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**AN ILLUSTRATED GLOSSARY OF ARCHITECTURAL AND
CONSTRUCTIONAL TERMS: FOR STUDENTS AND NEWLY QUALIFIED
PLANNER IN PRACTICE**

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How to use this Illustrated Glossary

This illustrated glossary is intended as a useful companion of architectural and constructional terms for students and newly qualified planners in practice. It is not simply an architectural dictionary, there are plenty of these available, instead it attempts to elucidate architectural and construction terminology in a straightforward way. The glossary has been divided into 6 planning sections, a summary of the contents of each is provided Overleaf:-

		Page
Section 1	Architectural Styles and Periods	3
Section 2	Materials	8
Section 3	Common Building Problems*	11
Section 4	Construction Details	14
Section 5	Architectural Terminology	20
Section 6	Useful References	27
Section 7	Alphabetical Index of Terms	29

Information provided is generally applicable throughout the UK. It is not possible, however, to include all regional variations and colloquial terms, sometimes used in the construction industry.

There is a full alphabetical index of terms at the rear of the glossary, which will guide you to the appropriate page for each term. A page for personal notes has also been provided.

**Disclaimer - Please note that the information provided in this glossary is advisory only, the care and conservation of buildings and structures should not be undertaken without seeking advice from a suitably qualified expert.*

Summary of Sections

Section 1 Architectural Styles and Periods - this section briefly outlines the major architectural styles and movements evident in most British cities. It is not a comprehensive history of British Architecture, for more detailed information refer to the references continued in Section 6. It should be noted that the terms continued in Section 1 are used in two ways; in relation to the original historical period from whence these styles derive; and to describe subsequent revivals of the style. Thus, for example Baroque architecture refers to a style that reached Britain in the late 17th and early 18th Centuries. Edwardian Baroque, on the other hand denotes a revival of the style in the early 20th Century.

Section 2 Building Materials - Buildings are generally either of a load bearing or frame construction. The former includes buildings built of such materials as brick or stone which carry the weight of the floors and roof. Traditional frame buildings would normally have a timber frame. Today steel frames are very common. With a frame building the external visible building material is essentially just filling in the spaces between the frame (unless the frame itself is visible!). This infill material may well include, for example, brick. Historically for most buildings materials would be found in the near locality, though there have always been exceptions for more prestigious or expensive projects - such as Stonehenge for example! The use of local materials is one of the important factors for local distinctiveness and giving local character. It was with improved communications in the nineteenth century that this began to change and today there is a global market in some building materials (see slate below). The concept of sustainability is helping a move back towards using local materials and towards not using unsustainable materials such as tropical hardwoods.

Section 3 Common Building Problems - Buildings which have been erected for some time, (and even some new ones!), will often display one or a number of fairly common problems, such as patches of damp penetration, minor cracks due to settlement and so on. Section 3 provides a brief guide to recognising some of the most common problems and their causes. Most require specialist treatment to solve or eradicate. However, all problems are best spotted in their early stages and treated as quickly as possible. It is particularly important to prevent water penetration into buildings through, for example, ensuring rain-water goods are functional.

Section 4 Construction Details - This section is designed to give an introductory guide to how some common elements of traditional buildings were put together. Through illustrations

the section shows the position of common construction elements in turn helping to explain their purpose.

Section 5 Architectural Terminology - Architecture is full of specialist terminology, this section provides definitions for most of the frequently used terms.

Section 1 - Architectural styles and periods

Adam. As in Robert Adam, the most famous member of a major dynasty of C18 architects. His style is characterised as lighter than the Palladians who preceded him or the Greek revivalists who followed. He had a particular brilliance in the planning and decoration of interiors.

Arabesque. Style of decoration derived from Moorish and Arab architecture. Involves intricate surface decoration generally based on geometrical patterns.

Art Deco. Architectural and decorative style primarily associated with the inter-war period. Though a style which celebrates modern technology in many ways it might be seen as the antithesis of modernism, it is often exuberant and exotic. It is characterised by the geometric stylisation of natural forms. It is a style often linked with, on the one-hand the streamlining of the great ocean liners of the period and on the other with great sky-scrapers like the Chrysler building, in Manhattan. Perhaps the best known British examples are great factories found on arterial roads leading from many cities, e.g. the Hoover Factory, Western Avenue, London; cinemas; and sea-side buildings of the period.

Art Nouveau. Style of architecture and decoration primarily associated with the late nineteenth century. Characterised by ubiquitous use of very fluid sweeps of undulating lines. One of the principal European centres was Brussels. It is a term which has been used to describe such diverse architects as Mackintosh and Gaudi, and perhaps properly fits neither.

Arts and Crafts. Self-conscious revival of *vernacular* styles and craft traditions during the late C19 and early C20. Origins are found in the writings of John Ruskin, later developed by William Morris, (a designer not an architect) and seen in his house, the Red House, commissioned from Philip Webb. Morris and his followers, aspired to creating beauty through a revival of craft skills, in reaction to what they perceived as the ugliness and tawdriness Victorian mass production. Architects, E Lutyens and C F A Voysey are often associated with the Arts and Crafts as their houses of this period are some of the finest examples of this style, but both lie outside the main group of Arts and Crafts designers.

Baroque. Historically, in Britain, the architecture of the late C17 and the early C18. It is an extravagant derivation of Classical architecture and flourished in Italy and France where it is denoted by exuberant sweeping and curved forms. The leading English exponents were

Wren, Hawksmoor and Vanbrugh. The use of giant orders, rustication, sculpture, broken pediments, exaggerated keystones and domes are typical. Its main revival was during the *Edwardian* period.

Beaux Arts. A very rich classical architectural style, associated especially with late C19 France and the restructuring of Paris during that period. Often, therefore, linked with grand, formal town planning.

Brutalism. From the French, '*beton brut*' (raw concrete), it is a term that originally referred to buildings which used exposed concrete in their construction, but was increasingly used to describe the particularly angular, massive and unforgiving structures of the late 1970s. (See also *modernism*.)

Byzantine. The culmination of early Christian architecture, developed in Constantinople (Istanbul) after AD330. The basilica form was to influence later Muslim architecture. The most spectacular British example of Byzantine revival is the Catholic Westminster Cathedral.

Classical. A key architectural movement in the history of western European civilisation. It is a style of architecture developed by the ancient Greeks (connected to the use of columns) and developed by the Romans. Classicism was revived by the *Renaissance* and has been around, in one form or another, ever since. There are three main orders (orders = forms having common elements and rules of proportion) of Classical architecture. The ***Doric***, ***Ionic*** and ***Corinthian***, with two additional orders the ***Tuscan*** and ***Composite***. Much of modern thinking about Classical Architecture derives directly from Renaissance theorists since, for example, there are no written records about architecture from Ancient Greece. An insight into Roman architecture does exist in the works of Vitruvius, a 1st Century Roman Architect, whose works were rediscovered during the Renaissance and formed the basis for some of the theory at that time.

Classical Orders

The **Doric Order** was used by both the Greeks and Romans and though there are differences, all Doric buildings have plain capitals to the columns, and have triglyphs present in the frieze. The Greek order has no base, which differs it to the Roman. The Acropolis in Athens is often thought of as the pinnacle of Greek Doric Design. In modern terms, Greek architecture was not really understood until the late-C18th when it became extremely popular, and there was a strong revival of Greek inspired architecture after this time. The

Ionic Order is also common to the Greeks and Romans, it is distinguished by the voluted capital, which feature in no other order. The **Corinthian Order** appeared in embryonic form in ancient Greece, but was only fully developed by the Romans. The capital is differentiated in having acanthus leaf decoration.

Vitruvius, (see above) also cites the **Tuscan Order**, which derives from an ancient Etruscan temple style. It is very simple in form, with wide spaces between the columns. The **Composite Order**, combines elements of the Ionic and Corinthian order is not described by Vitruvius and therefore probably emerged after his time. It was first identified by Alberti c1450, during the early Renaissance.

The first person to put the columns of the orders side by side was Sebastian Serlio in c1540 and this tendency to see the orders as an ascendant progression has been with us ever since.

Corinthian. See *Classical*

Decorated. See *Gothic*.

Doric. See *Classical*

Early English. See *Gothic*.

