Kent Academic Repository

Brown, Maria Florence (2004) ***Seeing through light : a selective history of architectural stained glass.*** **Doctor of Philosophy (PhD) thesis, University of Kent.**

Downloaded from
https://kar.kent.ac.uk/94240/ The University of Kent's Academic Repository KAR

The version of record is available from
https://doi.org/10.22024/UniKent/01.02.94240

This document version
UNSPECIFIED

DOI for this version

Licence for this version
CC BY-NC-ND (Attribution-NonCommercial-NoDerivatives)

Additional information
This thesis has been digitised by EThOS, the British Library digitisation service, for purposes of preservation and dissemination. It was uploaded to KAR on 25 April 2022 in order to hold its content and record within University of Kent systems. It is available Open Access using a Creative Commons Attribution, Non-commercial, No Derivatives (https://creativecommons.org/licenses/by-nc-nd/4.0/) licence so that the thesis and its author, can benefit from opportunities for increased readership and citation. This was done in line with University of Kent policies (https://www.kent.ac.uk/is/strategy/docs/Kent%20Open%20Access%20policy.pdf). If you ...

Versions of research works

Versions of Record
If this version is the version of record, it is the same as the published version available on the publisher's web site. Cite as the published version.

Author Accepted Manuscripts
If this document is identified as the Author Accepted Manuscript it is the version after peer review but before type setting, copy editing or publisher branding. Cite as Surname, Initial. (Year) 'Title of article'. To be published in *Title of Journal* , Volume and issue numbers [peer-reviewed accepted version]. Available at: DOI or URL (Accessed: date).

Enquiries
If you have questions about this document contact ResearchSupport@kent.ac.uk. Please include the URL of the record in KAR. If you believe that your, or a third party's rights have been compromised through this document please see our Take Down policy (available from https://www.kent.ac.uk/guides/kar-the-kent-academic-repository#policies).

Seeing through Light:

a Selective History of Architectural Stained Glass

Entrance Hall, Colemore Gate, Birmingham
Graham Jones

Maria Florence Brown

Contents

Abstract Pg. 1

Acknowledgements Pg. 2

List of Illustrations Pg. 3

Preface Pg. 13

Introduction Pg. 16

Chapter I: Origins Pg. 22

Gothic Stained Glass Pg. 23
Renaissance Glass Painters and the Decline of the Art Pg. 33
The Gothic Revival Pg. 42
William Morris and the Arts and Crafts Movement Pg. 55
American Glass: Louis Comfort Tiffany Pg. 75

Chapter II: Pre 1945 Pg. 82

Art Nouveau Pg. 83
Frank Lloyd Wright Pg. 99
The Break with the Ecclesiastical Tradition
John Trinick Pg. 143

Chapter III: Post 1945 Pg. 156

Post-war Glass in Europe Pg. 157
New Glass in Britain Pg. 173
A Contemporary Art Pg. 192
Graham Jones Pg. 196

Conclusion Pg. 201

Bibliography Pg. i

Glossary Pg. xi

Illustrations Pg. xiv

Abstract

This dissertation traces the history of glass in its architectural environment from the earliest surviving examples to the work of modern designers and architects producing new and exciting effects of light, colour and form.

Chapter I: Origins

Chapter one explores the beginnings of architectural glass in the Middle Ages, investigating the ideology of the patrons and technical virtuosity of the craftsmen who created and constructed the great windows that still illuminate the interiors of many European cathedrals and churches. It follows the destructiveness of the Reformation, the re-emergence of stained glass with the 19th century Gothic Revival and the new form and expression that was found under William Morris, the Arts and Craft Movement and Louis Comfort Tiffany.

Chapter II: Pre 1945

This chapter discusses Art Nouveau's reaction to the historicism of the Victorian era, the subtle manipulation of light and space by Charles Rennie Mackintosh in Britain and the innovative concepts of Frank Lloyd Wright in the United States. It moves on to investigate the pioneering spirit and lasting influence of the pre-war German artists and presents the work of John Trinick, tracing its evolution from medievalism to modernism.

Chapter III: Post 1945

The final chapter evaluates the reinterpretation of the medium from the post-war period, its place as a vital element in the sophisticated architecture of the 21st century and as an individual art form in its own right.

Acknowledgements

With thanks to:

Mark Angus

Dr. Frank Brown, School of Architecture, Manchester University

Sœur Jeanne Héléne, Sœurs de Saint-Paul de Chartres

David Jewell, St Mary's Church, Slough

Graham Jones

Rica Jones, Tate Gallery

Kit Kemp, Firmdale Hotels

Dr. Jonathan Kear, University of Kent

Ruth Meardon, Milton Keynes Library

Monique Merland, Musée d'Archéologie et d'Arts Décoratifs, Liège

Anthony McCrae, Middlesex University

Andrew Moor, Andrew Moor Associates

Wendy Nugent, Derby Cathedral

Fr. Pace, Our Lady of Dolours, Hendon

Michael Peover, BSMGP

Peter Risdon

Dr. Sebastian Strobl & Staff, Canterbury Cathedral Stained Glass Studio

Rodney Bender & Students, Swansea College of Art

Ruth Trinick

William Whealan, Salmestone Grange, Margate

and others, too numerous to mention, who have generously given of their time and expertise to enable me to complete my research.

List of Illustrations

Frontispiece: Graham Jones. Entrance Hall window. Colemore Gate, Birmingham, West Midlands, 1995. Plated, etched and sandblasted glass.

1. Engrand le Prince. Portrait of Engrand le Prince. Detail in *Tree of Jesse* window. Church of St Etienne, Beauvais, c.1520's.
2. Chinks Grylls. Photograph of Glass Screens. London, c.1988. Stained glass. (Photo. Ian Dobby)
3. Windows fragments from Monkwearmouth and Jarrow, Tyne and Wear, 675. Mosaic patterned stained glass.
4. Benedictine Monastery window, Monte Cassino, 1090. Stained glass.
5. *The Prophet Daniel.* Clerestory window, Augsburg Cathedral, Augsburg, c.1125-30. Stained glass.
6. *Virgin and Child* window. Vendome, 12th century. Stained glass.
7. *The Abbot Suger portrait* window. Abbey of St Denis, Paris, 12th century. Stained glass.
8. *Presentation of Christ in the Temple*. Infancy window, St Denis, Paris, c.1144. Stained glass.
9. *Hellmouth* window. Hengrave Hall Chape', Suffolk, 16th century. Stained glass.
10. *Crucifixion window.* St Peter's Church, Stockerton, Leicestershire, 15th century. Stained glass.
11. *Miracle* panel *of St Thomas á Becket*, Canterbury Cathedral, Canterbury, Kent, late 19th century reconstruction. Stained glass.
12. *Five Sisters* window. York Minster, York, 1253. Stained glass.
13. East window, King's College Chapel, Cambridge, 1526-31. Stained glass.
14. M.F. Pawle. Photograph of Nave window, St Mary's Church, Slough, Buckinghamshire, c.1930. Stained glass. (Photo. Maria Brown)
15. Thomas Johnson. Depiction of South aisle windows, Canterbury Cathedral, 1657. Oil on canvas. (Courtesy of Dr. Sebastain Strobl)
16. Joshua Reynolds. West window, New College Chapel, Oxford, 1787. Painted glass.
17. Earlom. West window, New College Chapel, Oxford, 1787. Engraving.
18. G.S. & I.G. Facius. *The Nativity*, New College, Oxford, undated. Engraving.

19. Joshua Reynolds. *Mrs Sheridan as Charity.* Detail, West window New College, Oxford, c.1786. Sketch.

20. Augustus Welby Pugin. Chancel windows, St Mary's College Chapel, Oscott, Warwickshire, 1838. Stained glass.

21. Thomas Willement. *Thinke and Thanke.* Davington Priory, Kent, c.1845. Stained glass.

22. William Wailes. West window, Gloucester Cathedral, Gloucester, 1859. Stained glass.

23. Augustus Welby Pugin. *The Entombment.* St Cuthbert and St Mary, Bolton Abbey, Yorkshire, 1851-2. Cartoon.

24. William Wailes. *Flight into Egypt* and the *Massacre of the Innocents.* North aisle and Tracery windows, All Saints, Maidenhead, Berkshire, 1864. Stained glass.

25. Augustus Welby Pugin. Photograph of Cloister window, St Augustine's Abbey, Ramsgate, Kent, c.1850's. Stained glass. (Photo. Maria Brown)

26. Augustus Welby Pugin. Photograph of Cloister window, St Augustine's Abbey, Ramsgate, Kent, c.1850's. Stained glass. (Photo. Maria Brown)

27. William Morris. *The Three Maries at the Sepulchre.* South aisle East window, St Michael and All Angels, Brighton, Sussex, 1862. Stained glass.

28. Ford Maddox Brown. *King Rene's Honeymoon.* Victoria and Albert Museum, London, c.1863. Stained glass.

29. Edward Burne-Jones. *The Battle of Beth-Horon.* St Michael and All Angels, Lyndhurst, Hampshire, 1863. Cartoon.

30. Edward Burne-Jones. *Adoration of Kings and Shepherds,* 1862. Oil on canvas.

31. Edward Burne-Jones. *Phyllis and Demophoon,* 1870. Oil on canvas.

32. Edward Burne-Jones. *Tree of Forgiveness*, 1882. Oil on canvas.

33. Edward Burne-Jones. *The Countess of Portsmouth*, 1893. Oil on canvas.

34. Edward Burne-Jones. *The Last Judgement.* The Cathedral Church of St Philip's, Birmingham, West Midlands, c.mid 1890's. Stained glass.

35. Morris & Co. East window, Waltham Abbey, Hampshire, 1860. Stained glass.

36. Morris & Co. Chancel East, St Michael and All Angels, Lyndhurst, Hampshire, 1862-3. Stained glass.

37. Morris & Co. East window, All Saints, Middleton Cheney, Northants, 1865. Stained glass.

38. Edward Burne-Jones. North aisle window, St John the Divine, Frankby, Cheshire, 1873. Stained glass.

39. Edward Burne-Jones. The Cathedral Church of St Philip's, Birmingham, West Midlands, c.mid 1890's. Stained glass.

40. Edward Burne-Jones. Nave window, St Mary the Virgin, Rye, Sussex, 1891. Stained glass.

41. Morris & Co. *The Last Judgement*. East window, St Michael and St Mary Magdalene, Easthampstead, Berkshire, 1876. Stained glass.

42. Powell & Son. 'Munich' style windows. The Gamble Room, Victoria & Albert Museum, London, c.mid 19th century. Stained glass.

43. Edward Burne-Jones. Detail *The Last Judgement*. The Cathedral Church of St Philip's, Birmingham, West Midlands, c.mid 1890's. Stained glass.

44. Edward Burne-Jones. *Crucifixion* window. Acocks Green, Birmingham, West Midlands, 1895. Stained glass.

45. Edward Burne-Jones. The Great East window, Holy Trinity Church, Sloane Street, London, 1894-5. Stained glass.

46. Edward Burne-Jones. South transept window, St Martin's in the Bull Ring, Birmingham, West Midlands, 1876. Stained glass.

47. Edward Burne-Jones. *St Cecilia*. William Morris Gallery, Walthamstow, London, 1897. Stained glass.

48. Christopher Whall. East window of the Lady Chapel, St Mary's, Stamford, Lincolnshire, 1890-1. Stained glass.

49. Christopher Whall. East window (detail), Cemetery Chapel, Dorchester, Dorset, 1890. Stained glass.

50. Christopher Whall. Upton-on-Seven Church, Herefordshire, 1906. Cartoon.

51. Christopher Whall. Photograph of Clerestory windows, Holy Trinity Church, Sloane Street, London, 1904-1923. Stained glass. (Photo. Maria Brown)

52. Christopher Whall. Clerestory windows (detail), Holy Trinity Church, Sloane Street, London. 1904-1923. Stained glass.

53. Karl Parsons. *St Colomba*, 1913. Stained glass.

54. Karl Parsons. *Hammer and Tongs*, c.1920. Stained glass.

55. Louis Comfort Tiffany. *Memorial* window. Old Blandford Church, Peterborough, Virginia, c.1865. Stained glass.

56. Louis Comfort Tiffany. *Lilies*, c.1900. Mosaic patterned stained glass.

57. Louis Comfort Tiffany. *Landscape*, c.early 20th century. Stained glass.

58. Jaques Gruber. Entrance Hall window, Medical School, Nancy, c.1899. Stained glass.

59. Domestic Art Nouveau stained glass in Belgium, c.1900.

60. Atelier G. Ladon. *St George and the Dragon*. St Boniface Church, Ixelles, Brussels, c.late 19th century. Stained glass.

61. Atelier G. Ladon. *St George and the Dragon* (detail), St Boniface Church, Ixelles, Brussels, c.late 19th century. Stained glass.

62. Victor Horta. D'entresol de l' hotel Tassel, Brussels, 1895. Stained glass.

63. Paul Hankar/Raphael Evaldre. Façade window, Chein Vert Restaurant, c.1898. Cartoon.

64. Victor Horta's House, Brussels, 1898. Art Nouveau architecture.

65. Cauchie House, and St Gilles, Etterbeck, c.1905. Sgraffito.

66. Victor Horta. Door panels, the Horta House, Brussels. 1898. *Dichroic* glass.

67. Victor Horta. Hotel Van Eetvelde, Brussels, 1895-7. Glass skylight

68. Raphel Evaldre. *Odalisque.* Hotel de Mâitre, Brussels, c.1897. Stained glass.

69. Raphel Evaldre. Detail *Odalisque*. Hotel Saintenoy, Ixelles, c.1890's. Stained glass.

70. Raphel Evaldre. *Odalisque* window, Hotel Saintenoy, Ixelles, Brussels, c.1890's. Stained glass.

71. Henry Van de Velde. Art Nouveau window, Hotel Otlet, Brussels, 1899. Stained glass.

72. Frances Macdonald. *A Pond*, 1894. Oil on canvas.

73. Margaret Macdonald. *Heart of the Rose*, 1901. Oil on canvas.

74. Charles Rennie Mackintosh. Salon de Luxe, Willow Tea Rooms, Glasgow, 1903. Stained glass.

75. Creative Stained Glass Studio. Domestic glass panels, Colorado, c.1980's. Stained and painted glass.

76. Stained Glass Design Studio. Domestic glass panels, Florida, c.1980's. Stained and painted glass.

77. Narcissus Quagliata. *Dionysus*, 1997. Fused glass panels.

78. Comparison of architectural elevations for Victorian and Prairie Houses.

79. Frank Lloyd Wright. Entrance Hall windows, Susan Lawrence Dana House, Springfield, Illinois, c.1903. Stained glass.

80. Frank Lloyd Wright. Dining room windows, Susan Lawrence Dana House, Springfield, Illinois, c.1903. Stained glass.

81. Frank Lloyd Wright. *Tree of Life* window. Darwin D Martin House, Buffalo, New York, 1904. Stained glass.

82. Frank Lloyd Wright. Entrance Hall skylight, Susan Lawrence Dana House, Springfield, Illinois, c.1903. Stained glass.

83. Frank Lloyd Wright. Table lamp. Susan Lawrence Dana House, Springfield, Illinois, c.1903. Stained glass.

84. Frank Lloyd Wright. *Butterfly* hanging lamp. Susan Lawrence Dana House, Springfield, Illinois, c.1903. Stained glass.

85. Frank Lloyd Wright. Avery Coonley Playhouse windows, Riverside, Illinois, 1912. Stained glass.

86. Duncan Grant. *Queen of Sheba,* 1913. Oil on canvas.

87. Duncan Grant. *Interior Gordon Square*, 1914. Oil on canvas.

88. Paul Cézanne. *Portrait of Victor Choquet*, 1877. Oil on canvas.

89. Roger Fry. Entrance Hall, Sir Ian Hamilton's house, London, 1914. Stained glass roundel.

90. Alfred Wolmark. Photograph of *The Temple Builders*. Undated. Oil on canvas. (Photo. Pete Risdon)

91. Alfred Wolmark. *Decorated Still Life*, c.1911. Oil on canvas.

92. Gerald Moira. *Expulsion of Adam from the Garden of Eden*. North aisle window, St James Church, New Bradwell, Buckinghamshire, 1898. Stained glass.

93. Gerald Moira. Three panel painting, Canadian Stationary Hospital, Dollens, 1913. Oil on canvas.

94. Alfred Wolmark. Photograph of the West window, St Mary's Church, Slough, Buckinghamshire, 1915. Stained glass. (Photo. Maria Brown)

95. Alfred Wolmark. Photograph of the West window, St Mary's Church, Slough, Buckinghamshire, 1915. Stained glass. (Photo. Maria Brown)

96. Alfred Wolmark. Photograph of the Side window, West wall, St Mary's Church Slough, Buckinghamshire, 1915. Stained glass. (Photo. Maria Brown)

97. Charles Eamer Kempe. Photograph of the East window, St Mary's, Church, Slough, Buckinghamshire, 1889. Stained glass. (Photo. Maria Brown)

98. Charles Kempe and Co. Photograph of Chancel window, St Mary's Church, Slough, Buckinghamshire, 1882. Stained glass. (Photo. Maria Brown)

99. M.F.Pawle and G.E.R. Smith. Photograph of North aisle windows, St Mary's Church, Slough, c.1945. Stained glass. (Photo. Maria Brown)

100. J.E.Nuttgens, 1938 and G.E.R. Smith. Photograph of North aisle windows, St Mary's Church Slough, Buckinghamshire, c.1935. Stained glass. (Photo. Maria Brown)

101. Alfred Wolmark. Photograph of *Woman with a lustre bowl* and *Portrait of the Artist's brother Adolphe.* c.1920's. Oil on canvas. (Photo. Kit Kemp)

102. Johan Thorn Prikker. Three windows, Gestllenhaus, Neuss am Rhein, 1912. Stained glass.

103. Johan Thorn Prikker. *Angeschnittene Kriesformen*, 1928. Stained glass.

104. Johan Thorn Prikker. *Kreis mit Diagonalen*, 1928. Stained glass.

105. Johan Thorn Prikker. *Ornamentfenster Blau*, c.1923. Stained glass.

106. Johan Thorn Prikker. *Essener Fenster*, c.1925. Stained glass.

107. Theo van Doesburg. *Ragtime*, c.1918. Stained glass.

108. Johan Thorn Prikker. *Orange*, 1931. Stained glass.

109. Johan Thorn Prikker. *Viertilliges geometrisches Kreuz*, 1931-32. Stained glass.

110. Heinrich Campendonk. *Leaping Horse*, 1911. Oil on canvas.

111. Heinrich Campendonk. *Girl Playing a Shawm*, 1914. Oil on canvas.

112. Heinrich Campendonk. *Cassius and Florentius*. Crypt window, Bonner Münster, 1929. Stained glass.

113. Heinrich Campendonk. *Kreuzigung* and *Taufsymboles*. Cloister windows, Marienthal and the Church of Maria Grün, Hamburg-Blankenese, c.1935-36. Stained glass.

114. Theo van Doesburg. *Dans I*, 1917. Stained glass.

115. Theo van Doesburg. *Vrouwekop*, 1917. Stained glass.

116. Theo van Doesburg. *Composition II*. Staircase window, Katwijk aan Zee, Rotterdam, 1917. Stained glass.

117. Theo van Doesburg. *Composition III.* Domestic window, Antoniuspolder, 1917. Stained glass.

118. Theo van Doesburg. *Study of a seated nude*, c.1917. Sketch.

119. Theo van Doesburg. *Composition IV.* Staircase window, De Lange Town House, Rotterdam, 1917. Stained glass.

120. Theo van Doesburg. *Composition in Discords*, 1918. Stained glass.

121. Theo van Doesburg. *Counter Composition XIII*, 1924. Stained glass.

122. Josef Albers. *Rhenish Legend*, 1921. Mosaic patterned coloured glass.

123. Josef Albers. *Figure*, 1921. Mosaic patterned coloured glass.

124. Josef Albers. Stair Hall, Grassi Museum, Leipzig, 1923-4. Stained glass.

125. Josef Albers. *Glass Assemblage*, 1921. Stained glass.

126. Josef Albers. *Stufen*, 1931. Sandblasted flashed glass.

127. Josef Albers. *Rolled Wrongly*, 1931. Sandblasted flashed glass.

128. Josef Albers. Sommerfeld window, Berlin, 1922. Stained glass.

129. Josef Albers. *White Cross* window, Minnesota, 1955. Photosensitive glass.

130. John Trinick. Photograph of *St Elizabeth.* East window, Maison Ste Elizabeth, Orphelinat, Chartres, 1930. Stained glass. (Photo. Sœur Jeanne Hélène)

131. John Trinick. Photograph of East windows, Maison Ste Elizabeth, Orphelinat, Chartres, 1930 Stained glass. (Photo. Sœur Jeanne Hélène)

132. John Trinick. Photograph of *St Paul.* Maison Ste Elizabeth, Orphelinat, Chartres, 1930. Stained glass. (Photo. Sœur Jeanne Hélène)

133. John Trinick. Baptistery and Rose windows, St Lawrence Church, Feltham, Middlesex, 1932-35. Stained glass.

134. John Trinick. Photograph of the East window, St Austin and St Gregory, Margate, Kent, 1935. (Photo. Maria Brown)

135. John Trinick. *Garden of Gethsemane* and *The Last Supper.* East window, St Austin and St Gregory, Margate, Kent, 1935. Cartoon.

136. John Trinick. Photograph of *St Teresa of Avila.* South transept, Our Lady of Dolours, Hendon, London, 1936. Stained glass. (Photo. Maria Brown)

137. John Trinick. East window, Salmestone Grange, Margate, Kent, 1938. Stained glass.

138. John Trinick. Photograph of Rose window, St Paul's Church, Dover, Kent, c.1945-48. Stained glass. (Photo. Maria Brown)

139. John Trinick. Photograph of *Creation,* West windows, Salmestone Grange, Margate, Kent, 1948-58. Cartoon and Stained glass. (Photo. Maria Brown)

140. Henri Matisse. Study for Chapel windows, Saint-Marie du Rosaire, Vence, 1950. Cartoon.

141. Henri Matisse. Main Hall window, Saint-Marie du Rosaire, Vence, 1951. Stained glass.

142. Fernand Leger. Audincourt, 1950. Dalle de verre.

143. Photograph of Thanet Crematorium Chapel, Margate, Kent, c.late 1950's. Dalle de Verre. (Photo. Maria Brown)

144. George Meistermann. *The Bottrop Spiral,* Bottrop Church, Bottrop, 1959. Stained glass.

145. George Meistermann. Chapel of St Antonius Hospital, Eschweiler, 1976. Stained glass.

146. Ludwig Schaffrath. St Peter's Church, Immemdof, 1974. Stained glass.

147. Ludwig Schaffrath. Aachen Cathedral Cloisters, Aachen, 1962-65. Stained glass.

148. Ludwig Schaffrath. Aachen Cathedral Cloisters, Aachen, 1962-65. Stained glass.

149. Ludwig Schaffrath. Aachen Cathedral Cloisters, Aachen, 1962-65. Stained glass.

150. Ludwig Schaffrath. Aachen Cathedral Cloisters, Aachen, 1962-65. Stained glass.

151. Ludwig Schaffrath. *Labyrinth window.* St Joseph's Church, Aachen, 1975. Stained glass.

152. Ludwig Schaffrath. North transept, St Joseph's Church, Aachen, 1975. Stained glass.

153. Ludwig Schaffrath. Nave windows, St Joseph's Church, Aachen, 1971-17. Stained glass.

154. Ludwig Schaffrath. St Marien Church, Bad Zwischenahn, 1970. Stained glass.

155. Ludwig Schaffrath. St Antonius Church, Hagen-Kabel; St Thekla, Merkstein; St Antonius Hospital Chapel, Hagen-Kabel, c.early 1970's. Stained glass.

156. Johannes Schreiter. Brandt collage, Meerwein Collection, Mainz, 1972. Papier-collé.

157. Johannes Schreiter. *Waiting for Godot.* Brandt collage, City Collection, Darmstadt, 1966. Papier-collé.

158. Johannes Schreiter. St Marienkirche, Dortmund, c.1969-72. Stained glass.

159. Johannes Schreiter. North apse window, St Laurentius, Niederkalbach bei Fulda, 1977. Stained glass.

160. Johannes Schreiter. *Heidelberg Series*. Heidelberg, 1977. Stained glass.

161. Lawrence Lee, Keith New and Geoffrey Clarke. Nave windows, Coventry Cathedral, Coventry, West Midlands, c.1950's. Stained glass.

162. Wilhelmina Geddes. *St Christopher*. Laleham Church, Staines, Middlesex, 1926. Stained glass.

163. John Piper. Nave window, Eton College Chapel, Windsor, Berkshire, 1958. Stained glass.

164. John Piper. *The Way, the Truth and the Light*. Three light East chancel window, Oundle School Chapel, Oundle, Northants, 1953. Stained glass.

165. John Piper. Baptistery window, Coventry Cathedral, Coventry, West Midlands, c.mid 1950's. Cartoon.

166. John Piper. Baptistery window, Coventry Cathedral, Coventry, West Midlands, c.mid 1950's. Stained glass.

167. Patrick Reyntiens. Photograph of *Christ in Majesty*. East window, St Michael's and All Angels, Marden, Kent, 1962. Stained glass. (Photo. Maria Brown)

168. Patrick Reyntiens. Photograph of Sanctuary windows, St Michael's and All Angels, Marden, Kent, 1962. Stained glass. (Photo. Maria Brown)

169. John Piper. All Saints Church, Misterton, Leicestershire, 1966. Stained glass.

170. John Piper. *The Light under a Bushel*. Nave window, Eton College Chapel, Windsor, Berkshire, 1962. Stained glass.

171. John Piper. *The Journey of the Magi*. Robinson College, Cambridge, c.1980's. Stained glass

172. Patrick Reyntiens. Baptistery window, St Margaret's Church, Twickenham, London, 1968-9. Stained glass.

173. Patrick Reyntiens. East window, St Margaret's Church, Twickenham, 1968-9. Stained glass.

174. Patrick Reyntiens. *Transfiguration*. One of three Library windows, Cowley Road Secondary School, Oxford, 1976. Stained glass.

175. Patrick Reyntiens. *Ulysses*, 1992. Stained glass.

176. The interior of Derby Cathedral, Derby.

177. Ceri Richards. Photograph of *All Souls*. Nave window, Derby Cathedral, Derby, 1965. Stained glass. (Photo. Wendy Nugent)

178. Ceri Richards. Photograph of *All Saints*. Nave window, Derby Cathedral, Derby, 1965. Stained glass. (Photo. Wendy Nugent)

179. Ervin Bossanyi. *Morning.* Stained Glass Museum, Ely, 1932. Stained glass.

180. Ervin Bossanyi. *Evening.* Stained Glass Museum, Ely, 1933. Stained glass.

181. Ervin Bossanyi. *Water.* Lavenham Priory, Lavenham, Suffolk, 1935. Stained glass.

182. Ervin Bossanyi. Staircase window, Tate Gallery, London, c.1937. Stained glass.

183. Ervin Bossanyi. *Peace & Salvation.* South transept, Canterbury Cathedral, Canterbury, Kent, 1956. Stained glass.

184. Marc Chagall. Photograph of Memorial & Chancel windows, All Saints Church, Tudeley, Kent, 1967. Stained glass. (Photo. Maria Brown)

185. Marc Chagall. Photograph of South Aisle windows, All Saints Church, Tudeley, Kent, c.1969. Stained glass. (Photo. Maria Brown)

186. Marc Chagall. Photograph of North Aisle windows, All Saints Church, Tudeley, Kent, c.1969. Stained glass. (Photo. Maria Brown)

187. Mark Angus. *Daily Bread.* West of North Door, Durham Cathedral, Durham, 1994. Stained glass.

188. Mark Angus. Domestic glass panels, c.1980's. Stained glass.

189. Graham Jones. Entrance Hall window. Colemore Gate, Birmingham, West Midlands, 1995. Plated, etched and sandblasted glass.

190. Graham Jones. Basement corridor, Shell-Mex Headquarters, London, 1987. Sandblasted stained glass.

191. Graham Jones. Basement Restaurant, Shell-Mex Headquarters, London, 1987. Sandblasted stained glass.

192. Graham Jones. Upper corridor, Shell-Mex Headquarters, London, 1989. Stained glass.

193. Graham Jones. Poet's Corner window, Westminster Abbey, London, 1992. Stained glass.

194. Graham Jones. Detail Poet's Corner window, Westminster Abbey, London, 1992. Stained glass.

195. Graham Jones. Curved glass screen, SmithKline Beecham Building, Harlow, Essex, 1997. Sandblasted and etched float glass.

196. Graham Jones. Detail Curved glass screen, SmithKline Beecham Building, Harlow, Essex, 1997. Sandblasted and etched float glass.

197. Bible Window NXV, Canterbury Cathedral, Canterbury, Kent, c.12th century.

Preface

Architectural stained glass has an immediate allure. The demands of art glass, influenced by architects and, perhaps even more strongly, by developing technology, has encouraged artists to challenge its use to an extent that is always surprising and often breathtaking. By its very nature architectural glass fosters a creative use of space; opening and fracturing the plane, taking the eye beyond the place in which it stands. Throughout the centuries its transparency and intangibility has seduced artists to push the boundaries of the medium and enter the arena of light and space manipulation.

As with most spectators it was these qualities of light and space that first drew my attention to the medium. Bridging the internal and external, stained glass windows, with their constantly changing patterns of light, bring vibrancy to the buildings they inhabit and fill them with life. However, it was not until I attempted to learn the mechanics of this craft that I realised how much more it entailed than simply soldering together beautiful pieces of cut glass to form a picture. I determined therefore to discover what it is that makes certain windows so special: what elevates them from craft to fine art.

I became aware at this stage of the dearth of information on the subject, particularly in regard to secular and contemporary glass and, of the few books that have been published, many are 'coffee table' editions lacking in any serious academic content. This in turn led me on a quest for material; visiting sites, questioning glaziers, artists, designers, architects, conservators and historians who, with unstinting support, have enabled me to gain an insight into the medium and explore the masterpieces in glass that exist across the centuries.

Beginning with the making of painted, narrative windows in Europe during the 5th and 6th centuries, I explore the development of art glass from its inception to the present day appropriation of industrially produced glass by contemporary artists and present the work of some of the best stained glass artists around the world, choosing a selection whose talents differ as widely as possible in style, reputation and experience.

During the course of this dissertation I discuss the history of architectural stained glass locating artists within contemporary artistic moments. I consider the relevance of the medium to the philosophy of the period in which it was constructed addressing the function of artistic styles in expressing social ideologies and practices. I evaluate the way innovations in the development of materials and architecture have been exploited and investigate the underlying issue of whether artists were, and indeed still are, motivated by technical advances or dogma. I debate the separation of art from craft, with the subsequent devaluation of applied art, and analyse stained glass windows, not just as pictures, but as crystalline areas in buildings, integral to their setting, which manipulate colour, lead and light to produce unique works of art. If 'unique works of art' they are, and that I think is indisputable, then why have they been, for so long, profoundly overlooked as such: prejudice against the craftsman as a creative artist in his own right; denigration of domestic and decorative arts, or simply the material itself?

As described by the British Society of Master Glass Painters stained glass is, principally, the art of manipulating coloured light within an architectural context; a technical art form in which the expressive elements of art and design combine with the disciplines of a craft. It is perhaps this marriage; this necessity to master so many elements that make it impossible to impose external parameters on artists working in glass. Indeed as most artists today are graduates from Art Colleges it is difficult and undesirable to make such distinctions between art and craft, and the artists themselves prefer not to be categorised. In the following chapters I robustly pursue the argument that there is no essential difference between artists working in fine or applied arts; that artists working in the medium of architectural glass do not receive the recognition that is due to them, and that the highest quality stained and painted glass can equal, if not surpass, similar work painted on canvas.

In his book *The Beauty of Stained Glass* Patrick Reyntiens states 'The art of stained glass has a noticeable habit of taking its stimulus from other arts that happen to be flourishing at the same time.'[1] I hope to disprove this commonly held opinion and demonstrate that stained glass has, at times, been the medium in which the hallmarks of certain styles have first appeared. I would suggest that, rather than a want of originality, it is the lack of an informed and constructive body of criticism that relegates stained glass from art to craft.

In this history of stained glass it has been necessary, for a number of reasons, to be somewhat ruthlessly selective in the choice of the work presented: politics, vandalism, wars and lethargy have, at times taken their toll on architectural glass but, despite such set backs, the overview is one of ongoing experiment and innovation which continues to gain impetus in this new century.

Introduction

> In spite of the great skill which has been employed upon stained glass, ancient and modern and employed in enormous amount; and in spite of the great and beautiful results achieved; we may well yet look upon stained glass as an art in which there are still new provinces to explore-walking upon the old paths, guided by the old landmarks, but gathering new flowers by the way.
> C.W Whall 1905[2]

The effects of light falling through coloured glass have always been a great source of fascination but stained glass is an unforgiving medium. Light, natural or artificial and constantly changing with the seasons, filters through the glass creating a kaleidoscope of colour mutations and artists can never be entirely certain how the finished work will look and perform once in place. Any miscalculations, such as colours too light or too dark, or lead lines too obtrusive will be revealed on installation when, unlike easel painting, modifications are virtually impossible. Glass is the only decorative material that allows this element of subtle change and unpredictability, and it is this variable quality that has continued, through the ages, to make it such a profoundly appealing and creative medium.

Throughout its history very little has been written on the careers of stained glass artists even though they are working in one of the most public of all the arts. The names of outstanding medieval glass painters such as John Thornton or Engrand Le Prince remain virtually unknown whereas their contemporaries working in other media have been the subjects of major academic studies *(illustration 1).*[3] There are myriad reasons for this: ancient works lost through deterioration or deliberate destruction, scarcity of documentary evidence and problems of interpretation for example. However, even without such obstacles to overcome, stained glass is to this day often the production of unnamed artists. Names such as Marc Chagall, Henri Matisse, Fernand Léger or John Piper may spring to mind but, already well established as painters before designing for stained and painted glass, their easel painting is inevitably accorded higher esteem. There are many artists today working in glass throughout the world, producing windows for all manner of public buildings, some of their work being in the latest idioms of contemporary art but, for various reasons, their names remain unknown to the general public.[4]

As Charles Winston pointed out in 1847:

> It is evident that the first step towards elevating glass painting to the rank it once held amongst the arts is to estimate its productions by those sound rules to criticism which are alike applicable to all works of art; and not by the sole standard of antiquarian conformity.[5]

Winston's book *An Inquiry into the difference of Style observable in Ancient Glass Paintings, especially in England: with Hints on Glass Painting by an Amateur* heralded the beginning of a new era with a plea for a more creative approach. His views, advocating the mosaic system rather than the glass painting of the 16th century, still favoured by the (then) modern Munich school, marked a decisive change from those prevalent in the preceding century.[6] Although rather too focussed on the past to enable him to make sound criticisms of the glass of his contemporaries, by constructing a detailed historical and stylistic classification covering the Early English, Decorated, Perpendicular, Cinquecento and Intermediate styles, his contribution toward a new awareness of all the elements which constituted a fine window (subjects, tints and textures, importance of lead-lines and saddle bars within the design), related to its surrounding architecture, was incalculable.

Indeed the need for an approach that brings the study of contemporary stained glass into line with other art forms has become more urgent with its increasing popularity. The viewing public of the 21st century still responds to the intrinsic beauty of the medium therefore, rather than merely accede to inherited criticism, it makes sense to move the discussion forward and discover what stained glass might mean for the audience of today. 'Glass art' has never been the same as painting, mosaics or sculpture, even though these disciplines have exerted an enduring influence on it. Unlike these arts, the fluctuating nature of daylight that plays through architectural glass gives it an element that is eccentric and unpredictable and ultimately beyond control. An appraisal of stained glass therefore suggests a slightly different set of criteria from those used in judging other forms of art as the work produced is so heavily reliant on an essential sensitivity to light. Perhaps a comparable argument could be made in relation to still life and even to the mid 20th century Post Painterly Abstraction of such as Helen Frankenthaler, Morris Louis and Richard Diebenkorn.

The luminous colour and brilliance of light in Frankenthaler's stain painting was achieved by thinning the oil paint and allowing large areas of light canvas to show through. This interest in light was further developed by Louis who refined the colour staining process within the new medium of acrylic resin paint. Acrylic resin offered a new quality of light reflection and refraction providing a luminosity and depth only equalled in the medium of glass. Diebenkorn's 1966 *Ocean Park* series, undoubtedly influenced by Matisse's *Porte-Fenêtre à Collioure* 1914, depict the landscape of the Pacific coast of southern California as seen through the large transom windows of his studio. Observed from behind the glass, the calm and airy sky and quiet planes of sea are given an additional crystalline light and encompassing blueness.

An exacting study of colour scales and relationships, the discipline of still life also afforded great possibilities for the manipulation of colour and light. Artists such as Jean-Baptiste Oudry (1686-1755) used his work *White Duck* as an opportunity to make a visual comparison of whites and Jean Simeon Chardin (1699-1779), by keeping his subjects at a distance, lost detail in favour of colour and form. In still life paintings the nature of the aesthetic experience is difficult to verbalise as it also deals with the characteristics of perception and light. For example Zurbarán (1598-1664) in paintings such as *Metalware, Pottery and Lemons* and *Oranges, Cup and Rose* floods normally darkened and non-optical space with brilliant, raking light as a device whereby vision is to be aroused from its habits of sloth and inertia, and made to see.[7] Nevertheless a stained glass window differs from other art forms because the light by which it is seen actually passes through it instead of just being reflected from it; thus using light to serve colour rather than colour in the service of light.

The first great law of stained glass according to Lawrence Lee is 'to conduct into the eye the energy of light as a kind of shock on the retina'; the second is that all transparent images conveyed by colour, line or form, interrupting a source of light, become transformed and are perceived as a unique visual impact.[8] Such is the power of light that a window with wide stone mullions holding an enormous grill of interlocking stanchions and horizontal bars, seen from the inside appears light and open, apparently without support. This spreading of light around solid interruptions is known as *halation*. In coloured glass light appears to expand or gather more with one colour than another and the greatest artists have used colour and space in this symbolic and inspirational way to appeal to the senses and the soul.

From its earliest history architectural stained glass has been commissioned by a client; either by an individual or more commonly by a commercial institution. Michael Baxandall analysed the motives of the client in 15th century Italy: 'the pleasure of possession, an active piety, civic consciousness of one or another kind, self-commemoration and perhaps self advertisement, the rich man's necessary virtue and pleasure of reparation, a taste for pictures' many of which hold true today.[9] Inevitably patronage and money have always been considerable factors in the history of art, no matter what the medium. In the past the Church was the greatest patron of the glass painters, but now many major companies together with civic corporations have introduced large areas of stained glass into their buildings. Architectural stained glass is an enormously expensive art form, the development and manufacture of the material an art in itself, therefore the collaboration of a client able and willing to pay plays an essential part in its creation. A commission, or sponsorship by a gallery, is usually a collective risk: the creation of a work of art facilitated by a combination of talent and material resources. Unlike a painting it is hardly possible for such work to be produced on speculation of finding a buyer. However, a client's involvement does not limit creativeness and originality or mean that an artist will thoughtlessly deliver ordered goods. In the long history of patronage it can be observed that significant major artists are seldom willing to compromise their personal talent and private intentions. For example Michelangelo, Matisse and Léger worked for the church, and even the vulgar municipal rivalry inherent in the building of the medieval cathedrals did not jeopardise the creativity of the artists and architects whom the church employed.

Despite such historical examples the medium is frequently considered compromised and the art of the stained glass artist denigrated because architectural glass is normally commissioned and must relate to a predetermined space. Andy Warhol, a key figure in the conceptualising of Pop Art in America in the 1950's and 60's, refused the distinction between what he termed 'commercial' and 'non-commercial' art, seeing 'commercial art as real art and real art as commercial art' claiming that ' ... 'real' art is defined simply by the taste (and wealth) of the ruling class of the period. This implies that 'commercial' art is just as good as 'real' art; its value simply being defined by other social groups and other patterns of expenditure.'[10]. Whatever the source of Warhol's ideas and material, once located in an art gallery that context determines a work as fine art. Unlike other arts, architectural stained glass has no history of independence and is seldom seen in a gallery context: not portable it is a difficult 'commodity' to buy and sell. It has been argued therefore that it is ultimately constrained by the architecture into which it is installed. However, to propose this is wholly to underrate the creative imagination of the artist and I would prefer to consider work in this medium as an innovative bridge between art and architecture, glass and stone and darkness and light.

'The separating of the art object' writes Ad Reinhardt, 'already separate in "time", from its original "place" and "use" casts off all of its meanings but one (i.e. art-as-art). The religious object that becomes a work of art as it moves into an art museum loses all its religious meanings.'[11] It could be argued that, whatever its location, art is seldom autonomous, free from any links with patron, place, time, thing or function outside itself. As opposed to the reproduction of a work of art which may be displayed anywhere, a stained glass window retains the one element which even the most perfect reproduction lacks: 'its presence in time and space, its unique existence at the place where it happens to be'.[12] Walter Benjamin terms the eliminated element 'aura' and adds ' ... that which withers in the age of mechanical reproduction is the aura of the work of art.'[13] In common with sculpture and painting, contemporary art glass is gradually becoming liberated from its dependence on place. Artists are now creating free standing windows and glass screens: not necessarily tied to place or to architectural style, or solely reliant on a natural light source these works do not 'wither', even in the context of a gallery, they still preserve their aura, authenticity and traditional roots *(illustration 2).*

Windows are an essential part of the architectural whole and, it has been argued, removed from their architectural setting lose much of their identity and meaning. International art glass consultant, Andrew Moor, states that once removed from its setting a stained glass window has little intrinsic value.[14] However this point of view is open to heated debate and one has to ask if the same argument would hold sway regarding an oil painting removed from its place above an altar for example, and placed in a gallery. Whole windows from St Denis have been removed from the interior they were intended to transfigure and, according to John Piper, '.... one's enjoyment of them thus isolated was not so different from the Rajah's gloating over handfuls of emeralds, rubies and other precious stones.'[15]:

A huge number of works by Morris and Burne-Jones and many of the windows of Wright, for example all of the Coonley House and most of the Martin House windows, now reside in museums and private collections. The fact that the glass has been dispersed and can be seen by a wider public in galleries and museums has contributed to its appreciation and popularity. Although, in some cases, this may have changed the meaning and perception of the work, aesthetically architectural glass makes a self-contained artistic statement: the symbolism, meaning and beauty embodied within the work itself. More prosaically its size, weight and difficulty to place make it an awkward buy for the art lover and therefore it is ultimately the market place that seals its fate as fine art.

The history of stained glass is one of continua' innovation based on ancient tradition, exploring new approaches to the raw materials. Since the Second World War contemporary designers have, once again, made a distinctive contribution to the evolution of the art and, in recent years, the range of opportunities open to them has enlarged with innovative stained glass now as likely to be found in public buildings or private houses as in religious settings. The last decade has witnessed huge growth and development in glass design (indeed some of the contemporary works I intend to present would not and could not have been created ten years ago) and a broader range of artistic styles and vocabularies has emerged due, in some degree, to technical innovations and methods consistent with modern building techniques and architecture. Despite the expansion of stained glass into secular contexts, there still seems to be an assumption that it is primarily a neo-Gothic, ecclesiastical medium and the paucity of published material in recent times, has encouraged this presumption to continue. During the course of this dissertation I propose to explode such myths and demonstrate that stained glass is, and essentially has always been, progressive and modern and continues to be an important medium of monumental art.

Chapter I: Origins

The means of colouring glass was first discovered in Egypt and Mesopotamia in the 3rd millennium BC. A thousand years later clear coloured glass objects were moulded, and by the 1st century AD Roman glassmakers had mastered the art of blown glass, which allowed vessels and thin transparent sheets to be made. Translucent and pierced screens of alabaster and glass in wooden frames were common in the Roman and Muslim worlds and, in the early Christian period, decorative glass windows appeared in churches. The predominant colours used at this time were blue, especially for the background, red, yellow and green. Violet, brown and white with a green or blue cast were secondary, and pinkish shades served as flesh tone. In describing the churches of Constantinople the poet Prudentius (348-c.410), impressed by the widespread use of glass wrote "In the round arches of the windows in the basilica shone glass in colours without number."[16] As there is no mention of narrative or of any painting on the glass, archaeologists have concluded that the glazing schemes of this period were most probably closely related to abstract mosaics.

The making of painted, narrative windows had its beginnings in Europe dating from the 5th and 6th centuries, although no complete windows survive there is literary evidence testifying to their existence.[17] It is known that window glass had been introduced into Roman Britain but coloured glass windows can be documented only from the Anglo Saxon period. The earliest English stained glass windows were those of Jarrow commissioned by Benedict Biscop and Monkwearmouth installed in 675, and the slightly later windows of the chapel of King Edwin at York. As no windows of this type have survived, simply unpainted pieces of coloured glass, they were thought to be no more than simple mosaics installed by Frankish glaziers as the knowledge of the craft had been lost in Britain *(illustration 3).* A cool, unobtrusive palette of greens, blues and pinkish purples were used together with shades of brown with very little evidence of red glass. Fragments of painted glass, depicting heads, were found in the Carolingian abbey of Lorsch, West Germany and in Wissembourg, Alsace dated from the 9th to the 11th century, and the practice continued in neighbouring countries as an already established craft of leaded and painted glass *(illustration 4).* However, it is not until examples such as those of the Augsburg Cathedral panels c.1123-30 with their single figure lights high in the clerestory, of the first Benedictine monastery at Monte Cassino 1090, Le Mans c.1090 and of St Denis 1144 that an idea can be formed of how complete windows must have looked *(illustration 5).* These were followed by the great French Gothic churches of Chartres, Notre Dame in Paris and Sens among others. Canterbury should perhaps be included with these French churches since the architect chosen to rebuild the choir, destroyed by fire in 1174, was the Frenchman William of Sens. Although much of the glass has been moved from its original positions, Canterbury, together with York Minster, are the only English cathedrals to contain any significant quantity of 12th century glass.[18] Even though little is known of the artists who designed and constructed these stained glass windows it is possible to recognise a creative tour de force: the *Ascension* at Le Mans, with its splendid colouring, the attenuated *Virgin and Child* at Vendôme and much of the vigorously drawn and sumptuously coloured glass of Canterbury, with its underlying sense of humour and humanity, are fine examples of Gothic stained glass *(illustration 6).*[19]

Gothic Stained Glass

Stained glass is central to medieval ideology and as much a part of Gothic architecture as soaring vaults and intricately carved porches. However, it was developments in architecture, rather than art, which fostered the proliferation of medieval pictorial windows.

The revolution in building construction in the 12th century saw an increase in massive newly built cathedrals.[20] Gothic interiors, integral to the whole concept of the building, were vibrant with the jewel-like luminosity of the windows whose reflections pierced and intercepted one another and created an overall atmospheric experience. The resulting unification, not only of the glazing scheme but also of the windows with the surrounding architecture, was one of the great achievements of the Middle Ages. The first flourishing of this art centred on the Abbey Church of St Denis near Paris, commissioned by Abbot Suger in 1144 to serve God "with all inner purity and with all outward splendour".[21] Reflecting on the writings of St Bernard of

Clairvaux, Abbot Suger saw in his windows a double symbolism: the new light of the Gospel illuminating the sacred subjects *(illustrations 7 & 8).*[22]

The gradual spread of Christianity was a unifying link across Europe and the doctrine of the Catholic Church: the Communion of Saints – the link between the pious dead and the living, and the Doctrine of the Incarnation – Jesus as both man and God, encouraged Christian art to focus on the human figure. It is this focus that is central to almost all medieval stained glass. Invariably most European art has been and is still, to some extent, influenced by early Christian iconography. For the 21st century viewer, early medieval art, through its clarity of pictorial form, may at first seem easy to understand. However, the apparent simplicity of the medieval prototypes is clouded by underlying concepts very different to those of today. Byzantine windows and the regulated light they gave forth were part of a complex iconography of light; the early Christian church being seen to generate light from within. Widespread medieval belief considered that glass, with its ability to transmit light, had the power to inspire visions. Its extraordinary translucence imbued it with transcendental overtones. In religious terms, light was a symbol of vital importance, used to describe the quality of the Spirit itself. During the 6th century a monk from Constantinople known only by his pseudonym 'Pseudo-Dionysius' wrote two treatises *The Heavenly Names* and *The Celestial Hierarchies* which, in dealing with the hierarchy of angels and the heavenly host, introduced the concept of light being the main constituent of matter. "All was made of light, and the light was the material reflection of the heavenly light, the wisdom of God".[23] By the mid 13th century Robert Grosseteste, Bishop of Lincoln and Chancellor of Oxford, had presented his paper *de Luce* which elucidated the theory that all matter was a form of condensed light. Writing in *The Gothic Cathedral* Otto von Simson states:

> In a Romanesque church, light is something distinct from and contrasting with the heavy, sombre tactile substance of the walls, the Gothic wall seems to be porous: light filters through it, permeating it, merging with it, transfiguring it ... Light, which is ordinarily concealed by matter, appears as the active principle; and matter is aesthetically real only insofar as it partakes of, and is defined by, the

> luminous quality of light ... In this decisive aspect, then, the Gothic may be described as transparent, diaphanous architecture. [24]

The effects of the stone being transformed into a 'transparent, diaphanous' material, are obtained by stained glass, but are also pertinent to the dominant medieval approach to scripture. The concept of 'claritas' as understood by these early philosophers being the visual quality of multiple reflection and transparency seen as indicating a higher moral order which reflected heaven and uplifted the spirit.

Light was a question central to the period and glass was a medium closely linked with it, as much to be looked through as to be looked at. It allowed both man's creation in its structure and design and God's creation in the heavens beyond. Erwin Panofsky in his *Gothic Architecture and Scholasticism* stresses the medieval bias for '*light through*'. The principle of the rationality in the senses as light through Being expounded by Erwin Panofsky is to be found everywhere in the study of medieval scholasticism, architecture and scripture. Gothic architecture and scribal culture also according to Marshall McLuhan, were both concerned with '*light through*' not '*light on*'. Referring to the dissension between the prophets and the scribes in Israel McLuhan argues that this theme of a dichotomy between the letter and the spirit 'enters into the very texture of medieval thought and sensibility, as in the technique of the 'gloss' to release the light from within the text, the technique of illumination as light *through* not *on*, and the very mode of Gothic architecture itself.[25] An important medieval assumption was that reality looked through the text, or the visual arts, at man and that by contemplation he was bathed in the divine light.

However, Marshall McLuhan believes that a certain amount of confusion was brought about when the visual sense became less well integrated with the other senses which in turn created this growing demand for '*light on*', rather than '*light through*'. As the sense of sight was more and more sharply separated the ability to release the spiritual light from within the narrative of the glass became increasingly difficult. Later technology encouraged a new visual intensity which came to require '*light on*' everything thus the spiritual and architectural cohesion of the medieval period was largely lost in ancient churches, abetted in no small measure by the introduction, for various reasons, of *grisaille* windows.[26] As von Simson states:

> Not that Gothic interiors are particularly bright … in fact the stained glass windows were such inadequate sources of light that a subsequent and blinder age replaced many of them by *grisaille* or white windows that today convey a most misleading impression. [27]

During the medieval period the Church wielded enormous power within the community and an essential feature of the oral culture of this period was the training of memory. Kurt Seligman states in *The History of Magic* that the stained glass windows clothed ideas in human form as mnemonic devices. *Ars Memorandi* c.1470 was preoccupied with the visualisation of the themes of the gospels. Images were created for each of the four gospels that suggested the stories in each chapter. Visualising these emblems made it possible to remember the stories contained in the entire gospel.[28]

A new way of 'seeing' and meditating on episodes from the bible was devised through the Spiritual Exercises of St Ignatius. Subjects went on retreat where they practised exercises in visualisation to correct inherently wayward vision. The theory was that passive vision, thought to be the norm, is unable to resist spectacle and darts in an unfocussed way from one marvel to the next. To combat this capricious, ordinary vision, the Spiritual Exercises, by removing the interference of worldly attractions, encouraged the gradual build up of brilliant images within the imagination. These powerful, luminous images focused all five senses on scenes from Hell, for example, with its fires, screams, sulphur and tears. Most importantly these images had to be sustained for a given period: the duration of three Ave Marias, the Paternosters and so forth.[29] This potent, elaborate construction of images banished the whims of 'fallen imagination' and deconditioned the habitual fatigue of worldly vision. Instead the viewer was distanced from his previous mode of seeing, and no longer overlooked ninety percent of the world in search of spectacle and the gratification of his own desires. Stained glass windows too, with their incandescence and impact, were an antidote to 'fallen vision', replacing the habitual and complacent laziness of seeing with their brilliance.

In the 19th century a consensus emerged amongst cultural historians that the primary function of stained glass was to illustrate the Church's teachings within an oral tradition. Yet the extent to which images were used didactically is a complex issue and recent studies have questioned this received wisdom.[30] Abbot Suger, in lavishing images and words on his new church, specifically excludes those unable to read:

> And because the diversity of the materials (such as) gold gems and pearls is not easily understood by the mute perception of sight (lacita visus) without a description, we have seen to it that this work, which is intelligible only to the literate, be set down in writing.[31]

That windows needed explaining to the layman is highlighted in Chaucer's *Canterbury Tales* when a group of pilgrims reveal their ignorance of the vigorously drawn images in the windows of the cathedral. In *Word and Image* Norman Bryson uses precisely this stained glass of Canterbury to illustrate his theory of the privileging of the word over the image: the iconographic scheme of the windows is shown as the wholesale subordination of the visual image to the biblical text.[32] As in modern advertising Bryson believes that the most abiding qualities are those attached to verbal components: "these will fix, while purely visual aspects, unanchored by text, will quickly fade into oblivion."[33]

Bryson uses the *Redemption* window in the Corona chapel of Canterbury Cathedral to elucidate his argument of the supremacy of the 'discursive' (features which show the influence of language over the image) over the 'figural' (features which show the image as a purely visual experience independent of language). One of the problems generally found in reading the glass is the complicated narrative patterns which were frequently favoured. The panels of the *Redemption* window form the common complex narrative pattern which would be almost impossible to understand if it were not for the Latin inscription indicating how the image as a whole is to be read. Bryson states that "The window displays a marked intolerance of any claim on behalf of the image to independent life. Each of its details corresponds to a rigorous programme of religious instruction."[34] The idea of the image taking on an independent life is discouraged: once the text has supplied the answer posed by the image the signal is given to the viewer to pass on to the next window. "With pedagogic imagery such terminal signposting is essential – left to his own devices the spectator might prolong his contemplation beyond the requirements of instruction. The inscription guarantees closure: the image must not be allowed to extend into independent life."[35]

Each of the images takes on the same kind of construction as a verbal sign: the signs resolving into the signifier and the signified. In Bryson's opinion the *Redemption* window plays down the independent life of its signifying material which, the nearer one gets, progressively gives way to "a cultivated transparency before the transcendent Scripture inscribed within it".[36]

Stephen Bann quotes Louis Marin's analysis to underpin his own assertion that a significant proportion of images is generated, not by the biblical texts, but by the intrinsic history of the building:

> The transparency of the stained glass window converts solar light (*lux*) into the resplendent illumination (*lumen*) of the dwelling of the church where the Word ... is covered in the mystery of moral flesh... The stained glass window makes of this light a figure: it configures it into a body of pure visibility. (Marin) [37]

In Bann's opinion even where the stained glass does represent biblical narratives, the function is still one of transmutation, and not the mere transfer of a textual material into a regulated figurative form.

Taking a more pragmatic approach Madeline Caviness suggests that the programmes in the monastic churches could not have been used as 'bibles for the poor' due to the fact that they were designed for the enlightenment of the monks and therefore, their subjects were too esoteric to be of any use for such a purpose. Looking into the possible ways that the windows could be 'read' Caviness discovered that they could not really be 'read' by the illiterate as, firstly, the windows do not customarily read like the pages of a book and secondly the narratives most often expand on events first described in the Vulgate bible.[38]

In an examination of the most popular story, the Joseph cycle, Caviness discovered that no two windows were alike; each window emphasising a different aspect of the story based on versions expanded beyond that presented in the Old Testament. In the various windows, depending on the context in which the figure is portrayed and the patronage, Joseph stands for Christ, the priesthood, a faithful steward, a younger son, a freed man, a visionary or an overseer. Caviness goes on to argue that since, in the Middle Ages, texts and pictures have equal autonomy, the public windows are as likely to have influenced texts as the other way round. Whether this is so can only be a matter of conjecture however, Caviness reaches the extremely plausible conclusion that these windows do not teach the bible to the illiterate, but rather present a more secular style of moralised stories and provide role models: "I tend to see these windows indeed as Bibles of the laity, but it is a Bible transformed into popular romance, more vividly reflecting contemporary sociological structures than esoteric spiritual truths."[39]

Michael Camille agrees that the didactic notion of images in the medieval period was tied to their capacity to tell stories. Implicit in the windows was a sense of mystery that was deemed as, if not more, important than the facts, thus allowing symbolism rather than naturalism to prevail. Camille sees the artist's problem was not so much naturalism but how to embody the role of the talking word. In the St Albans Psalter St Gregory describes a depiction of Pilate washing his hands with its open mouthed characters as a dumb show arguing that this "enactment of spoken narrative in visual form" shows the direct influence of contemporary drama.[40] The 'hellmouths' depicted at St Kew, Cornwall and Hengrave Hall, Suffolk for example *(illustration 9)*, taken directly from the enactment of the 'Harrowing of Hell' support this theory as does a crucifixion window at Stockerston, Leicestershire *(illustration 10)*, painted with great vitality, showing Jesus' hands holding onto large wooden pegs while being roped to the cross. It is also the case that many of the *tableaux vivants* adopted the iconography of the windows.

As Neil MacGregor perceptively points out the pictorial problem central to any representation of Christ is one of giving theological concepts human dimensions: how to portray a 'true likeness' of a God who became man; how his suffering should be shown, not as simply personal but cosmic, and how the fusion of his human and divine nature could be made clear.[41] Biblical texts often solve the problem through contradiction: God as both the Prince of Peace and the Suffering Servant; Saviour and Sacrifice; the sheep and the shepherd; powerful and resounding paradoxes in language, but virtually impossible to capture in a single image. The image must always be a choice, individual and specific, selected from many possibilities. If it is indeed only words that can explain the abstract mysteries then perhaps, as MacGregor argues, it is images that are uniquely able to address the omnipresent questions by touching the emotions.[42] It is interesting to note that, while an enormous amount of attention is given to the argument surrounding the question of image and narrative in the windows (when much of the glass is high in the clerestory, far out of range of the naked eye), by comparison very little attention is paid to their crucial architectural function: to modify and subdue the interior light.

During the late 12th century French and English stained glass were closely related both in the coloured glass, imported from Normandy, Burgundy or the Rhineland (throughout the Middle Ages, only clear glass was made in England) and in design. The earliest windows at Canterbury are those in the clerestory, probably completed by 1180. These windows included large figures, one above the other, representing the lineal descent of Christ from Adam. In lower windows the designer followed the example set by Abbot Suger at St Denis; dividing the light into medallions or panels of different shapes each of which depicted a scene which formed part of a sequence in a single story. The earliest of these twelve medallion windows, c.1178, in the north and south choir aisles and the transepts are devoted to 'types' and 'anti-types': a scene from the New Testament being associated with one or more from the Old Testament which prefigured it. Following the martyrdom of Thomas à Becket in 1170 Canterbury became a major centre of pilgrimage. In 1220 a new shrine was erected for his body in the Trinity Chapel. The surrounding aisle windows, devoted to his life and the miracles performed after his death, were illustrated with great visual economy. The colourful dramatic intensity induced by a combination of deep reds and blues create a rich and glowing effect making the windows some of the masterpieces of English stained glass of the period *(illustration 11).*

The perfection of vaulting and the flying buttress in the last quarter of the 13th century eliminated heavy load bearing walls thus allowing the introduction of more and much larger windows: the rounded Norman style gradually giving way to single pointed lancets; later in the century two or more being placed side by side. A wider range of colours, purples, dark green and yellow hues were added to the French repertoire of colours. This, in turn, inspired a greater variety and skill in stained glass, the colour and style of which now beginning to show affinities with contemporaneous manuscript illumination. *Grisaille* glass was becoming popular demonstrating the general move, by the end of the century, away from the extravagant colouring of earlier years.

The monochromatic panes of *grisaille* glass with black or brown painted outlines were favoured by the Cistercians who forbade the use of coloured or figurative glass in their own churches. They were also used in cathedrals for variety, to admit more light, to diminish the intensity of the blue or to accentuate contrasting colours. The glass used was mainly white, thinly painted in outline with black foliage patterns. Occasionally fragments of coloured glass were included to give variety. The *Five Sisters* in the north transept at York Minster is an outstanding example which could not have been created with cost-cutting in mind. The old glaziers made their white spaces interesting when they *diapered* their *quarry-glazing* and did such fine *grisaille* work. That each piece of glass was handled with loving care and treated on its merits to bring out the quality of its texture almost goes without saying. The whole surface of the five simple Early English lancets is glazed in delicately varied and irregular tints of whites, pale greys and pale ambers with tiny shards of blue, red, yellow and purple enriched with freely and beautifully drawn patterns of interwoven foliage (*illustration 12).* The result resembles a huge piece of jewellery: the points of colour leading the eye across the surface of the series while the gentle, luminous background cleverly suggests a shimmering perpetual movement within the glass.

Between the 13th and 14th centuries the transition from the simple Early English to the more baroque Decorated style introduced great changes in the Gothic architectural style. Windows became larger, longer and narrower, made up of two or more lights within one arch, separated by stone mullions and terminating in acutely pointed trefoil or cinque-foil heads with tracery lights at the top: these changes brought with them certain difficulties for the glass designer. This new style of window led to the evolution of glass designs, precluding the use of huge figures or complicated patterns of medallions, as in the wide single lights at Canterbury. The canopy and pedestal assumed more and more importance; their painted plain white glass giving greater prominence to the main, coloured figure or scene. Proportionally figures were created to fit the space allotted to them; most were tall and slight with narrow shoulders but occasionally squat, thickset figures made an appearance until, towards the end of the century, kneeling or half figures were introduced. Borders and tracery lights, containing a wide variety of designs, were important features of this period. The most common being repeated patterns of natural foliage such as oak, ivy, hawthorn or vine leaves drawn in matt on white and set on one or two colours. They were no longer restricted to individual shapes of glass but were allowed to grow in sprays over the whole window. The lily, as a symbol of the Virgin Mary, was also popular. Another feature of the Decorated style was the increase of heraldry and the appearance of donors, often participating in biblical scenes.

Although impossible to state with any conviction whether this change of mood inspired the evolving technology or vice versa; in tandem with fresh artistic creativeness came important new technical developments in the medium.[43] Made by applying a chloride of silver or silver nitrate and mixing it by heating at a low temperature, *silver* or *yellow stain* was introduced into glass, thus creating the generic term by which the craft of glass painting became known. Popular from that time on this colour, which ranged from pale lemon to rich amber, was used for such items as crowns and halos and to add touches of gold to a head, where formerly a separate piece of glass would have been leaded on. Intermediate tones were added; tawny brown and olive greens were used together with much more white glass. This style continued, with only subtle changes, into the 15th century; the glass now appearing more transparent due to the use of a large quantity of white, fewer, paler colours and a softer, more realistic, detailed, subtle and crisp style of drawing with the leads playing a less important role in the design. Narrower borders using a simple strip of white glass or no borders at all became common; the shafts of the canopy extending to the edge of the stone work. The loss of the border to a window could be compared to the removal of the architrave from a door: there is nothing to function as an intermediary between glass and architecture resulting in a stark transition and subsequent loss of architectural cohesion. With the rise of a wealthy middle-class, this century also saw the increase of secular stained glass intended purely for domestic settings. Narrative acquired enormous importance and subject matter became far richer and more varied. Roundels of the *Labours of the Months* became popular bearing a striking similarity to 17th century Dutch genre painting.

The Middle Ages saw the rise of stained glass from its obscure early development to a position of pre-eminence among forms of monumental painting in northern Europe. Apart from the functional purpose and aesthetic role of bringing light and colour into a building these windows were used, in a very direct way, to convey to the congregation the signs and images central to the Christian faith. Thus the medium could be interpreted theologically as a powerful symbol of God's presence in the world. Stained, painted and leaded glass flourished as a major art form in Gothic Europe (around the mid twelfth to sixteenth centuries) thriving in the developing technology and an architectural climate that sought to eliminate the solidity of the masonry and substitute ever larger and more decorative windows.

Renaissance Glass Painting and the Decline of the Art

With the 15th century establishment of the Perpendicular style and its huge increase in window space came a demand for more and more stained and painted glass. Glass painting rather than glazing became the prominent feature. Glass painters began to use larger pieces of glass in their panels, the painted pictures drawing the eye across the whole of the window surface; the lead lines no longer playing such a conspicuous part in determining the outline of the drawing. Aerial perspective was introduced with the invention of a staining blue. The effect of different strengths of *silver stain* on blue turns the blue to various shades of green while the blue itself could vary from light to heavy, thus allowing the creation of naturalistic receding landscapes. Depth was achieved by staining onto a background of misty blue-grey glass: the foreground of a narrative scene with a combination of different strengths of *sliver stain* with the background given only the lightest paint and indistinct detail.

In 1615 James I, concerned about deforestation, issued an edict preventing glass manufactures from using wood fuel in their furnaces. Developed as a substitute, the coal furnace generated far greater heat which improved the quality and clarity of the glass produced thus making English glass the most sought after in Europe for decades to follow. Notwithstanding the introduction of such technical and artistic innovations, including *etching* and *enamelling*, stained glass declined as an art form: on one hand due to the consequences of the Reformation which resulted in the destruction of Roman Catholic imagery and on the other the predicament facing glaziers trying to imitate panel or fresco painting. Coupled with this, buildings were being designed with windows of a size and shape which imposed tremendous stress on the fragile material.

The Renaissance style of northern Europe influenced artisans to paint pictures on, rather than with, glass. In the middle of the century enamel colours were discovered, probably in the Netherlands.[44] The effect of different colours could now be achieved on a single large piece of glass by an *enamelling* technique (ground coloured glass, mixed with a stabilising solution and fired onto clear glass), thus dispensing with the need to use individual small panels of colour, which had created the beauty of earlier stained glass. These enamel colours were painted directly onto the glass, negating the need to cut individual shapes from a sheet of *pot-metal* glass thus allowing the glass to be regular shapes. Increasingly the practice of using larger, rectangular panes meant that leading no longer served an aesthetic purpose and it therefore became sparse and purely functional.

The deliberate imitation of frescoes and oil paintings, tried to add a third dimension to an art which had always been essentially two dimensional. It attempted to simulate volume, made figures rounded rather than flat, introduced a more realistic perspective, particularly in architectural and landscape settings and thus succeeded in making traditional stained glass unfashionable. While the northern Renaissance style is evident in churches throughout England it must also be said that it had little or no effect on many English glaziers working in the first half of the 16th century.[45] Introduced by Flemish artists, it was unpopular with many in England who maintained that it denied the essentially two dimensional nature of the medium.[46] It could also be argued that Renaissance glass clashed with the traditional art of stained glass in an even more fundamental way. Renaissance artists working with stained glass were interested in the human body and its concrete surroundings: naturalistic figures were either surrounded by interiors filled with their possessions or set in rather solid landscapes dotted with buildings. The somewhat materialistic nature of the designs, coupled with heavily stippled shading, and later *enamelling*, resulted in a loss of the simplicity, strength and brilliance and thus denied the transcendental quality that had been central to the earlier glass. It certainly posed problems for the designers who were faced with the difficulties of carrying the design (which was no longer to consist of small pieces of coloured glass separated by *cames* and confined within each panel), across the entire space of an aperture that was still purely Perpendicular in style: i.e. divided into tiers with mullions, transoms and often tracery. The huge east window of King's College Chapel in Cambridge illustrates this dilemma (which still existed in the 1930's as evidenced in M. F. Pawle's south aisle window at St Mary's Church, Slough for example) and the solution the glaziers worked out *(illustrations 13 & 14)*.

Largely discarding the traditional canopied frame and ignoring the stonework, the glaziers divided the window in half horizontally and allowed the scenes to unfold across the whole plane, with a clearly marked foreground, middle ground and background. Although artists aimed for a balance between the vertical and horizontal, this solution was somewhat of a compromise as, in some windows, the discrepancy between the height and width is disproportionate. Also the complex architectural features painted on the glass in the Renaissance style are at odds with the fan-vaulted English Gothic architecture of the Chapel itself. Whether the Renaissance style was appropriate to glazing and whether or not it began a long decline in the art of glass painting may be open to question but King's College Chapel is, nevertheless, a masterpiece of great virtuosity and technical skill. However, its mature Renaissance elements marked the end of the medieval tradition in England as, just at the moment when the Renaissance was beginning to have an impact on the appearance of stained glass, the Reformation of Parliament took place.

The English revolt against Rome was national, unlike many of its European neighbours. Although the political break was triggered by Henry VIII's desire for a divorce from Catherine of Aragón, the atmosphere for revolt had been set by 14th century reformer John Wycliffe. Wycliffe attacked the papacy striking at the sale of indulgences, pilgrimages, excessive veneration of saints and the moral and intellectual standard of ordained priests. Thus the King and Parliament acted together to transfer to Henry the ecclesiastical jurisdiction previously exercised by the Pope. Between 1536 and 1539 monasteries were suppressed and obedience to the papacy and adherence to Catholic doctrine was a criminal offence punishable by death. The iconoclasm that followed the Reformation saw the destruction or removal of many ecclesiastical artefacts. In many churches the stained glass depicting Catholic imagery was smashed and replaced with clear glass, the decorative borders were often left however as they included no form of idolatry. The removal of religious narratives and the subsequent loss of their most important patrons had a lasting effect on the glaziers who were forced to find alternatives. Virtually all that remained to them was heraldry or studies of nature. The guilds declined leaving many craftsmen only capable of leading simple designs in clear glass.

For English glaziers it was primarily the existence of enamel colours which allowed them to continue their craft as war in France saw the destruction of the Lorraine glass factories by Louis XIII and the subsequent collapse of trade with English glaziers.[47] Almost entirely reliant on exported coloured French glass, English glaziers were left with little more than matt, stain and enamels with which to work. Unfortunately enamels had several drawbacks: the applied colour, especially blue, had a marked tendency to flake, taking with it part of the surface of the glass and leaving unsightly patches, while the smooth, thin, fragile glass essential to exhibit *enamelling* to its best advantage, combined with the reduction in leading resulted in what is sometimes referred to as the 'dark age' of glass painting. In France, even as early as this, coloured glass does not seem to have been substituted for enamels to the same extent as the rest of Europe which, together with their ability to capture the spirit of earlier work, made French glass richer and more effective. In the second decade of the century, encouraged by William Laud, former Chancellor of Oxford University, then Archbishop of Canterbury, there was a short-lived revival of pictorial religious glass painting; centred in Oxford and mostly carried out by the Dutch van Linge brothers from Emden. Using enamels, due to the scarcity of the *pot-metal* colours or *flashed* glass which had been readily available to the medieval artisans, these artists painted separate squares of glass which were fired then leaded together to form a grid.

Considered by Charles Winston to be 'deficient in brilliancy' these large, richly coloured pictures with landscape backgrounds, extended over the whole surface of the glass irrespective of the mullions. Abraham van Linge's windows, constructed for the chapel of University College in 1641, exemplify their work.

Following the Civil War of 1642 however, all glass painting was halted. Laud was executed, the Dutch glaziers left England and another out-break of iconoclasm ensued. In 1643 and 1644 ordinances were issued and parliamentary visitors appointed to oversee the destruction of thousands of religious images: particularly Christ on the Cross, the Virgin Mary and the Three Persons of the Trinity, which was considered blasphemous and superstitious (*illustration 15).*[48] Emanating from Rome, the influence of the Renaissance and baroque had continued to grow throughout Europe during the 17th century but it was not until the end of the Commonwealth and the Restoration of the Monarchy in 1660 that stained glass in England began to be produced again on any scale.

The 18th century saw the virtual disappearance of stained-glass making in Europe, with England alone continuing the tradition. Emulating easel painting, a practice which heralded disaster for the integrity of the medium, the larger glass studios frequently used cartoons produced by the leading painters of the day. These designs sacrificed the honesty of stained glass, turning the resulting work into somewhat pretentious and showy painted pictures. The practice of painting with enamels on a white glass background can be seen as a sad substitute for the lustrous colour, depth and sparkle of stained glass which it attempted to ape. Such a work is the controversial, west window of New College Chapel, Oxford, commissioned in 1777 to replace a 1765 William Peckitt window which had been condemned for bad draughtsmanship.[49] The new window was constructed and painted in enamels by Thomas Jervais after Joshua Reynolds' originals (*illustrations 16 & 17).*

In January 1778 Reynolds wrote to the Reverend John Oglander, Warden of New College regarding his proposed commission:

> I have inclosed a drawing copied from that which was sent to Mr Jervais, leaving out what I wish to be removed …The advantage the

> window receives from this change is so apparent that … every person to whom I have shewn it approve(s) of the alteration.[50] … This change by no means weakens the window, the stone pillars which are removed, suppo(r)ting only the ornament(s) above which are removed with it.[51]
>
> Supposing the scheme to take place my Idea is to paint the great space in the centre *Christ in the Manger,* on the principle that Correggio has done it in the famous Picture called the *Notte,* making all the light proceed from Christ, these tricks of the art, as they may be called, seem to be more properly adapted to Glass painting than any other kind. This middle space may be filled with the Virgin, Christ, Joseph and Angels, the two smaller spaces on each side I shall fill with the shepherds coming to worship, and the seven divisions below filled with the figures of Faith, Hope, and Charity and the four Cardinal Virtues which will make a proper Rustic Base or foundation. For the support of the Christian Religion upon the whole it appears to me that chance has presented to us the materials so well adapted to our purpose, that if we had the whole window of our own invention and contrivance we should probably not have succeeded better.
>
> Mr Jervais is happy in the thought of having so large a field for the display of his Art and I verily believe it will be the first work of this species of Art that the world has yet exhibited." *(illustration 18).*[52]

In this work the white glass background is divided into rectangular quarries and painted with opaque enamels in much the same way as a canvas is with oil paint. Reynolds introduced a subtle and novel palette of browns and greys, almost imperceptibly blending the shadows by deeper tints of various local colours. On a blue-grey background cavort a succession of sugary, sentimental young women, more fitted to the chamber than the church. These figures seem to have little religious significance and are far removed from the vigour and sincerity of the medieval glass painting to be seen in Thomas of Oxford's 14th century companion windows. Jervais' additions - the flimsy neo-Gothic canopies above the Virtues -

make little sense architecturally and the whole is crudely divided by a rectangular grid of heavy *re-bars*. In addition to a 'want of uniformity' which concerned Jervais, natural changes in the direction of light partially block out the images painted on the glass. [53] However, the work is somewhat redeemed in the early evening when the setting sun saturates the glass and its surrounding area with a theatrical golden glow.

Reynolds, the first president of the Royal Academy and foremost portraitist of his day, went to great pains with his cartoons. Relying heavily on portraiture, he used society figures and members of his family to sit for him, Mrs Sheridan as Mary and Charity for example, while the shepherds immediately to the left of centre were modelled on himself and Jervais *(illustration 19).* This might well have impeded his attempt to capture the spirituality which was the essence of his subject. For example, whilst Mary, as portrayed by Mrs Sheridan, may well have expressed a genuine maternal feeling, Reynolds' work was perhaps too corporeal and personal a portrait to signify successfully the abstract nature of the Virgin Mary and the Incarnation. However the greater problem, clearly evident once the work was translated into glass was that of Reynolds' lack of understanding of, and sensitivity to, his material.

Inexperienced in working with the medium Reynolds still worked as for oil on canvas rather than attempting to use lead-lines to advantage and capture the special quality of light through glass. As he told the poet W. Mason "it was meant that they (the cartoons) should be drawings" however, during a later visit, Mason saw the figure of Faith painted on canvas. Reynolds explained that he had used pallet and brushes for so long that he found it easier to paint than to draw. "Jervais, the painter on glass," says he "will have a better original to copy; and I suppose persons hereafter may be found to purchase my paintings"[54] Indeed this was the case.[55]

Initially Reynolds exhibited the work at the Royal Academy as oil paintings where they were heavily criticised by Horace Walpole, the arbiter of the 'Gothick' revival.[56] At a time when glass painters such as Jervais were producing heavily enamelled windows, Walpole advocated the aesthetics and techniques of what was almost a lost art. Before the installation of the windows in New College Walpole wrote to a friend:

> Mr Essex agreed with me that Jarvis's (sic) windows for Oxford, after Sir Joshua Reynolds, will not succeed. Most of his colours are opaque, and their great beauty depending on a spot of light for sun or moon is an imposition. When his paintings are exhibited at Charing Cross, all the rest of the room is darkened to relieve them. That cannot be done at New College, or, if done, would be too dark. If there is other light the effect will be lost. [57]

And afterwards, his opprobrium justified, he wrote to another friend:

> I foretold of their miscarriage. The old and the new are as mismatched as an orange and a lemon, and destroy each other; nor is there room enough to retire back and see half of the new; and Sir Joshua's washy Virtues make the 'Nativity' a dark spot from the darkness of the shepherds, which happened, as I knew it would from Jarvis's colours not being transparent. [58]

The blame for the failure has been, to some extent, laid at the feet of Jervais' translation. However, Jervais could only work with the available materials: enamels were not particularly translucent at the time; neither did he dictate the artistic style. He had in fact recommended that Benjamin West (later to succeed Joshua Reynolds as President of the Royal Academy) prepare the cartoons, it was the College who invited Reynolds to do so. Therefore, I would rather argue that Reynolds should have made an effort to understand the medium in which he was working thus allowing himself more authority in the translation of his cartoons into stained glass. The failure of these windows make it patently obvious that eminent easel painters will not necessarily be capable of designing outstanding stained glass, however later patrons did not learn from this misconception. In 1857, on the advice of Charles Winston, several prominent German artists from the 'Munich' school of stained glass painters (a school which ignored or camouflaged the leadlines in favour of painting a picture over the whole surface of the glass) were commissioned to re-glaze Glasgow Cathedral. Winston had, by this time, become incredibly out of touch believing 'Munich' glass superior to anything British designers could produce. The tabloid press of the day regarded the enterprise as the snobbish mistake of trusting great names. Few windows now remain as subsequent generations judged the undertaking a calamity. As Christopher Whall, a major figure in the Arts and Crafts Movement and one of the key figures in the post-medieval revival of stained glass, emphatically remarked in 1905:

> I am not certain whether, to get the best results, one should do all the work oneself but I am absolutely certain that one should be *able* to do the work oneself-that is the key.
>
> Think in glass when drawing the cartoon. The art must set the craft simple problems; it must not set tasks that can only be accomplished by trickery or by great effort, disproportionate to the importance of the result.[59]

If others, such as Horace Walpole, could foresee problems with the Reynolds' window it is surprising that Reynolds could not; and Walpole was not alone in his distaste for the new windows. John Byng, Lord Torrington believed 'these twisting emblematical figures' appeared to be 'half-dressed languishing harlots', preferring the 'old high coloured paintings and their strong steady shade'.[60] Nevertheless many, including the royal family, admired the work, some even regarding it as a move forward in the art of stained glass. It is obvious from Reynolds' response to Thomas Warton's (historian of English poetry) *Verses on Sir Joshua Reynolds's Painted Window at New–College Oxford*, published in 1782 that, initially at least, he was pleased to have his name associated with it:

> This is the first minute I have had to thank you for the Verses which I had the honour and pleasure of receiving a week ago … It is short, but it is a complete composition; it is a whole, the struggle is I think eminently beautiful …
>
> It is not much to say that your Verses are by far the best that ever my name was concerned in. I am sorry therefore my name was not hitchd in in the body of the Poem, if the title page should be lost it will appear to be addressed to Mr Jervais.[61]

But, perhaps belatedly coming to a better understanding of the possibilities of the medium, Reynolds was hugely disappointed once the designs were in place. He told Mason:

> I had frequently pleased myself with reflecting, after I had produced what I thought a brilliant effect of light and shadow on my canvas, how greatly that effect would be heightened by the transparency which the painting on glass would be sure to produce. It turned out to be quite the reverse.[62]

Mason himself 'grieved' to see Reynolds 'laying loads of colour and varnish' on the cartoon and was concerned that the window would never stand the test of time. Indeed his fears were well founded as much of the glass of the 17th and 18th centuries was replaced in the gathering momentum of the Gothic Revival (even as late as the end of the Second World War it had been decided that Reynolds' 'tasteless' window should be permanently removed; it was only the vehement resistance of Sir John Betjeman which gave it another reprieve) but fortunately the Reynolds window still stands as a monument to its time.

