glazing bars on windows. Totally glazed areas, however, create a confusing environment for people with only partial sight, who find it difficult to distinguish the position of the shopfront threshold, without the base provided by a stallriser. Facilities behind the glazing like a cashpoint should be accessible to wheelchair users.

HANGING SIGNS

- Projections from the shopfront, both horizontal and vertical, should be handled carefully; for example hanging signs should be located with a minimum 2.3m headroom clearance above pavement level.

THE NEED FOR CONSULTATION

- Close consultation is advised with the Local Authority, particularly those with access officers who can give expert advice. Indeed problems can often be overcome if early negotiations are carried out.



Soho, Westminster

The quality of any shopfront design relies on the quality of the detailing. In order to properly assess the appropriateness and quality of the detailing it is essential to have accurate drawings of a sufficient scale to see

precisely what is proposed. There are no hard and fast rules but drawings to a scale of at least 1:5 and 1:10 are normally required giving details and sections of the fascia, cornice, pilasters, mullion, stall risers and any other architectural feature. For fine details of glazing bar profiles, mullions and in some cases cills and cornices, full size 1:1 drawings will be required. Plans and elevations will also be necessary showing the shopfront in context with the whole building and adjoining properties. Sometimes a photograph will help to show context. The finished quality of a shopfront cannot accurately be determined from drawings of a scale of 1:50 and above. Many shopfitters will be reluctant to give detail at this level, however, the General Development Order makes it quite clear that the local planning department can insist on sufficient information to determine the application. In any case, most experienced shopfitters will prepare drawings of this level of detail to work from themselves.

The first part of this section will look at some typical details, whilst the second part will look at how they have been applied in practice. As the details cover a range of shop types in different locations, it must be stressed that not all the solutions put forward here will be acceptable in certain locations or on specific properties and it is advisable to consult with the planning department before drawing up any details.

The following details are all from traditional forms of shopfront, however, it must be stressed that the English Historic Towns Forum are committed to good modern design in appropriate cases. But in general it has been found that good modern design tends to follow from an

individual approach to a particular problem and therefore the solutions would not have universal application for a document of this kind.

Typical details

- 1. CORNICE & FASCIA
- 2. STALLRISERS & CILLS
- 3. MULLIONS
- 4. PILASTERS

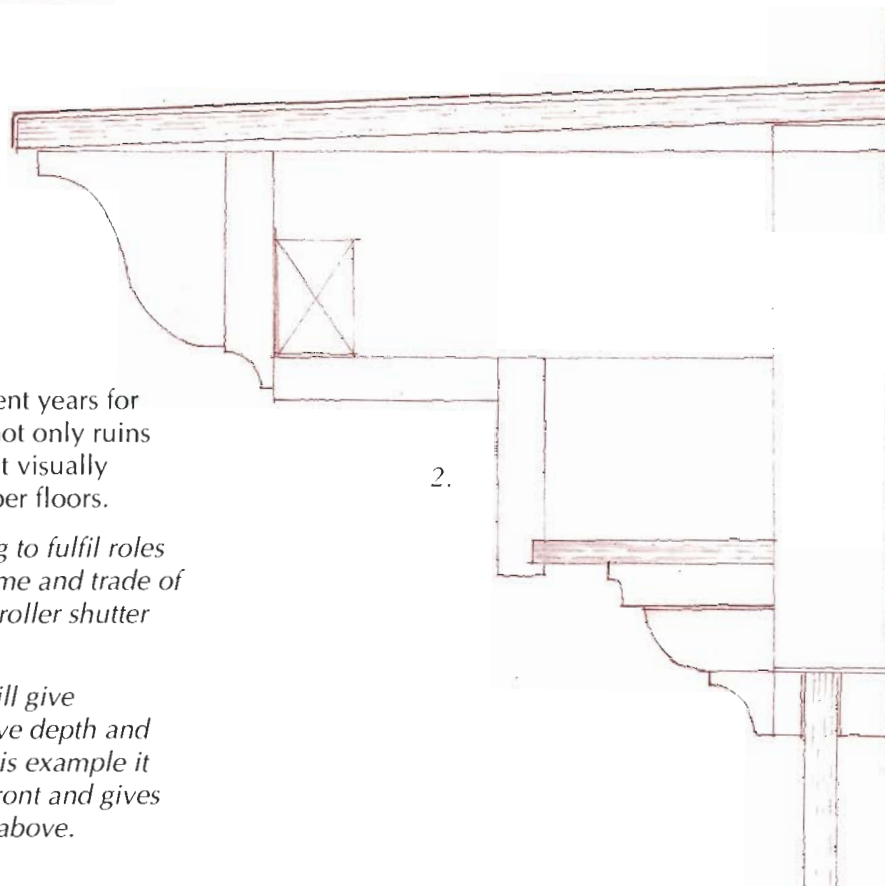
Examples of details applied in practice

- 1. STRATTON, WINCHESTER
by Powell Design Partnership
A simple modern solution to a medieval timber framed building with an oak frame around a glazed area allowing the structure of the building to be revealed.
- 2. 34 THE BULL RING, LUDLOW
by Boots Retail Construction & Engineering
This is a replacement of a poor quality modern shopfront. It successfully combines the company's corporate image in a traditional shopfront design.
- 3. CANNON ST, DOVER
by Dover District Council Architects Department
Idiosyncratic shopfront with interesting joinery details.
- 4. THE CHILDRENS BOOKSHOP, OXFORD
by The Oxford Architects Partnership
A new timber shopfront on a listed building designed to reflect the historic facade above and have a strong commercial presence.
- 5. CORPUS CHRISTI, CHELTENHAM
by Bayleys
A simple timber shopfront with clear details of the mouldings and mullions.

1. Cornice & Fascia

There has been a tendency in recent years for fascias to become too deep, this not only ruins the proportion of the shopfront but visually separates the ground from the upper floors.

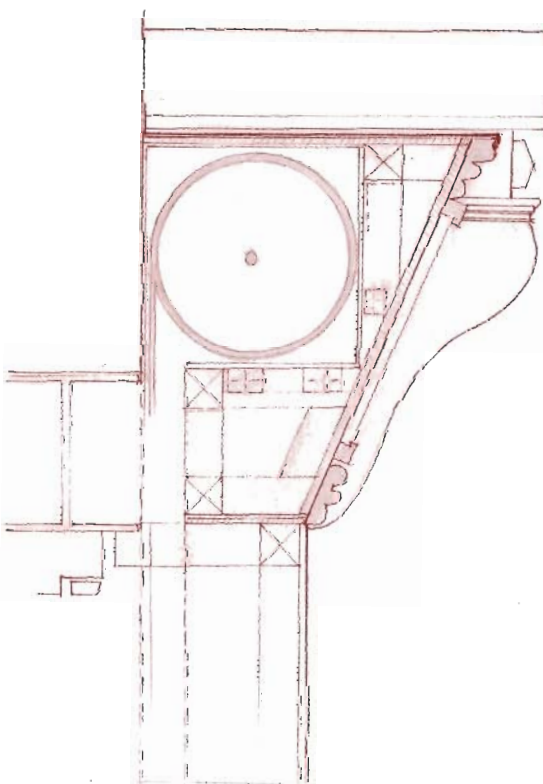
1. Increasingly, fascias are having to fulfil roles other than announcing the name and trade of the shop unit, such as hiding roller shutter mechanisms.
2. A properly detailed cornice will give protection to the fascia and give depth and interest to the shopfront. In this example it properly finishes off the shopfront and gives visual support to the building above.