Edwardian. The period of Edward VII (1900-1910), though architecturally tending to include the period until the First World War. A period architecturally of confident architecture; eclectic, but much inspired by the Baroque period. It was stylistically conservative. Elsewhere in Europe more innovative architectures were being developed.

Elizabethan. English architecture from around the mid C16 - the first English architecture to embrace Renaissance principles such as symmetry. This image of England, with large mullioned and transom windows and decorative work such as strap-work, was revived throughout the C19. *Jacobean* architecture was essentially a continuation of the Elizabethan period, though displayed more profuse decoration.

Gothic. Along with classicism and modernism, one of the three great architectural movements of western European architecture. It is the architecture of the pointed arch and the flying buttress. It first emerged in the Burgundy area of France and came to Britain with Cistercian monks. The great monuments of medieval gothic, therefore, are the gothic

cathedrals. Durham, (1093 onwards) whilst essentially Romanesque, was one of the first buildings to use the gothic rib vault on a large scale. In England gothic architecture evolved through three major phases. **Early English, (1200-1300)**. The beginning of English Gothic architecture, Wells Cathedral c1180 is a good example. In England there was more emphasis on horizontal elements than occurred in contemporary France. The windows in this style are almost universally long narrow lancet windows, without tracery. The **Decorated (1300-1350)**. The stylistic period of English gothic, characterised by the use of the ogee ('s' curve) in the arches and tracery of windows. Particularly common is foil decoration, small arc openings separated by cusps. With **Perpendicular (1350- 1550)** the stress is on straight verticals. Large windows are separated with slender vertical subdivisions and arches are often flattened, N.B. this is a truly English style there is no equivalent on the continent. (In France and the Low Countries Decorated developed into the Flamboyant style.)

Gothic revival. Gothic began to be revived in a fairly loose and historically inaccurate way during the C18. This rather insubstantial style is often referred to as Gothick. The more serious attempts to revive medieval styles, especially for churches, of the C19 are known as the Gothic revival. The most well known figure of this revival is the architect A.W.N. Pugin. The building of the new Houses of Parliament (designed by Charles Barry and Pugin) marked the acceptance of gothic for British public buildings.

Greek revival. The revival of a severe classical form, as opposed to the rather delicate classicism of Adam et. al., began to develop in the 1780s and reached its peak in the 1820s. Belsay Hall in Northumberland is a major example of the Greek revival.

International style. A term coined in the U.S.A. to refer to early *modernism*, the new architectural style of the C20.

Ionic. see *Classical*

Jacobean. See *Elizabethan*.

Modernism. Modernism has 19th Century roots, as architects began to search for style which reflected the technology of the time and was not based on revivals of historic styles. Importantly it was felt that the form of buildings should come from their function and useless ornamentation was redundant. During the inter-war period The Bauhaus design school and Le Corbusier in France, dominated the movement. After the war not only was the architecture of the modernists chosen to re-build much of Europe, but the principles of

functionality etc. were applied at the city scale with, as we now appreciate, sometimes less than successful results.

Palladianism English architecture derived from the Italian architect Palladio, (1508-80). There are two main periods in Britain, the work of Inigo Jones, 1615-1660s, though the term is more usually applied to the period 1720s - 1760 when the style was at the height of its influence, led by the aristocratic architect Lord Burlington. (Palladianism, however, remained a strong influence in Britain from this period onwards).

Perpendicular. See *gothic*.

Post-Modernism. Architecture which grew out of a reaction to modernism. The term is generally first accredited to the author Charles Jencks, (see Section 6) in the 1970s. The architecture is said to be 'double coded', determined both by the architect's taste but also the wishes of the client. There is, thus, no singular style. Attention to detail, use of colour, historical references, and humour are all included.

'Queen Anne Style'. Term applied to a type of domestic architecture, made fashionable by Richard Norman Shaw in the late 19th Century, that was evocative of Dutch influenced mid-17th Century buildings (i.e. little to do with the reign of Queen Anne 1702-14). The style was often executed in red brick, with strongly contrasting sliding sash windows.

Renaissance - From the Italian '*rinascimento*' meaning rebirth, indicating the revival of Classical Architecture, which began in Italy around the 1420s. Renaissance motifs were introduced to Britain in the early 16th Century, but pure Classical architecture did not arrive until Inigo Jones introduced work based on the Italian architect Palladio in the early 17th Century.

Romanesque. A style dominant before the rise of Gothic Architecture, though its date of origin is disputed. In Britain it is generally equated to Norman architecture, i.e. post conquest (1066) buildings of the 11th and 12th centuries. Derived from Roman architecture its characteristics include massive piers, rounded arches and rib vaulting.

Saxon. English architecture which is post-Roman and pre-Norman conquest. The only remnants of this period lie in church architecture, significant examples of which lie in the north-east e.g. Escomb (Co. Durham), Monkwearmouth (Sunderland), and Jarrow.

Tuscan. see Classical

Victorian. Architecturally the Victorian period was one of eclecticism. Just about every architectural style was revived during the Victorian period (most notably perhaps with the gothic revival) and new architectures developed from Arts and Crafts to buildings made possible by technological advances, such as the Crystal Palace. The Victorians often had a functional view of what constituted the appropriate architecture for a building. For example, most Church of England churches were built in gothic, with its association with medieval Christianity, whereas buildings such as banks would usually be classical, with its image of order and stability. However, there are many exceptions.

Section 2 - Building Materials

Artificial stone. As with slates and other natural materials, there has been a burgeoning of 'look-a-like' artificial stones. These vary in quality and it is very difficult to meaningfully generalise about them. The best can be difficult to tell from natural stone, though even with these the difference may become apparent over time as they weather differently. Commonly planning authorities will accept their use in limited amounts, for example, for use as sills and lintels, but will be less enthusiastic about large areas of artificial stone walling.

Ashlar. See stone.

Bond. See under Construction Details and Brick.

Brick. Bricks come in an almost infinite variety. Headers are bricks laid so that only the end appears on the face of the wall and stretchers bricks are laid so that the side only appears on the face of the wall. Commonly now bricks are laid in stretcher bond, composed of stretchers only. English bond, English garden wall bond and Flemish bond are illustrated in the section on construction details. Nogging is brickwork used to fill in the spaces between the timbers in a timber frame building.

Cladding. A non-structural external covering or skin applied for aesthetic or protective purposes.

Clapboard. American term for weatherboard.

Clay tiles. Plain clay tiles were a traditional roofing material of the South east of England, though they were also used for tile-hanging, over timber frames as an external wall covering (see also interlocking tiles and pantiles). Plain clay tiles are also commonly found on early 20th century buildings across the country when they became fashionable.

Coade stone. C18 and C19 form of artificial stone used for ornamentation and sculpture.

Cob. Walling material made of clay with straw, gravel and sand added.

Concrete. A mixture of cement and aggregate. Used by the Romans, the modern use of concrete began in France in the late 18th early 19th century. Re-enforced concrete dates

from the late 19th century and it became the chosen material for many of the proponents of the modern movement in the 20th.

Coursed. See stone.

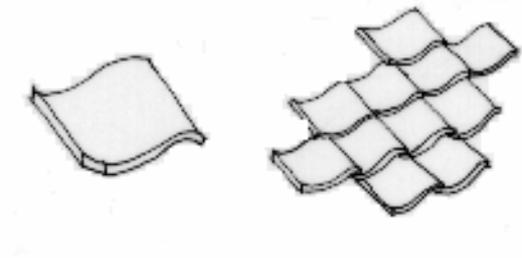
Faience. Glazed terracotta, available in various colours from off-white to brown.

Interlocking tiles. Modern roof tiles which physically lock to each other rather than simply overlapping as traditional tiles would do.

Lead. Traditionally used as a roofing material, especially on expensive buildings such as churches. Particularly used for low pitches. Sometimes substituted now for stainless steel because of problems of theft. Lead is also used for rainwater goods and in particular parapet and valley gutters.

Lime. The traditional constituent of mortar and render, with sand. From the late C19 it was increasingly used in conjunction with, or replaced by Portland cement. Today, however, lime based mortars are increasingly used on traditional buildings. Lime mortars have to be used in different ways from harder cement mortars; for example, they should not be used when there might be frost. It should also be noted that lime is highly caustic and requires care in its handling (see also pointing).