Throughout late medieval Europe glass painters were influenced by artists working on frescos and panels. Although in Europe this seems to have led to collaboration between glass painters and artists in other media, in England it contributed to the demise of the guilds, unable or unwilling to match the modern styles of the Flemish glass painters.[63] The previous century's use of colour on, rather than in, glass continued into the 18th century when, with somewhat disastrous effect, artists relied on their skills as painters to fill a glass canvas with a picture that ignored the inherent beauty of the material, the leadlines and the glazing bars. During the 19th century however, this began to be displaced by a return to the skill of the medieval craftsmen and the rediscovery of the beauty of the material itself.

The Gothic Revival

When the art of stained glass was revived by the Gothic movement in the early part of the 19th century, the huge demand for stained glass windows created difficulties for artists who could not, and often did not wish to, meet the demand for Gothic figures, generally preferring to draw in a more contemporary style rather than merely imitate the past. To bridge the gap stained glass was taken up as a trade. Trade did not have the same aesthetic 'niceness' as art and filled the demand for sham medievalism; the cut and dried repetition in the commercial stained glass of the day, so different to the originals. Artists were dispensed with and the artistic quality of the medium deteriorated. Although the first crude idea of the Gothic revivalists was, to some extent, mitigated by the refinement of public taste which compelled the more prominent firms to employ artists for important commissions, the majority of the work was still carried out by unknown employees to a prescribed style.[64] Consequently the reputation of Victorian glass has suffered. Unfortunately, largely through lack of interest, some beautiful examples of the period have remained unattributed. Glass such as much of that produced by the firms of Pugin and, later, Morris is, without doubt, the best to be seen in three hundred years.

Frustrated by windows such as Reynolds' and the emergence of insipid reproductions of the Gothic, together with his own inability to equal the quality of medieval work, the Catholic architect Augustus Welby Pugin (1812-52) began to investigate some of the original methods of the medieval craftsmen. Striving to emulate the conviction and skill of the 13th, 14th and 15th century medieval artisans he emerges historically as a principal force in the architectural Gothic Revival: not only as the most important figure in stained glass until his early death, but as the most significant influence on the medium for many years.

After his conversion to Catholicism Pugin absorbed romantic ideals emanating from Europe together with the emotional ideology of Christian Art developed during the reaction to the French Revolution. Certain architectural historians believe that his thoughts on architecture also have strong links to France. Referring to the willingness of other architects of the day to work in any number of styles a reviewer, in 1844, thought Pugin unusual in that he was: 'almost the only architect in England who has seen the absurdity of this cosmopolitan practice'.[65] Rather it was his increasing association of Gothic revivalism with religious belief which led to his moving from early stylistic mixtures – seen in buildings such as the 1835-36 St Marie's Grange near Salisbury, described by Phoebe Stanton as 'an architectural ensemble that must have startled the passengers on coaches passing along the road' - to an art that was more and more Gothic.[66]

Naively convinced that better architecture and design would be achieved through social and religious reform Pugin did not separate architectural principle from religious conviction. The resulting sense of confusion is embodied in his book The True Principles of Pointed or Christian Architecture. Biographers such as Michael Trappes-Lomax and Phoebe Stanton believe this reflects the inner turmoil of an impetuous man fighting for his values without considering where such reasoning would leave him. It is however, difficult to believe that Pugin was unaware of the central paradox of his theory: improved design makes for a better society, but design cannot be improved until society is better. It would seem more probable that, rather than being unconscious of the fact that such thoughts would leave him stranded, he was unable to achieve a satisfactory solution. Stanton argues that it was only Pugin who saw buildings as projections of the way of life in which they were produced, but many of his successors also held the belief that there was a cross-over between design and the state of the nation.

Rosemary Hill argues that Pugin came closer than his successors ever did to the integration of life, art and work; the ideal of dignified labour. 'Working at home, he never kept a clerk, his workmen were often also his friends and he dealt with them on fair and open terms'.[67] In these statements Hill not only takes a somewhat benign view of Pugin but also chooses to ignore key figures of the Arts and Crafts Movement such as Christopher Whall. Morris and Burne-Jones did indeed hand over the more menial workshop tasks to 'clerks' but Pugin's decision not to employ a clerk could perhaps more justifiably be contributed to his irascible temperament than to his socialist convictions. When asked why he did his own drawings rather than giving the mechanical part of his working drawings to a clerk he replied "Clerk, my dear sir, clerk, I never employ one; I should kill him in a week".[68] The 'workmen' referred to are more likely to be manufactures such as Hardman and Hubert Minton (ceramics) and the builder George Myers, all of whom readily understood the detail and spirit of Pugin's work and needed little supervision and control. In response to

C. Bruce Allen's request in 1852 for assistance in establishing a museum of architecture and school of art for artist-workmen Pugin states:

> Workmen are a singular class, and from my experience, which is rather extensive, are generally incapable of taking a high view on these subjects,-and ready at a moment to leave their instructors and benefactors for an extra sixpence a day for the first bidder that turns up. I have been all my life instructing men while others profited by the result of my labours. In the present state of society and the total absence of anything like the faith and religious feeling that actuated men in past ages, I believe it is impossible to do much good...[69]

In stating the fundamental truth that employers have but a slight hold on their skilled workmen but disregarding circumstances which will often compel them to seek the highest reward for their labours Pugin displays none of the 'self consciousness or sentimentality that hampered the Oxford-educated Ruskin and Morris in their dealings with craftsmen'.[70]

As Andrew Saint points out the main thrust of Pugin's writing intimates that obedience to his rules for design is a moral duty rather than a technical nicety. One can, and would feel inclined to argue against such a concept absolutely however, it may be worth considering that, if building and design merely followed the whims of aesthetic fashion it would be unlikely to be taken seriously as a symbolic or significant force in society either in its own time or that of succeeding generations. Perhaps it is possible, within the field of stained glass, to use the Reynolds' designs for the New College windows as just such an example.

It was these windows that Pugin cited in a lecture to students at St Mary's College, Oscott c. 1838 to illustrate his main objections to *enamelling*. Although he found the windows 'exquisitely beautiful ... in design and colouring', he berated both the subject matter and pictorialism as theatrical and pagan. On a more practical level, the fact that such designs ignored the mullions (appearing to pass behind them) made them unconnected with the stonework which caused tension between framework and glass. Echoing Walpole's criticisms, he stated that *enamelling* gave colours a 'want of brilliance' and led to the narrative being painted on to large squares of glass, rather than the colours being separated, as before, by lead-lines. This in turn made for a loss of definition of outline within a network of somewhat meaningless intersecting lines.

Beginning with designs for pottery and metalwork, it was with stained glass that Pugin made his greatest contribution to the regeneration of the ancient crafts. For Pugin the rejuvenation of stained glass was fundamental to the recreation of Gothic architecture and, for this reason, he gave it equal value. Pugin sought, not merely to produce imitations of medieval glass, but to absorb the whole spirit of the Early, Decorated and Late periods (i.e. the 13th, 14th and 15th centuries). Phoebe Stanton suggests that this inclusion of meaning and spirit added a new dimension: the reconsideration of the relationship between design and function, of buildings and the society they symbolised and of architectural and ornamental detail. Leaving aside the problems of achieving a true understanding of the spiritual impulse of so distant an age, Pugin was concerned with the unification of style, structure, purpose and decoration and had grasped the detail in all its aspects: drawing, painting and the glass itself.

Initially pleased with their work, Pugin became increasingly dissatisfied with and irritated by his relationships with his glaziers (William Warrington and Michael O'Connor - pupils of the designer of the south aisle windows of Ely Cathedral, Thomas Willement with whom Pugin also collaborated - and William Wailes).[71] Although not perhaps an altogether happy experience for these firms, it was one which modified and improved their subsequent work. It was with Warrington that Pugin undertook the East window of St Mary's, Oscott, Warwickshire in 1838 *(illustration 20).* This window, which was directly controlled by Pugin, demonstrates, both in colour and design, just how firm a grasp Pugin had on the principles of medieval stained glass. In spite of Warrington's painstaking and accurate attention to historical detail, left to his own devices there is a distinctly pedantic Victorian flavour to his work which, one could imagine, would displease Pugin as perhaps did O'Connor's individual and dramatic use of colour. However, it would seem from a letter to Lord Shrewsbury, written in 1841 after the completion of the apse window at St Chad's, Birmingham that it was Warrington's attitude rather than his inadequate drawing that most disappointed his employer:

> The Glass-Painters will shorten my days, they are the greatest plagues I have. The reason I did not give Warrington this window at the Hospital is this. He has lately become so conceited, (and has) got nearly as expensive as Willement.[72]

Pugin next turned to Willement, already well known as a designer and glazier, to construct his cartoons for the three light east window of the chapel of the Hospital of St John at Alton Towers for Lord Shrewsbury. Willement had been among the first of the Gothic revivalists to break away from the pictorialism of the previous century toward the mosaic style of the medieval glass painters. From 1812 to 1824 his work was purely heraldic and, even later in his career, heraldic designs numbered amongst his most accomplished *(illustration 21).* It was in the 1840's that his experiments with the medieval style bore fruit but, unlike Pugin, Willement, in common with Warrington and Wailes (Warrington's 1847 East window at All Saints, Lamport, Northants and Wailes' West window at Gloucester Cathedral 1859 for example) appears to have been willing to move seamlessly between the 18th century pictorial and the medieval traditions, adopting either on aesthetic rather than moral grounds according to the demands of the patron (*illustration 22*). The Willement-Pugin collaboration was of a very short duration, completing only the Alton Towers and Priory glass, owing certainly to Pugin's parsimony and probably to his irascibility and insistence on controlling every detail, as was his wont. In a letter the following year to Lord Shrewsbury Pugin complained: "... I believe that Willement thinks only of making money, and if he had a contract he spoils the job ...I will never work with Willement again."[73] Willement was duly replaced by Wailes of Newcastle, formerly a grocer and tea-dealer.

Newly established in what was to become a substantial stained glass business, Wailes worked with Pugin for four years completing windows at St Barnabus, Nottingham; St Giles, Cheadle and St Georges, Southwark. Pugin gleefully revealed to his friend Lord Shrewsbury:

> "In the article of stained glass alone, since I completed my arrangements with this northern man, a saving of 60 per cent over Willement's prices has in many cases been effected".[74]

The reasons for Pugin's split with Wailes are unclear although it seems plausible that he felt Wailes did not imbibe the feeling and spirit of medieval art and that, towards the end of their association, he also he began to consider Wailes preference for deep colours made the work too dark.[75]

Debilitated by increasing ill health Pugin concentrated his energies on furnishing buildings designed by others and architects began to appear on his list of clients for stained glass and metalwork. In 1845 Pugin began designing stained glass in collaboration with the manufacturer of ecclesiastical metalwork John Hardman of Birmingham, with whom he had worked previously. Having persuaded Hardman to expand his business into the manufacture of stained glass windows, Pugin set up a studio in his Ramsgate home employing Hardman's nephew, John Hardman Powell (who was to become his son-in-law). From time to time a team of men would arrive from Birmingham to live in and assist with the orders that were overwhelming the small studio. Thus in Ramsgate Pugin found himself with the overall responsibility for the running of a busy workshop: Hardman & Co, under his overriding authority, became the exemplar which others strove to follow. Their success did not prevent attacks on Pugin in the *The Ecclesiologist* and *The Rambler* (a new Catholic journal) beginning in 1848 causing Hardman to be worried that his business was under threat.

The manufacturing process was split between Pugin, in Ramsgate and Hardman in Birmingham, with Pugin making occasional forays to Birmingham for consultation. It was from Ramsgate that the preliminary sketches, full size cartoons and lead work designs were drawn up. Until his death Pugin produced all the sketches and designs, marking on the cartoons the exact colours required for their translation into glass. When pressure of work was at its height the eight children from his three marriages also helped in the studio as did his third wife Jane. The geographical separation of the studios often created administrative problems and Pugin's absence in Ramsgate and consequent lack of influence on the quality of the finished work caused him a great deal of frustration. An undated letter to Hardman expresses his anxiety:

> Remember that glass is the most difficult the most deceiving of all art & that *I ought to see everything before it goes* ... I cannot see the effect in a cartoon not even a coloured one the transparent light changes the effect and deceives me altogether ... you laugh at me when I say I ought to watch the work you work splendidly *to* the cartoons but you cannot alter them as they require it & there is the difficulty.[76]

Despite his misgivings the work succeeded well enough to receive the highest praise at the Birmingham Exposition of Arts and Manufacturers in 1849. A reviewer in the *Journal of Design* described it thus:

> ... ruby glass, richly mounted ... a graceful combination of materials and a great variety of the processes of manipulation ...[77]

Having experimented with all aspects of the medium including firing, Pugin had concluded that his artistic control was vital to the success of the outcome:

> I am sure the old men watched everything ... we shall never produce anything very good until the furnaces are within a few yards of the easel.[78]

From this time Pugin became increasingly interested in glass design and technology. He often felt thwarted and depressed by the result of his labours but never wavered in his resolve. He began looking in a new direction; that of the material itself, travelling to Rouen and Evereux to "have a good look at the glass. I never troubled with that *view* before."[79] On his return he wrote that he had "learnt an immense deal ... I feel certain that I now have the key to whole system (sic) & by keeping the glass of different periods distinct we can make every window."[80] Pugin had come to see his work as 'dead and heavy' and, with Hardman, sought to produce glass that was made altogether lighter and more vibrant partly by the judicious introduction of a quantity of white glass.[81] As he wrote to Hardman "We are artists in glass not manufacturers."[82]

Making large amounts of glass of a quality equivalent to Pugin's samples did not prove to be an easy task for the manufacturer James Powell but comparison between the Pugin-Hardman collaboration and that of the earlier collaborations, together with Wailes' work after his split with Pugin, lead to the conclusion that Pugin's immersion and commitment paid dividends.[83] Wailes' windows both during and following his collaboration with Pugin remain sombre, dark and subdued whereas Pugin (c.1850) was using lighter colours and silver stain combined with figures in a variety of poses, more animated both in gesture and expression with movement in the draperies. Wailes' more successful later work continued to owe much to his alliance with the architect. For example the overall crispness of design and vitality of the drawing in the North aisle windows of All Saints, Maidenhead suggests that the architect, in this case G E Street, had a large input toward their appearance (*illustrations 23 & 24).* The Lady Chapel window of Pugin's own church, St Augustine's at Ramsgate show his developing preference for the removal of the canopy. Rather than cramping the image between canopy and base he gave the narrative room to spread up to the borders: "They are far better than all images under canopies, they increase the size of the window ... the groups fill the quatrefoils *perfectly*".[84]

The first important success of the Pugin-Hardman collaboration was the West window of St Cuthbert's College, Ushaw in Durham 1847, which Pugin believed to be a masterpiece of modern times. This was supplanted c.1850 by the East and West windows at Erdington Abbey, Birmingham. The latter illustrate the development of the partnership, both in the confident handling of crowd scenes and the coruscating colour combinations: typical of the compositions for his large windows; hierarchical; simplified and architectonic. However, he was still dissatisfied with the glass painting for the work of the Late (three dimensional) period. The Late period seems to have been problematical for Pugin on more than just a practical level as, even with regard to Kings College Chapel, he considered *enamelling* a 'false system and the decline of the art'. Of the glass painting on the East windows at St Andrew's, Farnham he declared "...they have put powerful shadows where there are half tints and half tints where there are strong shadows ... nobody in the place has the remotest idea of Late work ... the Decorated is *perfect* but the Late is vile."[85] However, by the Great Exhibition of 1851 these difficulties had been overcome and their submissions included examples of all three styles, Early (East window of Hereford Cathedral), Decorated (two light window St Edmund's College, Ware) and Late (some lights from Farnham together with panels from the Lady Chapel, St Augustine's, Ramsgate and, as an example of his secular work, panels from the Alton Towers dining room window). Although described as being in 'a class apart' the technically complex and extravagantly decorated presentation of the Medieval Court at the Great Exhibition displayed little in the way of innovation, unlike the earlier work exhibited in Birmingham.[86] Compared with other leading architects of the time such as Street, Shaw and Webb for example, Pugin's use of ornament harks back to the picturesque movement rather than moving toward the more Spartan nature of High Victorian Gothic.

Although secular work did not form a major part of Pugin-Hardman oeuvre, the Houses of Parliament being the one great exception, there was a steady demand for heraldic windows for private houses similar to those designed by Pugin for St Augustines and The Grange, his Ramsgate home. *Grisaille* windows with their finely painted *diapers* strengthened by the use of black and decorated with Pugin's emblems were increasingly becoming a feature of the Pugin-Hardman repertoire and have become a hallmark of their work *(illustrations 25 & 26).*

Pugin's devotion to the Gothic manner has been attributed to his reactionary and somewhat fanatical religious convictions (his glass deplored by the Church as 'encouraging to Rome') rather than on an inherent understanding of Gothic architecture and his designs criticised as stiff and two-dimensional nevertheless his style became the canon amongst the few glaziers working during the period and his influence cannot be underestimated: an influence which, rather unfairly, was not applauded by some of his successors such as Christopher Whall and Henry Holiday. Holiday (1839-1927), a student of the Royal Academy Schools, became affiliated to the anti-academic principles of the Pre-Raphaelites, aiming to break away from the earlier stylistic limitations of the Gothic Revival. From 1862 the originality and freshness of his stained glass attracted the attention of important patrons. Whall, writing in *The Builder* in May 1891 criticised the 'crude angular horrors of the days of Pugin' (pp 408-11). In a paper presented to the Architectural Association in 1890 Holiday denigrated the influence of the 'Pugin movement' on the decorative arts.

> The revived admiration of Mediaeval, and particularly 13th century, architecture, having become general, it was swallowed whole with all its accompaniments with a total absence of thought and discrimination … A 13th century stained glass window … exhibits commonly a power of design, a splendour of colour, and a vigour of imagination and symbolism which may well excite our wonder and envy. What effect had these windows on the commercial decorators in the early days of the Gothic revival? They saw nothing of the beauty of colour of design or of imagination. One thing alone they aimed at (to judge by their results). Draughtsmanship in the 13th century was in its childhood. The figures in the best works of that period possessed a surprising vigour and spirit, but the technique was imperfect. Here was the thing to be imitated. Colour was of no consequence: the rawest and crudest that could be found would do; but a splay foot and a goggle eye would place the work at once on a par with an Early English window.[87]

Willement's window at Wells Cathedral was a case in point, picked out by Charles Winston for "the folly of admiring ancient art for the sake of its bad drawing, and of imitating its bad drawing." Winston asserted the charm of medieval glass was not due to its distortions but to "the real artistic feeling, and thorough conception of the subject, which are expressed in it." stating that "mere *artisans* who at present make it their trade" should not be encouraged. [88]

Holiday consistently drew attention to the commercialism of design and manufacture in Victorian stained glass which had, by the 1860's become such a dominating force. It was just such commercialism that Pugin had been at pains to avoid. Had it not been for his influence, which made the major glass manufacturers of the time aware of the sound principles of good design and the technological mastery that had been attained by the 'old men', Victorian glass would, it could be argued, have been far more commercial.

History often appears to give William Morris too much credit for technical innovation; merit that perhaps Pugin more justly deserves as Morris & Co were not technical innovators. Unlike Pugin, Morris never tried to make his own glass, buying in new glass from Powells who were making to chemical formulae for medieval stained glass discovered by Charles Winston c.1850. Until then the material had been thin and watery; similar to sheet glass. Winston insisted that modern glass would not bear comparison with medieval unless its quality was improved, and it was his research that was most effective. However, whether the subsequent work was improved by Winston's glass is debatable; probably due in no small measure to the way in which the new glass was often heavily enamelled there would appear to be no discernible difference in quality. Nevertheless the high quality inherent in Winston's glass, which equalled that of the medieval period, enabled far more authenticity in restoration carried out at the time. It was, without doubt, through Morris' generation of glass painters that Winston's glass was employed to greater effect but, if their achievements are to be judged fairly, their predecessors' accomplishments in terms of technology and composition must not be underestimated.

As various authors have pointed out, an intractable enmity existed between Ruskin and Pugin and lasted for the fifty years that Ruskin outlived him. Pugin's only reported response to this relentless criticism was that he would like to see Ruskin try to build something. However it was, in all probability, Ruskin's negative influence that caused later historians to give Morris overall credit for the craft revival. Kenneth Clark believed that "if Ruskin had never lived Pugin would never have been forgotten".[89] Pugin was not forgotten although Ruskin may have reattributed many of his ideas. It cannot be disputed that, twenty years before Morris & Co were founded, Pugin was setting out new criteria and bringing back lost craft techniques. In addition Morris' flat patterns demonstrate the immediate influence of Pugin: in his book *Floriated Ornament* 1849 Pugin initiated principles for the use of organic form as flat patterns; in it he observed:

> The Great Difference between ancient and modern artists in their adaptation of nature for decorative purposes is as follows. The former disposed the leaves and flowers of which their design was composed

> into geometrical forms and figures, carefully arranging the stems and component parts so as to *fill up* the space they intended to enrich … a modern painter would endeavour to give a fictitious idea of relief, as if *bunches* of flowers were laid on.[90]

With the growth of the Gothic Revival stained glass was swept from virtual obsolescence to dominate the decorative arts of the 19th century. In the early part of the century the movement gained pace when questions began to be raised by the reformist Thomas Carlyle about the ill effects of industrialisation. In England nostalgia was strongly felt, and the English Gothic Revival had a powerful influence all over Europe and the United States. The Gothic Revival was not simply a return to the Gothic medieval systems, but involved a re-conceptualisation of the Gothic; a reconstruction that was in reaction to Neo-classicism, and was part of a complex response both to modern industrialised society and new notions of nationalism, in which can be seen the re-claiming of Northern styles and the renunciation of Mediterranean styles by northern European states. Equally, the Gothic became a source of fantasy for the Romantic artists who projected their own value systems onto the past.

While the aim of the mid century glaziers was to emulate the medieval craftsmen, the qualities of their own time - perceptiveness and imagination - come through in their original use of colour, sense of drama and flamboyant foliage. Pugin brought a certain modernity to his work by using ancient methods and principles which, at the same time, incorporated ‘the practical improvements of our times and our increased anatomical knowledge’ thus paving the way for Morris.[91] The fundamental importance of designers such as Augustus Welby Pugin, William Morris and Christopher Whall was their shared capacity for combining an understanding of theoretical principles with an appreciation of, and sensitivity toward, workshop materials, tools and practices: a fact which made their glass outshine any contemporary rival. Morris and Whall's glass is not only unsurpassed in inventiveness, expression and dramatic intensity it is also constructed with a precocious talent for colour and decorative competence. Although there is little doubt that it was such glass as Morris & Co's which introduced a newly creative and original phase in the Victorian period founding, as Martin Harrison suggests, an original 19th century manner, equally it was initially brought about by the enthusiasm and ability of its predecessors.

William Morris and the Arts and Crafts Movement

It is impossible to consider the history of stained glass without including Morris, so important was he to the development of the medium. In 1861 the Arts and Crafts circle of Morris (Burne-Jones, Rosetti, Ford Maddox Brown, Webb, Faulkner and Marshall) took up many of Pugin's ideals as they strove to revitalise handicrafts and the applied arts during an era of increasing mass production. Although urging a return to medieval traditions of design, craftsmanship and community they revolutionised stained glass in terms of colour and design. Theirs was the manifestation of a spirit of renewal in the decorative arts based on a philosophy or attitude. Similar to Pugin, their philosophy was founded in ideals developed in the eighteenth century by authors dealing with concepts of man's right to self-esteem through creativity and expression through the honest use of material. Where Pugin had urged an approach to design based on the Christian spirit that had inspired the works of the Middle Ages, Morris' vision was to reject the ideology which gave rise to the Catholic revival and to develop the art of the past in terms of a modern environment. An environment which embraced the more liberal views of Marx, Darwin, J S Mills and Positivism (Humanism) and architectural debate which had a more secular focus. Although much of their early glass was commissioned by Gothic Revival architects and their earliest glass is Gothic in spirit, Morris and his contemporaries began to react against the adoption of Gothic styles in architecture and applied arts: to see their work as wholly regressive is to misunderstand the origins of modernism and implies a fundamental misunderstanding of their aims. The roots of modernism lie in the mid 19th century with Baudelaire's art criticism; in depictions of modernity with its challenges to the established art canon; in identifying with contemporary politics and turning away from the distinctions between high and low art. Anticipating the accelerating changes at the beginning of the 20th century Morris and his circle challenged the unquestioning adherence to the tradition of the past, not merely in the arts but socially, politically and economically.

While an important fact for Morris was the foundation on a self-consciousness about the historicist basis of style, he regarded the 19th century architectural revival as "too limited in its scope to be a vital growth capable of true development."[92] In common with John Ruskin, he believed that "the art of any epoch must of necessity be the expression of its social life, and that the social life of the Middle Ages allowed the workman freedom of individual expression", a freedom which he believed was not extended in the 19th century.[93] For him the evolution of architecture was inextricably linked with the evolution of society; a philosophy of socialism that was based on the ideal of art as redeeming and civilising man: "We are waiting for that new development of society ... for what must be the work, not of the leisure and taste of a few scholars, authors and artists, but of the necessities and aspirations of the workmen throughout the civilised world."[94]

The early years of Morris, Marshall, Faulkner & Co, from its inception to 1875, was possibly the most creative period but it appears that initially the Company had little experience of stained glass and cartoons were created which were almost impossible to cut. Although Webb's employment with Street had familiarised him with the incorporation of stained glass into an architectural setting only Burne-Jones, Rosetti and Madox Brown had any previous experience of designing stained glass cartoons (for James Powell & Sons in the 1850's). In the earliest days Burne-Jones seems to have attempted to indicate the lead-lines, and Morris to have decided the colours, but most of the translation into glass was left to the studio craftsmen. Herbert Read thought this rather surprising considering the Arts and Crafts ideal of the unification of design and execution in the person of the artist-craftsman. However I would suggest that it was the following generation of artist-craftsmen who held to such ideals. From rather irresolute beginnings as a glass colourist and an initial awkwardness in his figures Morris quickly gained confidence and ecclesiastical stained glass became the Company's most important early product. Although most of his 1860's glass has the subdued and subtle colouring of the early Tristan and Isolde panels, St Michael's, Brighton (also 1862), shows the addition of small contrasting areas of bright gold and blue, together with radiant white quarries delicately painted and stained *(illustration 27).* During this time Webb had the responsibility for the overall planning of the windows and his tendency was to place figure panels within delicately patterned quarries. This had a twofold benefit: not only was more light admitted but it was also a cheaper alternative to a wholly figurative design as Burne-Jones suggested in a letter to Reverend Compton.[95] Morris had a predilection for silver stain, not only using it to add rich golds to hair and drapery but also applying it to blue glass to obtain a distinctive metallic green which became known as 'Morris green' *(il'ustration 28).* Comparison between Morris' glass and that of others of the same date illustrate his original approach as a colourist. His distinctive early work demonstrates a medieval influence both in figure and narrative scenes: designed in broad areas of colour held in bold graphic outlines of lead. Gothic in spirit they may be but, nevertheless, his windows are silvery and delicate with nothing of the polychromatic colouring which typifies windows of the High Victorian period. His compositions combine an overall simplicity, Pre-Raphaelite in inspiration, with a wealth of naturalistic detail, particularly in the backgrounds.

From these beginnings the firm was flooded with orders and his workforce grew to encompass workmen, artists and amateur helpers all directed by his foreman George Campfield. Morris closely monitored everything himself paying meticulous attention to detail at every stage "passing all parts of a large window, one by one before the light … and never losing sight of the general tone … or relation of one part to another."[96] In a pamphlet written for the Foreign Fair in Boston in 1882 his views reflect Winston's thoughts on the basic principles of glass painting:

> …In the first place, the drawing and composition have to be much more simple, and yet more carefully studied, than in paintings which has all the assistance of shadow and reflected lights to disguise the faults and assist the grouping. In the next place, the light and shade must be so managed that the strong outlines shall not appear crude, nor the work within it thin … These then are the first conditions of good glass painting as we perceive them – well balanced and shapely figures, pure and simple drawing, and a minimum of light and shade. There is another reason for this last. Shading is a dulling of the glass; it is therefore inconsistent with the use of a material which was chosen for its brightness. After these we ask for beautiful colour… [97]

In his early work Morris was constantly experimenting in collaboration with different designers. It was multi-figure compositions that posed the most problems, not only to Morris: due to inexperience Burne-Jones was, at this time, seldom asked to contribute more than single-figure panels for important, large scale commissions. Recent research has discovered that Morris designed many more single figure compositions than had previously been supposed but it was Burne-Jones who was the most prolific of the firm's figure designers.[98] From his earliest youth drawing was central to his being:

> Unmothered (his mother having died when he was just one week old leaving his father resenting his existence), and with a sad Papa, without brother or sister, always alone, I was never unhappy because I was always drawing ...[99]

Burne-Jones' reputation in Britain was made as much in his stained glass as in his paintings. Representing a swing away from the sharp divisions between pure and applied art he characterised a more modern approach that manifested itself in greater versatility. [100] Burne-Jones was always conscious of the necessities of glass design utilising re-bars and leading to maintain a strong surface. The medium itself imposed a discipline which restricted his penchant for rather tortured emotion, thus his glass was shorn of the sentimentality and apparent insincerity of his painting. Comparison between his paintings and glass designs suggest that stylistically he experimented with ideas in glass which infiltrated into his easel painting. In his paintings of the 1870's the languid Pre-Raphaelite figures he favoured, set in an imaginary age of knights and enchantments, become voluptuous females and muscular heroic males from religious and classical allegory. For example the cartoon for the South transept at Lyndhurst *The Battle of Beth-Horon, Joshua commanding the sun and moon to stand still* of 1863 is far more vivacious and dynamic than the *Adoration of Kings and Shepherds*, in oils of 1862 and there is a marked difference between the two similar paintings *Phyllis and Demophoon* 1870 and *The Tree of Forgiveness* 1882 *(illustrations 29, 30, 31 & 32)*. The influence of glass design is displayed distinctly in the latter where increased importance is given to the foliage background with its flattened blooms and the impression of Art Nouveau and Japanese Art. The elegant, elongated figures of Burne-Jones' portraits of the early 1890's also support this theory becoming far more animated in their first appearance in glass in the designs for the St Philip's, Birmingham windows begun in 1885 *(illustrations 33 & 34)*. Of Morris & Co, his was eventually by far the greatest influence on the medium, not only on his contemporaries but also on subsequent generations of glass painters who recognised the seriousness of his intent whether in stained glass or painting.

Morris was preoccupied with ways of unifying huge windows. Typically the large spaces were divided into small compartments, each filled with its own individual scene. His most successful arrangement was the establishment of strong links horizontally connecting the subjects of the main lights with their neighbours; each part not independent but forming a part of a broader theme for the whole window. The remarkable progression of the firm is illustrated by windows such as those of Waltham Abbey 1860, St Michael and All Angels, Lyndhurst, Hants 1862-63 and later at All Saints, Middleton Cheney, Northants 1865 *(illustrations 35, 36 & 37)*. At Waltham Abbey the overall composition is somewhat confused by the numerous tiny and naively drawn figures in the main lights. There is a vast compositional improvement in the Lyndhurst window where the daunting challenge of the complex window tracery has been resolved by a simplified and easily read design. In 1862, the still relatively inexperienced Burne-Jones spoke of the difficulties of creating a unified theme to the vicar of Lyndhurst, Revd John Compton: "The lights are too much broken up and dispersed I think for justice to be done to any great subject like the Crucifixion – the stone work instead of seeming to enclose the figures would seem to cross and cover them." A further remark illustrates his increasing awareness of the need for simplicity in successful architectural glass design "... the figures would be very simple and distinct so that they could be seen at a very great distance and explain themselves at once."[101] The successful integration of the whole can be attributed to Webb and Burne-Jones' designs together with Morris' unifying colour scheme. In the highly sophisticated All Saints window, an improved vertical movement is achieved, not just by the shape of the lights themselves, but by the border design and the tonal pattern which lightens toward the top leading the eye up to the quatrefoil focal point the *Worship of the Lamb*.

By the 1870's Webb's quarried backgrounds were becoming less common when figures began to be set against simple plain quarries. One critic stated "This method was rarely attractive and accounts for the first undeniably second-rate windows made by the firm".[102] In tandem with this use of plain quarries, from 1864 Morris was introducing richer background detail, developing the use of drapery and scroll-work grounds, cloud pattern and, particularly, foliage grounds. Quite possibly not to play a significant role but rather as a device for linking abutting components rather than isolating them: an alternative to the canopy used as a space-filler. The Burne-Jones Adam and Eve at St John the Divine, Frankby, Cheshire 1873 is a fine example of just such a foliage background *(illustration 38).* The cartoon for this window has been lost but it is known that Burne-Jones designed the figures and quite possibly the open background foliage too (even when cartoons are available for study it is difficult to know to whom the backgrounds should be attributed). However, if indeed this was Burne-Jones' foliage design it was something Morris took up and augmented and these backgrounds became key elements in composition given equal importance to the figure. Morris often decided upon dense foliage patterns, more solid and of deeper shades, some with powerful rhythmic structures, perhaps influenced somewhat by his interest in tapestry weaving. While the density of the background allowed lighter figures to come forward on the picture plane it also had the disadvantage of reducing, occasionally drastically, the amount of light admitted. He had also to make decisions on just how conventionally to treat these patterns, striking a balance between the naturalistic and the formalised. Particularly in his early work with Philip Webb, Morris showed great sensibility to the architectural demands of the windows and their situation with regard to interior lighting; this was not always the case with some of the firm's later work: St Philips, Birmingham 1885-c.1897 and St Mary the Virgin, Rye 1891 for example *(illustrations 39 & 40).*

Morris strove to preserve the delicate balance between the architectural setting and the pictorial nature of the glass. This, he felt, would not be upset so long as pictorial considerations were not allowed to override the architectural interrelationship of the components, and the early stained glass of the studio demonstrates a gradual progression from pictorial to architectural principles. Morris gained enough experience to deal with most of the problems involved in design and production and, together with Burne-Jones, who was shouldering an increasing responsibility, developed fresh designs which gave full rein to their expressive and imaginative use of colour and demonstrated their understanding of the possibilities and limitations of the medium. At this stage of production Morris & Co's glass designs seem extremely modern and innovative when compared with their competitors. While others such as Clayton & Bell, influenced by Pugin, designed in the conventional Gothic style, Morris & Co drew on other influences, displaying Pre-Raphaelite and strongly naturalistic tendencies.

Despite the firm's success with stained glass Morris felt it was necessary to diversify in order to expand the business. By 1875 his partners were developing their own careers and the firm had been restructured under the name of Morris & Co. It is evident that Morris and Burne-Jones were moving, both socially and artistically in different directions. Morris began to consider that many medieval buildings had been subjected to over zealous restoration. Up to this period ecclesiastical commissions had proved the mainstay of the glass studios however, Morris' reaction to the over restoration was to refuse commissions to provide windows for such work in case this implied approval (given certain conditions this decision was not always adhered to). In 1877 Morris launched the Society for the Protection of Ancient Buildings for which he wrote the manifesto. He also became absorbed by printing, weaving and tapestry contributing very few new stained glass designs. Thus Burne-Jones was given his head and architectural limitations gave way to artistic prowess. Influenced by the delicate colour and Italianate style in figures of Renaissance artists such as Mantegna, Botticelli and Michelangelo (characteristic of Morris & Co during the 1870's), Burne-Jones added his own originality of line which distinguished his work from the mid 1870's. To fill spare spaces in neo-Gothic windows with canopies, borders and such did not satisfy the artistic impulses of the innovative and unconventional Burne-Jones. With the Easthampstead window 1876 his creative imagination responded to just such a challenge (*illustration 41).* Although apparently pictorial; being composed in horizontal registers on the same picture plane it cleverly retains its two dimensionality: a fundamental characteristic of the medium. Burne-Jones has been unfairly criticised for increasingly pictorial designs. A contemporary critic stated:

> St Philip's, Birmingham ... (presents) a logical outcome of a painter's disposition to make attractive pictures rather than practical working drawings. The inevitable result of discontinuing the systematic practice of showing colour and inserting lead lines was that however much the designs gained in other ways, what they gradually lost is respect of those special characteristics which distinguish glass painting from the rest of the arts.[103]

However, unlike the painted windows of the Munich school, Burne-Jones' windows never disregard their setting neither are they over realistic or theatrical as were many windows produced by the large studios of the day *(illustration 42).* In common with medieval tradition, Burne-Jones uses leads to outline the main lines of drawing and brown/black enamels to emphasise details in hair or drapery, it is only in the flesh tones that they could be considered at all pictorial (*illustration 43).*

It is clear from his accounts that, with his later work, Burne-Jones began to use enlarged photographs of his small sketches as a basis for his full sized cartoons. The East window at St Philip's *The Last Judgement* was one example of photographic enlargement for which the charge was a paltry £70.00. Also from as early as 1876 he had drawn on his huge stockpile of designs which could be cut about and re-used: certain cartoons, with modifications, being used up to thirty times *(illustrations 44, 45 & 46*). He was never involved in the execution of his own cartoons (a practice that Christopher Whall roundly condemned) nevertheless the demands on him were enormous. As a consequence the calibre of his designs became erratic. [104] The quality of Burne-Jones' figures always remained fairly constant and some beautiful work was still produced however, the tendency for deeper colour in the backgrounds and greener quarries allowed in less light *(illustration 47).* Both Burne-Jones and Morris' preoccupation increasingly lay elsewhere and, it has been argued that, without any further creative input, their glass designs became formulaic and impoverished and the truly creative and stimulating period of Morris & Co's stained glass came to an end. This argument ignores important exceptions such as St Philip's, Birmingham where traditional, iconic images are used in a new expressive way to create mood and atmosphere. Even after the death of both men, the prestige of the company remained high as did the stream of orders. Morris' emphasis was on a return to the principles of organic beauty, the use of plain materials and surfaces, and honesty of expression in the medium and the workmanship. On his part Burne-Jones brought new means of expressive power into what had been a neglected medium. Their combined skills and example made their work one of the dominant sources of 20th century modernism paving the way for twentieth century artists to accept stained glass as a major art form.

Sewter suggests that Burne-Jones' increasing success as an easel painter toward the end of his life led, in common with Morris, to a shift of interest away from stained glass design. But even at the peak of his creativity Burne-Jones was never involved in the execution of his designs, always handing his line drawings to a copyist to translate into coloured glass. This was never the case with Christopher Whall whose vocation exemplifies Arts and Crafts practice and philosophy. Although he was critical of the streamlined workshop practices of Morris & Co he remained an ardent admirer of Burne-Jones as a designer whose work was a strong influence on Arts and Crafts glass as a whole. Whall was a man for whom stained glass remained not only his life's work but also a life-long joy and preoccupation. He speaks of his glass 'dreaming' between the light and the dark; of its 'singing' colours; of its 'soul' and of the privileges of working with all aspects of the medium. He was arguably the finest stained glass artist of his time, playing a seminal role in the early 20th century history of stained glass by promoting an awareness of medium, not simply as pictorial decoration but as the art of manipulating light, yet was virtually forgotten until a revival of interest in his work was instigated some twenty years ago.

Whall (1849-1924), whom I have selected to illustrate Arts and Crafts stained glass, is now widely acknowledged by modern historians both as a key figure in the neo-Gothic revival of stained glass and an important presence in the Arts and Crafts Movement. During the 1880's the Arts and Crafts Movement in stained glass was born of a dislike of the production-line working practices of many of the major studios. The basic tenets of the movement were that a designer should carry out (or at least have the practical knowledge and experience needed to supervise) all the stages involved in the creation of a work: unlike the earlier period of the Gothic Revival, the direct supervision of an architect was far more rare during the progressive '90's. In a chapter on *Architectural Fitness* in his refreshingly direct and practical technical handbook *Stained Glass Work* edited by W R Lethaby, unequalled almost to this day, he wrote:

> We went back, at the time of the Gothic Revival to the forgotten art of Gothic stained glass; now tired of the insincerity and mere spirit of imitation with which it and similar arts have been practised, a number of us appear to be ready to throw it aside and build our arts afresh. A widespread awakening to principles of simplicity, sincerity and common sense in the arts generally has made an appearance. Signs are of an interest consciously and deliberately revived in building, in materials for their own sake and a revived practice of working in them and experimenting with them. The reason why the 19th century complained so constantly that it had 'no style of architecture' was that it had every style of architecture, and a race of architects who could design in every style because they could build in no style; knew by practical handling and tooling nothing of the real nature and capacities of stone, brick or wood or glass.[105]

His writing also demonstrates the collaborative spirit in which he worked: his responsive attitude to his co-workers' suggestions for modifications of colour or design and his aversion to the sub-division of labour. His consequent reaction against the prevalent Victorian commercialism revolutionised the practice and tutoring of stained glass in Britain, Ireland and the United States, where his work was much admired and copied. Whall's philosophy of craftsmanship was firmly established in continual experimentation within technical boundaries. His was a personal approach to the medium and his thorough understanding of and involvement in its technical disciplines allowed him to exploit to the full its expressive potential.

Born in Thurning, Huntingdonshire where his father was Rector of St James, Whall developed a life long interest in literature, music and, above all a passion for nature and traditional country craftsmanship. In 1867, dismissing parental opposition, he enrolled at the Royal Academy Schools. Despite exhibiting two of his works at the Royal Academy he did not gain the professional recognition to which he aspired. Unlike Morris and Ruskin, Whall was never wealthy; it was the gift of £100 from an aristocratic relation that enabled him to travel in Europe for three years studying and sketching Gothic and early Renaissance art and architecture. Of the Renaissance artists it was Botticelli, ‘rediscovered’ by Burne-Jones and other English painters of the 1860’s, whom Whall most admired and his later work, particularly his stained glass angels, reflects the grace of Botticelli’s painting. In common with his predecessors Whall was a man of religious conviction and an admirer of John Ruskin, using Ruskin’s writing as his constant guide. He was so impressed with Italian church architecture that he felt called to Catholicism and compelled to dedicate himself to Catholic art. On his return to England, with nothing left of his legacy, he moved into the Rosminian community of St Etheldreda’s, Ely Place. This medieval London chapel of the Bishop of Ely, recently restored to Catholic ownership, was in the process of being renovated and Whall, the obvious choice as a trained artist, was invited to design a glazing scheme for its side aisle windows. After studying material by Violette-le-Duc on medieval stained glass he drew cartoons for the three panels: Adam Naming the Beasts; Adam and Eve before God and The Expulsion of Adam and Eve from Eden, which were then (almost certainly) translated into glass by Saunders & Co. With scant technical preparation and no previous training in designing for stained glass, and possibly not knowing quite what to expect from a commercial studio, the completed scheme appalled him. This was due partly to the studio misinterpreting his drawings; in particular the figures of Adam and Eve in panel II which were not copied from his original cartoons and particularly to the over-hot colours which Saunders & Co favoured: the first of many problems caused by the division of labour so prevalent in commercial glass studios.

> When I handed in my cartoons, I never heard anything more about the matter till the windows were fixed in their places. I went to see them, and the first thought that passed through my mind was “I must learn my trade”: the word “craft” as yet was never heard.’[106]

To add to his problems with the 1879-80 St Etheldreda windows his inexperience in glass design led to disputes and the commission eventually being transferred to another artist.[107]

Following his marriage to the artist Florence Chaplin in 1884, Whall moved to Stonebridge, Surrey where the couple led a pastoral life, growing their own food and keeping a few animals. During this period Whall worked as a free-lance designer for prominent stained glass studios such as James Powell and John Hardman. In common with many artists of the time Whall was repeatedly so frustrated with the alteration of his cartoons by mercantile glass studios that he began seriously to question the division of labour which separated the designer from the construction processes and made Victorian glass so commercial. Division of labour did not allow those engaged in applied artists to complete the whole process of artistic creation; an aspect the Gothic Revivalists and the Arts and Crafts Movement so much admired about the Middle Ages. It meant that craftsmen, who were restricted to learning only one or two aspects of their craft, were unable to employ 'the rightful liberty or observe rightful limitations' which vastly contributed to the vital and vigorous spirit of Medieval glass. Later Whall was to affirm Ruskin's belief that "A great painter's business is to do what the public ask of him, in a way that shall be helpful and instructive to them". Going on to add:

> You cannot always do what people ask, but you can do it more often than a headstrong man would at first think ... The chief difficulty of a work of art is always its chief opportunity ... A thing can be looked at in a thousand and one ways and something dauntingly impossible will often be the very thing that will shake you out of the rut and prevent the work from being tame.[108]

Whall never considered reasonable limitations imposed by structure, architectural propriety or necessity, as restrictions in a work of art. Rather he thought of them as part of the problem to be solved: "It is only a spirit of dangerous licence which will consider them bonds or find them irksome."[109]

Opposed to the routine sub-division of labour, Whall saw it as the repetition of small tasks that no machine had been invented to perform; engendering lassitude, dullness and limited aims in those practising what ought to be an inspiring art. "With us" said such a craftsman to Whall "it's a matter of judgement and experience. It's all nonsense this talk about seeing work at a distance and against the sky and so forth, while as to the ever taking it down again for re-touching after once erecting it, that could only be done by an amateur. We paint a good deal of work on the bench, and never see it as a whole until it's leaded up; but then we know what we want."[110] This is the antithesis of Whall's fundamental conviction and philosophy that design and technical mastery must go hand in hand; he particularly questions the last remark. Were it wholly and universally true he states, nothing more would be needed in condemnation of wide fields of modern practice in the architectural and applied arts. It denies artistic choice and the relationship between one thing and another. For Whall every bit of glass is the centre of a relationship with surrounding pieces, combination after combination, with nothing final until the window is finished.

Although he held such strong views he did not necessarily consider it essential to do the entire work himself, but preferred to see the whole business opened to all. Once familiar with all aspects, a craftsman would gravitate to that which suited him best and keep in constant practice in this particular field, thus a workshop could run as a co-operative venture.

Putting his ideology to the test Whall decided to learn the technical disciplines of the craft for himself and, typical of the Arts and Crafts practicalities, converted the outbuildings of his Surrey cottage to a studio.

> A sort of coach-house, 15 feet by 12 feet was my studio, my glass painting room being a cow-house adjoining 12 feet by 10 feet. Here I got myself taught the necessary processes of stained glass work, both painting and lead working.[111]

This hands-on experience led him to a realisation of the importance of the whole spectrum of properties particular to the craft: the relationship between the lead-lines and the glass, with the *cutline* as the essence of the design conception; the potential of the material itself and the manipulation of light; that extra element so fundamental to the medium.

By the end of the decade Whall had, through art exhibitions and speeches at art congresses, become publicly recognised and his career as a glass artist burgeoned.

His first important work in 1890 "The foundation and beginning of everything" as he later put it was a commission from the architect John D Sedding for a window for the Lady Chapel of St Mary's Stamford *(illustration 48).* Referring to the Stamford windows in a 1891 paper for the Liverpool Art Club Whall emphasised the importance of life studies: it is a feature of glass of this period that naturalism was taking over from conventionalised neo-Gothic figure design. These windows contain the embryos of almost all Whall's mature work. The most thorough research was undertaken before the designs were completed: for instance the Archangel Michael's suit of armour was first created out of papier-mâché and cardboard and worn by an assistant to see if it would function on a practical level.[112] Symbolically the expressive use of subtle colour, typical of Whall's work, is especially evident in the progression of blues from light through deep sapphire to strong purple in the Coronation of the Virgin. The technical function of the leading is almost totally hidden by the lively expressiveness of the line: beautifully handled it effectively unites the various elements of the design. The Stamford window was constructed in the cowshed at Stonebridge, but many following commissions meant a move to Dorking where he employed two assistants.

The gradual progression of Whall's ideas is discernible in his windows from the 1880's to the early 1890's. His increasing involvement in construction saw the disappearance of James Powell's stock background patterns in favour of an integrated whole drawn directly from nature; more texture in the painting, and assertive leading which enhances the line. Whall is one of the first glass designers to, as he put it, "play games with the lead-lines", experimenting with different width of came for decorative effect. The 1891 window at St Mary's Church Ticehurst, Sussex for example, wholly designed and partly constructed by Whall, demonstrates his feeling for his materials, and his growing awareness of the potential of the medium.

Throughout the 1890's Whall pioneered the use of *Slab* glass, newly developed for its saturation of deep, pure colour and variation in texture by the architect E S Prior, with whom, in conjunction with Henry Wilson and W R Lethaby, he collaborated *(illustration 49).*[113] Prior's Slab glass marked a radical change to anything produced in the history of stained glass. Blown into a square mould the colour is concentrated in the thicker centre and base, becoming progressively lighter toward the thinner edges and corners. Thus a far greater gradation of colour within one piece of glass became possible, reducing the need for tonal painting. This hugely variable thickness and almost course texture lent itself perfectly to the strong simple effects which he had aspired to in theory: the primacy of materials acting as a determining factor in style and workmanship. Whall saw the potential of this new material, both stylistically and technically, and in practice exploited its properties of light and colour. *The Art Journal* for 1896 described the glass thus:

> It is dull on one side and instead of being rolled or blown is moulded in small pieces and varies considerably in thickness from half an inch to one eighth of an inch. The glass has somewhat the effect that cutting gives a gem and is exceedingly brilliant and at the same time cannot be seen through (pp.116-18).

These architects with whom Whall collaborated, also inspired by Ruskin, had rejected the stylistic restrictions of revivalism in favour of a broader view which was alive to vernacular craftsmanship. Similarly, Whall's own work drew from the ancient and the modern. He not only identified with the medieval glaziers but also with the later 'plumber-glaziers' who had repaired the ancient work. These repairers would sometimes rather whimsically lead together disparate fragments of glass with such a masterly eye for juxtapositions of colour that a new abstract beauty was often inadvertently created. The freedom and innovation in the design and colour range of Whall's post 1890 windows progressively refers to this tradition and demonstrates his recognition of the abstract characteristics of the medium.

In 1896 Whall moved back to London to take up Lethaby's invitation to teach at the Central School of Arts and Crafts and later, at the Royal College of Art. In teaching he found his natural métier, bringing to his courses the inestimable advantage of having learnt from his own practical experience and mistakes. He would accept nothing less than excellence; perfection in all respects: "... everything, everything should be done well. From the highest form of painting ... to washing out a brush". A delay may cause "ire in celestial minds, but that is forgotten when we are dead, and we soon are, but not the window."[114]

The following year Whall was given a huge commission for Gloucester Cathedral: five of the multi-tiered twenty one light windows for the Lady Chapel, several of its smaller windows together with the east window of the Chapter House. Prestigious as this work was, there was little money available for it. He made no profit on the commission and even his assistants agreed to accept a cut in their wages. The subjects for the five main windows he described as illustrating 'the dignity to which human nature has been raised by the Incarnation of Christ through the Virgin Mary'[115] With this, his first opportunity to work in a notable medieval building, Whall was able to put his 'important principles of good taste' into practice. He never disguised the lead-line as he considered it should be made to contribute to the beauty of the whole. Moving away from the perfectly intersecting lead joints that most of his contemporaries aimed for, Whall maintained that slightly staggered joints were not only more pleasing to the eye but structurally more sound.[116] He allowed no violent action to assert itself or, should the subject demand it, felt it should be so disguised that a figure in action should never appear to start out prominently from the glass and, with the *Five Sisters* at York as a guide, he always made his white spaces interesting. Either decorating a few quarries with organic designs or rhythmically breaking the overall pattern by alternating brilliant subject panels with substantial areas of quarry glazing in sparkling whites. Whall aimed at repose, wanting to make his windows 'dream' and be:

> ... so treated to look like what they are; the apertures to admit the light; subjects painted on a thin and brittle film, hung in mid-air between the light and the dark.[117]

Glaziers, he stipulated, should know enough of architecture to allow their glass to harmonise with the building considering its lines and lights and shades, illustrating, enriching and completing it, and making people happier to be in it. These were the daunting challenges he undertook with the commission at Gloucester: the combination of his modern, personal approach to glazing with a strong sympathy toward the surrounding medieval architecture.

The key to Whall's success is that he never lost sight of the function his art had to perform. His work does not sacrifice light to mood and atmosphere but skilfully unites the two. The South African architect Herbert Baker wrote of the Gloucester glass as "the light of heaven shining through the stained glass and broken up, as it were, through a prism" contrasting this to "the semi-opaque look of so much mass produced glass painting of the period."[118] Using the whole range of available modern glasses he put together jewel-like greens, blues and amethysts of *Slab* with textured Venetian, English *muffle* and Flemish glass to confer an added sparkle. The extraordinary potency of the shimmering whites frame the figure panels, complement the Perpendicular mullions and transoms and suffuse the Chapel with light while judicious use of neutral grey, brown and blue acts as a diffuser making a splendid foil for the more vibrant colours in the drapery and background.

Peter Cormack, Deputy Keeper of the William Morris Gallery, states unequivocally that the Gloucester windows remain, to this day, the finest post-medieval examples of the medium in any English cathedral and testify to Whall's grasp of the distinctive national tradition of stained glass work. However, as a general note I would suggest that while Whall's cartoons are expressive and beautifully drawn, many of his design drawings are not particularly innovative but akin to many other Edwardian stained glass designs by such as Henry Holiday and many of the designers working for Powell's: it was Whall's personal approach to colour that made his work extraordinary *(illustration 50).* [119]

The Gloucester windows were also an opportunity to involve his students in a major commission and formed part of their training. Whilst Whall drew most of the figures he gave the responsibility for the foliate canopies and richly patterned costumes, quarry ornament and borders to his students. He used nature as a guide and an example and therefore recognised that, while a disciplined regime was fundamental to success, students could not cultivate 'the joy' of stained glass in a 'dusty workshop'. As eloquently outlined in *Stained Glass Work,* written at the suggestion of Lethaby, 'Daddy' Whall (as he was known) aimed to develop in his students a mastery of design together with practical ability. In it he draws on both his experience with the Gloucester commission and as a teacher in London art schools and in his own studio. He believed stained glass to be an excellent way to learn colour, regarding the medium as a means of salvation from both fashionable 'art' colours (indecisive tints) and modern garishness. Artists, he maintained, from the Venetians to the Pre-Raphaelites became stronger and braver having once worked in the medium:

> The painter has his colour box of a few pigments from which all his harmonies must come by mixing and diluting, but the glass painter has hundreds of specimens of different tints to place side by side, with no possibility of diluting or slurring them he must choose from hard, clear, pure tints. He can substitute and rearrange until he makes the work 'sing'. He does not have to rely on memory, he has all the colours burning around him: singing to him to use them; sounding all their chords.[120]

However, it was not simply the arranging of the right colours together which absorbed him but the arranging of the right quantities and the right degrees of them together. In 1886 Gauguin circulated a paper, believed to be of 18th century Turkish origin, which included the following: "Seek for harmony not contrast, for what accords not what clashes. It is the eye of ignorance that assigns a fixed and unchangeable colour to every object... beware of this stumbling block."[121] Two years earlier Van Gogh, working on a series of flower compositions sought to harmonise extremes of colour stating "Much, everything, depends on my perception of the infinite variety of tones of one same family."[122] Whall worked on similar principles. After deciding on the main relations of colour his attention focussed on small differences; harmonies around harmonies. 'Each note becomes a chord, each tint a group of tints.' thus softening 'brilliance into glow'.[123] Taking an anemone to illustrate his point - purple against green leaves, white centre and thin ring of crimson shaded into pink – that it would not look the same if all the colours had been equal in quantity: always seeing colour composition as a question of the exact tint, quantity and distribution. Perhaps stemming from his study of medieval glass and its restoration during the 17th and 18th centuries was the realisation of the stunning effectiveness of introducing small chips of powerful colour into a neutral ground. From such colour highlights or 'final accidents' comes the 'soul' of the window.

> If a window wants a bit of any particular tint put it there meaning or no meaning. If there is no robe or other feature to excuse or account for it – put the colour in anywhere and anyhow – in the background if need be – a sudden orange or ruby quarry, as if the thing were done in the purest waywardness. There **is** an excuse – the eye demands it- do it fearlessly. ...these hints come late on in the work, when colour, light, shade and design are all fusing together into a harmony. You can no more forecast these final accidents, which are the flower and crown and finish of the whole than you could forecast the lost 'Chord'. It comes from the soul of the window.[124]

The turn of the century saw another prestigious commission for Whall when he was commissioned to design and construct several windows for Holy Trinity Church, Sloane Street, designed by John Dando Sedding. Sedding pioneered the use of the Gothic and Classical in a free way to create modern churches and his plans included ideas for stained glass. The construction of Holy Trinity, known as the Cathedral of the Arts and Crafts Movement, was taken over on Sedding's death in 1891 by Henry Wilson, who also insisted that all furnishings and fittings were made by members of the Art Workers Guild thus bringing about the unification of designer/architect and craftsman. Working from sketches drawn up in 1888, Whall produced his first windows: the South Aisle *The Adoration of the Magi* 1900 and, in collaboration with his daughter, Veronica, *Pentecost* 1907. Similar to the windows at Gloucester, he again displays his understanding of the leadline as graphics; using lead to create the interesting and inventive pattern of zigzags and flames which characterise his work. His interest in the development of the new Powell glasses (*streakies* and tints combined with pure colour) is obvious as is the emphasis on the value of white glass, which unifies the whole glazing scheme. The first of these windows, although owing much to Burne-Jones, is given a personal feel by Whall's thoughtful handling of his material. With the second, the development of his own interpretation of Christian iconography is observable in the differentiation of northern and southern churches by the costume of the onlookers. The Arts and Crafts Movement's search for new effects in glass is particularly evident in the choice of material for backgrounds and borders.

Between c.1904 and 1923 Whall worked on the design and construction of the ten clerestory windows; unfortunately only six were completed. These 'Angel' windows, completed as funds became available, were adapted from those at Gloucester, and demonstrate his familiarity with the medieval angelic hierarchy for which he introduced colour coding in their wings. For example in beautiful glass of extraordinary quality, the effects of paint and colour most carefully judged to be viewed from far below, seraphim were given red wings for love; cherubim blue for wisdom while purple wings denoted a link between love and wisdom *(illustrations 51 & 52).*[125]

Although his studio at home was suitable for designing and drawing Whall had been forced to use the workshop facilities of Lowndes and Drury for the more robust aspects of the work. It was not until 1906 that he was able to obtain a converted coach house in Ravenscourt Park, Hammersmith for use as a studio-workshop. From here he completed prestigious commissions throughout Britain, South Africa and the United States; having a significant influence on the emerging school of American glass designers c.1910 through Charles Connick (Charles J Connick Stained Glass Foundation). He served as Master of the Art Worker's Guild and was active in the Arts and Crafts Exhibition society organising major shows of British applied art, including his own work at Ghent 1912, Paris 1914 and London's Royal Academy 1916.[126] Ill health saw his daughter Veronica taking a greater hand in the business and this partnership was formalised in 1922 with the establishment of Whall & Whall Ltd. Such was his commitment to, and his delight in stained glass that Christopher Whall continued to work almost until his death at the age of seventy five (the Company then came under Veronica's direction until her retirement in the 1950's). Thanks to his tutoring, his insistence on perfection of detail and his ideals, many of his students and apprentices for example Karl Parsons (1884-1934), achieved notable status well into the following century *(illustrations 53 & 54).*[127]

Whall's windows perfectly encapsulate his enchanting youthful idea of angels looking down through the glass at the congregation below and express a vital ingredient of the Arts and Crafts Movement itself:

> I believed that angels must be looking in, just as much as (I) was looking out, and gazing down, grave-eyed, upon the little people inside, ...and wondered sometimes whether the outside or the inside was God's House most: the place where (I) was sitting with rough, simple things about that the village carpenter or mason or blacksmith had made, or the beautiful glowing world outside.[128]

Here is the combination of a love of nature and tradition tinged with nostalgia for simple craftsmanship, honesty to materials and the rich pattern and colour of the medievalists alongside business-like workshop practices.[129] The interests of the Arts and Crafts Movement in Britain lay here rather than in the technicalities of the craft; they investigated the technology but were not engrossed by it. It was the American glaziers who experimented endlessly with the medium itself.

American Glass: Louis Comfort Tiffany

Essentially the basic stylistic elements of English Arts and Crafts were adopted in a modified form by American artists such as Louis Comfort Tiffany who tended toward a preference for unpainted glass and the inclusion of the multiple colours and textures of opalescent. Artists shifted the emphasis from paint and stain to glass and lead, stressing the qualities inherent in the medium itself. High quality glass carefully selected for its grain and shading, complex *cutlines*, *bevels* and *jewels*, intricate leadwork and wire overlays are the hallmarks of the American style of glasswork which grew out of a secular, decorative tradition. More importantly Arts and Crafts designs would frequently be amalgamated with elements of Art Nouveau or even Renaissance-style windows. In the course of time American Arts and Crafts developed definitive characteristics which came to be identified with the influential early 20th century 'Mission' style.[130] The Arts and Crafts emphasis on handcrafted work generated great interest in a culture which was fast becoming overwhelmed by its industrial success: this abiding interest perhaps accounts for the long-standing secular patronage of American stained glass art.

At the beginning of the 1880's both Louis Comfort Tiffany (1848-1933) and John La Farge (1835-1910) were recognised by the prestigious *Scribner's Monthly* for their contribution to art glass and their introduction of a new glass industry to the United States. At the height of his influence Tiffany, reputedly the premier 19th century American stained glass artist and certainly among the first known abroad, employed hundreds of artisans in the production of thousands of windows, lamps and objets d'art. John La Farge who was to become his chief competitor, never achieved the same renown as Tiffany whose commissions for stained glass included major public buildings such as the Smithsonian, Yale University and the White House.

At the age of twenty four, already trained as a painter, Tiffany began studying the chemistry and techniques of glassmaking. In collaboration with La Farge he experimented endlessly to achieve the glowing beauty of Romanesque glass and to move his technique forward. Their art glass was remarkable for its colour, texture and technology, vivid iridescent *dichroic* coating, new methods of mixing colours, and new styles of opalescent such as *confetti* and *fracture and streamer*; each sheet a collage of striped, mottled, patterned and spotted colour variations. Not only was Tiffany a master of technique he also experimented with the size and shape of the glass pieces he used. Comparison with other designers of the period, for example Burne-Jones, demonstrates the liberties Tiffany took with the spacing of the leads. To achieve an even rhythm of leading over the glass surface designers had been in the habit of making their pieces of glass approximately the same size. Tiffany rejected this notion in favour of allowing the picture to dictate the lead-intervals: small details were picked out in myriads of tiny leadlines while backgrounds, architectural details and human figures were composed of large, irregularly shaped pieces of glass. Thus he created, visually and technically, a distinctly original style and a sense of interval which, later, Frank Lloyd Wright exploited so successfully.

Tiffany considered himself the architect of opalescent glass and the opalescent window style *(illustration 55).* His registering of a patent in 1891 caused a great deal of ill-feeling as La Farge felt that the results of their shared glassmaking experiments had been appropriated. The creation of this opaque glass involved a radical new treatment which combined and manipulated several colours within the material itself to create a unique range of shades and three-dimensional effects. Tiffany believed that his new glass allowed more fidelity to the inherent nature of the medium by enabling form to be defined by the glass itself, thus reproducing a painterly effect in glass without the use of paint. He considered that 'Glass covered with brushwork produces an effect both dull and artificial'.[131] Another important school of the stained glass revival however, firmly rejected Tiffany's opalescent glass; influenced by Christopher Whall they preferred the Gothic tradition of painting with pigment on clear, *antique* glass.[132] The followers of this school, such as Charles Connick of Boston, were in bitter opposition to Tiffany and La Farge, believing that their greatest contribution to stained glass was in rescuing it from the abysmal depths of opalescent picture windows.

When first inspected at the Boston workshop to which they had been transported from London, Connick was appalled at the novel, apparently crude and 'dirty' glass-painting technique Whall had employed on a series of clerestory windows commissioned for the Church of the Advent, Boston.[133] However, after their installation, so impressed was he by their 'lovely, low-toned vibration of light' that he used them as a constant reference and source of inspiration:

> I recalled that (dirty) impression with a start when I saw those sections of glass glowing serenely and beautifully in light as parts of the clerestory windows in the Church of the Advent ... When I had solved the mystery of that transformation, I understood how the tiny spots of light through those areas of dirty paint had, in distance, illuminated entire windows in a gracious fashion new to me yet curiously true and good. I awoke again to the charm of glassiness and soon I gloried in the discovery of Christopher Whall.[134]

Both schools considered that they were being honest to the artistic ideals central to the philosophy of the Arts and Crafts movement. Equally important to Tiffany was the goal of unity of design; the desire to create a unified artistic expression. First manifested in his complete interiors, for which he designed furniture, textiles and wall coverings, this aim was extended to the design and manufacture of stained glass. Through his own company, established in 1885, he also expanded his more commercial activities, setting up a metalwork department which produced lamps and chandeliers that were sold in vast numbers in his own New York showrooms, company catalogues and department stores. Enthralled by the economic and industrial power of his country, Tiffany wanted to remove art from its esoteric heights and viewed industrialisation as a means to a fairer distribution. He noted with gratification 'Already legislative halls, railway stations and opera houses are liable to be more beautiful than the palaces of the rich'.[135] His work reflects his efforts to resolve the conflicting ideals of the Arts and Crafts movement.

At the 1878 World Exhibition, American art glass studios such as that of Tiffany captivated the French audience and caught the attention of Samuel Bing whose Parisian gallery l'Art Nouveau, housed the most innovative designs of the turn of the century. A contract was agreed giving Bing sole rights to the importation of Tiffany's glass into Europe. To facilitate Bing's launch of 'American' glass onto the European market, Tiffany proposed utilising cartoons drawn by young avant-garde French artists. Under his supervision eleven windows were subsequently constructed from drawings by artists such as Bonnard, Valloton, Ranson, Denis and Toulouse-Lautrec and exhibited at the Salon in the Champ de Mars in 1895. In an article in the first edition of the magazine *Art et Decoration* in 1897 Louis Magne spoke of the 'rugueaux' nature of the surface typical of American glass and the excessive simplification of the subjects transposed.

Tiffany became synonymous with American art glass and the style of Art Nouveau, but it could be argued that the style has been somewhat erroneously associated with his stained glass designs. His direct association with Bing would seem to be the prime reason for this as, apart from the occasional incorporation of popular Art Nouveau motifs (such as the peacock) into his stained glass, there is little resemblance to what otherwise may be considered Art Nouveau style in the mosaic patterns which constitute much of his work in the medium *(illustrations 56 & 57).* Tiffany's *favrile* blown glass vases and bowls, together with his stained glass windows were displayed at world fairs and sold in galleries such as Bing's.[136] Inspired by the soft patchy iridescence which occurs naturally on excavated Roman glass, they were fast becoming internationally renowned for their brilliant colours and metallic *lustres*.[137] By 1889 Tiffany was translating his imaginative vision with such artistic skill that the success of his exhibits encouraged Bing to analyse the development of the arts in America.

Central to Bing's ideology was that the evolution of artistic style should be regulated by tradition. He particularly admired the Japanese (having previously been a dealer in Japanese art in Hamburg) whom he believed to have a special national gift. The subject matter of the art nouveau printmakers and illustrators of the 19th century 'youthful school' such as Hiroshighe and Hokusai included elements of popular culture while at the same time retained the elegant, delicate and refined sensibility of their aristocratic forefathers. It was these general laws that Bing wanted to introduce into France and he was therefore, somewhat dismissive of American fine art. This he considered to be without its own cultural heritage, borrowing from the European tradition. However, according to Bing, it was in the applied arts that important lessons for European artisans could be found.

Bing's investigation of Tiffany in the American craft scene confirmed the special qualities of contemporary American glass design. It was in this modern craft community that Bing professed to have perceived collaboration and unity in diversity through 'a common current of ideas' and a 'moral bond' which united all the disparate craftsmen of America[138]:

> It is primarily the moral ties that draw them together and the close communion of their various characteristics that today distinguish the industrial arts in America.[139]

This was the vision of collectivity and diversity, with nature providing the model, which Bing had for a modern craft initiative.[140] However Bing's romantic perception was possibly flawed. While he may have witnessed 'unity in diversity', a spirit of cut-throat competition held sway within the confines of at least one craft discipline; that of stained glass where interstudio rivalries brought about an aesthetic and economic war. As the popularity of American art glass cut a swathe across the country and medievalists saw what they considered a plethora of such windows obtruding into sacrosanct architecture, traditional glass studios sought to regain their economic territory by launching an attack on the artistic integrity of the modish opalescent style.

By the end of the 19th century with European studios actively seeking American church commissions and the Arts and Crafts movement, Art Nouveau and Tiffany vying for recognition, the market share diminished and many studios struggled to survive. However Tiffany, successfully created an art industry triumphing where others had failed as his personal fortune enabled him, when occasion demanded, to sacrifice company profits in the interests of artistic achievement. Most of his competitors could not produce affordable art and, at the same time, retain high standards and individual expression. Lifting stained glass from its traditional religious mystique he promoted it as a popular, egalitarian art form providing such a remarkable range of products that consumers at almost every economic level had access to his work. The demand for Tiffany's architectural glass had become immense and remained so until the end of his life. In 1932, a year before Tiffany's death, the studio filed for bankruptcy and victory was finally conceded to the more traditional, and successful, handling of the medium in an architectural context. As H. Webber Wilson points out, Tiffany's enduring popularity has caused the 20th century perspective of America's stained glass heritage to remain focussed on the debate between opalescent religious windows and the tradition of painted glass. However, the inspiration for America's modern glass movement should, more properly, be seen to reflect the whole scope of the nation's art glass.

There are multifarious reasons for the burgeoning of a large glass industry in the United States during the second quarter of the 19th century. New machinery and the use of technology together with improvements in communications and transport allowed the country to develop at a rate which was without precedent. On the back of this industrial upsurge individual success, throughout all cultural levels, created a new, and extremely wealthy, class of industrialists and merchants. A new emphasis on architectural decoration encouraged the incorporation of stained glass into all types of architecture and interiors: the best work a manifestation of the uninhibited, eclectic American spirit of the preceding decades. Unrestrained by aristocratic inheritance or mores and uninhibited by a tradition of religious expression in their glass, the 'American experience' nourished freedom of choice and personal expression. New designs were initiated which promoted the evolution and development of the material itself and called for more flexible methods of construction.[141]

Today there is a tendency to consider the production of the 19th century as the fruit of a total art, influenced by a technical and stylistic evolution of its own, which reflects the contemporaneous cultural, political, social and economic climate. The combination of art and architecture, and fashion and style, which reflected the aspirations, technical innovations and growing wealth of industrial nations, influenced the arts and opened up a voracious national and international market. To satisfy demand art and industry began to work in partnership, moving from almost total separation at the beginning of the century to interdependence at its turn.

The first examples of the century testified to a rekindled interest in stained glass through an appreciation of the matt, highly coloured medieval glasses. In Europe, the wide influence of Pugin encouraged such glass to be introduced in replacement of, or as an alternative to the usual transparent glass in Renaissance style ecclesiastical architecture. Typical panels with their genre painting, their didactic medieval figures and stylised ornament found a place not only in religious buildings but in numerous public buildings and the picture windows of the middle classes during the first half of the century; the rich colours creating soft and romantic interiors. Simultaneously 19th century glaziers sought new technical possibilities, for example, a wider range of richly coloured glass employed within a larger format, together with textured glass adorned with ornate, linen-like decorative engraving. During an initial experimental and somewhat naïve phase stained glass at first remained similar to that of the Renaissance and baroque, merely following in the wake of easel painting. However from c.1880 the birth of diverse new techniques saw the medium beginning to be liberated from its high-flown religious connotations. A traditional representational style of glass painting was upheld but this was coupled with a greater degree of experiment in technology and design. A tendency to use more white glass, letting in extra light, became prevalent and the introduction of 'American glass', *sandblasting*, transfers, a Japanese influence and more abstract compositions opened other possibilities of which Art Nouveau took full advantage.

Chapter II: Pre 1945

The flowering of secular stained glass, which began at the end of the 19th century with the Arts and Crafts circle, saw the subsequent Art Nouveau movement bringing a new dynamism to glass design. Calling for the creation of a new style and a devotion to handicrafts Art Nouveau took up and elaborated the Arts and Crafts manifesto. It was eclectic, borrowing motifs from sources as varied as Japanese prints, with their division of the surface and depersonalised figures; science and technology; nature; Neo-Gothic, Rococo, Baroque and Classical architecture; craft revival; national styles and the 18th century symbolism of William Blake, to create a highly decorative style with elements of fantasy which established the direction of modern art and design for the new century.

During the early years of the 20th century a spirit of reaction to the eclectic historicism of the Victorian era was generated by the artistic avant-garde. New tendencies which came into being during the last decade of the previous century were taken up with alacrity by a young and prolific generation of artists. A number of whom, on leaving art school, were directly employed in ateliers where their originality and energy injected new life into glass design. The considerable increase of small ateliers which opened in the effervescent spirit of the turn of the century (disappearing to become almost unknown today) reflected an era which experienced full expansion and in which a huge number of stained glass works were produced. These ateliers were not incognizant of current design trends but, with the Church remaining their principal client, usually offered a choice of glass designs encompassing all styles and genres. Thanks to the new glaziers, who considerably developed the style, side by side with religious inspiration was the increase of secular glass mostly under the auspices of Art Nouveau. Glass was ideally suited to the main aspirations of Art Nouveau, in particular its desire to create beautiful objects which were also quintessentially modern and the challenge of producing a *Gesamtkunswerk* - a total work of art. Within the medium, form and decoration could be completely united, with colour carried in the body of the material rather than applied on the surface, and flowing shapes almost create themselves in the manipulation of the soft lead *cames*.

Art Nouveau

The term Art Nouveau was initiated by its leading protagonists in France, Hector Guimard and Samuel Bing. Arising out of a desire for renewal the movement initiated a search for an art that corresponded to the modern spirit of modernity and relevance. It continued the struggle to eradicate, or at least challenge, the traditional hierarchy that divided fine arts, architecture and applied arts, resulting in a style based on new values and a new spirit. It responded to the age seeking to discover a style encapsulating the rapidity of change, new world views and scientific advances which were taking place. As such it contains elements of the past as well as the present. Rather than the expression of a single style this was a movement which expressed certain ideologies and in which formal characteristics recur.

Jeremy Howard believes that the views that have (erroneously) gained most credence see Art Nouveau as one style: decorative and narcissistic, devoid of socio-political message or consequence. However, the movement was full of apparent contradictions: extravagance and simplification; symbolism and formalism; the erotic and depersonalised; the vernacular and the oriental; truth to nature and stylisation; eclectic use of historicist styles as well as the rejection of historicism.[142] The forms of nationalism contained within it can be regarded either as completely dissimilar on the one hand or integrated on the other. It was dismissed by many on the left of the political spectrum as exemplifications of the worst excesses of bourgeois capitalism, while many on the right denounced its stance against traditional hierarchies, treatments and motifs as dangerous signs of decay[143]. Thus has Art Nouveau been seen separately as both an intellectual and a decorative art movement. Nevertheless the movement was united in its endeavour not to allow art to remain static, to raise its level and to attract public attention.

The incorporation of disparate views and overlapping styles within the movement allowed a miscellaneous collection of artists to group under its umbrella. Rather than resort to a slavish emulation of the past, these artists sought to respond to the vicissitudes of the modern age and its spirit of change with styles that were relevant to the present. Art Nouveau artists acquired new knowledge, not simply from observation, but also from popular scientific books and the new circulation of plant microphotography. The sea with its opaqueness, lack of solidity and sense of variation and movement, together with the earth and the air, also became sources of inspiration for many artists. The theme of motion, which often united the different traits of Art Nouveau, seemed to accord with the increasing awareness of the state of flux the world found itself to be in at the turn of the century. This was quite a contrast to the earlier artistic preoccupation with producing something that aspired to solidity and stability. Other artists took a more constructive approach based on new scientific discoveries demonstrated by the Eiffel Tower and the Gallery of Machines at the Paris Exhibition of 1889.

The implications that flight held for art were shown in the way the artists began to challenge the traditional viewpoint. Birds-eye viewpoints began to appear, encouraging, or coinciding with various formal principles: a flattening of space and form, heavy contours and large blocks of colour. Artists used directional force lines, often abstracted from organic forms, to evoke a sensation of dynamism, force and speed, and the alternating forces of lift and gravity. Thus it could be argued that Art Nouveau built the foundation for many of the modern movements: the preoccupation with form and colour in Russian Suprematism and the state of dynamic tension in Italian Futurism and its less expressive French and English cousins Cubism and Vorticism.

The Arts and Crafts Movement, with its respect for medieval values, honest craftsmanship, truth to nature and the call to reinstate beauty and quality into the environment, had encouraged artists throughout Europe to explore and incorporate their local traditions and surroundings into their art. Consequently nationalistic overtones, or at least the effort to create a national style, can often be found in Art Nouveau. However, these nationalist trends may have sprung from a different perspective; namely, the volatile political situation apparent in many areas of the continent, and the competitive nature of European capitalism and imperialism. Jeremy Howard effectively argues that any sense of truth to medieval tradition or to nature, whether for political gain or not, contains elements of falsification. He presents the paradox that the affectation of a co-ordination of natural forms does not necessarily correspond with actual organic activity. Similarly the simulation of medieval values within a society far from that period, furthermore a society dominated by commercial interests, created a romantic sham which extracted from tradition the elements which suited the limited contemporary goals of artist and client, while only possible due to the wealth making organisation of late 19th century European society.[144]

Charles Rennie Mackintosh, in Britain, Hector Guimard, Victa Horta and Henry Van De Velde in France and Belgium and Frank Lloyd Wright in America were of the generation of architects whose desire to create a new national architecture was spread widely enough to be considered a new International movement. All were interested in reviving and re-vamping an appropriate national style. In the case of Wright perhaps 'inventing' a national style might be more germane as he sought to cast off the European 'colonial' tradition in favour of creating a 'Prairie' style more relevant to the new spirit of America.