Westminster - glass fascia



Bath



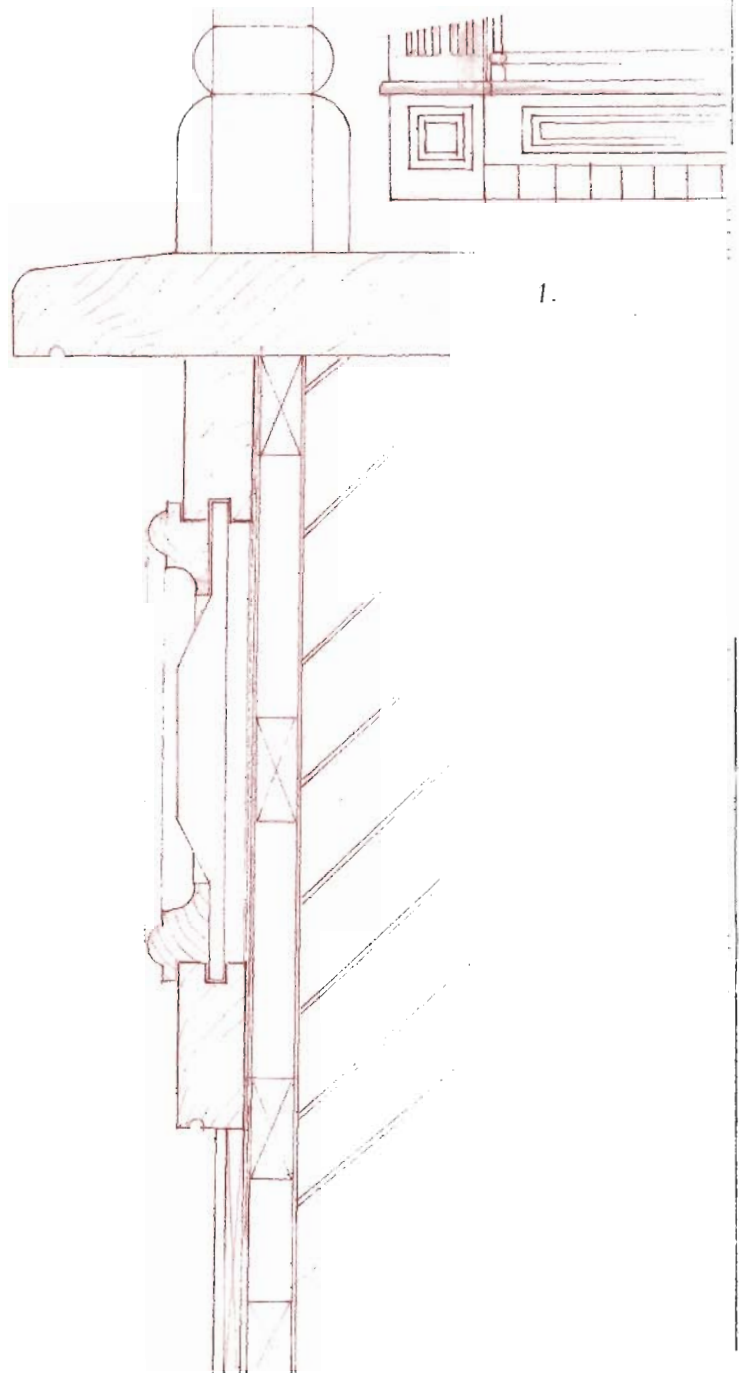
2. Stallriser & Cills



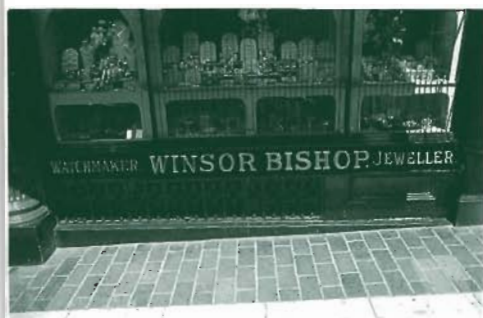
Brass cill and decorative grill

The stallriser gives visual stability to the shopfront, it also protects the lower part of the window. Stallrisers are prone to being splashed with muddy water, so must be properly primed and painted and regularly cleaned to avoid a build-up of dirt particularly at the lower level. Stallrisers traditionally sat on a plinth or splash back, which could be constructed of stone or brick and might be rendered. It is difficult to successfully detail a timber stallriser that abuts the paving, as it will be prone to rot. Cills tended to be flat in Georgian or Regency shopfronts but became bolder and rounder in the mid Victorian period.

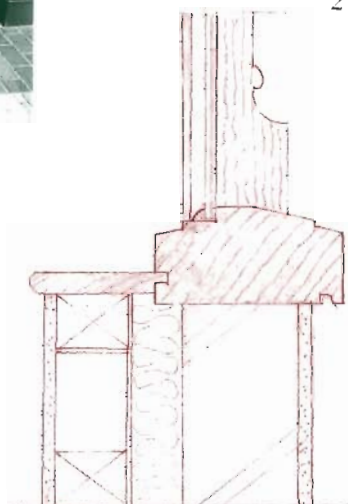
1. *Panelled stallrisers are a traditional feature but the panelling should never be just tacked on as this will lack depth and conviction.*
2. *A good cill detail is essential both in visual terms and to throw water away from the stallriser. In this case the full length timber shopfront sits on a small rendered plinth.*



2.



