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Faculty of Design

Department of Fashion and Textiles

The Importance of Medieval Stained Glass

by

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Section 1 Introduction

It is hard for us in the twentieth century surrounded by masses of information technology - televisions, computers, newspapers, telephones and fax machines - to imagine the important role that stained glass played in medieval society. It would be accurate to say that between the middle of the twelfth century and the middle of the fifteenth century stained glass was the principle and supreme method of communicating spiritual truths to the common man.

It could be argued that stained glass was the most important art form of the medieval period. I am not forgetting the very high position the art of architecture held on the hierarchical pyramid of the arts but as we will see later, in the early stages of the medieval period, architectural development was very much a response to the demands placed on it by the glass artist.

It is essential that we grasp the uneducated nature of the medieval public before we can fully understand the power which stained glass art held over society. Stained glass art could administer education, enjoyment and spiritual enlightenment to the public, and it is this combination of effects that make it unique.

The process of educating the mainly illiterate masses was described in the words of Emile Mâle:

"By means of statues and windows in a Church ... the clergy in the Middle Ages tried teaching their flock the greatest possible number of truths . They fully realised the power art had on souls still innocent and vague. For the immense body of illiterates in the crowd who have neither Psalter nor missal, and who could only grasp in Christianity what they actually saw there, it was necessary to materialise the idea, to clothe it in a perceptible form." (Read, 1960, p. 7)

It is possible to draw a picture of the medieval cathedral as if it were a library or computer data base. Everything inside the structure becomes symbolic and essential to the educating process, nothing is left to chance. Everywhere the congregation chooses to gaze is filled with the teachings of the Bible.

"I am an old woman who knows nothing and has never read a word. I see at the church [...] a painted paradise with harps and lutes and a hell where the damned are boiled." (Brooke, 1969, p. 37)

Victor Hugo referred to the medieval cathedral as the "Book of Stone" and if we extend this simile then the stained glass windows must be compared to brightly coloured illustrations. To an uneducated public which might not understand the often complex symbolism contained in the intricate stonework, surely the brightly coloured, imaginative stained glass windows held the greatest teaching potential. After all how often do all of us simply ignore the text and gaze at the pictures.

In the windows of a cathedral, more than in any other area, we see most vividly the teachings of Christ. Here we find a graphic reconstruction of the lives of the saints or the creation of the earth. These images leave little room for misinterpretation, even to the most uneducated members of the public. Not surprisingly the educational potential of stained glass was recognised by the churchmen of the day. According to an old Catechism of the period the following direct instructions on what to do upon entering a church or cathedral were issued:

"One should take the Holy water, adore the Blessed sacrament, then walk around the church and contemplate the windows." (Arnold, 1925, p15)

If we remove medieval stained glass from churches, as has often been recommended, in order to preserve them in museums for future generations then we will be breaking a chain of free and open education which has existed for centuries. By locking precious artefacts up behind closed doors we might ensure their protection but we also deny and contradict their original function. Although I cannot say that the messages in medieval stained glass will be relevant to a modern public, to remove them would be to further distort their meaning and appearances. Displaying them in a museum would ensure that they are permanently misunderstood. The true genius in stained glass is partly portrayed by a rich understanding of medieval times but also through an appreciation of the basic image and the beauty of the colour held within the glass. If we lock away this beauty, encasing it in a dark museum where it is out

of context, isolated from the natural light which brings it to life and breaking a circle of education, then we are damaging beyond repair the very majesty of the medieval stained glass we should be trying to protect. [Figure 1]

Figure 1. St. Catherine, early 14th century, the priory church, Deerhurst, Gloucestershire. West window, south aisle. (Read, 1960, p. 95)

Section 2 Architecture

Why is it so important to consider the links between medieval stained glass and architecture? Because stained glass and architecture developed symbiotically, changes in one left openings for improvement and advancements in the other. Before looking at these advancements it is necessary to look briefly at the social situations that allowed architects the freedom to experiment with their buildings.

During troubled or depressed times architecture, like most other forms of art and design, is often kept to a minimum; experimentation is rare, and nobody likes to take risks with their buildings. The insecurity of the middle ages is clearly reflected in the architecture of that period. Churches of that time were built with thick walls and had purposefully small openings, a church could be easily turned into a fortress if and when necessary. The urgent need to have a fortress for protection against the ravages of a hostile world is an accurate reflection of the socially unstable middle ages. [Figure 2]

The eleventh century brought with it a spirit of increased confidence, security and initiative. Fuelled by extensive trade and the growing importance of the city as a centre for commerce, the excess funds created by an economic boom were applied to build and improve church buildings. As churches were less often

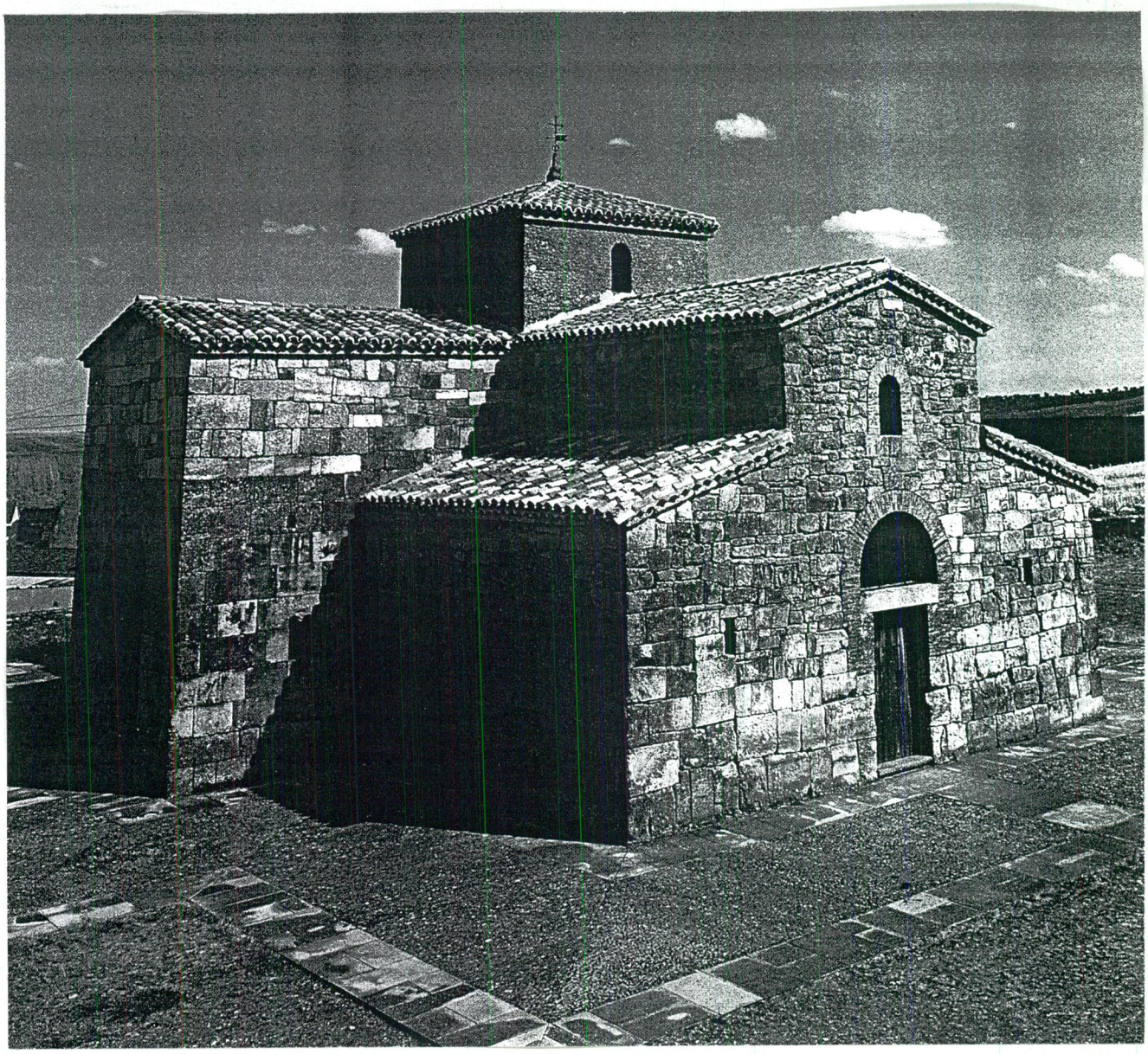


Figure 2. San Pedro de la Nave - typical fortified middle ages church. (Kubach, 1978, p 13)

used as refuges, indeed their religious and social functions became increasingly important.