Webber Wilson suggests that Art Nouveau was too ultramodern 'just too snappy and irreverent' to be readily accepted in the United States. [145] An article in the 1907 *Ornamental Glass Bulletin* demonstrates that the avant-garde was anathema to the Establishment:

> Over in Europe, France especially, a new school of architecture has much vogue just now. It may be called the school which represents Beardsleyism in architecture. The exponents of this school, practically founded by Mr Bing, have a way of fashioning adornments, exterior and interior, fashioning structures themselves in the twisted, impossible manner which Mr Beardsley, following the windings of a vagrant pencil, placed before the world as Art productions. "They call it l'Art Nouveau over there" remarked John Mead Howells of Howells and Stokes, architects, in discussing this new method of construction and design:
>
> It is really to my mind, an evidence of a decadent style. It is a radical breaking away from conventionality, and has for its result many strange manifestations which lack wholly of artistic beauty … I am

> inclined to the belief that Burne-Jones and others of their pre-Raphaelite school originated this new Art. Beardsley ... did many things which seem to be in a measure copied in structures in Paris. I would not say they were actually copies, but they present the queer, twisted and distorted human figures, the oddities in curves and other outlandish shapes which violate all the canons of Art.[146]

Despite this criticism, although seldom adopted in its architecture, America eventually came to have quite an inventory of studio Art Nouveau stained glass.

Both Wright and Mackintosh were obviously influenced by Japanese art and architecture which revealed that, beyond the Arts and Crafts, there was a contemporary style based on space and use of material. Japanese use of bright, flat areas of colour, exploitation of material and an increasing use of glass was sympathetic to concepts of modern life, modern ideas of hygiene and enjoyment of nature and sunshine. Wright shared with Mackintosh a fundamental understanding of the Japanese print: the essence of space. Whereas Guimard, Horta and Van De Velde stressed the value of line, distorting it to produce a whimsical and personal statement, Wright and Mackintosh explored the use of interlocking figure and ground. Grasping the essential trait of Japanese art by seeing form as making and representing space they demonstrated a deeper understanding and appreciation of the work.

Samuel Bing, the owner of the Parisian showcase for contemporary design the Salon de l'Art Nouveau stated that the enterprise:

> ...opened as a meeting ground for all ardent young spirits anxious to manifest the modernness of their tendencies, and open also to all lovers of art who desired to see the working of the hitherto unrevealed forces of our day ... this aim ... to which it tended ... would be indicated more clearly – if the name of an establishment could extend to the length of a phrase – by the denomination: *Le Renouveau dans l'art – the Revival of Art.*[147]

In Bing's salon these ideas were honed and focussed into three principles: sobriety, primacy of function and harmony of colour and line. Not entirely a departure from the earlier agendas of the reformed Salon and the Central Union, Bing's centre for craft innovation differed in its internationalist, rather than purely French approach. However, his work also referred to 18th century French art, the Rococo, which he considered to have 'grace, purity, elegance and sound logic'. His aim was twofold: to differentiate between national variations in style while, at the same time, to strengthen the distinctively chic French idiom. Similarly Guimard was concerned to restore past traditions, stressing the vital importance of an engagement with a lost national heritage – the feminised world of Rococo - together with a response to the modern age. In Guimard's opinion:

> A style of architecture, in order to be true, must be the product of the soil where it exists and of the period which needs it. The principles of the middle ages and those of the nineteenth century, added to my doctrine, should supply us with a foundation for a French Renaissance and an entirely new style.[148]

In 1894, after an official cultural visit to the United States Bing, although deploring much of American culture as brash and *arriviste,* was filled with admiration for the ingenuity and originality of American applied arts. He extolled the 'youthful vigour' and experimental initiative of American glass designers such as Tiffany and Lafage and compared American progress with 'the anaemic debility and sluggishness of French applied arts' fearing that 'America will rapidly overtake us given her energetic methods of tackling every problem'.[149] It was the indomitable energy of the Americans that Bing most admired and from which he believed the 'greatness of the industrial arts in America stems.'[150] He remained firmly of the opinion that French artisans were far more aesthetically worthy and, inspired by American entrepreneurs, sought ways to activate them and stimulate innovation. Galvanised by Tiffany's collaborative workshop Bing relocated the American model to France but, rather than reproducing an identical collaborative, established an international exhibition centre and shop which housed experimental artefacts from differing branches of the applied arts. This exhibition centre incorporated, not only an American, but also a Belgian ethos: it was the tradition of American crafts coupled with the exemplar of Belgian interior space that was the bedrock of Bing's Maison de l'Art Nouveau.

By 1895 the French architect Louis Bonnier had been commissioned to open up the spaces of the existing exhibition centre to allow for installations of international experiments in modern design and create what was to become the *Maison de l'Art Nouveau* in the rue de Provence, Paris. During a visit to Belgium Bing had been stirred by Henry Van De Velde's example of a totally designed interior environment, where each individual artefact contributed to a single ensemble. Van De Velde's subsequent commission to decorate four salons of l'Art Nouveau - reproduced in lavish photographs in the first edition of *l'Art Decorative* 1898; entirely dedicated to the work of Van De Velde - demonstrate his diverse and imaginative use of stained glass and link him directly to the role played by Bing in the spread of American glass through Europe. The extravagant decoration of these salons included murals, tapestries, ceramics, mosaics and stained glass skylights, door panels and translucent screens placed to divide the internal space into separate areas: all constructed in the American opalescent glass supplied by Tiffany.

The applied arts and architecture in France were invested with new psychological effect; moving on from a primarily Neo-Rococo spirit, through an indigenous vocabulary toward a more openly modern one. Most often to be seen in the buildings of Guimard, it was also apparent in those of Henri Sauvage. Sauvage did not design only for the elite. His other commissions included tenements for Parisian workers. Such buildings as the 1904 Société Anonyme des Logements Hygiéniques à Bon Marché demonstrate the Art Nouveau architect's concerns with new construction techniques and materials such as reinforced concrete, plate glass, social activities, hygiene and finish as well as style.

Sauvage's Villa Majorelle, built in Nancy in 1900, was an Art Nouveau manifesto in itself. It had an asymmetrical plan; its interior function and space reflected on the exterior by projections, balconies, bays and recesses and the distribution of varying shapes and sizes of windows. The organic modern style of the Villa Majorelle was a collaborative work with every detail co-ordinated, but its vibrancy was due in great measure to the ensemble of stained glass by Gruber which was at the same time medievalist and ultra modern. Jaques Gruber, Professor of Decorative arts at the city's Ecole des Beaux-Arts, was part of the renaissance of the glass industry in Nancy. Showing concern for opacity, colour and relief; he used acid to reveal hidden colour and enamels to create glowing, opaque finishes *(illustration 58).* Beginning in 1898 Gruber made masterful use of American opalescent glass in a number of windows in both private houses and public buildings in Nancy and this success spread across Europe.

During the last two decades of the 1800's, Belgium, particularly Brussels, was France's greatest rival for the leadership of European modern art. In Brussels Art Nouveau became a special style, a nationalistic imperative which denoted the new capital city, representing Belgium's prominence as an industrial and imperial force. Brussels became increasingly bourgeois, its rising middle class enjoying a new sense of independence, security and wealth. The general public had a preference for the floral and symbolic repertoire so fashionable at the turn of the century: swans, herons, peacocks, butterflies, iris and waterlilies could be seen in abundance adorning the windows, fanlights and verandas of the middle classes making a great contribution to the charm of the facades and satisfying the modern taste for light and airiness *(illustration 59).* As art was freed from traditional constraints and hierarchies artists strove to create a new art which both responded to and represented the age. Through an emphasis on the applied arts, art was to have a social imperative: to raise the moral and living standards of the community.

Not totally unexpectedly, if history acts as a guide, the development of Art Nouveau in Belgium engendered a fairly rapid reaction against the traditional movements of the 19th century which, paradoxically, appears to have prolonged the eclecticism they so despised. Thus, up to the First World War, religious stained glass of an eclectic style tinged with Art Nouveau can frequently be found. If Art Nouveau did not come to have a massive influence on Belgian ecclesiastical glass, it came nevertheless to open the door to modern art, and a number of artistic crusades were caught up in its wake. Movements such as *Le Salon d' Art Religieux de Durendal*, which formed in Brussels c.1900, strove to reunite artists of all schools declaring '...des oeuvres contre la décadence et au-dessus de la médiocrité et du mercantilism...' Whilst recognising the merits of the neo-Gothic movement's tentative attempts to restore the acquired skills of the art; ateliers of the modern school believed that '…l'art religieux n'est point figé dans une formule ou un style, l'admettre, serait proclamer sa mort.'[151]

Such attacks on the academic Saint-Luc style were not new but, by the turn of the century had become more and more frequent. L'abbé Moeller summarises the general consensus of modern opinion:

> Mon avis sur l'ecole Saint-Luc – ou mieux dire sur le néo-gothique – c'est à mon sens, plus un mouvement d'archéologie qu'un mouvement d'art *(illustration 60 & 61).*[152]

Indeed the lavish education provided by the Saint-Luc schools did not foster originality but rather the revival of a style very much alive during the previous century. Despite the imposition of rigid constraints on its students, once having graduated, many rejected orthodoxy and sought to enlarge their repertoire: in an effort to satisfy popular taste some even produced Art Nouveau stained glass. The ensuing gap between theory and reality - on the one hand the authority's defence of Saint-Luc and on the other the production of the majority of artists – existed to c.1913. As a consequence, up to the beginning of World War I, three strands of religious stained glass can be distinguished. The first, represented by the conservatism of the Saint-Luc schools outnumbers the second, modern religious art; still not sufficiently liberated or strong enough to make a real impact. The third strand, which included the largest number of working artists, was poised somewhere between its two precedents. Without being too avant-garde, it gradually began to have an effect on the emancipation of the historical tenet. However, between the wars the new tendencies were subverted in favour of iconic religious images; satisfying the belief of the clergy that Modern Art agitated against the majesty and calm which religious art should represent. It was not until c.1930 that a move away from the teaching methods of the Saint-Luc schools could be seen. Another problem for glass painters who favoured a more modern approach was that religious stained glass was intimately bound up with the conservatism of many architects; until the 1930's modern architecture was almost exclusively reserved for secular buildings.

Belgian architects such as Van de Velde and Horta, following the same precepts as Bing and Guimard, designed integrated interiors for the new bourgeoisie. Baron Victor Horta for example, abandoned the neo-classical style of his schooling to become one of the pioneers and leading practitioners most commonly identified with Belgian Art Nouveau architecture. Through his collaboration with such avant-garde architects, French glazier Raphaël Evaldre, working in Brussels, assured the success of American glass and Art Nouveau glass design in Belgium.

The collaboration of Horta and Evaldre began in 1893 with Horta's first major work, the Hôtel Tassel in Brussels, and continued undiminished until c.1911. The Hôtel Tassel made its young architect internationally famous and set out his principal themes: exposed structural ironwork; glass facades and the replacement of the traditional corridor arrangement with a centralised floor plan and careful attention to decorative detail. For Horta the role of the decorator was to reinforce the architecture with personal touches: to dress it without concealing it. At the Tassel the relationship between stained glass and architecture is cleverly marked by a reprise, in linear counterpoint, of the contours of the metal columns of the façade.

A note from his memoirs demonstrates recognition for his innovative ideas 'un succès d'invention: "la suppression de l'ornement peint sur verre et son remplacement par des verres colorés".[153] These coloured glasses were the new type of American *dichroic* glass which would change colour according to the amount of light penetration or the direction of the rays.[154] This glass won favour as much as for its reflection as its transparency making it particularly enticing for interior decoration. White and golden yellow *dichroic* glass was introduced into a number of interior doors and partitions, its honeyed tones suggesting the warmth of sunlight so often absent in Northern Europe. Used in many of Horta's designs, it was employed with particular effect in the window of the Tassel smoking room, situated between the ground and first floor *(illustration 62).* Viewed from the interior the curves of the lead-lines emulate the lazy drifts of smoke emanating from the cigars of the members: from the outside, the play of leads and the forms within the opalescent glass bring to mind the silhouette of a Chinese dragon.

Perhaps the most important function of the coloured glass however was to filter and magnify the rays of light descending from centre skylights to illuminate the corresponding colours and styles of the floor mosaics and mural paintings designed to create a unified and personalised atmosphere. Initially the decoration would occupy a whole window surface, as at the Tassel, but it became progressively concentrated in the higher areas and laterals to leave a large, central area of translucent white crackle glass ensuring maximum luminosity *(illustration 63).* Horta explained that his habitual method of developing the Art Nouveau motif was to 'take the stem and throw away the leaves' allowing a pliant line to develop in curves and counter-curves from bottom to top as an organic form but without precise reference to vegetation.

Horta's liking of linear organic motifs and combination of the exposure of the tensile qualities of iron and the extensive use of plate glass allowed a new freedom in the organisation of space, opening up his interiors. His buildings such as the Maison du Peuple 1899, destroyed 1964, included glass and iron facades that were among the most advanced of their day. In the late 1890's he built a house for himself in Brussels which stands as an example of the architectural style that made him into one of the most acclaimed architects in Belgium and an important predecessor of the International Style *(illustration 64).* The Horta House characterises Art Nouveau in its use of industrial materials, steel and iron in the visible parts of the house with decorative mosaics or *sgraffito* on the façade. A sgraffito, basically a colour drawing into cement, was very popular in Brussels at this time: a particularly good example being the Cauchie House, 1905 *(illustration 65).* New decorations inspired by nature also began to make an appearance, particularly the decorative whiplash lines, inspired by the look of natural vegetation, which Horta so favoured. His house also deploys one of his great innovations: the rooms being built around a central hall. From the magnificent glass ceiling light falls into the house creating a far more natural illumination of the building than was the case in the traditional late 19th century Belgian house *(illustrations 66 & 67).*

Evaldre was the exclusive fabricator of Horta's glass designs but this did not preclude him from seeking work elsewhere or from the construction and design of stained glass under his own name. His contributions to the artistic salons of Brussels at the turn of the century testify to a decidedly Japanese inspiration. In 1897 he participated in the international exhibition at Tervueren with: 'des superbes vitraux: l'un d'eux représente de larges roseaux inclinés dans un fleuve où les motifs sont non pas peints après coup mais conposés au moyen de verres colorés.'; the following year his work submitted to the Salon de la Libre Esthétique was also greeted with enthusiasm:

> Evaldre, un verrier, est en train de conquérir la premièr place en Belgique. Ses desins ... sont fort bien compris au point de vue de la mise en plomb. Le sobre et judicieux emploi des verres irrisés d'Amérique aux merveilleuses nuances fait de ces vitraux des oeuvres d'art dignes de rivaliser avec les meilleures productions étranger. On travaille bien, si pas mieux en Belgique. (Gisbert Combaz) [155]

His two 'Odalisques', one at the Hôtel de Maître, Brussels and the other at the Hôtel Saintenoy, Ixelles, demonstrate his talent as a glass painter *(illustration 68)* Around 1900 Evaldre, in collaboration with the architect Paul Saintenoy, created a major work for the frontage of Hotel Saintenoy, rue de l'Arbre, Ixelles. Of imposing dimensions this work depicts a young woman with long wavy hair emerging from the sea's spume with her hands covering her lips: a theme dear to Art Nouveau *(illustrations 69 & 70)*. The face, delicately painted on the glass, is the only transparent area of this huge work. Its construction in American glass renders the subject readable for the passer-by in the street but, at the same time, affords privacy for the occupants.

In 1903 Evaldre constructed, in the style of Horta, beautiful stained glass in the hotel Hannon, rue du Haut Pont, which has been mistakenly attributed to Tiffany himself. However, it is without doubt the abstract ornament which characterises the work of both Horta and Van De Velde that has created the most original of the Art Nouveau stained glass in Belgium.

In common with Horta, Henry Van de Velde was intent on raising the status of the applied arts to that of the fine arts. He had a scientific notion of art stemming from his interest in, and experimentation with Pointillism during the late 1880's and his cartoons were recognised, not just for their art, but also for their function and precision. Inspired by the Arts and Crafts Movement he reacted against the moribund style of Victorian Revival architecture and industrial design. His own house at Uccle, which he was in the process of erecting when he met Bing, became the first 'built manifesto' of art nouveau: an early landmark in which the architecture and interior decorations were closely integrated.

Influenced by Bing's demands for spectacle in the exhibition halls of l'Art Nouveau, Van De Velde discarded his former sobriety in favour of a more ornate style. Today it is possible to judge both Van De Velde's interior decoration and Tiffany's coloured glass of this period through the conservation of the Hôtel Otlet in the rue de Florence, Brussels *(illustration 71).* In this building, completed c.1900 in collaboration with the architect Van Rysselberghe, the linear and abstract ornament typifies the style conceived by Van De Velde on his return to Brussels. For him:

> la ligne est une force … et elle tire son dynamisme de la main même qui la trace: elle s'étire, se gonfle, se comprime, s'incurve comme une forme vivante. Elle se referme sur elle-même dans un équilibre parfait et une finale symétrique.[156]

His work was characterised by a simplified, constructive quality with a central concern for convenience and comfort; his graceful linear forms expressing supple, flowing movement which can be associated at this period with the attenuated, flowing lines of Mackintosh and the Glasgow School. Belgian Art Nouveau was to become more and more geometrical from 1903-4, evolving around ever more simplified forms from an art that was becoming humdrum through overexposure. Portable items such as stained glass fire screens, partitions and folding screens appeared with pure rectilinear forms almost abstract in composition. The corresponding tendency evident in the work of artists influenced by the Viennese model, prefigured a more sober and rational evolution which signified the demise of Art Nouveau.

In Britain, Glasgow emerged as the seat of Art Nouveau. A rising middle class, keen to indulge themselves in their newly found wealth and education, attracted art schools and dealers, and art collections were started by local businessmen including the shipping magnate William Burrell. In this prosperous, energetic, industrial city the latest discoveries and techniques of construction were put into practice: plate glass, steel and cast iron, fireproof concrete, central heating, ventilation, gas and electricity being researched and developed. The decorative arts in the Glasgow of the 1900's were founded on semi-industrialised production rather than painstaking craftsmanship. In common with European Art Nouveau, the Glasgow Style was linked to sophisticated production methods, modern methods of transport and high levels of consumerism.

The primary instigators of Art Nouveau in the city were four students at the School of Art: Frances and Margaret Macdonald, Herbert MacNair and Charles Rennie Mackintosh. Presumably due in large part to the sensual elements in to be found in the work and the fact that the inherent sense of mysticism was far removed from the Christian understanding of the word, English critics of the time referred to these Glasgow art students as the 'Spook School' and believed them to have unhealthy, even revolting and decadent tendencies. Frances Macdonald's *A Pond* 1894 for example, used as a frontispiece for the group's *The Magazine,* embodies many of the elements most reviled by critics *(illustration 72).* Contained within this work is the sensation of sexuality through human tissue and bodily fluids: a gathering of small sperm-like creatures hover over vaginal images as though waiting to create new life. The androgynous but implicitly female figure is grasped by the head and, one could argue, despite her stretching forward to break away will be slowly but inexorably held, smothered and devoured headfirst by the huge sperm-like male. One can perhaps read this work as depicting the efforts of the female to find a new liberation and move on from subjugation as part of a natural law.

Their time at the Art School saw a shift from an earlier preoccupation with utilitarian and commercial ends to a more educational and artistic ethos that, by 1900, increasingly referred to Arts and Crafts, provoking a tension between aesthetic and commercial principles. Theirs was a style of northern Art Nouveau similar, in many respects, to the work being produced in Europe and the United States. Like Morris and his circle in England and Wright in America, Mackintosh was deeply concerned by the poor quality and design of everyday objects. All shared the pursuit of modernity and were part of a search for a form of life and art that would embody the aspirations of a new century.

Initially the Glasgow Style, in common with its continental cousins, depended to a great extent on the representation of the female figure. As the style developed this dependence dwindled, the figure becoming increasingly abstract, even at times being replaced by a thornless rose. As with many artists or artistic groups (for example Josef Albers and de Stijl), it is with their work in stained glass that one sees the inception of a characteristic which later becomes a hallmark. Margaret Macdonald's stained glass design, *Summer* 1893, was the precursor to many of her later images such as *The Heart of the Rose* 1901, which made the rose the hallmark of the Glasgow Style *(illustration 73).* In *Summer* the flat, attenuated young female-plant unfurls from her roots to be caressed by the male-sun, while flying between them a flock of swallows - symbols of Isis, the Egyptian fertility goddess - connote the onset of summer. The female-plant allows nine thornless roses to fall from her hand. The rose was, for the Romans, a sign of victory and triumphant love, and also sacred to Venus in antiquity and her symbol in Renaissance and later art. The Renaissance likened the rose to Venus because of its purity, beauty and fragrance, comparing the pricking of its thorns to the wounds of love. However, the thornless rose has been particularly associated with the Virgin Mary, who is called the 'rose without thorns' i.e. sinless. Thus the coupling of the plant-woman and sun-man in *Summer* brings with it innocence, harmony and the creation of life. Jeremy Howard interprets the use of the thornless rose in this instance as a sign for the freeing of sexual impulses and suggests the work symbolises the union of Margaret Macdonald and her fiancé Charles Rennie Mackintosh.

As the new century approached Mackintosh concentrated increasingly on the integration of the arts and their environment. Buildings and interiors, from structure to decoration, furniture to fittings, all were co-ordinated according to a unifying order: an order that embodied the unity of reason with emotion and of science with imagination. In his lecture on seemliness Mackintosh states:

> The architect ... depends very greatly for his success upon a kind of instinct, a synthesis, or integration of myriads of details and

> circumstances of which he cannot be directly very conscious but the appreciation of which makes the master in every profession.[157]

Miss Cranston's Tea Rooms and the 1900 Eighth Exhibition of the Vienna Secession stand as examples. Mackintosh's influence on the Vienna secessionists should not be underestimated.[158] With Koloman Moser, Josef Hoffman founded the Wiener Werkstätte in 1903 having previously reinforced the cultural exchange between Vienna and Glasgow by seeking Mackintosh's advice in setting up the Werkstätte. Moser and Hoffman were the Werkstätte's principal designers in glass and the particular appeal of the medium is illustrated in an extract from their 1928 jubilee catalogue written by Leopold Rochowanski: "Glass represents a personalised perception of space. As though born of brightness, if placed in a bright light, it will set a rhythm for the dancing light, or catch a moment's repose for converging light beams."

In his interiors Mackintosh customarily used stencilled motifs with straight and curved lines interlaced on an exaggerated vertical format and Hoffman was greatly influenced by Mackintosh's shared belief in simplicity of line and form. The bold, hieratic, rectilinear work of Koloman Moser (1868-1918) also owes a great debt to Mackintosh. His stained glass window at the Steinhof Church, Vienna, constructed in 1907, which places simplified figures on a background which anticipates geometrical abstraction is allied to Mackintosh's later, more rectilinear work.

Major commissions such as the Glasgow School of Art 1897-99 and 1907-9 have become a testament to the skill of Mackintosh's work: absolutely relevant to time and place without being wholly defined by context or slavishly imitating historical styles. The School of Art was officially opened in the December of 1899. The assembled company were shown a building in which the architect's innovative use of interior space has a practical as well as an aesthetic quality. The curved windows along one of the walls of the white board room and the small abstracted-organic motifs of trees, roses, seeds and birds in the stained glass panels of many of the doors demonstrate Mackintosh's preoccupation with the quantity and quality of interior light. The control of spatial emphasis and subtle manipulation of volume, which required an exact calculation of the way light falls across interiors and entrances, was particular to the simplicity of his form of Art Nouveau.

Early in his career Mackintosh's decorative work, in common with all style-conscious architects since the 18th century, had been merely an extension of his architectural work; complementary to it. By the turn of the century the decorative arts had taken a more prominent place in his work and he made use of stencilling and stained glass: although his contribution to the medium of stained glass was small it was nevertheless important for its originality. In common with Wright, Mackintosh was a master of the *grilles*, a combination of coloured and clear light: his interiors often featuring the imaginative use of semi-abstract designs and exploiting, for the first time in Britain, the qualities of American opalescent glass. Seldom employing, or integrating art glass to the same degree, Mackintosh's interiors have, nevertheless, an extraordinary modernity. Although Wright took Mackintosh's near abstraction to a more logical conclusion, both devised delicate linear use of characteristic local plant motifs to intersect and enhance areas of natural light and used glass to give a distinctive sense of place to their designs.

Miss Cranston's elegant Willow Tea Rooms, Sauciehall Street, Glasgow 1903 is a splendid example. 'Sauciehall' (alley of willows) is the theme Mackintosh adopted throughout the design in a manner not dissimilar to Wright's use of a single plant form during the same period. Set apart from the three tea rooms on the ground floor was the *Salon de Luxe*. This Salon for ladies, white and intimate, with its rich purple and silver furniture, its chandelier a shower of coloured glass balls, its walls lined with panels of leaded mirror glass, was Mackintosh's tour de force. Arguably Mackintosh's Art Nouveau stained glass reached its apotheosis in the magnificent double doors of the Salon de Luxe. Using the pale tonal colours most favoured by Art Nouveau artists: green, rose pink and purple, the glass, set in white wood, was patterned with stems, roses, buds and the characteristic flowing lines and loops to be seen also in Margaret Macdonald's paintings *(illustration 74).*

From the last decade of the 1800's these motifs of Art Nouveau began to appear in stained glass with more and more frequency; and the medium was enthusiastically taken up by many of the well-known architects and designers. This apparently complex and convoluted style is actually easy to translate into stained glass designs. The strongly curved flat forms, with simplified motifs and free expression of colour allowed studios to construct many frames quickly and cheaply and the glazier's early originality degenerated into a routine production of complicated pictorial effects designed in heavy fruity colours. The market was flooded with patterned windows from numerous factories (particularly in the United States). Windows were turned into distinctive areas of pictorial and decorative interest, with some glaziers, in imitation of Tiffany, achieving an almost painterly effect in their combinations of colour and texture. These glass artists would fit 'jewels' into the pattern which would catch the light causing it to sparkle and refract. Some used bevelled glass to create glittering lines on the edges of flat colour; others used 'bulls eyes' to alter the quality and density of light.

Art Nouveau was considered to have reached its peak at the Exposition Universelle in 1900: although instantly recognisable it had no strict definition and was more a visual language than a formal statement of design. It tended to dominate fashionable taste until the First World War; after which artists dismissed the extravagance of the Edwardian style and looked for a more sober idiom. They sought to create a modern style that combined the functional with the abstract. The ornamental richness of stained glass was rejected; glass was kept pure or used as a building material rather than a decoration. Nevertheless, it was a pivotal development in the history of art, design and architecture as, by rejecting conventional style and redefining the relationship of art to industry, its practitioners paved the way for the advent of modern art and architecture.

Frank Lloyd Wright

The development of Modern Art provoked considerable advances in stained glass design yet, by the 1920s, most English stained glass was still influenced by the romanticism of the Arts and Crafts Movement and Art Nouveau or a debased version of work produced by commercial studios. The most exciting developments in the medium were taking place in Europe and the United States. In Vienna, Koloman Moser was designing his bold rectilinear windows which were indebted to Art Nouveau as practised by Mackintosh; largely ignored in England. Johan Thorn

Prikker, a Dutch artist, was producing a body of work spanning Symbolism, Expressionism and geometrical abstraction and, at the German Bauhaus, there was a flourishing stained glass workshop which involved artists such as Paul Klee, Theo van Doesburg and Josef Albers. The American architect who tended to distance himself from the Arts and Crafts tradition was Frank Lloyd Wright.

A pioneer of the modern style Wright (1867 - 1959) created the philosophy of organic architecture believing that a building should develop out of its natural surroundings. The originality of his designs which introduced innovations such as indirect lighting, double glass windows, all glass doors and air conditioning, rebelled against the ornate Neo-classical and Victorian styles favoured by conventional architects of his generation.

Although Wright's vision was predictive rather than romantic, he was sympathetic to the principles established by the Arts and Crafts movement in so far as it emphasised such virtues as simplicity, propriety and the honest use of materials. In common with other architects and craftsmen in America, Wright was searching for a style that would be appropriate to modern life and reflect the dignity of each citizen in a democratic republic. He sought to achieve a true and harmonious integration of ornament and building, thus developing an organic architecture that would express the freedom of democratic man and was conscious of the essential function of glass in achieving this aim. From the art glass of his early houses to the hemispherical dome of the Guggenheim Museum nearly sixty years later it is, arguably, his innovative use of the medium that defines his work.

Wright had a liberating and creative view of space; introducing an opening and fracturing of the plane in which vertical and horizontal elements 'float free' from one another. His belief was that the reality of architecture was not in a building's façade but in its interior space where human activity occurs. A comparison could perhaps be made here with Roman wall painting where a similar drive to open up a space beyond the limits set by the building itself is present. As Wright himself pointed out 'The sense of space within the reality of any building is a new concept wherever architecture is concerned. But it is essential ancient principle just the same ...'.[159] In 1882 August Mau distinguished four so-called Pompeiian Styles of Roman wall painting. He based these distinctions on the fundamental way in which the artist treated the wall and the painted space. However this division is now sometimes called into question as these styles overlap: elements of the earlier styles are not entirely given up in the later ones; the architectural Second Style combines architecture with figure painting in a way which remains the basis of all subsequent styles. The creation of an intervening area or interval established between reality and representation is the peculiar achievement of the First Style; the Second Style is far more spectacular with the compelling idea of the simulated space as taking over from the real space allowing transitions between reality and simulation. The expansiveness of the Third Style is conveyed by the freeing of fictive space from the force of gravity by making tendrils and weightless stalks into supporting columns. Since normal grids are omitted, it is impossible to determine distance and space itself becomes boundless. With the Fourth Style, the breaking open of the wall and the expansion into fictive space are achieved once more. It is clear that although formally so different, all four styles are structured around a common desire: to negate the physical limits of the room, floor, ceiling and walls, in order to break past the parameters of the real and allow actual space to be penetrated by a fictional expanse beyond it.[160] Although ultimately working against this principle, it is evident in some of Wright's earlier work and is an abiding principle with many American glass studios to this day *(illustrations 75, 76 & 77).*

KENT TEMPLEMAN LIBRARY UNIVERSITY

Wright believed that stained glass was a development of the liberation of building design by new materials and methods. As Andrew Moor states '...With such a potent patron, it is surprising and tragic that stained glass failed to become part of the language of modern architecture. Perhaps this failure is due in some measure to the influence of Mies van der Rohe and Le Corbusier, although the latter actually designed a number of windows and was a great admirer of the medium'.[161] Van der Rohe's dictum of 'less is more' sharply opposes Wright's use of glass as ornament. Wright's definition of which compares 'ornament' with the expression of an emotion, as in poetry, which enhances the building and becomes an integrated part of the whole.

His ideas about ornament reflected theories that began during the 18th century Enlightenment and became a 19th century preoccupation with the study of natural phenomena and organic forms. Many of his earliest principles of architecture and decorative arts developed from this 19th century thought which culminated in the Arts and Crafts Movement in England and America.

Wright too was concerned with the decline in craftsmanship and generally poor quality of design but, contrary to the central ideal of the Arts and Crafts movement, developed his work in the context of machine production; a major issue with reformists. Wright and the members of the Arts and Crafts Society were divided by a dispute over whether handicraft techniques or the machine were to be used. Wright stated in his autobiography "The Society went 'handicraft' and then soon went defunct."[162] His interest was to lie in the study of "the machine as a tool at work in modern materials".[163]

Even in his earliest work Wright developed a style and language that prefigured the artistic philosophy of the de Stijl movement with its purity of design and clarity of thought. At the end of the 1880s-beginning of the 1890s, while still working with Louis Sullivan, a man strongly influenced by Art Nouveau, Wright began designing entire walls of glass (unfortunately curtain walling was, and still can be, an appalling fire risk). Almost all of his subsequent buildings included numerous windows and walls of leaded glass in his unmistakable style; a style which favoured a vertical line and developed a personal idiom in elongated, stylised plant forms. One of his important design contributions was in the concept of decorative windows used as screens or *grilles*, in which he incorporated clear glass within the coloured glass design. Setting the glass in zinc *cames* for extra strength, he thus eliminated the need for *re-bars* which would spoil the visual effects of the clear glass sections: many, if not most, contemporary glass artists still use this *grilles* concept with great freedom of interpretation. Always aware of the importance of the medium and the multiplicity of ways in which it might be used, Wright truly understood the symbiotic relationship of architecture and glass.

Wright's designs for his earliest clients in Chicago consisted of a comparatively conventional repertory of forms. For example the curvilinear, intersecting forms of the entrance window and fanlight for the George Blossom House 1892 and the stair window of the Charles Roberts House 1895, which included a naturalistic vocabulary of leaf and plant forms set in textured shapes of frosted and clear glass, were characteristic of his early style. The horizontality of the houses was balanced by the vertical emphases of the art glass windows; a balance that evolved to striking effect with the Prairie houses, designed only a few years later. The development of the Prairie house transformed domestic design and created new models for living both in the United States and Europe and serve to demonstrate the rapid acceleration of Wright's radical thinking about the use of art glass in the home. Wright considered a building as "a broad shelter in the open, related to vista: vista without and vista within."[164] The Prairie house design consisted of extended, horizontal shapes, natural wood furniture designed to integrate with the architecture, airy interior spaces separated by leaded glass and long bands of continuous windows (called light screens), so that the outside vista was always visible. The houses included corner windows to remove the most confining part of the room and glazed doors, opening onto broad terraces, to integrate inside and outside living. Deploring the claustrophobic interiors of existing Victorian houses he sought to redefine the American house by breaking open the conventional 'box' to facilitate a visual and physical flow of internal movement and soften the boundaries between the building and its surroundings, thus achieving a 'vista without and within' *(illustration 78).*

Wright's treatment of windows within the architectural whole was particularly remarkable. His compositions are usually based on a vertical format which provide a contrast to the general horizontality of the building and also to the horizontal nature of a row of windows, which themselves appear as a horizontal band. With the Unity Temple at his home in Oak Park, Illinois the entire ceiling was carried on concrete posts allowing the non-supporting walls to form a clerestory; becoming light screens immediately below the roof allowing "a sense of happy, cloudless day into the room..."[165] He had a particular dislike of sash or, as he termed it 'guillotine' windows as the light which came through appeared as a hole in the wall rather than as a band of light. The idea of casement windows, opening to the outside would extend the room space and its relation to the exterior world thus bringing together the intimate relationship of site and vista which was central to his philosophy of architecture. Casement windows can hardly be seen as an innovation: integral to the Arts and Crafts movement they appear in the earliest domestic interiors of William Morris. The inclusion of casements in American architecture however, often involved an extensive roof overhang as protection; a radical departure from convention that many of his early clients refused to sanction.

Many of the early Prairie houses were built on unprepossessing suburban sites, and therefore the 'vista within' became of great importance. A prime example of this inward focus can be seen in the Susan Lawrence Dana House, Springfield, Illinois 1903 where he compensates for the lack of outlook or natural vegetation on this large, but uninviting, corner site by the internal quality of design and the richness of glass ornament which draws on characteristic local natural forms as 'organic' ornament.

With such buildings Wright demonstrated his dazzling designs in art glass windows, doors and lampshades and his new technique of electro-glazing which he employed consistently for more variable effect.[166] From the beginning he had preferred using straight zinc *cames* to hold the glass rather than the broader, thicker and more curvilinear lead which was customary. In 1952, referring to the glass designs for the Dana House, he wrote to the Taliesin Fellowship:

> … I found the means in Chicago – electro-glazing where you could take a little copper strip and set it in between two pieces of cut glass – any pattern you wanted – and just by sticking it there with solder…then drop it in to an electric bath, and the copper would attract from the bath enough more copper to seal the glass.[167]

Zinc, as the stronger material, could be more easily worked in varying thicknesses to further emphasise, not only a geometric line, but one of the key tenets of modernism: 'truth to materials'. With this method he demonstrated both the suitability of his design to the nature of his material and his potential to take full advantage of the possibilities of the medium.

Anticipating the abstract art of the 20th century in his 'Prairie' windows the strongly geometrical shapes in stained glass were the forerunners of what later became extremely popular throughout Europe and the United States. Many of the designs were organic but highly stylised; to a degree that made the design abstract. This extreme geometric abstraction still managed to capture the essence of the plant, something which was particular to Wright who tended to favour two styles of design: complete abstraction or based on stylised flowers and plants. Examples of the latter can be seen in the Susan Lawrence Dana House, and the Darwin D Martin House Buffalo, New York 1904 (*illustrations 79, 80 & 81).* It was with the Martin House that he was given the opportunity to further explore and define his concept for the Prairie period home. Normal walls were replaced with an arrangement of piers, mullions, fireplaces and built-in furniture to create a series of interlocking spaces, thus destroying the 'box' and creating freedom of movement. Based on the rectangle, the geometrical vocabulary can be seen throughout the house integrating all its elements. As in the Dana House, the windows for the Martin House form an significant part of the overall decorative and architectural scheme. Although an admirer of medieval ecclesiastical glass he believed that glass for a modern building should be made of:

> ...shimmering fabrics ... woven of rich glass .. patterned in colour or stamped to form the metal tracery that is to hold all together to be, in itself, a thing of beauty consistent with slender steel construction expressing the nature of that construction in the mathematics of structure. [168]

Of the several designs created for the windows the most dramatic was the Tree of Life Window the stylised, organic forms of the motif dating back to, at least, the medieval period. The motif, used alone or in various combinations and permutations to form light screens became as he often put it 'the expression of the building', as the sumac plant became the expression of the Dana House.

Wright's design included an extraordinary range of subtle colours and tones in which small facets of milky opalescent and iridescent glasses were introduced. However, the design, as it was initially conceived for the main reception room, obscured the view and, apparently, Martin himself provided an alternative, simplified plan for the lower floor of the building. But the subsequent removal of a great deal of the iridescent glass could simply have been due to the fact that Wright had come to prefer clear, primary colours. Speaking later of his use of iridescent glass he recalled:

> I have used opalescent, opaque, white and gold in the geometrical groups of spots fixed in the clear glass. I have used, preferably, clear primary colors, like the German *flashed glass*, to get decorative effects, believing the clear emphasis of the primitive colour interferes less with the function of the window and adds a higher architectural note to the effect of light itself.[169]

With the unlimited budget for the Dana House Wright again moved away from Victorian box-like rooms to a different relationship of open spaces in which rooms flowed into one another. He also varied the floor levels and heights of ceilings to create a more interesting living environment. In the vestibule the ceiling of arched bands of autumnal glass skylights provides the key decorative medium and whets the visitor's appetite for the magnificent display of art glass throughout the house *(illustration 82).* Wright's windows, often used on two levels to articulate the space, were not merely openings but were envisaged rather as light screens; their ornamentation continuing the surface of the wall. For example the 'sumac' windows in the dining room of the Dana House, although abstracted in contrast with the naturalistic sumac of the walls, continue the theme. This theme is again reflected in the hanging ceiling lamps; another demonstration of the use of a single motif to achieve unity throughout a house. When Wright designed the windows he took into consideration the way the colour, quality and play of light could change a room. The Dana House dining room windows for example were richly coloured and screened out most of the light, contributing to the subdued illumination. In some of the Prairie houses, such as the Dana House, the glazing scheme varies from room to room, in others, for example in the Martin House, they vary from window to window. In comparison to the less complex windows of the Martin House, the Dana dining room windows have a far stronger sense of movement achieved by the inclusion of short vertical chevrons of colour on the stylised leaves of the plant.

The glazing schemes were often complemented by lighting fixtures and skylights. Six pedestal brass table lamps were designed for the Dana House; large and heavy though the lamps are, they embrace the delicate joinery and overall presentation so typical of Wright's design: their delicate but sturdy character being one of the elements that separated him from his Arts and Crafts contemporaries *(illustration 83).* Although he employed free-standing lamps Wright preferred that the lighting, together with the furniture, was integral to the room, and his fascination with art glass covering integral lighting became one of his trademarks. Writing of such lighting innovations in *In the Cause of Architecture* in 1928 Wright perceptively remarked: "No longer an appliance, nor even an appurtenance, but really architecture... I can see limitless possibilities of beauty in this one feature of the use of glass."

In the Dana House dining room illumination is provided by a two-way system of indirect lighting which extends the whole length of the room together with four butterfly ceiling lamps which repeat the spaces of the interior. The lamps are extremely complex in design; numerous planes and angles forming an abstracted butterfly (*illustration 84).* The cartoons for these shades suggest the use of intense colours, oranges, yellows, reds and greens, in a range of sandblasted, clear, coloured and textured glasses.

The Dana House screen of windows with its stylised plant motifs reflects the landscape visible beyond. In some instances, as with the Glassner House 1905, the landscape outside was integral with the glazing scheme, having trees planted at corresponding intervals to the images of the glass. Thus the Albertian genre is taken to its extreme limit where the 'canvas' literally becomes a window on the world leading to a distant view. However, by the end of the first decade of 20th century Wright had reacted against the tendency toward realism of form in window glass, which could get mixed up with the view outside. Moving on from the 19th century practise of (once again) imitating landscape perspective in designs which acknowledged the flatness of the medium he stated:

> The windows usually are provided with characteristic straight line patterns, absolutely in the flat and usually severe. The nature of glass is taken into account in these designs as is also the metal bar used in their construction, and most of them are treated as metal 'grilles' with

> glass inserted forming a simple rhythmic arrangement of straight lines and squares ...[170]

Many designs were constructed of squares, rectangles and bars which framed the view from the windows exemplifying his dictum that: "a window pattern should stay severely put" and "not get mixed up with the view outside."[171] He also began to depart from the symmetrical, geometric designs he had favoured, moving instead to dramatic, asymmetrical patterns of the Avery Coonley Playhouse. A pivotal point in his career and his most important single windows of the period, these designs introduced the circle for the first time.

Integral to the context of the Playhouse at Riverside, Illinois, the Avery Coonley windows (1912) are nevertheless self-contained artistic statements which undoubtedly demonstrate the influence of a year in spent in Europe from 1909 to 1910 *(illustration 85).* The complete departure from his previous work is particularly evident in his use of primary colour and fragmented abstract forms unrelated to nature. This turn away from organic source material and inclusion of primary colour and irreducible geometrical form, echo the experiments in contemporaneous European paintings such as those of Francis Picabia and Frank Kupka and correspond somewhat to the later paintings of Piet Mondrian (as does his 1936 Danforth Chapel window for Florida Southern College). However, in common with the specifically American form of Modernism which evolved after the Armory Show in 1913, when contemporary European art was shown in New York for the first time, Wright's early style reflects a quintessentially American spectacle. The Avery Coonley Playhouse design was specifically designed to convey the excitement of a parade with its balloons, flags and confetti. These windows are valued as being among the icons of American Modernism, not only do they represent many of the concepts of contemporary art and design but they also follow another tenet of Modernism by breaking decisively with the past. In a similar scheme designed for his own children's playroom this theme was taken up in the light fixtures; glass globes suspended from the ceiling at different levels resembling balloons.

From these few selected examples it is obvious that, in several important respects, Wright's work differed considerably from that of most American and European glass artists in the period before the First World War. In contrast to contemporary productions from studios such as that of Tiffany, with their hotter, more naturalistic palettes, Wright sought repose, achieving a quiet feel through a combination of electro-glazing and colour selection. Zinc *cames*, less flamboyant that the customary lead, separated the sharp, clear colours he preferred for his abstracted forms. His work was functional and integral to the architectural structure, intended as an embellishment to his architecture rather than a powerful artistic statement. Following the exhortations of American avant-garde poet Ezra Pound to 'make it new', Wright brought the medieval medium of stained glass into the secular architecture of 20th century America. But, by the end of the 1920's, market factors such as the high cost of materials and expertise demanded by the craft appear to have contributed to its demise for domestic use on a grand scale. Fortunately the Dana House has survived virtually in tact, even to the inclusion of one of the original brass lamps, sold at auction in 1989 and now back at Springfield. From this alone it is possible to observe that Wright is the artist who introduced, and most effectively demonstrated, the use of abstract stained glass as a major decorative element which helps to reinforce the architectural motifs.

The Break with the Ecclesiastical Tradition

In common with other similar attitudes, early 20th century art became 'an explosive liberating force against the oppression of assumptions and established hierarchies accepted until then.'[172] A series of commonly held assumptions - philosophical, scientific, political and social - were questioned and, in the arts, the unequivocal adherence to past traditions was challenged and rejected. Art history had been seen previously in terms of a steady linear progression, unfolding and developing in time. At this point such a progression was reduced from long stretches to short, rapid, multiple and concurrent spurts and fragments. Thus modern art was not so much making a fundamental break with the past but merely reducing the period of its evolution. Until the turn of the century it was customary to view the arts in broad categories or styles but now began an accelerating succession of movements; some so transient as to be almost imperceptible; each with its own agenda and augmented by declarations and manifestos. Before focusing on the abstract art created by these movements, a brief examination of the vocabulary of abstraction would perhaps prove a better point of departure.

Abstract art draws on different vocabularies. It refers to the history of representational art with concepts akin to plane, framing, and perspective. It also refers to geometry and the tradition of mathematics, with points, lines and volumes: artists such as Klee and Kandinsky for example use these characteristic motifs of abstraction. It relates to concepts of language and engages with Saussurian linguistics: Cubism, for instance, brings in the semiotic perception of signifier and signified; using a violin sound hole as the sign of a violin, it connotes rather than denotes. In abstract art all types of sign can communicate including icon – a likeness, for example a portrait; index – a connection, for example a footprint, and symbol which represents by convention, for example a crown standing for Queen as head of state.

Abstract art, it is argued, depends upon the assumption that specifically aesthetic values reside in forms and colours, independent of the subject of the work of art. However it would seem that this argument marginalises the fundamental problem of the language of abstraction and its ability to communicate; about which there seems to be no general agreement. Stephen Bann states that to elucidate the overall intelligibility of abstract art 'we need not merely a principle for finding local relationships between individual works, or sets of works, as Gombrich argues, but a comprehensive system for the analysis of art as a discourse ... a 'diachronic' principle which traces the morphology, or logic of the evolution of forms, in time'.[173] Levi-Strauss takes the musical analogy of a cyclical development from code to message and myth affording it a direct parallel with the development of abstraction.[174] This musical analysis takes on a greater explanatory power if linked to the formal models of discourse devised by linguists such as Saussure to analyse the structure of an artistic language. Analysis in these terms helps to demonstrate that the development of abstract art was far more than a random and somewhat perverse process and opens up new ways of judging the importance of contemporary abstraction. Abstract art broke with mimesis in a conspicuous and provocative way, borrowing its functions from other media. Abstract artists, in their concern to challenge the depictive tradition of single point perspective and find a new code, did not create the crisis of representation but rather responded to a crisis which could already be observed in literature. Abstract art, although less apparently accessible than representational art, demonstrates that all art rests on theoretical assumptions and exploits conventions in much the same way and with the same validity. As Rothko stated "There is no such thing as a painting about nothing".[175]

Although he produced very little stained glass, the artist and critic Roger Fry was an important influence on art glass designers as it was he who brought modernism to attention in Britain. Believing that art had begun to recover the language of design and explore long neglected possibilities, he organised the first Post-Impressionist exhibitions held in London in 1910 and 1912; both of which created an enormous furore. In connection with these exhibitions, Fry coined the term Post-Impressionism to embrace the various styles of painting that succeeded Impressionism. Although the Post Impressionists based their styles on the use of colour developed by the Impressionists, they reacted against Impressionism's desire to paint an accurate reflection of nature and depict the effects of light. Instead they chose to present a more subjective view of the world.[176] At this time Fry placed a great deal of emphasis (too much as he later stated) on their divorce from the parent stock. Almost two decades later, whilst still recognising their essential difference, he saw more clearly their affiliation to it: how closely they followed tradition and how their work demonstrated a familiarity with the Italian primitives.

The assemblage of works by Cézanne, Gauguin, Van Gogh, Matisse and Picasso were virtually unknown in Britain. With the exception of a few of the younger English artists these works were not well received. Constant accusations of anarchism and sensationalism were levelled by journalists: not just as an attack on the foreign contingent (in the second exhibition the 'decadence' of the English group and their unpatriotic deference to the French was singled out), but a far more personal onslaught directed against Fry himself. Fry, however, put up a vigorous defence arguing that this new movement in art was the work of 'highly civilised and modern men trying to find a pictorial language appropriate to the sensibilities of the modern outlook.'[177] Furthermore it was the more disconcerting to the English public in that it was 'no mere variation upon accepted themes but implied a reconsideration of the very purpose and aim as well as the methods of pictorial and plastic art.'[178]

English Neo-Romantic painters, seeking to establish a national identity, argued vehemently against Fry's lectures and writings denigrating English artists such as Blake and Turner, stating a preference for literary source material rather than the pursuit of 'significant form' in mounds of fruit and bottles of wine. To an English audience, whose greatest appreciation was for the illusionist skills of the artist, the subordination of such skills to the direct expression of sensation was inexplicable. However, Fry believed that the underlying cause of antagonism was as much social as aesthetic.

Fry was of the opinion that most art was made, bought and sold merely for its value as an indication of social status.[179] The educated classes, according to Fry, felt instinctively that their special culture was one of their social assets; familiarity with high art giving them a distinctive cachet and social standing. It was felt that it was only possible to appreciate high art through erudition, but "to admire a Matisse required only a certain sensibility. One could feel fairly sure" Fry stated "that one's maid could not rival one in the former case, but might by a mere haphazard gift of Providence surpass one in the second. So that the accusation of revolutionary anarchism was due to a social rather than an aesthetic prejudice."[180]

Prepared for the hostile comments of the Royal Academicians, Fry was upset by the attitude of artists such as Walter Sickert, with whom he had previously felt in sympathy. Sickert's account of the exhibition in the January edition of the *Fortnightly Review* demonstrates his familiarity with many of the works on show. His critique was a mixture of praise and condemnation: his remarks on Gauguin and Cézanne were perceptive but he loathed Matisse and labelled Picasso as 'a faux fauve'. However as Fry's admiration of Cézanne increased,[181] Sickert became ever more critical and abusive stating that Cézanne would be 'remembered as a curious and pathetic by-product of the Impressionist group ...'.[182] The exhibition finally proved 'a prodigious success' according to Clive Bell who declared:

> It set all England talking about contemporary painting and sent the more alert not only to Paris but to museums and collections where they could have a look at primitive, Oriental and savage art.[183]

It had an immediate impact on the work of some of the younger English painters who had previously been acolytes of Sickert; the most progressive painter of his generation. Although the English tradition was successful it had no real points of contact with advanced French Impressionist art. It was Sickert who came closest with paintings such as *Café des Tribuno* where his spontaneous use of paint ties in with the Impressionists. However, the young English artists became dissatisfied and, by 1911, a gap had widened between the conservatism of the New English Art Club who met in Sickert's studio, and the committed progressives which included the artist Wyndham Lewis. Within three years a new generation of English artists evolved and extended the boundaries of art far beyond that of Sickert.

Fry and his associates, the Bloomsbury Group, motivated by a reaction against the formalism and Realism of the late 19th century, were distinctly influenced by Post-Impressionism in their simplification of form, suggestive use of colour and strongly rhythmic line. Duncan Grant's portrait of James Strachey 1910 can be seen to have moved from the grand manner of painters such as John Singer Sargent and is more allied to Degas. Grant and Vanessa Bell responded to Fry's Post–Impressionist exhibitions with rather insipid paintings such as Bell's *The Tub* 1912. Painted for the Garden Room at 'Charleston' but never installed, it relates to Matisse and the Fauves; converting to modernist ideas of rawness and unrelated colour and showing the influence of primitive art. Grant's *The Queen of Sheba* 1913 continues the English avant-garde tradition with its pointillist technique and arbitrariness in treatment of form *(illustration 86)*. There is a new fluidity in the figures with movement implied by distortion and the mysterious and exaggerated movements of the bodies are echoed in the necks of the camels. By 1914 Grant was close to abstraction: *Interior Gordon Square* 1914 uses verticals and horizontals in a way similar to that of Cézanne in his portrait of Victor Choquet *(illustrations 87 & 88)*.

In 1913 (to 1919) Fry opened the Omega Workshops in Fitzroy Square. These were craft workshops; more or less an early version of the artist's co-operative, giving employment to impoverished young painters whose work was in one way or another sympathetic. One of its main motives was to overcome the traditional division between the artist and craftsman and, in common with William Morris, to encourage the belief that beautiful decorative objects sustain and support life. One major difference between Morris's Company and the Omega Workshops was Fry's temperamental distrust of any politico-social motivation. Morris' ideas about art involved a moral basis that Fry's did not. What the Omega proposed, if indeed it had formed a new idea of morality, was freedom from convention, rather than the development of an idealistic society. The Omega had only a small influence at the time and then only in the limited circle of the rich and cultivated. It achieved nothing like the universal publicity of the Bauhaus or de Stijl, possibly because its productions were never conceived as models for the masses. Fry spoke of 'original industrial art' believing that there was none to be found in England. Although not opposed to mechanical production as such, he was firmly against the soulless 'conveyor-belt' manufacture of poorly designed objects. What he hoped to do with the Omega was to bring about a closer relationship between the artist-designer and the craftsman so that artistic concepts could be interpreted in a more sympathetic manner.[184]

In the Omega Workshops art merged with the environment: the new sense of colour, energy, rhythm and pattern, Fauvist and Cubist in colour and design, began to emerge in applied art. In 1914 Fry designed his most significant work in stained glass: a circular window for the entrance hall of the Hyde Park Gardens house of Lady Ian Hamilton. The rest of the entrance hall and three first floor rooms having been decorated by the Omega in a conglomeration of patterns undoubtedly meant to rebel against convention. Now housed at the Victoria and Albert Museum the design is described as:

> ... a landscape flanked with palm-trees to right and left; a strip of water crosses the picture, and behind it are mountains. The border is of very pale yellow and blue billets alternating with mauve bars. No enamel paint is used. The design is made by the leading. The glass shows great variety of rather soft tones of blue, green, yellow, brown and ruby, some of it being streaked.[185]

The roundel was constructed by Loundes and Drury to Fry's cartoon after Cézanne's *Les Moissonneurs* in 1876.[186] There is also a distinct similarity to Charles Ginner's *Tiger Hunting mural in the Cave of the Golden Calf* 1912 however, the greater linear severity and smaller sections in Fry's exotic palm fringed window are agitating to the eye (*illustration 89).*

The 'in situ' art, at Charleston, the Sussex farmhouse where Fry lived for a time with Vanessa Bell and Duncan Grant, embraced modernism, attempting to change the bourgeois perception about notions of good decoration. At the time, the bright colours, spontaneity and freedom of treatment spelled decadence, bad taste and all kinds of loose behaviour to the general public. One artist in particular played up to this impression and that artist was Wyndham Lewis. It was Lewis whose lampshade designs, some on the theme of prostitution, albeit subtly disguised, were particularly flagrant. He moved away from the abstract designs of most of the other shades to produce a range of figurative images of circus performers and, as he told Winifred Gill, 'stages in the bargaining between a roué and a procuress for the purchase of a young woman.'[187]

It was not long however, before Lewis (together with Cuthbert Hamilton, Edward Wadsworth and Frederick Etchells) stormed out of the Omega thus beginning a thirty year feud founded on his attributing to the Bloomsbury set his failure to win recognition as a painter after the First World War. There are complicated, manifold reasons for this break but it was mainly brought about by aesthetic dissension principally over the decorations for the 1913 Ideal Home Exhibition room. Lewis was opposed to the Omega's disregard of the idea of traditional materials in making furniture just as he disliked its code of anonymity which undermined the making of personal masterpieces. In the Vorticist magazine *Blast* July 1914 Lewis wrote:

> As to its (Omega's) tendencies in Art they alone would be sufficient to make it very difficult for any vigorous art-instinct to long remain under that roof. The Idol is still Prettiness ... despite the Post-What-Not fashionableness of its draperies. [188]

This seems indeed to be so; even Vanessa Bell requested of Fry that they should move on from painting only the 'gay and pretty.'[189] Although the Bloomsbury painters were the first to introduce advanced style into England they had no real commitment to abstraction. In spite of Grant's 'wit and invention' as noted by

Rupert Brooke, the Omega was the poorer for Lewis' departure when decoration took ascendancy over design.

In 1914 Lewis set up the Rebel Art Centre. The four mavericks from the Omega were joined by William Roberts, Jessica Dismorr, Jacob Kramer and Helen Saunders, with Ezra Pound as a frequent visitor. In May of the same year the leader of the Futurists, Marinetti, was invited to speak. The aim was to enlighten those interested in the modern revolution in the arts. Each Saturday the public was invited to attend such discussions and to see the work of the incipient Vorticists. The legacy of Cubism had, by this time, developed in several directions allowing distinct coteries of avant-garde groups to metamorphose including Vorticism, in some respects its most cogent expression in England. It played an international card to counter the sophistication of the Bloomsbury set.

The Anglo-Jewish artist Alfred Aaron Wolmark, designer of the first completely abstract stained glass window in England, has been linked by John Piper to the Vorticists but there is no direct evidence of any such association. The indirect evidence of exhibiting with members of various groups does not really indicate a substantive connection merely that the organisers considered the works, usually wide-ranging in style and ability, up to the required standard. June Osborne declared Wolmark's window to be an 'isolated landmark: it stands alone, without anything else (at least, in this country) related to it.'[190] I would take issue with this statement. Firstly, if recognised as a work of art in itself, rather than perceived solely as ecclesiastical stained glass, Wolmark's window in St Mary's, Slough is distinctly related to many other works of both fine and applied art being produced at the time. In the series of work Wolmark himself painted at Concarneau, Brittany from 1911-12 flat planes of colour and geometric forms are strongly related to the glass; *The Temple Builders*, undated but I would suggest c.1912-15, and his work to the late 1920's-1930, including painted ceramic pots, is imbued with a similar spirit; sadly after 1930 his work lost its direction *(illustrations 90 & 91)*.[191] Secondly, the Slough window is, to some extent, prefigured by Gerald Moira's 1898 North aisle window in St James Church, New Bradwell, Buckinghamshire *(illustration 92)*.[192]

Moira exhibited at the Arts and Crafts Exhibition Society throughout the 1890's.[193] Although he did not sustain his early promise as a glass designer, eventually becoming better known for his murals and book illustrations, the New Bradwell window stands as a testament to his potential in the medium. Notwithstanding the somewhat Pre-Raphelite faces and the positions of the figures, reminiscent of the 1873 Burne-Jones Adam and Eve window for St John the Divine, Frankby, Cheshire, the strong, warm background colours and simplified outlines are surprisingly Expressionist for so early a work: an element not demonstrated in his work in other media. It is interesting to compare this stained glass to a three panel painting by Moira housed in a converted Canadian Stationary Hospital in Doullens (near Amiens) completed in 1918 *(illustration 93).* In this work, where nursing sisters are thematically linked to Christian ideology, Moira uses colour and posture symbolically. For example, the white and blue of the nurses' veils and dresses are colours associated with Mary, and the nurse in the foreground so carefully carrying the bandages, reflects many traditional sculptures and paintings of Mary cradling the infant Jesus: as Mary cared for the helpless baby so the nursing sisters tended the wounded in their hour of need. But in spite of the subject matter this conventional painting (completed twenty years later than his stained glass), lacks the expressiveness of line and colour and the emotional impact that is so evident at New Bradwell. One could conclude therefore that the expressionist element in Moira's glass is the result of working with this new medium which led him to explore a fresh and exciting visual vocabulary. Wolmark, on the other hand, had already begun to emphasise colour and form in his easel painting before exploring the medium of stained glass.

Born in Warsaw, Poland, Wolmark settled in England with his family in 1883; initially living in Devon the family moved to London where, as a student at the Royal Academy Schools from 1895, he was awarded a silver medal for drawing. His early painterly work, depicting scenes from his Jewish upbringing in the East End, owed a great debt to Rembrandt but, after a short time working in Brittany Wolmark's style underwent a radical change. It is virtually impossible to offer an explanation for this dramatic change in style as he has written so little about himself. However, one can point to his inclination to absorb other artist's styles into his own work: in particular, Gauguin's tendency to divide compositions into areas of plain colour with minimal shadowing to indicate volume. This could perhaps be regarded as a natural progression in his painting in that the colours are given greater value if they are less constrained by attempts at naturalism in the form of three-dimensional shadowing. In his painting *Nudes in a Red Light* (c.1911), Wolmark's flat patterned background and dramatic colours are reminiscent of Gauguin although the characteristic thick and rather craggy impasto is certainly his own. He was later to remark that he 'painted in this manner before ever having seen Gauguin's work'.[194] More specifically Wolmark often recalled with great delight that one of his paintings had been hung next to a Van Gogh.[195] Probably the most plausible explanation is simply that by 1912 Wolmark had been impressed by the work of the French Post-Impressionists both in London and Paris (which he visited in 1906, 1910 and 1911) and wished to incorporate this stylistic feature into his own painting. From tentative beginnings, this tendency to simplified form with less concern for volume was added to his already established movement toward using brighter colours. Although a few of his earlier paintings included small areas of outlined flat planes this feature gained importance and became far more confidently executed in the period up to 1914. On his return to London Wolmark associated with the English avant-garde within which many differing small groups and coteries were formed under the wide umbrella of Post-Impressionism. He exhibited in many group shows including Fry's International Post-Impressionist exhibition in London in 1910; the Allied Artists Association 1908-1912, 1914 and 1916; the Contemporary Art Society 1911 and Frank Rutter's *Post-Impressionist and Futurists* show at the Doré Gallery in 1913.

In the avant-garde life of pre-war London art became revolutionary, in many instances reflecting the agitation and violence of the times. Certain Post-Impressionist groups, such as the Vorticists, joined women's suffrage, home rule, socialism, and all other challenges to what had been the accepted ideas about man and his place in society.[196] Within the movements some, such as Vorticism, shared an identifiable style, but many had no common visual ground with the inevitable result that both artist and audience could not decide with any certainty what, or who, belonged to whom. In an effort to clarify the situation an anonymous writer for the magazine *Colour* devised the following identifications:

> The Literary Group under the able guidance of Mr Savage, the editor of 'The Gypsy'.
> The Waterists, a group of watercolour painters, and the eccentric 'Cubists'.
> The (Augustus) John Group with all the little 'Johnnies'.
> The Jacob Epstein Group of modernist sculptors and painters.
> The Camden Town Group of Post-Impressionists.
> The Wolmark 'Colourist' Group-a development of the former school.[197]

Where the Post-Impressionism of the Bloomsbury Group celebrated the revival of a decorative tradition, the Vorticists and their allies painted the dynamism of an industrialised society. I would argue that the works of Wolmark demonstrate unequivocally that he falls into the category of the former group. However, he prided himself on being independent; despite exhibiting with many contemporary modern artists he distanced himself from group affiliations. It is therefore difficult to place Wolmark in the context of any other artist except perhaps Henri Gaudier-Brzeska, whom he befriended and championed for several years from as early as 1912. Although it is probable that Wolmark absorbed the tendency to simplified outline and facetting, characteristic of some of Gaudier's work, in this instance one must agree with Risdon's inclination to see that as reinforcing a trend already in place.[198] I would suggest however that, although used in his own individual way, Wolmark's tendency to incorporate the styles of other artists into his work, to his detriment, prevented his own style becoming fully developed and matured.

Wolmark's penchant for coruscating colours, particularly orange, emerald green and purple is evident in his paintings dating from c.1911, the West Windows of St Mary's Church, Slough and in all his later work *(illustrations 94 & 95).* Although there is an obvious visible relationship between the flat planes of his coloured glass and the flat coloured planes of his easel paintings from 1911 onward - possibly best illustrated by the series fishing boats and market traders painted during his honeymoon in Brittany in the latter part of 1911 - as yet, no sign of preparation for the stained glass designs has come to light. Nevertheless, one could safely assume that he must have had some guidance for the ambitious task of designing the Slough windows.

The windows were commissioned by Mary Elliman, of Elliman's Embrocation fame, whose family were important benefactors of the town.[199] In his book on stained glass entitled *Windows,* which exerted a great influence on the Ellimans, Lewis Foreman Day expressed his ideas on modern glass:

> To affect a style is practically to adopt the faults and follies of the period. Why should the modern designer submit to be shacked by obsolete traditions? ... the unfortunate designer of modern glass is constantly asked to conform both to the technique and to the design of glass such as was executed at the period to which belongs the building where his glass is to go, no matter how inadequate the one or the other or both may be... The problem is how to produce the best glass we can in harmony with the architecture to which it belongs. What happens to have been done during the period to which the architecture of the building belongs concerns us only in so far as it may help towards a solution. It is no sin in modern work that it belongs to its day – it is its virtue.[200]

In 1913, having been inspired by the ideas of Day, Mary Elliman and her brother James arranged for new windows to be designed for their parish church. At a meeting in the same year between James Elliman and the then Bishop of Bristol, Dr Browne, the idea was developed to introduce coloured windows into the church.[201] Browne expressed his opinion that 'when a service was finished people should have in the west windows a sense of religious beauty without figures of saints and men to disturb their thoughts.' After a tour of stained glass produced in English churches during the previous fifty years, Elliman decided against any 'saints, or halos, or anything of that kind.' The *Windsor, Eton and Slough Express* of 25th September 1915 (p.2, col.5), in a repeat of the article by P G Konody in the *London Observer,* 19th September, reported that the overall idea was for the window to be a 'medley of colour ... to attract and hold the eye and give a pleasing and restful feeling to the mind. It was not to be a picture, but a feast of colour.'

Elliman employed the author of '*Colour in the Home*', Edward Duveen to assist in finding a glazier who could produce the kind of window he wanted: a window which had no previous existence and was to be 'an entirely new departure.'[202] Duveen decided that, because of the problems of introducing a combination of strong colours to an already deep red brick building, it would be essential to commission an artist. The artist he turned to was a Mr Gill. Tantalisingly, without a Christian name, it has proved impossible to discover his identity: Colin Gill or Eric Gill would seem obvious suggestions. Elliman did not accept the designs that Gill submitted as he disapproved of the religious figural motifs which were included (very typical of Eric Gill's work). Gill then introduced Alfred Wolmark, who submitted a preliminary sketch for Elliman's approval in the autumn of 1913 with the suggestion that the windows should be constructed by the Dix Studio of Gower Street, London.

A trial section was made at the studio for the approval of Dr Shaw, Bishop of Buckinghamshire, and Dr Browne who thought the colours were unusually rich and beautiful. Subsequently two larger panels were erected for a fortnight's trial in the church. Shaw considered these pieces as "not exactly devotional –there is a sort of riot of colour more suggestive of the world than the church", remarks which directly opposed the enlightened view of Abbot Suger many centuries earlier. Following the Pseudo-Dionysus, Suger argued that sensory impressions derived from bright colours drew the onlooker "from the material to the immaterial" bringing the divine into human life.[203] However, Shaw did not oppose the continuation of the work. [204]

When the windows were completed in September 1915, they were dedicated by Dr Shaw, who remarked on the importance of colour as a reminder of the 'duty of cheerfulness in daily life and facing with strength all the burdens.'[205] After the unveiling the bottom panels were altered at the direction of Dr Browne, who considered them ugly and inadequate. The original designs are unknown, the panels now contain, somewhat innocuously, Wolmark's interwoven initials; an emblem used in most of his later paintings.

Contemporary accounts were full of approbation. P. G. Konody of *The London Observer* described the abstract design as being an advantage rather than an obstacle in meeting the design brief for a piece of decoration which was to produce a 'sense of religious beauty without figures of saints and men to disturb the thoughts of the congregation.' He considered that Wolmark had not adhered to the condition that no figures were to be introduced but his treatment of the figures was:

> ... so abstract ... that the subject *Creation* ... is entirely lost in the decorative sumptuousness of the translucent colour pattern... All that can be distinguished with a certain degree of clearness is the rhythmic parallelism of the feather of the angel's wings and the consecutive wavy line of the winding serpent.[206]

There appears to be no evidence to support the notion that Wolmark intended this work to be in any way representational.[207] Although to some extent he uses form as narrative, the work lacks a core and, with every area given equal value, becomes an even decoration across the face of the four lancets. The density of the unpainted colour contrasts prevent *halation*, blocking rather than transmitting the spirituality of light and thus cannot compare with the emotional and spiritual intensity of the work of Albers or Chagall for example. The small west window is also by Wolmark but here he applies a far more limited and tonal palette and includes a clearly discernible Star of David in the base panel (*illustration 96).*

Wolmark's use of small irregular shaped pieces of vivid primary colours in these windows makes them prefigure, to some extent, many of Albers' glass assemblages constructed at the Bauhaus in 1921-22 and in fact could be said to take the medium back to its roots of abstract mosaic patterns. However, the conformity of the size of the glass pieces and their uniformity of colour results in blandness in spite of the almost overwhelming strength and vibrancy of the whole. A remark from Konody in 1915 suggests that the powerful colours might be overwhelming in the context of the rest of the glazing scheme:

> To appreciate the artistic significance of the experiment one has only to turn from its opulent, sumptuous glow to the anaemic, livid east window which is a by no means contemptible example of modern stained glasswork. The comparison is absolutely disastrous for the older work, and it is to be hoped that the lesson will be heeded in the

> event of any further colour windows being added to complete the decoration of the edifice *(illustration 97).*[208]

Unfortunately this lesson was not heeded and other commissions in differing styles, many by Kempe and Pawle, together with random *grisaille* windows complete the melange: the immense impact of the West windows overshadowing this hotchpotch of other glass in the church *(illustrations 98, 99 & 100).*[209] A definite argument could be made for the introduction of a coherent glazing scheme throughout the building, as happened with John Trinick's windows at Salmestone Grange Chapel, Margate, 1938-1958; The Chapel of St Angela at the Ursuline Convent, Forest Gate, c.1947 and Chagall's at Tudeley from 1967 to 1985 for example.

However, the boldness of concept and colour lends a spectacular, even breathtaking quality to the interior and Wolmark's tendency towards the medieval canon proportionally (the main mass occupying about a half of the total height of the light and placed a little below half way up, leaving the remainder as base and canopy; the whole surrounded by a border) helps the work to integrate well with the neo-Gothic architecture.

Wolmark's windows became the subject of a legal controversy in 1918.[210] Duveen and Elliman were in dispute over their payments to each other which resulted in a verdict in favour of both Duveen's claim and Ellison's counter-claim. There is a myth which has attached itself to these windows which suggests that an argument raged between Wolmark and Ellison as to whether Wolmark had 'conformed to the instructions that the design was not to contain any saints or haloes or anything of that kind.' The dispute was said to have centred on whether the stipulations laid down in the contract were infringed by a window which was described by the prosecution as representing Adam and Eve in the Garden of Eden. Mr Justice Darling decreed that the window was without meaning and represented 'nothing at all' and in consequence the case was dismissed.[211] This unsubstantiated myth implies an expectation that such abstract designs would be controversial; they may well have been but, if the parishioners disliked the work, they did not express their feelings in print.[212] Nevertheless the experiment with abstraction was not repeated in England until Coventry's unorthodox designs were commissioned where the cathedral windows and the way in which they are integrated into the structure of the building represent a radical break with tradition.

The Slough window, a cardinal moment which marks a radical break with ecclesiastical tradition in Britain, is Wolmark's sole stained glass commission but his continuing interest in the applied arts is evident in his painted pottery, which displays broad areas of plain colour very much akin to his glass, his stage designs and his frame making *(illustration 101).*

In spite of the pioneering spirit of Wolmark, it was in Germany that the finest stained glass was designed and constructed during the first decades of the 20th century, and it was the Dutch artist, Johan Thorn Prikker (1868-1932), who was to make the most prominent and lasting contribution. In his desire to be able to paint with light he succeeded in injecting new life into the medium. A symbolist painter, he also designed stained glass, textiles and mosaics; enthusiastically laying himself open to many new ideas. He corresponded with Henri van de Velde, was strongly influenced by the theories of the pre-Raphaelites, the diversity of French symbolism, the Berlin expressionists, the Blaue Reiter, especially Kandinsky, De Stijl and the radical views of the cubists, in particular Orphists such as Delaunay.

In 1912 he produced three windows for the Gesellenhaus in Neuss am Rhein together with his key work, the ten large windows in the chancel and main aisles for the Church of the Dreikönigen (Three Kings) also in Neuss *(illustrations 102, 103 & 104).* The design for the Dreikönigenkirche windows was considered so revolutionary as compared to traditional windows of the period, that permission was not obtained to install them until after the First World War. In 1913 he designed the head of Christ *Christuskopf – Ecce homo;* its simplified lead-lines flat planes of colour and bold geometric forms anticipating his later work.

However, having stated in 1920 that any kind of figurative content should be avoided, Thorn Prikker moved from figurative symbolism towards a more abstract language: a brave step in a field still dominated by commissions from the church.[213] He began designing in a geometrical abstract style, clearly influenced by the theories of the Bauhaus and De Stijl. In common with Itten, Klee and Van Doesburg, Thorn Prikker developed the coloured grid as a flexible format for experimenting with colour harmonies. During this decade his abstract work oscillated between art deco and jazz eclecticism with windows such as *Ornamentfenster Blau* 1923 and *Essener Fenster* 1925 and a succession of classic works *(illustrations 105 & 106).* American jazz had a great influence on many avant-garde artists at the end of World War I and was enthusiastically taken up by De Stijl; evident in the syncopated grid-like structure of Van Doesburg's *Ragtime* for example *(illustration 107).* However, rather than merely borrowing from others (*Essener Fenster* is also distinctly Vorticist in concept although there is no evidence that Thorn Prikker was aware of the movement), I would argue that the musically inspired *Essener Fenster* predicts the added extra sparkle and fragmentation of 1940's Boogie Woogie with its staccato runs and riffs and use of two pianos. By the turn of the decade, in common with the aesthetic concept of De Stijl, Thorn Prikker had eliminated almost all diagonal movement in his work, thus bringing him ever closer to De Stijl's purist ideals. His windows up to 1930 demonstrate an ever increasing separation between symbolism and realism by structures which became more and more pure, culminating in the glass panels, *Rundbogenfenster mit Kreuz* and *Orange* 1931, which articulate the change of direction his work underwent during his final years *(illustration 108).* These two economical and radically simplified pieces prefigure many later developments such as *Geometrisches Kreuzfenster* 1931, *Vierteiliges geometrisches Kreuz* 1931-32 and *Phos zoä-Licht und Leben* 1931-32 which owe an enormous debt to van Doesburg as does most of his work from c.1921 (*illustration 109).*

In common with Wolmark there is a direct correlation between Thorn Prikker's stained glass designs and his work in other media however, he worked predominantly with stained glass for thirty years, both as designer and teacher. Outstanding as the figure most crucial to the understanding of the modern development of the medium, he achieved the initial breakthrough for stained glass becoming a pivotal figure in the creation of a truly modern vocabulary and set the scene for its development which has continued to this day.

A pupil of Thorn Prikker, the Expressionist Heinrich Campendonk (1889–1957), studied at the Kunstgewerbeschule in Krefeld between 1905 and 1909. After his graduation Campendonk, at the instigation of Franz Marc, moved to Bavaria and became a member of the Blauer Reiter circle, with whom he exhibited. In 1922 He taught at the Kuntschule in Essen, in 1923 at Krefeld and in 1926 at the academy in Düsseldorf until removed from his post in 1933. He lived in Belgium and then Amsterdam, where he was appointed to the Rijksakademie.[214]

In 1913 the Kuntsalon Cohen in Bonn organised an exhibition under the title of Rheinische Expressionisten which included Heinrich Campendonk, August and Helmut Macke and Max Ernst: the first time that an exhibition of German artists had appeared under such a heading. The first use of the term 'Expressionist' would seem to be in the preface of the catalogue of the exhibition of the Berlin Secession in April 1911, referring to artists such as Picasso, Braque, Derain and Dufy, normally described as Fauves or Cubists. Expressionism then became known as an all-embracing synonym for the European avant-garde, with the artists themselves acknowledging no allegiance to it.

In spite of his early creativity in the field of stained glass, once taking up easel painting, Campendonk began to follow firmly in the footsteps of his mentor Franz Marc as is obvious in works such as *The Leaping Horse* 1911 *(illustration 110).* The same year art dealer Alfred Flechtheim confided to Marc that, while Campendonk's earlier work illustrates a strong independent temperament, later he was:

> …too strongly influenced by the excessively strong wind that blows from you and Kandinsky, with the result that Campendonk has lost much of his originality. Don't you think it would be better if Campendonk worked on his own again?[215]

His work became decorative and somewhat folksy with paintings such as *Girl Playing a Shawm* 1914 opening a vast chasm between himself and his former teacher *(illustration 111).* However, his later stained glass designs such as *Cassius and Florentius* 1929, the Crypt window at the Bonner Münster, *Kreuzigung,* designed for the Cloister at Marienthal and *Taufsymboles* 1936 for the Church of Maria Grün, Hamburg-Blankenese, 1936 demonstrate a return to the artistic principles and originality of his youth *(illustrations 112 & 113).*

From 1916 the development of interiors became the special interest of a school of Dutch artists associated with De Stijl who collaborated in the design and execution of environmental projects. In common with almost all avant-garde artists of the period De Stijl's goal was to work through the arts for an ideal future; to break down existing separations and achieve an integrated society fitted to build an idealist urban environment of abstract forms. In a series of three lectures on 'the new Plastic Art' in 1916 van Doesburg stated that this new style would be realised by a new form of collaboration between architecture and the arts. The early phase of this collaboration aimed to merge the arts in a constructive harmony which would, it was hoped, herald a radically new post-war society. De Stijl environments, despite the coloured abstraction demonstrating an obvious difference in style, shared a fundamental quality with those of the earlier Arts and Crafts and Art Nouveau designers. The De Stijl artists, in common with Morris and Mackintosh, for example, believed that a harmonious environment reflected the process of its creation. This environment was invested with both aesthetic value and moral integrity because the collaborative effort required to achieve it reflected sound social and working conditions. However, De Stijl artists had a far greater notion of designing for industry, although industrial production was urged to find a means of carrying out their work rather than their designs being determined by it.

The publication *De Stijl,* founded in 1917 by Theo van Doesburg, the movement's second major artist after Mondrian, was created to express a common artistic credo shared by artists working in various media. Bart van der Leck, trained in stained glass ateliers, furniture maker Klaahamer and architects Gerrit Reitveld and Rob van 't Hoff, for example: men who were admirers of Wright. However, although he was revered by the De Stijl architects, he did not truly play a significant role in the evolution of their architecture. In common with Mackintosh, most of his applied art designs, particularly his Prairie windows, included a repetition of geometric motifs that comprised an essentially decorative ordering of forms – the very thing the De Stijl artists wished to avoid. Their stained glass, although geometric and abstract, bears scant resemblance to that of Wright.