Norwich

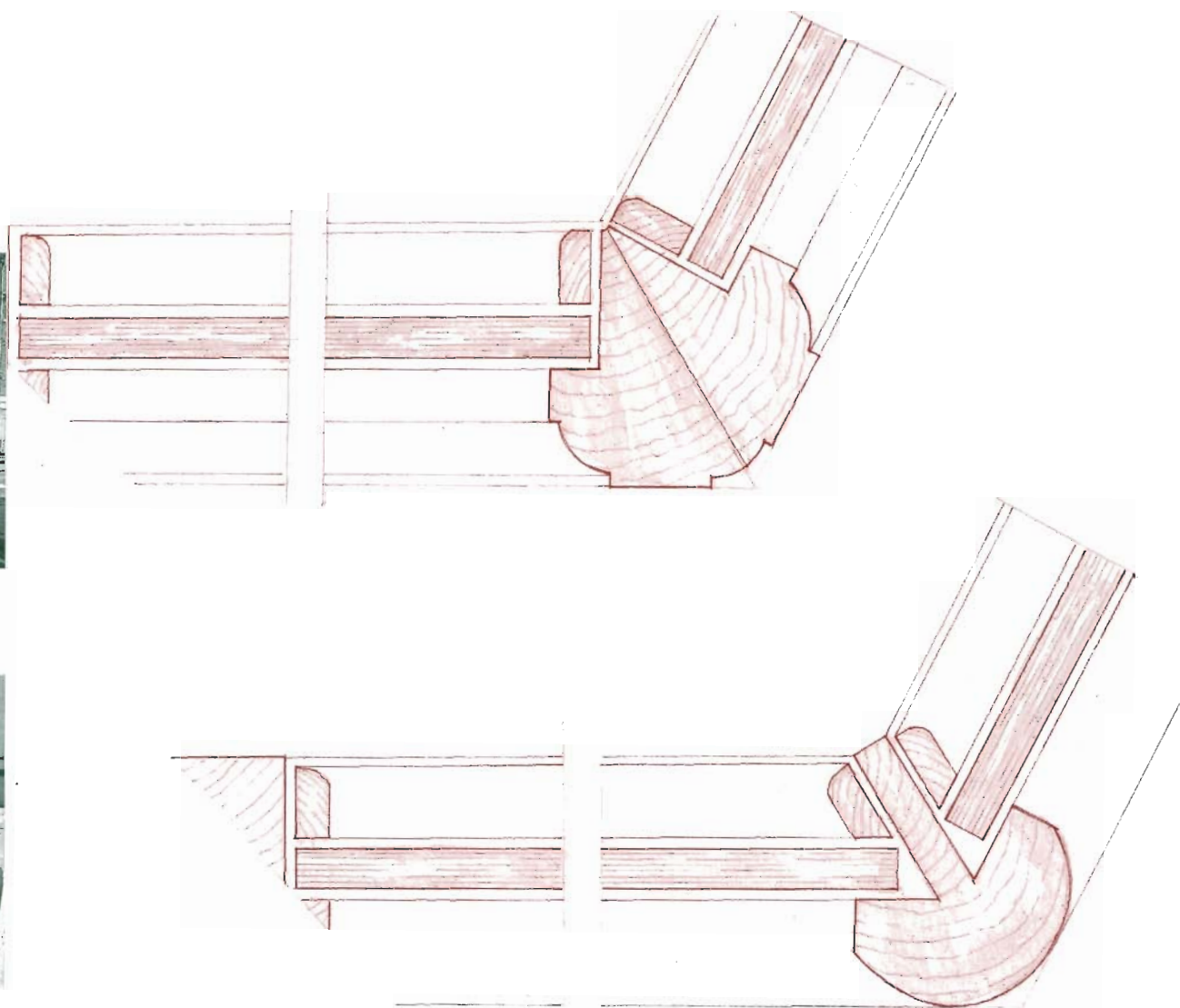


3. Mullions

- These are an important element in visually breaking up a large expanse of glass and should be in proportion to the building as a whole and the style of shopfront. Increasingly they need to be able to hold stronger panes of glass. The following mullions can be readily adapted to accept plate, toughened and laminated glass.



York



4. Pilasters

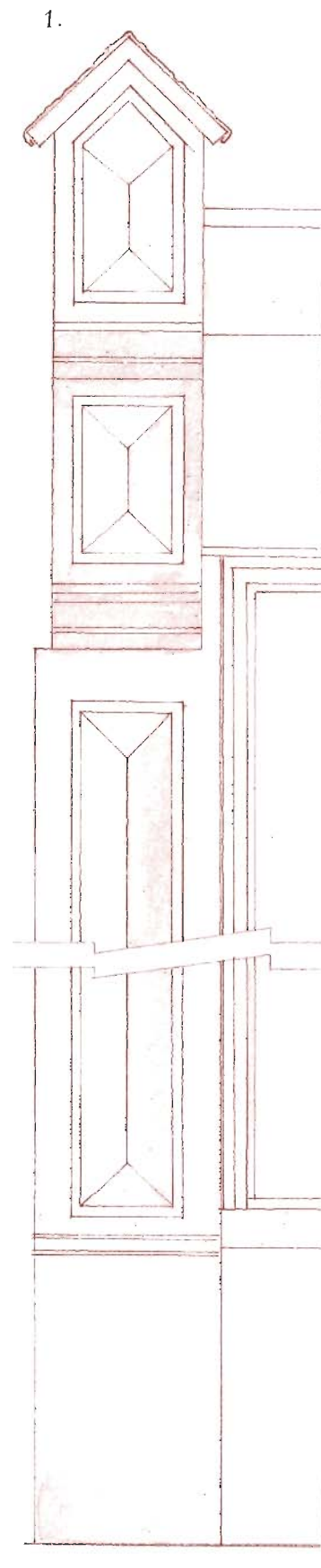
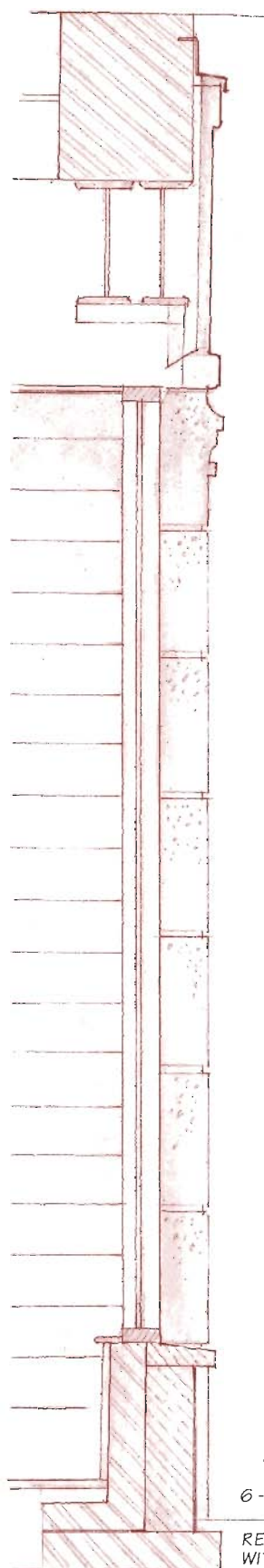
Pilasters often form part of the architectural surround to the building. In typical Victorian shopfronts they tended to be heavier with more ornate console brackets. They can be constructed in timber, stone or render, these should never be replaced when a new shopfront is installed. When these features are missing or covered up, careful reinstatement using patterns and mouldings from adjoining properties should be undertaken.

The details shown are:

1. A timber pilaster which makes a strong frame for the intended timber shopfront.
2. A typical rendered pilaster which would have originally been incised to look like ashlar stonework.