"The medieval cathedral was far from being a place of worship alone. Within it's walls people strolled, chatted openly, not hesitating to bring their pet dogs, parakeets and falcons." (Brooke, 1969, p. 30)

As certain amounts of rivalry existed between the cities in Europe, a grand church building was a good way of showing foreigners the importance of one's city and the strength of one's businesses. The vastness of the cathedral building industry in Europe during this period is quite impressive. In France alone, eighty cathedrals and over five hundred churches of huge proportions were built. This demonstrates a highly effective and efficient building industry in that country.

In this new atmosphere of enterprise, attempts were to improve the church building. The first step taken towards this goal involved the replacement of the old timber roof which was popular in the middle ages but which had been extremely vulnerable to fire. Initial building experiments of a continuous stone covering for the main nave of a cathedral involved the wagon or barrel vault. However, there were some considerable draw backs to this new form of construction, for example the enormous weight of the solid stone roof was solely supported by the external walls. Any openings in these walls would decrease their load bearing capacity. If the window openings were made too large the

stability of the entire cathedral would be threatened. The net result was a characteristically gloomy Romanesque style church. [Figure 3] The main chamber of these cathedrals had to depend on illumination coming from the two ends of the structure or from a small amount of light filtering into the nave from tiny windows in the side aisles. Stained glass during this period was of little or no importance because the areas available to be glazed were so small.

Gothic fascination with light had a deep and theological source. Along with Plato's[i] metaphysical association of sunlight with goodness and knowledge, the importance of light was elaborated upon by the pagan neo-platonists who associated light with the ultimate reality and with the principle force of the Universe.[ii] In the Bible the very word of God is compared to "a light that shineth in the darkness by which all things were made and that enlighteneth every man.." (St. John, Chapter 1, verse 5)[iii]

Medieval man also drew symbolic connections between light that could pass through glass without breaking it and the story of the Immaculate Conception.[iv] This involves God making Mary pregnant with Jesus Christ, the Redeemer of the human race while she still remains preserved from all stain of original sin by her virginity

"As the glorious sun penetrates glass without breaking it ... so the word of God, the Light of the Father, passes through the body of the virgin, and then leaves it without undergoing any change." (Crewe, 1987, p.7)

Figure 3. Pomposa, Benedictine Abbey church of Santa Maria, interior view looking west. (Kubach, 1978, p. 41)

On a dual basis of pagan and Christian thought a fifth-century Syrian mystic Dionysius the Aprepagite, built a highly complex philosophy which was nothing less then an entire theology of light.[v]

The Frenchman Suger is a significant figure in the production of stained glass from the period of this thesis' study. At the age of only 39 he was elected Abbot of St. Denis. He was a product of peasant stock who was educated by the church. In his early twenties he represented his monastery at both Papal and state councils. He used his talent for promotion and publicity to gain support for his cathedral building projects as well as exploiting his strong links with King Louis 6th of France to finance his schemes. "The French cathedral was born with monarchical power" (Brooke, 1969, p. 48) This unity between church and state was essential to the cathedral building industry in France. Only the combined wealth of the monarchy with the organisational networks of the church of France could successfully undertake such enormous construction projects.

Through a bizarre confusion of names Suger confused Dionysius the Arepagite with St. Denis the third century martyr Apostle of Gaul to whom Suger's church was dedicated.[vi] Suger studied the theology of light and became passionate about it and in turn about stained glass. When Suger got the opportunity of reconstructing the choir aisle at St. Denis he was determined to bring as much

light as possible into his church. His new choir at St. Denis terminated in a semi-circular double ambulatory from which radiated nine shallow chapels. These chapels were endowed with tall windows "by virtue of which the entire sanctuary was pervaded by a wonderful and continuous light". (Brooke, 1969, p. 48) [Figure 4]

In the choir in St. Denis, which was inaugurated on June 11, 1144, we have a manifesto for Gothic architecture. Light is this architecture's theme and generating element: "Light of Divine essence" which filters through radiant stained glass windows bathing the interior with a glow not quite of this world.[vii]

Architects of the Gothic period were determined to allow more and more of this magical light to enter their cathedrals, they pared their structures to the bone, defying laws of gravity in even higher and more delicate buildings, risking all to create what can truly be called the first and greatest architecture of light. The main problem for architects of the time was how they could reduce stresses created by the nave vault on the external walls, this would in turn allow greater scope for the inclusion of window openings.

One of the first techniques used by architects to reduce these stresses was the development of the groin vault. A groin vault is the product of two barrel vaults made to intersect at right angles; the line of intersection of the vaulting surfaces

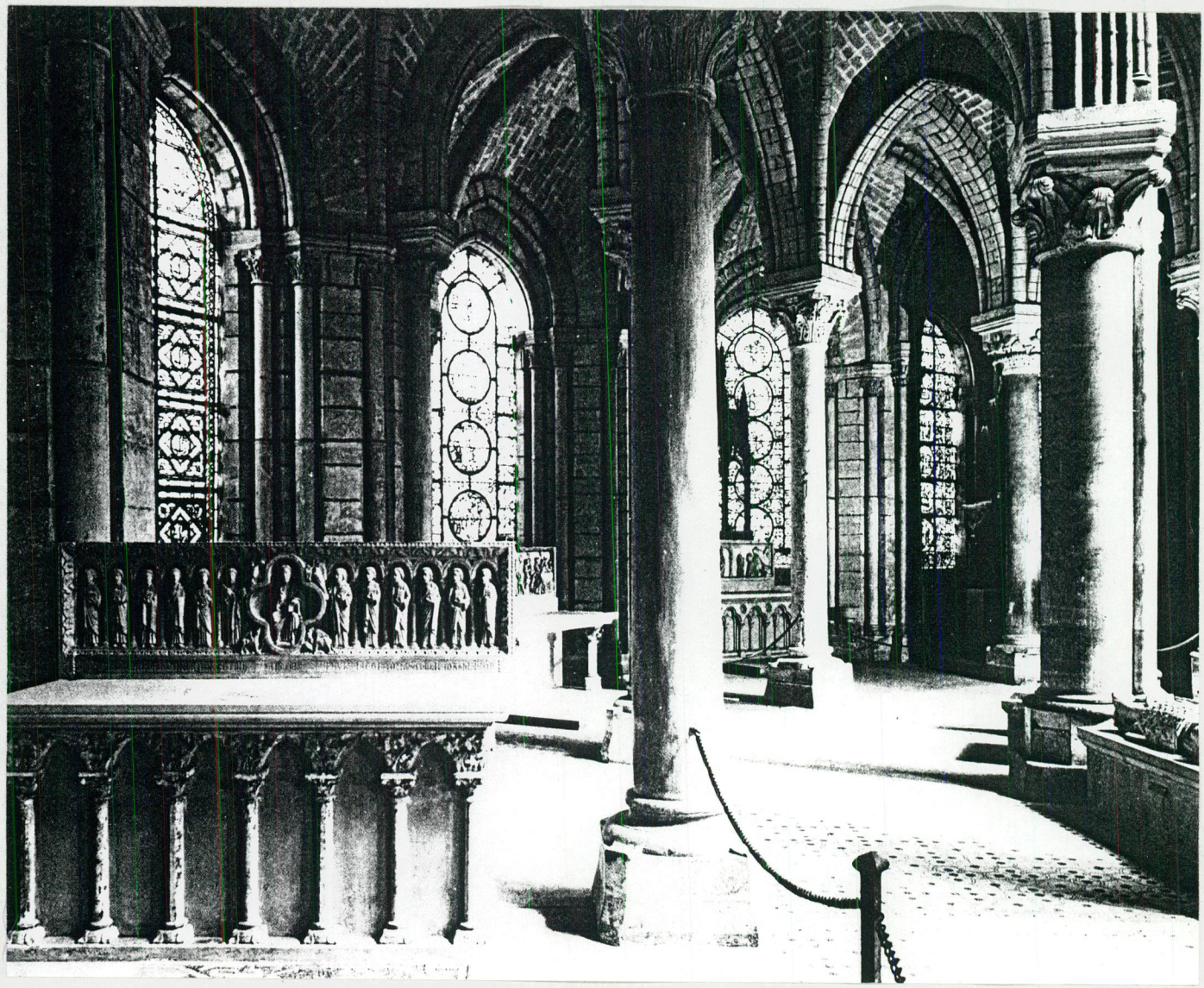


Figure 4. Saint Denis, northside of ambulatory, 1140-1144 - this photograph shows four of the nine shallow chapels. (Bony, 1983, p. 61)