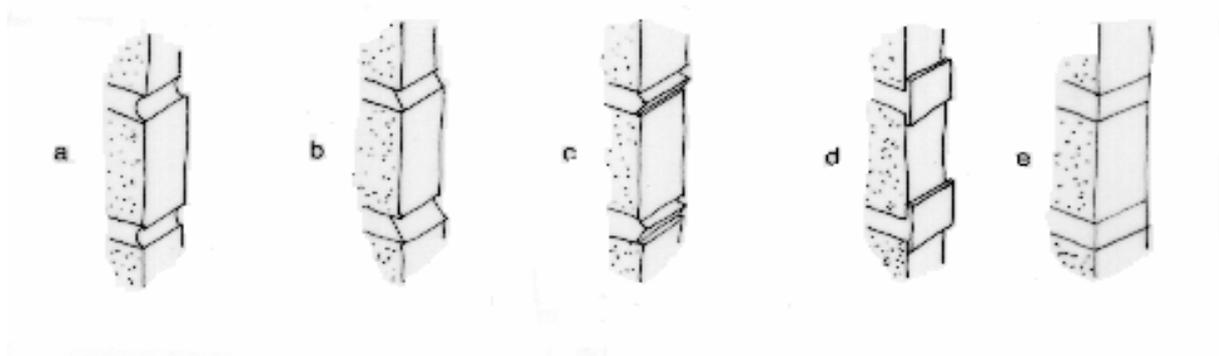
Pantiles. A clay roofing tile of a curved 's' section, common in eastern and north-east of England counties and Scotland, related to imports from Holland (C17 onwards), they are also found in central/northern Somerset. See also clay tiles.



Paviours. Paving slabs, traditionally hewn from stone, i.e. paving stones, today more likely to be of concrete due to cost.

Pointing. The exposed mortar finish between bricks, or stonework. Traditionally pointing contained lime and no cement, but modern builders tend to use harder sand and cement mixes. A traditional mortar uses lime as its basic constituent. Lime putty is slaked quick lime i.e. burned limestone, stored wet. A traditional lime hardens by carbonation, it dries and becomes limestone again by the loss of water. Cement replaced lime because it less

technically demanding, can be used in colder weather and sets quicker to allow faster construction. Good pointing is essential to ensure a building is weather proof. There are many type of finish. Illustrated below are, a) Recessed, or 'bucket handle', b) weather struck, c) double struck d) strap, or ribbon pointing and e) flush. It is a fundamental principle of mortars that they should be sacrificial, i.e. that they are weaker than the basic building material. If they are harder this can be very damaging to the brick, or stone, they are applied to, as the erosion effects of the weather will be directed to the material of least resistance. The traditional way of pointing masonry with lime mortars was flush. Recessed pointing, using cement mortars, was evolved as a preferred method of consolidating standing archaeology in the C20. Strap pointing (d) can only be achieved with a very hard mortar mix and is rarely appropriate, e) flush.



Rubble. See stone.

Slate. The most common roofing material nationally (though with many regional exceptions) is slate. In the C19, as communications improved, this came increasingly to mean Welsh slate, which ranges from mid-grey, though blues and purples to almost black. Westmoreland slate, which has a greenish hue and usually laid in diminishing courses, (i.e. smaller slates towards the ridge) was used for prestigious buildings especially in the North of England. Scotland and Cornwall also traditionally produced slate. Increasingly natural slate is an international market, with over recent years slates available in Britain from Spain, China and Brazil. Not all these slates are of the same quality or aesthetic characteristics as found with domestic slates. There is also a burgeoning industry of artificial slates. These vary in quality (and price). With some their only resemblance to slate is that they are a dark colour. Others are largely composed of slate dust glued together and can be difficult to tell from the 'real thing'.

Stone. Traditionally dressed or coursed stone has been seen as a prestigious building material due to its durability, though in stone producing areas much vernacular architecture utilises locally produced stone. Some stone is has been particularly prized e.g. Portland stone, used to construct St Paul's cathedral in London i.e. transported considerable distances even in the mid-17th Century. In Britain the most common building stones are usually sedimentary sandstones or limestones (e.g. the famous warm ochre limestone of the Cotswolds) because they are more easily worked. There is, however, considerable variety including, flint in East Anglia, hard gritstone in Lancashire and granite in parts of Scotland.

Stone 'slates' or Stone tiles Roofing slabs made from stone, the word 'slate' is a commonly used misnomer. They are traditionally laid in reducing courses i.e. smaller towards the ridge. At one time common in West Yorkshire and the Southern Pennines, they are becoming increasingly rare. One problem is that there is little current production.

Terracotta. Fired unglazed clay, used for ornamentation in buildings. The colour can vary greatly from creamy-white, through pinks and ochre to earthy browns.

Thatch. The oldest of British roofing materials, usually based on bundles of straw, or reeds. Thatched roofs are now mostly confined to the West Country and Norfolk. Other forms of thatch, for example 'black' heather thatch, traditional to the north of England, are now very scarce.

Wattle and daub. An infill for timber frame buildings made from laths and cob or clay plaster.

Weatherboard. Overlapping horizontal boards affixed to a timber frame. Used in the South-east and East Anglia for walling.

Section 3 - Common Building Problems

'Buckling' in leaded lights. The leads in old leaded windows may bend and buckle due to inherent faults in the design of the leading or heating and cooling. This is a specialist problem. The old lead work can often be saved, however, and re-leading is usually only necessary where joints have actually failed, i.e. pulled apart.

Bulges in masonry and brickwork. Old walls will often display bulges in masonry and brickwork. There may be many causes for this, including inaccurate construction i.e. not strictly plumb in the first place. Mostly, however, they show some form of structural failure; for example walls pulling away from floor joists, due to settlement etc. Bulging may look dramatic, but is often quite simply remedied by 'strapping' the bulge to sound structural parts of the building. Here specially treated steel rods are attached to the stonework/brickwork and then bolted to structural timber members. In extreme cases the wall may need to be taken down and rebuilt. However, sometimes this is done more for aesthetic reasons, than structural ones and in historic buildings will detract from their historic integrity.

Cast Iron Fractures. Cast iron has a very low elastic limit (i.e. the amount it can bend without breaking) therefore it is prone to fracture. Elements such as decorative railings, weather vanes etc., were often made of cast iron, especially during the C19, and are particularly prone to fracture. Repair to non-structural decorative items is usually, however, relatively straightforward.

Cleaning of Stone. The cleaning of sandstone has been a hugely controversial issue over recent years and inappropriate cleaning can cause major building problems. Sandstone tends to be cleaned either chemically or abrasively, both of which are inherently problematic. Limestones are easier as they can simply be washed with water.

Cracks There are two basic types of crack found in brickwork and masonry walls. Cracks which run along the joints i.e. through the mortar and crack which run across brick or masonry blocks. The former indicates a crack which has opened up slowly over time and has found the route of least resistance through the wall. The latter indicates a sudden sharp shift in the position of one part of the wall in relation to the other. The second type of cracking is certainly more dramatic and can indicate serious structural failure. There are two main causes of cracking:

- i) settlement, which is present in all buildings, as over time they find their natural state of equilibrium with the ground beneath. Cracking occurs where different parts of the building

settle at different rates and degrees due to small differences in ground conditions. If foundations have been prepared properly this cracking should be minor and presents no great problem to the building. Dramatic problems can occur for example, in areas of former mining where ground conditions are unstable.

- ii) Cracks also occur due to the failure of structural elements, for example where walls are not sufficiently tied to one another, the weight of a roof can gradually push them apart. The cause of cracks, and their severity is a matter for the structural engineer. One question which is often not immediately apparent, however, is whether the crack is increasing in severity i.e. whether movement is still occurring, or whether it is either historic or seasonal movement.

Damp. There are two main types of damp, 1) *penetrating damp*, this is usually most apparent after heavy rain and though the cause may not be immediately apparent can usually be traced to such things as defective, rainwater goods, pointing, cracks in rendering etc. 2) *rising damp*. this is characterised by a ascending moisture level in walls from ground level to sometimes as much as 1.5m. The water moves up the wall by capillarity, i.e. the ability of liquid to move through fine tubes against the force of gravity. Common sources are ponding rain water or leaking pipes. Where it is the water table itself that is causing the damp the problem is more serious. Modern construction creates a barrier to prevent the damp rising through the wall - hence the term 'damp proof course' - but their introduction in historic buildings can cause as many problems as it solves.