York



	Cement	Lime	Sand
9 - 16mm RENDER COAT	1	1	5
FLOATING COAT	1	1	6
6 - 10mm FINISHING COAT	1	2	9

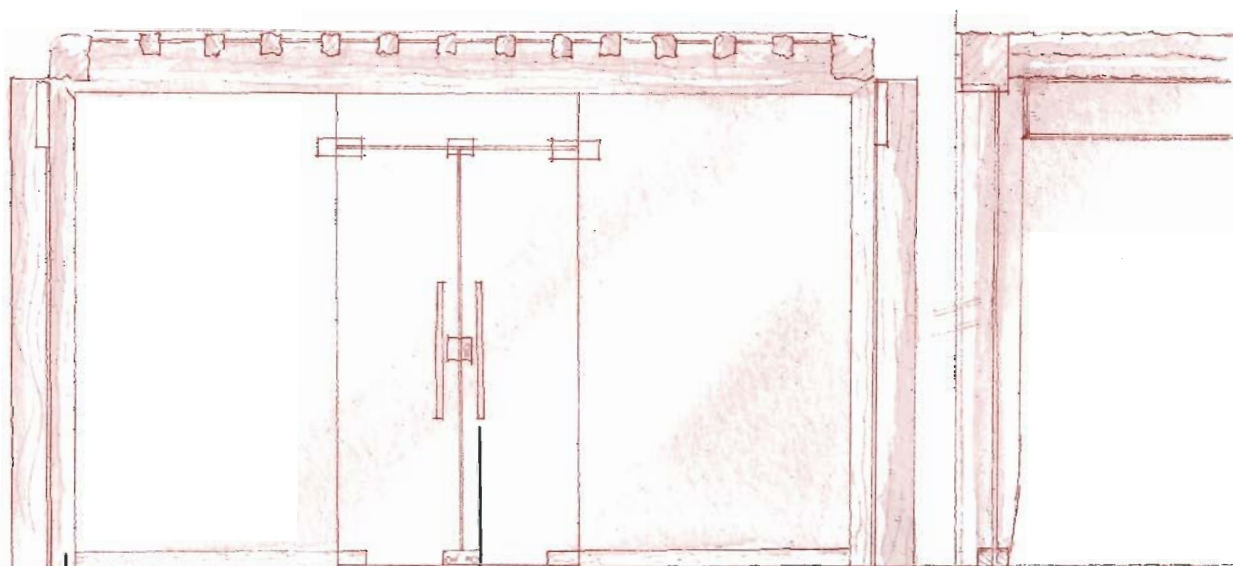
RENDER MIX SHOULD BE COMPATIBLE WITH ADJOINING RENDER IN COLOUR, TEXTURE & COMPOSITION

1. Stratton, Winchester

by Powell Design Partnership

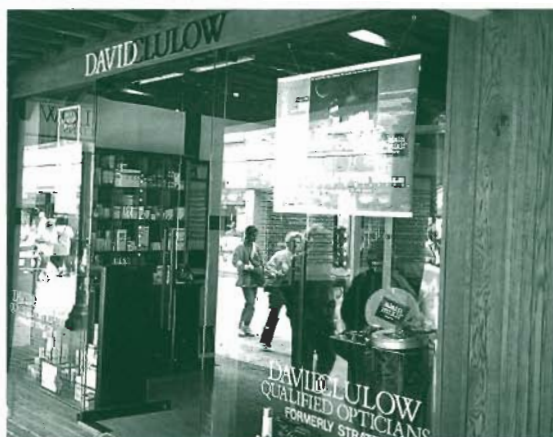
A medieval timber frame building under a pentice giving strong architectural context. The modern minimalist approach allows the original structure to be seen.

Natural oak has been used to match in with the original timber.



OAK FRAMEWORK
& PANELLING TO
MATCH EXISTING

SATIN BRONZE
DOOR FIXINGS



2. 34 The Bull Ring, Ludlow

by Boots Retail Construction & Engineering

This replacement shopfront had to respond to earlier alterations to the property. It is constructed in hardwood and painted. The final execution was high quality and the result of close attention to detail.