By 1918 van Doesburg had become an accomplished designer of stained glass windows. Having made a thorough study of the demands of the medium he realised that, although the composition of a window must be based on the amount of light required for the interior, it must, at the same time, be responsive to all structural requirements. His understanding of the visual possibilities of the technique is also to be seen in the way he used his *cames* and *re-bars*. Not simply using them as a necessary evil for structural support but completely integrating them by giving them an aesthetic function which worked with and not against the rhythm of the whole.

Throughout the ages the basic technique of stained glass forces the artist, to a greater or lesser extent, to a form of abstraction. During certain periods detail has been achieved through painting, *enamelling* or *etching* the glass but many artists choose not to do this. Van Doesburg was one such artist. He had already emphasised the spiritual value of art and was becoming more and more convinced that this value could best reveal itself through abstraction, where the emotion of the artist could be expressed in shape and colour without a recognisable image acting as intermediary: his stained glass art gradually resolved in this way.

His first stained glass commission in 1916 was however, very modest: a small door panel for the mayor of Broek, displaying the municipal coat of arms. At this time van Doesburg had not mastered the technique. The rather symmetrical combination of circle fragments, rectangles and planes demonstrates the influence of his friend, the Hungarian artist Huszár. In 1917 van Doesburg designed two small panels, seemingly not commissioned, featuring an Indian dancing girl, a motif he had already used for a painted diptych (*illustration 114).* In this work, entitled *Dans I,* he reversed the image in the bottom half of each panel. This treatment has a special formal importance: it was the first example of a technique he later used frequently. Van Doesburg consistently employed rotations and mirror images to achieve variations within a set pattern. *Dans I* was immediately followed by four small windows placed over the Mayor of Broek's door panel. These windows are far more abstract, although it is possible to recognise a bird motif.

Vrouwekop 1917 is the first work that consisted solely of rectangular planes. Of it van Doesburg remarked 'I have designed a portrait of Helena (his wife) in stained glass. It completely beats the Middle Ages to pieces. I was still trembling for hours afterwards, and even now when I look at the sketch, tears well up in my eyes. It is the most beautiful thing that has ever been done in stained glass.' *(illustration 115).*[216] Although this panel is a stylised representation of the profile of a woman's head it is not easy to recognise it as such. The white glass for the face, blue eye and hair, green dress and black background assist, to some extent, in identifying the subject. It could be argued that to search for recognisable motifs in abstract patterns is irrelevant, however I believe that it makes sense to seek the artist's point of departure as this helps to develop an awareness of his manner of abstraction and his views about it. At this period van Doesburg had a clear and simple method of abstraction, his starting point would seem to be from concrete subjects, be they humans, animals or objects, and his designs usually involved a lot of movement. It was not until later that his work held the promise of art that was conceived mathematically before execution; not taken from nature, but purely constructed with an effort for absolute clarity. In *Arithmetic Composition* 1930 for example a grid is used within which fourteen squares make arithmetic progression. For van Doesburg art was its own system excluding lyricism and sentimentality.

With *Vrouwekop* van Doesburg had achieved the balanced composition of vertical and horizontal rectangular planes that was to become the trademark of De Stijl: although in fact the window was not as original as van Doesburg suggests. Once again he was strongly influenced by the stained glass designs of Huszár. Within a brief period of time van Doesburg achieved a high level of abstraction; almost entirely due to his production of stained glass windows, his priority at this time. It is in this medium that van Doesburg demonstrates most clearly the rapid changes of direction his work took during this period and was a starting point for a series of pictures which show the translation from nature towards abstract expression. In the same year van Doesburg produced a book entitled *The New Movement in Painting* which surveyed the development of modern art, showing the avant-garde movements preparing for a new, geometric abstract monumental art: a style of the future.

His first important glass commission was a staircase window for a seaside villa 'Allegonda'. The Katwijk aan Zee home of the Rotterdam tea and coffee merchant J. E. R. Trousselot and his wife was in the process of being modernised in the Tunisian style. The resulting window *Composition II* was believed to have been designed to invoke the sensation of rising surf, while its abstract treatment harmonised well with the austere whitewashed architecture standing amongst a landscape of white dunes (*illustration 116).* The commissioning agent, Oud, wrote of the window that "the motif is transformed and also worked out in the space, that is, in the white light, so that the aesthetic idea which forms the basis of the piece – the rhythmic, upward rising movement of sea surf – is imaged only through relationship.'[217] It is particularly difficult to identify the rising surf motif in *Composition II* and I am far more inclined to agree with Carel Blotkamp's assessment: 'One might get the impression from this (Oud's remarks) that van Doesburg had taken the surf as his visual starting point – something that would be quite appropriate for a villa at the seashore, although an unusual choice of subject for him. However, Oud makes a distinction between the motif ... and the aesthetic idea. The motif, therefore, does not have anything to do with the sea or the surf; indeed, on closer observation it appears to be a sitting figure in profile, a motif which van Doesburg had been using more frequently as a basis for his compositions.'[218]

Composition II sets red, yellow, blue and clear pieces of glass within a grid structure where the upper half forms a reverse mirror image of the lower; the whole design being enclosed by a frame. Van Doesburg seems to have preferred the design in its early monochrome state which he thought gave it a special spiritual value. He wrote 'I had stretched it on the wall in black and white in three parts above each other; only white planes (I had not yet put in the colours), separated by black lines. When I surveyed the whole I got an indescribably beautiful impression... Monday I put in the colours, but felt that the sacredness of the black and white drawing had got lost.'[219]

Composition III, comprising five identical windows made for a teacher's house in St Antoniuspolder, employs a similar form of abstraction. Yet again van Doesburg uses Huszár as his mentor; this design derives from an earlier painting of skating figures by the Hungarian artist. The limbs and heads of the skaters are represented in van Doesburg's window by small rectangular coloured planes of glass in different sizes and positions, separated by white glass. Van Doesburg used the motif of the tiny ice skater repeated and rotated in several directions within a grid structure *(illustration*

117). The studies for his paintings of the time demonstrate that he began with the flat representation of a figure, parts of which he then covered with white paint leaving, in the finished work, a medley of small colour planes on a white ground: the sizes of the colour planes corresponding to human proportions *(illustration 118).*

By the middle of 1917 van Doesburg began to become dissatisfied with this method of abstraction feeling that there were 'considerable shortcomings' in his work. In common with many of his contemporaries, Klee and Kandinsky for example, van Doesburg considered that the formal purity and means of expression in music had advanced further that in painting and it became fashionable to compare the tight yet flexible structure of a Bach fugue with visual art that was preoccupied with structure but without discernible subject matter. 'Once I have found a motif, I keep too much together in the elaboration' he wrote 'In music, particularly by Bach, the motif is constantly elaborated upon in different ways. I would like to achieve that also...'[220] He had already begun to apply, to some extent, musical manipulations similar to those employed by Bach, but had still left the impression of the figures. However in designing the de Lange Town House staircase window he took a different approach. This time he did not use nature as his starting point but took some components from *Composition II* and varied them by changing the format, multiplying, mirroring and rotating until the original seated figure was broken up.

With the de Lange Town House van Doesburg had the opportunity to create an integrated design for the whole interior. His colour designs were applied throughout the house including the doors, a painted wall in the dining room, banisters and a large triptych stained glass window for the stairwell: *Composition IV* 1917 *(illustration 119).* Van Doesburg described his design thus: "The whole (window) stands out against the air. The colour composition is completely free in space ... I have also designed colours for the entire building....In order to give you an idea of my conception, I would say that I started out with the notion that all the planes had to be made 'free floating' by means of an opposing light colour. The deep blue door panels, for example, are freed by means of white."[221] For the Dutch, the use of white with strong colour accents could be read as a symbol of puritan rejection of the Beaux Arts tradition. The design for *Composition IV* has been likened to a Bach fugue in its scientific and mathematically accurate manner of expression.[222] The two outer sections are composed of blocks of primary colour in a mirror image (as in *Composition II*), framing the centre panel which employs only secondary colours. Thus an asymmetrical but balanced composition is achieved. Van Doesburg seems to have used blue, red and yellow as a consonant triad and introduced green to express dissonance or contrast; the colours contrasting with one another to produce a dynamic effect which would in turn contrast with the static nature of the architecture resulting in equilibrium or rest, as in music. It is this thematic and colouristic variation and contrast which suggests the measured rhythm of a fugue.

As De Stijl developed into architecture and explored the use of planes and space its vocabulary of squares and rectangles was elaborated. Appropriate for modern life, De Stijl designs were functional but displayed function in an aesthetic fashion. It was his attempts to solve the problems of the frame that signified a pivotal point in van Doesburg's designs for architecture. In the Lange House dining room, for example, van Doesburg treated wall painting differently from easel painting in that, although obviously confined by its space, it was not enclosed by a frame. Whereas Mondrian allowed the frame to act as a boundary to his forms, preventing them from escaping into 'real' space, van Doesburg removed the frame and, instead, drew the outside space into the separate elements of the picture. He criticised frames and, by extension easel paintings, for emphasising the spectator's impression of seeing a single object confined in a restricted space, rather than a spatially unfettered coloured composition. In common with Wright, by using the architectural plane itself, he displayed the connection between art and the environment. Van Doesburg was strongly of the opinion that abstract art, with its flat surface, forms a rhythmical and balanced unity with architecture. Abstraction breaks the plane in height and breadth thus retaining the architectural quality of the wall, as opposed to perspectival landscape painting which breaks the architectural plane in depth: the wrong way. Van Doesburg wanted to retain the integrity of the architectural surface, to this end he rejected symmetrical designs which he associated with traditional perspective, and used rhythmic, geometric patterns as an alternative. Possibly the fact that Mondrian never designed for stained glass or other applied art and always considered himself as, first and foremost, an easel painter rather than an interior designer, contributed to his disagreement with van Doesburg over interior design.[223] Van Doesburg was convinced that the interior was going to be the important thing but earlier continuous ornament was 'a vague, decorative manner of solving time and space as a unity.'[224]

In *The De Stijl Environment,* Nancy Troy states that the stained glass work of artists such as van Doesburg and Huszár should be understood in the context of their easel paintings. These paintings bear out her opinion as they demonstrate the artists' efforts to divorce themselves from the characteristic decoration of Wright's work whilst at the same time attempting to achieve a monumental style suited for architecture. Van Doesburg used a grid structure in his stained glass and ceramic floor tiles before introducing it into his easel paintings.

In his easel paintings, by using the grid to obscure the distinction between figure and ground, van Doesburg was able to achieve a composition of pure relationships similar to the motif of *Composition II.* Mondrian's checkerboard paintings also used grids for the same purpose but, unlike van Doesburg, Mondrian's grids are a solution to a pictorial problem; viewed solely in the context of painting rather than that of applied art. The material demands of stained glass gave van Doesburg's grid a practical as well as an aesthetic purpose. For him the simplification of form that was necessary in good stained glass design assisted the development of his architectural painting style.

Mondrian's work was in direct opposition to that of the Cubist's use of overlapping planes to create the illusion of three dimensionality. Mondrian placed lines parallel to the horizontal and vertical producing 'closed' planes in juxtaposition: thus keeping the two dimensional quality but forfeiting the new dynamic element. An element van Doesburg wished to express. By 1918 he had added to his work a fourth dimension: a new expression of the element of time-movement by a novel use of kinetics. His designs of this time represent examples of incorporating dynamics by the employment of colour pairs, thereby stressing the element of colour movement *(illustrations 120 & 121).* His use of complementary colour pairs stems from Seurat whose theory of simultaneous colours was based on Delacroix's colour circle.

In 1922 van Doesburg's Bauhaus lecture 'The Will to Style: A New Form of Expression of Life' was published in De Stijl· one of his most important manifestos containing his entire artistic code. In the context of the gradual development in Germany of functional style of architecture van Doesburg's manifesto was a rejection of individualism and materialism, of which handicraft was depicted as a remnant.[225]

> The will towards a new style expresses itself in many ways. Not only in painting, sculpture and architecture, in literature, in jazz or in cinema, but particularly in functional products.... Nothing is ornamental, superfluous or artificial as are superficial touches of beauty added afterwards. Only the truth of the thing itself exists. Above all else truth, function and construction are expressed. There are no mistakes such as can result from individualistic tendencies.[226]

However, van Doesburg became less and less inclined to concede to the practical demands of architecture and, by the end of the 1920s, he rejected the ideal of collaboration between painter and architect upon which De Stijl's principles had been based. His by now uncompromising abstraction had become unpopular and ultimately unworkable. In contrast architects such as Le Corbusier, determined to find solutions to social problems, were able to produce work that was experimental but at the same time fulfilled functional requirements.

Dutch artists were not alone in investigating the possibility of uniting the arts to form an abstract environment. The German school of design, the Bauhaus, founded in Weimar by the architect Walter Gropius in 1919 as a merger of an art academy and an arts and crafts school had an incalculable influence on modern architecture and design. Gropius believed that the school should be concerned with the creation of prototypes which would serves as guides to craftsmen and industry.

The Bauhaus was based on the principles of the 19th century designer William Morris and the Arts and Crafts movement that art should meet the needs of society and that there should be no distinction between fine and applied arts. It also expounded the forward-looking principles that modern art and architecture should respond to the needs and influences of modern industry and that good design should combine high aesthetic standards with sound engineering. To this end classes were offered in crafts and design as well as in fine arts. Its style was defined by the absence of ornament and ostentation and by harmony between function and the technical means employed. By the time the school was closed by the Nazis in 1933 its principles and work were known throughout the world.

Many Bauhaus tutors emigrated to the United States, where their teaching came to dominate art and architecture for years and made a marked contribution to the International Style. This architectural style, the principal trend of the 1920's and 30's and continued into the 1960's, was also shaped by the works of the Russian Constructivists, Theo van Doesburg and Piet Mondrian, founders of De Stijl, and the demands of urban planning. The International Style was geometric and asymmetrical and made use of modern materials such as steel and glass. It fostered a break with architectural tradition, despising ornament, keeping to simply designed, unadorned buildings that served the needs of their users. The ideals of the style became the dominant world-wide architectural vocabulary of the mid 20th century.

During the autumn of 1919 Johannes Itten began his Basic Course at the Bauhaus. The Basic course presented him with three tasks:

1. To liberate the creative forces and thereby the artistic talents of the students. Their own experiences and perceptions were to result in genuine work. Gradually the students were to rid themselves of all the dead wood of convention and acquire the courage to create their own work.
2. To make the students' choice of career easier. Here, exercises with materials and textures were a valuable aid. Each student quickly found the material with which he felt the closest affinity: it might have been wood, metal, glass, stone, clay or textiles.
3. To present the principles of creative composition to the students for their future careers as artists. The laws of form and color opened up to them the world of objectivity. As the work progressed it became possible for the subjective and objective problems of form and color to interact in many different ways.[227]

Itten found the exercises with materials and textures particularly stimulating. Students were encouraged to experience and demonstrate the tactile sensations induced so that they arrived at the essence of the material. An interesting result was produced by Paul Citroen, *The Railroad Station,* Weimar 1921, where the profusion of black girders and soot stained glass perfectly express, both by idea and technical representation, the essence of the subject.

In the Germany of the 1920's stained glass was part of a powerful new architectural movement and this was one of the crafts included in the Bauhaus course. There was a thriving glass department where the smooth, stark language of Bauhaus design was easily translated into stained glass. The principles of Abstract Art can be perfectly incorporated into stained glass, offering the opportunity to express pure, flat colour, held within a confining line, but subtly shifting its symbolism with changing light.

Of the tutors at the Bauhaus it was Josef Albers (1888-1976), who served his apprenticeship in the glass workshop designing his brightly coloured stained and sandblasted glass. A German-American painter, graphic artist, designer and influential teacher, Albers created colour dynamics through special articulation: investigating colour relationships in geometrical abstractions. His book *Interaction of Color* written in 1963, was a further insight into the development of his work and his innovative theories of colour. His work in glass inspired a life long interest in light and colour. In his glazing, his painting, his teaching and in *Interaction of Color* Albers aimed to demonstrate that colour is an entirely unstable and relative phenomenon as colours change constantly according to their juxtapositions and relationship with other colours. His work is a homage to colour and serves to prove his passionate concepts about line and colour and the methods of art. His contribution to contemporary stained glass cannot be minimised, encouraging as it did creative freedom of expression and use of materials.

Among other projects, Albers designed the glass screens of Walter Gropius' Sommerfield House in Berlin; sadly now destroyed as is much of his glass. Whilst others such as van Doesburg and Mondrian seem to have had more impact on architectural glass, Albers was the first to explore the potential of the medium itself producing, as early as 1955, work which by eliminating the use of leading, anticipates that of 21st century art glass designers such as Graham Jones. He achieved the goal of his teaching and his art: 'to open eyes', by so doing laid the path along which many contemporary glass artists have trodden.[228] His work evolved into structures within which can be seen the interaction of colours in a single visual field, prefiguring to some extent, the colour field branch of abstract expressionism as practised by artists such as Robert Motherwell 1915-91 and Mark Rothko 1903-70.

Albers' interest in glass goes back to his childhood when he was taught the art of stained glass by his father. Albers held a strong belief in the collaborative ideal, completing many art-in–architecture projects during his lifetime. His first art-in architecture project in 1917-18 was the design for a stained glass window for a church in his native Bottrop, West Germany. The enlightened glazing scheme for this church was also to include, in 1958, Georg Meistermann's *Bottrop Spiral.*

Glass was Albers' major preoccupation during his early years at the Bauhaus and it would be difficult to overstate the importance of the medium in the development of his work. It was in glass that his first abstract works were constructed. Glass assemblages such as *Rhenish Legend* and *Figure* 1921 were made of pieces of broken bottle and other glass objects from the town dump at Weimar *(illustrations 122 & 123).* In these pieces no specific premium is placed on geometry, but there is an obvious progression from his earlier figurative drawings. *Glitter Bild* 1922 and the stained glass windows of Stair Hall, Grassi Museum, Leipzig*)* use the rigorous geometrical grid structure of De Stijl (*illustration 124).* Although here the grid is plain and simple with the resultant motion up and down and left and right, later he would elaborate on the grid in a huge variety of ways, using it as a basis for highly refined compositions. *Glitter Bild,* and several untitled assemblages of the same period display Albers' experiments with different textures and colours of glass at random; the limits of variation cleverly defined *(illustration 125).* What had been rubbish became jewels arranged into balanced compositions with dynamic ongoing rhythms and interplay. In this crystalline art form the light functions in much the same way as it did in the blank spaces of his early drawings; not simply giving luminosity but also creating an optimistic mood. Years later in the *Homage* series Albers would prime his panels with six to ten coats of gesso to create light of a similar sort; a neutral ground to allow colours to display themselves freely.

From 1925 Albers used the technique of *sandblasting* coloured glass, sometimes executing the work himself, sometimes sending it to a commercial workshop. It was only when he perfected a new process for *sandblasting* glass that geometry became a consistent element of his work. With *sandblasting* he employed – as he was to do with *White Cross Window* some thirty years later – a recently developed industrial technique to create a new form of expression in glass.[229] As early as the mid 1920's he had transformed the glazier's traditional craft into an expressly modern endeavour; the hard-edged templates required for *sandblasting* yielding the geometry which would characterise his lifelong work.[230]

In his sandblasted works Albers combined geometrical elements and standardised colours. He was more concerned at this point with structure rather than colour; the overlapping structures reflecting the work of Moholy-Nagy. In works such as *The Light Modulator* Moholy Nagy also experimented with light reflection; the way different paintings caught the light. In *Flying* 1931, by finding the precise tone that would be created if shapes were transparent and superimposed, Albers gave the false impression of overlapping forms with one visible through the other. He also developed forms with multiple, apparently contradictory readings. In ambiguous works such as the sandblasted *Stufen* and *Rolled Wrongly* 1931, the 'reversibility' of the medium reveals his interest in forms of optical illusion: this art glass achieves a possible reading of three dimensionality in space *(illustrations 126 & 127).* However if there is a Bauhaus style of stained glass it is probably typified by his many screen windows of 1921-22. For example the windows of the Otte and Sommerfeld Houses in Berlin designed by Walter Gropius and a small panel, held in the McCrory Corporation Collection in New York, which uses the same 'window as screen' concept *(illustration 128).*

Albers' constructions were closely related to one another. Variations in rhythm and colour were made by adding or removing only one or two elements such as line or colour. His repeated use of the same stencil elements led to bold but subtle permutations. In later life he referred to his glass constructions in the following way:

> The colour and form possibilities are very limited. But the unusual colour intensity, the purest white and deepest black and the necessary preciseness as well as the flatness of the design elements offer an unusual and particular material and form effect.[231]

Throughout his life he was concerned with overlapping structures creating ambiguities; using the tendency of the Western eye to look at the vanishing point. In his later work, in America, this became his central concern and it was not until then that he systematically investigated the properties of colour. By placing an emphasis on rectilinear shapes of strong, flat colour, he allowed the interplay of colours to heighten the non-representational, purely optical effect of the forms. He tried to use economical means of line and colour to create complex, ambitious structures using the capacity of the human eye to take in their limitations and possibilities. With the exception of Duchamp, he was the first artist to do so. Duchamp's *Optical Machines* are, of course, more satirical.

Albers experimented with the effects of colour transparency and investigated the saturation and interrelationships of colour: themes he explored in *Interaction of Color* arguing that 'Colour is the most relative medium in art'; defending the idea that colour reacts and becomes new in relation to zones. Often claiming (I would suggest erroneously) that 'a square was a neutral form, a dish in which colour could be served, a stage on which colours could perform like actors' rather than a mystical, primal geometric form as it was for Malevich. [232] Albers appears to have believed that his demonstrations of colour dynamics showed colour functioning independently of form. However, as John Gage points out Albers' forms create an asymmetric movement and even, at times, a sense of traditional perspective leading to the conclusion that colour and form are inseparable.

In this respect, Albers had much in common with his pupil, Kenneth Noland as both wanted to release colour from form. But while Albers' spatial ambiguities and the scale of his easel paintings relate to the European abstraction of Malevich and Mondrian (the largest *Homage* paintings measure little more than four feet square), Noland, belonged to the purely formal concerns of American 'Post-Painterly Abstraction'.[233] Noland struggled to eliminate everything but colour from his work, but the impossibility of this mission is amply demonstrated in his rectangles, stripes and chevrons of the 1950s and 1960s in which form creates optical illusion and vibration. Albers' awareness of three-dimensional space while simultaneously drawing attention to two-dimensional forms and finally the two-dimensional surface had important reverberations for the art of the 1960s.

Op or Optical Art has been referred to as a generator of perceptual responses. Essentially it has the dynamic qualities which provoke illusory images and sensations in the viewer, whether this happens in the physical structure of the eye or in the brain itself. The art of Albers is the art of sensation. Although it is not perhaps as disturbing visually as that of say, Bridget Riley, who explicitly evokes Post-Expressionism and achieves far more atmospheric effects, the essential characteristics of optical art are very much a part of his work. Albers' adoption of a symmetrical format seems to share something with the minimal painting of Frank Stella.

The publication of *Interaction of Color* in 1963, brought Albers' ideas about colour to an international audience. In it he states:

> Our concern is the interaction of colour: that is seeing what happens between colours. We are able to hear a single tone. But we almost never ... see a single colour unconnected and unrelated to other colours. Colours present themselves in continuous flux, constantly related to changing neighbours and changing conditions.[234]

This view is in direct opposition to that expounded by Kandinsky in *Concerning the Spiritual in Art* in which he declares colours and forms have specific meanings.

Concerning the Spiritual in Art includes chapters on 'the effect of colour' and 'the language of forms and colour', and examines the analogy between music and painting. Kandinsky has a conception of the reverberations of the soul in response to colours which appears to reside in the sensitivity for experiencing colour as analogous to other sensations. He couches his colour in geometrical forms, since these shapes convey fewer literal or associative meanings and harbour resonances on a level similar to colours. For example a triangle has, as Kandinsky says, 'its particular spiritual perfume', as has a square or circle, a trapezoid, or any other non-representational form. The resonances intrinsic in colours can be heightened or muted by the form in which they appear. According to Kandinsky's theory a yellow triangle would be a happy marriage of form and colour in which the expressive content of yellow and triangle reinforce each other. Abstract or semi-abstract combinations of form and colour are the compositional elements of a divine language, Kandinsky believes, and he implies that one can in a sense orchestrate them as one can the constituent parts of a musical composition, But Kandinsky does not advocate the mechanistic application of elements in his divine art. The artist's choice of formal elements 'must be decided by a purposive vibration in the human soul.' [235] Assertions that the 'specific equations of form, colour and meaning propagated by Kandinsky' are rejected as 'utterly implausible' by Stephen Bann who inclines to the theory that the relational notion of colour and form has an immediate parallel to Saussurian linguistics where there are only differences. [236] Nevertheless, many of Kandinsky's views and theories on art and the spiritual were shared by Johannes Itten and Paul Klee. During his Dessau period Albers realised Klee's first glass designs: studies of the patterns of sounds and rhythms in poetry and speech.

The flat plains of Albers' own glass constructions relate to De Stijl and Russian Constructivism. His use of straight lines and right angles resemble to some extent those of Van Doesburg, a colleague at the Bauhaus in 1922, but he found Van Doesburg's work limited. A closer connection could perhaps be found to Piet Mondrian as the range of Albers' work reflects the Dutch artist's ideas of rhythm achieved by a balance of properly proportioned lines and angles.

Albers was one of many European artists who crossed the Atlantic before the war and became established in the United States. He had taught at the Bauhaus for a period of thirteen years: under its first director Walter Gropius, then through the period of extreme functionalism under Hannes Meyer up to the final directorship of Mies van der Rohe - the adherent of 'less is more'.[237] It would be surprising then if his work did not embody many of its complexities and contradictions. However the somewhat different idealism and intellectual stimulation of Black Mountain College was an equally important influence. Whereas the Bauhaus students intended to become artists and architects, the course at Black Mountain College was conceived as part of a liberal arts degree and included students who would enter other professions. Albers, who became the most influential of the masters, looked at works of art, not in a defined way, but as experiments in form which cross artistic boundaries. This change from the vocational to the educational remained the pattern of his teaching for the rest of his academic life and undoubtedly influenced his own work. It is a pattern that most of the outstanding post war German art glass artists have followed.

It was after the war that Albers produced what was perhaps his most outstanding venture in any medium: the *White Cross Window 1955* for the Abbot's Chapel, St John's Abbey, Collegeville, Minnesota *(illustration 129).* This window consists of thirty-one small panes of photosensitive glass joined by a framework of staggered wooden mullions. The composition - a complex, mathematically ordered arrangement in four shades of grey - is activated by the sensitivity of the glass to light.[238] Such an idea became a realistic possibility only in the 1940's, when scientists at the Corning Glass Works, where the *White Cross Window* was constructed, discovered that when exposed photographically, a single pane of glass would yield a surprising range of tones within a single hue.[239] This allowed Albers to place contrasting shades of grey against one another without the need for the leading of traditional stained glass. Beyond eliminating the need for lead *cames*, this discovery made it possible for Albers to design a monochrome window whose tones change in a variety of ways in response to light. Because *White Cross Window* is made of photosensitive glass, its composition changes according to the direction and quality of the dominant slight source. As a result, at night, when artificial illumination replaces daylight, the tones of the glass reverse in value-dark areas become light and light areas become dark-an effect which completely transforms the composition of the window as a whole.[240]

On the whole, the years between the wars were unremarkable for stained glass yet during this period Europe and the United States witnessed intellectual and aesthetic efforts to break away from the apparent confinement of the stereotypical tradition of pictorial ecclesiastical windows. It was at this time that experiments in glass grew from artists such as Thorn Prikker, van Doesburg, and the influential Bauhaus school where Klee and Albers were involved in the stained glass department. Their work, veering away from figurative glass, created enormous interest in a new generation of German stained glass artists such as Anton Wendling and Georg Meistermann.

John Trinick

Although *float* glass, developed in England in the 1950's by Pilkington Glass, was to give later artists a freedom from the restrictions imposed by leading, in the English stained glass of the 1930's there is little evidence of European influence and innovation. However, the work of Australian artist John Trinick (1890-1974) is an outstanding example of innovative English ecclesiastical glass at a time when much of the stained glass being produced followed the 'anaemic' colour and formulaic style of such as M. F. Pawle and G. E. R. Smith.

In 1919, John Trinick, after five years of study at the Art School of the National Gallery of Victoria in Melbourne, moved to Europe to pursue his interest in medieval art and culture. He studied at the Byam Shaw and Vicat Cole Schools of Art before specialising in stained glass design. Working first at the William Morris Studio followed by a period of tuition under Christopher Whall from 1921 to his death in 1924, Trinick travelled to France and Germany to study and record the iconography of medieval glass. During his travels he was commissioned to design and construct the windows for the convent of Maison Ste Elizabeth, Orphelinat, Chartres. Consecrated on the 21st August 1930, the lights, one representing St Paul, patron saint of the congregation and the other Ste Elizabeth, patron saint of the then orphanage, were described as *'superbes vitraux, véritable oeuvre d'art' (illustrations 130, 131 & 132).*[241] On his return to England in 1931, encouraged by Whall's emphasis on self-sufficiency and independence, he opened his own studio at Upper Norwood, London, where he worked as a freelance stained glass artist, dealing unaided with all aspects of the craft, from design to installation. In 1945 he set up a studio in Cliftonville, Kent until, in 1961, ill-health forced him to give up practical work.

He was accepted into the Art Worker's Guild and became a prominent member of the British Society of Master Glass Painters and the Guild of Catholic Artists and

Craftsmen. His stained glass designs were exhibited at the annual Royal Academy Summer Exhibition between 1925 and 1952; at the Walker Art Gallery in Liverpool; at Vitoria in Spain; twenty seven large scale water colour copies of medieval French and German stained glass were bought by the V&A for permanent exhibition and the John Trinick Collection was instituted at the Potter Museum, University of Melbourne, Australia in 1997.

A Catholic convert, as were many of his predecessors, Trinick was convinced of the spiritual implications of his work. A connoisseur of Catholic iconography and typology, he incorporated much of its symbolism into his own designs which were, predominantly, commissions for the Roman Catholic Church. Drawing inspiration from 13th century glass, 15th century Italian art, architecture and sculpture, he also spoke often of the Pre-Raphaelites, his interest in Morris and particularly Burne-Jones; Chagall and other contemporary British and European artists. An avid student of philosophy his reading embraced the writings of St John of the Cross, Boethius, Julian of Norwich, William Blake and Nikolay Berdyayev, to name but a few, and he corresponded with Carl Jung among many other scholars.[242] It is perhaps this breadth of vision that makes his work so individual *(illustration 133).*

Trinick's description of his basic principles of glass design clearly demonstrate the tremendous influence of Christopher Whall, from whom he learnt all aspects of the art form: "Under Whall's influence" he wrote "The Artist learns to become a craftsman."[243] His remarks also serve to illustrate his engagement with modern art which took a new approach to the problem of representing three dimensional volumes on a two dimensional surface; evolving a technique of occasionally breaking the contours of a subject in order to let the surrounding space move up onto the picture plane, thus allowing the space between objects to become part of the same structure as the objects themselves:

> The general principal I observe in my designs is that of using the material of the craft of stained glass to produce beauty in the quality of light admitted by a window; and, as it were, to 'hang' a veil of vibrating light and colour in the stonework, to arrest the sight and prevent its passing through. With this principle and with these aims in

> view, the character of my designs have been determined, and a systematic treatment adopted which avoids the use of 'silhouetted figures', that is figures that stand out from their backgrounds. These are proper to certain forms of pictorial art, but are quite out of place in terms of stained glass. In my windows, therefore, the figures appear 'interwoven' with the background, thus taking their place as a part of the shimmering texture of light and colour which is the effect desired.[244]

Sympathy with ancient buildings and an understanding of the display of the human figure in accordance with conventions inherited from the Arts and Crafts movement is always evident in Trinick's designs. His biblical figures portray gentle gravity giving them a timelessness which conveys subtleties of mood and expression in gesture and in the force of stillness. Landscapes, plant and animal studies were favoured subjects and he found ways of introducing these into his biblical commissions. In response to medieval precedents and Morris' influence the use of repeating patterns is marked in Trinick's glass, but the limited palette of small, bold areas of pure, bright colour is entirely his own. In common with Whall, Trinick makes no attempt to hide the lead *cames* but integrates them into the design using them to strengthen the line. In the *Creation* window at Salmeston Grange Chapel, Margate, he exploits the lead line to create visual dynamism and add emotional depth in a similar way to that of Chagall, or rather his glazier Charles Marq, but unlike that collaborative effort, Trinick handles the medium with the expert eye of a stained glass artist rather than a painter; designing to take advantage of the leads not merely to incorporate them as a necessary adjunct to a painterly conception. Occasionally his Pre-Raphaelite propensity for minute detail creates a certain amount of 'over-leading', such as in one of the South aisle lights at Salmestone but in the elegant, flowing contours of the attenuated figures, or in the animals, foliage and flowers of the backgrounds, his boldly drawn, lively designs and dazzling tonal combinations of colour continuously delight the eye.

Painters such as Northcote (a pupil of Reynolds) and Turner noted that colour relationships in painting are unstable, perceiving that reds look darker in twilight while light blues turn almost white. In the evening the colours in glass react similarly with the fading light. At dusk some colours, such as red, quickly turn to black, others, while vibrating in sunlight, become quiet and dull. In the diminishing light, blues, in a special reaction to the property of light, hold their vibrancy. With his progressive use of the complete spectrum of blues and purples and reduction of reds, Trinick prolongs the active life of his windows until the last of the daylight disappears. His predilection for blue was not founded purely on such pragmatism but on the deeply held belief that 'the deep blue of medieval glass ... was the product of a spiritual discipline and culture'.[245] This belief reflects the colour hypothesis of Franz Marq who, in c.1911 wrote to August Macke explaining his theory of blue, yellow and red:

> Blue is the male principle, astringent and spiritual. Yellow the female principle, gentle, gay and sensual. Red is matter, brutal and heavy and always the colour to be opposed and overcome by the other two! For example if you mix serious, spiritual blue with red, you intensify the blue to unbearable sorrow, and yellow the conciliatory, the complementary colour to purple, becomes indispensable.

The 1935 three light East window of St Austin and St Gregory, Margate, one of Trinick's earliest surviving windows, demonstrates his engagement with, rather than imitation of, the art of the past; taking forms, proportions and scale from the style of the Victorian church and adding his own feel to it *(illustration 134).* Unified by colour (predominately blue juxtaposed with areas of bold green and red), verticality and the repeated patterns reminiscent of Morris which are distributed throughout the lights, the medieval bias of the window is arrested by the introduction of the Garden of Gethsemane panel. This small, left hand panel depicting the scene in the garden is the first indication of a direction that Trinick was to develop in his later work, in style if not in colour (illustration *135).* In this panel incidental pattern is minimised, the strong, clean line creating a two dimensionality evocative of Japanese art, particularly in the foliage of the olive tree. The fluidity of form in the figure of Jesus, which takes up the contours of the background on which he lies, silently expresses his anguish.

The following year, Trinick was commissioned to design the St Teresa window at Our Lady of Dolours, Hendon, dedicated to the Farraro family. The unusually rich harmony of complementary colours, shading upwards from deep purple to gold demonstrate his controlled, yet imaginative handling of the pure colours imposed by the medium. In certain areas, such as the tree root in the base panel, encircled by lilies and roses in allusion to the mystical Garden of the Canticles, a sense of depth is achieved by double caming: a technique further developed by Patrick Reyntiens to add strength to the line and also explored in the post-war work of Lugwig Schaffrath whose work is defined by dramatic juxtapositions of different widths of came *(illustration 136).*

Pre-Raphaelite in attention to detail and demonstrating the influence of Morris in the stylised interweaving of fruit and foliage it is in this work that the flame-like angel originates; subsequently a conspicuous feature of the East window at Salmestone Grange.[246] Trinick used the words of St Teresa as the basis for the appearance of this angel, shown here in the act of wounding the saint's heart; an external token of the intensity of her spiritual experience:

> I saw in his hand a long spear of gold, and at the iron's point there seemed to be a little fire. He appeared to me to be thrusting it at times into my heart, and to pierce my very entrails; when he drew it out, he seemed to draw them out also, and to leave me all on fire with a great love of God.[247]

Zimmermann's work on *Conceptions of the Love of God,* a translation of St Teresa's commentary on the Canticle of Canticles, forms the basis of the entire scheme for Trinick's decorative treatment of the windows and the inclusion of the text. As he explains:

> It will be noticed that the figure is shewn completely surrounded and encompassed by the flowers and fruit of an apple tree, which also forms a background throughout the window. This is with reference to the words of the Canticle given in the saint's commentary, "Under the apple tree I have raised thee up". At the head of the window the tree

> takes on the form of a Cross, in accordance with the saint's own development of these words: "I believe that the apple tree signifies the tree of the cross"...She is shewn surrounded upon all sides by the fruit and blossom by reference to the words, "Stay me up with flowers, compass me about with apples, because I languish with love." The tree bears fruit and flowers at the same time because the saint's development of the words equates it with the Cross and hence with the Tree of Life. In furtherance of this idea it is shewn in flames at the summit, and it is from the midst of these flames that the figure of the angel is shewn descending as one of substance with them, and in the act of piercing the saint's heart with his spear, according to her own words...[248]

The saint's unidealised face is remarkable in that it was painted as a portrait taken from her death mask, her description and a chronicle which relates that, shortly before she died, all signs of age vanished and her face remained permanently youthful in death. Trinick made every effort to follow the death mask as closely as possible 'even to the fact that the eyes are closed, for the reason that this is most fitting in the representation of an ecstatic and mystical state'.[249]

Designed and constructed over a span of some twenty years (1938 to 1958), it is the glazing scheme for the twelfth century Salmestone Grange which could be considered the apotheosis of Trinick's work. What the windows replaced remains a mystery as there are no traces of earlier windows therefore the artist was liberated from the constraints of working within the context of any existing glazing scheme.

The interpretation of the subject matter at Salmestone is to be found chiefly in the 'key' text, attached to the Chapel as a whole.

> Unless a grain of wheat, falling into the ground, die, itself remaining alone. But if it die it bringeth forth much fruit. *St John XII 24-25*

This text was chosen in allusion to the locality of the Grange and its Chapel: the surrounding fields having been given over to the cultivation of wheat, in common with much of Thanet.[250] The governing idea of the text is most openly embodied in the first work to be constructed, the Central Light of the East Window, but the imagery of the production and growth of wheat can be seen at various points throughout the subject matter of the windows as symbolising redemption and also considered in itself as being both the 'daily bread' and the food of the divine and supernatural life 'according to the spirit' for all mankind. The first elements of this are seen in the base panels of the three lights: left - The Sowing; right - The Reaping and centre - the Construction and Transformation of the original product at the central moment of the Mass. In the same earth originates the roots of the Tree of Life, whose trunk opens to reveal Mary with Jesus. Below stand the two figures most closely associated with the growth of wheat: Ruth and Joseph of Egypt. In the branches of the tree stand certain saints, both Jesus' friends and those with local connections. The subject matter throughout the rest of the lights follows the chronological order of the scriptures and the historical development of the Christian Church.

At Salmestone Trinick transposed the medieval glazier's skills and iconography into a more modern form; his Arts and Crafts style integrating the glass with its 14th century surroundings. He was particularly concerned with the medieval context of these windows and, although in some lights the intricate narrative style, symbolism and choice of colour reflect the style of the medieval masters, in others it is evident that modern art had not passed him by.

With the East window constructed in 1938 Trinick honed his mosaic technique, reduced his range of colours and, once again, introduced the flame-like angels which lead the eye upwards, thus establishing a style which makes his work immediately identifiable *(illustration 137).*

After the destruction of his London workshop during the Second World War, Trinick chose to move to Cliftonville in Kent where he set up a modern studio which included an electric kiln. Possibly the work pending at Salmestone Grange and commissions in Dover were the major influences behind this decision. At St Paul's, Dover, where the glazing scheme is a mixture of Victorian studio glass and somewhat innocuous modern designs, Trinick's shimmering Rose window for the

North aisle Chapel of Our Lady c.1945 -1948 is, in all respects, in a class of its own. With every shard of glass precisely harmonised this window becomes a jewel set in the building, much as the windows at Jarrow and Monkwearmouth were thought to be (*illustration 138*). From the Rose window at St Lawrence, Feltham for example, one can see Trinick evolving and maturing as a colourist. At St Paul's he has judiciously modified his palette to a tranquil tonal range of textured pinks, mauves and blues, a hallmark of his later work, creating a harmony of fresh colour within which his figures echo his tuition under Whall:

> Always remember the first function of a window is to have stately and seemly figures in beautiful glass ... Get your figures dignified and your faces beautiful, show the majesty or the sanctity that you are aiming at in these alone and your saint will be recognised as saintly without his halo... In my own practice I make a point of keeping back all these ornaments and symbols of attribute until I feel that my figure alone expresses itself fully without them.[251]

A master of the craft and a colourist of great sensitivity and delicacy, from this point Trinick's work became more adventurous in style. Although many of his foliage patterns continued to demonstrate the influence of Morris, and his elegant, elongated figures to reflect the later work of Burne-Jones, the creative and original inclusion of modern elements lifted the work into a new sphere. The West windows, *The Creation*, at Salmestone Grange Chapel are among the most interesting of Trinick's oeuvre as they clearly demonstrates his engagement with the world beyond the ecclesiastic and medieval boundaries of English stained glass art: a world which included modern primitive painters such as Henri Rousseau, Henri Matisse and Marc Chagall, and the English Neo-Romantics *(illustration 139).*

Often imitated by modern painters, Rousseau's mature pictures with their bold colours, flat designs and imaginative subject matter typically depict tropical scenes of fantasy. His human figures, at rest or play among huge exotic plants, are surrounded by wild animals that they have mysteriously charmed to a tense stillness. Aptly described by Robert Hughes, paintings such as Matisse's *Music* and *Dance* 1910 sets down an 'image of a pre-civilised world, Eden before the fall, inhabited by men and women with no history, languid as plants or energetic as animals… Then, as now, this image held great appeal for the over-civilised …'. [252] The subject matter of Trinick's *Creation* window owes a certain debt to the physicality and form of Matisse's dancers. Although more robust, energetic and intense, they share, with the Adam and Eve of the *Creation* window, the same sense of physical ecstasy and absorption which excludes extraneous influences. Matisse emphasises this focus by placing his figures on an undecorated, flat picture plane, while Trinick reduces the distraction of background pattern by the total pre-occupation of his figures, one with the other.

Russian by birth, Chagall's colour and form derives from Russian expressionism, influenced by French cubism and Fauvism. Chagall, Trinick's contemporary and with whom perhaps he shares more in terms of both period and style, deploys subject matter which combines personal recollection with folklore, imagination and biblical themes. Both introduce a similar vein of humorous fantasy into their subjects that draws on the unconscious and suffuses the imagery with poetic inspiration. However, visually it is with the English Neo-Romantics that Trinick's mature work could be most closely associated.

As an Australian, it is difficult to know whether Trinick identified himself with the ethos of Neo-Romanticism however. The movement, which seems to have reached maturity at a time when accomplishment and unity were essential to the survival of the nation, was characterised by a focus on escapism and the isolation of Britain during the war years. It appealed to an audience who were being forced to come to terms with a disappearing world based on ideas of family pride and unity and past national achievements. As Virginia Button points out:

> In tune with a general resurgence of nationalism in Europe in the 1930's it functioned as a unifying concept during the crisis decade of the 1940's and was accepted by left and right due to a universal idea for cohesive and recognisable national unity.[253]

Concluding that it was an expression of a longing for an imagined Golden Age stimulated by the war she postulates Neo-Romanticism:

i) Represented the world view of an intellectual elite that was threatened by both internal and external transformations during the inter-war period.

ii)

ii) Its moment occurred after the war, particularly between 1945 and 1951 when these transformations intensified.[254]

Writing in the *New Statesman* in 1942, Raymond Mortimer created the title 'Neo-Romantic' for a group whose senior members included Graham Sutherland, Henry Moore and John Piper. Although considering their work less rational that the art of the past he thought them more traditional that the Surrealists and Abstractionists. Debates in the 1930's had centred on hostility to surrealism and abstraction with Neo-Romanticism emerging as a more acceptable alternative to artists who resented a subservience to French art.[255] Nevertheless, surrealist sources and techniques were introduced to 'modernise' the visual image. Robin Ironside applied the term 'British Neo-Romanticism' to a survey of British painting from 1939, taking pleasure in the fact that this group of English painters reacted against 'significant form', the aesthetic formula set out by Fry and Clive Bell, arguing that they had 'sent English painting up the wrong path to Cézanne's door. ...rather than that of Chagall, Rouault or Chirico to which the native temper might have been attuned.'[256] With its sources firmly rooted in William Blake and Samuel Palmer, it could be fairly concluded that the movement resisted the influence of French art in a deliberate attempt to re-evaluate the national tradition. Much of its style revived a tradition exemplified by Sickert and the Camden Town Group which claimed to represent the visual avant-garde while uniting artist and audience by addressing social issues.

Loosely spanning the period around the Second World War Neo-Romanticism was anti the governmental propaganda of assumed victory instead it looked back to lost Arcadian idylls and artists such as John Piper were not afraid to express regret, fear, desolation and longing. Using stirring literature as inspiration Neo-Romantic artists prized emotion and narrative over structure and dynamism; the energy of a picture stemming from the merging of intensified human and landscape forms. The most popular themes included the sea and the heavens in various moods, trees and mountains, animals, children, shepherds, exotic countries and ruins. Despite Ruskin's forceful objections to the Romantic notion of human moods being projected onto inanimate objects such as flowers, clouds, the moon and stars or even whole landscapes, this practice was continued by the Neo-Romantics.

Piper, stylistically labelled 'picturesque' by Robert Hewison, regarded neo-Romanticism as the modern manifestation of a traditional British art which was dominated historically by an empathetic relationship with a sustaining landscape.[257] Neo-Romantics, although ardent admirers of Blake, appear to have turned to Palmer for direct pictorial inspiration and Trinick's work would seem to have a similar derivation. For example Palmer's watercolour *A Cornfield by Moonlight with the Evening Star* shares many thematic signifiers with Trinick's *Creation* window where intense and somewhat solitary figures are subsumed into a moonlit, lonely landscape. In common with the Neo-Romantics the simplified forms and facets of the *Creation* window look superficially modern but within these 'mind' landscapes, which prompt speculation on a psychological level, the narrative consists of age old stories.

In his biography of Palmer, Geoffrey Grigson describes the artist as 'a Christian, a visionary and a mediaevalist'; epithets which could equally well apply to Trinick.[258] There is little doubt that the quality of the Trinick windows lies in their sympathy as an integral whole, with the architecture and existing glazing schemes and with his handling of materials. But it is his deployment of leading as integral with the drawing, individuality as a colourist and inspiration as a designer that lifts his work into a new sphere. His unique combination of the ancient and the modern incorporates a naivety that appeals to the emotions of a sophisticated audience.

Technically unsurpassed and creatively inspired, Trinick, whose important works of public art dignify and enrich churches and convents in England and Europe, pleasing and uplifting generations of viewers, was somewhat of a recluse, who never desired fame. Described by Sebastian Strobl as 'stunning' the legacy of this master craftsman is often unrecognised and he is now virtually forgotten as an artist both in England and in his native Australia.[259]

Although unexceptional in many respects the period leading to the Second World War was also one of great diversification and inventiveness. Art Nouveau had taken up and augmented the Arts and Crafts manifesto and its style established the direction of modern art and its relationship to industry at the turn of the century. While Wright was in the forefront of innovation in the United States the influence of European Art Nouveau or *Jugendstyl* inspired the drive toward a new expression in Britain; apparent in the work of Mackintosh. Although on a small scale, Mackintosh's role in the development of architectural glass was significant for its originality: he created no imagery beyond the outlines of the leading and, for the first time, utilised the opal and opalescent glasses that had recently become available. In common with Wright, who took up and developed his form of near abstraction, he was preoccupied with the quantity and quality of interior light. The interwar years saw the adherence to past traditions questioned, challenged and rejected. In Germany the bold, abstracted, geometric forms of artists such as Thorn Prikker were making a prominent and lasting contribution to the medium while in England Trinick's designs evolved to include creative and original modernist elements that lifted it beyond the ecclesiastical and historical boundaries of traditional English stained glass.

A review of earlier criticism of 20th century glass in the *British Society of Master Glass Painters' Journal* noted a very low opinion of almost all 20th century glass and included cutting comments on so much British glass in so many places. The Journal quoted specific remarks: 'The twentieth century might never have been ... sentimental and pale ... one respects the early twentieth century designer's reluctance to dim the luminous interior of a whitewashed church, yet the attitude seems death to the glass painter's art ...' and referring to glass executed in 1946 as ' ... above average for its date.' [260] Unfortunately, with notable exceptions such as those discussed, this is true of a great deal of glass produced in England between the wars and shortly afterwards.

It was progressive artists such as Thorn Prikker and his followers in Germany who first began to bring new excitement and creativity to stained glass design, thrusting it into the modern consciousness, making it relevant to the spirit of post-war Europe. It could be argued that the modernism of these artists makes a happier marriage with secular architecture: the fine modern glass which Thorn Prikker designed for Hagen railway station being a splendid example. However British post-war architecture, such as Coventry Cathedral, produced new challenges and exhibitions such as that of Picasso in 1945 were stimuli for change to British artists. Artists such as Piper, freed from wartime restrictions, began to have less and less dependence on realism and relied instead on the manipulation of form and colour for symbolic significance: his stained glass designs for Coventry Cathedral for example, embodied the modern spirit of the new cathedral itself.

Post-war ecclesiastical stained glass took up the challenges of its predecessors and widened its parameters. Works such as that of Johannes Schrieter, John Piper and Mark Angus might have a deeper meaning once the narrative is understood, but initially trigger a response by the luminosity of the medium and the spirituality of the colour and form; as does most secular glass. This comes back to the question about the complexity of the narratives in medieval glass and invokes the theories of such as Kandinsky, Klee and Albers which refer to the emotional and spiritual intensity of colour and form that does not rely on a religious theme. Jean Bazaine suggests that:

> '... nobody takes in all the details of the windows at Chartres (except with binoculars and a guide, which are not indispensable accessories of the Christian). But the subject is 'there' all the same, and what sinks in to the faithful is not just an empty play of lines and colours, nor is it the stories themselves, it is in the emotion of the artist who dealt with these stories. ... Painting today can perhaps give this same faith some vitality in the form of revelation of the exterior world through more intense interior vision, a moment of truth in which the rhythms of life naturally assume a form of meditation.'[261]

It could be argued that too many conventional designers have rigid ideas as to artistic standards and this adherence to the 'rules' has prevented them from recognising that coloured glass is an art form that appeals to the feelings, not the intellect, and that because coloured light evokes a strong emotional response it is an art ideally suited to both religious and secular architecture.

Chapter III: Post 1945

In Europe as in the United States stained and painted glass was seldom used in commercial buildings after the First World War. Although no longer required as a coloured, ornamental element, glass had begun to play an increasingly important role in architecture: an innovation made possible by the development of a load bearing steel frame which allowed the outer walls to be infilled with glass. Processes such as *engraving, embossing*, *aciding* and *sandblasting* enabled this glass to be used decoratively but without the inclusion of colour. In 1930's London the Daily Express Newspaper Offices, Peter Jones Department Store and Richard Rogers' Lloyds Insurance Building in the City typified the style.

The starting point for much of the new glazing after the destruction wreaked by the Second World War was the realisation that what the medieval glaziers had expressed in glass was the mystical exchange between heaven and earth. Taking these early artisans as an example, post-war glass artists employed the transformation of colour by light not simply to illuminate the surrounding space, but also to endow it with ethereal beauty and, in so doing, to retain a bond with the life of a modern audience. In common with earlier glass designers, post war artists working in the medium, such as Schaffrath, Schreiter and Piper were concerned to increase the expressive rather than the merely decorative qualities of colour and form.

It is often suggested that the work of such artists led to a renewed interest in architectural stained glass for secular buildings, but it is apparent that the public perception of stained glass has never fundamentally made the transition from ecclesiastical to secular. In the minds of most people stained glass, even at the beginning of this new millennium, still tends to be associated with religious themes. Brian Clarke controversially argues that 'precious' art has no future. 'We must come to terms with the electronic age and not hide away from it in 19th century romanticism. For the first time in five hundred years artists are in a position to work with architects on a heroic scale towards the destruction of precious art and the establishment of architecturalism.'[262] June Osborne launched into a fierce polemic against this opinion stating 'It is difficult to escape the fact that this art has always been at its most telling, most lively and most transcendental when it has a religious theme to express.'[263] Whilst one may not unconditionally agree with Clarke, this is a surprisingly limited point of view considering the wealth of inspiring contemporary secular stained glass to be found in every major city throughout the modern world. Osborne's, implication that stained glass, by its very nature, is inspirational through its religious symbolism alone, looks back to a medieval culture where religion was the dominating force of art and the Church its greatest patron. Implicit in this opinion is the assumption that the narratives and symbols of Christianity are as commonly known to most members of society as, to a greater or lesser extent, they once were.

Post-war Glass in Europe

After the war the architectural rejection of co'our virtually negated the influences of such artists as van Doesburg, Mondrian and Albers. However, as coloured modern building materials and components gradually began to re-emerge with architectural designs such as those by Piano and Rogers at the Centre Pompidou and Norman Foster at the Sainsbury Centre and Design Research Centre at Ryegate, a similar spirit motivated a small, but important number of artists who have designed for glass since 1945. One of whom, Jochem Poensgen, remarked that:

> ...the open inclusion of painting and sculpture in architecture in the history of art seemed to me evidence of a golden age. The optimistic utterances of Fernand Léger about the possibilities of art on public display greatly confirmed my ideas. My turning to art glass as a possible way of realising these ideas was a logical consequence.[264]

Already regarded as a master of the use of colour and form, it was not until the end of his career that the French artist, Henri Matisse (1869-1954), turned to glass as a means to convey emotional expression: almost a logical conclusion to his experiments with colour and light.

In 1947, after a period of convalescence with the Dominican sisters at Vence, near Cannes, he was commissioned to design the decoration of the small Chapelle of Saint-Marie du Rosaire which he completed in 1951. The apparently naive designs for the chapel windows at Vence are a permutation of his late papiers collés: cut from clear, coloured glass without the addition of paint or modification. The technique of papiers collés, originally used in the preparation of painted compositions was, between 1943 and 1947, gradually transformed into a technique of its own. It differed from the cubist's use of collage in its format and its aims, but retained some of its elements. For example Picasso and Braque made use of existing materials; fragments of real objects introduced into imaginary space, the image completed by charcoal or ink line and areas of paint. Matisse chose the forms he wanted from coloured sheets pinned onto a plain ground, enabling him to study their relationships by moving them around. Thus his work acquired a previously unattained boldness, youthfulness and strength. In these collages and in his later paintings such as *Interior au rideau égyptien* the interaction of colour epitomised the force of light: the state of energy and rest which colour creates on the picture surface.

The papier collé medium, which Matisse used in the design for the windows and vestments in the Chapel at Vence had evolved continuously since the thirties. In *Jazz* 1943 the glued paper was replaced by a stencil which was, in turn, followed by a whole series of more or less permanent materials: stained glass, ceramic tiling, appliqué, textiles and print. When he began working in paper he felt himself to be drawing with scissors, however his text for *Jazz* in 1947 demonstrates a significant association with the window about to be constructed at Vence: "Cutting into the chosen colour reminds me of the direct carving of the sculptor".[265] In the windows each cut revealed the pristine character of the material and also of an image. Soon after *Jazz* was completed characteristic forms began to evolve which can be associated the Vence windows. Screen hangings such as *Océanie* and *Polynésie* took on an all-over design common to textiles, yet at the same time left space around each element. With *Amphrite* later in the same year these spaces were delineated and the marine motifs reassembled into heraldic symmetries with a narrative meaning. The following year, in one of the stained glass designs for the chapel at Vence, Matisse added rectangular geometric forms to his repertoire: somewhat typical of the new scope of reference these geometrical forms referred to the head-dresses of Dominican nuns yet deliberately implied the sight and sound of a swarm of bees *(illustration 140).*

The two windows behind the altar consist of organic green shapes overlaid on deep blue and suspended on a potent yellow.[266] This formal graphic style is dependant on repetition, symmetry and rhythm. Within a combination of vivid colour Matisse's rhythmic lead intervals create a simplistic perfection: indeed it is on this art of interval that much of his success with the medium relies. To introduce a dynamic element to such a design Matisse alternates transparent and not-transparent glass: the contrast between the transparent blue and green and the translucent yellow glass thought, in this instance to have been the suggestion of Marq, establishes a rhythmic pattern by creating different visual focal points.

With the main hall windows Matisse further reduced the form, introducing large, rhythmically balanced petals of alternating pure yellow and green glass *(Illlustration 141).* From reproductions it is possible to comment on the general principles of an artist's stylistic progression, the deployment of colour and leading etc., in so far as texture and quality of light is concerned it is not, therefore, I will defer to Reyntiens' description of these aspects of the chapel window:

> ... there was one refinement that was the work of Paul Bony, the interpreter, and that was something that Matisse, for all his genius could not have foreseen. If you look closely at the surface of the range of the main windows you will see that the blue and the green are transparent and allow the eye to go right through them so as to contact the outside world. It is almost like taking a refreshing plunge right into the middle of a swimming pool. The yellow is another entity altogether, since this is only translucent, not transparent. It has been white-acided on the inside so as to support a delicately-textured knap, rather like a shammy-leather kid glove. The act of painting on the glass to achieve this would have been too violent and intensive a qualification of the yellow; this explains the use of aciding instead of paint. It is in the push-pull against the prohibition on penetrability over the area of the acided yellow (which delicately inhibits and

> restrains the eye's expectation) that the real subtlety of Matisse's windows comes to be appreciated.[267]

The commission at Vence gave Matisse his greatest opportunity to handle light directly, in its own right. Throughout his career, Matisse had made his colours work and re-work on one another to create expressive intensity and ambiguous spatial effects but here the separable attributes of painting, colour and light, could be used in a truly appropriate form. To achieve better visibility from a distance neo-impressionism covered a whole surface with a homogeneous structure of broken tones of contrasting dotted colours: an innovation which had been introduced long before in fresco. However, the neo-impressionists moved away from tradition by basing their ideas on a scientific concept of mixing lights rather than pigments and experimented with complementary after-images. Goethe had observed that the strong stimulus of one colour created a complementary colour as an after-image. Such experiments can be seen in the Vence windows. Here a negative red after-image is created as an effect of light pouring in through the yellow, blue and green glass: the windows themselves contain no red. In an interview Matisse recollected his experience of the sun playing through the Vence windows:

> That effect of colour has real power ... so much power that, in certain lights, it seems to become a substance. Once when I found myself in the chapel, I saw on the ground a red of such materiality that I had the feeling that the colour was not the effect of light falling through the window, but that it belonged to some substance. This impression was reinforced by a particular circumstance: on the floor in front of me there was some sand in a little pile that the red was resting on. That gave the effect of a red powder so magnificent that I have never seen the like in my life. I bent down, put my hand in the sand and picked up a good fistful, raised it to my eyes and let it trickle through my fingers: a grey substance. But I haven't forgotten that red and one day I should like to be able to put it on canvas.[268]

Considered as a light-transmitting medium from its conception, the doubling of the glass image on the floor of the chapel is intrinsic to the beauty of the whole, allowing

Matisse greater breadth of vision than would a similar work on canvas. The Vence windows give Matisse a singularity as a glass designer in his consideration of reflection, not just within the window itself but also in the over-spill onto the surrounding walls and floor.

The windows at Vence palpably reveal the unqualified statement of an artist who thought deeply about the medium within which he was working and used it in his own entirely honest way. Together with Léger's windows in a small suburban church at Audincourt constructed by Jean Barillet in 1950 in a limited palette of small pieces of *dalle de verre*, the most difficult medium; this work denies previously laid down precepts either in principle or practice, and opens up infinite possibilities for the medium. As with Trinick, the limited palette used by Léger serves to illustrate that this can be an asset with stained glass design *(illustration 142).* Very fashionable in the 1960's, *dalle de verre* has since fallen out of favour, not only because of the practical difficulties but also because, viewed from the outside, the imposition of so much concrete into the design creates a thick and ugly tracery of unresolved lines *(illustration 143).*[269]

Compared to the Continent, principally Germany, in Britain there was a dearth of stained glass commissions, particularly for secular buildings. But, in common with most of Europe, the post-war period saw more church building going on than at any time since the Middle Ages and thus the requirement for ecclesiastical themes. The massive rebuilding programme in post-war Germany and the demand for new churches, prompted by a huge religious revival together with the influx of more than twelve million refugees from East Germany, included legislation requiring the inclusion of public art: in turn this was linked to tax rebates for patrons and donors of such work. However, the post-war art situation was complex with debates ranging between styles. After an initial period of confusion, church architecture and the allied arts had, during the years 1952-55, supplanted historicism with modernism.[270] Some authors suggest that the Church, anxious to supplant images of a Nazi and imperial past with those of a social democratic future, welcomed the opportunity to transcend polemics and regain the spiritual orientation of the abstract stained glass pioneered between the wars. Others propose the seeds for change had long been sown and the two wars had simply retarded its evolution.

While it is evident that, from the early nineteenth century, the ground had been prepared for new developments in art glass, it was not until the mid-fifties that the interplay between art glass and modern art became more widespread. Windows designed for the new style of architecture were, by and large, modern in concept. As technology allowed windows to be expanded into walls of glass, architectural art glass was no longer bound by a frame. This in turn encouraged a new freedom of expression in the medium which brought about a departure from the narrative tradition of both figures and colours. The stained glass scene at the beginning of the 1950's was dominated by the modernity and clarity of German glass designers who widened the spectrum of innovative art glass introducing elements which could not be obtained on canvas. United with the modern movement in art they represented simultaneously a revival of an ecclesiastical art, frequently displaying a Franciscan influence in its simplified style, together with a severity of form which rejected ornament and figural elements. However, even this conscious decision to free stained glass from a fin de siécle approach did not entirely obliterate its Art Nouveau roots. The great transitional works of Campendonk and Wendling, whose graphic style was influenced by the last phase of German Gothic revival, gave birth to the radical break with convention in the glass walls of such as Meistermann.

Meistermann, born in 1911 at Solingen, studied at the Academy of Fine Art in Düsseldorf, obtained a professorship at the Stadelschule, Frankfurt-Main in 1952, became a professor at the Academy for Art in Dusseldorf in 1955, a professor at the Academy of Fine Arts in Munich 1965-67, a professor at the Academy of Art in Karlsruhe 1960-76 and President of the German Association of Artists 1967-72. Liberated from the last vestiges of Gothic revival his huge windows were breathtaking in their dynamism and originality. From the beginning of his career Meistermann revolutionised the language of stained glass using a new, purely graphic imagery freed from associations with past traditions.

Pioneering designs such as *The Bottrop Spiral* 1958 became a turning point in the history of abstract pictorial semantics giving impetus to his own and succeeding generations of glass artists *(illustrations 144 & 145).* His richly developed design ideas caused a flurry with their marked innovative elements and had a permanent effect on those artists seeking new objectives. His influence can be strongly observed in the work of Ludwig Schaffrath. Meistermann's three dimensional perspective, which gives his work so much depth and structure, also became a significant element in Schaffrath's work.

The first stage in the liberation of stained glass was the loss of narrative; the second was the complete rejection of the figure; however this second stage still relied heavily on the effects of colour and form. It was not until a third, post-war stage, that the window became an architectural, structural feature within which the use of a bright, varied palette increasingly gave way before dynamic rhythm and line. Often consisting of white or lightly coloured glass, the rhythm of the glass construction became part of the massive new concrete buildings so typical of the 1960's. Thus a building could be viewed as a total work of art as Thorn Prikker, Van Doesberg and Henry Van de Velde had previously striven for: not just in churches but also in public secular buildings. Of the new wave of artists who developed and pursued this change in direction Ludwig Schaffrath was perhaps the most consistent. He depends on rhythm and interval rather than colour and content for the dynamism and energy so typical of his linear art. His belief that the profligate use of colour in advertising and television distorts the public's self knowledge of their emotional reaction, leaving them unable to form rational conclusions, led to a great deal of his work being carried out in monochrome glass of various degrees of opacity and tone. A frequent visitor to Japan, his admiration of Japanese art seems to have opened up new possibilities which reflect an Oriental respect for the powerful effect of negative space.

Born in West Germany in 1924 Schaffrath, who studied at the Schluterschule before becoming an assistant to Professor Anton Wendling (former pupil of Thorn Prikker), expanded and explored the ideals and characteristics formulated at the Bauhaus; by the 1960's manipulating them into a personalised visual vocabulary. 'The fundamental principle of modern architecture of the '60's was the explicit expression of the basic elements of the building process as form.'[271] A similar approach was taken by the German glass artists who converted the lead line from a structural necessity into an aesthetic driving force. Colour became a secondary consideration, complementing the line: the simple combination of glass and lead resulting in a stark visual effect harmonising with the contemporary style of the architecture.

Schaffrath's architectonic glass walls create a visual impact turning what is, in essence, a structural support into an artistic feature. From 1953 he experimented with many materials and techniques to meet the new architectural challenges of the period. Beginning with glass at St Peter's Church, Immendorf, rebuilt in 1958, and Aldenhoven, by the end of the decade glass had become his main preoccupation *(illustration 146).*

For Schaffrath the profound relationship between his glass walls and the structure of the architectural whole is of fundamental importance. Modern architecture increasingly introduces walls of glass into its structure which, despite giving a new found freedom in construction, poses certain problems, significant for both architect and artist alike. Modern glass, which permits the creation of huge apertures, opens the possibility of the interior becoming visible from the outside; the viewer's eye being directed around the internal space on approaching the building. The interior thus gains a new aspect when viewed from outside: the enclosed interior space exhibiting a tension between containment and openness. It is the balance between these two opposing factors that is central to Schaffrath's art and is demonstrated particularly well in the following works.

In 1962 Schaffrath was commissioned to design the thirty two cloister windows surrounding the four sides of the cemetery garden of Aachen Cathedral. Schaffrath saw this successful old building as both a challenge and a limitation. He set himself the task of serving the existing building and underlining its scope while at the same time developing it and displaying it to its best advantage. Although he strove to respond to this ancient architectural and artistic masterpiece with a new, individual vocabulary, with its concept of 'glass as screen' or partial enclosure, the ensuing work is unequivocally reminiscent of Alber's *Sommerfeld* windows of 1922. Coming at a formative period of his career, the commission was problematical in that not only does each passageway serve a different function: contemplative or functional, with various entrances and exits, the architecture dates from late Roman to late Gothic and includes baroque paintings of the Stations of the Cross and the 20th century peace cross of Wendling.

Schaffrath eventually decided upon the motif of the 'epitaph' as a universal and unifying symbol. The indecipherable dedications on the ancient, eroded tombstones suggested a monochrome abstraction: no colour, no images and no inscriptions. He chose light, grey toned glass graded in transparency and texture: glass which could be viewed equally well from both inside and out, changing with the seasons from the greens and browns of winter to reflect the radiance of a summer day. The result reveals the cloister interior to the outside, both opening and enclosing the space and thus creating a total entity between the cemetery garden and the cloister passageway *(illustrations 147, 148, 149 & 150).* The integration of the graphic lines with the ornamental stonework stand as an example of how a new vocabulary can invest an existing work with new life and guide the spectator to a better understanding and enjoyment of the original character of the building.

A second church in Aachen, St Josephs, also badly damaged during the Second World War, is situated on a busy street corner and was constantly subjected to reverberating traffic noise. The church elders therefore decided that, whilst the building was undergoing repair, they would take the opportunity to incorporate the use of double glazing. The modern glazing kept to the original Gothic window shapes on the outside, but theses shapes were only caught in glimpses from the interior. Commissioned to design the secondary glazing, Schaffrath created a flowing symmetry of colour and line which endows the interior space with a modern but sympathetic ambience; enhancing rather than destroying the traditional characteristics; his particular forte. The rhythmic circular line and subtly limited palette of the windows gently invite entry into the building. Similar to the Aachen cloisters the glass walls act as a partial enclosure drawing the spectator inside into an oasis of peace and contemplation.

From the movement of the circle Schaffrath conceived a third motif: the labyrinth, a Christian symbol of redemption *(illustration 151).* In classical mythology the labyrinth is a road with no way out: Schaffrath uses the irregularities of this motif to signify the complications of human life. In much of Schaffrath's work the labyrinth becomes both an harmonious wrong road and a complicated path to redemption.[272] This play of parallel straight lines and undulating curves which refer partly to geometry and partly to mythology, together with concentric snail-like circles and half circles, appear as re-occurring symbols. The suggestion of shelter and enclosure in these curves and circles is challenged and endangered by the intercepting vertical straight lines (*illustrations 152 & 153).*

With his work at St Joseph's, Schaffrath makes a connection between the labyrinth motif and the rose window on the West aisle. The rose window can be perceived not only as a vision of heaven but also as a wheel of fortune on which turns the destiny of man. Schaffrath's rose incorporates a circle through which twists and turns the path to its centre. Thus the spectator is eventually directed, after overcoming many difficulties, to the benediction of Christ.

From the Middles Ages accomplished architects endeavoured to attain a unity of design and Schaffrath, emulating their achievement, strove to bring this sense of cohesion to modern construction. His craftsmanship and technical ability are evident in his manipulation of different textures of glass which give his work an adventurous tonal graduation and movement. In his designs the unadorned monochrome glass is compensated for by the varying degrees of transparency and the organic rhythm of the lead lines of differing widths. Beginning with the light and cheerful entrance window at St Marien Bad Zwischenahn, the sense of movement once again invites the spectator inside and, as with the rest of the church, the glass guides the visitor's footsteps to right or left (*illustration 154).* Rooted at the base the forms of the glass do not rely on colour; their transparency recreates internally the natural colours of the outside world. Sensitive from inside and powerful when viewed externally, the windows incorporate a huge variety of different glasses. This lack of repetition in the use of glass allows the pieces to refract and respond individually to light which endows the internal space with serenity and encourages the spectator to interpret, in his own way, the delicate graduations of colour and subtle changes of light.

In common with most glass artists of the period, Schaffrath's motivation was to make art part of everyday life and in the process give both new and existing architecture an added dimension of beauty and creativity: not added as an afterthought but integral to the origin concept and design. Art glass of the seventies was particularly successful as the result of the introduction of glass walls encouraged designs which were equally effective when viewed both internally and externally; not simply in the innovative use of glass but also in the rhythmic, flowing lines of the *cames*. This manner of glass construction has little to do with traditional, conventional stained glass: these designs create a light kinetic in which areas of the glass walls pass from brilliance to darkness and lighter forms support heavier.

Schaffrath attempts to neutralise inconsistencies in the architecture by a formal intensification of conflicts, as at St Antonius Hospital: introducing a random sequence in his glazing scheme to act as an element of harmony in the building. A new sense of order is defined by this illustration of the incompleteness of what appears to be a perfect structure, thus humanising the idea of order *(illustration 155).*

In spite of his pioneering spirit Schaffrath's work tends to be repetitive; the dominant theme being rhythmic, interweaving parallel lines which create flowing, dynamic forms that lead the eye through the work. Standing in complete contrast is the unpredictable diversity of Johannes Schreiter whose originality, I would argue, makes him master of the stained glass scene in Germany during the post-war period. A pioneer of new ideas and techniques, he mixed plastic with glass, originated the 'wandering lead line' (lead lines that end in the middle of the glass – a technique used with aplomb in the 1980's by Mark Angus) and introduced into his otherwise wholly abstract compositions a variety of images such as burn marks; scientific diagrams and quotations.

Born in 1930 Schreiter fled the newly formed German Democratic Republic to study at the Munster Werk Kunst Schule (1946-52), where he first became involved with stained glass, followed by three years teacher training at Mainz and Berlin. He became a director of the School of Art in Bremen in 1963 and, in the same year, a professor at the Academy of Decorative Arts in Frankfurt. In 1958 he developed his unique 'Brandt' collage process in which he introduced *papier-collé* to a severely limited palette, singeing and burning individual fragments to express emotion; a process which brought him recognition and became central to his future work:

> Johannes Schreiter has developed a process with which he achieves subtle colour transitions. He ignites white paper at the edges and the smoke creates the finest colour nuances, from dark brown to white. He arranges these scraps of colour on black cardboard in groups and rows, a process which results in a fascinating play of dark and light that could not be conjured up with any method of painting *(illustration 156 & 157).*[273]

A determined opponent to the division between fine and applied arts Schreiter worked in a variety of media including easel painting, drawing, lithography, relief painting and mosaic in addition to stained glass. In the Germany of the 1950's the prospect of making a career as an artist seemed remote and he turned first to teaching and then to the contemplation of emigrating to Paris. However, as the post-war rebuilding programme increasingly began to offer opportunities in the applied arts, notably stained glass, he was encouraged to remain in Germany. As his reputation as a stained glass designer grew, the medium came to dominate his artistic output.

In 1956 Schreiter made his first attempt to design and construct a complete panel (now destroyed). At the time a great deal of publicity had been given to modern painters creating ecclesiastical stained glass designs and Schreiter was impressed by Matisse's windows at Vence and the uncompromisingly contemporary designs of such as Meistermann. It was however the *dalle de verre* construction of Léger at Audincourt that he aimed to emulate. Having been given a box of glass off-cuts by the newly established Derix workshops, with whom he was to establish a successful collaboration, he set the pieces into Plaster of Paris. Not restricted by the demands of a particular building, the design, three disciples in repose, is a somewhat surprising choice.

This first experimental piece, which excited his interest in the effect of coloured glass on light, marked the beginning of a new career. Exhibited at the *Neue Kunst im Raum der Kirche* at the Berlin Interbau, the panel earned him a major commission from Hans Schadel, one of Germany's premier architects.[274] Indicative of the spirit of the time Schadel's architectural designs for the church of St Margareta's, Burgstadt am Main included one hundred and twenty square metres of stained glass as an integral part of the building. Liberated by the lack of a specific brief from the architect, Schreiter was allowed the freedom to expresses a personal spirituality inspired by his interest in Christian art. This work, which he considers to be his genesis as a glass painter, encapsulates many of the fundamental elements that were refined in his subsequent compositions: the introduction of opaque glass and exploitation of tonal variation within a restricted palette; the graphic use of leadline and, perhaps above all, his highly individual response to the symbiotic relationship between stained glass and architecture.[275]

In 1959 Schreiter was invited to move from his small studio in Bonn to the Rottweil studios of Ludwig Derix in southern Germany where the Burgstadt commission was carried out. This move offered him the studio space he needed to work on his large cartoons and afforded him the opportunity to supervise the window's construction. Selecting the glass himself and passing it to the craftsmen for cutting, he became well-versed with the processes of the craft; in turn, the craftsmen had the chance to see the how the artist created his cartoons. At the time a rare exchange of insight due to the specialisation of the West German approach, it is a practice which Schreiter continued throughout his working life.[276] A testament to the success of this collaboration was that, although independent and under no obligation to do so, for the next first five years he had all his commissions carried out at Derix's studio.

The West window at St Margareta's was a huge wall of glass, a dramatic contrast to the starkness of the altar and the bare, triangular East wall of the church. As with all windows of this size it is essential that the designer pays attention to the quality of light and its overall effect in the building. Challenging preconceived ideas that stained glass was synonymous with intense colour Schreiter instead chose to limit his palette to subtle earthy colours and to explore the full tonal possibilities of the medium. To avoid an abrupt change of tone from one piece of glass to another, or ease a transition within an individual piece he would apply one or more filmy coats of patina to the exterior of the window. The resulting gentle opacity subdues the light and, preventing the *halation* and mixing of colours that would result from sunlight through *pot-metal* antique glass, heightens the nuances of colour and strengthens the effect of the leadlines. Seeking to unify the vast expanse of glass Schreiter's line surges across the picture plane in an interwoven expanse of abstract forms which refer more to a fantastic landscape beyond the frame than any attempt to draw on recognisable Christian symbolism. Not only does this window jettison traditional Christian icons it also heralds Schreiter's gradual move away from the Arts and Crafts ideal of 'honest' use of material through the promotion of vernacular architecture constructed from locally available materials using traditional building practices and patterns. Holding a high art philosophy akin to that of Albers he explains:

> When I create a glass window, I don't think about any sort of usefulness either for my contractor or for me, and certainly not about the exposition of a certain material ... I simply can't abide ... this big fuss over the material glass; such ecstasy over the material leads only too easily to the overvaluation of decoration, and that is exactly what I want to free the glass panel from. There's a good reason why this idea of 'doing justice to material' has been instated as the watch-word of the handicraftsman. It is still being used as a weapon against the unpleasant and 'disrespectful' way in which the artist handles his material.[277]

Compared to some of his later work the window at St Margareta's is relatively conventional however, certain challenges to the characteristic handling of the material begin to establish themselves. From tentative beginnings at St John's Church, Kitzingen, begun in 1959, motifs suggesting burning and singeing were introduced into his glass designs as well as his collages; motifs which were intensified throughout the 1960's into more intentional and individual burn marks combined with simplistic geometric forms.

In 1969 Schreiter began designing the thirty three replacement windows for the church of St Marien in Dortmund; the original glass having been destroyed by allied bombing during the Second World War *(illustration 158).* Within these windows he employs an abstract vocabulary to express Christian ideology in a way which engages a modern congregation. As he explains:

> In the creation of the 33 windows my aim was, in the first instance, to unify the two different architectural styles of chancel and nave through the basic elements of my design without detracting from the characteristic distinctions of these unique component parts.[278] Therefore, all the windows, with the exception of one small Romanesque one in the south aisle, contain the same vertical textural screen, varied to artistic necessity.[279]
>
> The principal parts of the design are the dark brown vertical beams comparable to the widths of the stone mullions, and large hanging areas of whites and organically formed departures from the stereotyped pale grey textured screens. It is above all these informal breaks in the surface uniformity which enter into a dialectic contrast to the building and illustrate the unpredictable, the unforeseen. Through these it becomes possible for the observer to relate the spiritual with human experiences. The non-transparency of the glass makes a vital contribution for it contains the eye within the building, removing all the established facts in the physical realm of perceptibility. No detail of the outside world disturbs the challenge to transcend the 'signals' of the window.[280]

Schreiter's emphasis on the vertical plane uses the religious metaphor of below and above. Following the medieval model, the upward thrusting lines become pointers to heaven while below the earthly congregation is symbolised in the liturgical red tones of the lower apse windows. The connecting lines are broken with chaotic deformations introduced to express the contemporary human condition and the destructive forces and effects of sin.