Death Watch Beetle. Usually found in hardwoods, in damp unheated buildings. The beetle is 6-8 mm long its grub around 4-6 mm long. In the pupal stage the grubs live in the timber during autumn and then bore out of the timber as adult beetle in spring. The female lays 40-70 eggs which hatch in 2-8 weeks, infestations call for specialist treatment.

Dry Rot. The presence of dry rot has traditionally been regarded as one of the most destructive things a building can experience. Remedial practice has involved the destruction of all affected timber plus a large margin of good timber. However, dry rot spores are omnipresent and will only germinate under the right environmental conditions i.e. on timber which has a moderate level of moisture (not dry, or very wet timber). It can be a major problem, especially in unheated buildings with little ventilation. However, its treatment only involves the removal of timbers which have lost structural integrity, creating the correct conditions for the timber to dry and monitoring moisture levels.

Furniture Beetle. May infest all wood. The beetles 2-6 mm long and emerges from the timber May to Sept. leaving bore holes of approx. 2 mm.

Leaks. Building may suffer from several types of water penetration, (for walls see section on **Damp**). A leaking roof will either be caused by 1) The failure of the roof covering, for example, missing slates, tiles etc., or 2) with problems where roofs change direction, forming a valley (see roof construction) or, where roofs meet a wall e.g. around chimneys. In these latter cases the problem may be with the lead flashing. Failure of flashing may be due to:- *abrasion*, i.e. from pieces of loose slate scoring the surface: *fatigue*: where too little allowance has been made for expansion/contraction causing the lead to crack.: or, *creep*, where the lead has stretched under its own weight again causing it to part company. It should be noted that lead is also susceptible to corrosion due to lichen on roofs and contact with lime in cements and mortars. Rainwater goods are also naturally susceptible to leaks, for example where elements, such as cast iron gutters have corroded.

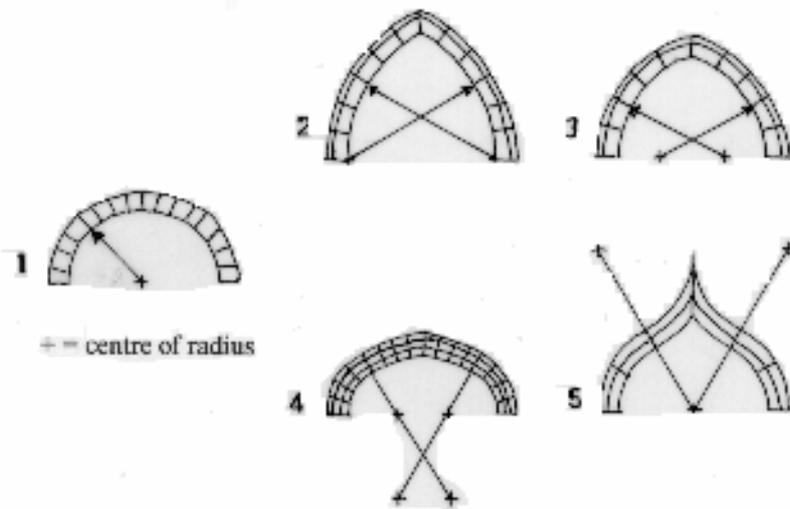
Metal Corrosion. Decorative, or constructional metal in buildings can be susceptible to corrosion, the commonest form is due to gases and particles present in the atmosphere, (carbon dioxide and sulphur compounds in particular). Other environmental factors such as heat and humidity will affect the rate of corrosion, for example, in marine areas chloride and other salts in the atmosphere will speed up corrosion significantly. Historically masonry was often constructed using iron cramps and dowels. When these rust they can cause severe distortion and cracking to the stone (**see also Rust**).

Rust. Iron, (NB present in steel), is particularly susceptible to corrosion in the presence of water and oxygen, i.e. frequent maintenance is needed with protective coatings.

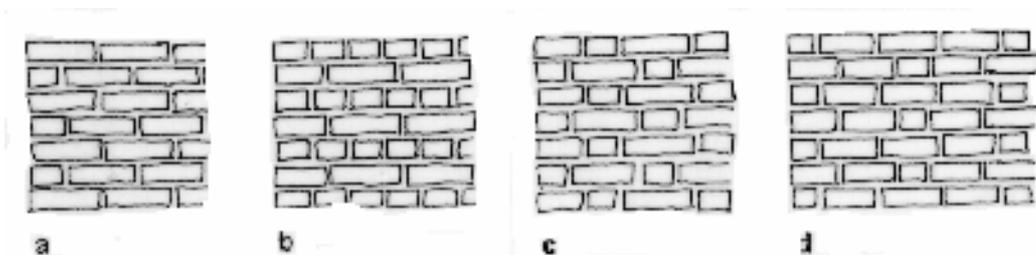
Wet Rot. This is a fungi found in very damp buildings, in timber or masonry. It may affect both softwood, or hardwood. In appearance it resembles black/brown fan shaped threads spreading across the surface. It will turn timber dark brown and induce cracking along the grain and across it. Affected timber should be cut away.

Section 4 - Construction Details

Arch Arches are formed by a series of wedge shaped blocks, called *voussoirs*, held together by mutual pressure. A semi-circular arch has a single centre of radius which forms the arch, see below, pointed arches have more than one. Illustrated are some common forms of arch, 1) Semi-circular, 2) Equilateral, 3) Dropped, 4) Four-centred, 5) Ogee.

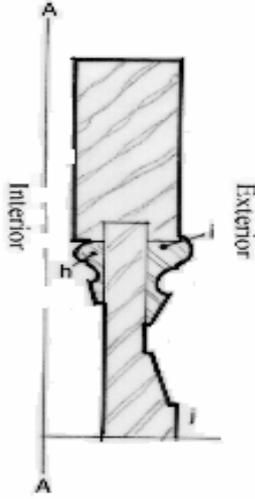
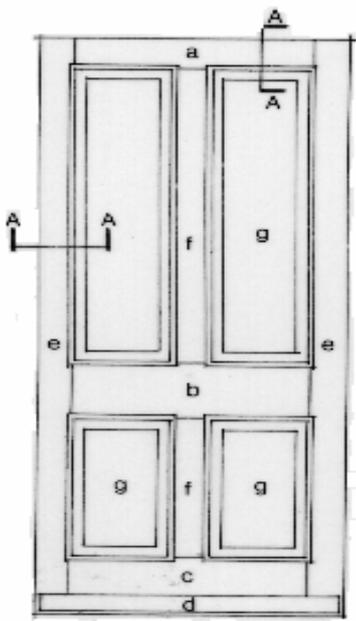


Bond - (see also brickwork). Bonds are different ways of laying bricks, so that the end of the brick, *the header*, and the side of the brick, *the stretcher*, form different patterns. These types of traditional walling have different strength. Illustrated are: a) stretcher bond, b) English bond, c) Flemish bond and d) Flemish garden wall bond.



Doors - up to the 17th Century doors were usually made from simple boards (planks), with external doors cross-boarded for strength; only on important buildings would there be any adornment, or carving. As classical motifs became adopted particularly in the 18th Century

panelled doors became common, generally with six panels. In the 19th century four panels became the norm. The door illustrated overleaf has raised and fielded panels surrounded by a rebated bolection moulding on the exterior elevation and plain panels on the interior, but the variations with this type of door was almost endless, some having glazed or arched upper panels etc.



a. Top rail	c. Bottom rail	e. Stiles	g. Panels	i. Bolection moulding
b. Lock rail	d. Weatherboard	f. Muntins	h. Moulding	j. Fielded Panel

Roof Construction - There are several different types of roof construction, and they are generally called after the most important structural element, i.e. the one on which all other elements are dependant. Illustrated overleaf are, *Crown-post*, *King-post*, *Queens-post*, *Hammerbeam* and *Cruck*. The principal elements are as follows:

Purlins - are horizontal timbers which run along the length of the roof, they are supported by the principal rafters and carry the common rafters.