is known as the groin. The pressure of forces exerted on a groin is directed towards the vertical supports at the corners of the groin bay. It is necessary to brace these supports against the new horizontal forces being exerted on them through the action of the groin vault. Once they have been adequately braced against these forces, the thickness of cross-section of the supports themselves can be reduced. This is extremely important as a reduction in the size of the supports leaves ample space between the supports for the inclusion of window openings. Early attempts at bracing the supports against the horizontal forces of the groin vault were done using a Romanesque technique involving the tribune gallery. This gallery acts like a chain pulled taut around the base of the vaulted roof. The gallery prevents the exterior walls from being pushed outwards.

Although an effective process, the gallery was found to badly restrict the free flow of light throughout the inside of the building. A solution to the problem was discovered in the flying arch or flying buttress. This arch transmitted the outward horizontal thrust created by the groin vault away from the exterior walls and into a very narrow but deep buttress-pier. A good way to imagine this process at work is to visualise a person with outstretched arms supporting a leaning wardrobe. This person's arms are the arch, the wardrobe is the force of the groin vault and the person's legs are the buttress-pier. [Figure 5]

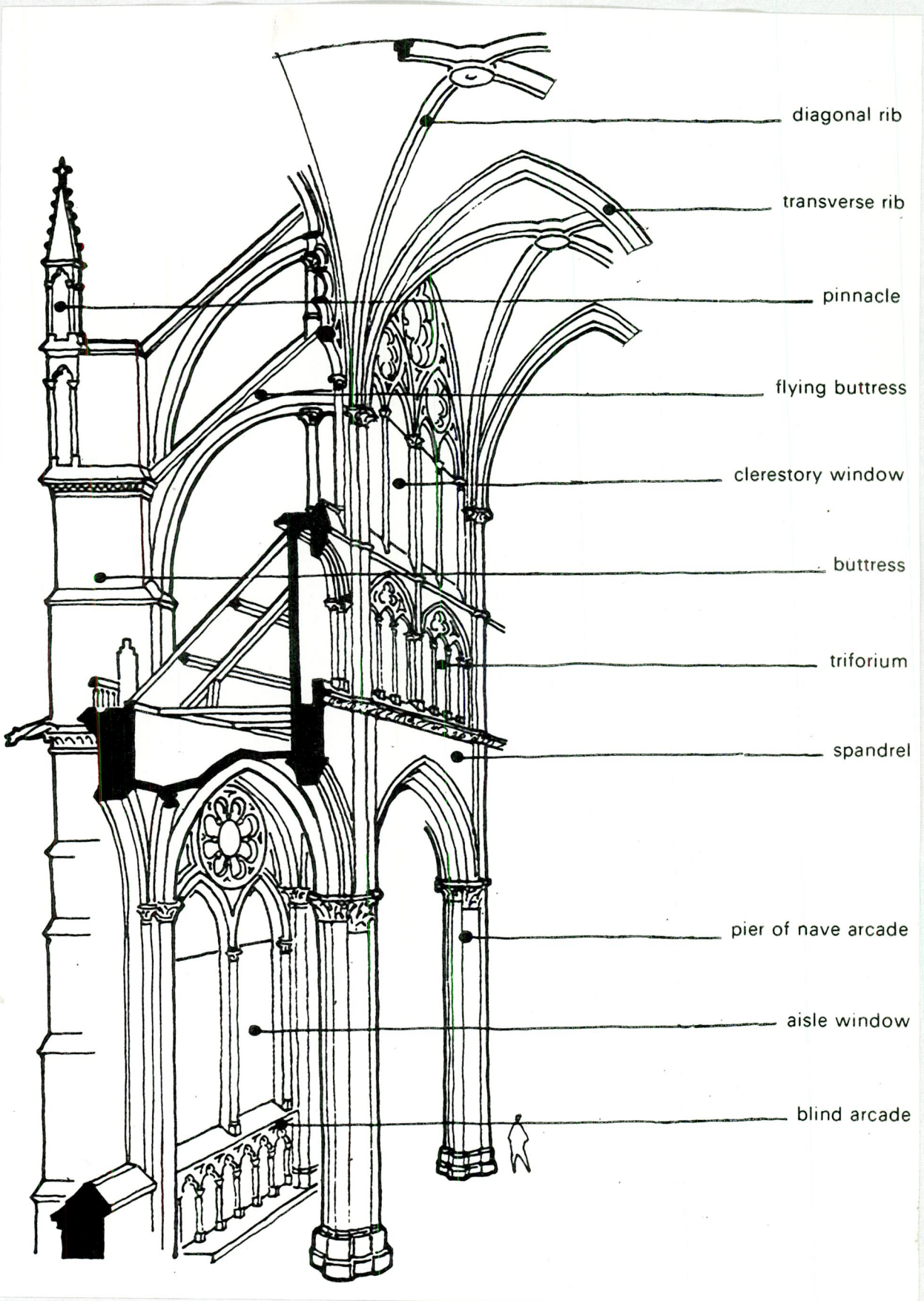


Figure 5. Diagrammatic section through nave of Amiens, showing various parts of cathedral (Brooke, 1969, p. 62)

The diagonal rib is an improvement and extension of the groin vault as it aids the weight distribution of the roof. The earliest surviving example of diagonal ribs and a groin vault used together is found in the vaults of the choir aisles in Durham cathedral.

Durham was started in 1093. It contains the earliest example of the pointed arch used in a window opening in western Europe. Originating in Mesopotamia, in ancient times, the pointed arch was popular in Muslim architecture. It is thought that the Norman architects of Durham became familiar with the pointed arch in Sicily which they wrested from the Muslims in the last third of the eleventh century. The pointed arch became popular in Gothic architecture because of it's huge load bearing capacity. It gives many medieval stained glass windows their characteristic shape and resulting composition. [Figure 6]

Through the use of the ribbed vault, the groin vault and the flying buttress Gothic architects began to re-direct the forces and stresses of a cathedral. The weight of supporting the massive stone roof was articulated away from the side walls and down into the ground by using the flying buttress. On the exterior the structural elements present in a Gothic cathedral were largely a product of their function. Weight, thrusts and forces were channelled away from the building through a stone skeleton that gives us a graphic example of natural forces at work. [Figure 7]

Figure 6. A pointed arch used in a 13th century piscina, north choir aisle Peterborough (Brooke, 1969, p 200)

Figure 7. General view of Bruges cathedral showing a forest of flying butresses (Brooke, 1969, p.66)

The technology which supports a Gothic cathedral is similar to the modern space frame form of construction used in the majority of high rise office blocks. In space frame construction the need for load bearing walls is eliminated. This is done by transferring all the weight of imposed forces to an exterior steel skeleton. The floors of the construction are usually made of cast concrete and are attached directly onto the steel skeleton. The resulting structure is self-supporting regardless of exterior or interior walls. Many space frame buildings are clad entirely in glass which is merely glued onto the building's exterior. This can be done because between each steel support there is no need for the additional support usually provided by a solid load bearing covering. The exterior walls of Gothic cathedrals are almost totally superfluous and can be punctured at will to create openings for windows. On the outside a mixture of free-standing flying buttresses holds the structure in equilibrium allowing the architect freedom to add as many windows as he sees fit. [Figure 8]

"Within, all is soaring insubstantiality, as befits a 'Celestial City' and the glowing colours of the stained glass stretched between the vaults and the piers give little indication of the complex machinery of support without..." (Brooke, 1969, p. 61)