The stylised treatment applied to the work to achieve the effect of burning integrates well with the overall design but does not immediately suggest charred paper and in subsequent commissions it is evident that this was a problem he pursued. Each new design, such as at Douai, France; the Landes Museum, Darmstadt and St Andreas Church, Wullen, demonstrates his increasing demands for a more literal translation which, in turn, forced the boundaries of technique and the development of new technology. [281]

There is a tension at the core of Schreiter's work: his huge walls of glass represent rationality, timelessness and survival in contrast to the emotion and decay held within the fabric of pre-war buildings, or their replacements, for which the glass was designed. Schreiter's understanding of integration is not that of the absorption of the glass (or other visual art) into the architectural design but rather its assimilation through the relationship between space and image. His remarks in the late 1970's offer an insight into his response to the challenge of co-ordinating his art with its surrounding architecture:

> A glass window which allows itself to be governed completely by the architectural factors and tends to be become a part of the architecture itself – with resultant surrendering of its pictorial qualities – is merely a servant of the structure; it can't quite hide its surrogate character. This usually happens to weaker talents when they try especially hard to integrate. They see their work as subordination and accommodation instead of co-ordination. By denying the pictorial autonomy the result achieved is one which we often see in many places – the boring lethargy of a window rambling along the structure, not being able to make any form of statement or create any feeling of autonomy. I don't mean to imply that pictorial art should incite anarchy and wallow in self contemplation. That would just as surely lead to destruction! The only justifiable dispute, and this can be applied to the relationship between the picture and architecture, is one in which both parties stimulate each other in their substance without reducing one another to a common level.[282]

With his skilful and thoughtful designs Schreiter is one of the few modern artists, who have successfully overcome the problems inherent in designing contemporary glass which will sit comfortably in ancient buildings; ecclesiastical or secular. One of the best examples of its kind being the north apse window in the Catholic church at St Laurentius, Niederkalbach bei Fulda, which embodies his philosophy on the contrasts of timelessness and survival with emotion and decay *(illustration 159).* This window refers to the past without imitating it, the clever use of graphic line giving it a definite but not jarring contemporary feel while his use of subtle honey colours within a frame of brown, white and red, harmonise both with the stone work and the interior.

During the late 1970's Schreiter began to be offered opportunities to create designs for innovative and exciting architectural commissions. Devoted to the concept of architectural art he succeeded, during this period, in narrowing the perceived gap between fine art and stained glass so that the two evolved side by side. Formerly there had been a assumption that the 'compromises' involved in adapting art glass to specific architectural demands caused a weakening of the intended visual message and impact resulting in a loss of status as serious investigative art. However, Schreiter's *Heidelberg* Series 1977, for example, shows no sign of such concessions *(illustration 160).*

Like the French designers German glass artists of the 1950's veered away from figurative glass.[283] Reyntiens in his essay *Good Behaviour and Bad Taste* written in 1979 states that all German art, looking back as far as the Romanesque, has been concerned with art forms as an expression of public self confidence and identity. Drawing the conclusion that German art is controlled by society and therefore 'Individual conviction behind much modern German stained glass seems in many cases lacking', Reyntiens is convinced that post-war German accomplishments are a social movement in art rather than a collection of individual achievements.[284] However, I would argue that one has only to observe the work itself to see that it stands as a silent denial of this opinion.

New Glass in Britain

The attitude of the Church in Germany was distinctly different to that in Britain: harking back to the orderly society of earlier years, British ecclesiastical commissions were customarily undemanding and traditional. One of the few exceptions was the new cathedral to be built at Coventry to replace a medieval church destroyed by bombing in 1940.

Described by Margaret Garlake as a 'grand romantic gesture of survival, rather than the sign of a new order … more a war memorial than a salute to the optimism of post-war revival' and defined by others as a 'showcase for Neo-Romanticism', Coventry Cathedral's unconventional blend of modern and traditional elements nevertheless became a subject of controversy.[285] However, after the furore over this break with convention had subsided, the importance of the Coventry windows as a landmark in English church glass was recognised and the bold use of concrete and glass served as a prototype, establishing a new tradition in British stained glass.

Sir Basil Spence's competition report for the Cathedral Church of St Michael, Coventry in 1952 specified artefacts such as stained glass, sculpture and tapestry 'designed by a great contemporary artist' to create the desired effect of richness inside the plain, relatively small building and to give warmth to a severe design.[286] Spence commissioned many of the stained glass designs very early (1952-3) and a remarkable attempt to co-ordinate these with the design of the building followed.

One of the functions of the cathedral - to serve as a shrine to the victims of the war - encouraged Spence to use light in order to create a mood. He was anxious to find designers who could produce windows of a modern design, which could hold their own in their setting, yet be sympathetic to it. In 1955 Piper wrote of his and his colleagues' work at the cathedral as:

> … the personal expression of a few individuals who believe that glass is alive and are not at present prepared to trim themselves to the wind of official taste or committees' demands.[287]

Designers from the Royal College of Art, Lawrence Lee and two of his students, Keith New and Geoffrey Clarke, were given a brief to produce abstract or semi-abstract designs for the nave in colours corresponding to the scheme Spence had designed to symbolise a progression from birth to death and represent man's relationship to God at different stages of his life: green, a qualisign for childhood; red, the experiences of youth; multicoloured, the confusion of middle age; purple, old age and death and finally gold, the afterlife. Lee recalled that "... the designers agreed that totally abstract windows were not appropriate ... some Christian symbolism should give a recognisable content for the spectator."[288] The clergy apparently offered no guidance over iconography, perhaps because of the abstract designs. Reyntiens argues that:

> The only drawback to these magnificent windows is that, though they are designated 'symbolic' the actual symbolism is so recondite and obscure that a handbook is needed to explain it all.

However, as has been previously discussed the apparent 'simplicity' of Christian iconography is deceptive and the placement of windows (in the clerestory for example) although designed and constructed to be viewed from a distance, make the details of even the least complicated images difficult to resolve without the aid of binoculars.

The ten windows were planned as a series of pairs leading from the entrance to the altar with a distinction established between the sides of the nave in terms of a 'God' side (north aisle), representing a divine order, and a 'Man' side (right aisle), representing a natural order *(illustration 161).* The unity of the design as a whole was helped by a common source book: Rudolf Kock's *The Book of Signs,* by working in close proximity and by joint trips to France to study contemporary glass.

The main problem at Coventry was the height of the windows, each some seventy five feet tall, and their dominant stonework. Although Spence's aim was to 'fuse the fabric with the glass' this was realised only in the sense that the windows perform a structural function.[289] It is the stonework and not the stained glass it contains which emerges as dominant. To overcome this "The images had to be very strong." Lee stated.[290]

Keith New's green window, representing childhood, adopts several devices such as extension, where strong black lines (almost a thick as the mullions) move the eye from an upward uncoiling spring shape to the black circles below containing a horizontal and vertical line; complement or contradiction in an attempt to come to terms with the imposed grid of vertical and horizontal stonework. Light, rising upward through the window may be said to complement or reflect in reverse the black mullions but, on the other hand there is contradiction in the black border of the green circle in the top of the centre lights and the dark diagonal arrows which break into it. The dominant window in the cathedral however, reaching from floor to ceiling, is the huge and dramatic bowed window of the baptistery. It was to John Piper, whose style of Neo-Romantic symbolism was particularly suited to ecclesiastical architecture, that this most important commission was given.

As a student at the Royal College in 1927, Piper was able to take advantage of the existing stained glass department. His interest in glass lay in the aesthetic rather than the technical aspects of a medium which taught him more about colour than, as he put it "... ever before or since ... I was more interested in what one got from stained glass, not what one was giving it".[291]

Together with Sutherland, Moore and Nash, other exponents of the Neo-Romantic style, Piper had been regarded as one of the brightest stars of the War Artists Scheme: commissioned in 1940 to record bomb damage in London, Bristol and Coventry. Although pursuing the historic theme of recording a war, paradoxically, the group were also accepted as being among the avant-garde.

By 1935 Piper, Nicholson and Hepworth were at the centre of an expanding group of artists. At a meeting of the Seven and Five Society the previous year, for whom Piper acted as secretary, Nicholson proposed a rule that only non-representational art would be exhibited in future shows. This seems to have been a spur for Piper's move from picturesque landscapes to relief constructions and carefully executed abstract works. He exhibited in the first all abstract exhibition in England in October 1935 which proved, in spite of Piper's efforts, to be the last exhibition of the Seven and Five Society. At this point in his career his form of modernism is described by Harrison as betraying 'no worse than a seemingly resolute apprenticeship'[292] In November of the same year Piper submitted work for the exhibition *Against War and Fascism*. By this time Marxism had begun to influence many artists and critics and pervaded debates about art: the antithesis of the privileged aesthetics of the Bloomsbury Group.

The following year saw the international exhibition *Abstract and Concrete* touring in Oxford, Cambridge, Liverpool and London. This international exhibition included the English avant-garde, on equal terms with the Europeans. By the late 1930's the term Constructive had replaced Abstract in an attempt to identify those artists who were opposed to the influence of Surrealism. Although by and large romantic in nature these artists continued to maintain their own individual style and viewpoint. Advocating an art based on tradition or history, with the past essential to the formation of contemporary practice Piper wrote in the art magazine *Axis* in 1936:

> Any Constable, any Blake, any Turner has something an abstract or surrealist painting cannot have ... The point is fullness, completeness; the qualities of all good painting together with symbolism (at least) of life itself ... Abstraction and surrealism can choose, but they do not choose both. They can build and be filled with an ambition for future life but can hardly express a fullness of present life. Constructivism is building for the future – and so far an escape into the future. The Royal Academy, a hesitation in the past.[293]

Piper reacted against the elaboration of political considerations in the debates surrounding modern art seeing such elaboration as a threat to his professional self-image and essentially a superficial view of artistic practice.[294] Such reactions contributed to the insularity and conservatism which was increasingly becoming apparent in English art of the late 1930's: nowhere more evident than in the medium of stained glass. Between the wars British stained glass was produced either by independent studios such as that of John Trinick, who both designed and constructed his own work, or by large studios with designers as members of staff. With the exception of Irish artists Evie Hone (1894-1955) and Wilhelmina Geddes (1887-1955), most distanced themselves from modernism.

Piper was interested in and influenced by the glass designs of these artists which broke so resolutely from Whall's influence. In spite of her ability as a colourist and designer Geddes' intense, powerful and somewhat aggressive style, often caused controversy *(illustration 162).*[295] It was Hone's 1949 East window at Eton College Chapel that Piper acknowledged as a precursor of modern British architectural glass.[296] Hone had three main objectives: satisfaction of the artist's sense of beauty; justification of the artist's sense of colour and abstraction which she saw as purification. Her powerful drawing, vivacious colour and strong feeling for form fuses the logic of cubism with an intense sense of religious life. Although her work differs from the rich deep aciding and narrative tradition of other Irish artists, her heritage of Irish carvings combined with modernism is evident in her work. With the replacement of huge Eton College window, Hone took great care with the dynamic of the painting and the rhythm and balance of colour. Following an Arts and Crafts tradition she had a clear concept of the potential of the medium. Welcoming a return to traditional stained glass techniques she chose and painted the glass herself with coruscating colour combinations giving the work an earthy simplicity.[297] The individual reactions of the figures of the apostles in the *Crucifixion* window confirm an Irish tradition while Christ on the cross demonstrates her admiration for the work of Georges Rouault. Hone used the formal simplicity of medieval art to bridge the ancient and modern, but symbolically the combination of the *Last Supper* and *Crucifixion* is a re-invention of medieval symbolism rather than the institution of purely modern iconography. Effectively it was not until the early 1950's that stained glass in England was thrust into the 20th century. [298] In 1958 Piper was invited to design a series of nave windows for Eton College which have proved to be far more stunning in actuality than in reproduction. Independently the windows are extremely successful however, as part of a pre-existing glazing scheme make too individual a statement *(illustration 163).*

After abandoning abstraction in easel painting and breaking from Nicholson, Piper claimed retrospectively that he had never intended to remain an abstract painter but had simply used abstraction as a discipline. In an article *Abstraction on the Beach* in 1938 he clearly stated his position regarding pure abstraction:

> Abstraction is a luxury, yet some painters indulge in it as if it was the bread of life. The early Christian sculptors, wall painters and glass painters had a sensible attitude toward abstraction. However hard one tries (many attempts have been made to make them toe the line with modern art) one cannot catch them out indulging in pure abstraction.

> Their abstraction, such as it is, is always subservient to an end, the Christian end as it happens.[299]

On the occasions that he returned to abstraction, it was in the form of ecclesiastical stained glass: as he has perceived it, following the medieval tradition of being subservient to the Christian end, rather than exploring a trait inherent in the medium itself. The three light East chancel windows of Oundle School Chapel, Northants, Piper's initial stained glass commission in 1953, saw one of the first attempts in England to design modern stained glass *(illustration 164).*

It was decided that the Oundle windows should be grouped under the headings biblical, creedal and typological with the individual nine lancets each containing a symbolic representation of the eternal and abstract qualities of Christ. Piper, doubtless anxious about this first commission, produced a huge number of sketches and cartoons inspired by a combination of influences: oblique references to the thirteenth century glass of Bourges Cathedral appear together with faceted mask-like faces indicating perhaps an engagement with the early Cubism of Picasso's *Demoiselles d' Avignon* for example.

Having seen the success of the Oundle windows, Spence submitted Piper's name to the Coventry Cathedral Construction Committee and he was subsequently awarded the commission for the great baptistery window. Essentially it was the desire to give coherence to the checkerboard pattern of stonework that decided Piper to produce a completely abstract cartoon interpreted into regular, geometric, patterns of glass. Forming a dramatic backdrop which nominally encompasses the font, the surround of deep colour directs rays of light through the central blaze of yellow and white onto the stonework: the Neo-Romantic themes and imagery symbolising the light of the Holy Spirit breaking through into the world *(illustrations 165 & 166).*

A surge of light in the middle of the window was, technically, the only means of overcoming the camouflaging effects of the large blocks of masonry between the glass. But Lee criticises the baptistery window as 'exerting a severe strain on the continuity of the window structure' arguing that a large area of almost white glass centred in rich, dark colours disrupts the architectural continuum, denying a connected sequence and reverberation of light over the total plane of a window. He also contends that the subject matter is nothing more than the deliberately theatrical effect of violent light contrast and that the suggestion that the dramatic hole of light in the centre represents the Holy Spirit coming in baptism is irrelevant. This suggestion may well have been irrelevant to Piper himself who, when writing of the glass at Chartres, states 'It is not what it is *about* that matters to us: what matters is that it creates another little world within the world.'[300]

During this period Piper states that he became aware of a collective consciousness that grew up about the function of stained glass in relation to architecture: a contemporary consciousness but also with a bearing on the glass images of the past. The primary function of glass, according to Piper, is to qualify or alter the light in the building or room thus creating a different atmosphere, as opposed to providing a message or even bright colour. 'The messages of the windows at Chartres ... has little significance for us in comparison with their transforming effect on the architecture of the interior, their creation of an enclosed, escapist world of colour and modified light. We leave it to the scholars to interpret the messages and point out the morals ...'[301]

In contrast to Reyntiens, Piper usually favours windows that are not aggressive or even particularly personal, but that quietly modify the light in the body of the church. In general he seems to prefer to leave the glass as an abstract of colour and subject, adding only enough line and 'smear' to convey an impression of the image or to provide a black and white texture. Within the traditional school, which opts for the controlled line and matt solution, there are sharp differences between line and matt (shading) but painting is used to establish the image as a continuous surface over the entire window. The principle is explained by Reyntiens. After speaking of the traditional method he describes the alternative: starting with clear glass and only putting on as much paint as is needed to qualify and subdue, and to guide the essentially glittering surface of the glass:

> ... the second method, which I favour is more spontaneous, leaves more to chance and accident, and gives a heightened play and glitter to the surface of the glass. Moreover, it does not look dull or faded in

> black or artificial light. At distance the matt (traditional) system window holds its light on the window plane and holds it in reserve: whereas the free painted window is more inclined to *halate* and shower its light on the surrounding masonry and the floor. [302]

Working together since 1950, the collaboration of Piper and Reyntiens has been particularly successful. Piper believes this to be due to Reyntiens' sensitive and inventive craftsmanship and his total understanding of the painterly approach. Piper has been recognised as one of the leading artists in the field of stained glass in the mid twentieth century, but his designs depend on being translated by Reyntien's technical ability. In his cartoons Piper indicated simply the horizontal glazing bars, leaving the final decisions about leading to Reyntiens, who allowed pieces of glass which came to hand to determine some of the shapes. Construction of the Baptistery window took him, his studio manager Derek White and assistants, three years from 1958 to 1961.[303] In the making the window was slightly altered from the model; at the top red and yellow horizontal lines were introduced into the area of blue, and at the sides, typical of Reyntiens' work, a marked and rapid transition from areas of blue to those of brilliant red occurred; something which Piper later criticised.[304] Despite such occasional disagreements, for thirty years it was only Reyntiens who was allowed technical control as Piper believed that his glass was 'greatly enhanced by Reyntiens' virtuoso leading': indeed most windows of this period owe much to such a collaboration between artist and glazier. [305]

Citing examples such as Chagall/Charles Marq, Matisse/Paul Bony, Léger/Jean Barillet and Braque/Bony, Piper stated, in 1968, that the great windows of modern times are all the result of artists working with collaborative craftsmen. It is his contention that constant reference back to painting as a source and norm is essential as, once the artist allows the craft to take over from the art, his vision will be influenced by the demands of the craft. If the two things are not given equal value, creative painting will cease and stained glass will become stereotyped.

It can be argued that Piper's opinions, in direct opposition to those of such as Whall and Lee, demonstrate the bias of an artist who was primarily an easel painter and continue the contentious issue of whether designers should carry out their own work:

an argument that has a history in all forms of art. Theophilus, in his book *De Diversis Artibus* written during the early 12th century, suggests the designing, painting and construction of a window would be the province of the craftsman. However, in his craftsman's handbook of the 15th century, Florentine artist Cennino Cennini states that it is not unusual in Italian glass making for the glazier to seek the help of a professional draughtsman in the execution of a design.[306] In 1922 Moholy-Nagy tried to create sequences of works, similar to those of Kandinsky, based on a notion of overlaid, transparent painted forms. He developed this to a stage where he was able to dispense with painting, photography and montage. The resulting enamelled work became known as the *Telephone Picture*. Not because it was of a telephone, but because he telephoned his instructions to the 'enameller' stating how he wanted the finished picture to look. Moholy-Nagy had no connection with the production of the picture except to choose the forms: similar to the choices Duchamp made with his ready-mades. Moholy-Nagy saw his *Telephone Picture* as achieving the same ends as his photographs: the artist as the author, responsible for the creation of the work.

Reyntiens made sophisticated choices in the treatment of his interpretations while still retaining the ethos of the original art work. Together with interpreting a huge amount of work for Piper, Reyntiens also collaborated with a number of other artists including the rare but important commissions for glass given to Welsh artist Ceri Richards: perhaps most notable being two windows at Derby Cathedral. However it should not be forgotten that Reyntiens is an artist in his own right whose style evolved over the course of many years.[307] A representative example of his early work can be found at St. Michael and all Angels, Marden, Kent where his bold use of the brush, clearly defined form and love of vibrant colour were given full rein when, in 1962-64, he both designed and executed the East window and three chancel windows *(illustrations 167 & 168)*. Employing discoveries made whilst interpreting Piper's work, Reyntiens exploited, in these windows, the possibilities of papier colle and drawing with colour, first conceived by Piper at Oundle. Comparison with Piper's designs, for example All Saints Misterton 1966, indicates the influence that these artists exerted on one another during this period *(illustrations 169 & 170)*. However, I would argue that Reyntiens invariably produced his best work in conjunction with Piper.

In the 1950's American culture had begun to impose its influence on Britain, particularly after 1956 when the impact of American art broadened the range of abstraction. American painting moved toward the centre of the world's stage: it was seen to have universal aspirations, to be macho, expansive and adventurous in opposition to the perceived nationalistic, nostalgic, small-scale and illustrative elements that made Neo-Romanticism outmoded. Liberated from wartime constraints, the Neo-Romantic group had dispersed and diversified but, as the Robinson College, Cambridge windows (1980's) indicate, Piper remained a Neo-Romantic all his life *(illustration 171).*

Reyntiens thought the greatest achievement in Piper's career as a stained glass designer was the largest window at Robinson College in the chapel/concert hall, explaining that it was:

> ...enormously difficult to make and took me two years. Every device that was legitimately called for in the way of technical expertise was put into this commission, and the difficulty of avoiding solecisms in colouring and rhythm were formidable, since, as in the Baptistery window at Coventry Cathedral, one could only see a very small area at any one time during the working process. The smallest window by Piper is in the little winter chapel attached to the main college chapel. This, of the *Adoration of the Magi,* was the most difficult to do from a technical point of view. No painter keeps to the possibilities of stained glass better than John Piper, yet at the same time no painter stretches his executive interpreter more cruelly. [308]

In the Winter Chapel window red and blue glass have been inversely etched and the layers of glass plated together to create two tone effects. This mixing of two colours to create a third was a technique frequently used by Piper and Reyntiens.

While Piper's cartoons grew more painterly and technically difficult to translate, Reyntiens' own work steadily became economic and stylistically simple. His independent designs began to demonstrate the influence of Abstract Expressionism, I would argue particularly that of artists such as Arshile Gorky who, as the first of the Abstract Expressionists, bridged the gap between American art and Surrealism, and the gesture (or action) paintings of Jackson Pollock. Similar forms to those of Gorky began to make a, not altogether successful, appearance both in windows and a series of free-standing screens. For example Gorky's *The Liver is the Cock's Comb* 1944 which alludes to human, animal and botanic organisms dragged in and out of focus by his control of the line *(illustrations 172 & 173).* Pollock's violent and expressionistic brushwork, his bright palette, reminiscent of Native American art, and his remark in 1956 that he was 'very representational some of the time and a little representational all of the time' found an obvious sympathy with Renytiens *(illustration 174).*[309] Although, after his collaboration with Piper broke down, he again introduced paint, stain and *acid etching* into his work: during the 1970's Reyntiens displayed an inclination to use glass in its raw state without any additional treatments such as acid etching, paint or stain: the antithesis of Piper's approach. It is inviting to ascribe this to the influence of the post-war German designers for whom he had the greatest admiration, describing their work as 'the greatest of the twentieth century achievements in the medium of leaded glass'.[310] However, as Bender points out, his work has neither the graphic appearance of most German work nor exploits the leadline in same way as Schreiter or Schaffrath.[311] He could perhaps be considered stylistically closer at this time to the American 'Post-Painterly Abstraction' of artists such as Kenneth Noland.[312] In 1956 Noland, who strove to think about and use colour for its optical effect alone, found his first characteristic motif, the circle, which he used within a plain field to emphasise the basic quality of flatness. The high-key and lucid colour of most of the Post-Painterly Abstractionists, encouraged critics to see them as moving towards either 'a physical openness of design' or a 'linear clarity' or both, which would certainly make a connection with Reyntiens' work of the period.[313]

Speaking at the Swansea Architectural Glass Conference in 2001 Reyntiens once again placed an emphasis on artistic integrity in the face of increasingly demanding technical content. During the early 1980's, after years of non-figurative work, his interest in the work of philosopher Alastair MacIntyre brought about a revivification of an older tradition of stained glass. MacIntyre's book, *After Virtue,* led Reyntiens to reaffirm the significance of the human form and reintroduce it into his glass designs, particularly those for ecclesiastical buildings.[314] A series of windows begun during the late 1980's illustrate his reawakened interest in the figure and his subsequent development of, what may be termed, a 'post-medieval' figurative style, which combines the richness and potency of the medieval tradition with contemporary techniques.

Competitive Sport 1988, *Hercules as Harlequin* 1988 and *Ulysses* 1992 form part of a sequence of autonomous panels illustrating the Greek myths in which he uses different tones to create depth and perspective, and his somewhat lyrical style to make the lead work appear integral to the image *(illustration 175).* The rejection of the graphic strictures of lead is fundamental to his approach during this period: rather than routinely separating form by colour and line, paint, colour and lead are fused into a unified whole. The characteristic juxtaposition of strong, pure colour, particularly marked in *Competitive Sport*, engages with the medieval masters yet the spontaneous and varied brushwork clearly demonstrates a 20th century spirit. By interpreting and building on past traditions, windows such as these can help to create a unified architectural environment, rather than a fragmented one as so often happens with contemporary glass in historic buildings, and as is the case with some of his earlier work.

As with Reyntiens' windows at Marden for example, it is often the case that a modern light is commissioned for an ancient building thus setting the artist an interesting conundrum. Such windows demonstrate the problems artists seldom seem to solve satisfactorily when working within historical buildings where the new windows may dominate the space and have the tendency to overwhelm any existing glazing.

Scale and colour are powerful, primary considerations in the design and use of both religious and secular stained glass. Colours will affect the ambience and are unavoidable statements of emotional balance. Unlike Piper, Ceri Richards had no affinity with the Gothic and the classical shapes of the apertures at Derby Cathedral suited his style admirably, negating any pressure a modern designer might feel to conform to the Gothic idiom. The pairs of windows, *All Souls* and *All Saints,* are the only coloured glass in the cathedral and thus co-ordinate successfully with the simplicity of the glazing scheme and the architecture *(illustration 176).* The *All Souls* East window designed by Richards and constructed by Reyntiens, is described by Canon Paul Miller as being 'like glimpses of a primordial struggle between darkness and light'. The conflict implied in the *All Souls* window represents the soul of man emerging from its physical limitations *(illustration 177).* In contrast to *All Souls,* the serene harmony of the *All Saints* window expresses the ultimate triumph of light and represents the consummation of the soul *(illustration 178).* In certain modern windows, such as Richard's *All Souls,* there are badly massed areas of colour at the top or bottom, at times more or less unrelated to the form of the architecture; over liberal use of paint, or perhaps, as in Chagall's windows, a disturbing method of breaking up colour with leads. However, it is the strikingly discordant windows by Ervin Bossanyi in the South Quire Transept of Canterbury Cathedral which best illustrate the tension that can be created between setting, frame and glass.

In 1956 The Dean and Chapter at Canterbury Cathedral courageously decided to commission windows which would stand as a monument to twentieth century artistry and craftsmanship rather than be a meaningless imitation of a past style. What is surprising, considering the folksy style and subject matter of his previous work, is that they entrusted the creation of the new glass to the contemporary artist Bossanyi.

Bossanyi was born in rural Hungary in 1891. He studied art in Budapest and, at nineteen years of age, was awarded a travelling scholarship which gave him the opportunity to study in Rome, London and Paris. He was interned during the whole course of the First World War and, on his release, settled in Germany where he adopted a more catholic approach to his art which began to include applied arts such as tapestry, ceramics, frescos, sculpture and stained glass. At the age of forty three he was forced to seek refuge from the spread of Nazism in Germany, arriving in England in 1934 where he lived until his death in 1975. Much of his work left behind in Germany was either destroyed by Hitler or as a result of the bombing raids carried out during the Second World War: just a few windows remain intact at Lübeck, Hamburg, Bad Oldesloe and Utersen. However, he was able to transport two panels from Germany *Morning* and *Evening* which hung in his English studio until his death. They are now on permanent exhibition in the Stained Glass Museum at Ely Cathedral *(illustrations 179 & 180).* As a young man Bossanyi produced many sketches of peasant and village life; an influence which is clearly visible in these designs of 1932 and 1933 and from which he gained inspiration throughout his career. Some four hundred and fifty paintings of life in the tiny Hungarian village of his childhood exist but most of them remain completely unknown. As in his glass designs Bossanyi peoples his easel paintings with figures from many cultures but no effort is made here to introduce a narrative or extract a moral, and the soft and subtle coloration of the pictures and restful, dreamy quality of the figures also demonstrates a marked contrast to the vibrant colours and bold designs of the stained glass.

Among his initial commissions in England were windows for the University of London; the Library of the Goldsmith's Company and the Worshipful Company of Glaziers. Disappointingly for Bossanyi these were for heraldic designs which left no scope for any creative or original input. It was not until his commission for Lavenham Priory c.1935 and his first public commission for a staircase window at the Tate Gallery that his somewhat atypical style was allowed expression *(illustrations 181 & 182).* Once again the subject matter was inspired by simple domestic tasks: in this case his imagination was fired by watching women washing clothes in a river in a valley near Chartres during a visit in 1937. He wrote:

> What wonderful work they achieve, and yet there is not one window for and from them – but I will make one for them. And as I look up into the spires of the church it seemed to me that the angel descends, descends to those women and girls and brings to them for their toil, purification, a heavenly benediction.[315]

As a result of the Tate Gallery commission he was asked to design seven windows for the sanctuary of Michaelhouse Chapel, Natal. Before being crated and sent to South Africa the windows were exhibited at King's College Chapel and Rochester Cathedral. Each nave panel depicts an angel with a central light of Christ and, at the West end, a Rose window has a representation of the head of Christ surrounded by trefoils featuring local birdlife. The vitality of the figures and pure, rich colours have much in common with the Canterbury glass, and begin to illustrate the intensity and Gothic spirit inherent in his subsequent work.

As with all his work he took enormous care over this commission, creating full size transparent cartoons of acetate which could be unrolled and attached to the aperture to ensure that the design was the precise colour, tone and scale that he had envisaged and choosing, cutting and painting the glass himself. However whether or not his work was either appropriate or successful in situ is a matter of debate. In an essay in the journal of the BSMGP Hugh Powell argues that all Bossanyi's work is judged from a few windows: the Tate; the Victoria and Albert Museum and at Canterbury Cathedral.[316] He believes that Bossanyi's personal style and philosophy, developed over a long and at times difficult life, and the message of service, love and compassion contained within the work is more easily communicated and more at home in a small, intimate atmosphere. I would take issue with this point of view: Bossanyi's designs and use of strong, pure colour is overwhelming in the vast expanses of a cathedral and would be oppressive if viewed in cramped spaces. Powell does concede however, that Bossanyi's essentially non-Christian iconography is unfamiliar and his emotive approach to church glass disturbing. This is most certainly true of the South Transept windows at Canterbury *(illustration 183)*.

As others have pointed out these windows are isolated from the surrounding glass and architecture by their obtrusive scale, intensity of colour and overbearing design. The predominant colour scheme of reds and blues together with some medallion shapes and patterned borders makes a concession to the surrounding twelfth century windows, but the roundels serve merely to introduce erratic background shapes rather than being integral to the structure of the design and, in common with much of his work, the treatment of the subject matter is idiosyncratic. Although these are companion windows the fact that they are quite different deprives the spectator of the sense of the wall as an architectural whole and forces each to be considered individually. This is particularly uncomfortable in a building such as the cathedral where everything - facades, window apertures and decoration - was conceived as a unified whole, developed with unity of scale.

The vehemence of the reds and blues and the dominance of the figures, far larger than the twelfth century prophets destined for the clerestory, clamour for attention. They have something of the stance and spirit of the Old Testament characters but their doe eyed, 'Walt Disney' faces lack the earthy quality of those in the medieval glass and simply express a mawkish sentimentality. Yet of Bossanyi's sincerity of purpose there can be no doubt. In a letter to Dean Sayre of Washington Cathedral Bossanyi says: 'Only works of art done by passionate, burning love bear the mark of validity in buildings of dignity.'[317]

With a passion and sincerity equalling that of Bossanyi, Marc Chagall, at the 1967 dedication of his commemorative window, in a church at Tudeley, Kent exclaimed "*C'est magnifique, je ferai les tout.*"[318] To fulfil Chagall's vision his interpreter, Charles Marq of the Atelier Jaques Simon at Rheims had gradually made a complete range of colours with *laminated* glass which allowed modulation within a single piece. This method, which allows light to penetrate the same piece of glass in different intensities, gives a special life to each colour. Marq found that it was white that determined and defined colour as well as forming a contrast with the black *grisaille* which was finally painted onto the glass by Chagall. His windows have been described as 'Paintings in Light' and it is the light held in the glass which creates the impression of vitality and movement. To enhance this Marq made great use of clear glass, for as he explained "...it is the light which makes the colours live."[319] On the one hand Chagall's taste for an intense yet fresh palette and his desire to be judged by his form and colour, has allowed his work to stand the glare of sunlight without making it seem pale or faded. On the other, it has been suggested that to see one of his windows is to see the lot and, although this is a somewhat harsh judgement, there is an obvious similarity in his style since the 1930's.

The collaboration between Marq and Chagall, began in 1957 when he was commissioned to design the windows for Metz Cathedral. For ten years Chagall worked on his designs for the ambulatory. The commission involved fitting in with a programme of subject matter as well as adapting the designs to windows of varying shapes.

In certain ways Chagall would appear to have been ideally suited for this, and indeed for all his church commissions: as his etchings from the Bible were unrivalled by his contemporaries and he always worked from a rich colour palette. But unlike Albers, Leger or Matisse whose glass designs juxtapose pure, flat areas of colour, Chagall is an 'atmospheric' colourist: colour infuses the entire atmosphere of his work and his more painterly approach becomes somewhat of a stumbling block in the medium of stained glass.[320] One of the originators of this style in the 1950's and 60's, he made no concession to the medium and his work stands in marked contrast to the graphic designs that were evolving in Germany during the same period. Chagall's windows are a landmark in the history of stained glass; although plainly figurative in content their influence is clearly visible in the fluid and painterly approach to colour favoured by artists in the 21st century. Arguably the best examples of his work can be found at Tudeley in Kent.

In the September of 1963 twenty one year old Sarah Venetia d'Avigdor-Goldsmid, of Tudeley Hall, drowned in a sailing accident off Rye. In her memory her family subscribed to the restoration of the interior of Tudeley church; restoration which was designed to provide a simple setting for the memorial window that her father commissioned Chagall to design a replacement for the plain glass three light lancet windows set in the east wall (*illustration 184*).[321] Chagall's drawings suggest the upward swell of a wild and unpredictable sea within which Sarah Venetia is tenderly transported to the welcoming arms of an equally youthful and benign Christ. This comforting narrative, which evokes the idea of human and spiritual interaction and shared concern, is supported compositionally by the swirls which lead the eye from the base, around the upper half of the window and back down again, thus binding each episode together.

Once again a design which gave Marq the difficult task of assimilating the leads and the glazing bars into what was a distinctly painterly composition. According to Patrick Reyntiens:

> The task of matching the leadlines to painterly image is one of the hardest optical tasks for a stained glass interpreter – especially as there is no one to help him in this matter. The painter-designer cannot do it, being quite unprepared for the task; it is a disaster to leave it to craftsmen. The only solution is to find an interpreter who has as fine a sensibility as the original painter-designer and this is an enormously rare occurrence.[322]

To make it unnecessary to separate each colour change with lead, Marq used the aciding technique employed in the Jerusalem windows to vary the colour values within a particular tone and create an unbroken continuum of colour. Without achieving the success or spontaneity that can be attributed to Trinick's command of the leadline, one assumes that Marq too attempted to use his leads to add emotional rhythm. In this he was ineffectual. I would argue that the quality of the whole range of Chagall's glass is weakened by Marq's arbitrary imposition of leadlines which uncomfortably fracture the gentle background movement of tone and colour. The deliberate asymmetrical placing of the glazing bars for the Memorial Window creates another visual disturbance; not an engineering requirement, it could be argued that their unequal distribution makes them intrude into the picture plane instead of merely dividing it. Nonetheless there is a breathtaking spiritual intensity in Chagall's use of colour and light which harks back to the ideas expressed by Wassily Kandinsky in *Concerning the Spiritual in Art* in which he declares colours and forms have specific meanings: declarations which Bann rejects as 'utterly implausible the specific equations of form, colour and meaning propagated by Kandinsky'.[323]

As the sun moves across the windows of Tudeley's south wall the interior is transformed, flooding the nave with a golden light *(illustration 185).* In the north aisle the deep blues and purples seem to exclude the outside whereas in the large Memorial window the tone of the blue is reminiscent both of the sea and the heavens *(illustration 186).* It is here in the chancel that the soft blues and rosy hues cast pools of colour onto the stones of the wall and floor conveying a sense of mystery and spirituality. By continuing the use of blue through the whole of the chancel Chagall has not only used one of the most effective colours for glass, but has also symbolically carried the expanse of blue sea and sky, which cradles Sarah with such gentle protectiveness, around the church and deep into the building and thus has made a poignant reminder of the short step from earth to heaven.

This modest church at Tudeley is one of only two churches in the world where all the stained glass windows were created by Chagall.[324] It is only as a unified whole that his designs integrate so surprisingly well with the architecture, rather than imparting the piecemeal effect created by a mishmash of design styles as can be seen at Metz Cathedral for example. In his book *Stained glass: Art or Anti-Art* Piper refers to the enlightened view which raises funds for whole glazing schemes, stating simply "I wish there were more opportunities for this kind of thing".

Although the scale of his commissions is huge, it was only from the age of seventy that Chagall worked with the medium of stained glass. With his stained and painted windows he brought to bear a lifetime's experience of colour relationships and explored yet another of the diverse directions that art glass sought during the middle of the last century. As a result, colour was intensified in his paintings: *The Concert* demonstrates the increased brilliance of his oil paintings of the same period. He adapted, rather than repeated his painting technique and, with his architectural glass, achieved an originality which made a real contribution to the evolution of the medium. However there is little doubt that, as with Piper and Reyntiens the strength of Chagall's stained glass lies in the collaborative effort and it this which underpins his real contribution to the medium and takes it beyond a mere extension of painting.

A Contemporary Art

The years following the rebuilding of Coventry held the promise that stained glass in Britain would develop a renewed momentum but such a revival never really came about: glass designers both in Britain and America, continued to look to the geometric, constructionist styles of the German stained glass movement for stimulus and inspiration and, to some extent, still do so.[325] However, following the lead of the German studio system which employs independent artists, many designers came to recognise the need to remain independent from major studios and give themselves the opportunity for individual expression and innovation. This was aided by the differing qualities of hand blown glass available which intensified the spiritual context and gave, both internally and externally, new scope for controlling light and containing space. Nevertheless it was not until the 1980's that young British artists began to develop a distinctive personal style which would lead the world in glass design.

For many artists working in the 21st century, it is not lack of technical knowledge, or concern that their creative vision or originality will be compromised by technical demands but something far more practically based. Art glass consultant Andrew

Moor asserts that it is far better for designers to use working studios where all the relevant expertise is on hand and whose staff are stimulated by a significant new commission.[326] Stained glass is a hugely expensive art form; the raw material costing thousands of pounds, the production of the glass an art in itself. Consequently important commissions are not an everyday affair. Designers have no desire to staff a studio with the best in their field of expertise only to have them idle for part of the year, or used for 'bread and butter' commissions. Many contemporary artists work within this system but others prefer to establish their own studios and retain a 'hands on' approach; Mark Angus is one such example.

Over time Angus came to the conclusion that most of the better quality modern stained glass was not being made in business workshops but was the creation of independent glass artists both in this country and Europe. In common with most of the new generation of independent artists whose work has achieved international recognition, the influence of post-war artists such as Piper and Lee in England and particularly Schreiter and Schaffrath in Germany is obvious.

Following the immediate post-war years glass art was dominated by German and French designs and ideas concerning new uses of glass. However, from the early 1970's a shift of emphasis from Europe to Britain occurred due, in no small measure, to the influences emanating from Swansea College of Art where the then head of the glass department, Tim Lewis, introduced a series of visitor schemes to bring the most radical German artists to Wales: artists such as Meistermann, Schaffrath and Schreiter were invited to lecture and build windows at the College.[327] Many of the students of that era, including Mark Angus and Graham Jones, are now among the most exciting of the contemporary designers.

His early enjoyment of form and colour attracted Angus to the work of artists such as Matisse and Léger; an interest that was coupled with a fascination for technical and geometrical drawing and a sensitivity for architecture. Failure to attain the necessary academic grades to qualify as an architect led him into a career as a chartered surveyor. During his first professional post in Canterbury he became captivated by the stained glass of the cathedral windows:

> Straightaway it was the 'glassiness' of handmade glass that arrested my imagination ... I recognised that this was pure colour, light direct into the eye, very powerful, that it could be used by itself architecturally and that it had modern application.[328]

Angus made the decision, 'inevitable from that first visit to Canterbury Cathedral' to study architectural stained glass, gaining a place at Swansea College of Art in 1976.[329] Since establishing himself in his own studio in 1979 he has won several major awards and been made a fellow of the BSMGP. He has completed commissions throughout Britain and has work on permanent exhibition in Germany together with panels at Ely Stained Glass Museum and the Victoria and Albert Museum, London. He has also published two books on Modern Stained Glass in British Churches. In 1999 he moved to Germany where he continues to 'develop his powers to use the medium of glass'.[330]

A proposal for a new window at Durham Cathedral was accepted by the Dean and Chapter in 1994. This window, west of the North Door, which replaces a clear glass window, was the gift of Marks & Spencer to mark the centenary of the firm in 1984. The Dean and Chapter, through Northern Arts, the regional Arts Association, consulted the Crafts Council on the choice of an artist. After careful consideration the commission for designing and executing the window was given to Mark Angus. His brief was to express the link between the divine and human economies. Angus said of the work:

> My aim in this symbolic work was that it should offer understanding and yet maintain mystery. I wanted to connect the function of the firm, the patron, with the function of the cathedral as the focus of spiritual food. The adaptation of the Last Supper is the catalyst for indicating the transformation of physical food into spiritual food in the sacrament. This, an event of nearly 2000 years ago, is given modern significance and meaning. We share the disciples' hunger for physical food and comfort and, more importantly, for spiritual food and comfort *(illustration 187)*.[331]

In this window Angus uses the myriad refractions of mouth-blown antique glass to enhance his symbolic colour scheme and design: a design which suggests particular relationships and forms of symbolism and requires an active effort from the spectator in its interpretation. Perhaps the first move in this direction might be to recognise that the window seems deliberately to pose a question which engages the reader and invites his active interest. It seems that the work anticipates that the viewer will not immediately grasp all the possible meanings but will contemplate it, acknowledging that it holds some deliberate ambiguity within it. The long red rectangle which takes up its length could be read as a table; life or perhaps sacrifice and, around this, the thirteen individual shapes have several possible associations: organisms; people or even plates of food. The blue of the top half of the window perhaps connotes heaven or the spiritual and the introduction of green at the base may represent earth or the material, while the whole design, surrounded and supported by purple, possibly indicates God's presence and sustenance.

The *'Daily Bread'* window makes a bold statement in contemporary symbolic terms, thus giving Mark Angus the usual problems of integration with the rest of the glazing scheme. This window is very popular with visitors and in the majority of cases is positively received although some people find it inconsistent with the rest of the building.[332] The window is like no other in the cathedral but the suggestion of a border and its strong, clear colours are nevertheless in tune with the ancient architecture in which it is set. It could be argued that it has the monumentality of the building's Norman architecture, the sombre richness of its surrounding stonework, and a spirituality expressed simply and with moving effect.

Angus' work can be seen not only in churches and cathedrals, but also in public buildings and private homes. Colour is a crucial consideration in his design and use of both religious and secular stained glass. He uses a wandering lead line to draw designs in the glass, rather than seeming to support the different sections. To achieve interest and avoid monotony, the lengths and widths of lead are varied, making important lines sweeping and rhythmical, and lesser details more subtle. It is this aspect which gives his work a distinctive and instantly recognisable signature *(illustration 188).*

During the last few decades of the past century glass consultants saw a pressing need to shock architects into the recognition of the real and continuing potential of stained glass as a peerless architectural medium in contemporary buildings for the introduction of light and colour; especially so as the value of colour in architecture had been and was becoming increasingly recognised by certain post-modern and high tech architects. Glass itself had been central to the architectural modern movement and its promise augured well, but in stained glass this promise had not yet been fulfilled.

The opportunity to reinstate stained glass as an indispensable and integral architectural medium was largely lost, due in no small measure to the fact that, for many people, stained glass was synonymous with ecclesiastical architecture. Designers became concerned that, with so little new ecclesiastical building taking place world-wide the art of stained glass would become defunct unless a concerted effort were made to utilise it in secular architecture. The other main problem of the period according to Martin Harrison in his paper on twentieth century stained glass was that there was a negligible amount of co-operation between architect and stained glass designer on a scale which might have allowed the opportunity for a truly impressive result. He argued that the outcome of this situation was all too clear in England where, ironically, at a time when the interest in stained glass was increasing all the time, the actual work produced was trite and banal decoration: a parade of 'sickly-faced saints, straight off the nineteenth century production line'.[333] A not totally unsubstantiated accusation as, in any of the arts, there is always a plethora of the mediocre, but in view of the quality of the work being produced from the mid-fifties by British artists like Piper, Reyntiens and Angus to name but a few, somewhat of a generalisation and the emergence of the new generation of glass artists serves to reinforce this argument.

Graham Jones

Since the 1960's due, in part, to the way architecture and design have continuously moved toward a minimalist, light weight aesthetic, a more seamless approach to glass art has been desirable and many architectural glass artists have, by using a variety of materials and techniques, attempted to reduce or eliminate the use of lead came to bond together fragments of glass. Contemporary artists, often aiming for a high-tech effect with minimal visible structure find that one or other of the new adhesives available can help to create this illusion. Current technology and advances in glue manufacture have led to the development of flexible and durable adhesives which have been of enormous benefit to present-day artists working in glass. The clear silicon, resin, epoxy and pigmented ultra-violet glues (which allow the interlayer between one piece of glass and another to hold a colour) now on the market make it possible to bond almost any type of glass to another, thus removing the need for lead.

The first attempt to eliminate lead in stained glass was used in the technique of *dalle de verre*, but the massive, structural and rugged nature of the work made it an awkward companion for minimalist architecture. During the 1960's many attempts were made to glue coloured antique glass to backing sheets of float glass but, in subsequent years, many of these windows displayed serious structural faults. The ensuing problems were primarily due to the various ways different coloured glasses absorb light and thus have differing coefficients of expansion and contraction which, over the long term, cause antique glass to separate from bonding agent and backing glass. Studios have overcome this problem by *laminating* antique glass directly onto a backing glass to create large, single panels without any lead lines. Various products and techniques, mainly involving transparent liquid resins, are used to achieve a similar effect. The key factor in the use of liquid resin to bond antique glass to base float glass is that, rather than simply gluing the two layers together, the liquid resin forms a soft layer of filler between the two glasses, flexible enough to accommodate the expansion and contraction of different types and colours of glass at different rates.

The 'sandwich' technique, also used since the 1960's, has been recently taken up more extensively by some artists as another method of reducing the inclusion of leadlines, while others have encased their designs in double-glazed units. In the 'sandwich' technique two sheets of toughened or laminated clear float glass are separated by 3 or 4mm and the cavity filled with cut pieces of antique glass to create the design. The difficulty here is that each piece must tightly abut the next or unsightly chinks of white light will show through the gap. To prevent this every shape must be perfectly cut and every straight edge polished. Cutting and polishing antique glass in this way is extremely time consuming and, as antique glass is very expensive, mistakes are costly. [334]

Today artists such as Graham Jones have rejected the age old tradition of leading glass and, moving from a linear, modernist language toward a more painterly abstraction, have invented new materials or techniques in order to achieve their artistic vision. The number of artists currently working in this manner has increased since the 1990's; the best of whom have managed to surmount its inherent dangers.[335] The younger generation of glass artists in Britain and America are currently receiving acclaim and consequently bringing about a shift in emphasis from Germany where art glass designers were undoubtedly dominant until the end of the 1980's.

In stained glass a certain separation still remains between those who pursue an uncluttered linear style and those who seek a softer, textured and more organic effect. British artist Graham Jones straddles this divide between linear and painterly establishing himself as the master of glass design in the 21st century. As opposed to many contemporary abstract glass artists, painting on glass is fundamental to his approach as it is in the painting that he captures the latent imagery so often present in his work. Together with commissions as far flung as China and Ecuador, he has produced a large volume of work both in Britain and Germany; his designs pleasing a German audience and acting as a source of inspiration to European and American glass artists alike.[336]

Jones (1958-) studied stained glass at Swansea College of Art from 1977 to 1980, during his training he won both major prizes in the medium and also, at just twenty years old, completed his first commission for a window at St David's Church, Hendy, Dyfed. This window, which features a torso emerging from a winding cloth on a surround of abstract organic patterns, demonstrates his ability to express his ideas in glass. An appreciation of Chagall, a fascination with the rhythmic folds of drapery and the allure of nature in a primal sense – rocks, waves, fire, storms, horizons, landscapes and vegetation - inspires the imagery behind the abstracted forms and contrasting colours of his compositions *(illustration 189 &*

Frontispiece).[337] Since graduating Jones has produced imaginative, non figurative art works for many major international corporations including Shell-Mex, Coca-Cola, ICI, Bass plc, Land Securities, MEPC, the Hammerson Group, SmithKline Beecham, the Wellcome Trust and Kleinwort Benson.

In 1987 Jones completed his first commercial glass commission for a series of windows for the basement corridor at the Shell-Mex Corporate Headquarters, London. Within a tight budget and a brief for a plain and monochromatic theme which would emphasise the columns and arches of the architectural structure, Jones achieved the ideal solution. Each corridor window, with its outer surround of plain sandblasted glass and narrow inner surround of milk glass, has a central column of specially blown, acid-etched, deep red opal. The slightly larger diameter of the circle at the top of each column, each with its subtly differing grain lines, has the effect of emphasising the arched structure of the building *(illustration 190).* On installation the windows proved to be so successful that he was immediately commissioned to design two more projects for the same building: in the basement restaurant and along the whole of an upper corridor.

With the restaurant windows - a series of seven created to mask a dingy alley enclosed by brick walls and railings – Jones provides an original answer to a common problem. Here it was possible to retain the existing clear window glass by inserting backlit coloured panels as secondary glazing. The panels are partially lit by daylight reinforced with powerful uplighters and small side spotlights to enhance the shimmer of the many glass prisms included in the construction. Jones has taken nature as his inspiration. An eye-level horizon line of low hills silhouetted against a louring sky create a sense of space while the sparkling prisms confer a brilliant sharpness which contrasts with the softly painted drapery below *(illustration 191).*

The deeply recessed arched apertures of the six pairs of upper corridor windows, completed in 1989, make it impossible to experience the work in its entirety, thus the spectator reads the work as an unfolding narrative. This imposed visual separation encouraged the artist to be bolder both in colour and concept: imaginatively adapting his design to exploit the architectural space Jones creates the sensation of walking through a radically changing spectrum of colours *(illustration 192).* As with all his work, he handles the paint with freedom and spontaneity while, at the same time, using it to mould the form and line which endows his abstracts shapes with depth, weight and movement.

At the beginning of the 1990's Donald Buttress, Surveyor of the Fabric of Westminster Abbey, was given the task of restoration; a task which included the addition of four new 30 foot high windows for Poet's Corner in the south transept.[338] The purpose of these windows was to provide space for memorial plaques for the major figures of English literature.[339] He set in train a competition for a modern work, the only contemporary glazing in the building, which would harmonise with the glazing scheme and ancient architecture of the Abbey. Eventually overcoming the reservations of even the most conservative of the Abbey's trustees, Jones won the commission in 1992.[340] Such constrictions may have seemed daunting to many artists and too great an infringement of their creative autonomy. However Jones, following the teaching and practice of Christopher Whall (see page 52), found a solution that turned the restrictions to his advantage *(illustrations 193 & 194).*

Unlike Bossanyi at Canterbury, Jones decided to treat the Abbey windows as a pair thus maintaining the unity of the wall. To help integrate the windows into the rhythm of the building, early in the design stage he decided to follow the Gothic tradition of introducing medallion shapes (which from a distance imply a narrative) with a surrounding border. Choosing an 'English country garden concept for English poets and authors' he 'picked up on medieval colours, introduced triple etching and double plated *enamelling* (not a common feature of his work) with two coats of paint ranging from dark to pale so as not to deaden the light in the chapel.'[341] Inspired by nature, the underlying visual language creates a substance which is evident even in the most abstract of his designs. The formal geometric shapes of the Poet's Corner windows, reminiscent of medieval *grisaille*, are interwoven with organic forms creating a geometry that holds together the unstructured flow of rich colour which both spills over and is contained by the lead line. Although Jones' designs transcend lead, here lead has not been regarded as a limitation of the medium but rather as vital to the whole; directing the eye across the picture plane and binding the design together. Once again, rejecting the traditional mosaic approach, he displays both his boldness with colour and his ability to create an atmosphere of tranquillity.

Jones has the talent and the knowledge of both media to transform painterly designs into glass nevertheless, it would be wrong to consider him as an entirely committed colourist. His huge 650 sq ft curved glass interior wall for SmithKline Beecham demonstrates his mastery of the dynamic, textural potential of etched glass *(illustrations 195 & 196).* The linear design and rich surface texture of the wall, which separates two conference rooms, is endlessly fascinating. Colour is used sparingly but with great bravura and the line is simple but executed with his usual verve. Perhaps it is part of the measure of Jones' great talent as a glass artist that he has the ability to produce work of equal brilliance and originality in apparently contrasting styles.

Conclusion

The evolution of architectural stained glass, in common with other art forms, could be read as a history of advance and decline as, throughout the centuries, glass artists have struggled with and overcome social, political and religious upheavals and technical conundrums to place the medium at the vanguard of contemporary monumental art.

To attempt to characterise the crafts of the past is a daunting task. As it is recognised today stained glass had its birth in the 12th century when Abbot Suger began the rebuilding of the abbey of St Denis near Paris. Driven by a combination of medieval ideology and technical innovation, the Gothic style expressed the affluence of society, the power of the Church and the religious zeal of its time. The scale, architectural developments and symbolic glazing of such Gothic cathedrals influenced both building and architectural stained glass from the 13th century onward and, although most of the early artists are unknown, the windows remain a testament to their skill. Following the consecration of St Denis, by the early 14th century it is estimated that some 80 cathedrals and 500 important churches had been started in France alone together with several of the early Gothic cathedrals in England. The ensuing proliferation of stained glass resulted in glaziers vying with each other to create ever more stunning windows. *Flashed* glass which could be *abraded* offered them more scope and the discovery of *staining* at this time gave them a new palette of yellows as well as the name of their craft.

Despite the series of dynastic wars fought by the rival houses of Lancaster and York between 1455 and 1485, the 15th century was a time of growing prosperity and stained glass was part of a flourishing artistic endeavour that spread across Europe. However, the arrival in England of the Flemish glass painters during the 16th century not only caused resentment among the English glass painters but also witnessed the subordination of role of the glazier to that of the glass painter. The increasing use of paint and, later, enamels, saw *pot metal* glass fall from favour and become scarce. In turn this encouraged more enamel painting and the virtual disappearance of the beautiful mouth blown glasses. A disastrous period for the medium followed as, in addition to the loss of the glass industry, the dissolution of the monasteries by Henry VIII and the Civil War of the following century resulted in the destruction of many religious works of art. Easy to destroy, the glass suffered badly; whole windows were wantonly smashed resulting in the loss of much of the country's medieval stained glass. During the 18th century there was little interest in the medium; much of its vibrancy had been lost due to the emphasis on *enamelling*, and what remained of the earlier work often suffered from lack of repair and unsympathetic restoration. It was not until the end of the century when connoisseurs such as Horace Walpole began to study and collect antiquities, including stained glass, that interest in the medium was generated anew.

The origins of the 19th century Victorian reappraisal of medieval glass lay in the previous century when an interest in history and archaeology, and an appreciation of the arts became fashionable. Walpole's home, Strawberry Hill, on the outskirts of London, exemplified the Gothic Revival and housed a vast art collection among which were examples of painted Flemish and other glass. These early glass panels excited the interest of many of his visitors which included the leaders and creators of fashion such as Augustus Welby Pugin who took a leading role in establishing the Gothic Revival both in theory and in practice: his devotional approach spurred on by his conversion to Roman Catholicism.[342] Pugin returned to and explored the fundamentals of the medium, in so doing he successfully developed the early principles of stained glass both in spirit and design.

The rise of Anglo-Catholicism fired the Victorian imagination and, by the middle of the century, the Gothic style dominated stained glass and architecture in England. This evangelical fervour in religion and new found enthusiasm for Gothic decoration resulted in a huge rise in the number of new churches being built as well as the alteration of existing buildings to conform to the Gothic style. Following in its wake was the growth of stained glass studios whose designers, although continuing the pictorial tradition of Victorian ecclesiastical stained glass, initiated increasingly bold, strongly coloured designs with large scale biblical figures and scenes.

Antiquarian Charles Winston was one of the greatest contributors to the revival of stained glass; neither a stained glass artist nor glazier he nevertheless determined to rediscover the secrets of making *pot metal* glass. Following several unproductive experiments to manufacture glass similar to the strongly coloured glasses of the medieval craftsmen, the successful outcome of his research regenerated the manufacture of *antique* glass and this, together with the drive and enthusiasm of Augustus Welby Northmore Pugin, enabled the revival of the early years of the century to develop into a thriving industry eventually employing hundreds of workers.

Pugin's influence, although not without its detractors, affected architecture and the applied arts yet stained glass, and indeed all the applied arts, were dominated through the latter half of the century and beyond by William Morris. His contribution to the arts and crafts of the day was almost without precedent; the successful application of his principles leading to the windows of Christopher Whall and John Trinick and the complete abstraction of those by John Piper and Graham Jones. His wealth enabled him to indulge his belief in the importance of the individual's contribution in an age of escalating mass production. In contrast to other contemporaneous stained glass studios Morris & Co. adopted a free-flowing style in both lead lines and painting with strong vibrant colours and naturalistic, organic forms. Morris' socialist ideals, in which the artist/craftsman, unimpeded by uniformity or mass manufacture strove for both utility in purpose and beauty in design, were the intellectual beginning of a movement that catered for the growing demand for Arts and Crafts products in the home and as architectural decoration. Reaching its peak in the early years of the 20th century, it was not until the Second World War that the movement it lost its appeal. In the United States and Europe similar ideals and movements sprang up as a result of their national sociological reactions to mass production.

While the national Arts and Crafts Movements continued to influence contemporary stained glass in Britain and Europe, the work of Louis Comfort Tiffany began to excite influential and fashionable taste in the United States. With its strong and separated colours, introduction of opalescent glasses, use of small 'jewels' and free flowing design, Tiffany's glass caused a sensation and the style, which came to be synonymous with Art Nouveau, quickly spread to an international market. Nevertheless many European stained glass artists disparagingly referred to opalescent glass as 'American' and continued with *pot metal* colours and *antique* glass. Accelerated by the First World War, Tiffany's popularity decreased and was further diminished as his control of the firm and its high standards began to slip. By 1928, when he retired from the company, the vogue for opalescent glass was on the wane and Tiffany's style considered gaudy and passé. (The vagaries of fashion have turned full circle and Tiffany's work is now much admired and highly sought after at auction.)

Many countries were influenced by, or developed their own distinctive style of Art Nouveau. In Europe it was linked to high levels of consumerism and sophisticated production methods which attempted to straddle the divide between artistic and commercial principles. Despite its former domination of fashionable taste, in Europe as in America the caprices of popular culture, a reaction to the surfeit of stained glass and the outbreak of war led to an ever increasing decline in work.

During the early years of the 20th century an architectural renaissance was underway in America. Pioneered by Frank Lloyd Wright, there appeared a more functional style of architecture that was concerned with space and form and an emphasis toward strong, clear lines. His windows use a limited palette with fine dominant lead lines of abstract and geometric shapes in harmony with the building. By using the medium as a screen between the inside and outside which allowed light and vista to reach the interior, Wright instigated a radical and exciting new concept in the architectural use of glass. However, by the entry of the United States into the First

World War the enthusiasm for building huge houses for the wealthy flagged. As land prices soared apartments and small properties in the suburbs, in which it was impossible or inappropriate to accommodate large areas of stained glass, became the new wave of building. A growing aversion to opalescent glass together with the vogue for natural light and unimpeded views again contributed to the decline of the medium.

The social upheaval and economic depression that followed on the heels of the Great War encouraged neither funding for new commissions nor artistic talent, yet it was during this period the germ of ground-breaking ideas took root that were to flourish in the post-war era. During the interwar years there was a vast reduction in secular commissions and leading glass artists became heavily dependant on the patronage of the Church. Little in the way of innovative design was attempted as the Church called only for variations on a traditional ecclesiastical theme. Nevertheless in Germany there appeared the beginnings of a fresh and vital new approach to the art; its practitioners continuing to influence the next generation of designers who took German art glass into its dominant position in the post war years. Many artists who were not practising Christians found in abstraction the freedom to express new objectives in the Church, such as a representation of peace and calm or order and stability in a rapidly changing world. Christian artists also began to express spirituality in abstract and symbolic designs and a new concept in stained glass gradually spread through the rest of Europe and the United States.

From the mid 20th century British architects and glass designers have created an atmosphere in which many secular styles of architecture retain equal validity and have imbued a new spirit both into the church as a building type and coloured glass as a religious and secular artistic medium.[343] Glass whose thickness plays with the light, whose irregularities and facets break it up: windows in which the glass is allowed full scope, in which the artist takes advantage of all the qualities which distinguish it as a material and a medium.

In spite of notable advocates such as those from the Bauhaus, Mackintosh and Wright early in the 20th century, stained glass did not become integrated into modern architecture. For years the medium was overshadowed by the achievements of its past: mention of stained glass immediately conjuring up images of medieval saints in Gothic churches or repetitive panels in Edwardian front doors. However, with the end of the Second World War and the emergence in England of such artists as Piper, the medium began to shake off the shackles of these old associations and bring about a change in public perception. Nevertheless, until relatively recently architects, conscious of the unchanging nature of the techniques involved in the process of creating stained glass, believed that the medium had little to contribute to a modern building.

Despite such scepticism, throughout the second half of the 20th century, spearheaded by achievements in Germany during the 1950's, glass artists became increasingly radical and experimental in approach. Initially their patrons were still, predominantly, the Church and more often than not their designs were for existing buildings, or those created in the Gothic style: the narrow, slit windows of the style particularly suitable to the structural limitations of a traditional leaded window. However, the recent technological advances in glass production, in particular the development of flat glass technology, (i.e. *float* glass, patented in 1959 by Alistair Pilkington) opened up new possibilities for contemporary art glass and a changing perception of art glass designers. Many practitioners who would have described themselves as stained glass artists as little as ten years ago now see themselves as glass artists: artists who use the same vocabulary as architects, who play with glass in one form or another; architecturally, sculpturally or autonomously.[344]

Glass art, such as that of Jones, often deals with themes of nature. The concept of organic design as developed in the 19th century and used by Wright to cover all aspects of his work, engaged with a wide range of responses to nature; practical, political and symbolic, but the word became trivialised and reduced to a stylistic label. The contemporary generation has recognised a deeper significance in nature partly through the experience of a looming ecological crisis. The need to recycle and save energy is something familiar to architect and layman alike. Design has reacted to the stimulus to ingenuity and moral direction that these needs imply; but these needs do not determine a style or a formal visual language. Alan Powers suggests that applied arts, more than other forms of art, discover and restore an alternative way of seeing the world, in which the shifting depth of quality of things, both natural and artificial, is a guiding principle.[345] Powers argues that Postmodernism is really an expression of natural processes, a reflection of the contradictory, but ultimately unified structure of nature and mind. It is this unification which may help to resolve the problem of categorising the applied arts, explaining their, as he terms it, 'both-and' nature: 'both art and use', as a positive attribute. If his vision is realised then perhaps the true value of applied art will be recognised and allow it to move on from a form of art somehow excluded from the status of fine art.

The general public have, for years, been familiar with the mass-produced, readymade articles enjoyed by Duchamp. But, in an exhibition entitled 'Craft' in 1997, readymades of this type together with hand made objects used the idea of craft to review and question the category of 'work of art'. Virtually all the participants of the show came from a fine arts background but their work either employed or alluded to craft skills. The spirit behind this work is a denial of, or dissatisfaction with categories. Today's artists, working in the field of applied art, do not see themselves as belonging to a world labelled 'craft' and critical attention is now being given by cultural historians to the psychology of all forms of craft which helps to give a context for the sophisticated work being produced.[346]

Following a tradition first established in the early Christian period, glass artists have consistently produced brilliant and haunting stained glass windows of exceptional beauty and contemporary relevance. As 20th century architectural technology once more opened the walls of buildings, artists and architects have been drawn into the age-old fascination with light playing through coloured glass and glass has, once again, become a significant element in architectural design. The turn of the century revolution in glass technology has expanded the horizons of architectural glass artists and encouraged them to adopt a vigorous, experimental approach to achieve, through technical innovation and artistic imagination, the exciting and inspiring potential of the medium in the modern world.

Endnotes

---

[1] Reyntiens, P. *The Beauty of Stained Glass.* London, The Herbert Press, 1990, p.79

[2] Whall, C. W. *Stained Glass Work.* London, John Hogg, 1905, p.132.

[3] Brown, S. & O'Connor, D. *Glass Painters.* London, British Museum Press, 1991.

[4] Not least of which is financial: once a glass artist is promoted and becomes well known his work is almost inevitably priced out of the architectural market to which it is so strongly tied. Even in the mid 20th century the cost of a stained glass window could be an equivalent price to that of a house. The fee for John Trinick's St Pius window at Hendon, for example, was £500 in 1958. However, in certain cases neither fiscal or aesthetic considerations prevent the cavalier attitude of the church today towards its masterpieces in glass as is evident at St Austin and St Gregory, Margate where a new vicarage was built across Trinick's magnificent East Window.

[5] Winston, C. *An enquiry into the differences of style observable in ancient Glass paintings, especially in England-with hints on glass painting by the amateur.* Oxford, John Henry Parker, 1847, p.283.

[6] During the early 1870's the Munich firm of Mayer & Co was exporting a huge quantity of stained glass work to England. A school which favoured the pictorial approach it came to be despised during the Victorian era. In the minds of many 20th century observers it was still synonymous with the worst in stained glass but latterly the work improved and the studio continued to thrive.

[7] Bryson, N. *Looking at the Overlooked.* Reaktion Books, 1995, p.73.

[8] Lee, L. *The Appreciation of Stained Glass*, Oxford University Press, 1977, p.13.

[9] Baxandall, M. *Painting & Experience in 15th century Italy.* Oxford University Press, 1988, p.3.

[10] Storey, J. *Cultural Theory and Popular Culture.* Prentice Hall/Harvester Wheatsheaf, 1991, p.173.

[11] Rose, B. *Art as Art: The Selected Writings of Ad Reinhardt.* University of California Press, 1975, pp.120-121.

[12] Benjamin, W. *Illuminations: The Work of Art in the Age of Mechanical Reproduction.* Harcourt, Brace and World Inc., 1968, p.222.

[13] Ibid.,. p.223.

[14] Conversation with Andrew Moor, Art Glass Consultant, London, 2000.

[15] Piper, J. *Stained Glass Art or Anti-Art.* London, Studio Vista, 1968, p.61.

---

[16]In Brown, S. & O'Connor, D. *Glass Painters.* London, British Museum Press, 1991, p.7.

[17] Sidonius Appollinaris (5th century) describes the church windows of Lyons as having multicoloured figures. Gregory of Tours (6th century) lists several Frankish churches with coloured glass windows. Brown, S. & O'Connor, D. *Medieval Craftsmen.* London, British Museum Press, 1991, p.8.

[18] A Tree of Jesse window at York c.1145 bears a remarkable resemblance to those at Chartres and St Denis and would seem to be from the same basic pattern.

[19] Introduced into England from France, the early craftsmen were known as 'verrers' or 'verrours', it was not until the following century that their names became well known, for example Robert le Verrer of Colchester, 1295 or Walter le Verrour of York, 1313. By the 14th century, when the number of English craftsmen had increased, the title became the Anglo-Saxon 'glasenwright' or 'glasswryghte' as used by Thomas Glasswryghte of Gloucester (commissioned to work at Westminster Abbey and possibly responsible for the East window of Gloucester Cathedral) and John le Preston, Glasenwreght of York. In 1387 this in turn gave way to 'glasyer' or 'glasier', for example Thomas Glazier of Oxford (glazier of Oxford and Winchester colleges) until, in 17th century, the term 'glass painter' became more commonly used. These men were much respected members of the community with their portraits, as makers not donors, incorporated into certain window designs. Le Couteur, J. D. *English Medieval Painted Glass.* Canterbury, SPCK, 1978.

[20] The new concept of a 'flat bed' construction in which the stone was dressed through the complete thickness of the wall with little or no mortar between the individual stones allowed for walls of far greater height and less bulk thus reducing the interval between each window. Conversation with Sarah Brown, BSMGP Conference, London, 2001.

[21] James, J. *The Masons Who Built a Legend.* London, Hafner, 1982, p.97.

[22]"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." St Bernard of Clairvaux (1090-1153).

[23] Reyntiens, *The Beauty of Stained Glass.* p.19.

[24] Otto von Simson writing in *The Gothic Cathedral* (pp.3-4) McLuhan, M. *The Gutenberg Galaxy.* London, Routledge & Kegan Paul, 1962, p.106.

[25]Ibid., p.105.

[26] In some cases the Reformation and Civil War took their toll in others cost was a factor.

[27] McLuhan, *The Gutenberg Galaxy.* p.107.

---

[28] See McLuhan, *The Gutenberg Galaxy.* pp.108-109.

[29] Bryson, *Looking at the Overlooked.* p.65.

[30] Caviness, M. 'Biblical stories in windows; were they bibles for the poor?' in Levy, B. 'The Bible in the Middle Ages: Its Influence on Literature and Art'. *Medieval and Renaissance Texts and Studies,* 1992, pp.103-47. Camille, M. 'Seeing and Reading: some visual implications of medieval literacy and illiteracy'. *Art History,* Vol.VIII, 1985, pp.26-49. Bann, S. 'Shrines, Gardens, Utopias', *New Literary History,* Autumn, 1994, p.831 and Bryson, N. 'French Painting of the Ancien Regime'. *Word and Image,* Cambridge, 1985, ch.1.

[31] Camille, 'Seeing and reading: some visual implications of medieval literacy and illiteracy'. p.35.

[32] Bryson, 'French Painting of the Ancien Regime'. ch.1.

[33] Ibid., p.4.

[34] Ibid., p.1.

[35] Ibid., ch.1.

[36] Ibid., p.4.

[37] Bann, 'Shrines, Gardens Utopias'. p.832.

[38] The medieval bible translated from Hebrew and Greek into Latin by St Jerome in c.400.

[39] Caviness, 'Biblical Stories in Windows: Were They Bibles for the Poor?' p.147.

[40] Camille, 'Seeing and reading: some visual implications of medieval literacy and illiteracy'. p.33. Liturgical drama had emerged by the 12th century in the Quem Quaeritis trope. Gradually dialogue was invented and the dramatic interludes were performed, on a processional route, at various stations inside the church between the west door and the altar. The secular and comic elements which began to emerge perturbed the church elders who consequently moved the performance outside. Initially staged on a semi-circle of 'mansions' in front of the church, these plays developed into the mystery cycles which were performed on a procession of pageant wagons during the feast of Corpus Christi.

[41] MacGregor, N. *The Image of Christ.* London, National Gallery, 2000.

[42] *Seeing Salvation.* London, National Gallery Exhibition, February 2000.

[43] Silver stain dates back to the 6th century in Islamic culture but, for reasons unknown, was not introduced into stained glass until the 14th century.

---

[44] Enamel pigment has been found in some of the windows of King's College Chapel, Cambridge, 1526-31, used in conjunction with traditional techniques.

[45] For example all the glazing in Fairford Parish Church, Gloucestershire, was executed by Dutch glaziers and Hengrave Hall, Suffolk was glazed by continental glass painters – probably French.

[46] English glaziers felt that they were beginning to lose control of their craft in favour of outside and unregulated competitors. In 1474 the London glaziers petitioned Edward IV against a number of foreign craftsmen who, although not members of the Guild, were setting up businesses in London: the response (later, by Richard III) was to ban only the importation of whole windows. English glaziers were further undermined during the reign of Henry VII by being ousted from the sought-after post of King's Glazier, mentioned as early as 1242, by a succession of immigrant Continental artists. Initially German artist Barnard Flower was appointed and, in 1517, Henry VIII chose Flemish artist Galyon Hone (overseer of King's College Chapel windows) as Flower's successor.

[47] Destruction of the glass factories variably dated from 1634 to 1636.

[48] These subsequent assaults on the glass at Canterbury cathedral are depicted in an oil painting by Thomas Johnson in 1657 in which iconoclasts can be seen shattering the south aisle windows.

[49] William Peckitt of York (1731-96), once again made York an important centre of stained glass in England. Although he was unrivalled by the few remaining contemporary glaziers; he has work at New College and Oriel College, Oxford and at Trinity College, Cambridge and even received royal patronage, he was a poor draughtsman who usually resorted to buying the cartoons for his windows. In a letter to Henry Bathurst (Fellow of New College and Bishop of Norwich) the Dean of Exeter wrote "...Everyone who has seen the two windows, wch Pecket executed for your College & this Cathedral, has lamented the want of a skilful draughtsman ..." Woodforde, C. *The Stained Glass of New College, Oxford.* Oxford, Oxford University Press, 1951, p.22.

[50] It had been requested the month before that the stonework of the West window be changed to make a predominant place in the centre to accommodate the works as a whole piece rather than distributed throughout the Chapel.

[51] Replaced in 1848.

[52] Hilles, F. W. ed. *The Letters of Sir Joshua Reynolds.* Cambridge, Cambridge University Press, 1929, pp.59-61.

[53] Woodforde, *The Stained Glass of New College Oxford.* p.43.

[54] Cotton, W. (ed. Reynolds, J.) *Notes on Pictures, Rev W Mason's Observations on Sir Joshua's Method of Colouring.* (MS copied from the original by Rev, J Mitford in 1851*)* London, John Russell Smith, 1859, p.58.

---

[55] The Nativity was sold to the Duke of Rutland for £1,200 – it suffered serious deterioration and was eventually burnt at Belvoir Castle in 1816. Reynolds bequeathed eleven paintings of the windows to his niece Mary Palmer, sold by Christies after her death in 1821 for £7,229.5s. Lord Normanton bought the Seven Virtues for £5.565, subsequently being offered three times the price by the National Gallery.

[56] Horace Walpole was one of England's earliest collectors of art glass, glazing the upper window panels of his Gothic home at Strawberry Hill with imported stained glass. The panels, mostly consisting of 16th and 17th century Netherlandish roundels (one an English 15th century Coronation of the Virgin), were leaded into settings supplied by glaziers including William Price the Younger and William Peckett, who also provided some of their own work: it was these settings rather than any ancient glass which created the desired Gothic effect. See Eavis, A. & Peover, M. *Horace Walpole's Painted Glass at Strawberry Hill* in *The Journal of Stained Glass,* Vol. XIX, No 3, BSMGP, 1994-95.

[57] Brighton, T. (ed. Lloyd, A.) *Reformation and Post-Reformation Stained Glass in Britain* from *The Painter in Glass,* Cardiff, Gomer Press, 1992.

[58] Ibid.

[59] Whall, *Stained Glass Work.* p.174.

[60] Brighton, *Reformation and Post-Reformation Stained Glass in Britain.*

[61] Hilles, *The Letters of Sir Joshua Reynolds.* p.95.

[62] Cotton, *Notes on Pictures, Rev W Mason's Observations on Sir Joshua's Method of Colouring* p.59.

[63] For example Bernard van Orley designer of the Charles V window in Brussels Cathedral studied with Raphael in Rome at the beginning of the 16th century.

[64] Holiday, H. *Stained glass as an art.* London, Macmillan & Co., 1896, p.36.

[65] Stanton, P. *Pugin.* London, Thames and Hudson, 1971, p .191.

[66] Ibid., p.15.

[67]Hill, R. *A.W.N. Pugin.* London, Crafts Magazine, May-June, 2000.

[68] Ferrey, B. *Recollections of Pugin.* London, The Scholar Press, 1978, p.187.

[69] Ibid., p.260.

[70] Hill, *A.W.N. Pugin.*

---

[71] Pugin's first windows for the Sanctuary of the College Chapel at Oscott, 1838, using Warrington received high praise. *The London and Dublin Weekly Orthodox Journal.* 1838, pp.90-1 recorded it as ' …one of the finest efforts of the art of staining on glass which has been seen in this country or probably any other for a very long period'.

[72] Warrington, as described in *The Ecclesiologist* had a predilection for '...Hands like a bunch of carrots –hair somewhat uglier than a rope mat – water elegantly reproduced by the heraldic wavy – and clouds literally nebuly …' Stanton, P. '*Welby Pugin and the Gothic Revival*'. Unpublished PhD Thesis, University of London, 1950, Appendix VIII.

[73] Letter held by the Victoria & Albert Museum London.

[74] Stanton, P. *'Welby Pugin and the Gothic Revival'.* Unpublished PhD Thesis, University of London, 1950, Appendix VII.

[75] Letters in the Hardman Archives, Birmingham relate that the windows of St Barnabus and St Giles were altered by Hardman to allow more light into the buildings. Atterbury, P. & Wainwright, C. 'Pugin: A Gothic Passion' in Shepherd, S. *Stained Glass* New Haven, Yale University Press, 1994.

[76] Atterbury, & Wainwright, 'Pugin: A Gothic Passion'. p.198.

[77] Stanton, *A.W.N. Pugin.* p.169.

[78] House of Lords Record Office, pp.304-986.

[79] Atterbury, & Wainwright, 'Pugin: A Gothic Passion'. p.198.

[80] Ibid., p.199.

[81] The architect G E Street significantly excluded Pugin from his criticisms of modern glass admiring Pugin's appreciation for the 'true principles of art' believing Hardmans' success owed a great deal to the 'proper use of white'. The liberal use of white glass was not without its critics however. Canon Sparke of Ely Cathedral complained of the Jesus College, Cambridge windows that Pugin had been too liberal in the distribution of white. Pugin himself was disappointed, drawing the conclusion that the ornament was too faint due to the fear of using black.

[82] House of Lords Records Office, pp.304-466.

[83] *Flashed ruby* (clear glass coated with a thin layer of red glass) proved the greatest problem. Apparently unobtainable since the late medieval period the 18th century glaziers produced glass as red as possible by repeated staining with *silver stain.*

[84] Shepherd, *Stained Glass.* p.201.

[85] Ibid., p.204.

---

[86] Crewe, S. *Stained Glass in England 1180-1540.* Royal Commission on the Historical Monuments of England, 1987, p.97.

[87]Holiday, H. 'Modernism in Art'. Published in *The Builder,* March 22, 1890. p.212.

[88] Winston, *An Inquiry into the Difference of Style Observable in Ancient Glass Paintings, especially in England: with Hints on Glass Painting by an Amateur.* pp.280-283.

[89] Clark, K. *The Gothic Revival.* London, 1962, p.144.

[90] Wainwright, C. 'Not a Style but a Principle': Pugin & His Influence', from Shepherd, *Stained Glass..* New Haven, Yale University Press, 1994, p.19.

[91] *The Builder.* 1845, p.367.

[92] Fernie, E. *Art History and Its Methods.* Oxford, Phaidon, 1998, p.101.

[93] Ibid., p.98.

[94] Ibid., p.102.

[95] Hampshire Record Office, 25M84/PW48.

[96] Permanent exhibition, William Morris Gallery, Walthamstow, London, 2002.

[97] Sewter, A. C. *The Stained Glass of William Morris and his Circle.* New Haven, Yale University Press, 1974, p.22.