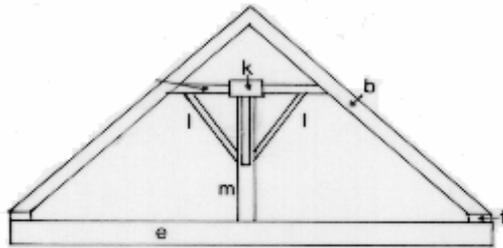
Rafters -are timbers which slope from the wall of the building to the apex of the roof and support the weight of the roof covering. Some roofs have principal rafters which add strength to the design and common rafters which support the roof covering.

Ridge - the ridge is the horizontal timber at the apex of the roof, supporting the ends of the rafters.

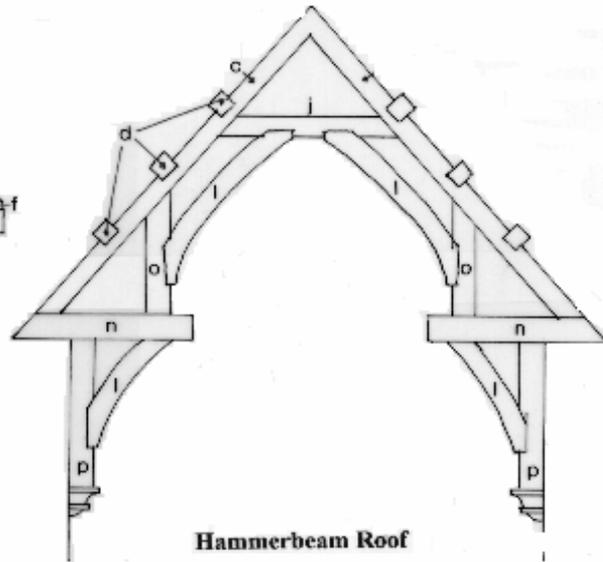
Strut - a vertical or sloping timber which runs between two members of the roof truss, but does not directly support the ridge, or purlins.

Tie-beam - The main horizontal timber which runs from one side of the building to the other.

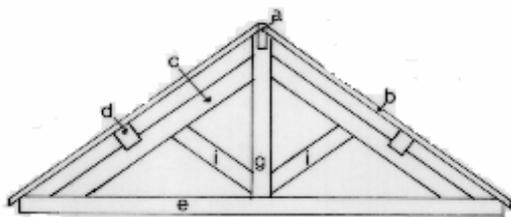
Truss - the rigid framework of timbers which is placed from one side of the building to the other and thus supports the lateral timbers, i.e. the purlins and ridge.



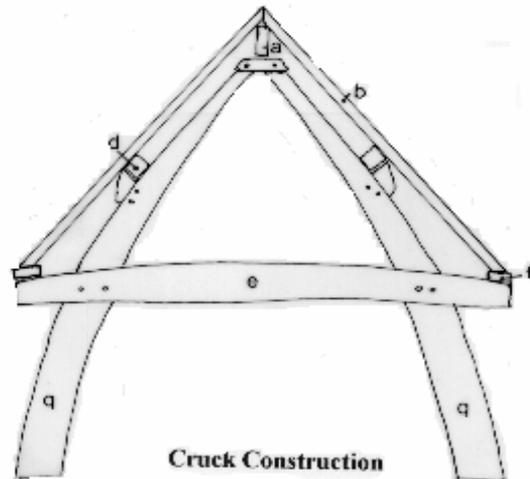
Crown-post roof



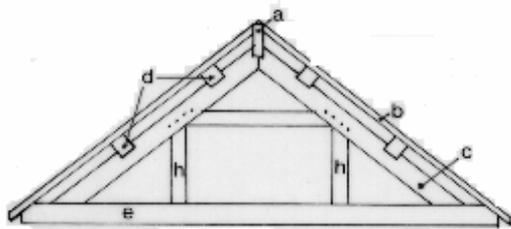
Hammerbeam Roof



King-post roof



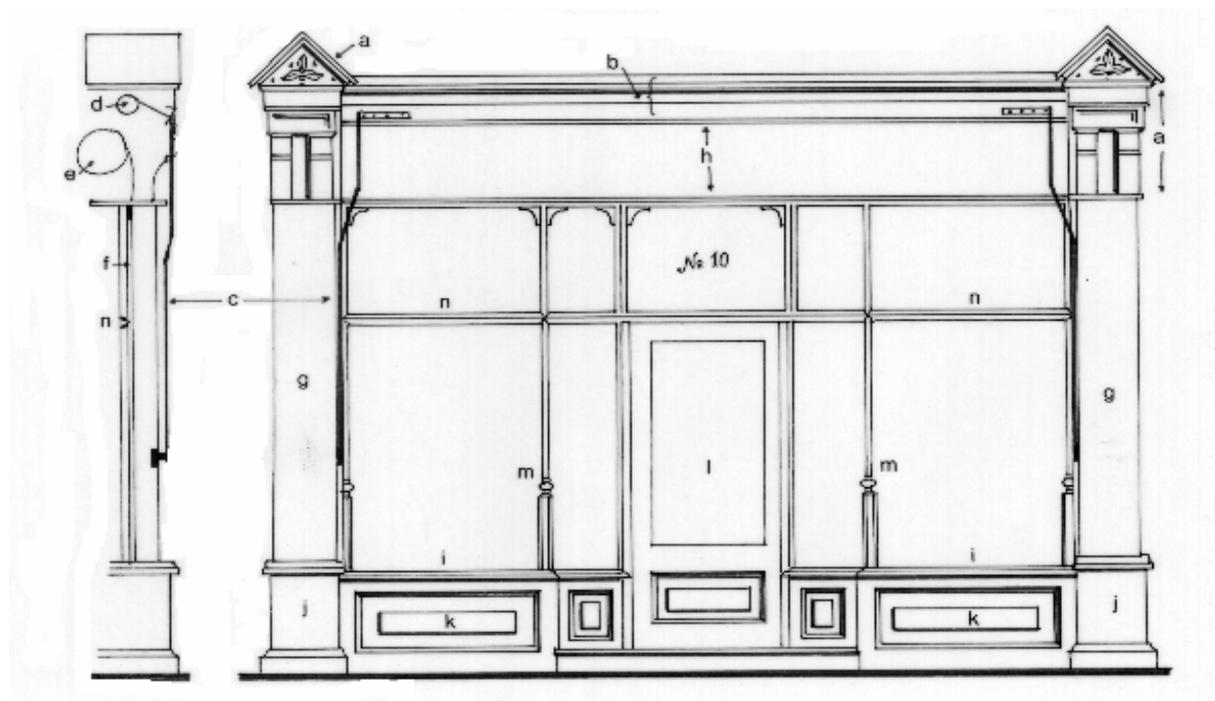
Cruck Construction



Queen -post roof

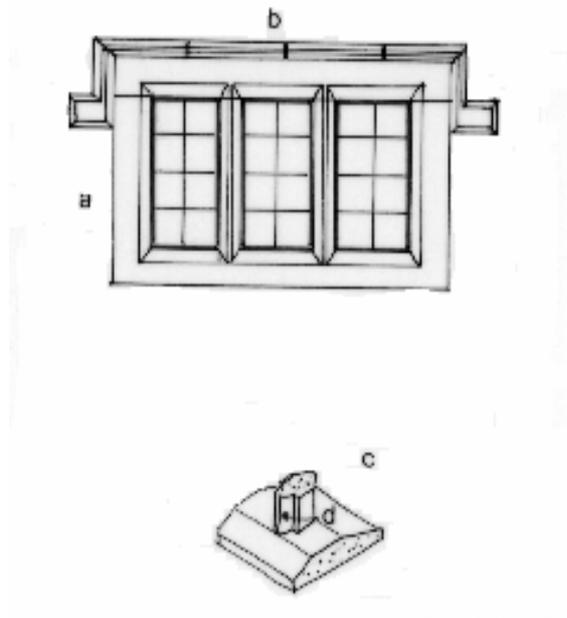
a) Ridge	f) Wall-plate	j) Collar beam	n) Hammerbeam
b) Common rafter	g) King-post	k) Collar purlin	o) Hammer-post
c) Principal rafter	h) Queen-post	l) Brace	p) Bracket
d) Purlin	i) Strut	m) Crown-post	q) Cruck blade
e) Tie-beam			

Shop fronts - Today shop fronts are often little more than prefabricated aluminium frames with standardised features, such as door, PVC light box fascias and so on. Traditional shop front design, however, can be traced back to the 18th Century, where classical precedents of proportion and detail were employed to graceful effect. Elements of traditional design were not just for decorative effect, however, each had a purpose, for example, the cornice not only emphasised the separation from the retail part of the building and the residential uses above it was also often used to hide a roller blind which would protect window displays from bright sunlight. The fascia, which is derived from the classical element the frieze, was used to display the vendors name and also from the mid-19th Century to hide roller shutters of iron and timber, (shop front security is nothing new). It is certainly much better to incorporate roller shutters as part of the design rather than the ugly aluminium shutter boxes so often used today. The illustration below is an elevation and cross section showing typical elements of a late-19th / early-20th Century shop front, with central recessed doorway.