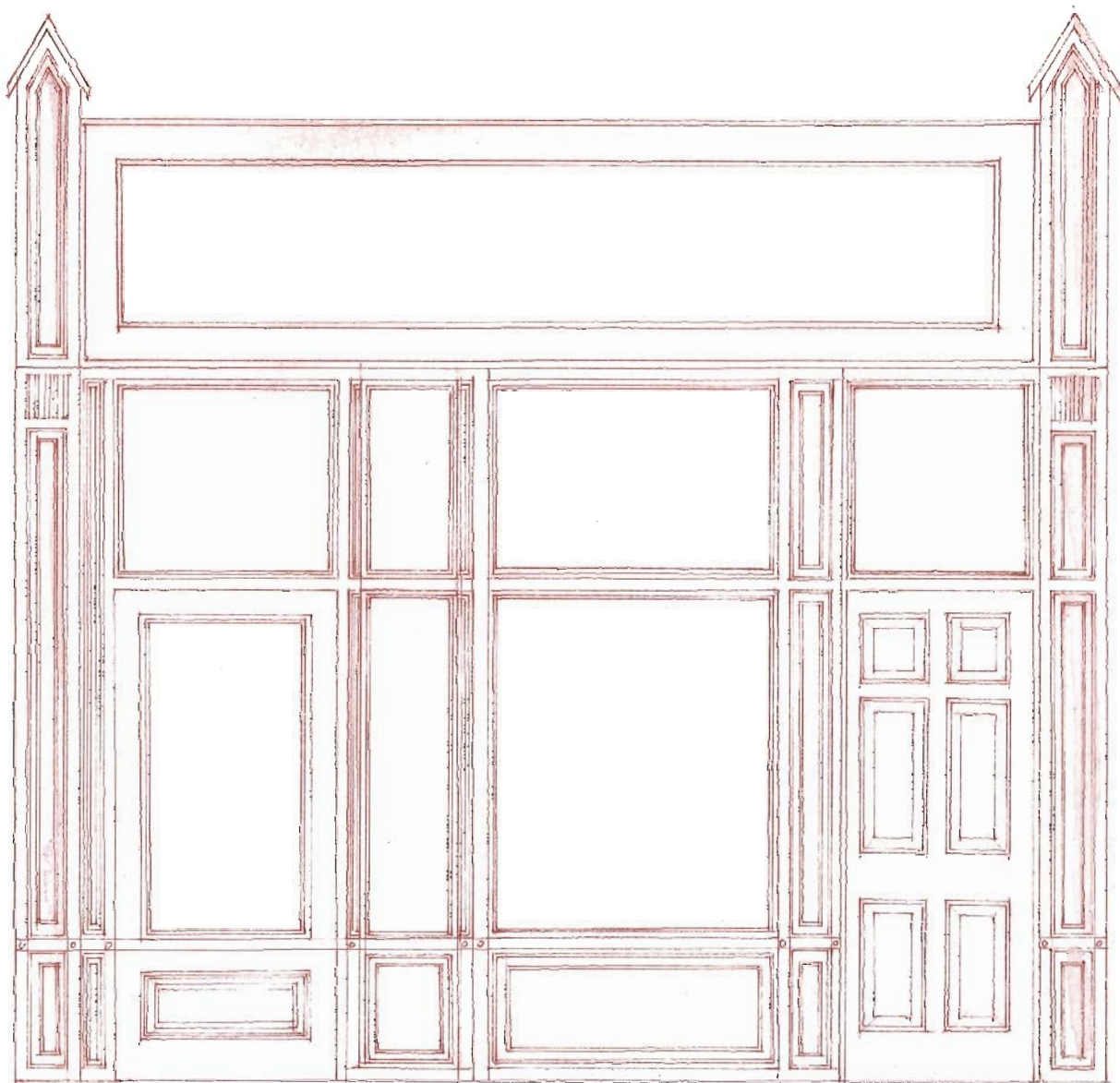


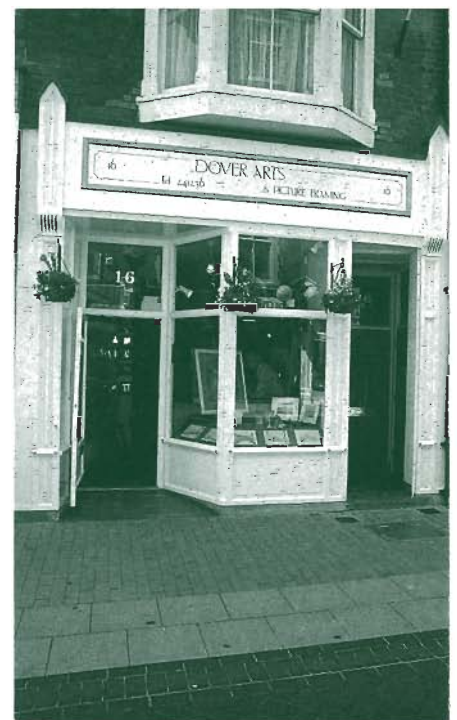
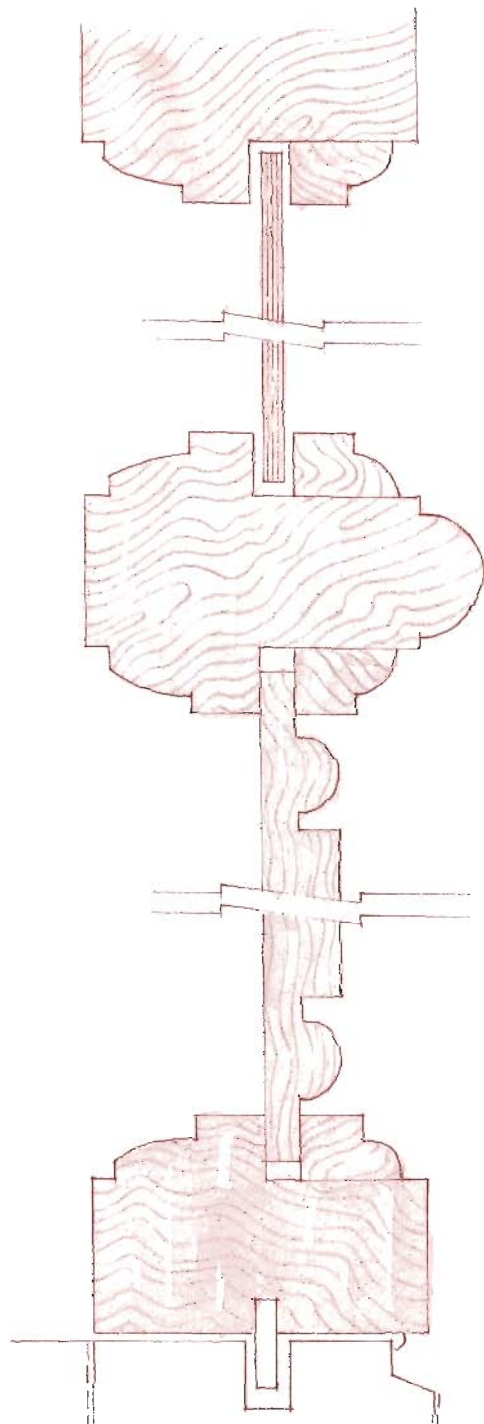
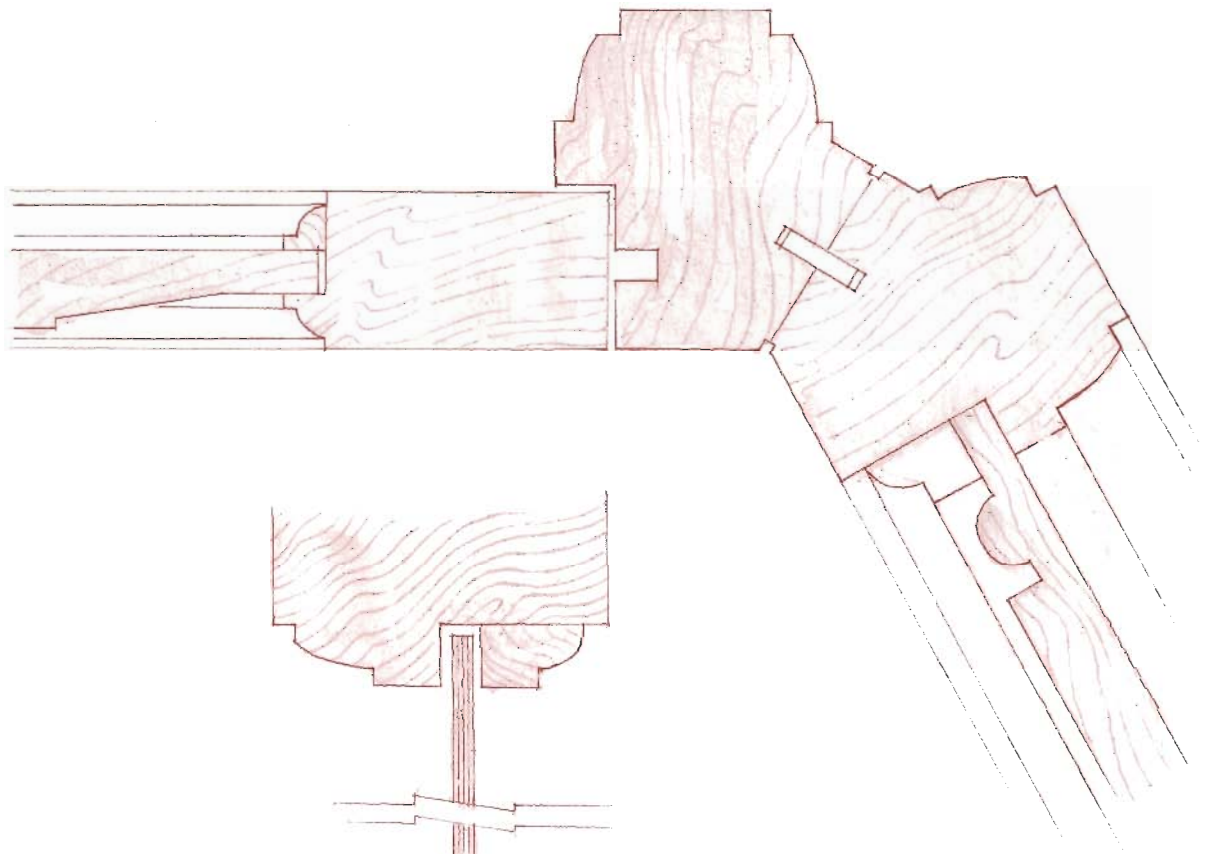
3. Cannon St, Dover

by Dover District Council Architects Department

This shopfront whilst respecting traditional shopfront design takes on an idiosyncratic approach.