[98]Bond, D. & Dear, G. *The Stained Glass of William Morris and his Circle in Hampshire and the Isle of Wight.* Hampshire District Council, 1998; Harrison, M. *Victorian Stained Glass.* London, Barrie & Jenkisn, 1980; Parry, L. *William Morris and the Arts and Crafts Movement.* London, Random House, 1998; The William Morris Gallery, Walthamstow, 2002 & conversation with Dr. Rosalind Polly Gray, University of Kent, 2002.

[99] Burne Jones, G. *Memorials of Edward Coley Burne-Jones.* London, Macmillan, 1904.

[100] In 1877 Burne-Jones exhibited thirteen major paintings at the Grosvenor Gallery in Bond Street where they triggered a debate in the press bringing him to attention as a leader of the British Secessionist movement in reaction against the establishment centred on the Royal Academy.

[101] Hampshire Record Office, 25M84/PW48.

[102]Permanent exhibition, William Morris Gallery, Walthamstow, London, (Thompson, 1993, p.144).

---

[103] Carew-Cox, A. & Waters, W. *Edward Burne-Jones Stained Glass in Birmingham Churches.* Birmingham,_Alastair Carew-Cox, 1998, p.25.

[104] Between 1872 and 1878, as well as working on his easel paintings, he designed over 270 cartoons for stained glass: approximately one every eight and a half days.

[105] Whall, *Stained Glass Work.* p.245.

[106] Cormack, P. *The Stained Glass of Christopher Whall.* Trustees of the Public Library of the City of Boston, 1999. Quoted by Charles J. Connick in 'Christopher Whall, Artist-Craftsman' *Journal of the American Institute of Architects.* June, 1925.

[107] Within a few years some of the Whall-Saunders glass was replaced – with the ironic result that three panels (now in the William Morris Gallery, London) from the original scheme have survived the Second World War bombing which destroyed all St Etheldreda's 19th century windows. Peter Cormack, William Morris Gallery, Walthamstow, London.

[108] Whall, *Stained Glass Work.* pp.208-281.

[109] Ibid., p.168.

[110] Ibid., p.168.

[111] Victoria & Albert Museum. Notes appended to the catalogue of the collection of Whall's drawings.

[112] Cormack, P. William Morris Gallery, Walthamstow, London.

[113] Slab glass (often called Early English or Norman slab) is very uneven in thickness and, consequently, in density of colouring. The process of manufacture involves blowing molten glass into a box-shaped mould, thus producing a four-sided bottle which can be cut into one square and four rectangular 'slabs'. This type of glass was rarely used by commercial stained glass firms as it was expensive and difficult to cut and lead, but it is one of the hallmarks of Arts and Crafts stained glass and was used by Whall after 1989 and by Karl Parsons (Whall's student) in almost all his widows.

[114] Whall, *Stained Glass Work.* p.166.

[115] Whall, C. W. *Gloucester Lady Chapel Windows.* Privately printed and issued in 1922-23. In 1909 he was also asked to glaze the large north sanctuary windows which included figures of Adam and Eve. After his death his daughter, Veronica, added two further windows; one commemorating her father and another commemorating the organist.

[116] A practise carried now out in most leaded glass to avoid panels buckling. Commonly referred to as 'glaziers pie' when the problem of crumpling or bulging occurs on the bench.

---

[117] Whall, *Stained Glass Work.* p.94.

[118] Baker, H. *Architecture and Personalities.* London, Country Life Ltd., 1994, p.148.

[119] Christopher Whall Exhibition at the William Morris Gallery, Walthamstow, London, April 2000.

[120] Whall, *Stained Glass Work.* p.206.

[121].Gage, J. *Colour and Culture.* London, Thames and Hudson, 1993, p.205.

[122] Ibid., p.206.

[123] Whall, *Stained Glass Work.* p.221.

[124] Ibid.

[125] One of the clerestory windows is a 'one off' war memorial.

[126] Cormack, P. prefatory essay, 1999 edition of *Stained Glass Work.* London, John Hogg, 1905.

[127] The work of almost every major stained glass designer of the early 20th century demonstrates Whall's influence: not only in Britain but also in the USA through Charles Connick and south Africa through Karl Parsons. Parsons' work varied in quality but he was one of the most original artists working in Whall's tradition. He manipulated light and colour through a distinctive technique of stippled brush-work, needle and stick work and an intricate combination of textured pigment and aciding, etching off the painted glass to create areas of luminous pure colour. Rather than a faked process of ageing - Willement habitually antiquated his glass by coating the outside with white enamel, making it dull and opaque and, even worse, Warrington (described in *The Ecclesiologist* as being of the 'dirty school') imitated medieval windows by generously overlaying them with boot-black - this method came close to giving a grain and patina to each piece of glass comparable to the 'rich velvety quality' that early medieval windows acquire over the course of centuries. He was also active as a teacher, working first as Whall's assistant at the Central School and then as principal tutor; later he succeeded Whall at the Royal College of Art (to become master to E. J. Nuttgens who, in turn, taught Patrick Reyntiens). His architectural glass spans the globe, from Britain to South Africa and New Zealand.

[128] Whall, *Stained Glass Work.* p.303.

[129] The Arts and Crafts Movement incorporated a variety of styles but adhered to the idea of 'honesty' in that they wanted their products openly to show what they were made of and how they worked. Their emphasis on plain materials and surfaces, simplicity and integrity had an impact on modern design.

---

[130] Mission furniture, initially crafted in small workshops and later mass produced, was popular in the United States between 1890 and 1914. It tended toward heavy, square shapes and rough detailing: stained oak, leather upholstery, exposed nailheads faked joints are integral to the style.

[131] McKean, H. *The 'Lost' Treasures of Louis Comfort Tiffany.* New York, Doubleday, 1980, p.153.

[132] Antique glass is not old glass but made in the medieval style.

[133] Cormack, P. *1997 Orin E Skinner Annual Lecture* sponsored by the Charles J Connick Stained Glass Foundation, Boston.

[134] Connick, C. *Adventures in Light and Color.* London, G. G. Harrap & Co., 1937, pp.4 -5.

[135] McKean, *The 'Lost' Treasures of Louis Comfort Tiffany.* p.92.

[136] A name Tiffany believed was taken from an old English word for hand-made.

[137] The iridescent effects of the *dichroic* coating were produced by spraying the molten glass with metallic salts; the tones and patterns of the *lustres* being dependent on the colour and thickness of the glass.

[138] Tiffany & Co. had recently expanded to include artisans from many branches of the applied arts – metal workers, jewellers, cabinetmakers, ceramicists and glassblowers – which enabled the installation of whole interiors.

[139] Silverman, D. *Art Nouveau in Fin-de-Siècle France*. Berkerley, University of California Press, 1989, p.184.

[140] *Art Nouveau by Example: Japanese and American Crafts.* pp.179-185, see Silverman, D. *Art Nouveau in Fin-de-Siècle France.* Berkerley, University of California Press, 1989.

[141] Tiffany introduced new techniques such as foiling. Usually used to construct lampshades or for delicate work where leading would appear clumsy. With this technique each piece of glass is individually wrapped in copper foil and soldered into place thus allowing the joints to be 'bent' into three dimensional forms. He was also among the first to disguise the re-bar by bending it to conform to the shape of the principal leadlines.

[142] Howard, J. *Art Nouveau.* Manchester, Manchester University Press, 1996.

[143] For example the lavish architecture was derided as evidence of a decadent style by the American Establishment in 1907 while, in France, Hector Guimard was anxious both to engage with past traditions and respond to the modern age.

[144] Ibid.

---

[145] Webber Wilson, H. *Great Glass in American Architecture.* New York, Dutton, 1986, p.54.

[146] *Ornamental Glass Bulletin.* December, 1907, p.2.

[147] Howard, *Art Nouveau.* p.16.

[148] Silverman, *Art Nouveau in Fin-de-Siècle France.* p.269.

[149] Ibid., p.271.

[150] Ibid.

[151] Engen, L. (ed.) *Le Verre en Belgique: des origines à nos jours.* Liège, Musée d'Archéologie et d'Arts Décorative, 1992, p.319.

[152] Ibid.

[153] Ibid., p.326.

[154] The clarity given to the composition by the forms encapsulated in the glass itself meant that glaziers did not have recourse to painting or engraving. The resulting simplicity of form stresses the importance of the line and reveals an engagement with Japanese art.

[155] Engen, (ed.) *Le Verre en Belgique: des origines à nos jours.* p.326.

[156] Ibid.

[157] Brett, D. *C. R. Mackintosh: The Poetics of Workmanship.* London, Reaktion Books, 1992, p.74.

[158] University of Kent Lectures on the Vienna Secession.

[159] Marin County Civic Center, California, USA.

[160] Discussion with Dr Thomas Blagg, University of Kent, 1997-8.

[161] Conversation with Andrew Moor. Andrew Moor Associates (Consultants), London, October 1999.

[162] Wright, F. L. *An Autobiography.* London, Houghton, 1976, p.129.

[163] Wright, F.L. 'In the Cause of Architecture', *The Architectural Record.* October, 1928, p.217.

[164] Ehrlich, D. *Frank Lloyd Wright Glass.* Hoo nr Rochester, Grange Books, 2000, p.6.

---

[165] Ibid., p.82.

[166] Information on electro-glazing obtained from The Marin Center, Nr. San Francisco, California, USA.

[167]Ehrlich, *Frank Lloyd Wright Glass.* p.25.

[168] Wright, F. L. 'In the Cause of Architecture'.

[169] Ehrlich, *Frank Lloyd Wright Glass.* p.83.

[170] Wright, 'In the Cause of Architecture'. *The Architectural Record.* March, 1908.

[171] Ehrlich, *Frank Lloyd Wright Glass.* p.77.

[172] Stangos, N. *Concepts of Modern Art.* London, Thames and Hudson, 1974, p.9.

[173] Bann, S. 'Towards a new Art: Abstract Art - A Language?' *Word and Image,* Cambridge, 1985.

[174] Ibid.

[175] Rose, B. *Art as Art: The Selected Writings of Ad Reinhardt.* Berkeley, University of California Press, 1975, p.61.

[176] For example the work of Cézanne, Van Gogh and Gauguin is characterised by a more freely expressive use of form and colour. Rather than copying nature Cézanne's perception of the natural world, as portrayed in his landscapes and still lifes, emphasize geometric form, volume, the relationship between surfaces and prismatic light. Van Gogh depicted nature in vibrant, often strident colours that induce an intense emotional reaction whereas Gauguin, in his effort to capture the pictorial boldness of folk art, was concerned with development of flat, decorative surface patterns. Due to the freedom achieved for the artist by Impressionism and a new-found emphasis on abstract concepts in art, other 20th century art movements such as Surrealism, Futurism, Cubism, Expressionism and Fauvism reflect the new approaches to interpretation pioneered by these artists and come under the umbrella of Post-Impressionism.

[177] Fry, R. *Vision and Design.* London, Chatto and Windus, 1929, p.238.

[178] Ibid., p.237.

[179] Ibid., ch.5 *Art and Socialism.*

[180] Fernie, E. *Art History and its methods.* London, Phaidon, 1998, p.163.

[181] Fry believed that Cézanne had resolved the seemingly insoluble problem of how to use the modern vision with the constructive design of the older masters.

---

[182] Shone, R. *Bloomsbury Portraits*. Oxford, Phaidon, 1976, p.62.

[183] Ibid., p.64.

[184] Later, in a series of essays written in the 1960's, Ad Reinhardt was to express a similar philosophy. Reinhardt felt that professional dedication and craftsmanship in art were ethical values. He saw the artist as the opposing force to a world of commerce and profit. The moral obligation of the artist, as he perceived it, was to maintain the highest standards in his work, while the policy of industry was to lower quality for greater profits. He deplored the idea of the artist lowering his standards, producing to fulfil market demands, and taking on the ethics of business. Rose, *Art as Art:The Selected Writings of Ad Reinhardt*. pp.147-167.

[185] Catalogue from the Glass and Ceramic Dept, Victoria and Albert Museum, London.

[186] See Collins, J. *The Omega Workshops*. London, 1983, pp.86-88 and note 35, p.290.

[187] d'Offay, A. *The Omega Workshops*. Anthony d'Offay Gallery, 1984, catalogue no 89.

[188] Shone,. *Bloomsbury Portraits*. p.115.

[189] Ibid., p.100.

[190] Osborne, J. *John Piper and Stained Glass*. London, Sutton Publishing, 1997.

[191] So far as dating the *Temple Builders* is concerned the alternatives are either c.1912-15 or the late 1920's. In favour of the earlier date he did another version of the same title dated 1919 and *Labourers* in 1913 which has several similarities. The style is characterised by sharp outlines, geometric fragmentation of planes, strong diagonal patterns and many small areas of single colour. In common with his stained glass his work from Concarneau and shortly afterwards also features these characteristics as does his painted pottery of 1916-17. In favour of the later date he made several studies of Jewish, biblical or symbolist subjects such as *Wisdom is better than weapons of war* 1923; *Jew holding Torah* 1925; *Judgement of Paris* 1926; *He that hath two coats* 1927; *Suzannah and the Elders* 1926-8; *The fruit gatherers* 1927-30; *Three Graces* 1930 and *My people, Eastern scene* 1934. Datable works of this type stop at this date. Paintings from 1920's are consistently much more rounded in contour and use more mixed pigments. Taking this evidence into account I am inclined to judge the dating on the basis of style alone, and conclude that this version of *The Temple Builders* is more closely associated with the earlier group of works that the later, dating it as broadly contemporary with the Slough window.

[192] Murray's *Architectural Guide to Buckinghamshire* describes St James as an 'unfinished work in the early Dec. style...with ...walls of rough stone with ashlar

---

dressings, and the slated roofs have red ridge-tiles… a relic of Victorian aspiration. It has aisles with four-bayed arcades. Some dashing art-nouveau glass of about 1900 is initialled M.B.Cantab.'.

[193] Anon. 'Gerald Moira's Stained Glass Designs *The Studio.* Vol. 18, October 1899, pp.18-23.

[194] Witt Library collection, Courtauld Institute of Art, University of London.

[195] During his research Peter Risdon, Wolmark's biographer, found circumstantial evidence that a painting was hung between a Van Gogh and a Gauguin at an exhibition in 1912 and believes the fact the Wolmark related this with such relish indicates either that he wanted to be seen in a similar light or aspired to 'use' their styles. Conversation with Peter Risdon November 2000.

[196] Wees, W. C. *Vorticism and the English Avant-Garde.* Manchester, Manchester University Press, 1972, p.25.

[197] Ibid., p.55.

[198] Private correspondence with Peter Risdon.

[199] The process of commissioning and designing the windows has been taken from newspaper reports from between 1915 to 1918.

[200] Day, L. F. *Windows: stained and painted glass.* London, Batsford, 1909, pp.343-348.

[201] Risdon, P. W. *Pamphlet from St Mary's Church, Slough.*

[202] Ibid.

[203] Gage, J. *Colour and Culture.* London, Thames and Hudson, 1993, p.64.

[204] *Slough, Eton & Windsor Observer.* 15th May 1915 (p.6 cols.2-3). Report of decision to proceed with application for a faculty to install the windows.

[205] Ibid., September 25th 1915, p.3 cols.2-3.

[206] *The London Observer.* article by P. G. Konody, September 1915.

[207] Wolmark, A. *Historic Glass Window at Slough Parish Church.* 12 page booklet, publisher and date unknown.

[208] *The London Observer* article by P. G. Konody, September, 1915.

[209] C. E. Kempe is often mentioned in reference to Victorian glass, but usually in connection with his later work (Kempe & Co recognised by its wheat sheaf cartouche); the earlier work is far more original and striking in its design and use of

---

colour. However, it is unsigned and has been difficult to attribute, thus causing Kempe's reputation to suffer. Much of his work has also suffered from the problems of water soluble borax being used as a constituent of the paint during the 1870's causing fading and peeling when exposed to damp.

[210] *The Times.* 25 January, 1918, p.2 and 26 January, 1918, p.4.

[211] *London Observer.* article by P. G. Konody, September, 1915.

[212] Conversation with David Jewell, Head Verger, St Mary's Church, Slough.

[213] Wember, P. *Johan Thorn Prikker.* Krefeld, Scherpe Verlag, 1966.

[214] Wember, P. *Heinrich Campendonk.* Krefeld, Scherpe Verlag, 1960.

[215] Dube, W. D. *The Expressionists.* London, Thames and Hudson, 1977, p.152.

[216] Blotkamp, C. *De Stijl: the formative years.* Massachusetts, MIT Press, 1982, p.14.

[217] Troy, N. *The De Stijl Environment.* Massachusetts, :MIT Press, 1983, p.24.

[218] Blotkamp, *De Stijl: the formative years.* p.15.

[219] Ibid., p.14.

[220] Ibid., p.16.

[221] Troy, *The De Stijl Environment.* p.25.

[222] This suggestion is strongly opposed by Carel Blotkamp in a letter responding to an article by Nancy Troy in *Arts Magazine, 'Theo van Doesburg: From Music into Space.* LVI 6, 1982, p.92-100. Blotkamp argued that van Doesburg referred to Bach's music only as an analogy. Because of its similarity to the composition of *Composition II,* he believes that this window could not have been based on a specific fugal theme.

[223] Piet Mondrian, letter to Oud August 30 1921: Theo van Doesburg letter to J. J. P. Oud Sept 12, 1921: Piet Mondrian, letter to Theo van Doesburg, 1923 quoted in Troy, *The De Stijl Environment.* p.70.

[224] Ibid., p.71.

[225] Baljeu, J. *Theo van Doesburg.* London, Studio Vista, 1974, p.115.

[226] Ibid., p.123.

[227] Itten, J. *Design and Form.* London, Thames and Hudson, 1983, p.8.

---

[228] Fox-Webber, N, Overy, P. Craig-Martin, M. *Josef Albers.* London, The South Bank Centre, 1994, p.9.

[229] Sandblasting, whilst an easy task to perform, is a difficult medium for design as it entails masking off areas of colour which are to remain on the glass and adding paint at a later stage to give different qualities and textures to the 'flashed' colour of the sandblasting.

[230] Fox Webber, N. et al *Josef Albers: A Retrospective.* New York, Harry N. Abrams Inc., 1988, ch.6, 'New Challenges Beyond the Studio'.

[231] Benezra, N. *Josef Albers; A Retrospective.* New York, Guggenheim Museum, Solomon R. 1988, p.23.

[232] Fox-Webber, N. Overy, P. Craig-Martin, M. *Josef Albers.* London, The South Bank Centre, 1994, p.28.

[233] Conversation with Professor Stephen Bann.

[234] Albers, J. *Interaction of Color.* New Haven, Yale University Press, 1963, p.5.

[235] Kandinsky, W. *Concerning the Spiritual in Art.* translated by Michael Sadleir, 1988.

[236] Bann, 'Towards a New Art: Abstract Art - A Language?' and conversation with Professor Bann 1998.

[237] Whitford, F. *Bauhaus.* London, Thames and Hudson, 1988, p.180.

[238] Fox Webber, *Josef Albers.* p.68.

[239] Stookey, S. D. 'Photo-Sensitive Glass: A New Photographic Medium' *Industrial and Engineering Chemistry.* Vol.41, April 1949, pp.856-861.

[240] Fox Webber, *Josef Albers.* p.69. Albers and the architect Breuer considered this window to be an experiment which, if successful, would lead to the construction of 650 windows by Albers in the huge north window wall of the Abbey Church. Albers' designs, through a complex series of misunderstandings, were rejected and he felt badly betrayed. This was but the first of such instances of Albers being the victim of circumstance in his art-in-architecture projects and, because of such problems, he slowly reassessed his former idealism regarding the value of collaborative endeavour. Alfred Wolmark had similar experiences. In 1920 he was approached by Sir Stuart Samuel to design windows for sites in London and New York, but this came to nothing. From letters between Wolmark and his wife, Bessie*, it seems that the designs were rejected as Samuel was unwilling to spend sufficient money on the projects. *Collection of St Mary's Church, Slough.

[241] Correspondence with Sœur Jeanne Héléne, archivist for the Sœurs de Saint-Paul de Chartres, 2001.

---

[242] Correspondence Ruth Trinick, Melbourne, Australia, 2001 and 2003.

[243] Letter to J. W. Mackail, dated 12.11.1922. Collection of Stefan Reynolds see Reynolds, S. D. C. *John Trinick – Master of Stained Glass.* London, BSMGP Journal of Stained Glass, Vol XXII, 1991.

[244] Ibid.

[245] Ibid., p.69.

[246] Flames, in a different form, were also a characteristic of Whall's designs.

[247] Zimmermann, B. (ed.) translated by Lewis, D. *The Life of St Teresa; written by herself.* London, 1916, see Trinick, J. pamphlet *Description of the Stained Glass in the Window of the North Transept, Church of Our Lady of Sorrows. Hendon,* 1936.

[248] Ibid. 1936.

[249] Zimmermann, B. *Conceptions of the Love of God.* 1913, see also Trinick, J. pamphlet *Description of the Stained Glass in the Window of the North Transept, Church of Our Lady of Sorrow. Hendon,* 1936.

[250] Trinick's notes held in the private collection of William Whelan.

[251] Whall, *Stained Glass Work.* p.250.

[252] Hughes, R. *The Shock of the New.* London, Thames and Hudson, 2000, p.135.

[253] Button, V. *The Aesthetic of Decline: Neo-Romanticism c.1935 to 1956.* Unpublished PhD thesis Courtauld Institute of Art, University of London, 1991.

[254] Ibid. p.14.

[255] Various sources including Michel, W. and Fox,C. J. (eds.) *Wyndham Lewis on Art: Collected Writings.* London, Thames and Hudson, 1971, pp.197-199.

[256] Ironside, R. *Roger Fry: a Summing Up.* Architectural Review no. 88, 1940, pp.99-100 and Yorke, M. *The Spirit of Place.* London, Constable, 1988, p.23.

[257] Hewison, R. *In Anger: Culture in the Cold War 1945-60.* London, Weidonfeld and Nicholson, 1970.

[258] Grigson, G. *Samuel Palmer: the Visionary Years.* London, 1947, p.18.

[259] Dr Sebastian Strobl is a Liveryman of the British Society of Master Glass Painters and Director of the Canterbury Cathedral Stained Glass Studio.

Trinick's surviving windows include:

Hertfordshire: St Francis' College two apse windows, 1939.

Kent: St Austin and St Gregory, Margate 3-light East window 1935.
Salmestone Grange Chapel, Margate 3-light East Window 1938/West and nave windows 1948-58.
St Paul's, Dover Rose window in the Chapel of Our Lady c.1946.
St Edmund's, Beckenham single lights South and North nave 1949.

London: Our Lady of Sorrows, Hendon left transept single light 1936.
Our Lady Star of the Sea, Greenwich North and South aisles, four 2-light windows 1937-51.
Ursuline Convent, Forest Gate entire Chapel of St Angela 1947-48.
Our Lady of Lourdes, St John's Wood North transept single light 1950.
St Pius X W10, eleven single lights.

Middlesex: St Lawrence Feltham Bapistry 2-light window 1932, circular West window 1935.

France: Maison Ste Elizabeth, Orphelinat, Chartres two single lights.

Windows in the dome of St Andrew's Hospital, Dollis Hill and in the former church on Bow Common Lane, Stratford were shattered the World War Two blitz and seven windows in St Michael's, Stockwell were destroyed during the demolition of the church.

Thanks to Stephen Reynolds and Ruth Trinick (nephew and niece of the artist) the Ian Potter Museum at Melbourne University, Australia now holds the John Trinick Collection which comprises 72 cartoons and slides of his work in England.

[260] *British Society of Master Glass Painters Journal.* Vol. XIV, no5, 1970-1, pp.267-8.

[261] Bazaine, J. *Le Vitrail Français.* Edition Deux Mondes. 1958.

[262] Clarke, B *Glass-Light exhibition catalogue.* Foreword, 1978.

[263] Osborne, J. *Stained Glass in England.* London, Alan Sutton, 1981, p.100.

[264] Clarke, B. *Architectural Stained Glass: Letter from Poensgen to Clarke.* London, Murray, 1979, p.21. Poensgen is a master of repeated, basic, apparently simple units in glass.

[265] Meili, G. *Matisse.* London, Thames and Hudson, 1967, p.142.

[266] It appears that Matisse rejected the first ten samples of green he was given, burdening the glass factory with tens of thousands of pounds of green glass; which took seven years to recover in sales. Reyntiens, P. *The Technique of Stained Glass.*

[267] Reyntiens, *The Beauty of Stained Glass.* p.176.

---

[268] See Gage, *Colour and Culture.* p.212.

[269] Dalle de verre is extremely expensive, extra clear coloured antique glass produced in thick 8" x 10" slabs. Impossible to cut in the normal way, it is necessary to punch out a series of holes along the cut-line with a tungsten tipped hammer before striking firmly. The cut pieces are then bonded in blocks of concrete or resin held by wooden shuttering, preferably on a vibrating bench so as to reduce the possibility of air bubbles weakening the finished structure. In situ the components of a window consist of over 50% resin, sometimes as much as 3" of concrete to 1" of glass thus making it incredibly heavy.

[270] Schnell, W. *Twentieth Century Church Architecture in Germany.* Munich, 1974.

[271] Conversation with Andrew Moor Associates, London, 2000.

[272] Pfaff, K. *Ludwig Schaffrath.* Krefeld, Scherpe Verlag, 1977, Ch.2.

[273] Roh, F. *German Painting in the Twentieth Century.* New York, 1968, p.141.

[274] At this time the Church in Germany, particularly the Catholic Church, was actively encouraging a new generation of promising young designers by promoting such exhibitions.

[275] It was not until the late 1960's that this use of line became apparent in Schreiter's drawings; I would argue a consequence of his increasing involvement in stained glass and focus on the graphic possibilities of the leadline.

[276] Unlike such as Schaffrath who, typically, could satisfactorily employ a colour code on his cartoons, Schreiter's designs depend on subtle coloration within individual glass pieces making it desirable to select the glass himself or, occasionally, to adapt the design to the glass available.

[277] Ricke, H. *Neues Gals in Deutschland.* Exhibition Catalogue, Dusseldorf, 1983, p.50. Quoting Schreiter from a manuscript written in August 1982.

[278] Nave and towers are Romanesque; chancel and aisle are High Gothic.

[279] Nave and towers are Romanesque; chancel and aisle are High Gothic.

[280] Angus, M. *Modern Stained Glass in British Churches.* Mowbray, 1984, p.25.

[281] Schreiter pioneered the use of plexiglass. Initially plexiglass was used to add strength to the windows of a church hall where a basket ball team practised. However, he found the flexibility of the material made it possible to express ideas which were impossible to achieve in glass: for example grooves could be cut into any part of it - rather than cutting through the whole piece - and the core of the lead fed into the gaps created.

---

[282] Ricke, H. 'Neues Glas in Deutschland', *Exhibition Catalogue*. Dusseldorf, 1983, p.49, quoting Schreiter's correspondence with Kenneth von Roenn, USA, 7th April, 1979.

[283] Abstract art in French churches began in 1937 when a number of well known modern artists were invited to design the chapel windows at Notre Dame de Toute Grace at Assy in Haute Savoie: a commission which resulted in a controversial new interpretation of religious stained glass. By the 1939 Exposition des Arts Décoratifs at the Petit Palais the detailed pictorial work of the traditional studios was beginning to be regarded as dated and dull while that of new modern artists such as Jean Bazaine and Francis Gruber gained wide acclaim.

[284] Reyntiens, P. *Good Behaviour Bad Taste.* Architectural Stained Glass, Murray, 1979.

[285] Garlake, M. *New Art:New World.* New Haven & London, Yale University Press, 1998, p.92.

[286] Campbell, L. *Coventry Cathedral Art and Architecture in Post War Britain.* London, Clarendon Press, 1966, p.103.

[287] Introduction *A Small Anthology of Modern Stained Glass.* London, 1955.

[288] Lee, L. 'The Nave Windows' in Campbell (ed.), *To Build a Cathedral.* London, Clarendon Press, 1966, P.50.

[289] Campbell, L. *Coventry Cathedral Art and Architecture in Post War Britain.* p.118.

[290] Lee, L. *Stained Glass.* London, Oxford Press, 1967, p .65.

[291] Bender, R. *Two approaches to stained glass.* Unpublished MPhil thesis, Royal College of Art and Swansea Institute of Art, 1985.

[292] Harrison, C. *English Art and Modernism 1900-1939.* Indiana University Press, 1981, p.273.

[293] Grigson, G. M & Piper, J. 'England's Climate' *Axis.* Autumn, 1936, no 7.

[294] Harrison, *English Art and Modernism 1900-1939.* ch.11. 'The Later Thirties: Surrealism, Realism, Romanticism'.

[295] For instance, the parishioners of Laleham Church, Staines, Middlesex petitioned that Geddes' East window (1926) be immediately removed to the back of the church as they found the imagery too 'awful' and disturbing.

[296] Hone worked with Sickert at the Westminster School of Art before moving to Paris where, at the Central School of Art, she absorbed the cubism of Picasso, Braque and Gris and was taken up as a special pupil of Gleizes who believed that

---

cubism should be universal, subduing the artist's personality. Returning to England in 1925 she spent two years in a nunnery in Truro where she began to represent religious art in a contemporary way. The 1923 emancipation of the Irish Catholic Church engendered an interest in Hone's new form of expression which was a mixture of Irish and European. In 1933 she produced her first stained glass panels one of which, *Green Fields,* was exhibited at the World Fair in New York. She worked at the Dublin Glass House until 1944 before opening her own studio at her home. In 1959 the Tate Gallery held a retrospective of Hone's work (although much of her work is in Ireland, there are in England, 112 lights and 150 domestic or secular panels), shedding light on this somewhat mysterious figure.

[297] Severe disability, the result of childhood poliomyelitis, prevented her from constructing her own work which was interpreted by Thomas Kinsella.

[298] Prior to Hone and Geddes there were a few examples of semi-abstract glass from the Omega Workshops of the Bloomsbury Group and the abstract West Windows of St Mary's Church at Slough by Alfred Wolmark.

[299] Piper, J. *Abstraction on the Beech.* First published in *Vingtieme Siecle* 1938, see Bender, R. *Two approaches to stained glass.*

[300] Piper, J. *Stained Glass: Art or Anti-Art.* London, Studio Vista, 1968, p.25.

[301] Piper, J. Essay 'Art or Anti-Art'. *Architectural Stained Glass.* London, Murray, 1979, p.60.

[302] Reyntiens, P. *The Technique of Stained Glass.* London, Batsford, 1967, p.79.

[303] Conversation with Derek White at Canterbury Cathedral Glass Studio, 1998. Formerly a glazier at the Coventry Cathedral workshops, from 1958-1971 White was employed as Reyntiens' studio manager bringing with him his expertise in cutting, firing and acid etching.

[304] Interview with Anthony MacCrea, glazier for Baptistery window. Middlesex University, 1998.

[305] Piper, Essay 'Art or Anti-Art'. p.61.

[306] *Stained Glass in England 1180-1540.* Royal Commission on the Historic Monuments of England, 1987, ch.1.

[307] A graduate of the Marylebone School of Art and Edinburgh College of Art from 1947 to 1952, Reyntiens took up a position in the stained glass studios of Joseph Edward 'Eddie' Nuttgens, a follower of many of Whall's principles before setting up his own studio in 1955. During the 1970's his glass workshops at Burleighfield House attracted many young artists from Britain, Australia, Canada and the United States. Beginning with Schaffrath in 1975, he initiated a spate of workshops, lectures and exhibitions in England by the new generation of German designers.

---

[308] Reyntiens, *The Beauty of Stained Glass.* pp.195-6.

[309] Moszynska, A. *Abstract Art.* London, Thames & Hudson, 1995, p.159.

[310] Reyntiens, *The Technique of Stained Glass.* p.134.

[311] Bender, *Two approaches to stained glass.*

[312] A name invented by Clement Greenberg in 1964 as the title of an exhibition at the Los Angeles Museum of Art. Moszynska,. *Abstract Art.* p.196.

[313] Ibid., p.197.

[314] Reyntiens, lecture at Swansea Architectural Glass Conference, 2000.

[315] Hayes, D. *Ervin Bossanyi The Splendour of Stained Glass.* Friends of Canterbury Cathedral, 1965, p.7.

[316] Powell, H. *Ervin Bossanyi: An Appreciation.* in BSMGP Journal, 1974-5, Vol. XV, No 3.

[317] Hayes, *Ervin Bossanyi The Splendour of Stained Glass.* p.36.

[318] Neervoort-Moore, M. *History of all Saints Church Tudeley* Kent, Addax, 1994, p.4.

[319] Ibid., p.6.

[320] It is somewhat of an irony that, long before he became interested in designing for stained glass, his early work such as *I and the Village* (permanent collection of the New York Museum of Modern Art) was far closer in colour and form to that of his contemporaries whose glass designs were ultimately more successful. The problem during this period, when windows relied on lead for structural support, was twofold: the richness of his approach is achieved at the expense of articulated forms, making it very difficult to lead successfully, and it also tends towards chiaroscuro: rather a representation of light than true colour luminosity. However, to his credit, he went to great pains to learn the techniques to enable him to paint the glass himself.

[321] The 1966 restoration and refurbishment of All Saints was supervised by Piper; the most significant part of the work being the restoration of the East window arch to an earlier Norman form to take Chagall's new window.

[322] Reyntiens, *The Beauty of Stained Glass.* p.182.

[323] Professor S Bann. Lecture at UKC, 1998.

[324] The seven nave windows were completed between 1968-69 and dedicated in 1974. By then Chagall was eighty eight and there was some anxiety on his part as to whether he would be able to complete the overall plan he had presented in 1967.

With this in mind the d'Avigdor-Goldsmids commissioned the remaining four chancel.

[325] Ed Carpenter to cite an American example: Carpenter was born in Los Angeles in 1946. He studied with Reyntiens before becoming apprenticed to Schaffrath in 1975. He currently runs his practice in Portland. Oregon. Typically Carpenter's windows at the Kaiser Permanente Medical Center, Portland; the Justice Center, Porland; and his (1993) 1,076 sq ft curved glass atrium wall for the Federal Building in Oakland, California reflect both a study of Schaffrath and Wright, demonstrating a European as well as an American influence. In the Federal Building Carpenter focuses on relatively small points of interest within a large expanse of glass by introducing delicate strips of vivid pink and blue dichroic glass to create shimmering light patterns, not only in the windows themselves, but also on the adjacent wall. In many of his windows dating from this period Carpenter often uses mixed media in an unconventional way; very much in the mould of current American glass.

[326] Conversation with Andrew Moor, International Art Glass Consultant, London 2000.

[327] Conversation with Caroline Swash, BSMPG Conference, London, 2001.

[328] Angus, M. *Modern Stained Glass in British Churches.* London and Oxford, Mowbray, 1984, p.9.

[329] Correspondence with Mark Angus, February 1998.

[330] Ibid.

[331] Leaflet from the Education Department of Durham Cathedral, 1996.

[332] Wendy Nugent, Chapter Steward, Durham Cathedral.

[333] Quoted from a paper by Martin Harrison on 20th century stained glass at the BSMGP Conference, London, 2001.

[334] Conversation with Andrew Moor, Art Glass Consultant, London, 2002

[335] The task of the glass artist is to create designs that will reflect some aspects of the building's structure and materials so that the window can be easily integrated with the architecture: the problem in using an abstract painterly style is that the coherent geometry which enables it to blend with its architectural setting is absent, and thus it may become obtrusive.

[336] Edith Temmel and Ellen Mandelbaum (now based in New York) for example. Temmel's set of four windows designed for the Church of the Sacred Heart, Graz, Austria (1994) consist of flashed glass of a single colour, silverstained in places and acid-etched several times to create splashes of red, blue and yellow on a white background. Mandelbaum's *Wales Waterfall* panel (1993) demonstrates sweeping brushstrokes and controlled use of bold colour.

---

[337] Conversation with Graham Jones, London, 2001.

[338] Conversation with Donald Buttress, Westminster Abbey, London, 2001.

[339] Conversation with Graham Jones, Westminster Abbey, London, 2001.

[340] Two windows were installed in 1994 the second pair, to be carried out in warmer colours, are still waiting for appropriate sponsors. Conversation with Graham Jones, Westminster Abbey, 2001.

[341] Most of Jones' designs are constructed by specialist studios such as Derix in Germany, but for Westminster Abbey he decided to execute the whole project himself with the assistance of Patrick and John Reyntiens. The venture was enormously labour intensive taking over a year to complete.

Although Jones carefully debated his choice of glass – selecting the flashed navy from six different blues - during construction Patrick Reyntiens advised him to darken the top panel still further; advice which he chose to ignore. However, once installed he was actually dissatisfied with the depth of the blue and wished he had deferred to the experience of the older man. Conversation with Graham Jones, Westminster Abbey, London, 2001.

[342] Discussion with Historian Michael Peover at Strawberry Hill, Twickenham, London, August 2001.

[343] Conversation with Dr. F. E. Brown, Manchester University School of Architecture, 2002.

[344] Conversation with students from the Architectural Glass Course, Swansea College of Art, Wales, 2000.

[345] Powers, A. *Nature in Design.* London, Conran Octopus, 1999.

[346] Harrod, T. *The Crafts in Britain in the Twentieth Century.* New Haven, Yale University Press, 1999.

Bibliography

Albers, J. *Interaction of Color.* New Haven, Yale University Press, 1963.

Alberti, L. A. Translated by J Spencer, *On Painting.* New Haven, Yale University Press, 1966.

Anderson, M. *Drama & Imagery in English Medieval Churches.* Cambridge, Cambridge University Press, 1963.

Anderson, W. *The Rise of the Gothic.* London, Hutchinson University Press, 1985.

Angus, M. *Modern Glass in British Churches.* London, Mobray, 1984.

Archer, M. *English Stained Glass.* London, Her Majesty's Stationary Office for the V & A, 1985.

Atterbury, P. & Wainwright, C. *Pugin A Gothic Passion.* New Haven, Yale University Press, 1994.

Baker, H. *Architecture and Personalities.* London, Country Life Ltd., 1994.

Baljen, J. *Theo van Doesberg.* London, Studio Vista, 1974.

Bann, S and Allen, W. eds. *Interpreting Contemporary Art.* London, Reaktion, 1991.

Bann, S. 'Shrines, Utopias, Gardens', *New Literary History.* Autumn, 1994.

Bann, S. *'Towards a New Art: abstract art – a language?* London, Tate Gallery, 1980.

Baudelaire, C. *The Painter of Modern Life and Other Essays.* Oxford, Phaidon Press, 1994.

Baxandall, M. *Painting and Experience in 15th-Century Italy.* Oxford, Oxford University Press, 1964.

Bazaine, J. *Le Vitrail Français.* Edition Deux Mondes, 1958.

Beadle, R. ed. *English Medieval Theatre.* Cambridge, Cambridge University Press, 1994.

Bender, R. *Two Approaches to Stained Glass.* Unpublished M.Phil. thesis, Swansea Institute of Art, 1985.

Benezra, N. *Josef Albers A Retrospective.* New York, Guggenheim Museum, 1988.

Benjamin, W. *Illuminations: The Work of Art in the Age of Mechanical Reproduction.* Harcourt, Brace & World Inc., 1968.

Berger, J. *Ways of Seeing.* London, Penguin Books, 1973.

Besset, M. *The Twentieth Century.* London, Herbert Press, 1988.

Betjeman, J. *John Piper.* London, Penguin Books, 1944.

Bindman, D. *Blake as an Artist.* Oxford, Phaidon, 1977.

Blotkamp, C. et al — *De Stijl: the Formative Years*. Massachusetts, Massachusetts Institute of Technology, 1992.

Bony, J. — *The English Decorated Style*. Oxford, Phaidon, 1979.

Bowe, N.G. — *The Life and Works of Harry Clarke*. Dublin, Irish Academic Press, 1989.

Brett, D. — *C R Mackintosh the Poetics of Workmanship*. London, Reaktion, 1992.

Brown, S & O'Connor, D. — *Medieval Craftsmen*. London, British Museum Press. 1991.

Brown, S. & O'Connor, D. — *Glass Painters*. London, British Museum Press, 1991.

Bryson, N. — *Word and Image: French Painting of the Ancien Regime*. Cambridge, 1985.

Bryson, N. — *Looking at the Overlooked*. London, Reaktion Books, 1995.

Bryson, N. — 'French Painting of the Ancien Regime', *Word and Image*. Cambridge 1985.

Burne-Jones, G. — *Memoirs of Edward Coley Burne-Jones*. London, Macmillan Press, 1904.

Butcher, F. & Albers, J. — *Despite Straight Lines*. New Haven, Yale University Press, 1961.

Button, V. — *The Aesthetic of Decline: Neo-Romanticism c1935 to 1956*. Unpublished PhD thesis, Courtauld Institute of Art, University of London, 1991.

Camille, M. — 'Seeing and Reading: some visual implications of medieval literacy and illiteracy', *Art History*. Vol. VIII, 1985.

Camille, M. — *Image on the Edge*. London, Reaktion, 1991.

Campbell, L. — *Coventry Cathedral Art and Architecture in Post War .Britain*. Oxford, Clarendon Press, 1966.

Campbell, L. — *To Build a Cathedral*. Oxford, Clarendon Press, 1966.

Carew-Cox, A. & Walters, W. — *Edward Burne-Jones' Stained Glass in Birmingham Churches*. Birmingham, Alastair Carew-Cox 1998.

Caviness, M. — *The Early Stained Glass of Canterbury Cathedral*. Princeton University Press, 1977.

Caviness, M. — 'Bible Stories in Windows: Were the Bibles for the Poor? in Levy, B. 'The Bible in the Middle Ages: Its Influence of Literature and Art', *Medieval and Renaissance Texts and Studies*. 1974.

Chaucer, G. ed. Crawley, A. — *Canterbury Tales*. London, Everyman Publishing, 1994.

Clark, B. — *Architectural Stained Glass*. London, John Murray, 1976.

Clark, T.J. *Image of the People.* London, Thames and Hudson, 1970.

Clarke, B. *Glass-Light Exhibition Catalogue.* 1978.

Clarke, K. *The Gothic Revival.* London, Hutchinson, 1962.

Cobley, P. & Jansz, L. *Semiotics.* Cambridge, Icon Books, 1997.

Cogniat, R. *Chagall.* Florence, Uffizi Gallery.

Collins, J. *The Omega Workshops.* London, 1983.

Compton, S. *Chagall.* New York, Harry N Abrams, 1985.

Compton, S. *British Art in the 2oth Century: the Modern Movement.* London, Lund Humphries, 1987.

Connick, C. *Adventures in Light and Colour.* London, G.G. Harrop & Co., 1937.

Connor, S. *Postmodernist Culture: An Introduction to Theories of the Contemporary.* Oxford, Basil Blackwell, 1989.

Cork, R. *Art Beyond the Gallery.* New Haven and London, Yale University Press, 1985.

Cormack, P. *The Stained glass of Christopher Whall.* Boston, Trustees of the Public Library of the City of Boston, 1999.

Cormack, P. 'The Stained Glass of Christopher Whall' in Connick, C. 'Christopher Whall, Artist-Craftsman', *Journal of the American Institute of Architects.* June, 1925.

Cotton W. ed. Reynolds, J. *Notes on Pictures; Rev W. Mason's Observations on Sir Joshua's Methods of Colouring.* London, John Russell Smith, 1859.

Crewe, S. *Stained Glass in England 1180-1540.* London, Royal Commission on the Historical Monuments of England, 1987.

Curtis, W. *Modern Architecture since 1900.* Oxford, Phaidon, 1987.

D' Offay, A. *The Omega Workshops.* London, de Offay Gallery, 1984.

Davidson, C. *Drama and Art.* London, The Medieval Institute, 1977.

Day, L. *Stained Glass.* London, His Majesty's Stationary Office for the V & A, 1913.

De Hamel, C. *A History of Illuminated Manuscripts.* Oxford, Phaidon Press, 1986.

Derrida, J. (translated by Bennington, G. and McLeod, I.) *The Truth in Painting.* Chicago and London, University of Chicago, 1987.

Dixon, R & Muthesius, S. *Victorian Architecture.* London, Thames & Hudson, 1978.

Douglas, D.R. *Figure Painting in Oil.* London, Pitman, 1979.

Dube, W. D.	*The Expressionists.* London, Thames and Hudson, 1977.
Duval, J. L.	*History of Abstract Painting.* London, Hazan, 1989.
Eco, U.	*A Theory of Semiotics.* Bloomington, Indiana University Press, 1976.
Eco, U.	*Travels in Hyper-Reality.* London, Picador, 1986.
Ehrlich, D.	*The Bauhaus.* London, Magna Books, 1991.
Ehrlich, D.	*Frank Lloyd Wright Glass.* Hoo nr Rochester, Grange Books, 2000.
Ellis, D. & Mills, H.	*D H Lawrence's Non-Fiction: Art, Thought & Genre.* Cambridge, Cambridge University Press, 1988.
Engen, L. ed.	*Le Verre en Belgique: des origins à nos jours.* Liége, Liége Musées d'Archéologie et d'Arts Décorative, 1992.
Farrar, F. W.	*The Painted Glass in Canterbury Cathedral.* Aberdeen, Aberdeen University Press. 1897.
Faulkner, P. ed.	*William Morris: The Critical Heritage.* Exeter, University of Exeter Press, 1998.
Favier, J.	*The World of Chartres.* London, Thames & Hudson, 1990.
Fernie, E.	*Art History and its Methods.* Oxford, Phaidon Press, 1995.
Ferrey, B.	*Recollections of Pugin .* London, The Scholar Press, 1978.
Firmin-Didot, P. ed.	*Lumières en Éclat: Art et espace de lumière du 21e siècle.* Chartres, Centre International du Vitrail, 2000.
Fox Webber, N. Overy, P. Craig-Martin, M.	*Joseph Albers.* London, South Bank Centre, 1994.
Fox-Webber, N. et al.	*Joseph Albers: a Retrospective.* New York, Guggenheim Museum, 1988.
Frampton, K.	*Modern Architecture: A Critical History.* Thames & Hudson, 1985.
Francina, F. et al.	*Modernity & Modernism.* New Haven, Yale University Press, 1994.
Freedberg, D.	*Iconoclasts and their Motives.* Maarsden, Gary Schwartz, 1985.
Fry, R.	*Vision & Difference.* London, Chatto & Windus, 1929.
Fuller, P.	*Art and Psychoanalysis.* London, Writers and Readers, 1980.
Gage, J.	*Colour and Culture.* London, Thames and Hudson, 1993.
Garlake, M.	*New Art New World: British Art in Post War Society.* New Haven, Yale University Press, 1998.
Goldwater, R.	*Primitivism in Modern Art.* Massachusetts, Harvard University Press, 1986.
Gombrich, E.	*The Story of Art.* Oxford, Phaidon Press, 1992

Gowing, L. *Matisse.* London, Thames and Hudson, 1979.

Greer, G. *The Obstacle Race.* New York, Secker & Warburg, 1973.

Grigson, G. *Samuel Palmer: the Visionary Years.* London, 1947.

Haftmann, W. *The Mind and Work of Paul Klee.* London, Faber and Faber, 1967.

Hagstrum, J. H. *William Blake Poet and Painter.* Chicago & London, University of Chicago, 1964.

Hall, J. *Dictionary of Signs and Symbols in Art.* London, Murray, 1974.

Hanks, D. *The Decorative Designs of Frank Lloyd Wright.* London, Studio Vista, 1979.

Harrison, C. *Modernity and Modernism: French painting in the 19the Century.* Milton Keynes, Open University Press, 1993.

Harrison, C. *English Art and Modernism 1900-1939.* Indiana University Press, 1981.

Harrison, M. *Victorian Stained Glass.* London, Barrie & Jenkins, 1980.

Harrod, T. *The Crafts in Britain in the 20th Century,* New Haven, Yale University Press, 1999.

Harvey, C. and Press, J. *William Morris, Design and Enterprise in Victorian Britain.* Manchester, Manchester University Press, 1991.

Harvey, J. *The Master Builders: Architecture of the Middle Ages.* London, McGraw-Hill, 1972.

Harvey, J. *English Medieval Architects.* London, Batsford, 1984.

Harvey, J. *The Cathedrals of England and Wales.* London, Batsford, 1974.

Harvey, J. *The Perpendicular Style.* London, Batsford, 1978.

Hayes, D. *Ervin Bossanyi The Splendour of Stained Glass.* Canterbury, Friends of Canterbury Cathedral, 1965.

Henig, M. *A Handbook of Roman Art.* Oxford, Phaidon Press, 1983.

Henig, M. & Munby, J. *Roman Life & Art in Britain.* London, British Archaeological Reports, 1977.

Hewison, R. *In Anger; Culture in the Cold War, 1945-60.* London, Weidonfeld and Nicholson, 1970.

Hilles, F. ed. *The Letters of Sir Joshua Reynolds.* Cambridge, Cambridge University Press, 1929.

Hobshawn, E and Ranger, T. eds. *The Invention of Tradition.* Cambridge, Cambridge University Press, 1983.

Holiday, H. *Stained Glass as an Art.* London, Macmillan Press, 1896.

Holiday, H.	'Modernism in Art', *The Builder.* March, 1890.
Hollander, H.	*Early Medieval Art.* London, Weidenfelf & Nicholson, 1974.
Honour, H.	*Romanticism.* London, Pelican Books, 1984.
Horne, D.	*The Great Museum: A Re-Presentation of History.* London and Sydney, Photo Press, 1984.
Howard, J.	*Art Nouveau.* Manchester, Manchester University Press, 1996.
Howard, R.T.	*Ruined and Rebuilt: the Story of Coventry Cathedral.* Coventry, Coventry Cathedral, 1968.
Hughes, R.	*The Shock of the New.* London, Thames and Hudson, 2000.
Ingrams, R.	*Piper's Places.* London, Chatto and Windus, 1983.
Itten, J.	*Design and Form.* London, Thames and Hudson, 1967.
James, J.	*The Masons who built a Legend.* London, Hafner, 1982.
Jencks, C.	*The Language of Post Modern Architecture.* London, Academy Editions, 1991.
Jenkins, J.	*Greek & Roman Life.* London, British Museum, 1991.
Kagan, A.	*Paul Klee Art and Music.* New York, Cornell University Press, 1983.
Kandinsky, W. translated by Sadlier, M.	*Concerning the Spiritual in Art.* New York, Cornell University Press, 1988.
Kemal, S.	*Kant and Fine Art: An Essay on Kant and the Philosophy of Fine Art and Culture.* Oxford, Clarendon Press, 1986.
Kidson, P. Murray, P. & Thompson, P.	*A History of English Architecture.* Harmondsworth, Penguin, 1979.
Klein, D.	*Glass A Contemporary Art.* London, Collins, 1989.
Knowles, D.	*The Monastic Order in England 943-1216.* Cambridge, Cambridge University Press, 1940.
Le Couteur, J. D.	*English Medieval Stained Glass.* Canterbury, SPCK, 1978.
Lee, L.	*The Appreciation of Stained Glass.* Oxford, Oxford University Press, 1977.
Lee, L. Seddon, G. Stephens, F.	*Stained Glass.* London, Spring Books, 1976.
Levy, M.	*The Human Form in Art: The Appreciation and Practice of Figure Drawing and Painting. London, Oldhams Press, 1961.*
Lincoln, E.	*The Medieval Legacy.* London, Macgibbon & Kee, 1961.
Ling, R.	*Roman Painting.* Cambridge, Cambridge University Press, 1991.

Lloyd, A. ed.	*The Painter in Glass.* Cardiff, Gomer Press, 1992.
MacGregor N.	*The Image of Christ.* London, National Gallery, 2000.
Macleod, R.	*Charles Rennie Mackintosh architect & artist.* London, Collins, 1983.
Maculay, J.	*The Gothic Revival 1745-1845.* Glasgow & London, Blackie & Son, 1975.
Maitland, S. ed.	*Very Heaven: Looking Back at the 1960's.* London, Virago Press, 1988.
Marks, R.	*Stained Glass in England during the Middle Ages.* London, Routledge, 1993.
Martindale, A.	*Gothic Art.* Oxford, Oxford University Press, 1985.
McCarthy, F.	*William Morris: A Life for our Time.* London, Faber & Faber Ltd., 1994.
McKean, M.	*The Lost Treasures of Louis Comfort Tiffany.* New York, Doubleday, 1980.
McLuhan, M.	*The Gutenberg Galaxy.* London, Routledge & Kegan Paul, 1962.
Meili, G.	*Matisse.* London, Thames and Hudson, 1967.
Michael, W & Fox, C. J. eds.	*Wyndham Lewis on Art: Collected Writings.* London, Thames and Hudson, 1971.
Moor, A.	*Contemporary Stained Glass.* London, Mitchell Beazley, 1989.
Moor, A.	*Architectural Glass Art. London, Mitchell Beazley, 1997.*
Moszynska, A.	*Abstract Art.* London, Thames and Hudson, 1995.
Mukerji, C. & Schudson, M.	*Rethinking Popular Culture.* Berkeley, University of California, 1991.
Naylor, G.	*The Arts & Crafts Movement.* Massachusetts, Massachusetts Institute of Technology, 1971.
Naylor, G.	*The Bauhaus Reassessed.* London, Herbert, 1985.
Nead, L.	*Female Nude: Art, Obscenity and Sexuality.* London and New York, Routledge, 1995.
Neervoot-Moore, M.	*History of All Saints Church, Tudeley.* (sl), Addax, 1994.
Norris, R.	*The Stained Glass in Durham Cathedral.* Durham, Dean & Chapter, 1985.
Nuttgens, P. ed.	*Mackintosh and his Contemporaries.* London, John Murray, 1988.
Osborne, J.	*John Piper & Stained Glass.* London, Alan Sutton, 1993.
Osbourne, J.	*Stained Glass in England.* London, Alan Sutton, 1981.

Pace Gallery. *Saul Steinberg: Still Life and Architecture.* New York, The Pace Gallery, 1982.

Panofsky, E. *Studies in Iconology: Humanistic Themes in the Art of the Renaissance.* Oxford, Oxford University Press, 1939.

Panofsky, E. *Gothic Architecture and Scholasticism.* London, Penguin Books, 1985.

Parry, L. *William Morris and the Arts and Crafts Movement.* London, Random House, 1989.

Pevsner, N. *Academies of Art: Past and Present.* Cambridge, Cambridge University Press, 1940.

Pevsner, N. *The Englishness of English Art.* London, Penguin Books, 1955.

Pevsner, N. *Pioneers of Modern Design.* London, Penguin Books, 1958.

Pfaff, K. *Ludwig Schaffrath,* Krefeld, Scherpe Verlag, 1977.

Piper, J. *A Painter's Camera.* London, Tate Gallery, 1987.

Piper, J. *Stained Glass: Art or Anti-Art.* London, Studio Vista, 1968.

Podro, M. *The Critical Histories of Art.* New York, Yale University Press, 1982.

Pollitt, J. *The Art of Rome.* Cambridge, Cambridge University Press, 1983.

Pollock, G. *Vision and .Difference.* London, Routledge, 1994.

Powell, H. 'Ervin Bossanyi: An Appreciation', *British Society of Master Glass Painters Journal. Vol. XV,* London, 1974-5.

Powers, A. *Nature in Design.* London, Conran Octopus, 1999.

Rackham, B. *The Stained Glass of Canterbury Cathedral.* Canterbury, SPCK. 1957.

Ramage, N. & A. *Roman Art.* London, Laurence King, 1995.

Reynolds, S.D.C. 'John Trinnick-Master of Stained Glass' *BSMGP Journal.* Vo. XXII, London, 1991.

Reyntiens, P. *The Technique of Stained Glass.* London, Batsford, 1967.

Reyntiens, P. *The Beauty of Stained Glass.* London, Herbert, 1974.

Richter, G. *A Handbook of Greek Art.* Oxford, Phaidon Press, 1994.

Ricke, H. 'New Glass in Germany', *Exhibition Catalogue.* Düsseldorf, 1983.

Roh, F. *German Painting in the Twentieth Century.* London and New York, Routledge, 1968.

Rose, B. *Art as Art: the selected writings of Ad Reinhardt.* Berkeley, University of California, 1975.

Rothenberg, P. *Creative Stained Glass.* London, Crown. 1973.

Rowlands, R. *A Bauhaus Source Book.* Oxford, Phaidon Press, 1990.

Ruhemann, H. *The Cleaning of Paintings: Problems and Potentialities,* London, Faber & Faber, 1968.

Ruskin, J. *The Two Paths.* London, Cassell & Co., 1909.

Schnell, H. *Twentieth Century Church Architecture in Germany.* London, 1974.

Service, A. *Edwardian Architecture.* London, Thames & Hudson, 1988.

Sewter, A. C. *The Stained Glass of William Morris & his Circle.* Berkeley, University of California, 1974.

Shone, R. *Bloomsbury Portraits.* Oxford, Phaidon Press, 1976.

Silverman, D. *L 'Art Nouveau in Fin de Siècle France.* Berkeley, University of California, 1989.

Skinner, G. McKearn, H. *American Glass.* London, Crown, 1993.

Smith, P. *Interpreting Cèzanne.* London, Tate Publishing, 1996.

Southern, R.W. *The Making of the Middle Ages.* London, Hutchinson University Press, 1970.

Spalding, F. *British Art since 1900.* London, Thames & Hudson, 1986.

Stangos, N. *Concepts of Modern Art.* London, Thames and Hudson, 1994.

Stanton, P. *Pugin.* London, Thames and Hudson, 1971.

Stanton, P. *Welby Pugin and the Gothic Revival.* Unpublished PhD thesis, London, University of London, 1950.

Stocks, J. *Architecture and Personalities.* London, Country Life Ltd., 1994.

Stookey, S.D. 'Photo-Sensitive Glass: A New Photographic Medium' *Industrial and Engineering Chemistry.* Vol.41, April, 1949.

Storey, M. J, *Cultural Theory & Popular Culture,* Hemel Hempstead, Prentice Hall/Harvester Wheatsheaf, 1997.

Strong, D. *Roman Art.* New Haven, Yale University Press, 1995.

Swash, C. *Stained Glass Walks in London.* Malvern, Malvern Arts Press, 2001.

Tallack, D. *Twentieth-Century America: The Intellectual and Cultural Context.* Harlow, Longman Group, 1991.

Taylor, N. et al. *Glass, Light & Space.* London, The Crafts Council, 1997.

Thompson, P. *The Work of William Morris.* London, Quartet Books, 1977.

Troy, N.	*The de Stijl Environment*: Massachusetts, Massachusetts Institute of Technology, 1983.
Twombly, R. C.	*Frank Lloyd Wright: an Interpretative Biography.* New York, Harper, 1973.
Unknown author.	'Gerald Moira's Stained Glass Designs', *The Studio.* Vol. 18, October, 1899.
Unknown author.	*Ornamental Glass Bulletin.* December, 1907.
Varnedoe, K. Gopnik, A.	*Modern Art and Popular Culture.* New York, Abrams, 1990.
Walker, S.	*Roman Art.* London, British Museum, 1999.
Webber-Wilson, H.	*Great Glass in American Architecture.* New York, E P Dutton, 1986.
Wees, W. C.	*Vorticism & the English Avant-Garde.* Manchester, Manchester University Press, 1972.
Wember, P.	*Heinrich Campendonk.* Krefeld, Scherpe Verlag, 1960.
Wember, P.	*Johan Thorn Prikker.* Krefeld, Scherpe Verlag, 1966.
Whall, C.	*Stained Glass Work.* London, John Hogg, 1905 & M & J Venables 1999.
Whall, C. W.	*Gloucester Lady Chapel Windows.* Privately printed, 1923.
Whitford, F.	*Kandinsky.* London, Hamlyn, 1967.
Whitford, F.	*Bauhaus.* London, Thames and Hudson, 1988.
Williams, R.	*Keywords: A Vocabulary of Culture and Society.* London, Croom Helm, 1976.
Williamson, H. R.	*Canterbury Cathedral.* London, Country Life Ltd., 1953.
Winston, C.	*Inquiry into Ancient Glass Paintings , Especially in England with Hints on Glass Painting by an Amateur.* London, John Henry Parker, 1847.
Wolheim, R.	*Painting as Art.* London, Thames and Hudson, 1987.
Woodeford, C.	*The Stained Glass of New College Oxford.* Oxford, Oxford University Press, 1951.
Wright, F.L.	In the Cause of Architecture', *The Architectural Record.* October, 1928.
Wright, F.L.	*An Autobiography.* London, Houghton, 1976.
Yorke, M.	*The Spirit of Place.* London, Constable, 1988.

Glossary

Abrade: to scrape away flashing to expose base glass.

Acid-etching: the process of working into the surface of the glass using acid. This technique is particularly used to cut through flashed colour.

Annealing: heating the glass and slowly cooling it to toughen and reduce brittleness.

Antique glass: the term 'antique' is applied to any handmade blown glass that copies medieval glassmakers' methods. This glass is full of imperfections, bubbles and surface marks called striations. Its uneven surface and varying thicknesses give it a distinctive character.

Backpainting: painting of exterior of glass (or adding a painted piece to the back of original glass for conservation).

Bevels: polished angles cut into the edges of glass.

Brilliant cutting: the process of grinding bevelled edges, circles, etc into the surface of the glass with a series if abrasive stones.

Cames: lengths of flexible lead or occasionally zinc, channelled either on one side or both, used to lead up pieces of glass.

Cathedral glass: Rolled and drawn glass which provides a cheap alternative to the character and beauty of antique glass.

Confetti, Fracture and Streamer: new styles of opalescent glass; each sheet a collage of striped, mottled, patterned and spotted colour variations.

Cutline: the line on the cartoon along which the glass is cut.

Dalle de verre: a technique of bonding together chunks of coloured slab glass with cement or epoxy.

Diaper: background design of regularly repeated motifs.

Dichroic: a vivid iridescent coating.

Embossing: involves the use of dilute hydrofluoric acid to burn into the surface of the glass to create obscurity.

Engraving: involves cutting into the surface of the glass with a sharp instrument, often a diamond point, or cutting a pattern with a revolving wheel (a process known as brilliant cutting).

Enamelling: mix of finely ground glass with a flux, painted and fired onto white glass-extensively used in 16th, 17th and 18th-centuries. Since then artists have been cautious in their use of fired enamel colours because these tended to produce dead colour tones and an unreflective surface. However, the availability of enamels with improved bonding properties and computer regulated kilns which make firing easier to regulate has revolutionised what is possible with enamels.

Ferramenta: iron framework in which the glass panels are set.

Flashed glass: glass that has a skin of a different colour 'flashed' onto the base glass which is most often clear.

Float glass: sheet glass manufactured according to the Pilkington method, patented in 1959, of floating liquid glass on molten tin.

Fusing: Melting different colours of glass together in a kiln at temperatures of c.760C.

Grilles: the incorporation of clear glass within a coloured glass design.

Grisaille: geometric or leaf patterns of regular design painted or leaded into white glass

Halation: the spreading of light around solid interruptions.

Laminated glass: two layers of glass bonded together by a resin.

Lustres: Iridescent metallic colours used as decoration.

Matting: heavy, even application of paint.

Muff: molten glass blown into a bubble. Before the glass solidifies the ends are cut forming a hollow cylinder or muff; both terms are used to describe this form of manufacture. When solid the cylinder is cut down its length and reheated for flattening resulting in a sheet of uneven thickness and colour which gives the glass subtle colour variations.

Pigment/Paint: mix of finely ground glass, iron or copper oxide and a flux fired onto glass.

Plating: putting two layers of glass into one lead came, usually to achieve a subtle colour or to make a repair.

Potmetal: glass coloured throughout when molten with one or more metallic oxides.

Prior's Slab or Early English glass: made by blowing molten glass into a box-shaped mould: when cold the glass was turned out and cut into four rectangular shapes that were thicker in the than at the edges, thereby creating denser colour in the middle.

Quarry: small panes of glass usually diamond shaped.

Re-bars/Saddle bars: reinforcing bars.

Rinceau: background design of flowing/curling foliage.

Sgraffito is basically a colour drawing into cement; very popular in Brussels at the beginning of the 20th century.

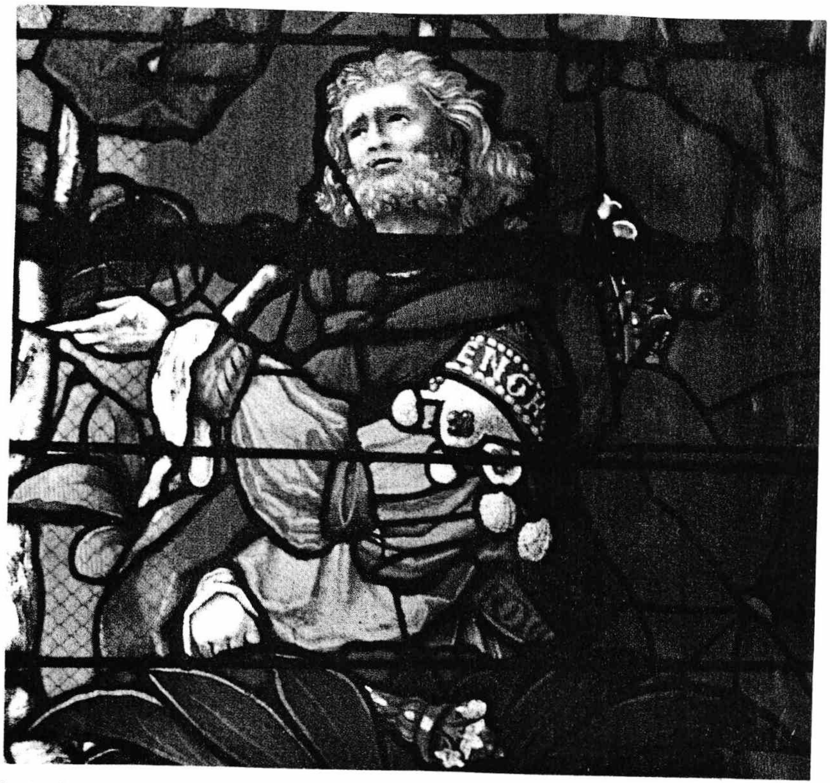
Sandblasting: a treatment whereby compressed air is used to abrade the surface of the glass.

Silicia: A compound of silicon found in sand and rocks. Glass is made primarily of silica fused at high temperatures with borates and phosphates.

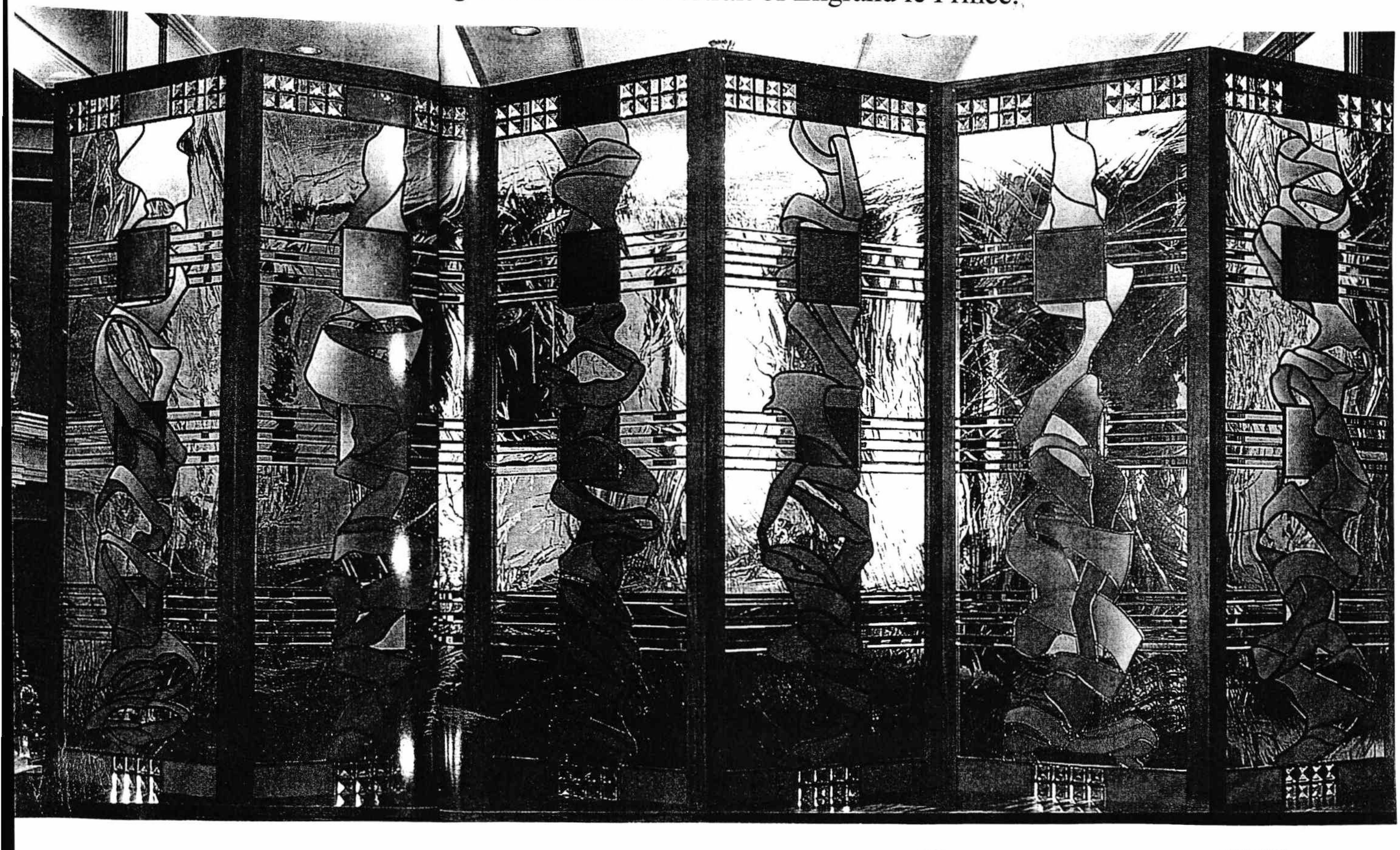
Slumping: the process of bending glass on a mould at temperatures of more than 540C

Streaky or Streaky Cathedral Glass: the inclusion of a second colour in the making of cathedral glass.

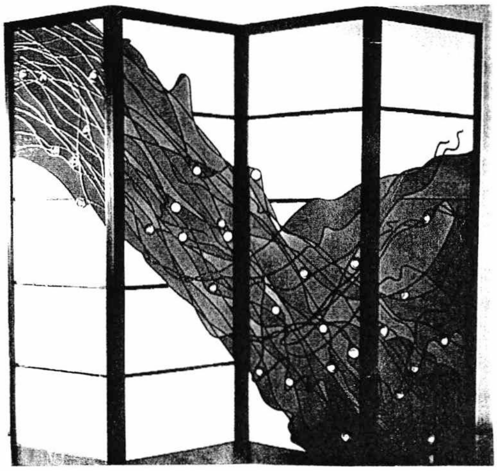
Yellow Stain (or *Silverstain*): stain ranging from pale lemon to dark amber produced by applying a solution of a silver compound to the surface of the glass which turns yellow when fired: nearly always applied to the exterior of the glass.



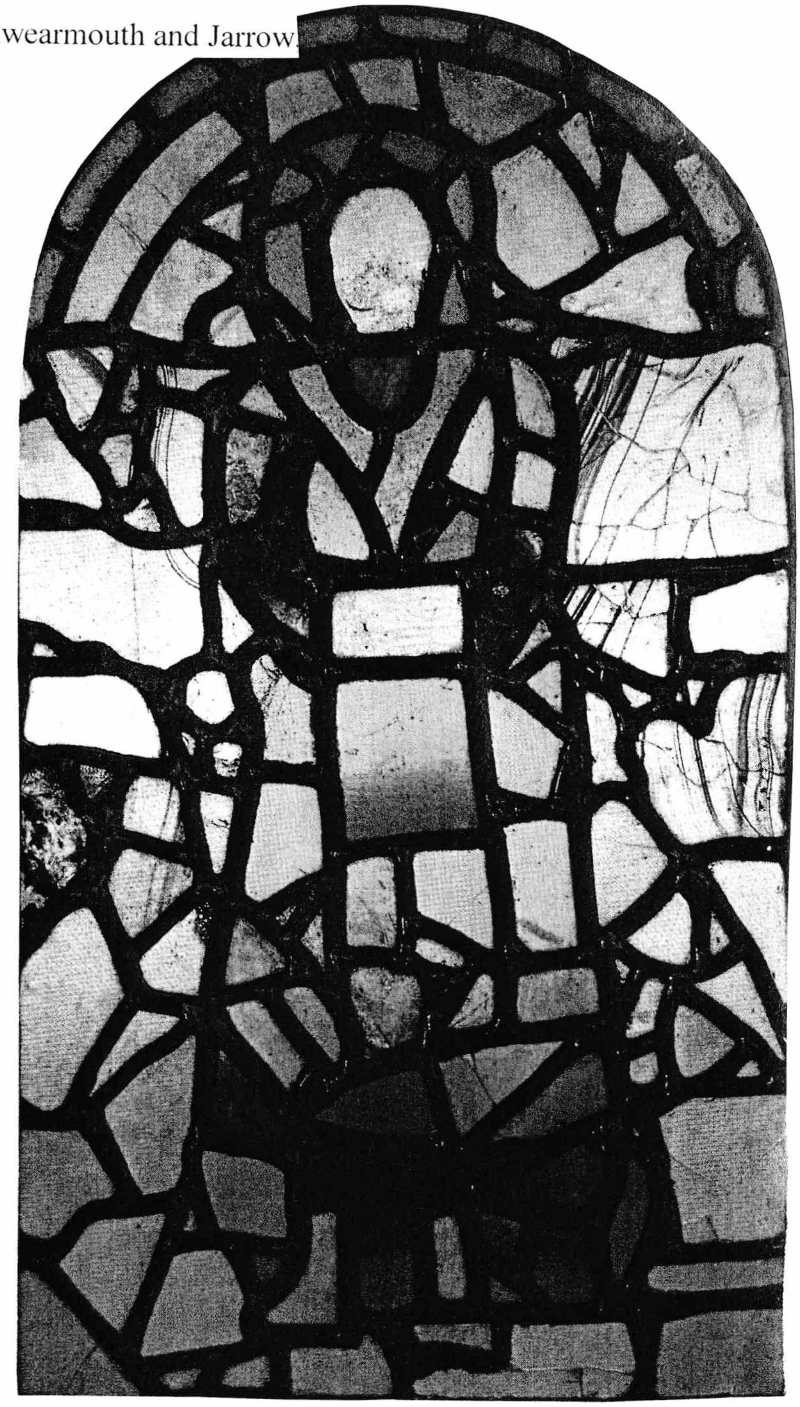
1. Engrand le Prince. Portrait of Engrand le Prince.



2. Chinks Grylls. Photograph of Glass Screens.

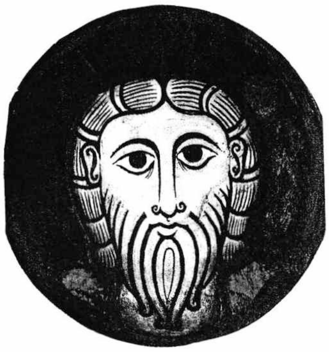


3. Windows fragments from Monkwearmouth and Jarrow. Mosaic patterned stained glass.

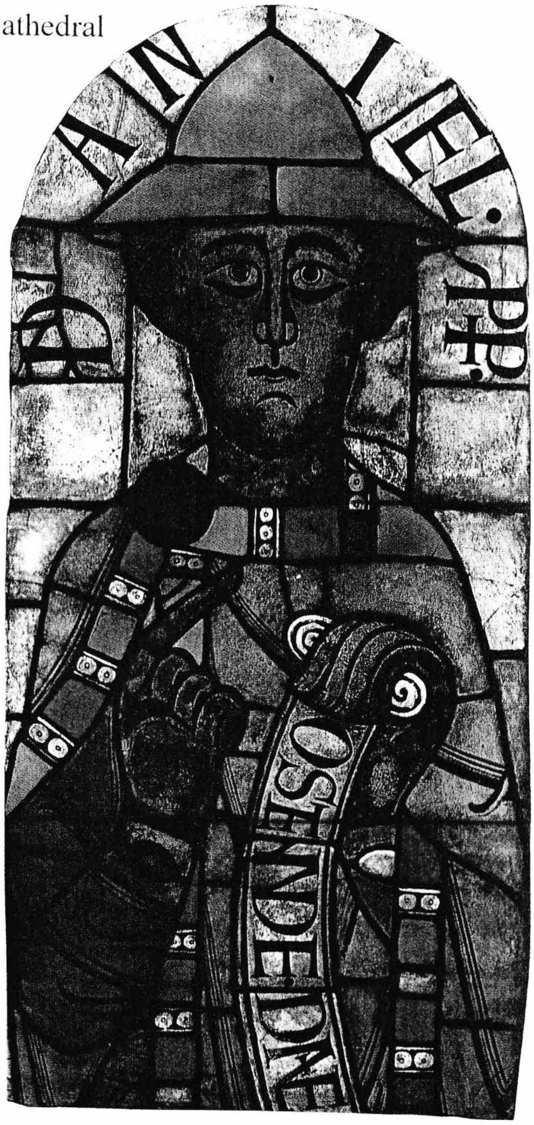


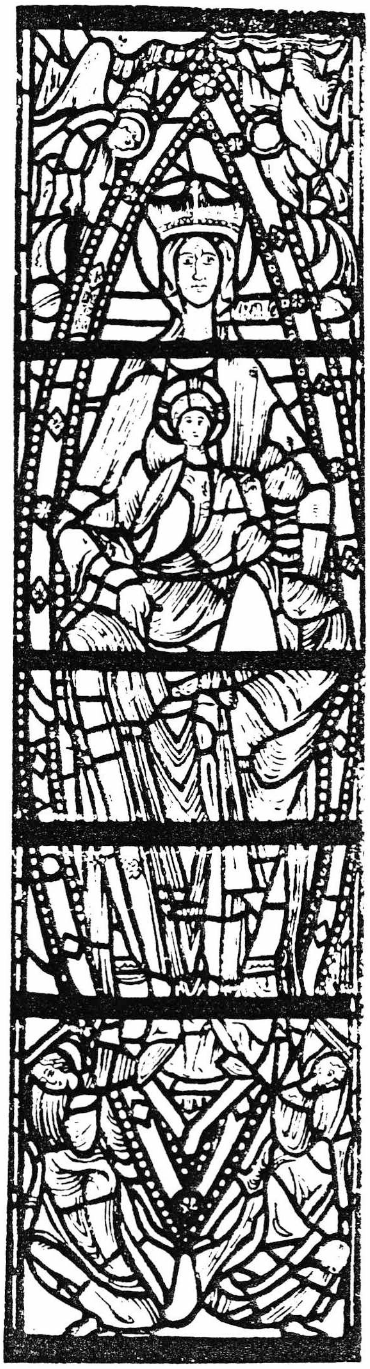
4. Benedictine Monastery window, Monte Cassino, 1090.