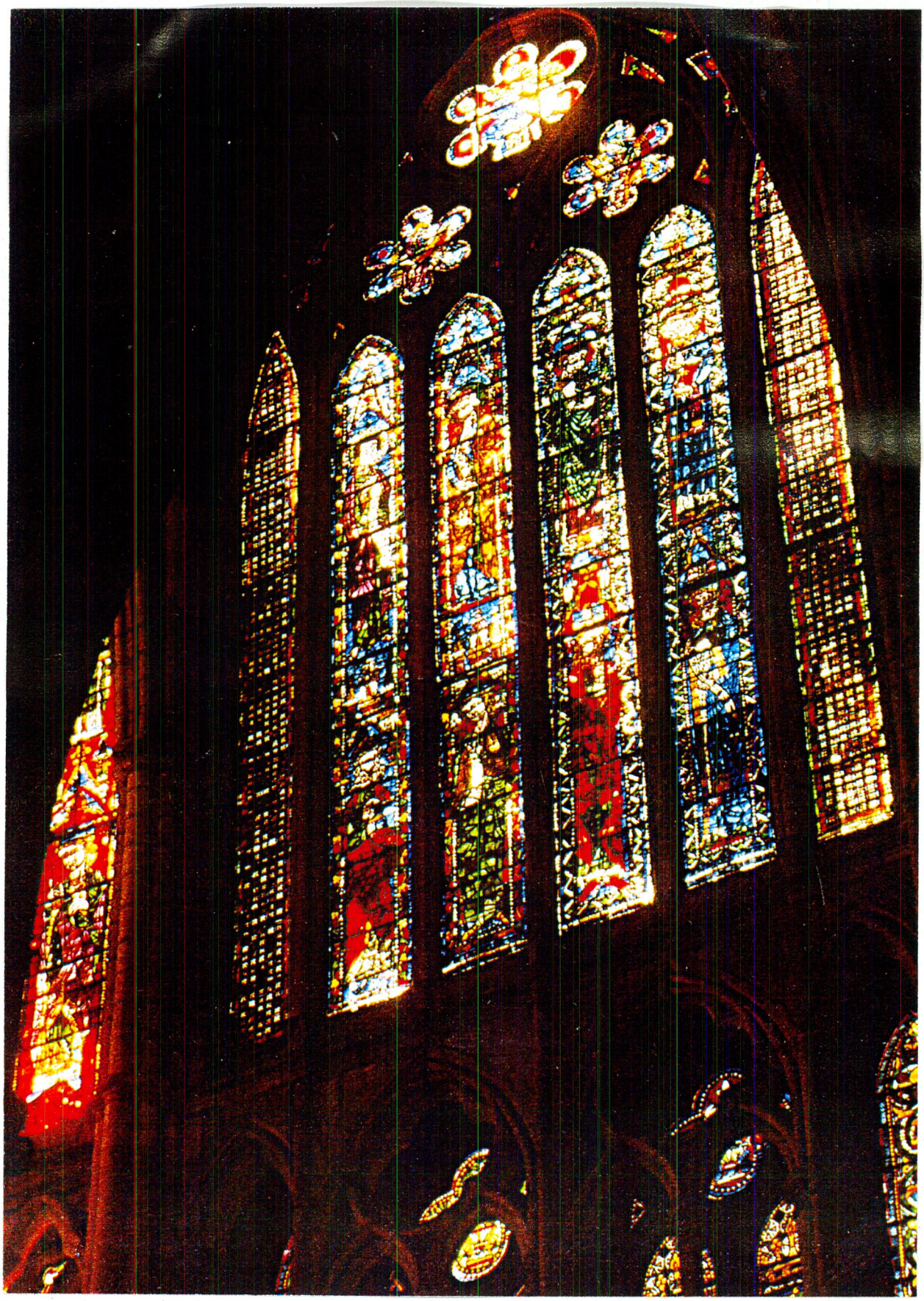


Figure 8. León cathedral, a view of clerestory and glazed triforum. This entire wall of medieval glass is one of the most complete in Europe (Anderson, 1985, p. 163)

Section 3 Technique

To fully understand and appreciate the unique qualities of medieval stained glass it is necessary to examine the techniques which go into the making of a window and also the materials used in the process. Much of the information concerning medieval stained glass techniques comes from a treatise known as *Diversaram Artium Scheduta*. Compiled by the monk Theophilus in the tenth century, it deals with all the arts of the day. The work is divided into three books the second of which deals with glass and glass painting. I have taken a broad look at the manufacture of medieval stained glass and even though local and international methods differ I have summed up the most common aspects of production. It is quite obvious that the time consuming process of stained glass production was not undertaken by one lone worker; but surprisingly little is known about the men who crafted medieval windows. Theophilus implies that the designing, painting and execution of a window was in the hands of the same group of craftsmen but beyond this we only know that these men were supervised by a master and it was he who carried out the most important aspects of the commission. It can be assumed that aspiring glass-painters were required to serve a long apprenticeship. They were expected to prepare materials and care for their tools in a similar way to other guilds of the medieval period.

Before we examine the complex process of constructing a window, it is necessary to survey the colouring and manufacturing techniques of the raw glass sheets; later to form sections of the finished window. Coloured glass was made in three main ways: muff, crown and flash.

Muff glass is produced when a hollow rod is covered in coloured molten glass. The glass is blown into a sphere and then through swinging and twisting it is manipulated into a long sausage-shaped balloon. This balloon is opened at either end, split along it's side and unrolled to produce a sheet of glass of uneven thickness roughly twenty-four by fifteen inches in size.

".....take a hot iron, and having split one side of the glass (cylinder) lay it on the hearth of the heated furnace. and a smooth piece of wood, and.....opening it...spread it out, flatten it at, pleasure with the tongs." (quoted in Coe, 1980, p. 102. Theophilus, 10th century, 2nd section)

The crown process starts in the same way, a sphere of coloured glass is blown at the end of a hollow rod. Instead of the glass being dragged into a cylinder shape it is manipulated between two rods and spun into a circular disc. In the same way that one might work pastry into a pizza shape, although for obvious reasons the molten glass is not manipulated by hand. It is possible to determine if medieval glass has been produced with the crown process through a close examination of the tiny air bubbles trapped in the glass, these bubbles run in concentric circles.

In both the methods described above the colour travels right through the entire thickness of the glass but there is another process called flashing which involves the dipping of white molten glass into a vat of molten coloured glass. A layer of coloured glass forms on the surface of the white glass and then the process of muff glass is executed . The net result is a thick layer of white glass coated on one side with a thinner layer of coloured glass. This process was first pioneered to cope with the intense colour of red or ruby glass, produced with copper-oxide pot-metals. Ruby glass was so dense in colour that it prevented all passage of light. Flashed ruby glass was found to be of similar thickness and strength as a solid piece of ruby glass but had the added advantage of facilitating the free flow if light.

The different colours in the glass were achieved by adding various metallic salts to the materials used in the production of clear white glass. The final resulting colour depended partially on the minerals used and partially on the temperature at which it was fired. Another factor which influenced the colouring of glass was the element of impurities. The sand which was used to make white glass was far from pure and often plain white glass had a yellowish or greenish hue. These various tangible factors present in the manufacture of the glass were believed to have caused the huge variations in the range of colours. Impurities also help to

give medieval stained glass an elementary or gemlike quality which was purposely exploited by the stained glass artist for mainly religious reasons.

"Medieval Theologians ... (were) ... tireless in their praise of the allegorical power of gems, with their property of giving off light "and glowing from within." (Brooke, 1969, p.62).

Gemstones were also believed to be capable of hynosis and transporting the viewer, as Suger himself describes to "some strange region of the universe between the slime of earth and the purity of Heaven"(Brooke, 1969, p.62). Even today the two most popular colours used in stained glass are most accurately described as being ruby red and sapphire blue.

The mineral salts used for colouring were as follows: copper oxide-produced red or ruby glass; oxide of cobalt produced blue glass; oxide of iron was used for making both greens, and through adjustment of firing techniques a strong brassy yellow colour could also be obtained. It is important to note that up until the end of the sixteenth century no coloured glass was produced in England at all. Coloured glass was generally imported from Germany or Normandy. The latter being of higher quality.

The first step of the window making process was the production of a preliminary sketch or "vidimus". This sketch was used to explain the stained glass artist's vision of what the finished window should look like. The vidimus was shown to

the sponsor or patron of the window who having commissioned the work held almost complete creative control, and could request another sketch or design to be produced if necessary.