Full details at 1:1 were produced showing both moulding and methods of jointing.





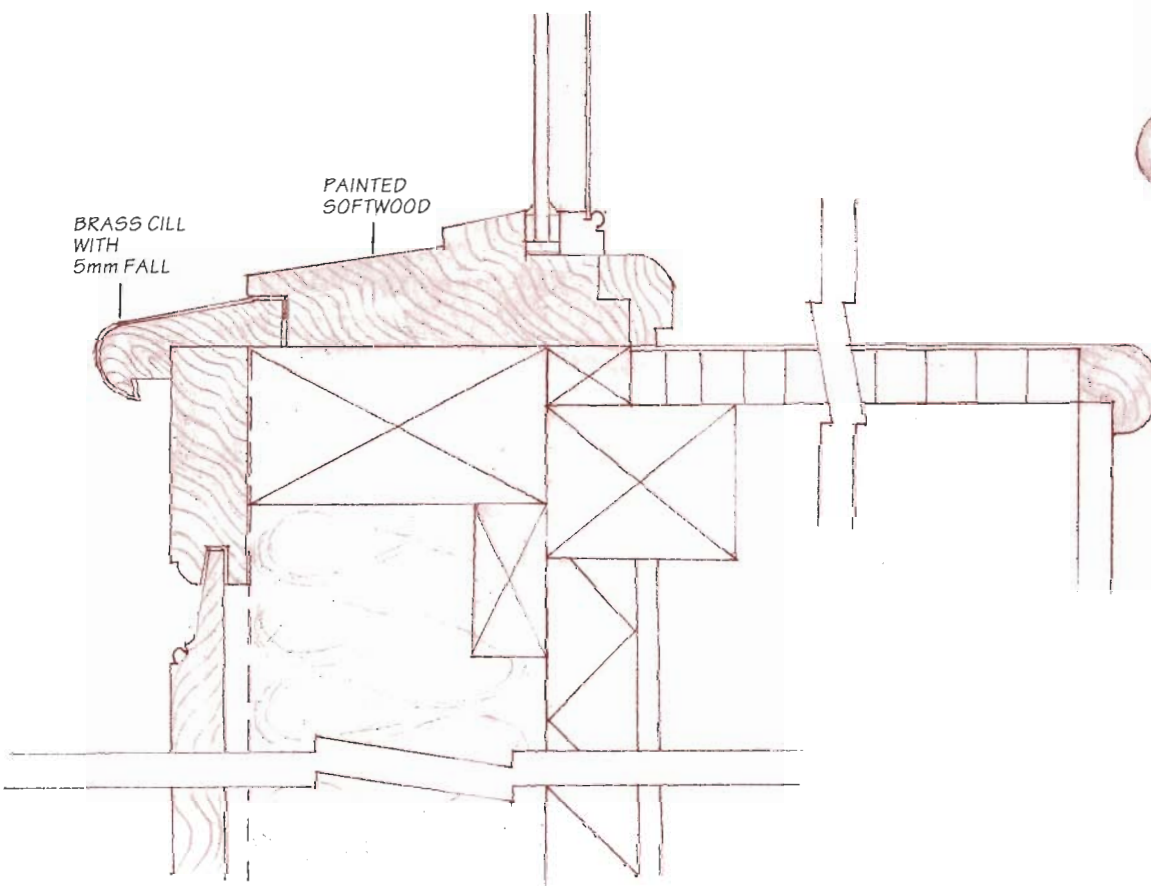
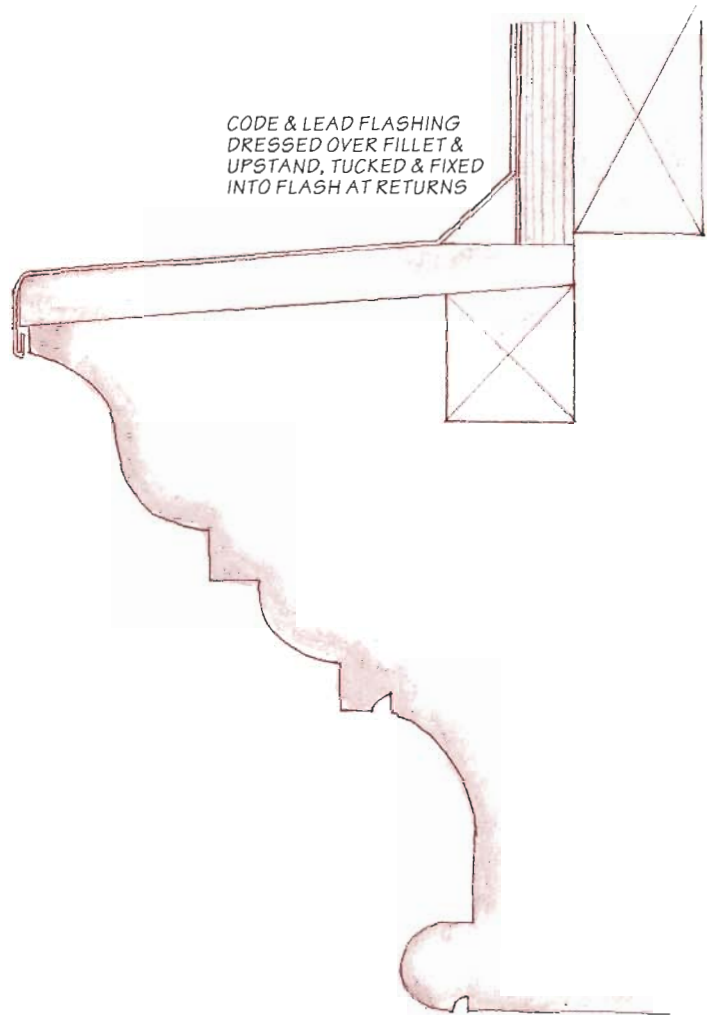
4. Childrens Bookshop, Oxford