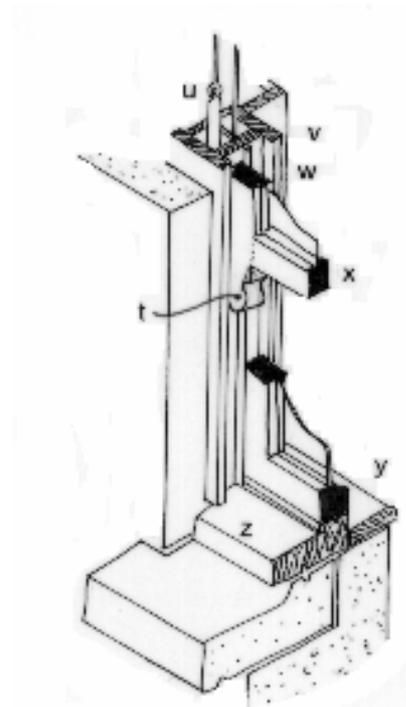
a Console	h fascia
b Cornice (incorporating roller blind)	i Sill
c Blind stay	j Pedestal
d Roller blind	k Stallriser
e Roller shutter	l Part-glazed door
f Shutter groove	m Turned corner-post
g Pilaster	n Transom

Windows - Early opening windows were of the casement type, i.e. hinged on one side. Made from iron, or timber, the windows had small panes of glass (because glass was difficult and expensive to produce) which were held together with lead glazing bars known as cames. The illustration, right, (a) is typical of a 17th Century mullioned window, (the mullions are the vertical divisions in the window), from an area of stone construction, such as Yorkshire. b) is a feature known as a drip-stone, designed to prevent water from running down the window. The cross section through the mullion and shows the rebate for the glazing, d).



From the beginning 18th Century, however, sliding sash windows became common and were thought to be a vast improvement on casements, as they allowed better control of ventilation. These consist of a pair of glazed panels which

slide, usually vertically in a frame. Weights housed in the case, balance the sashes and are affixed to them by cords. Horizontal sashes, though generally called 'Yorkshire' sliding sashes, are also found throughout the country. The illustration below shows a cut-away of the sash mechanism.



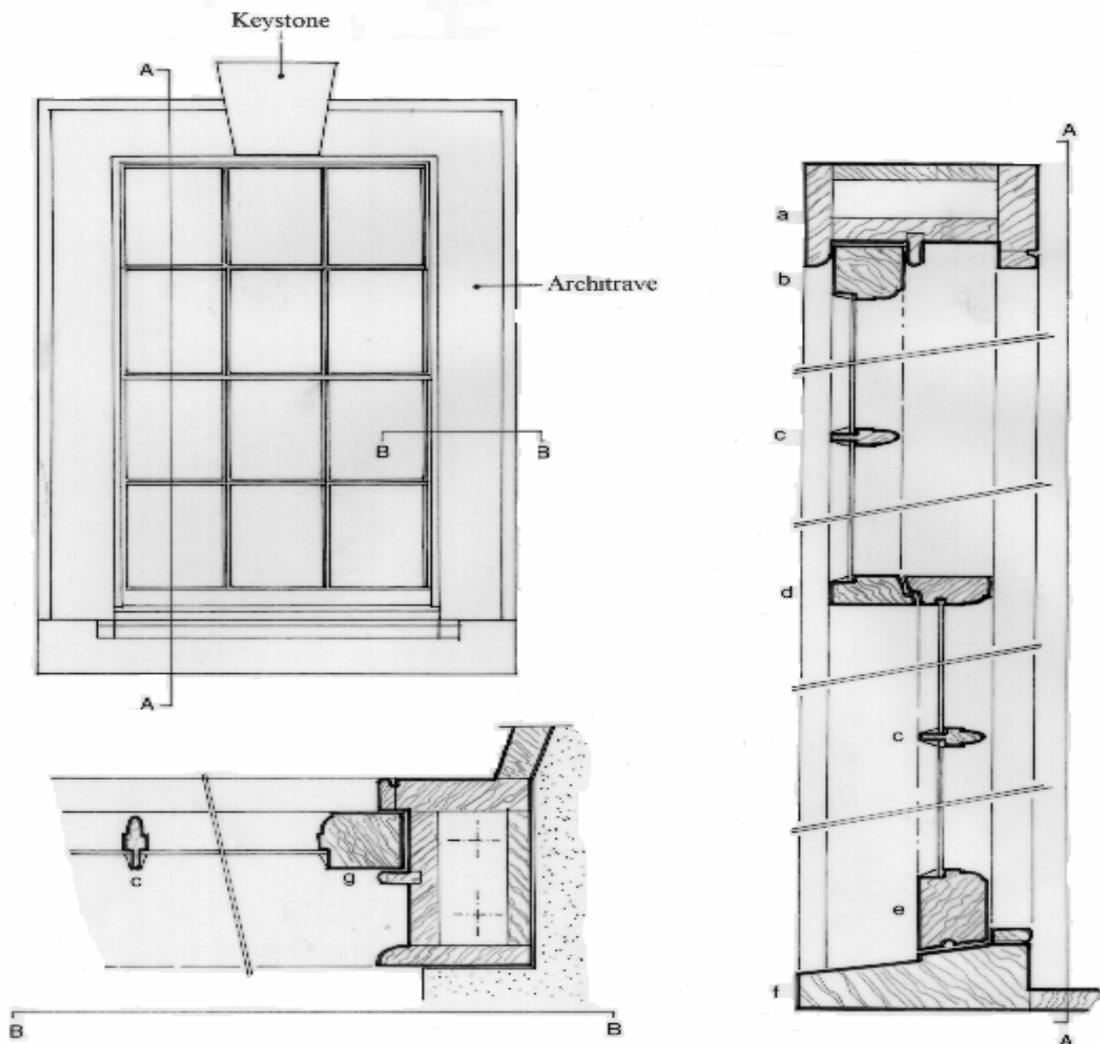
t	Horn from 1850s onward
u	Counterbalance on sash cord
v	Sash box
w	parting bead
x	Bottom rail of top sash
y	Bottom rail of bottom sash
z	Timber sill

Originally sashes had quite thick glazing bars and small panes of glass, but as the 18th Century progressed improving technology and new building materials

allowed glazing bars to become increasingly slender and graceful. In the 19th century the trend for more glass and less frame continued. In the 1830s a large central pane surrounded by narrow strips, known as margin lights became fashionable and in 1845 onwards plate glass made large single panes possible.

Mid 19th century and later windows are easily identified by 'horns', these are strengthening devices at each end of the bottom rail of the upper sash, see illustration above. Overleaf is a typical late 18th century window with cross section details.

Mid-18th Century Sliding Sash Window



a: Sash box	b: Top rail	c: Glazing bar
d: Meeting rail	e: Bottom rail	f: Sill
		g: Stile

Section 5 - Glossary of Architectural Terminology

Abacus. The flat slab on the top of a capital on which rests the architrave. The form varies in the different orders of Classical architecture, (see architectural styles). It also appears in gothic architectural as square, round and octagonal.

Abutment. Any solid structure that resist the thrust of an arch or vault, (see Arch)

Acanthus. An ornament based on the leaves of the Acanthus plants, it appears on the capital of the Corinthian and Composite orders in Classical Architecture.

Addorsed Two figures, often animals placed back to back.

Aedicule A surround to a door, window etc., which consists of two pillars, supporting a pediment.

Affronted two figures, often animals placed facing each other.

Aisle A subsidiary lateral division of a church (i.e. parallel to the nave), also used in conjunction to barns.