The second step is the production of a full sized working drawing of the finished window. This was known as a "cartoon" and contained concise information on the location of the leaded strips or "calmes", used to attach the separate pieces of coloured glass to one another, forming the window shape. The cartoon was quite often used to draft several different windows. There is a good example of this at "All Saints", North street York and "St. Michael le Belfry", York. [Figure 9] Both windows depict "St. Christopher "and it is quite obvious that the two windows were drafted off the same cartoon. It is interesting to note that St. Christopher at "All Saints" is nearly a hundred years older then St. Christopher at "St. Michael". This means that the same cartoon must have been in use for a hundred years or more.

The next stage of production involves the transferring of the cartoon information onto a whitewashed table. All the relevant colour information is added at this stage of the process. The table acts as a template against which the jigsaw type pieces will be checked and measured. The following stage, involves the cutting of the actual glass, it is the most precarious operation, using all the skill and luck of the stained glass artist. Cutting was done in two major ways. The rough

Figure 9. St. Christopher drawn twice from the same cartoon; left - All Saints church North street York; right - St. Michael le Belfry York (Coe, 1980, p. 5)

cutting was done with an iron which was placed in a fire until it glowed red-hot. The iron was then held against the glass until it's excessive heat caused the glass to crack. The more accurate cutting was done by nibbling away at the edges of the glass with a notched instrument known as a grossing iron. Grossing required much skill and was used right up until the invention of the diamond cutting wheel in the sixteenth century. It is always important when assessing a piece of art that the possibility of if being a modern or even Victorian forgery is borne in mind.

"Mutilated windows have been completed with an ability which makes it difficult at first to distinguish the older from the more recent work and one runs the risk of searching for the laws of medieval iconography among works of the nineteenth century". (Male, 1961, p.43).

A close examination of the edges of a piece of stained glass will give the viewer a good idea of it's age, if the edges are in anyway cut smoothly then it is possible that the work is not medieval. Once the pieces of glass had been nibbled into shape they could be laid on the whitewashed table where the shape of each one and it's colour consistency was carefully checked. A considerable amount of artistic skill was required by the stained glass worker when selecting and matching colours . Because of the primitive nature of the glass casting process identical colour matches were rare. It was up to the initiative of the artist to choose complimenting shades of colour often exploiting imperfections or flaws in the glass to his advantage. This increases the overall beauty of

medieval stained glass giving it it's distinctive primitive qualities and making each piece of work totally unique to the artist who created it. Using known methods of work practice and colour matching learnt from *Diversaram Artiam Scheduta*.[viii] it is possible to spot forged or badly repaired piece of stained glass. In figure 9a we can see an illustrative piece of glass taken from Canterbury cathedral. According to Bernard Rackham this window contains a piece of forged glass.[ix] The small piece of yellow glass bearing part of an inscription " Idiator" does not belong to this panel. He points out, that it was the practice of medieval glass painters never to bring two pieces of glass of the same colour in direct contact with each other, unless of course they formed the same element. If the yellow band bearing the inscription were complete it would come in contact with the yellow tree on the left side, which is at present separated by a piece of blue glass. Only through detailed knowledge of the techniques of the medieval stained glass worker is it possible to spot this type of forgery and learn to disregard it.

The next stage involved the painting of fine detail onto the surface of the separated coloured glass sections. Painting was done with iron oxide ground and mixed with the powdered glass which acted like a flux, this was then made liquid with either urine or wine. The objective of the mixture was to use a dark pigment that would not be affected by the heat of the kiln. The soft glass would melt in the heat and would form a protective layer over the dark pigment trapped

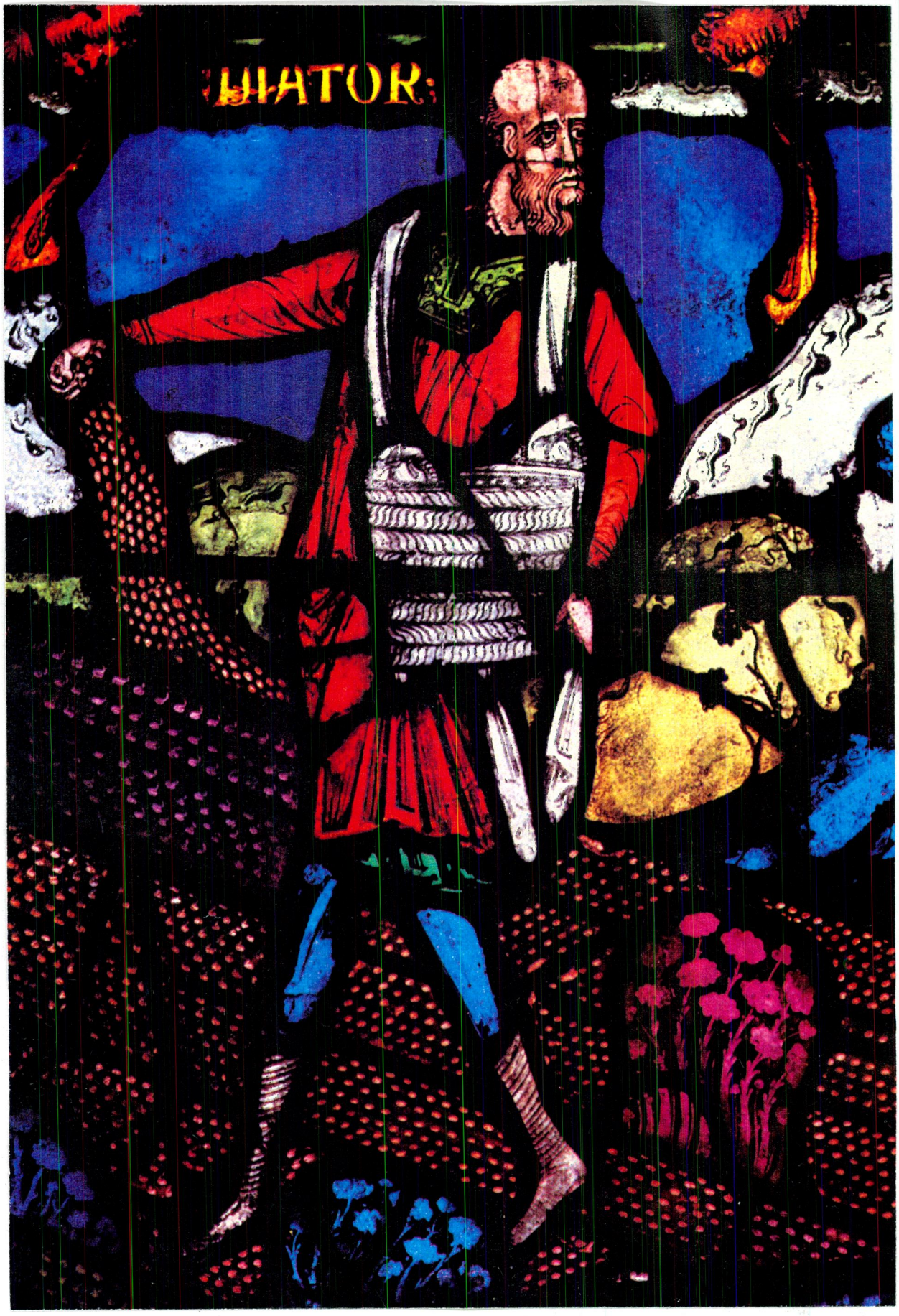


Figure 9a. The parable of the sower, early 13th century Canterbury cathedral, north choir aisle, second window (Read, 1960, p. 49)

underneath. Painting was done in a mostly linear way but in the later periods it developed into quite complicated shading and toning.

After the painting was completed the pieces of glass were then placed on an iron plate for firing. According to Theophilus' notes it was essential that the softer glass was kept to the edge of the kiln where if would receive a lot less heat than the harder white or yellow glass placed at the kiln's heart. It is clear from this description that firing was a delicate process and if a piece of glass broke during this stage of production all the previous work of cutting and painting was lost. When successfully fired the glass pieces were returned to the whitewashed table ready for the lead calmes to be soldered in place. The calmes were about three sixteenths of an inch thick and were H-shaped in a cross-section. The calmes were soldered down on both sides of the window, and in certain locations small ribbons of lead would be left sticking out of the joints. These would be used in a later stage of construction. The final process involved the forcing of a putty compound between the calmes of lead making the whole window watertight.