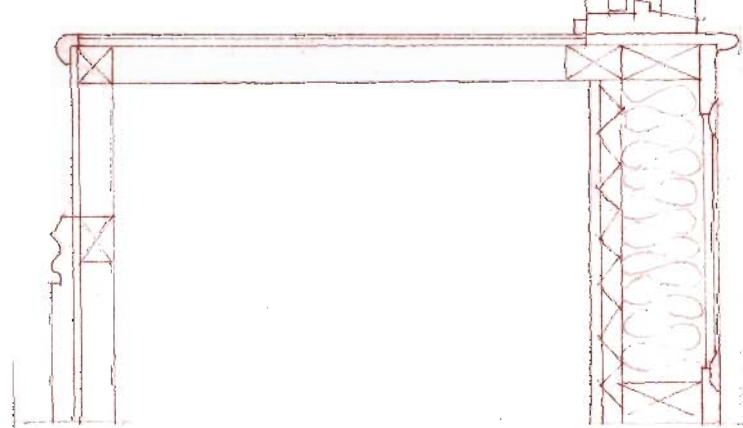
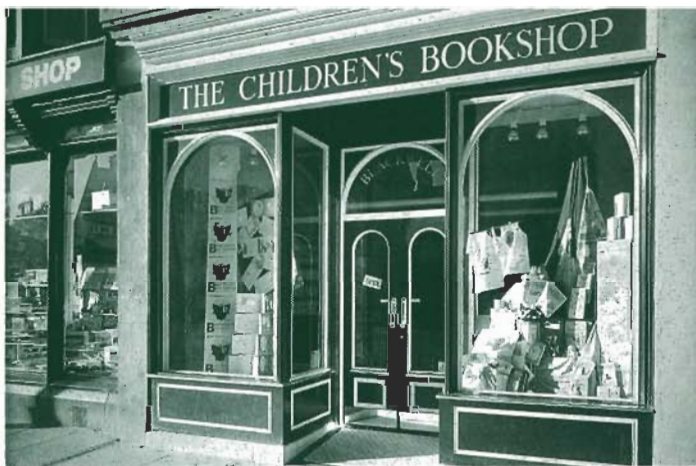
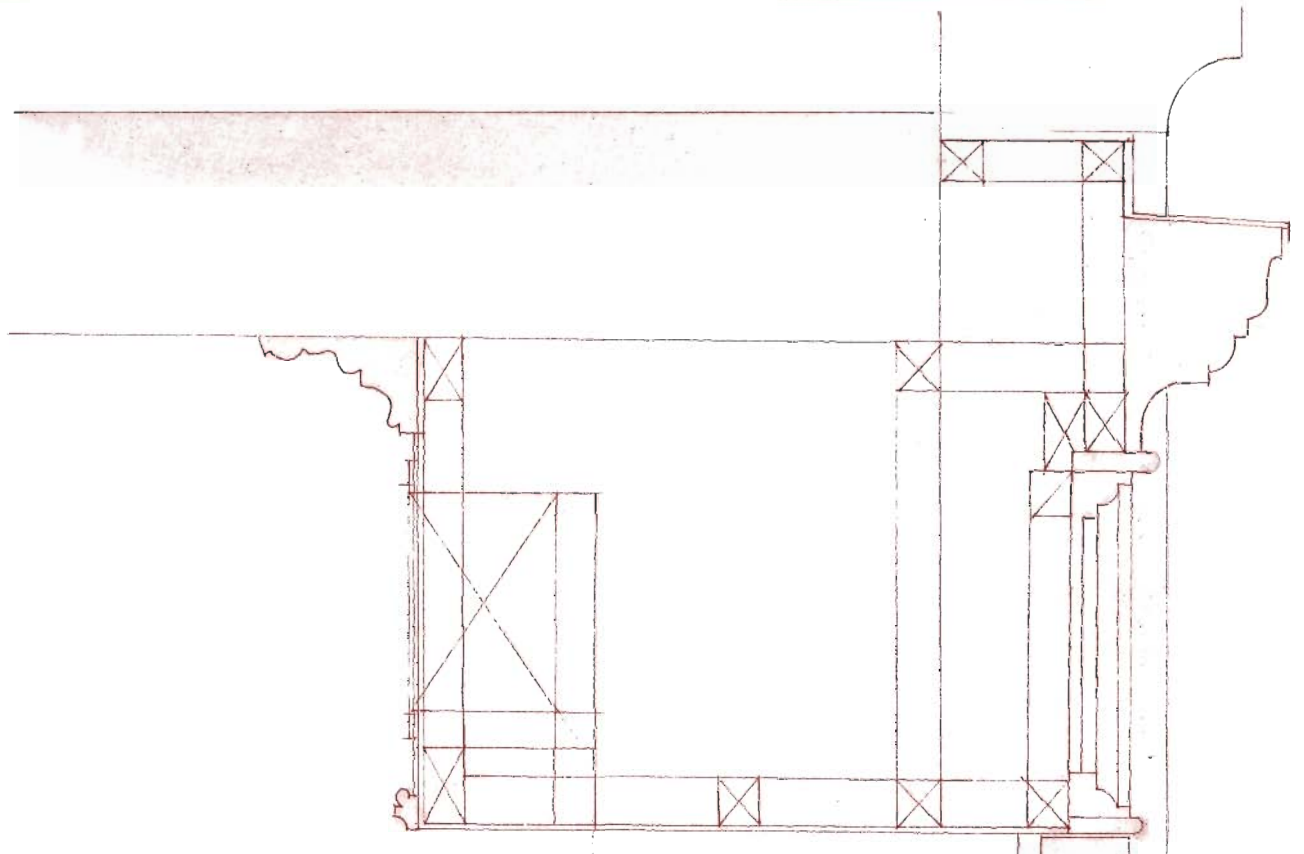
by The Oxford Architects Partnership

The building is a mid-19th century Grade II listed building. The former shopfront had to accommodate two openings, one for the upper floors. The client brief involved the use of the upper floor as a bookshop allowing the shopfront to be full width and required good display facilities.

The drawings gave full sections at 1:10 scale and 1:5 details of key elements like the cornice and cill.

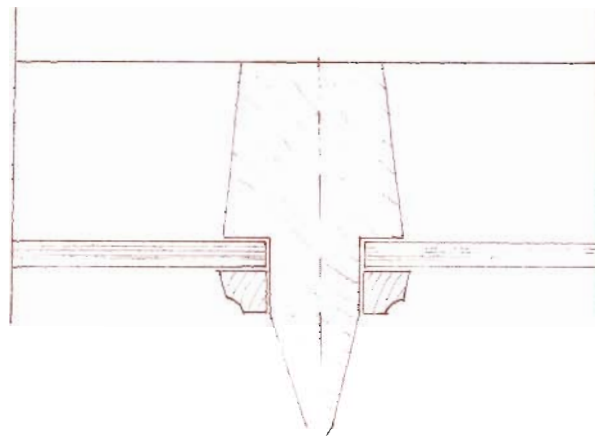
Note a bulkhead has been included behind the fascia which could easily incorporate security measures should future tenants require it.