11th century head demonstrating the three-layered tonal painting style as outlined by Theophilus in *De Diversis Artibus*



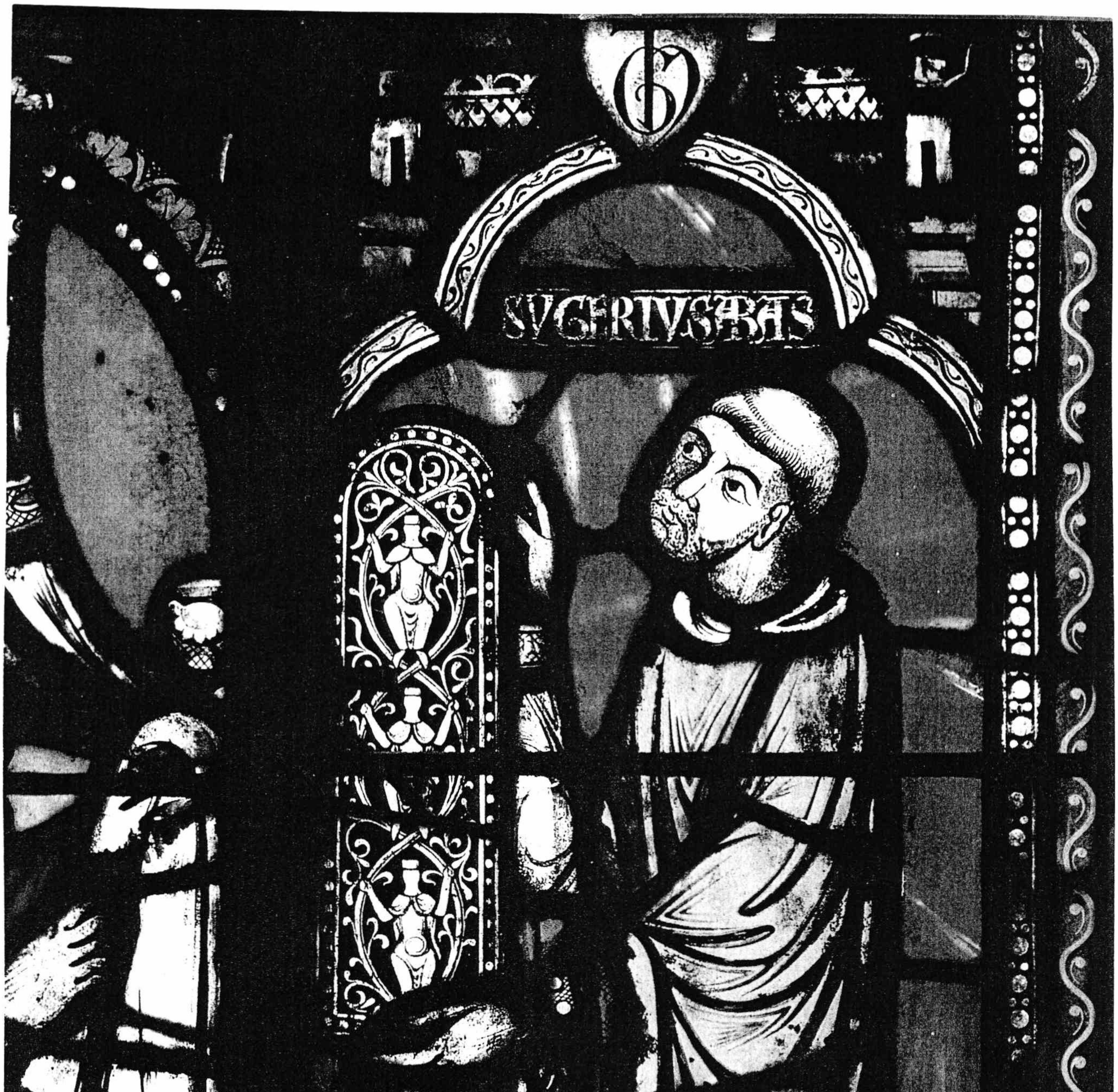
5. *The Prophet Daniel.* Clerestory window, Augsburg Cathedral


A N
IEL·
PP
OSTENDE DE

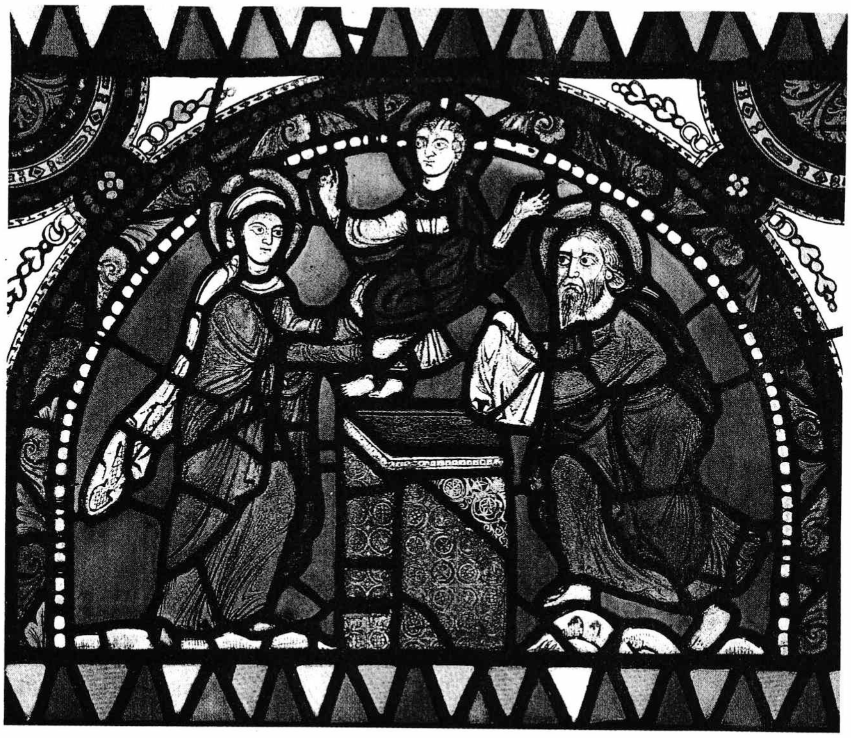


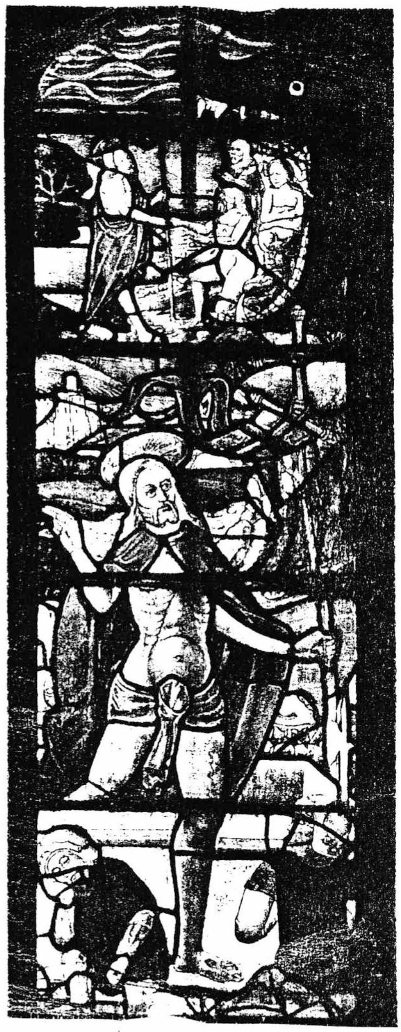
6. *Virgin and Child* window. Vendome.

7. *The Abbot Suger portrait* window.


SVGERIVS ABAS

8. *Presentation of Christ in the Temple.* Infancy window, St Denis

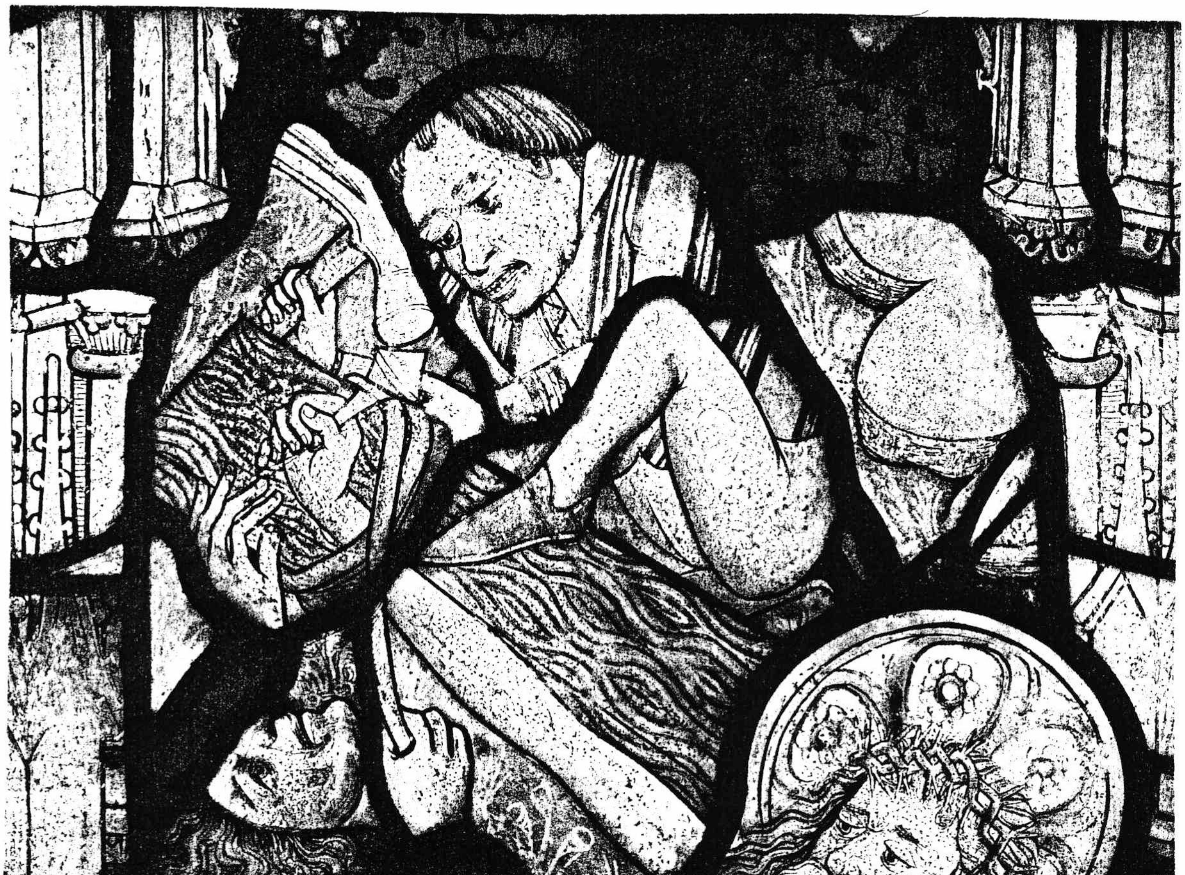




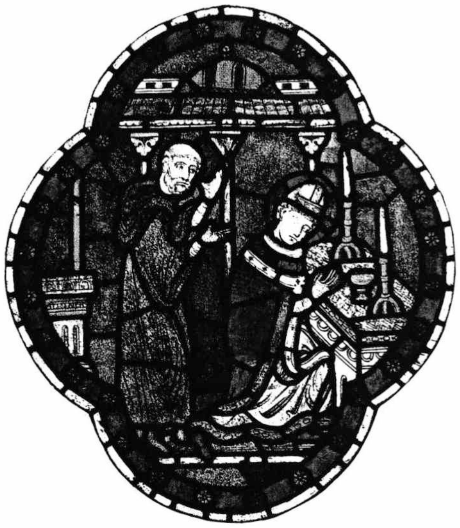
9. *Hellmouth* window.

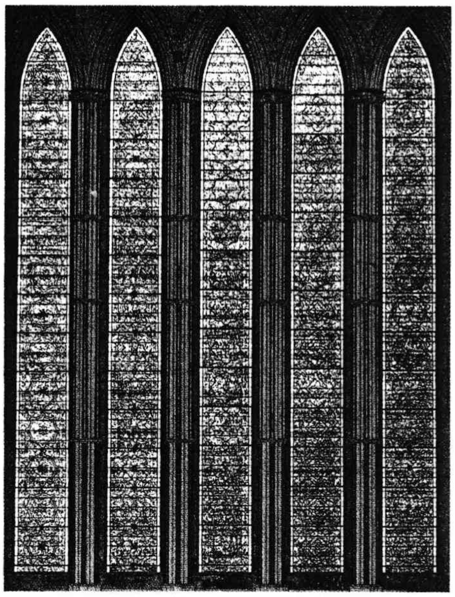
Hengrave Hall Chapel, Suffolk

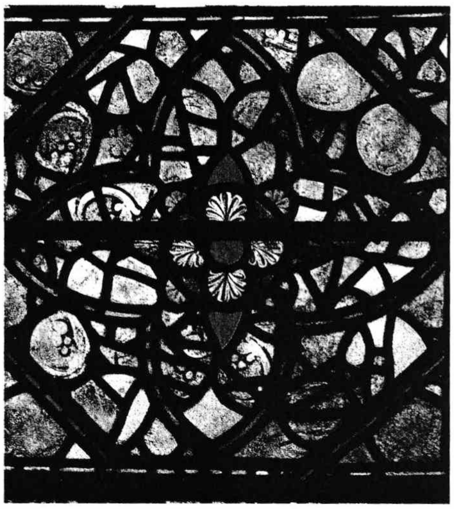
10. *Crucifixion window.* St Peter's Church, Stockerton.



11. *Miracle* panel *of St Thomas á Becket*, Canterbury Cathedral late 19th century reconstruction.



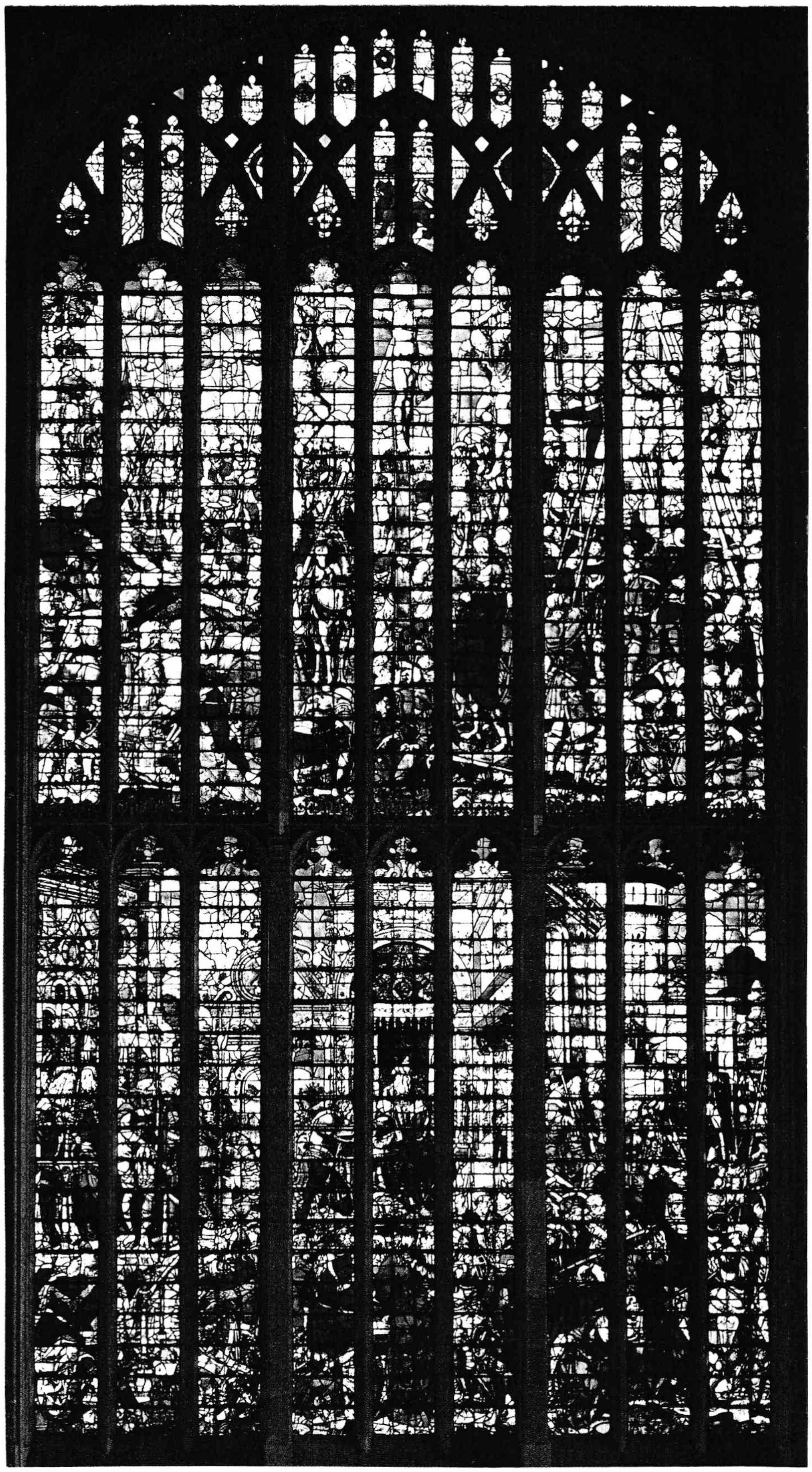




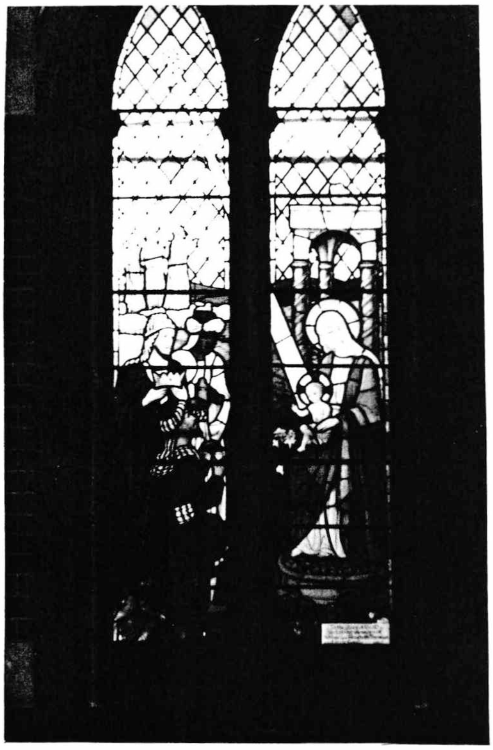
Detail

12. *Five Sisters* window. York Minster

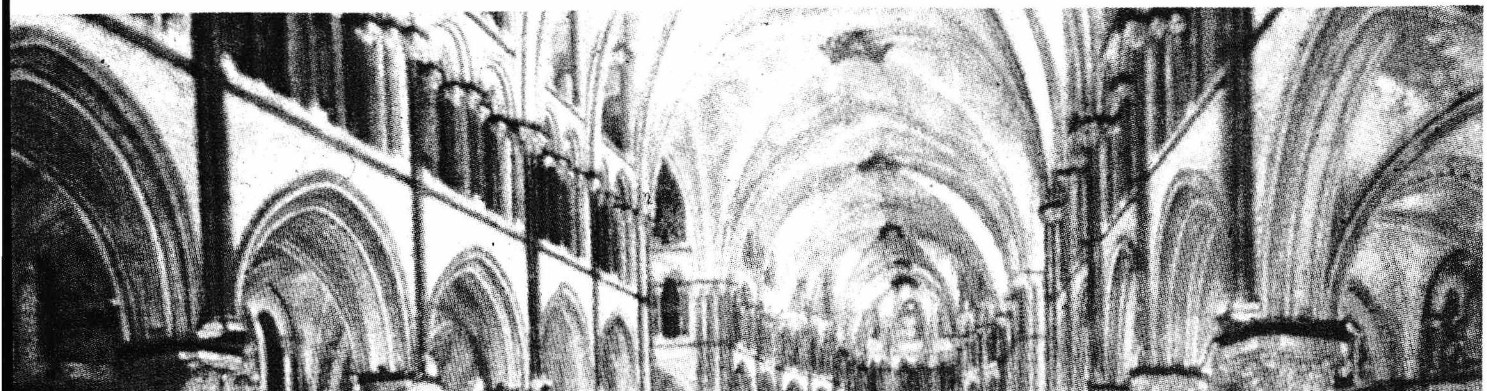
13. East window, King's College Chapel, Cambridge



14. M.F. Pawle. Photograph of Nave window, St Mary's Church, Slough

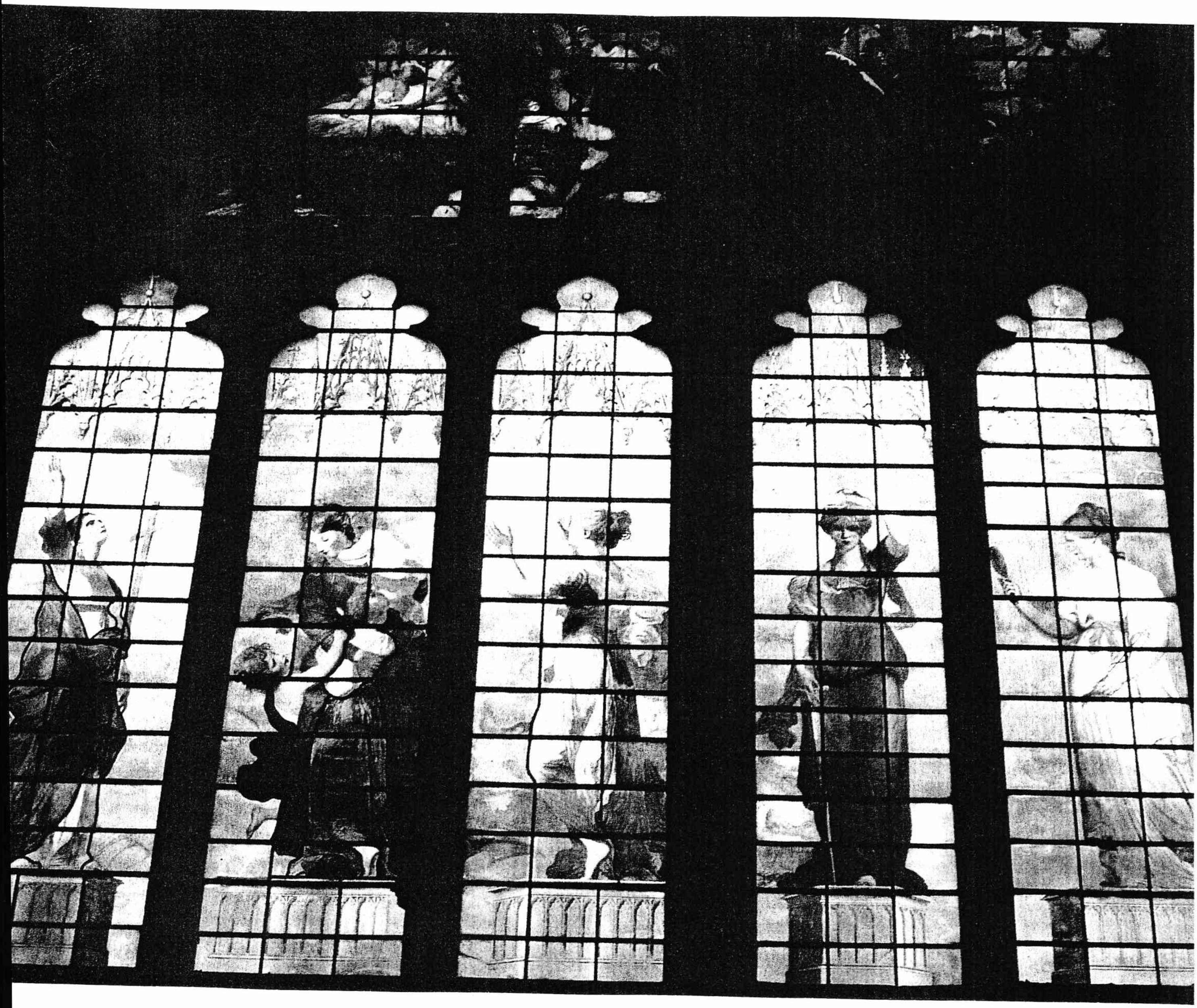


15. Thomas Johnson.

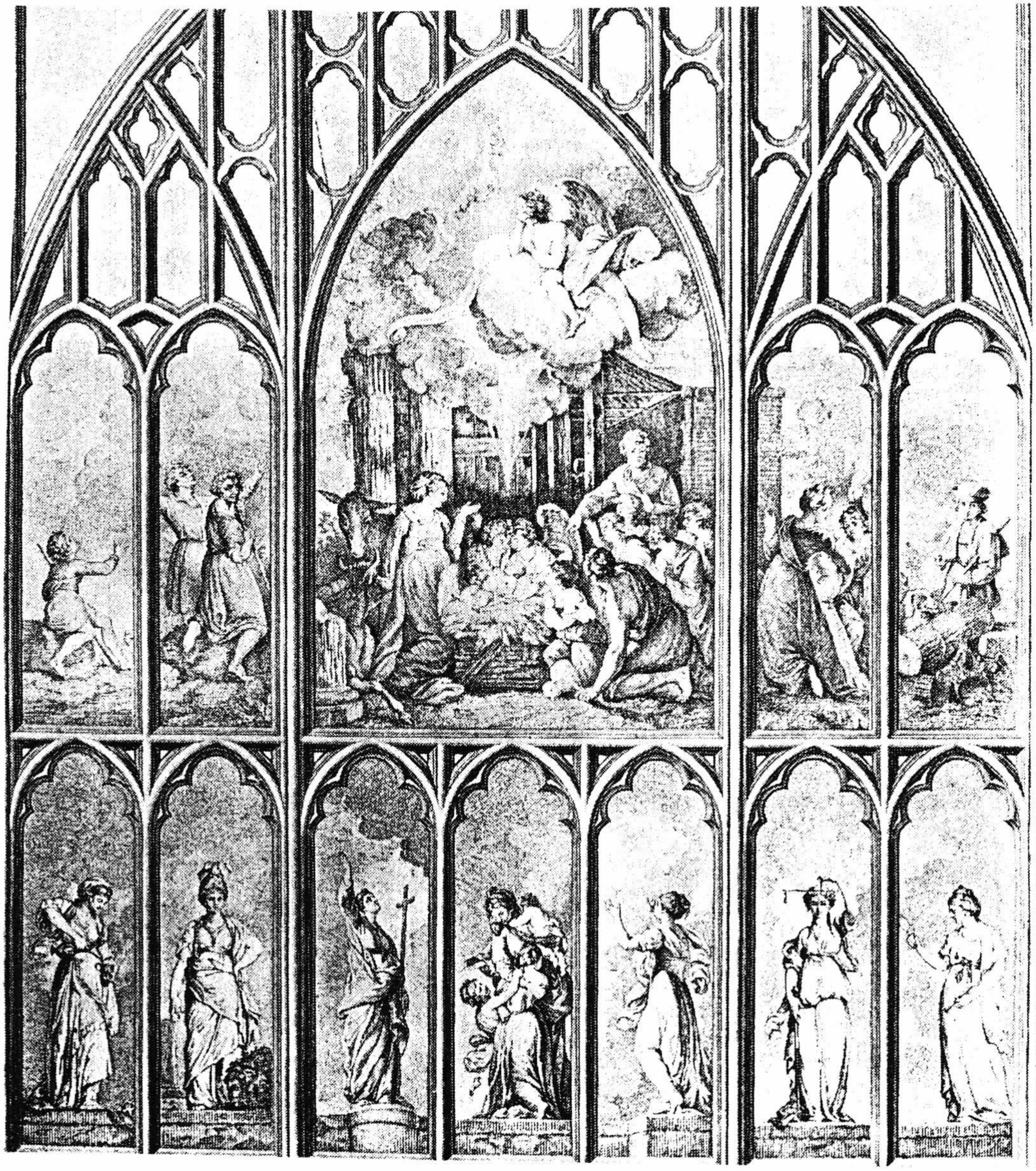


Iconoclasts destroying the South Aisle windows of Canterbury Cathedral
Dated 1657 but probably referring to the events of c.1643

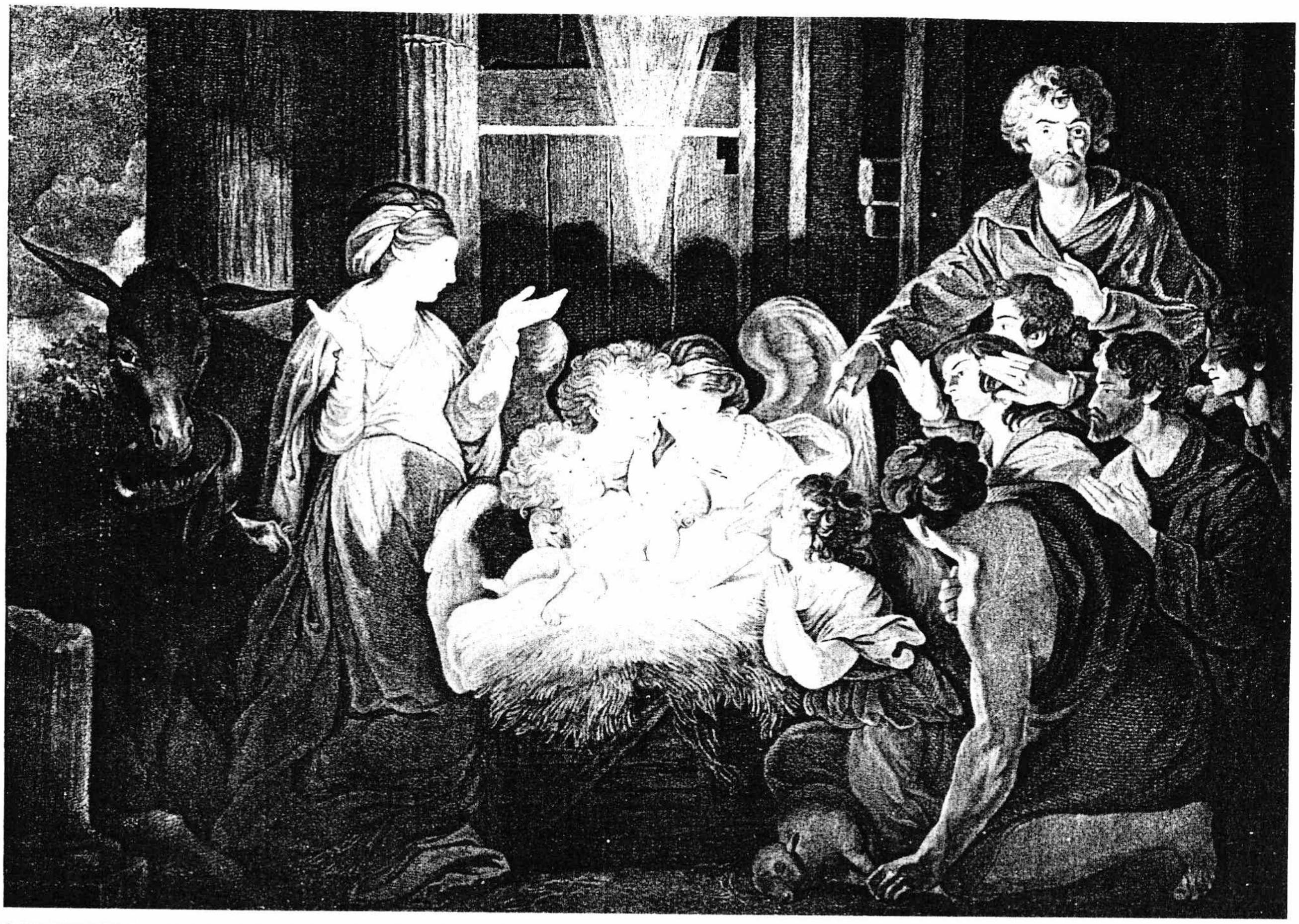
16. Joshua Reynolds. West window, New College Chapel, Oxford, 1787.



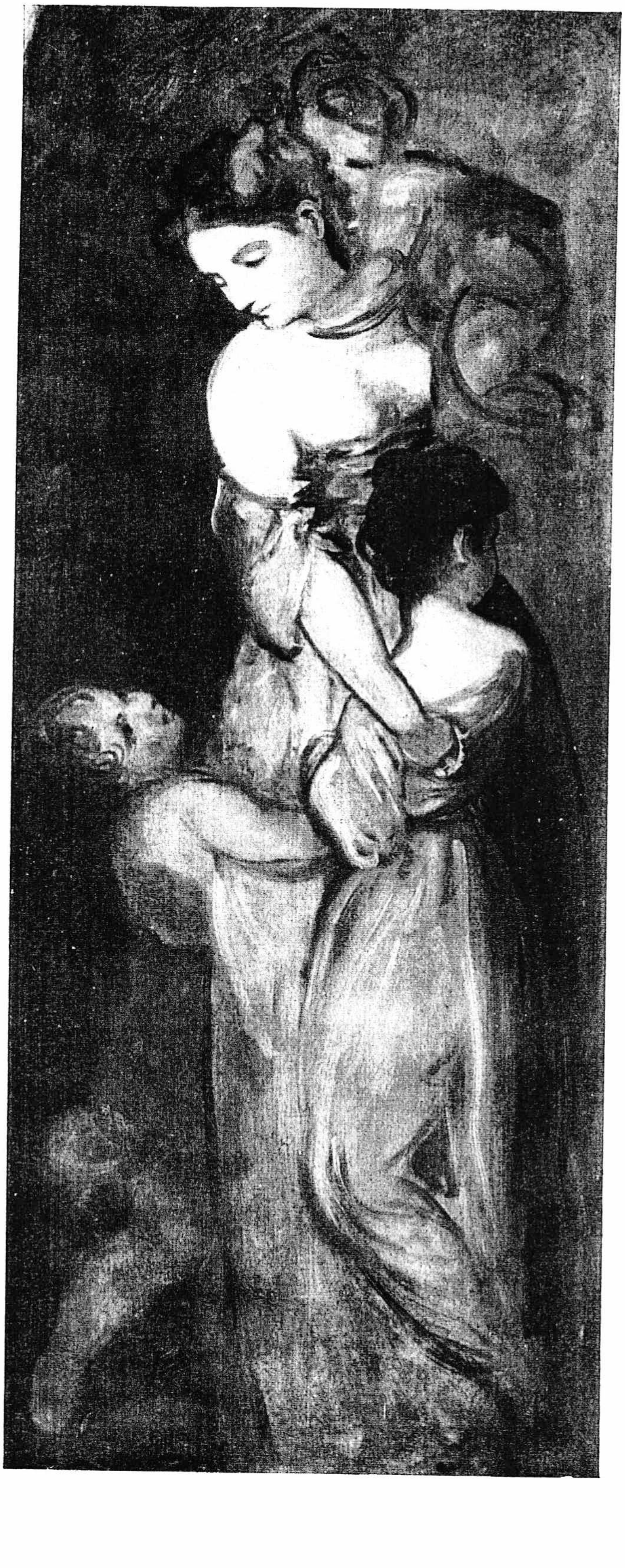
17. Earlom. West window, New College Chapel, Oxford, 1787.



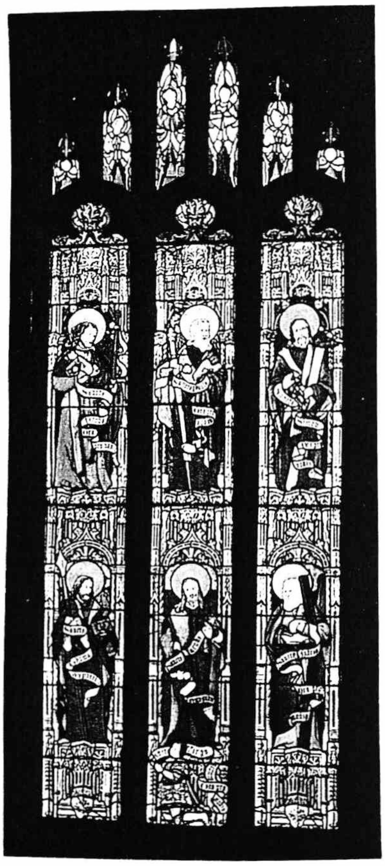
18. G.S. & I.G. Facius. *The Nativity*, New College, Oxford, undated.

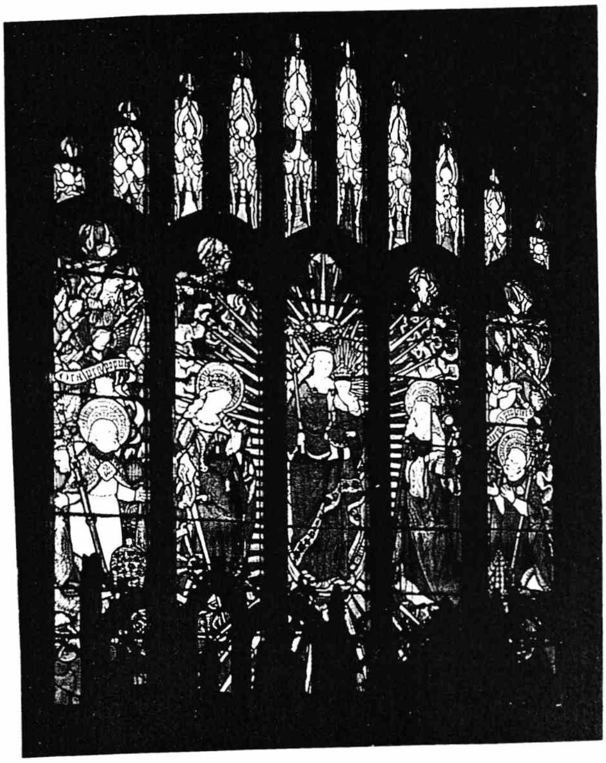


19. Joshua Reynolds. *Mrs Sheridan as Charity.*

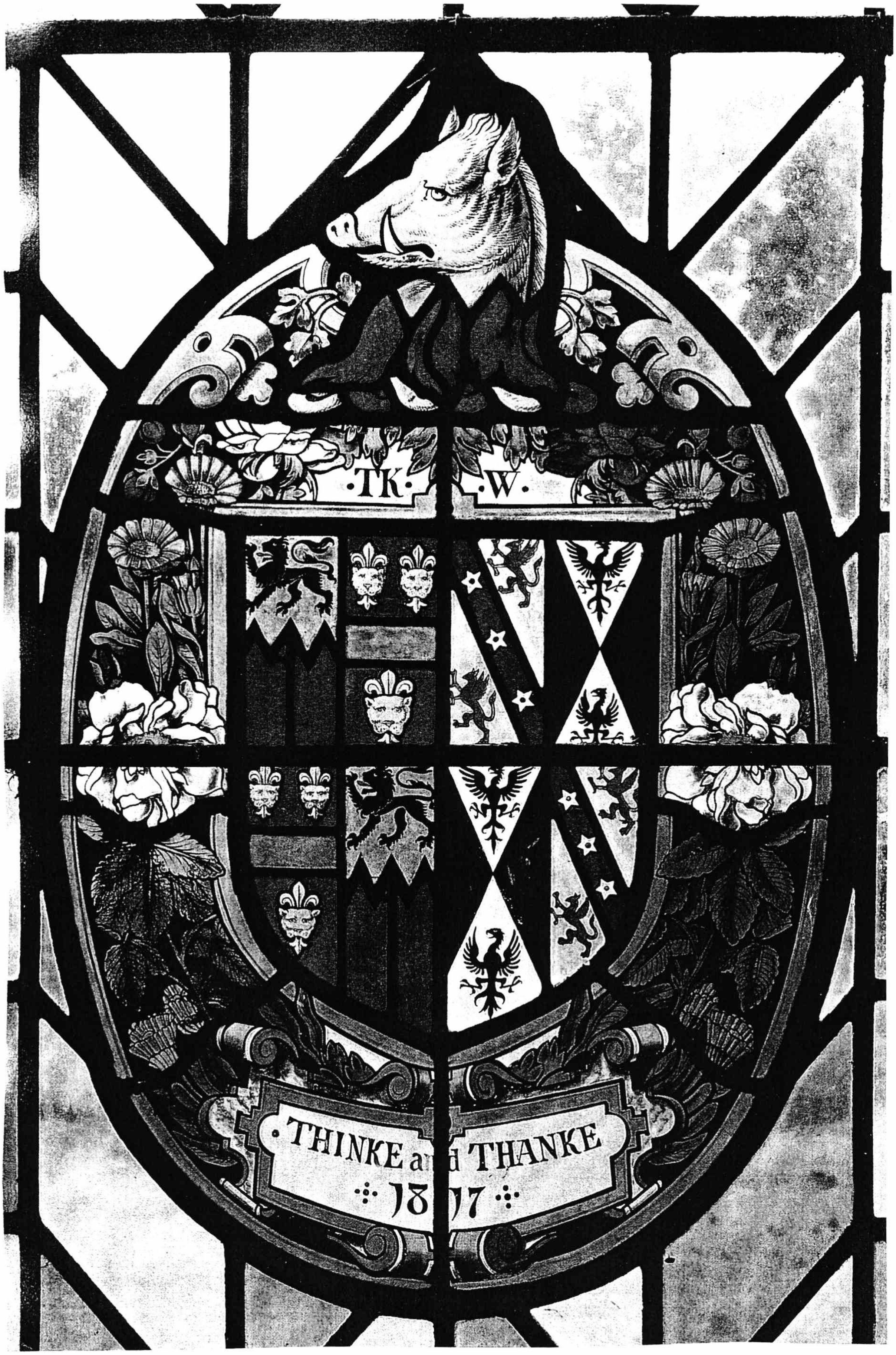


20. Augustus Welby Pugin. Chancel windows, St Mary's College Chapel, Oscott

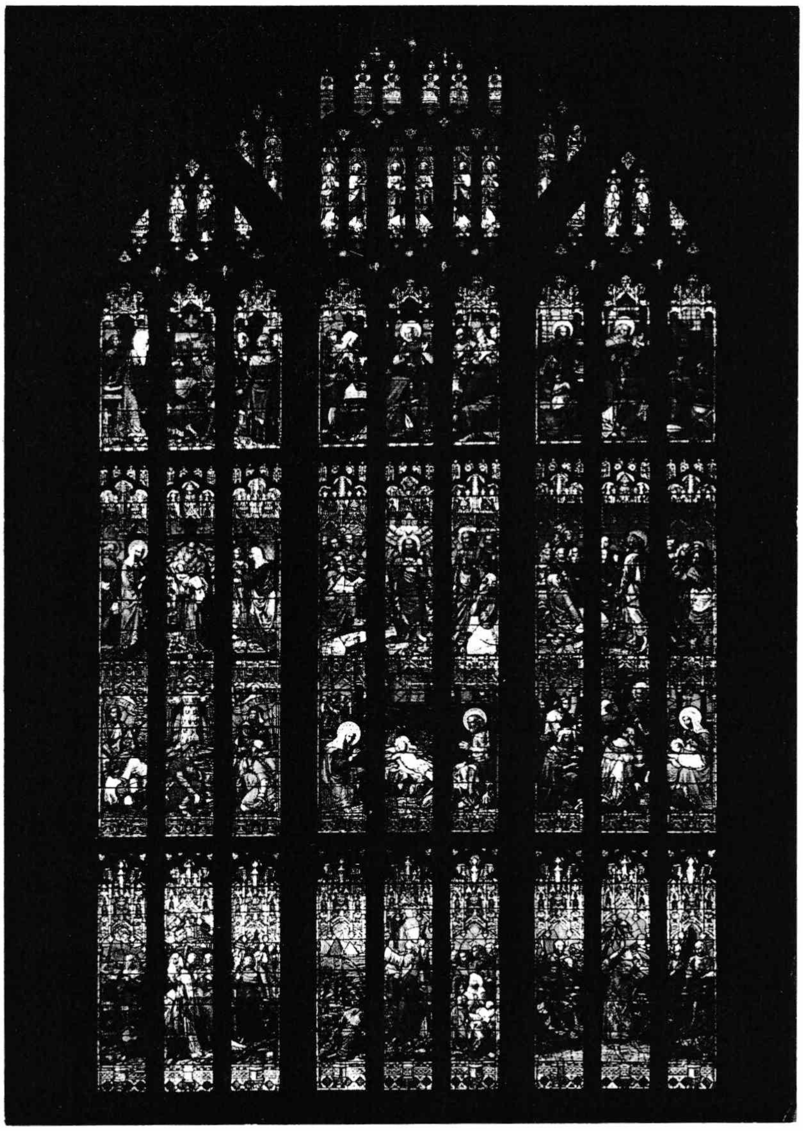




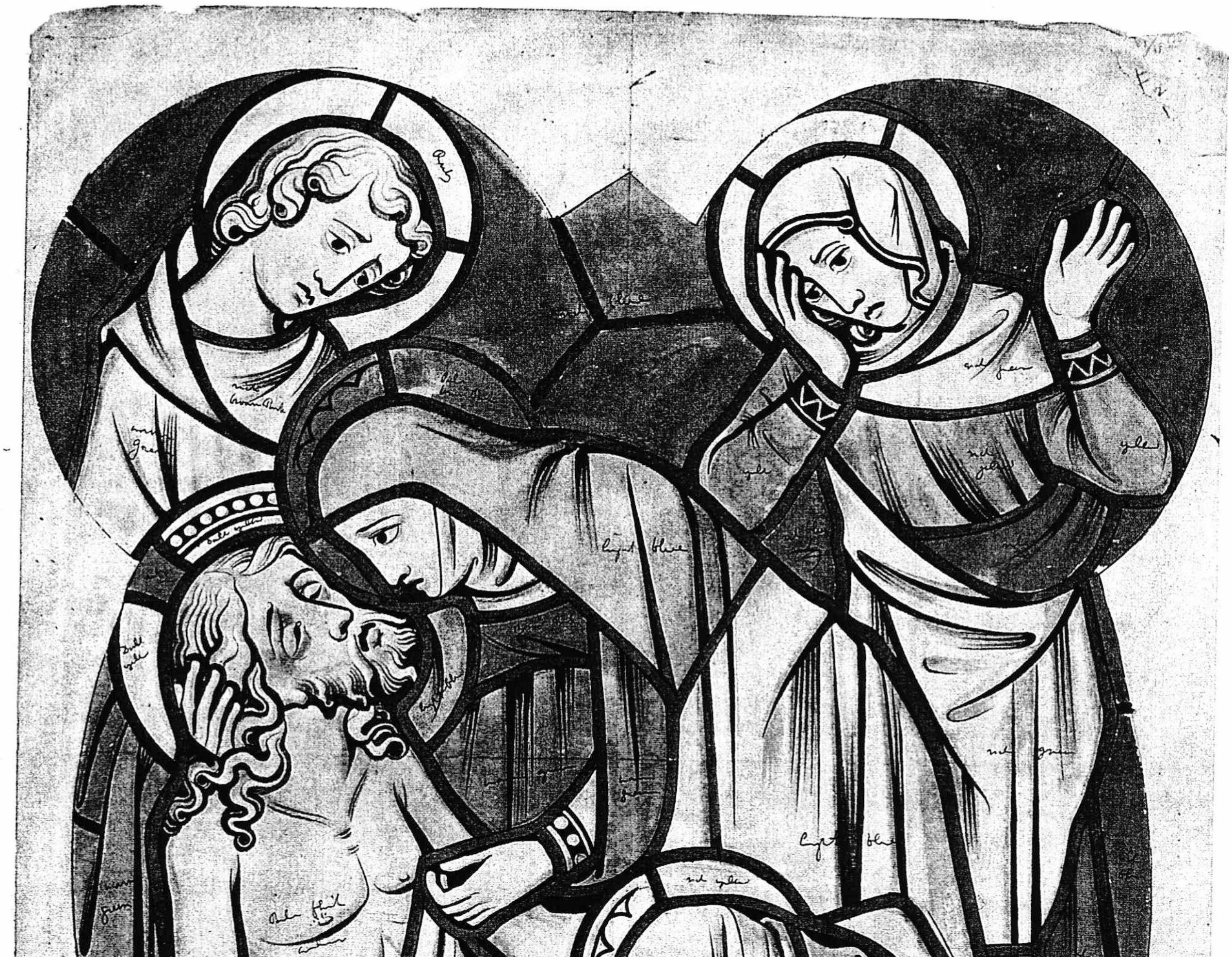
21. Thomas Willement. *Thinke and Thanke.* Davington Priory, Kent, c.1845.


·TK· ·W·
·THINKE and THANKE
18 7

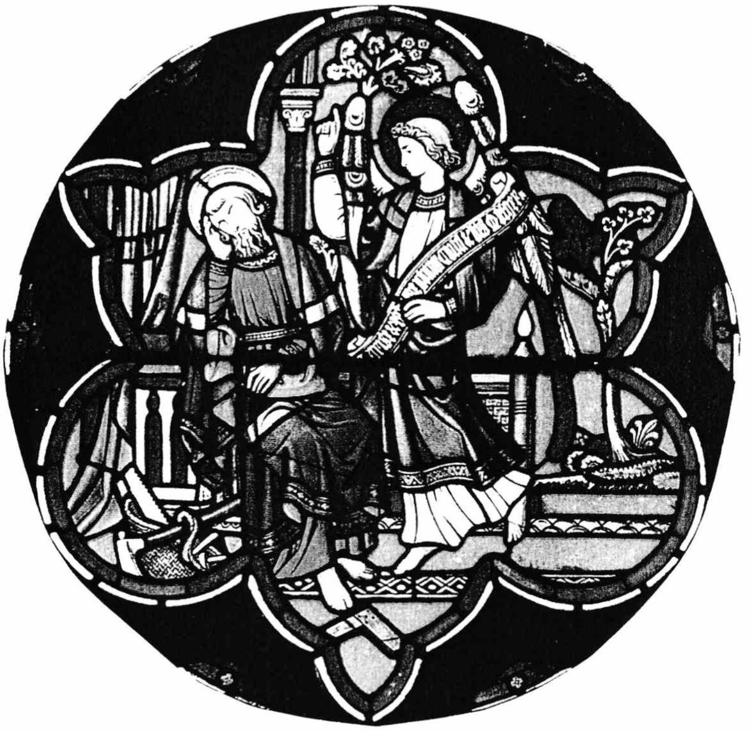
22. William Wailes. West window, Gloucester Cathedral, Gloucester, 1859.

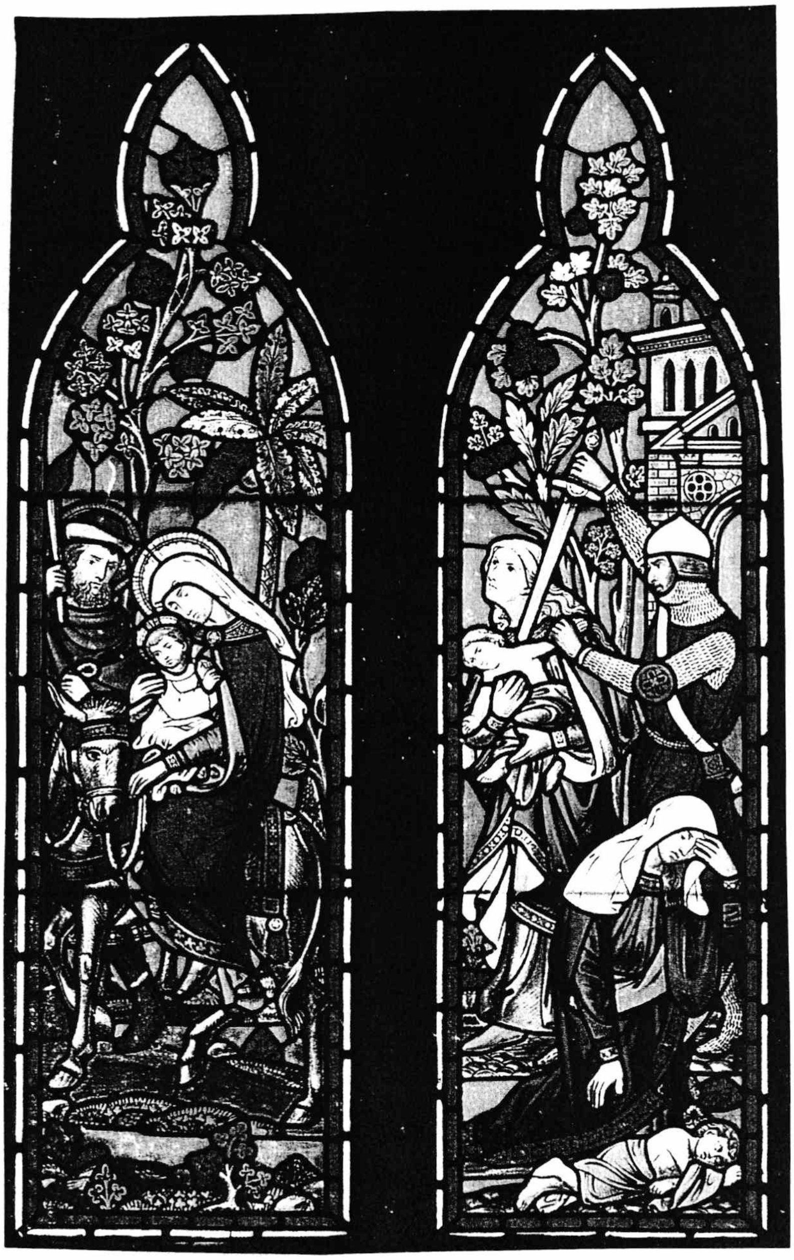


23. Augustus Welby Pugin. *The Entombment.* St Cuthbert and St Mary, Bolton


Ruby
blue
Dull yellow
Light blue
rich green
yellow
rich yellow
yellow
rich green
Light blue
rich yellow
Ruby

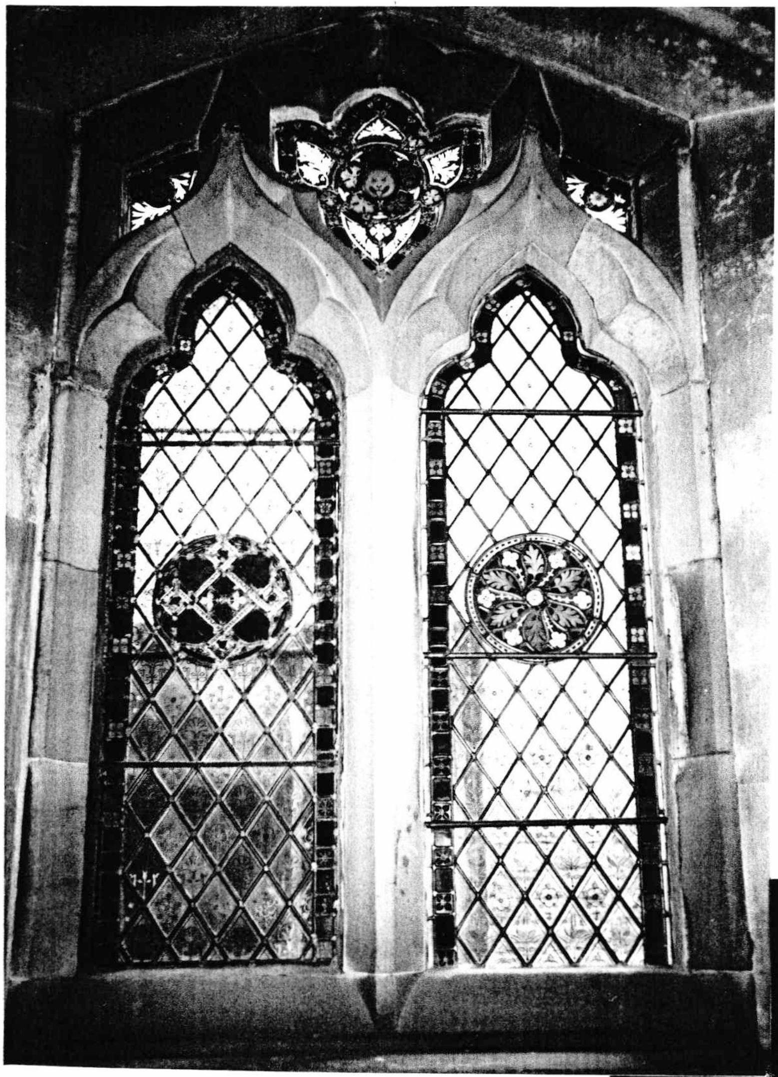
24. William Wailes. *Flight into Egypt* and the *Massacre of the Innocents.* North aisle and Tracery windows, All Saints, Maidenhead, Berkshire.

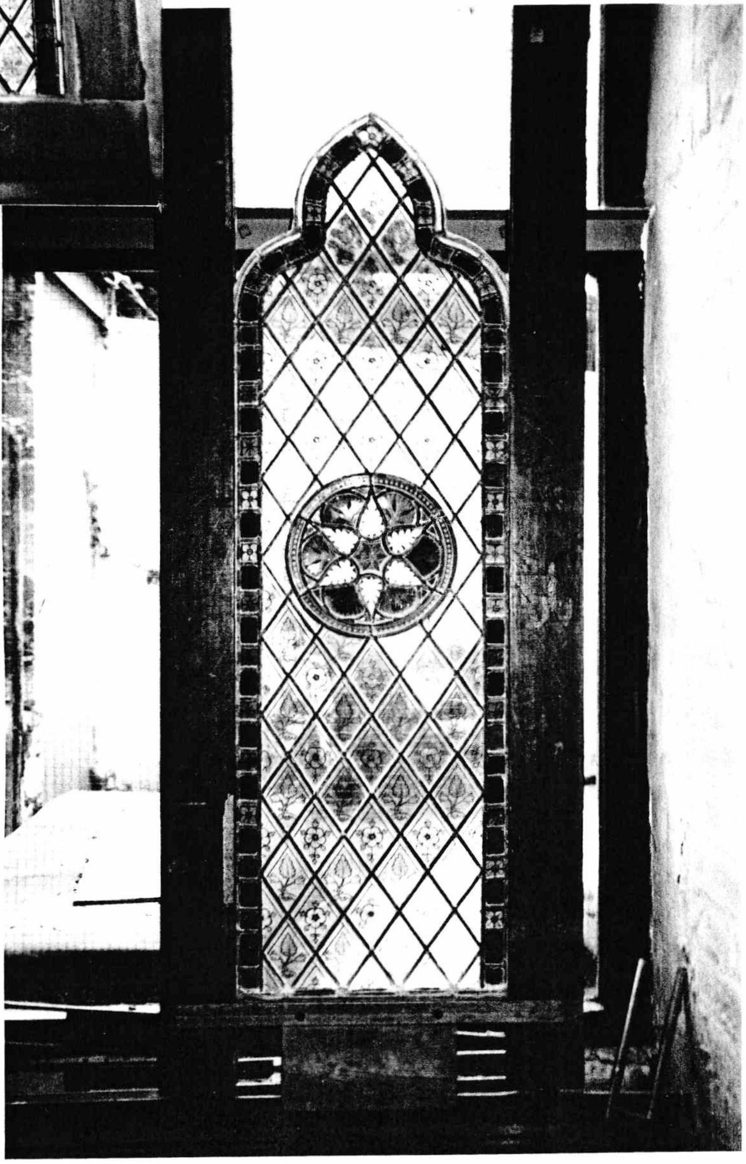




25. Augustus Welby Pugin. Photograph of Cloister window, St Augustine's Abbey, Ramsgate, Kent, c.1850's.

In situ



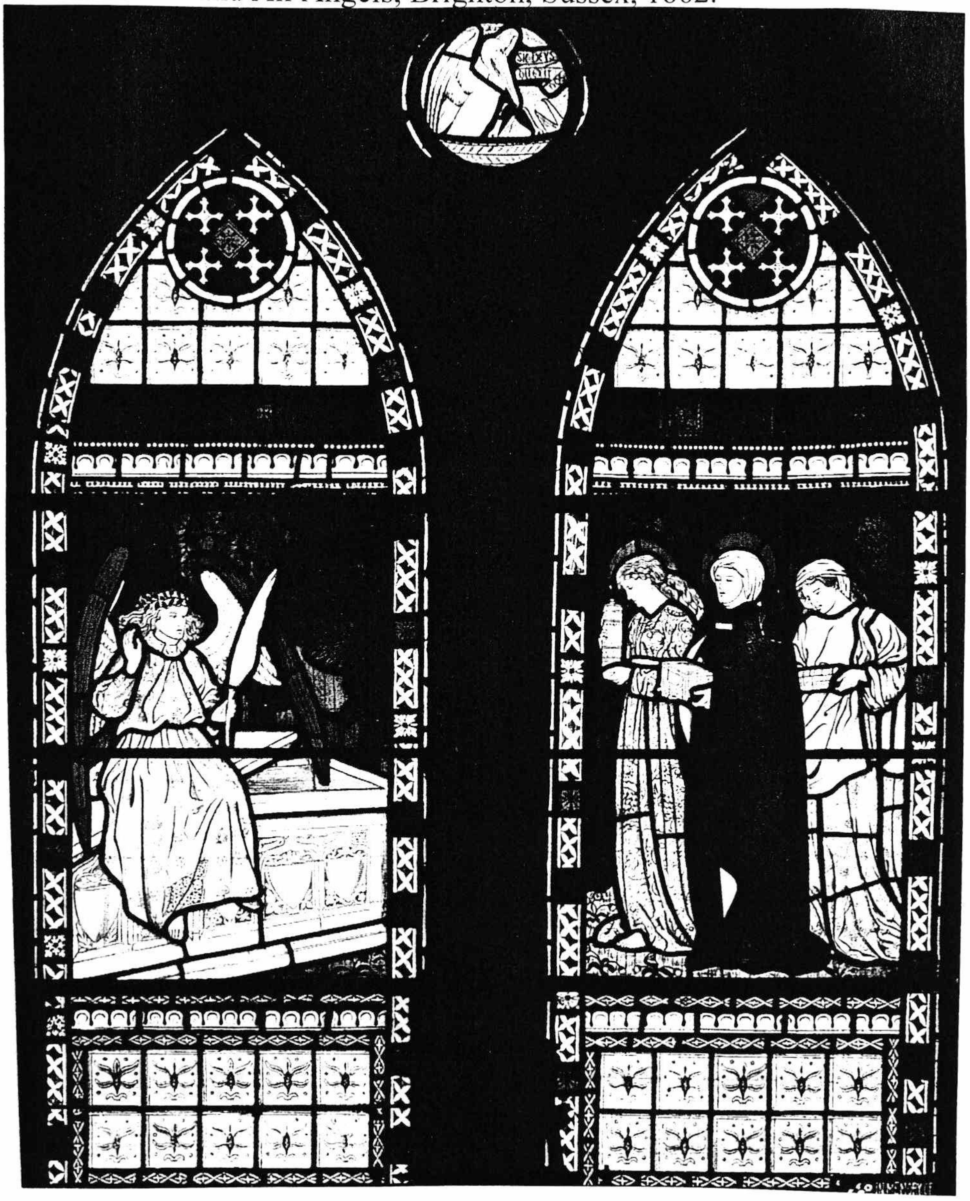


26. Augustus Welby Pugin.

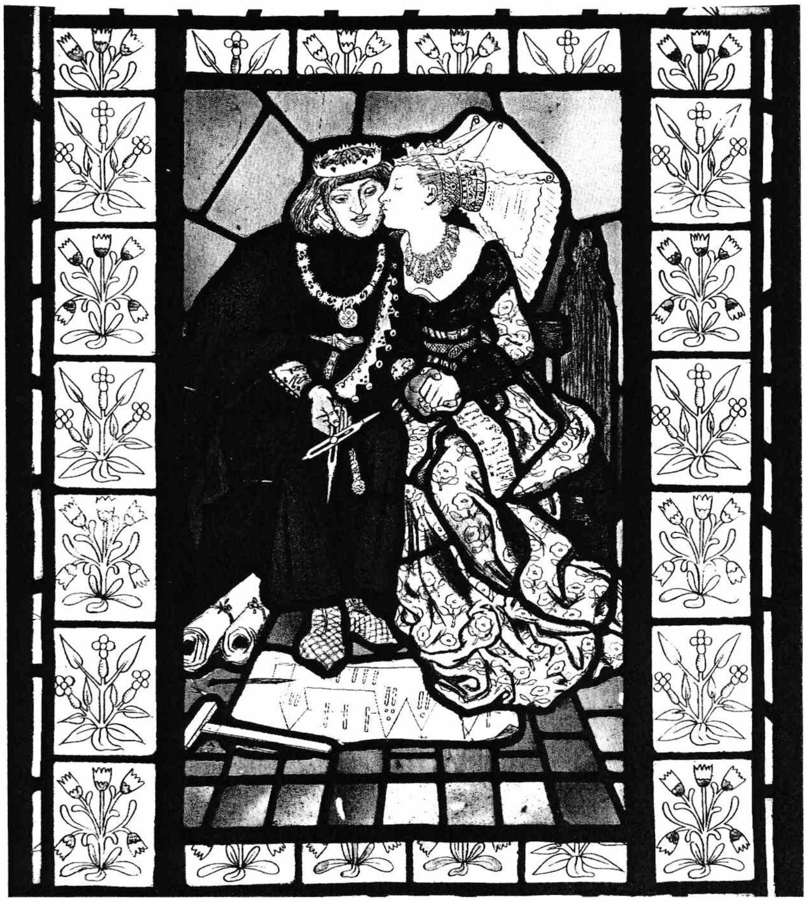
Photograph of Cloister window.

During conservation

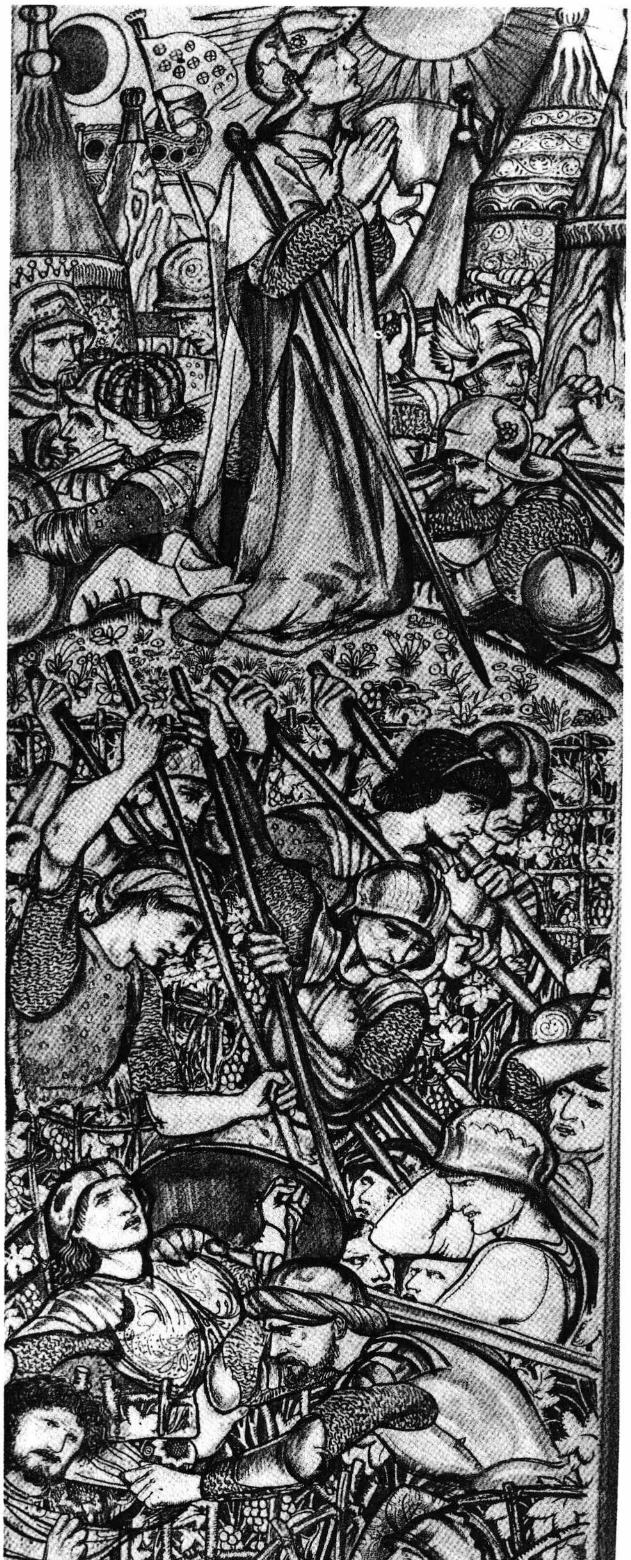
27. William Morris. *The Three Maries at the Sepulchre.* South aisle East window, St Michael and All Angels, Brighton, Sussex, 1862.



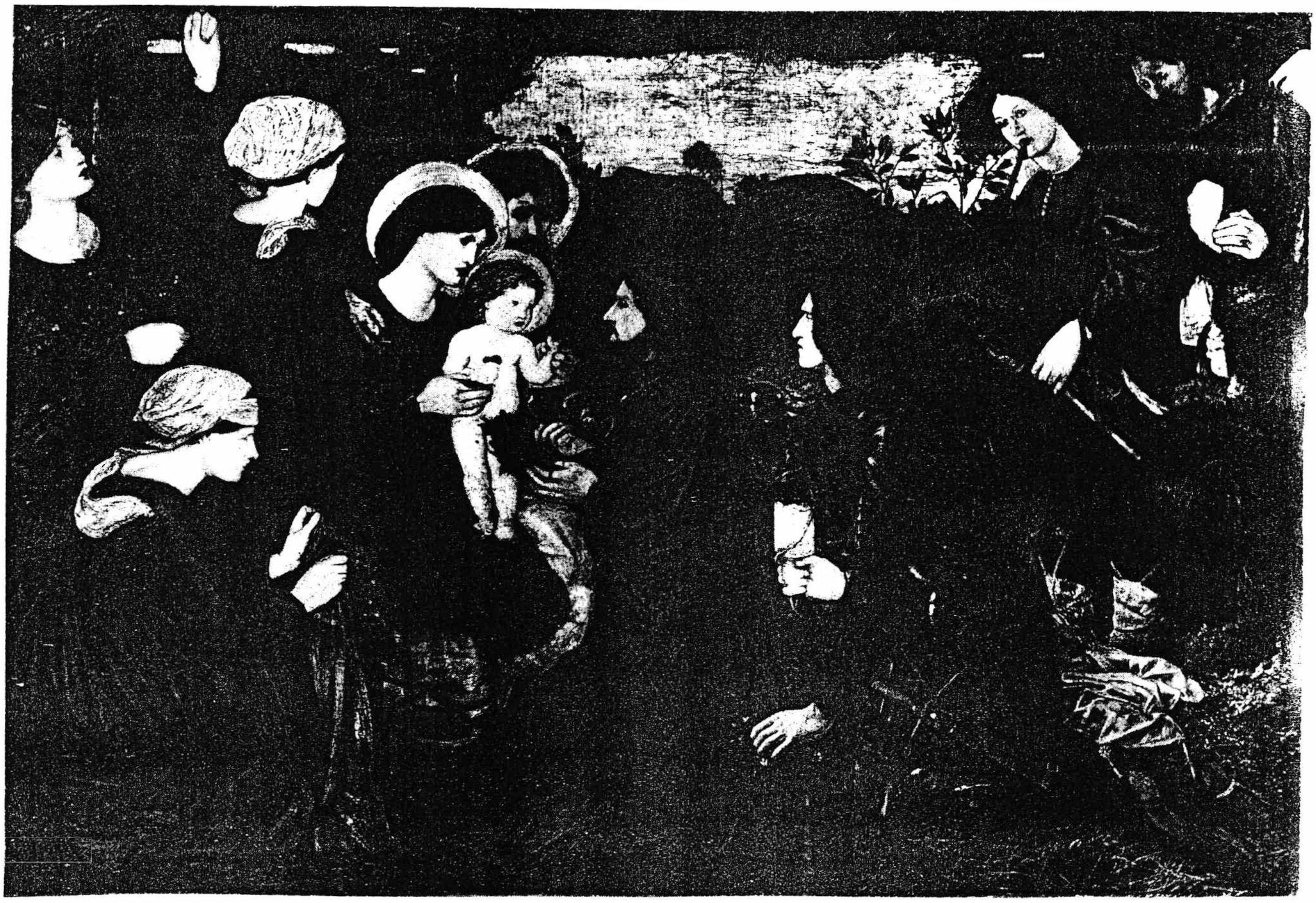
28. Ford Maddox Brown. *King Rene's Honeymoon.* Victoria and Albert Museum



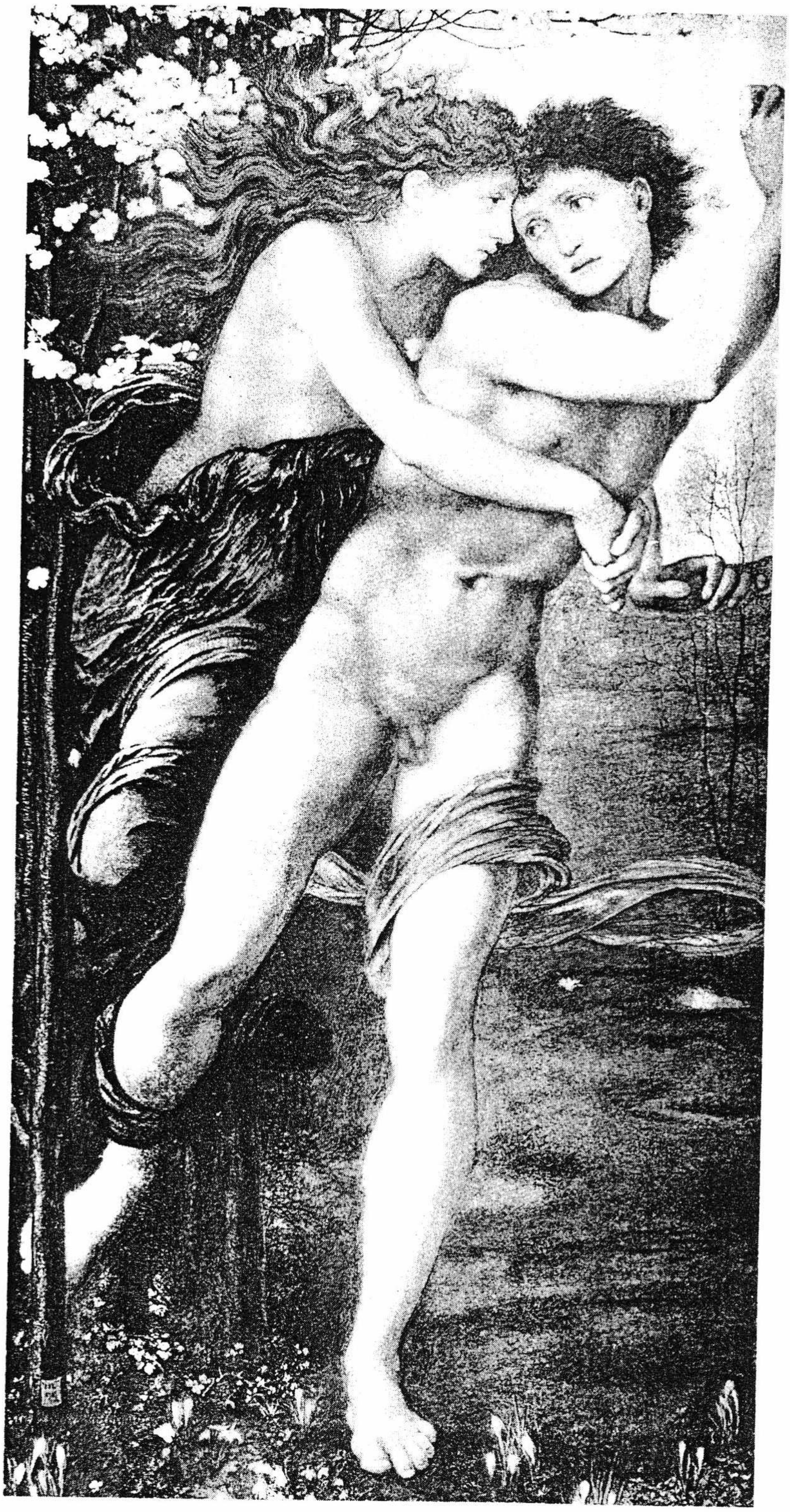
29. Edward Burne-Jones. *The Battle of Beth-Horon.* St Michael and All Angels, Lyndhurst, Hampshire, 1863.



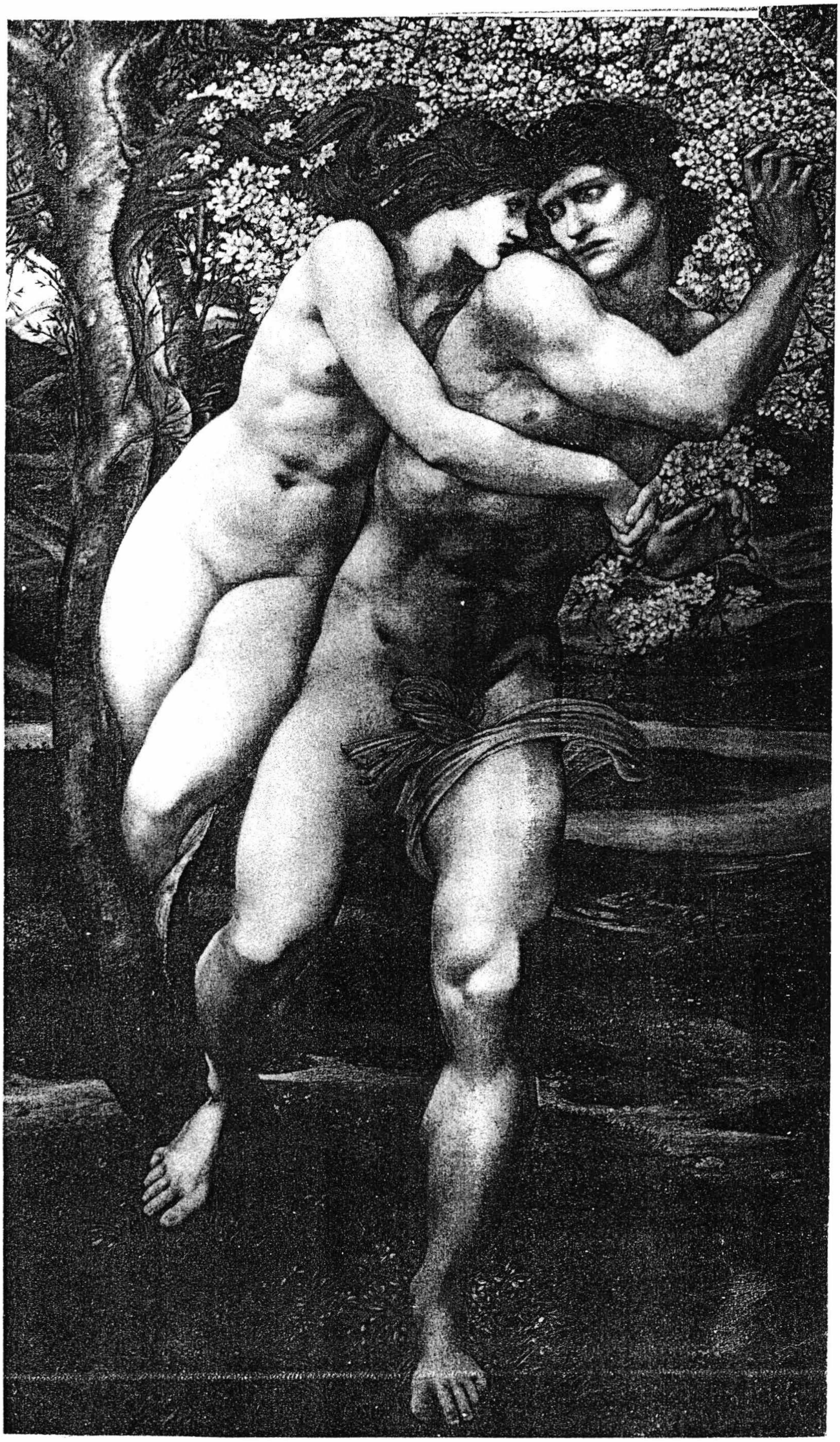
30. Edward Burne-Jones. *Adoration of Kings and Shepherds,* 1862.