In the early 12th and 13th centuries the window was sub-divided into a number of sections. The window opening in the stonework of the cathedral had a thick wooden frame attached. The piece of stained glass was attached to this metal armature using the ribbons of lead, as we discussed earlier. The fragile glass was supported in situ through a series of heavy metal glazing bars which were

curved in sympathy with the lead calmes and following the general composition. Later in the 14th century the wooden and iron framework was done away with. The windows where placed directly into slots provided in the stonework and secured in place through a regular grid of horizontal and vertical saddle bars. During this period a window opening was no longer a large single space cut into the masonry but was sub-divided into a number of tracery openings separated by thin strips of masonry. [Figure 10]

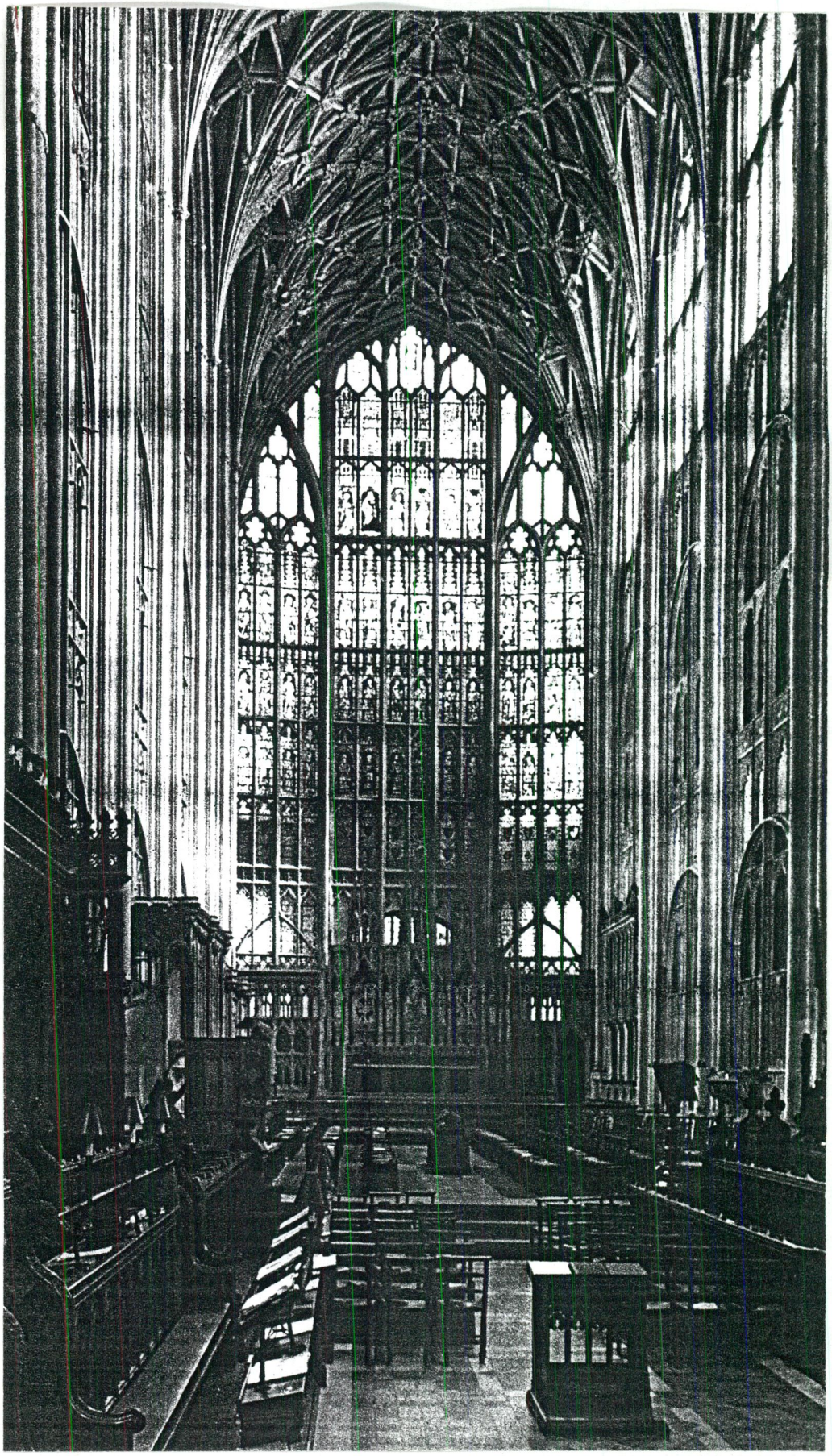


Figure 10. Delicate window tracery- Gloucester cathedral choir 1330 (Branner, 1964, p. 91)

Section 4 Subject, Source, Sponsor

The Sponsors of medieval stained glass are important for a number of reasons. They paid for the work and in a lot of cases they had artistic control over the window. In the majority of cases a sponser was free to select subject matter he deemed appropriate. This could come from the Bible, the lives of the Saints and Apostles, his trade or profession, and in later periods, his own portrait or coat of arms. It is important to consider that the donor set the budget for the stained glass artist, the amount of money granted for a commission would determine the complexity and quality of the finished window. This is clear in a small Church at Waterperry in Oxfordshire. Here we have the example of a rather humble couple who commissioned a single window. This is a very plain window with the figures set into diamond shaped panels, or quarries, of a repeated design which is cheap and easy to produce. In total contrast in another window in the same church we see the resplendent kneeling figures of Robert FitzEillis, the Lord of the Manor and his wife Margaret. [Figure 10a] This later piece is of work is of the highest quality displaying fine detail and skilful back painting reflecting the greater wealth of the patrons. Another aspect of cheaper commissions was the level of actual original work undertaken by the glass artist. As we have seen earlier the cartoon used for the drafting of the window design was seldom only used once. Only the more expensive commissions involved original design

Figure 10a. Portrait of Margaret FitzEllis, Church of St. Mary, Waterperry, Oxfordshire, (Crewe, 1987, p.32)

work, the cheaper ones relied on older dated cartoons which were simply redrafted to suit.

The exact level of control the patron or donor had over the choice of subject matter remains slightly vague. It is believed that the patron selected subject matter with advice from his priest, it is clear that Henry III had a particular liking for the story of "Dives and Lazarus". This can be ascertained by his many references to glazing programmes in which he specified that particular subject matter to used. Selection of subject matter could also be decided by the donor's trade. There was a patron saint for almost everything during medieval times. Considering that there are at present known in England one hundred male Saints and fifty female Saints, it is not hard to imagine that every trade had it's own Saint. For example St. Bartholomew was martyred by being skinned alive. The medieval mind made a connection with the Saint's death and a trade or trades existing at the time. His emblem is the flaying knife and he is often depicted carrying his own skin over his arm. There are two good examples of St. Bartholomew at Grappenhall, Cheshire and at Acaster Mabbis, Yorkshire. Because he is loosely connected with skins he is patron Saint of any connected with skins; glove making, book binding, and fur handling.

Donors of windows generally believed that the sponsoring of a window would bring appeasement in Heaven from the Saint depicted in the window and some

requested that the onlookers pray for the health of the donor. It might have been towards this end that a little visual representation of the donor began to be added to stained glass windows in the second half of the 14th century.

If a city guild decided to donate a piece of stained glass to a cathedral the guild members took great care in placing the window in a prominent position, somewhere it would be clearly visible. Using a small emblem that would be universally recognised as a symbol for the guild they could in effect use the donation as a clever piece of product advertising. A giant pair of scissors symbolising the Freiburg tailors guild is emblazoned at the bottom of a window bearing the figures of the Virgin and Child. [Figure 11] This is a blatant but effective piece of early advertisement by association. Considering the reverent light in which medieval people viewed any religious subject matter, in particular in stained glass, the close connection of the tailor's guild with the Virgin Mary and the Infant Christ must have been the medieval equivalent of Michael Jackson endorsing Pepsi from the concert stage.