Alcove A recess in a wall that extends to the floor (unlike a niche which does not)

Altar-piece A framed picture or carving placed behind and above an altar.

Apron The panel immediately below a window sill.

Apse The termination, usually semi-circular to the chancel, aisle, or transept in a church.

Arcade a series of arches supported on columns.

Architrave The moulded frame of a window or door, (see Window)

Archivolt The architrave mouldings of an arch, or mouldings of an arch.

Arris The sharp edge formed by the meeting of two straight or curved edges.

Astragal A small projecting moulding half or three quarters of a circle in profile.

Astylar A facade of classical proportions which has no columns, pilasters etc.

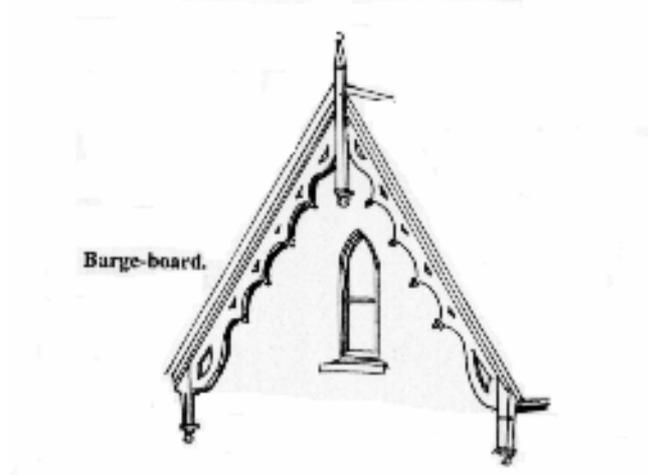
Atrium A glass roofed inner courtyard, often multi-storied in modern office blocks, hotels etc.

Balconette A small cast iron, window protector or window box, for decorative rather than practical purpose.

Baluster A small vertical member which supports a hand-rail or coping.

Balustrade A series of balusters, supporting a hand-rail, or coping.

Barge-board. A timber fixed to the ends of projecting roof timbers at a gable end to protect them from rain, (see below).



Barrel Vault A vault of semi-circular cross section, see vault.

Bas-relief Decorative sculpture in shallow relief.

Bay The external division of a building marked by windows, columns etc.

Bay window A projecting window which begins at ground storey and may extend through several floors.

Bead A small convex moulding, (see for example sash window)

Bead and Reel. A pattern of alternate circular and elliptic motifs used on classical mouldings.

Beam A horizontal structural member, (see for example roof)

Bed-mould A moulding that supports a projection on a building, e.g. a cornice.

Belfry A tower containing bells.

Bell-cote A turret containing bells.

Belvedere A turret or lantern from which to obtain a view.

Blind - i.e. arcade, tracery, window etc. The imitation of these features e.g. windows, to enliven a blank wall.

Blocked - As in blocked column, architrave, etc. The interruption of these features by projecting blocks.

Bolection moulding. A moulding that covers the joint between two different planes, often bold and convex, (see panelled doors)

Bond (see brickwork)

Boss Ornament placed at the intersection of ribs, or beams in a ceiling, e.g. especially in ecclesiastical use.

Broken pediment. A pediment in which the sloping sides stop before they reach the apex, for decorative effect.

Bull's eye window. A round or oval window in which often glazing bars radiate from a circular panel.

Buttress A masonry structure used to stabilise the outward thrust on an arch or wall, see Gothic Architecture.

Campanile A bell tower, (from the Italian)

Capital The uppermost part of a column, see Classical Architecture.

Casement window. A window hinged on one edge, (see window)

Catslide roof. A roof with a break in pitch, the lower section being a lower angle than the upper. This might be found where a roof line is extended from a two storey building down over a single storey extension.

Chancel. The eastern arm of a church, in which the altar is placed.

Cinquefoil see foil

Circus A circular range of houses

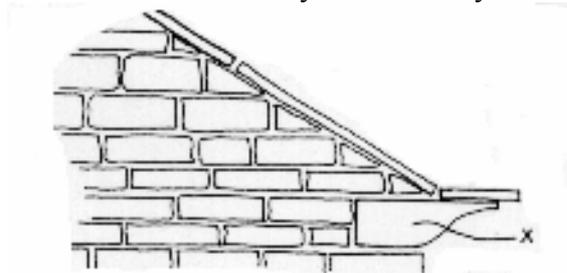
Clerestory Usually the upper part of a nave which projects above the aisle roof and contains windows.

Cloister A covered walk around an internal open space, e.g. within cathedrals, abbeys etc.

Console. A bracket in classical detail, which is scrolled both ways i.e. to form an 'S' shape.

Coping the protective capping to walls, gable ends of buildings etc.

Corbel A projecting moulding for support, x below is an example of a corbel, though in this case this feature may be known by other terms e.g. kneeler



Cornice The uppermost part of a projection, (see for example shop fronts)

Coursed stone/rubble etc. A layer of stone etc. of continuous height.

Crenellation A parapet with indentations, i.e. like the traditional ideal of the top of a castle.

Crescent concave terrace of houses

Crest-tile A series of ornamental tiles along the ridge of a roof.

Cross-wing In mediaeval houses a wing built a right angle to the main part of the house.

Crown The highest part of an arch or vault.

Crypt An underground chamber in a church.

Cupola A dome, especially a small dome on top of larger one.

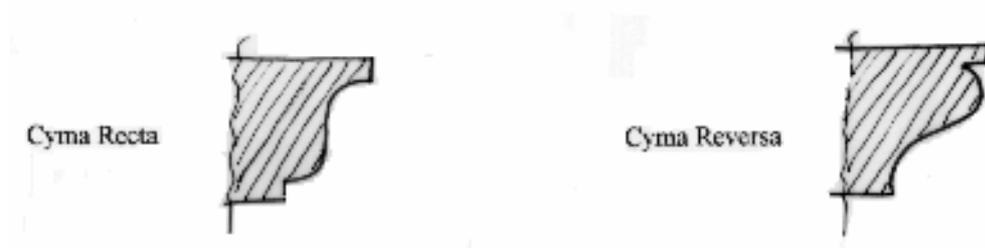
Curtain wall Originally the wall of a castle connecting towers, today used to describe modern buildings with walls almost entirely glazed.

Cusp the point formed when two curves meet at a point in gothic tracery, see below.



Cyma Recta, (or Ogee curve), a double curve the upper concave the lower convex, i.e. like an elongated 'S'.

Cyma Reversa, a moulding which is the reverse of cyma recta, (above), i.e. it is concave in its upper part and convex in its lower part, see below.



Dentils tooth-like rectangular projections running along the bottom of a cornice.

Diocletian window. A semi-circular window divided by two mullions.

Drip stone a projecting moulding to throw off water, (e.g. see window)

Dutch gable decorative treatment to the gables of a building reminiscent of Dutch architecture.



Eaves. The lower edge of a roof which overhangs the wall.

Egg and Dart. A decoration of alternative ovals and points.

Elevation The vertical face of a building, or a drawing which depicts the vertical face of any building

Entablature In classical architecture, the combination of architrave, frieze and cornice.

Facade The principal elevation of a building.

Facadism The retention of the principal facade of a building, whilst the interior is rebuilt.

Fan-light Strictly speaking a semi-circular window over a door, though in general parlance used for square and rectangular lights as well.

Fascia A long flat board either under the eaves of a building, often now introduced for supporting gutters which traditionally would be fixed directly to rafter ends. Term also used for boards displaying shop names, (see shop fronts)

Fenestration. Term applied to the glazing of a building.

Fielded panel. A panel with a raised central area, (see door)

Fillet A narrow flat band which separates two mouldings, or terminates a series of mouldings.

Finial An ornament which crowns a gable end, pediment or any other apex of a building, e.g. in the form of sphere.

Fluting vertical groves of semi-circular or semi-elliptical section, usually on a column or pilaster.

Flying buttress. A buttress where there is void between it and the main wall supported, see also buttress.

Foil decoration. Tracery decoration in gothic architecture, made up of small arcs, which form cusps. Commonly Trefoil, 3 cusps, quatrefoil, 4 cusps and cinquefoil, 5 cusps. Taken from the French for leaf.

Frieze In Classical architecture the part of the entablature between the architrave and the cornice.