5. Corpus Christi, Cheltenham

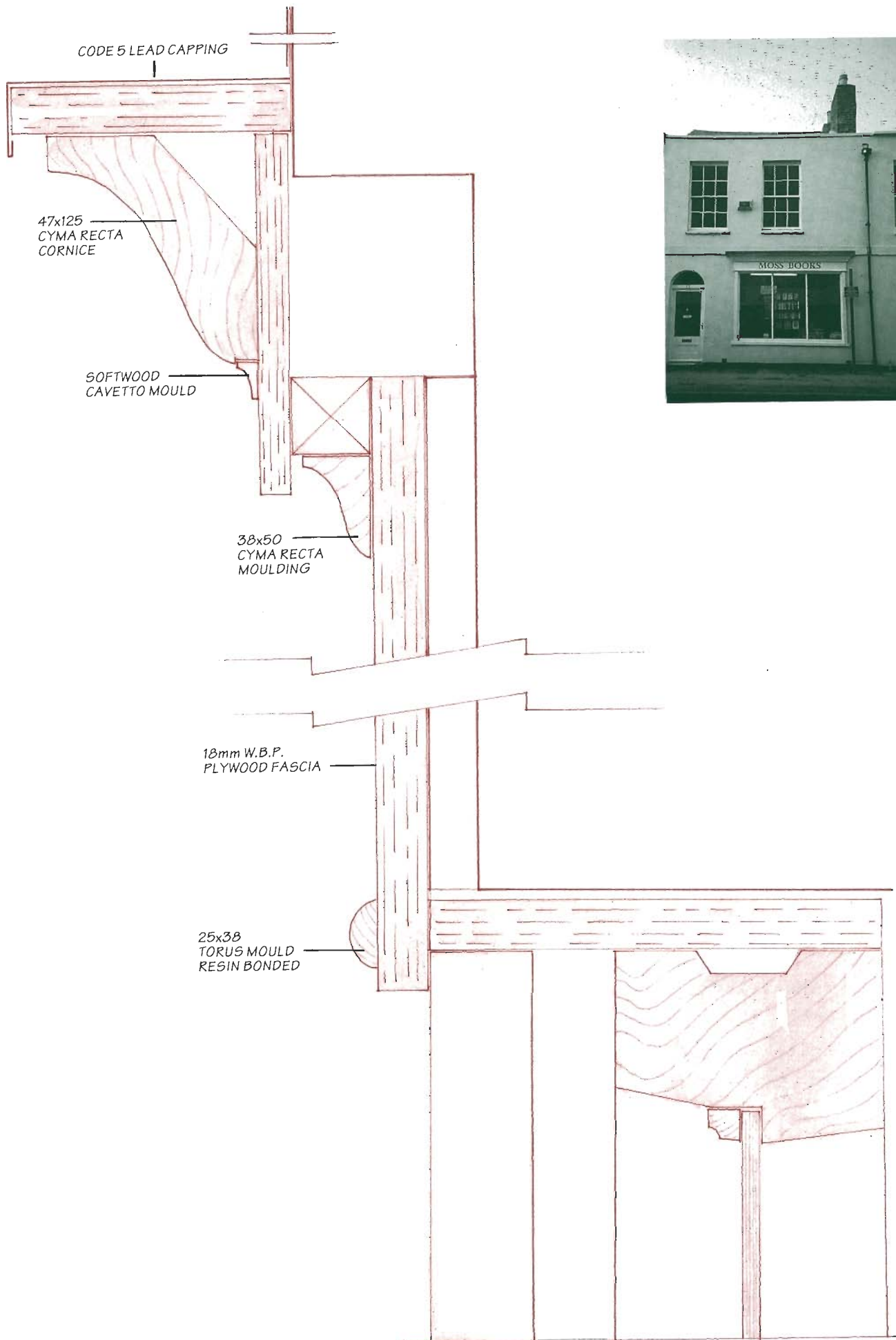
by Bayleys



Although a simple and relatively small shopfront, the drawings and section give full details of all the mouldings including sections through the mullions.

Although this approach might not be acceptable in some areas, it shows that an attractive and effective shopfront can be assembled using readily available components.





Bibliography

- 1. *Shopfronts*, Alan Powers (London, 1989).
- 2. *Modern Practical Joinery*, George Ellis (London, 1987, reprint of 1908 edition).
- 3. *Shopfronts*, English Heritage Listed Building Guidance Leaflet (London, 1990).
- 4. *Shop Fitting and Setting Out*, a practical handbook on the method of setting out for modern shopfronts, S O Curtis (London, 1939).
- 5. *Designs for Shopfronts*, I & J Taylor (1792).
- 6. *A Series of Design for Shopfronts*, T Young (1828).
- 7. *Designs of Shopfronts*, J Faulkner (1831).
- 8. *Shopfronts and Exterior Doors*, T King (n.d.).
- 9. *On the Construction and Decoration of the Shopfronts of London*, N Whittock (1840).
- 10. *English Shopfronts Old and New*, H Dan & E C Morgan, Willmott (London, 1907).
- 11. *English Shopfronts from Contemporary Source Books 1792 - 1840*, D Dean (London, 1970).
- 12. *Practical Building Conservation*, Vol. 4. *Metals*, (English Heritage Technical Handbook), Ashurst, J. & N., Gower (1988). This series also provided an extensive and useful bibliography and list of contact addresses.
- 13. *Smithells Metals Reference Book*, Brandes, E.A., 6th ed. Butterworths (1983).
- 14. *Materials and Technology*, Vol. 3 *Metals and Uses*, Longman (1940).
- 15. *Specification, Materials volume*, NBC Architectural Press.
- 16. *Georgian Group*, Guide No. 8 *Ironwork*, The Georgian Group
- 17. *Bath Shopfronts*, Bath City Council (1993)
- 18. *TRADA*. There are various leaflets on timber.
There are also various British Standards relating to the different components in shopfront construction.

Acknowledgements

The following local authorities and organisations are thanked for supplying information:

- East Hertfordshire District Council
- Dover District Council
- Bath City Council
- Exeter City Council
- Borough of High Peak
- Calderdale Metropolitan Borough Council
- Scarborough Borough Council
- Cotswolds District Council
- City of York
- Chetenham Borough Council
- Hove Borough Council
- Kings Lynn District Council
- Newark and Sherwood District Council
- Brighton Borough Council
- Norwich City Council
- Winchester City Council
- Chester City Council
- Canterbury City Council
- St. Edmundsbury Borough Council
- National Association of Shopfitters
- Laminated Glass Centre

THE DOCUMENT HAS BEEN PREPARED BY:

- D. Baxter - Hereford City Council
- N. Green - Freelance Consultant
- P. Newall - Shrewsbury & Atcham Borough Council
- D. Rose - Gloucester City Council
- L. Wride - Oxford City Council
- R. Knott - Mendip District Council

Design & Artwork by:

Jo MacDonald, Graphic Design Studio,
Winchester City Council

Illustrations by

Yvonne White, Freelance Artist, (0737 357012)

Typeset by Image Connection Bureau, Southampton
Printed by Optimum Litho Ltd., Winchester

The English Historic Towns Forum

OBJECTIVE

- The English Historic Towns Forum was created in order to promote and reconcile prosperity and conservation in historic towns.

BACKGROUND

- The Forum was founded in 1987 at a conference in Bath, when representatives from twenty English historic towns and cities discussed matters of common interest.

The Forum sets out to:

- establish and encourage contact between local authorities having responsibility for the management of important historic towns and cities
- organise seminars, workshops and conferences to discuss issues of common concern
- encourage a corporate, inter-disciplinary approach to the management of historic towns
- compile and circulate information describing the approach of different authorities to critical management issues for historic towns
- express a collective view on proposals which are likely to affect the interests of historic towns

Membership of the Forum currently stands at 47 full members with an increasing number of affiliated members. For membership details please contact:

*The Huntingdon Centre,
The Vineyards,
The Paragon,
Bath, BA1 5NA.*



ISBN 1 898261 23 7

© This document remains the copyright of
The English Historic Towns Forum 1993.