Another even cruder way to advertise using stained glass was to show the members of the donating guild somewhere on the window itself. If a window was donated by the masons for example a little vignette of the masons happily plying their trade would be included alongside the figures of the Saints. [Figure 12] Changes in the view held by the general public towards manual labour were

Figure 11. Freiburg - Vigin and child, 14th century windows donated by the guild of tailors; note the symbolic pair of scissors (Brooke, 1969, p. 26)

Figure 12. Bourges cathedral, 13th century, vignette depicting the work of the wheel wrights and the cooper's guild, who donated the window (Brooke 1969, p. 65)

partially responsible for the depiction of work scenes inside churches, which in previous eras would have been seen as punishment rather than of benefit to society. Nevertheless the medieval church clearly declared through it's art that man is responsible for destroying the harmony of the earth, and that fallen humanity can only be redeemed through the grace provided by work.

"Manual labour delivers man from the necessities to which since the Fall his body is subject."[x]

In this way medieval stained glass gives us historical information and a vital insight into the more mundane ways of medieval life .The everyday business of mason's mixing mortar, carrying materials in a hand barrow or using a plump to check the straightness of a row of blocks is very informative and almost unique to the art of stained glass.

Section 5 Costume

The medieval mind had no concept of historical costume. The idea that clothes worn by Jesus, Noah or Moses would be different to the styles that were in fashion at that time did not occur to them. We know this from comparisons of medieval stained glass with other medieval costume sources. One such reliable source of costume in the eleventh century is the Bayuex Tapestry. The Bayuex Tapestry is a piece of linen 75 yards long and 10 inches wide. It is embroidered in coloured wool and depicts a pictorial account of the Norman conquest of Britain in 1066. If we compare costume styles in this obviously contemporary medieval piece of work, completed in 1077, with the costume styles of Biblical figures in medieval stained glass from roughly the same period it is easy to see how similar the styles are, even though the Bible is set a thousand years or more previously. In fact the antiquated costume in art is not evident until the late Renaissance period. The fact that windows prior to the 16th century display accurate contemporary costumes makes them so important to the costume archivist, designer or historian.

The huge range of medieval dress depicted in stained glass is too extensive to be dealt with in this thesis so I will confine my discussion to examples of costume from English stained glass which I find particularly interesting.

The range of clerical costume to be seen in medieval stained glass is quite enormous. Styles of costume range from the very basic monastic habits of monks to the highly elaborate jewel encrusted robes of Popes. It is quite easy to distinguish between the various ranks and clerical orders by examining key symbolic elements of their dress. [Figure 13]

Cardinals can easily be recognised in stained glass from their red costumes and broad brimmed hats. There is a good example of a cardinal at St. Jerome, Saxlingham Nethergate, Norfolk.

Deacons are shown wearing the *dalmatic* . The dalmatic is a long robe similar to the ones used for ceremonies in the church today, it hangs from around the shoulders and bears a heavily embroidered panel at its foot. Archbishops can be identified by the mitre also worn by bishops. Archbishops carry a staff with a single cross on top, a heavy cape called a *cope* is usually worn by an archbishop and is distinctive because of the Y-shaped *pallium* . A pallium is a wide embroidered ribbon and usually goes around the neck and shoulders and down the centre front.

Very concise information on the development of the mitre can be obtained from medieval stained glass. In the 12th century the mitre was flattened and rounded, it had a depression in the centre and curled at each side, an example of this can

Figure 13. St. Thomas Beckett, 1447, Warwick church, St. Mary's Warwickshire - this is a good example of a jewel encrusted clerical robe from the medieval period (Coe, 1980, p. 112)

be seen at Rivenhall, Essex. In the 13th century the mitre became much taller and it had a narrow brim, concave sides and curved up to a sharp point an example of this can be seen at Credenhill Herefordshire. In the 14th century the sides of the mitre had become straighter, the top remained pointed and it was usually jewel encrusted, an example of this can be seen at Gloucester cathedral .

A main difference between a bishop and an archbishop as shown in medieval stained glass is the staff. [Figure 14] The archbishop carries a straight staff with one cross on top the bishop carries a crook staff or crosier. Abbots and monks are recognised by their heavy monastic habits, made from a rough plain fabric such as wool. These were sometimes belted with a plain leather belt or a piece of rope, the head was quite often covered by a cowl.

Nuns and abbesses always wore a distinctive type of head dress called a wimple this meant that the head was covered. A wimple consisted of a length of linen or silk which was wrapped around the head and shoulders. If the wimple was worn in conjunction with the veil it meant that the Nun's face was almost entirely covered.

A Pope was the highest ranking office in the medieval Church and as such he always had the most richly embroidered and complicated garments. There is a

Figure 14. Head of an archbishop, c.1410, Canterbury cathedral, west window of the water tower - showing mitre and staff detail (Read, 1960, p.148)

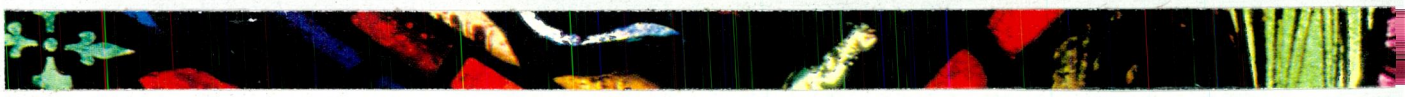
good example of a Pope in full costume at the Church of St. Peter Stockerston Leics. [Figure 15] In this 13th century window can be seen the figure of the fourth Pope and Martyr St. Clement. He is wearing a loose fitting clerical robe which is trimmed along the bottom and around the "peter pan" style collar in embroidery and jewels. The collar is very full around the neck and both here and around the base of the garment we can see fur, this suggests that the robe is fully fur lined. The robe comes to about knee level on the Pope and below this we can see the ends of two undergarments, one of these is also fur lined the other is heavily embroidered.

On his head he wears a triple crown of tiara which is surrounded by a circular nimbus. The circular nimbus placed vertically behind the head was a Gothic symbol strictly laid down and religiously used to represent sanctity. In his left hand St. Clement holds the triple headed staff which is also a symbol of the Papal office. His right hand is in the typical two fingered gesture used for giving a blessing.

Around his right wrist the Pope is carrying an anchor. It was the custom in medieval art and indeed in later periods to represent the figure of a Martyr or Saint with a symbolic attribute and it was by his or her attribute that the saint was recognised. St. Clement died when he had an anchor tied to him and got thrown

Figure 15. St. Clement, church of St. Peter, Stockerston, Leics., (Crewe, 1980, p. 43)

into the sea. He was patron saint of Trinity house and the authority responsible for all lighthouses and light ships.



Section 6 Important Information

Why does medieval stained glass give us such important costume information? It might well be argued that the information on costume in medieval stained glass is of a general nature and can easily be found in any number of other sources, such as painting, tapestry, embroidery, manuscripts, engraving and sculpture. But I believe that the level of information about costume in stained glass is far superior to the earlier mentioned sources for several reasons.

Stained glass was originally designed to be a public education service that would teach the mainly uneducated people of medieval society about the Bible. Because of the nature and function of the glass the drawing style is particularly simple. As a costume designer I recognise that this type of illustration gives us a basic and practical guide to the costumes of the medieval Period. Allthough the illustrations are very two dimensional and flat but show stitching and seam detailing very effectively, as well as giving an indication of the flow and drape of the fabrics used. [Figure 16]

In 1994 I had the opportunity of working on the film costume drama *Braveheart*. This film was directed by Mel Gibson and was set in 13th century England. The chief costume designer in charge of the £900,000 Costume budget was Charles Knode. Charles Knode lectures at Wimbledon College of costume and has

Figure 16. The burial of Nurse Britons, early 13th century, Canterbury cathedral, north aisle of Trinity chapel, 6th window (Read, 1960, p.54)

designed costumes for several other major costume dramas such as *War and Peace* [BBC2, 1973] and *1492* [Ridley Scott, 1990].

The costumes for *Braveheart* were designed to be as authentic as possible and one of the court costumes from the film was bought by the museum at the Tower of London where it will be used in an historical display. Much of the research for the film was done using medieval stained glass as a fundamental information source and important details like lions for the front of the king's tunic were copied directly from panels of medieval stained glass in Westminster Abbey.