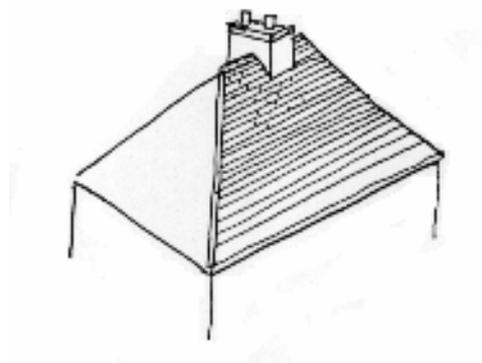
Frontispiece. The principal facade of a building and in particular the central entrance and window arrangement above it, found on 16th and 17th century buildings.

Gable The triangular portion of walling and the wall below it at the end of a ridge roof, see roof.

Gazebo A garden structure from which to obtain a view.

Glazing bar Moulded timber used to sub-divide a window - see window.

Hipped Roof Roof without gable ends (below)



Hood mould Moulding over a door or window to throw off water, see drip mould.

Impost A support from which an arch begins

Jamb The vertical side of a door or window , see for example window.

Jetty An upper storey which overhangs a lower one.

Keystone The central wedge block of an arch, or as a decorative feature a wedged block above a door or window, (see for example sash window)

King-post see roof.

Kneeler A stone that supports coping stones at the end of a gable, (see roof).

Lancet window. A tall narrow window with a pointed arch, typical of Early English gothic architecture.

Lantern A glazed structure raised on a roof in order to light the interior below.

Lintel A horizontal structural member spanning an opening e.g. above a door or window.

Mansard roof. A roof whose sloping sides have a double incline, the first much steeper than the second, often to incorporate accommodation within the roof. Named after French architect, Francois Mansart (1598-1666)

Mullion A vertical member dividing windows into lights (see window)

Order See Classical Architecture

Ovolo A convex moulding, usually a quarter circle in cross section, used in classical architecture.

Pedestal A base, or support, for a column, statue or urn.

Pediment A low pitched triangular gable used in classical architecture.

Pilaster A representation of a column on the elevation of building, generally not projecting more than half the width of a column.

Pillar a column which does not comply to the orders of classical architecture.

Piloti Columns, or stilts associated with modern movement buildings, on which a building is raised.

Plinth The lowest projecting part of a building, or the pedestal of column.

Polychromy Decoration in differing often contrasting colours, popular during the high-Victorian period and associated with Ruskin.

Porte-cochere. A porch which is large enough for a carriage to enter from the side.

Portico - a colonnade on the front of a building, covering the entrance.

Purlin The beam that supports the rafters of a roof, (see roof).

Rafter A roof member which follows the slope of the roof, (see roof)

Rib Stone ribs are construction feature of gothic vaulting creating a framework on which the roof is supported, see Gothic Architecture.

Riser The vertical part of a staircase.

Rose window A large circular window filled with tracery, a feature of Gothic Architecture.

Scotia - A small concave moulding.

Sill (cill) the horizontal base of a window opening, or door frame.

Soffit The under surface of any building element e.g. balcony, lintel etc.

Stanchion An upright support made from metal.

String course. A horizontal projection from a wall face running along a wall.

Superimposed orders. The use of the orders of classical architecture in the conventional manner i.e. Corinthian, above Ionic, above Doric.

Tie-beam, see roof.

Tile-hanging. Covering of vertical face of building using overlapping tiles, attached to a timber, brick or stone sub-structure.

Timber frame. A form of construction in which the walls are built as a timber framework and then infilled with another material.

Torus A large convex moulding at the base of classical columns.

Tracery The ornamental masonry subdivision of gothic windows. see Gothic architecture.

Transom A horizontal division in a window.

Tread The upward facing (horizontal) part of a staircase.

Truss see roof.

Vault An arched roof or ceiling.

Venetian Window. A triple opening in which the wider central opening is closed by an arch while the side openings have lintels.

Volute A scrolled cushion which is the particular feature of the Ionic capital.

Vousoir One of the wedge shaped elements of an arch, (see arch)

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Section 7 - Alphabetical Index of Terms

Abacus	20	Coping	22	Lime	9
Abutment	20	Corbel	22	Lintel	24
Acanthus	20	Corinthian	4	Mansard roof	24
Adam	3	Cornice	17,22	Metal corrosion	13
Addorsed	20	Coursed	8,22	Modernism	6
Aedicule	20	Cracks	11	Moulding	15
Affronted	20	Crenellation	22	Mullion	16,24
Aisle	20	Crescent	22	Muntins	15
Alcove	20	Crest-tile	22	Order	4,24
Altar-piece	20	Cross-wing	22	Ovolo	24
Apron	20	Crown	22	Palladianism	6
Apse	20	Crown-post	16	Pantiles	9
Arabesque	3	Crypt	22	Paviours	9
Arcade	20	Cupola	22	Pedestal	17,24
Arch	14	Curtain wall	22	Pediment	24
Architrave	19,20	Cusp	22	Perpendicular	6
Archivolt	20	Cyma Recta (Ogee)	14,23	Pilaster	17,25
Arris	20	Cyma Reversa	23	Pillar	25
Art Deco	3	Damp	12	Pilloti	25
Art Nouveau	3	Death watch beetle	12	Plinth	25
Arts and Crafts	3	Decorated	5	Pointing	9
Artificial Stone	8	Dentils	23	Polychromy	25
Ashlar	8	Diocletain window	23	Porte-cochere	25
Astragal	20	Door	14,15	Portico	25
Astylar	20	Doric	5	Post-modern	6
Atrium	20	Drip-stone	18,23	Purlin	15,16
Balconette	20	Dry rot	12	Queen-Anne	6
Baluster	20	Dutch gable	23	Rafter	15,16
Bargeboard	20, 21	Early English	5	Renaissance	6
Baroque	3	Eaves	23	Rib	25
Barrel Vault	20	Edwardian	5	Riser	25
Bas-relief	20	Egg and Dart	23	Romanesque	6
Bay	20	Elevation	23	Roof	15,16
Bay Window	21	Elizabethan	5	Rose window	25
Bead	21	English Bond	14	Rubble	10
Bead and Read	21	Entablature	23	Rust	13
Beam	16,21	Facade	23	Saxon	6
Beaux Arts	3	Faience	8	Scotia	25
Bed-mould	21	Facadism	23	Shop front	17
Belfry	21	Fan-light	23	Sill	17,18,25
Bell-cote	21	Fascia	17,23	Slate	10
Belvedere	21	Fenestration	23	Soffit	25
Blind	21	Fielded Panel	15,23	Springing-line	14
Blind-stay	17	Fillet	23	Stanchion	25
Blocked	21	Finial	24	Stone	10,11

Bolection moulding	15, 21	Fluting	24	String course	25
Bond	14	Flying buttress	24	Terracotta	10
Boss	21	Foil decoration	5,24	Thatch	10
Brick	8,14	Frieze	24	Tie-beam	15,16
Broken pediment	21	Frontispiece	24	Tile-hanging	26
Brutalism	3	Furniture Beetle	14	Timber frame	26
Buckling	11	Gable	24	Torus	26
Bulges	11	Gazebo	24	Tracery	6,26
Bull's eye window	21	Gothic	5	Transom	18,26
Buttress	21	Gothic revival (Gothick)	5	Tread	26
Byzantine	4	Glazing bar	18,24	Truss	15,16
Campanile	21	Greek revival	5	Tuscan	7
Capital	21	Hipped roof	24	Vault	26
Casement window	18,21	Hood mould	24	Venetian window	26
Cast iron fractures	11	Impost	24	Victorian	7
Catslide-roof	22	Interlocking tiles	8	Volute	26
Chancel	22	International Style	5	Voussoir	14,26
Cinquefoil	22	Ionic	6	Wattle & Daub	10
Circus	22	Jacobean	6	Weatherboard	10
Cladding	8	Jamb	24	Wet rot	13
Clapboard	8	Jetty	24	Window	18,19
Classical	4	Keystone	19,24		
Clay tiles	8	King-post	15,16,24		
Clerestory	22	Kneeler	24		
Cloister	22	Lancet window	5,24		
Coade stone	8	Lantern	24		
Cob	8	Lead	9		
Concrete	8	Leaks	12		

Notes:-