One major advantage medieval stained glass has over other information sources is the size of the actual windows. Many windows are life size or even larger and in times when illustration tools were quite crude the larger the canvas the artist has to work with the more detailed and readable the finished piece is likely to be. This is best demonstrated by a brief comparison with the detailed manuscripts of the medieval period which are also finely decorated but too small to be copied accurately

"In one department we must not expect the Manuscripts to give us to much information-namely, that of the details of pattern and decoration, the scale of the drawings is so small-some-exquisitely painted figures are hardly more then an inch high-that only broad effects are possible" (Houston, 1939, p.5)

Although much medieval stained glass involves crude cutting and leading the finer detail when added with liquid pigment is highly accurate. With life sized

pieces of illustration in medieval stained glass the scale of ornament on costumes can be very accurate. Thus repeat patterns may be copied directly from a window onto a garment without needing to scale them up or down.

It is much easier to examine life sized illustrations in stained glass windows, because of their size and back illumination, then it is to examine and accurately record illustrations in a manuscript or tapestries. It is easy to take photographs of stained glass without risk of the flash damaging the glass, but this is a constant problem when photographing tapestries and manuscripts.

Although once painted, medieval statuary can no longer yield vital descriptive information through colour. Additionally the nature of three dimensional sculptures does not always lend itself to the fine detail that can be gained from a flat-two-dimensional costume source. Glass illustration is far superior in it's level of construction information for the costume archivist then the moulded, streamlined, medieval sculpture. Some colour is still contained in other surviving medieval costume sources but this colour has often severely faded in comparison to the consistency of colours in stained glass. Light has a damaging effect on all colour just how drastic its effect usually depends on the way the colour has been applied to the object. Fading happens to colours in manuscripts, paintings and tapestries because the paper or fabric has been coloured only using simple vegetable dyes. The dyes used in medieval stained

glass are metal oxides and rather then merely resting on the surface of the glass, paint on a picture, the dye in the majority of medieval stained glass goes through the entire thickness of the glass.[xi] The difference in the strength and durability of glass to wool or canvas needs little elaboration, but the strength and durability of glass makes fading rare.

There is quite a real risk when examining medieval documents that some original elements of composition have faded without trace. This process is probably best described by the story of the Virgin's disappearing veil. Painting the Virgin Mary with a veil across her face was a standard practice of the medieval artist. It was not a matter of choice to include the veil but a symbolic necessity. But in a 14th century Italian painting of the Virgin Mary, Mary has no Veil. On close examination by scientists the reasons for the absence of the veil was ascertained. When a medieval painter wanted to obtain a lighter shade of colour he would add a thin layer of bluish paint over the portion of the painting to be lightened, this process was known as pentimento. Over the centuries this layer of paint ways worn away from the surface of the canvas until eventually the Virgin had been completely de-veiled. Although the residue of the original layer of paint can be detected on the surface of the canvas by scientists there is no way of defining the exact shape, density or composition of the veil in it's original form. This process cannot happen with stained glass, not even in the most extreme cases of ageing.

Even when the thin layer of surface detailing paint has been removed from the glass through ageing a little ridge always remains intact and barely visible on the glass surface. This ridge is formed because a tiny amount of the glass, which is not protected from the elements by paint, gets broken down and develops a slightly rough surface texture, when the paint protecting surface is also removed a shadow of the area where it used to be is left behind.

This vital information can be retrieved using a simple rubbing technique, because of this medieval stained glass should never be subjected to the same level of misinterpretation that surrounds other medieval information sources.

The delicate nature of manuscripts and tapestries, that means they have to be closely guarded and protected against damage by their environment. This creates problems of access for the historian or designer. No such problems of access exist for the medieval stained-glass still intact in it's original location.

Section 7 Demise and Decline

The decline and eventual demise of medieval stained glass came about for a number of loosely related reasons. Changes in the religious climate during the 16th century reign of Henry VIII and the resulting Reformation of the church led directly to the whole scale destruction off hundreds of thousands of windows. This was the result of two very concise directions from both Henry VIII and his successor Edward VI

"....they shall take away, utterly extinct and destroy all shrines, coverings of shrines, all tables, candlesticks, trindles or rolls of wax, pictures, paintings, and all other monuments of feigned miracles, pilgrimages, idolatry, and superstition; so that there remain no memory of the same in walls, glass-windows or elsewhere in their churches or houses"
(quoted by Coe, 1980, p. 77. Royal Article 28-1547-King Richard VI).

This process of hell and brimstone wholesale destruction of windows was continued by the Puritans right up until the 17th century.

Developments in the art of painting the surface of white glass enamels ultimately led to the breakdown of traditional stained glass techniques and a reduction in the importance using lead calmes as a means of forming the basic composition of the illustration. The new enamels reduced the cost of the stained glass process and also gave the artist more freedom, being able to paint on the surface of the glass as if it were a canvas. Later enamelled glass had none of

the qualities of earlier traditional stained glass. The pallet of the artist, although extended in colour range, was not of such deep richness. This was due to pigment lying on the surface of the glass only, as opposed to extending through the entire thickness of the glass. The durability of this newer glass was also questionable and the enamels were prone to cracking and flaking.

Improvements in the circulation of printed material had a two fold effect on the production of traditional stained glass. The amount of money spent on commissioned glass was greatly reduced, this was partly because of the Reformation and partly because the congregations of the cathedrals were beginning to be educated. The power the glass held over the public was reduced as a result similar to the reduction of power experienced by cinema at the introduction of television. Manuscripts containing illustrations began to filter into England from the dramatic artistic developments happening in the Italian Renaissance. Many commissions for work were given to artists from abroad who could imitate this new florid style of illustration and the English artist started to lose their own sense of identity.

The Italian Renaissance made the first serious inroads into historical wardrobe styling and the windows of this later period are no longer of use to the costume historian as the clothes depicted are stylised rather then an attempt at contemporary visualisation.

Section 8 Conclusion.

The words of Wassily Kadinsky are instructive:

"Every work of art is the child of its time; often it is the mother of our emotion. It follows that each period of culture produces an art of it's own, which cannot be repeated."(quoted in Read, 1960, p.8)

Medieval stained glass in it's original location and preserved as much as possible in it's original state, without inhibiting the free flow of light, is the most vital link we have with the thoughts, teachings, beliefs and costumes of the medieval period. Any attempt to remove or reconstruct the windows will break forever this fragile thread of reality which links our century with the 12th., 13th., 14th, and 15th centuries.

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[i] Plato : 428 BC - 338 BC , Greek philosopher, son of Ariston and Periltone

[ii] Neoplatonism appears in the first half of the 3rd century, and has it's greatest representative in Plontinus (204 AD-270). Plontinus developed Platonic philosophy into an elaborate system of doctrine

[iii] The Holy Bible -The medieval Bible was known as the Vulgate and was translated from Hebrew and Greek into Latin by St. Jerome. Latin was the universal language of Europe at this time, and the language in which all the churches Liturgy were written

[iv] Immaculate Conception: Genesis iii, 15; Luke I, 28

[v] Dionysius Areopagiticus or The Areopagite was named in the Bible Acts XVII through 34 as one of those Athenians who believed when they had heard Paul preach on Mars hill. Little is known about the original Dionysius Apreopagiticus but some hundreds of years afterwards his name was attached to a number of anonymous theological writings of unknown origin. The works of Pseudo-Dionysius began to influence theological thought in the West from the time of their translation into Latin by Erigena

[vi] St Denis was the first bishop of Paris and patron saint of France, whose feast is celebrated on Oct. 9. He was sent into Gaul at the time of the emperor Decius and suffered martyrdom at the village of Catullicus, now St. Denis of Paris. Hilduin, Abbot of St. Denis in the first half of the 9th century, wrongly identified

Denis of Paris with Dionysius the Areopagite. St. Denis is usually represented in Gothic art carrying his head in his hands.

[vii] Brooke, 1969, p. 48, quoting Suger's *The Gothic Cathedral.*

[viii] Written by Theophilus a 10th century monk and concerning itself with the arts of the medieval period

[ix] Bernard Rackham, *The Ancient glass of Canterbury Cathedral*, Lund Humpreys, London 1949

[x] *Speculum Doctrinale* Vincent of Beauvis 1241

[xi] see 'Flashing' in chapter on Technique.