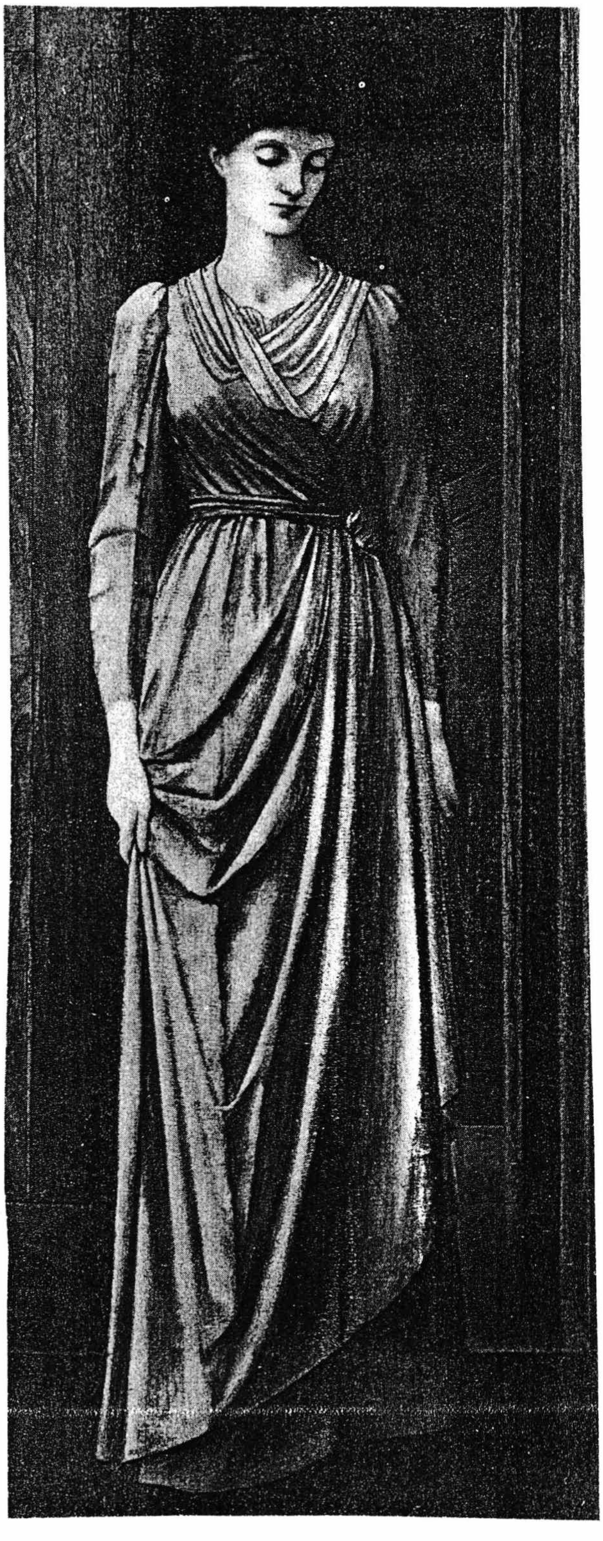
31. Edward Burne-Jones. *Phyllis and Demophoon,* 1870.

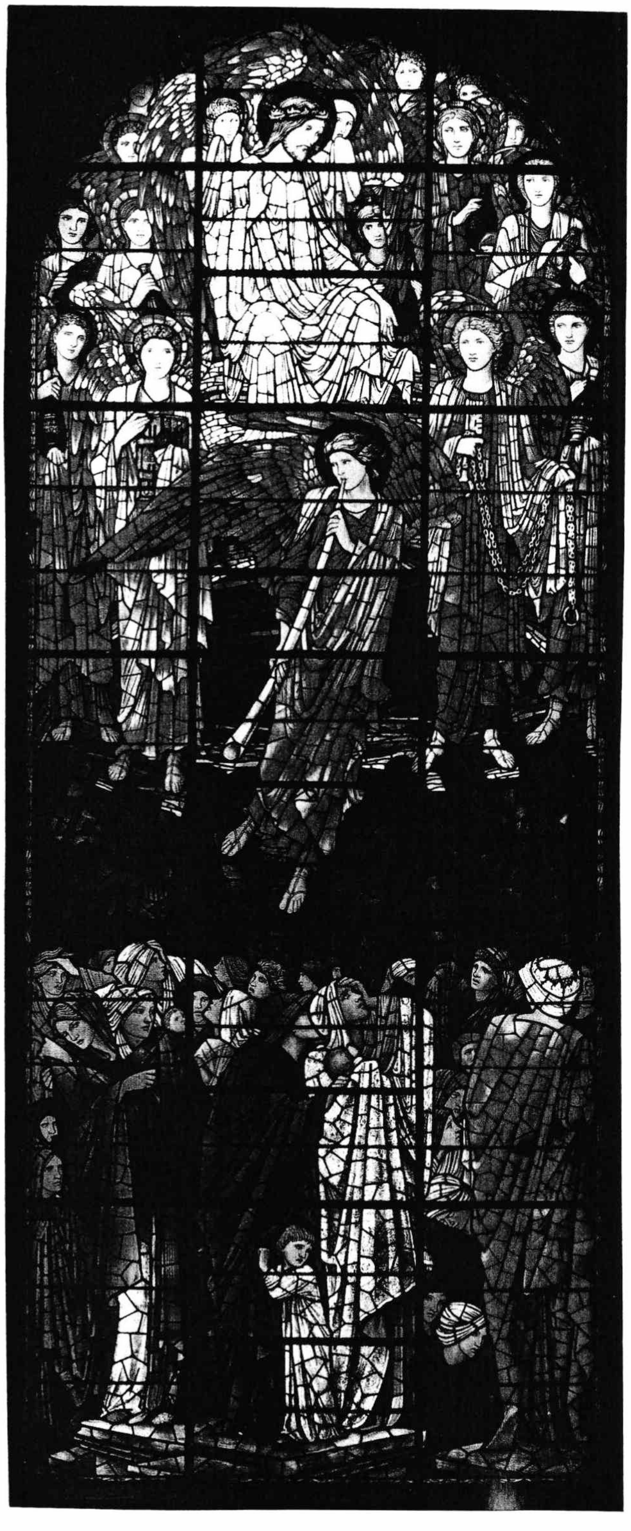


32. Edward Burne-Jones. *Tree of Forgiveness*, 1882.



33. Edward Burne-Jones. *The Countess of Portsmouth*, 1893.

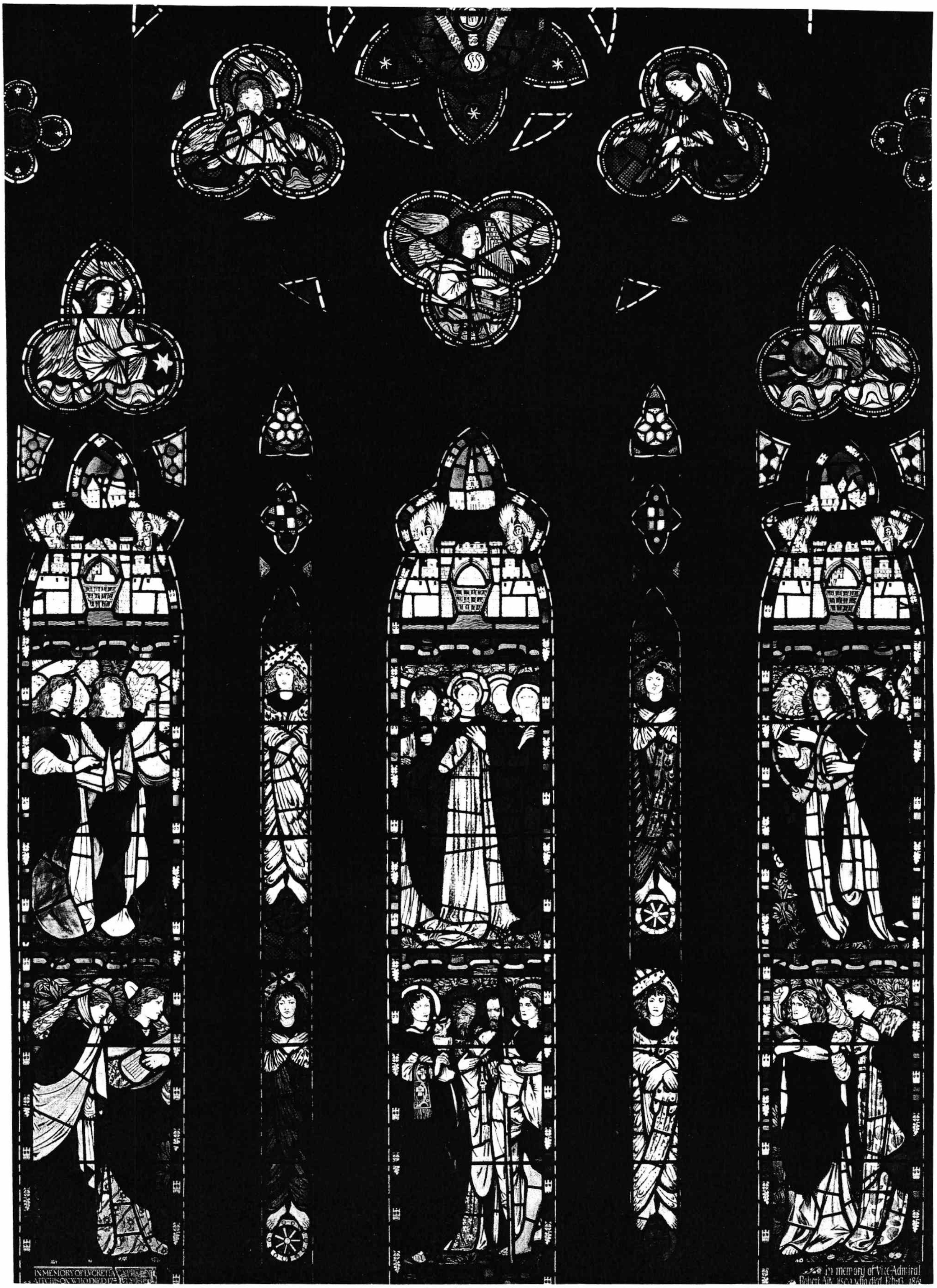




34. Edward Burne-Jones. *The Last Judgement*.

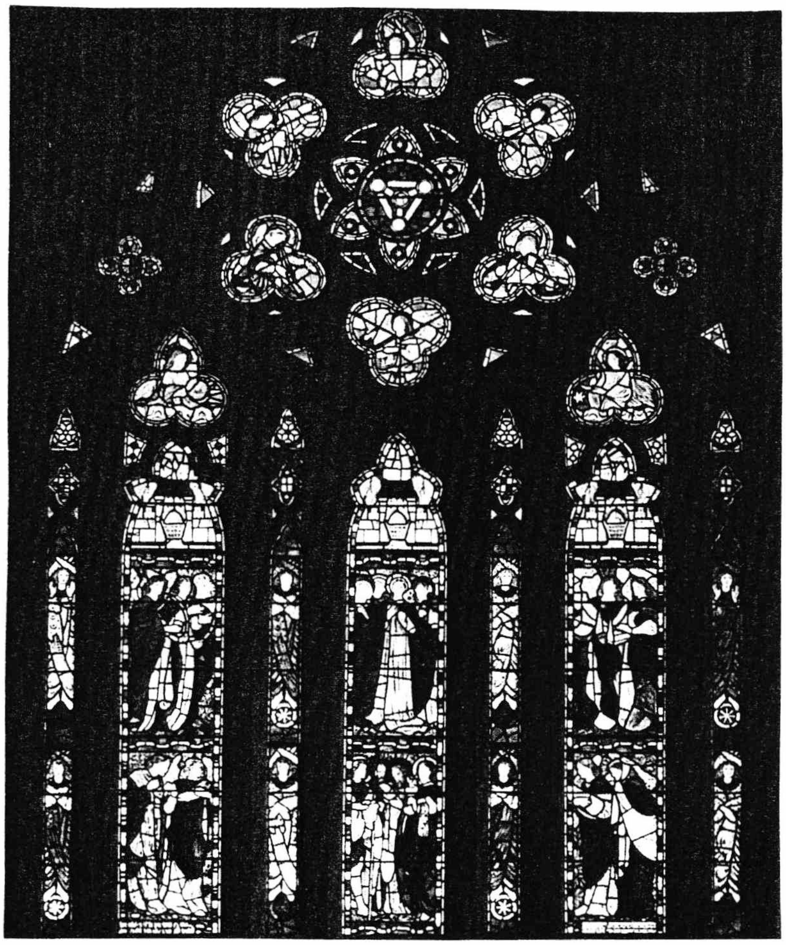
The Cathedral Church of St Philip's,
Birmingham.

35. Morris & Co. East window, Waltham Abbey, Hampshire, 1860.

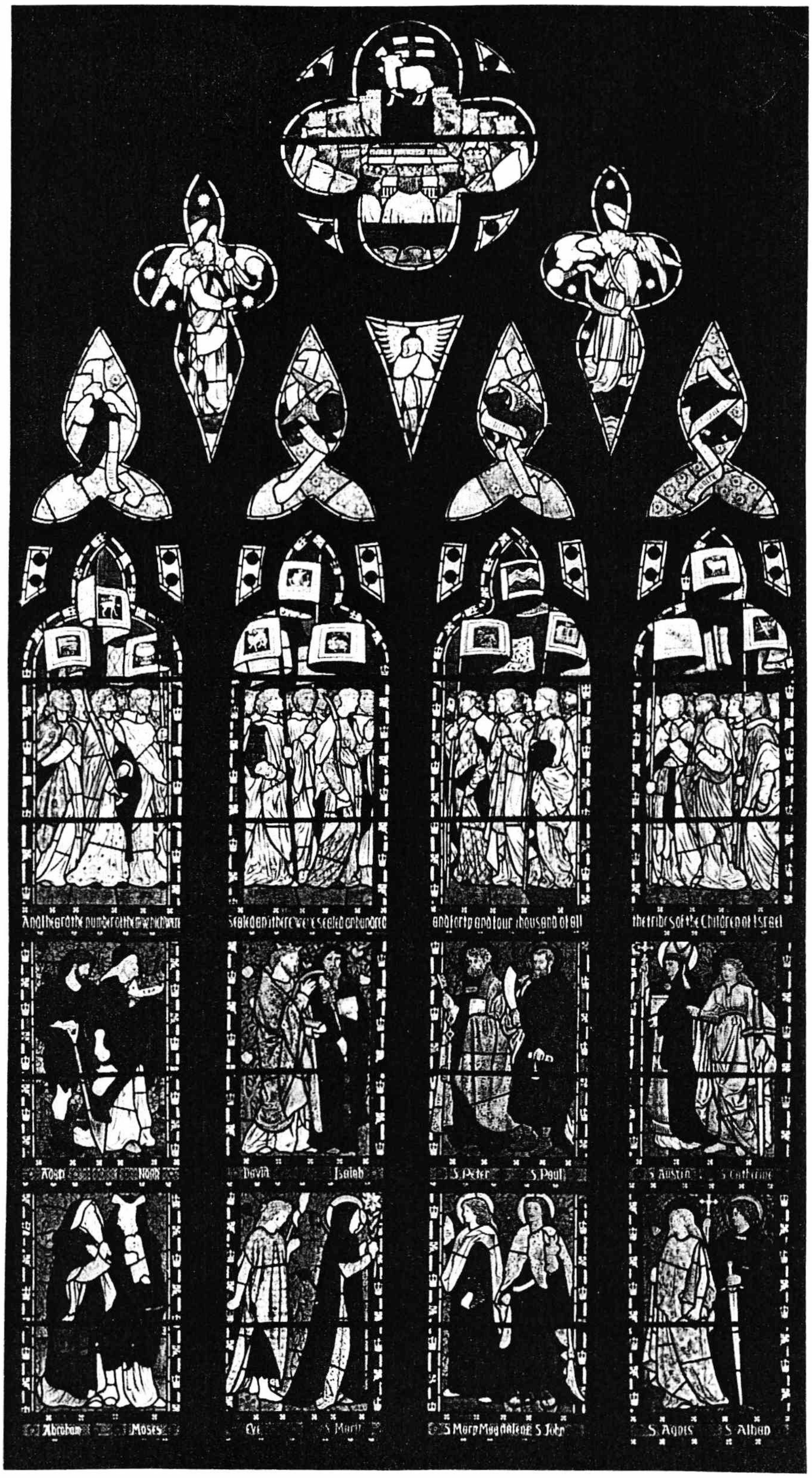


IN MEMORY OF LVCRETIA
in memory of Vice-Admiral

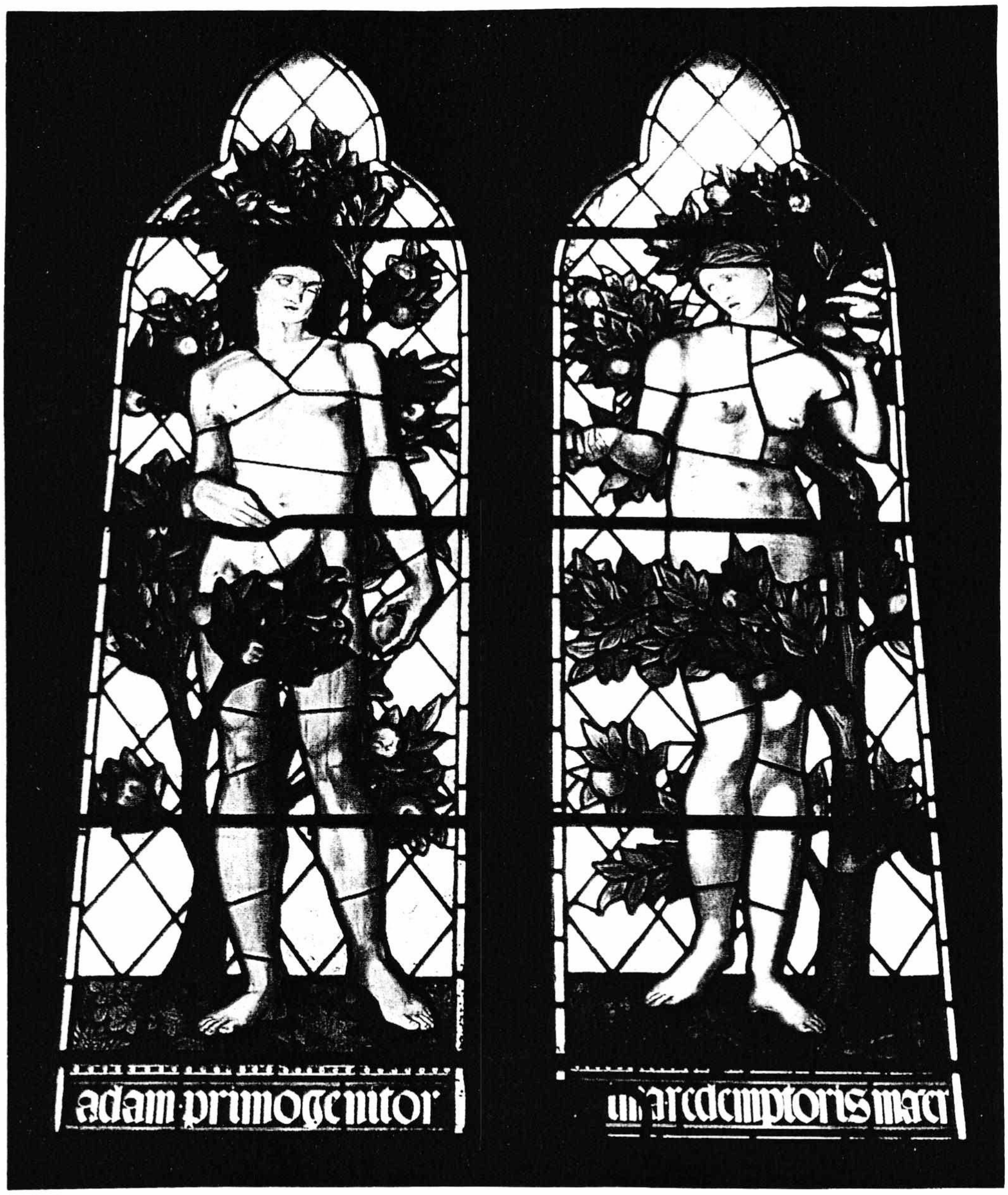
36. Morris & Co. Chancel East, St Michael and All Angels, Lyndhurst, Hampshire



37. Morris & Co. East window, All Saints, Middleton Cheney, Northants, 1865.

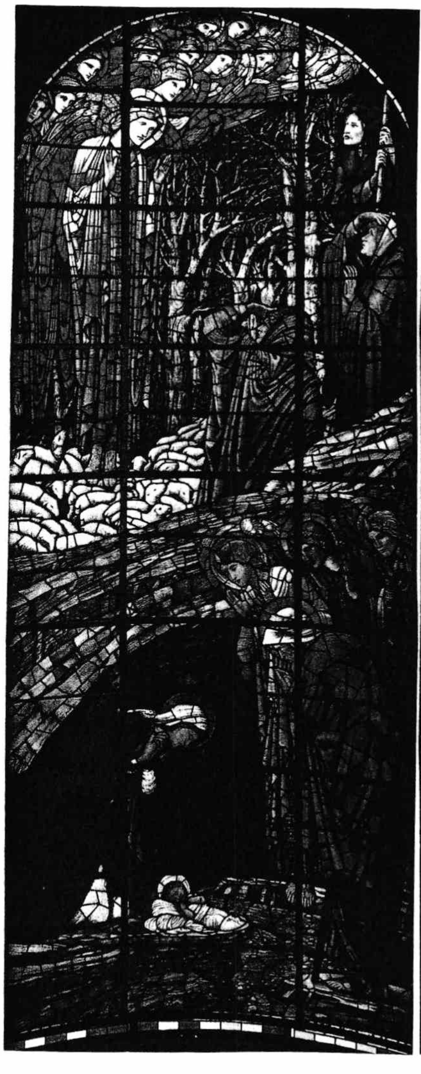

And I heard the number of them which were
sealed and there were sealed an hundred
and forty and four thousand of all
the tribes of the Children of Israel
Adam
Noah
David
Isaiah
S Peter
S Paul
S Austin
S Catherine
Abraham
Moses
Eve
S Mary
S Mary Magdalene
S John
S Agnes
S Alban

38. North aisle window, St John the Divine, Frankby, Cheshire, 1873.

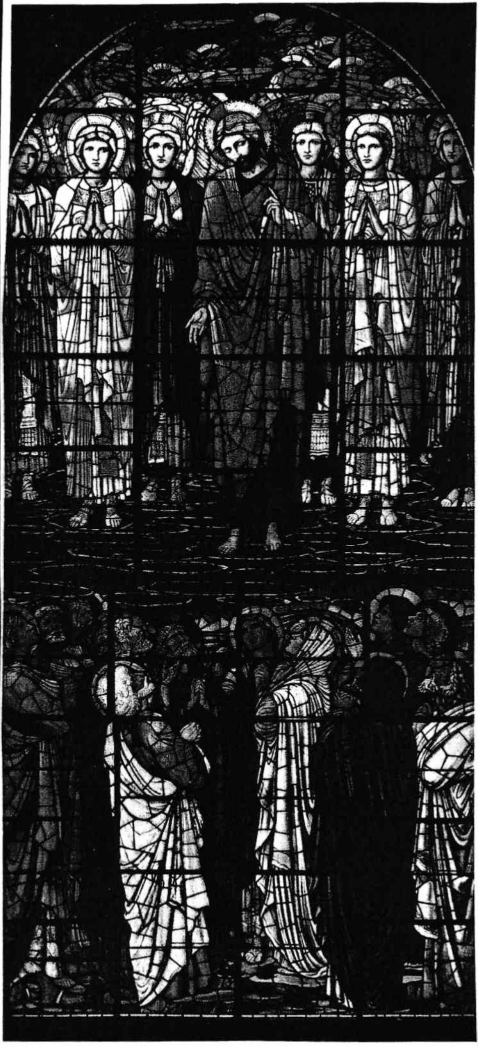

adam·primogenitor
redemptoris mater

39. The Cathedral Church of St Philip's, Birmingham, West Midlands, c.mid 1890's.

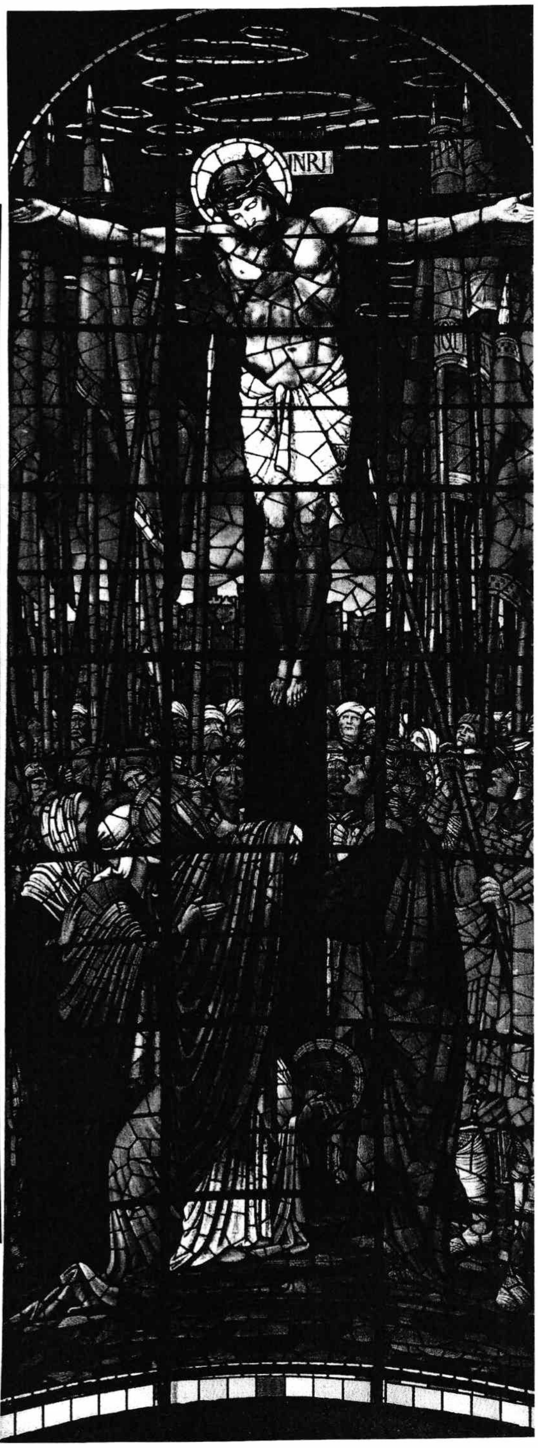
This new, expressive use of iconic traditional images reveals Burne-Jones' engagement with Romanesque illuminated manuscripts (small heads in relation to narrow attenuated bodies; the space divided in half horizontally) together with strong and assertive colour which generates mood and atmosphere. The windows create something unique and entirely new while at the same time living in harmony with their 18th-century surroundings.



The Nativity

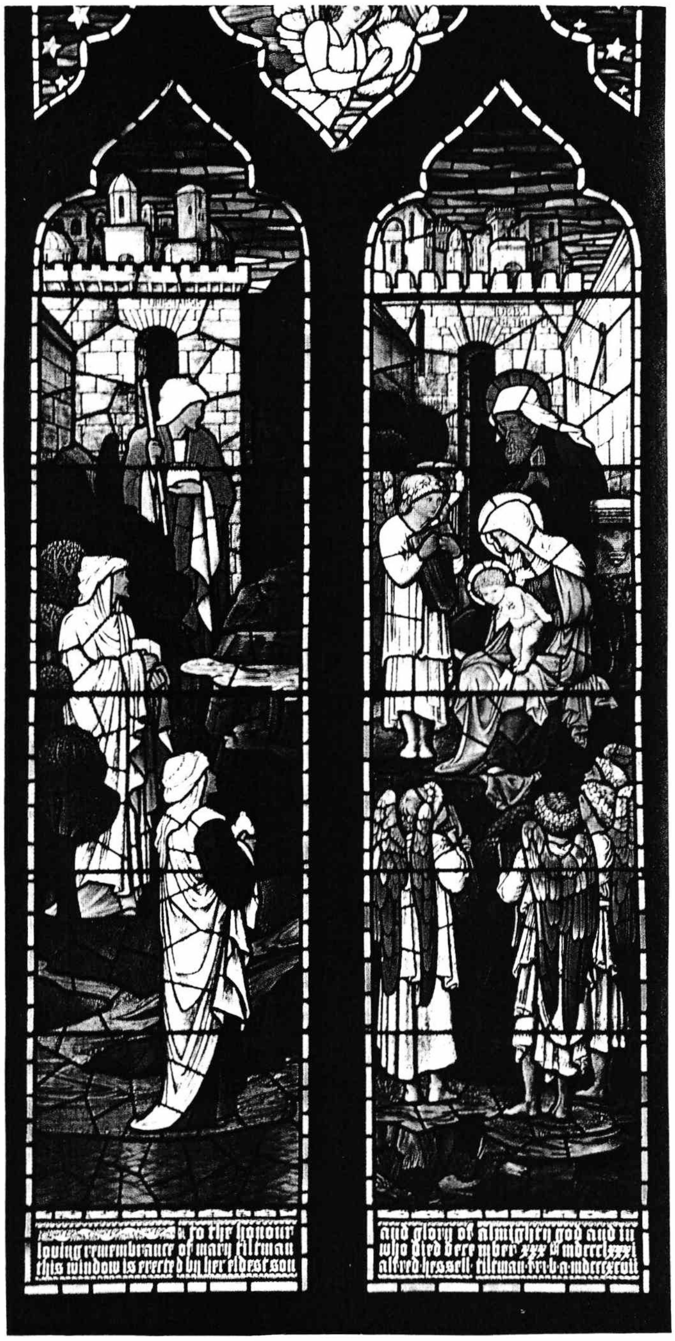


The Ascension

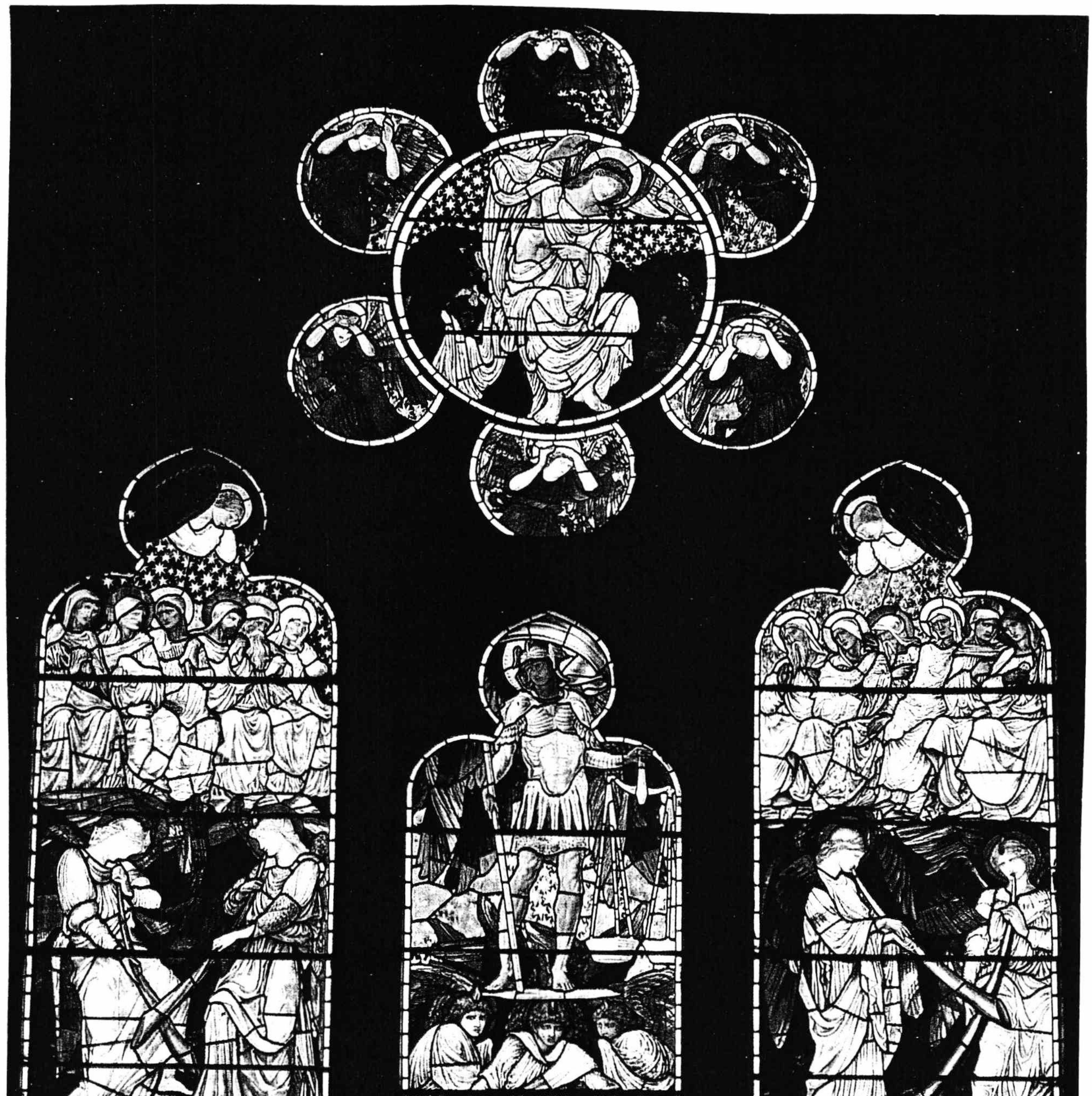


The Crucifixion

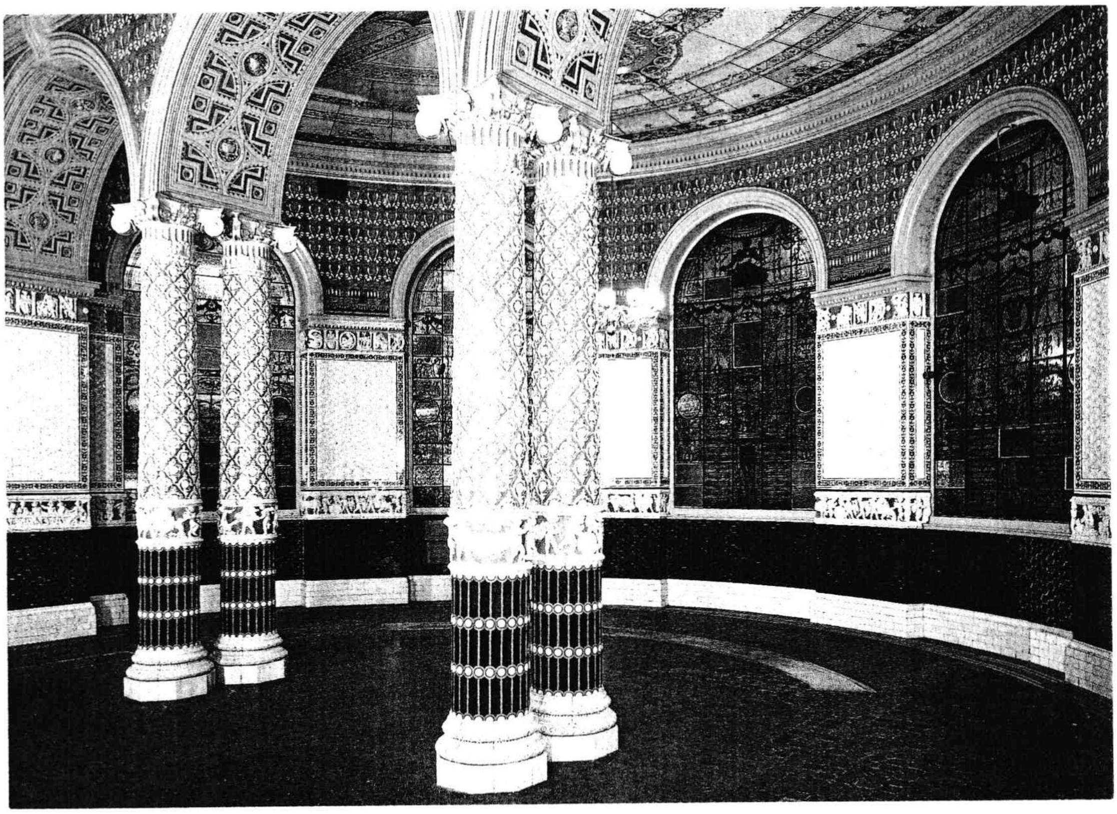
40. Edward Burne-Jones. Nave window, St Mary the Virgin, Rye, Sussex, 1891.


to the honour
loving remembrance of mary tiltman
this window is erected by her eldest son
and glory of almighty god and in
who died december
alfred hessell tiltman

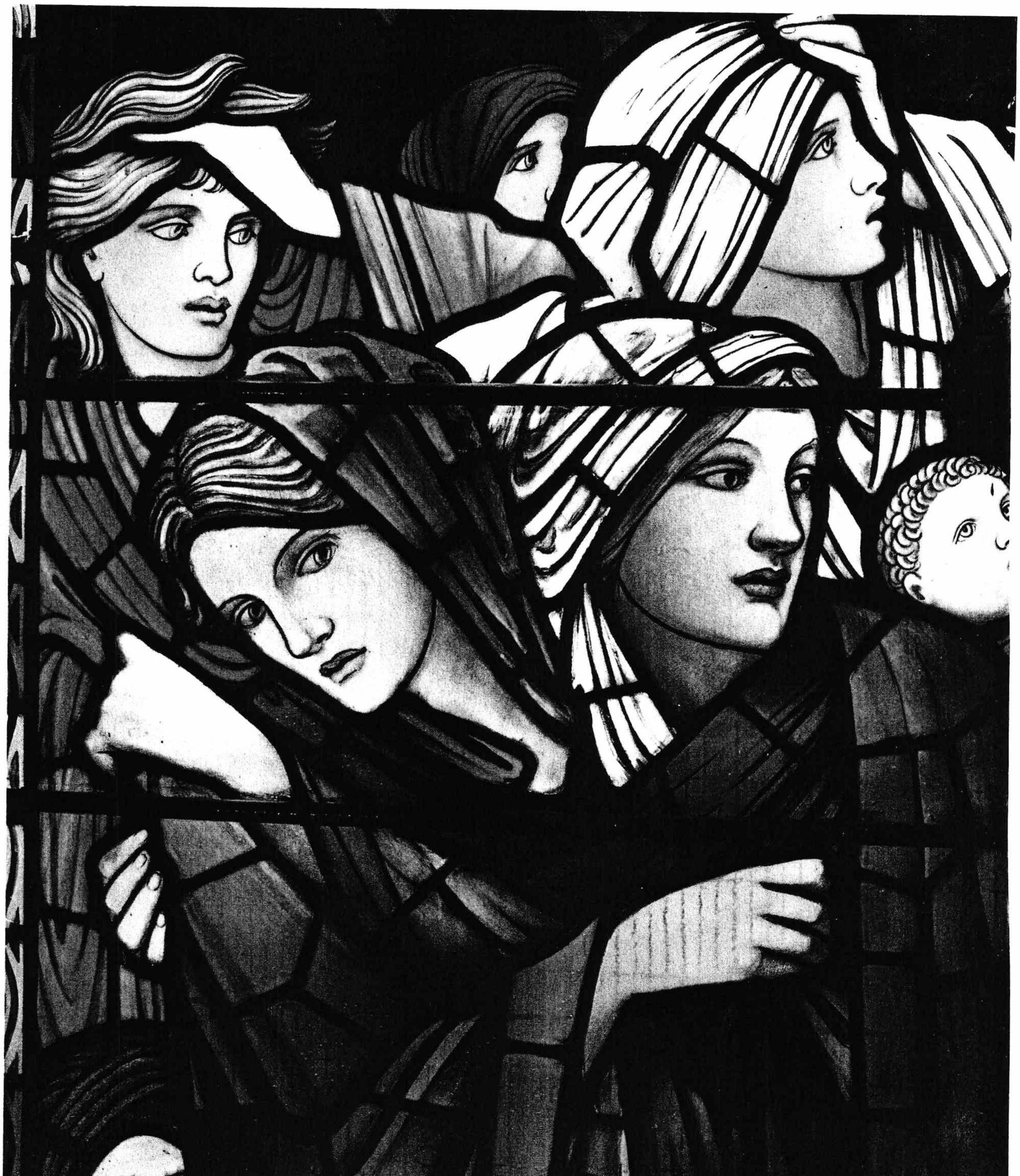
41. Morris & Co. *The Last Judgement*. East window, St Michael and St Mary Magdalene, Easthampstead, Berkshire, 1876.



42. Powell & Son. 'Munich' style windows.

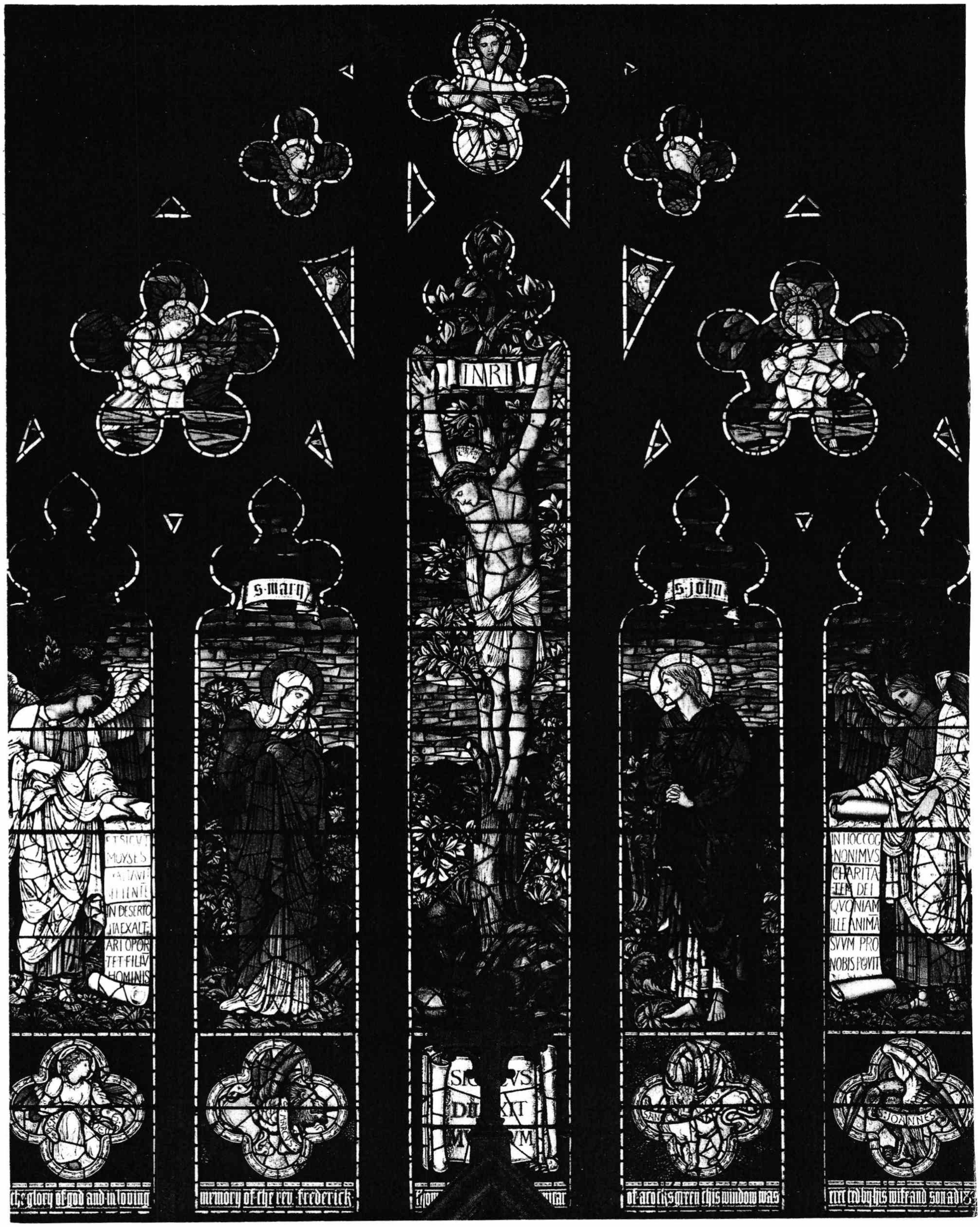


43. Edward Burne-Jones. Detail *The Last Judgement*. The Cathedral Church of St Philip's, Birmingham.



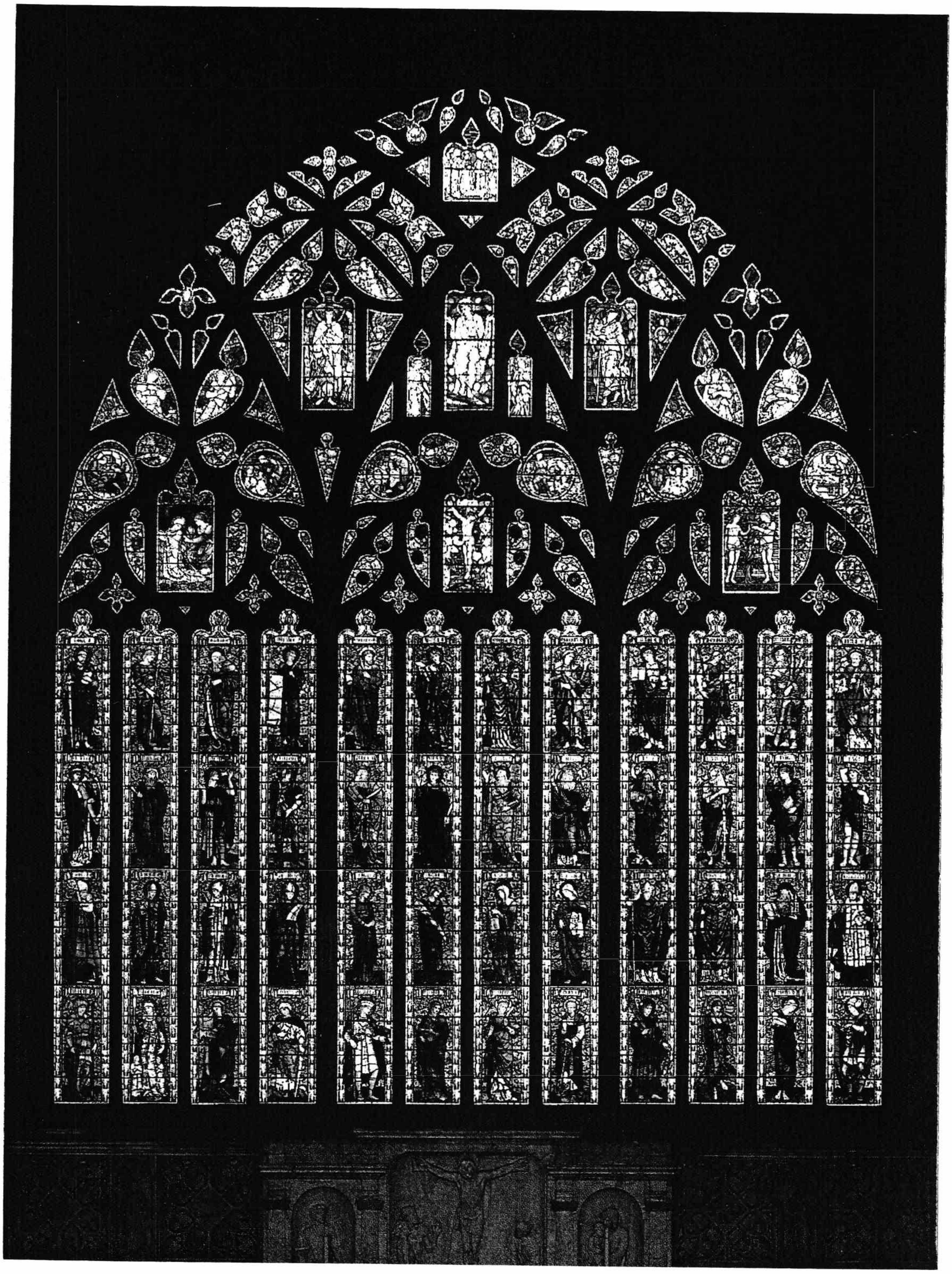
44. Edward Burne-Jones. *Crucifixion* window. Acocks Green, Birmingham.

All the designs were taken from stock cartoons and re-interpreted: Christ with the Virgin and St John originally designed for St Michael's, Torquay in 1877; Angels with scrolls for All Saints, Ruskington 1874; Angles in the tracery for All Hallow's, Allerton 1882 and the Symbols of the Evangelists (designed by Webb) for St Michael and All Angels, Lyndhurst 1862-3. The Crucifixion (1877) and the Angels with scrolls (1882) demonstrate a change of style between these two dates with neo-classical draperies supplanting Burne-Jones' interest in the late Renaissance and highlight the difficulties imposed upon the whole by using pre-existing figures chosen from stock designs.


INRI
S·mary
S·john
ET SICVT MOYSES EXALTAVIT SERPENTEM IN DESERTO ITA EXALTARI OPORTET FILIVM HOMINIS
IN HOC COGNONIMVS CHARITATEM DEI QVONIAM ILLE ANIMAM SVVM PRO NOBIS POSVIT
SIC DILEXIT MVNDVM
MARCVS
SANCTVS LVCAS
S. JOANNES
the glory of god and in loving
memory of the rev. frederick
vicar
of acocks green this window was
erected by his wife and son

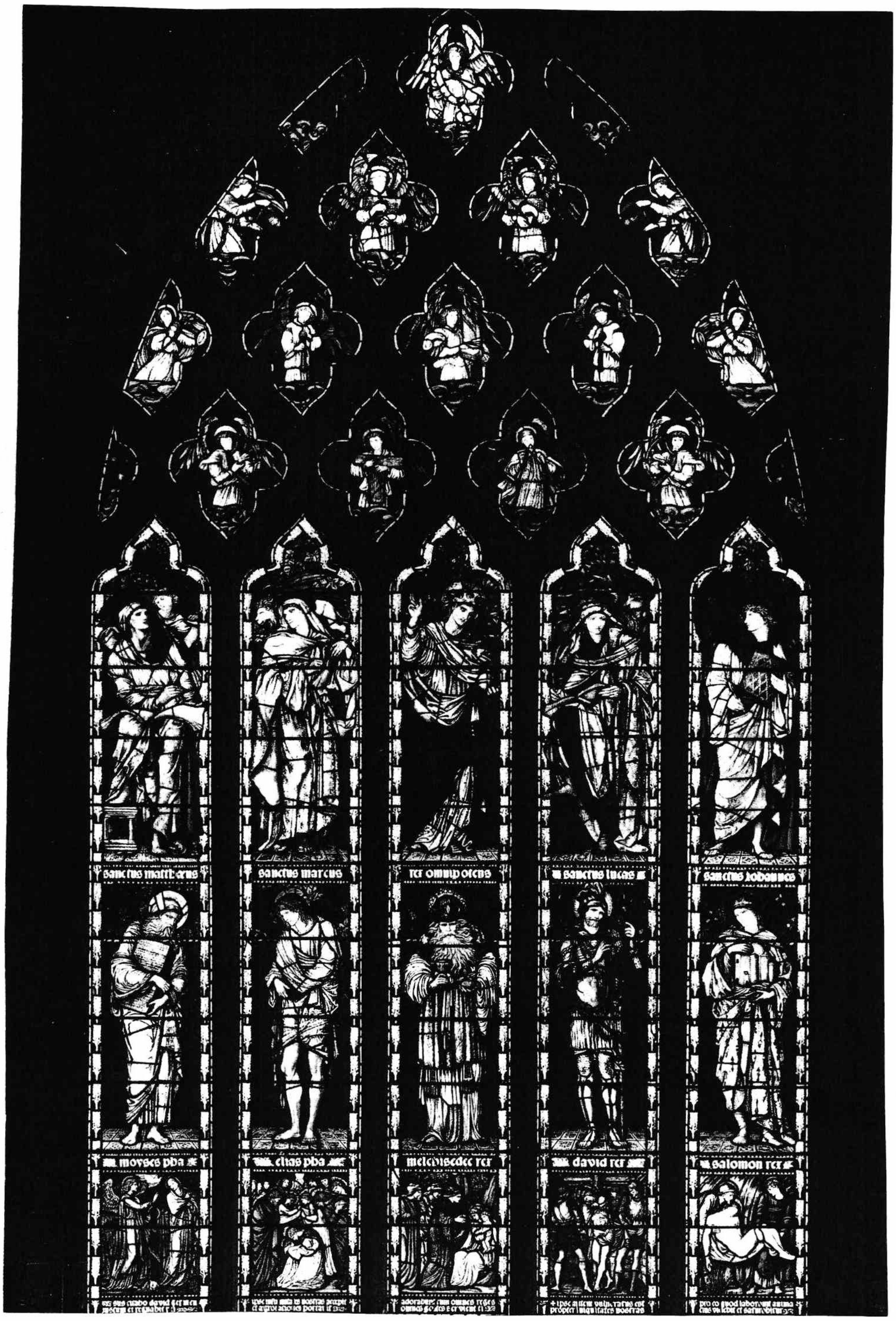
45. Edward Burne-Jones. The Great East window, Holy Trinity Church, Sloane Street, London, 1894-5.

In this the largest window made by Morris & Co, Morris' neutral foliage background acts as a foil for the rich colours of Burne-Jones' stock figures. The repetition of figures and separate narrative panels in the tracery complied with the demands of the architect John Dando Sedding, however Burne-Jones' skilful use of colour achieved balance over the large area.

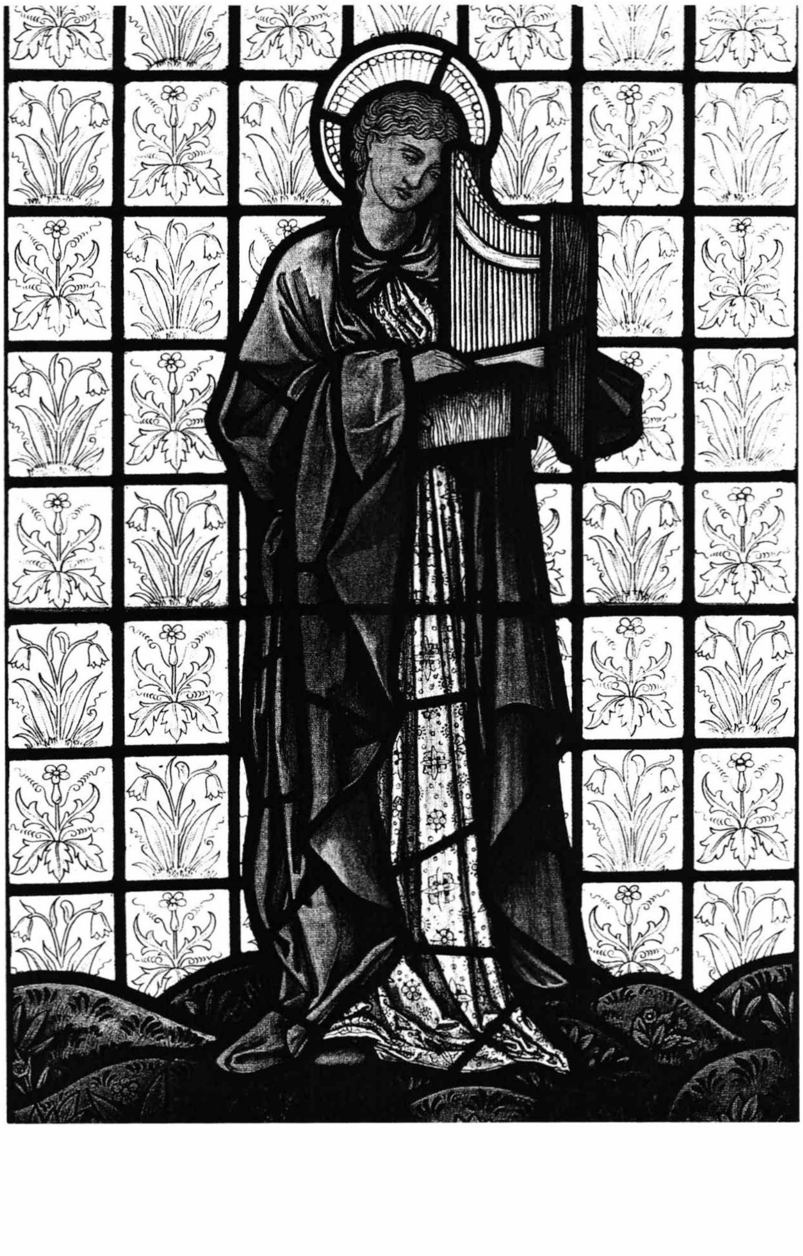


46. Edward Burne-Jones. South transept window, St Martin's in the Bull Ring, Birmingham

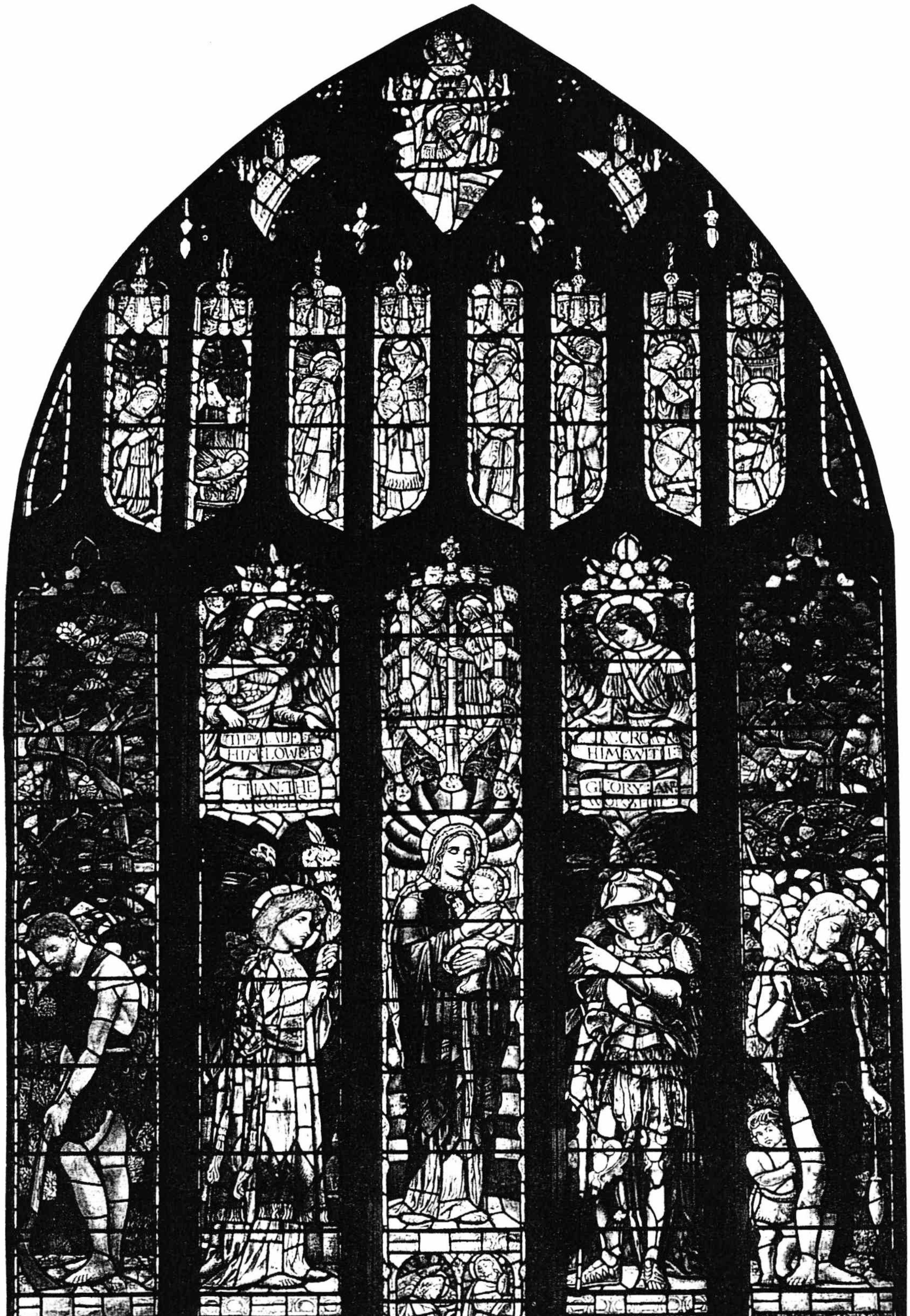
The four figures flanking Christ (upper tier) reflect the influence of the Italian Renaissance after Burne-Jones' return from studying in Rome and contrast with the lissom figures in the tier below which typify an alternate, contemporaneous style. The four Evangelists in the top tier were originally designed for Jesus College Chapel, Cambridge in 1873; Moses and Elias for Lytham (Lancs) in 1876; David and Solomon for Calcutta Cathedral in 1874 and the Nativity scenes (bottom tier) for Castle Howard Chapel in 1872. Only three new designs were included: The Entombment and The Flagellation (bottom right) and Melchisedec (middle of second tier)


sanctus matthaeus
sanctus marcus
rex omnipotens
sanctus lucas
sanctus johannes
moyses pha
elias pha
melchisedec rex
david rex
salomon rex

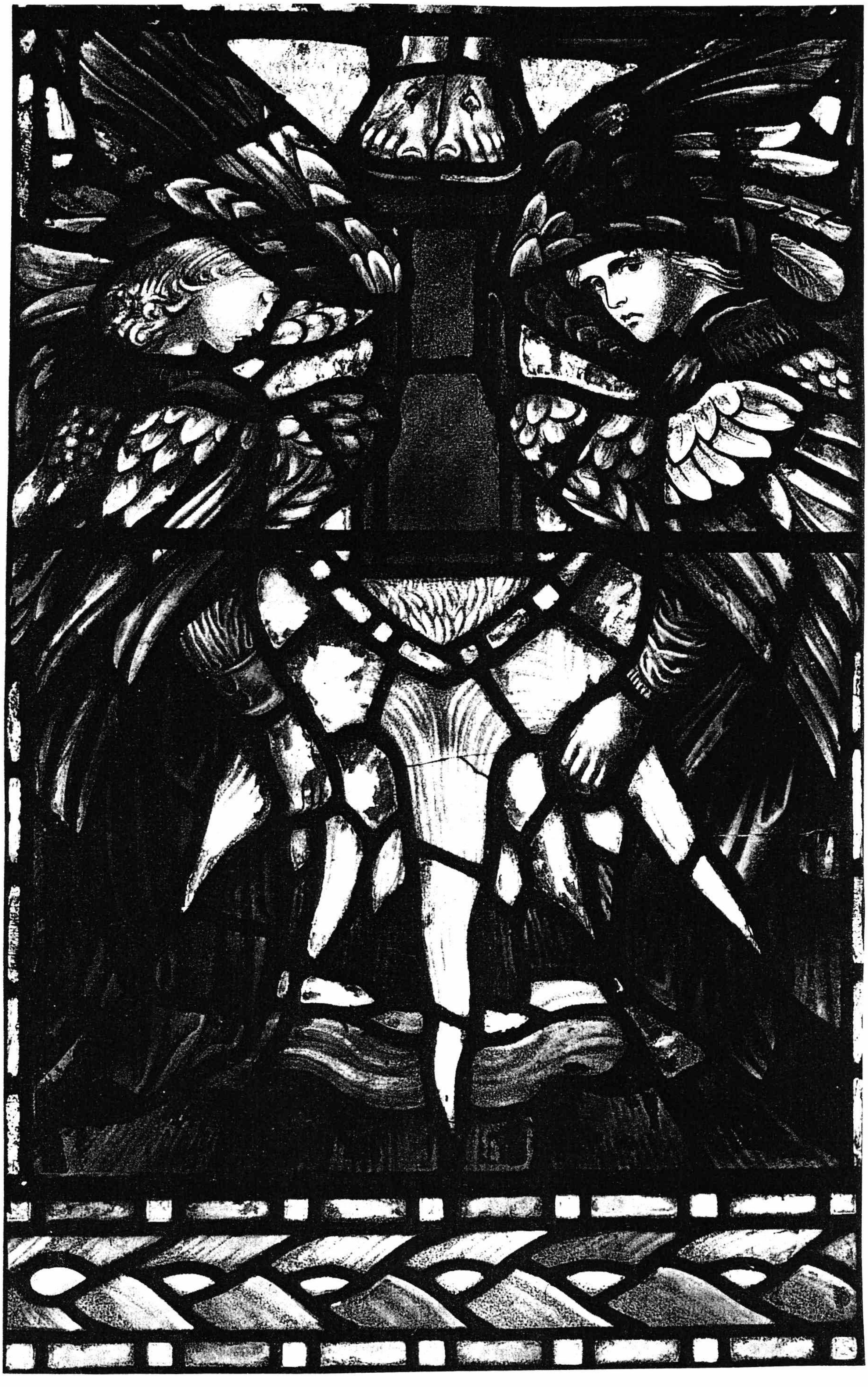
47. Edward Burne-Jones. *St Cecilia.*



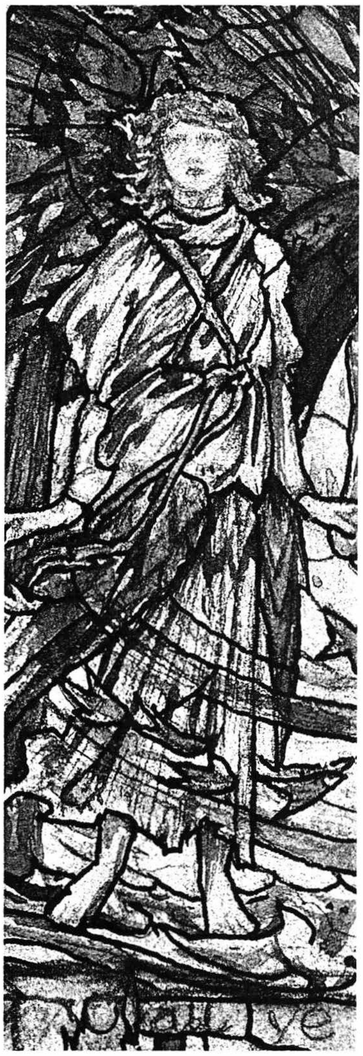
48. Christopher Whall. East window of the Lady Chapel, St Mary's, Stamford


HIM LOWER
THAN THE
HIM WITH
GLORY AND
THY HEAD AND

49. Christopher Whall. East window (detail), Cemetery Chapel, Dorchester, Dorset.

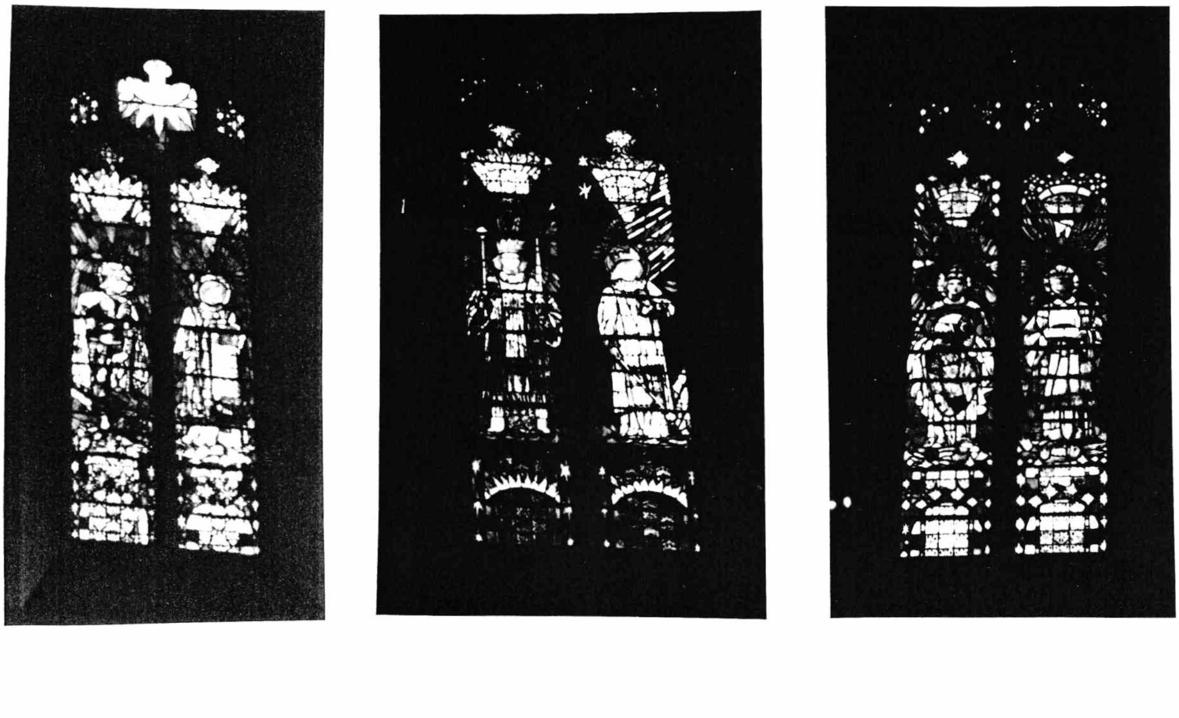


50. Christopher Whall. Upton-on-Seven Church, Herefordshire, 1906.

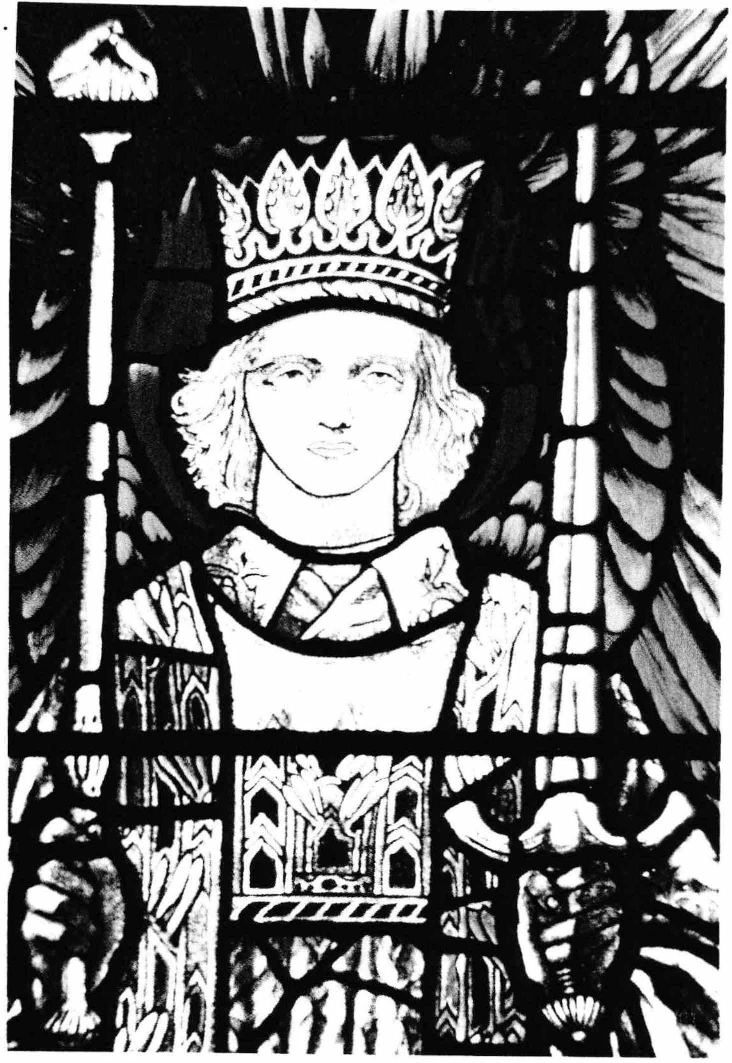


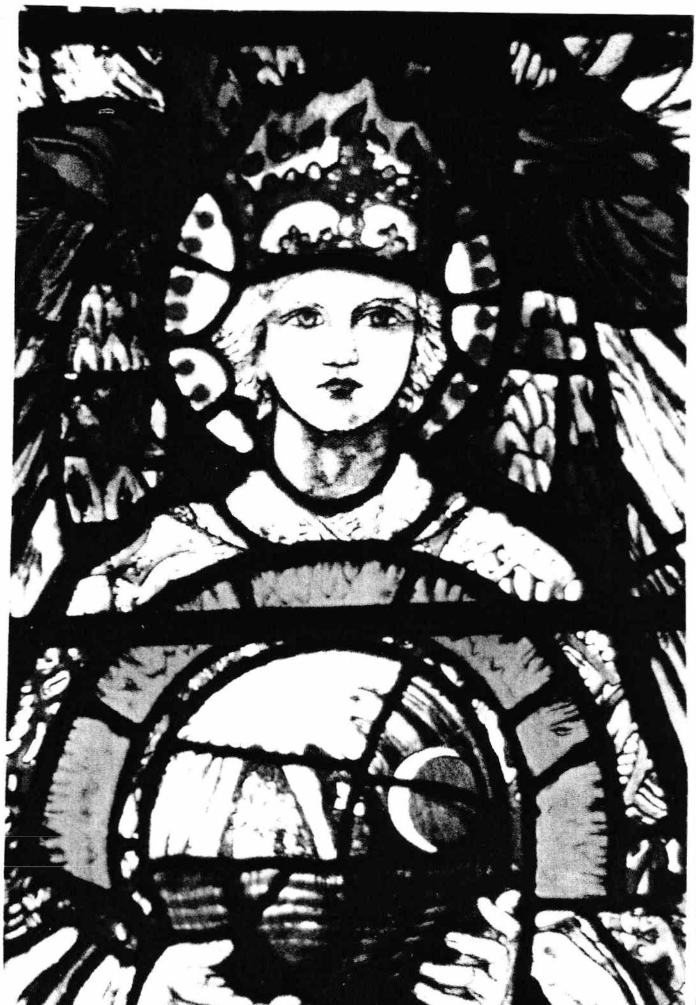
Cartoon.

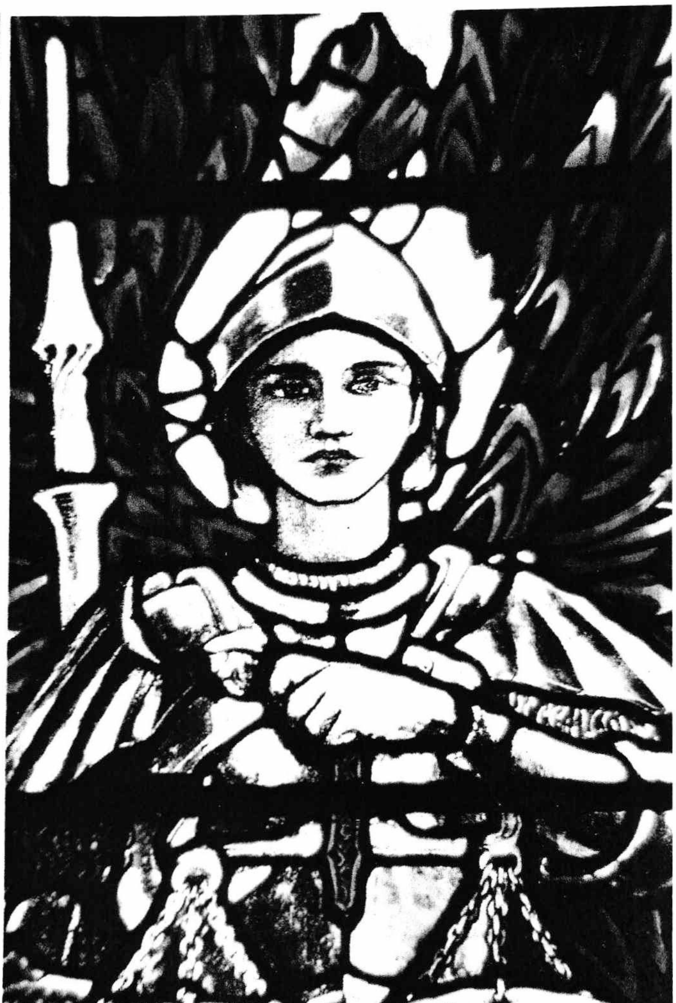
51. Christopher Whall. Photograph of Clerestory windows, Holy Trinity Church, Sloane Street, London, 1904-1923.



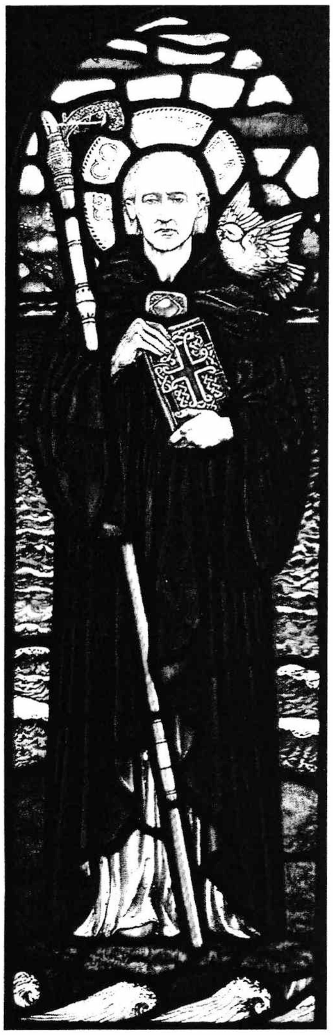
52. Christopher Whall. Clerestory windows (detail), Holy Trinity Church, Sloane Street, London, 1904-1923.



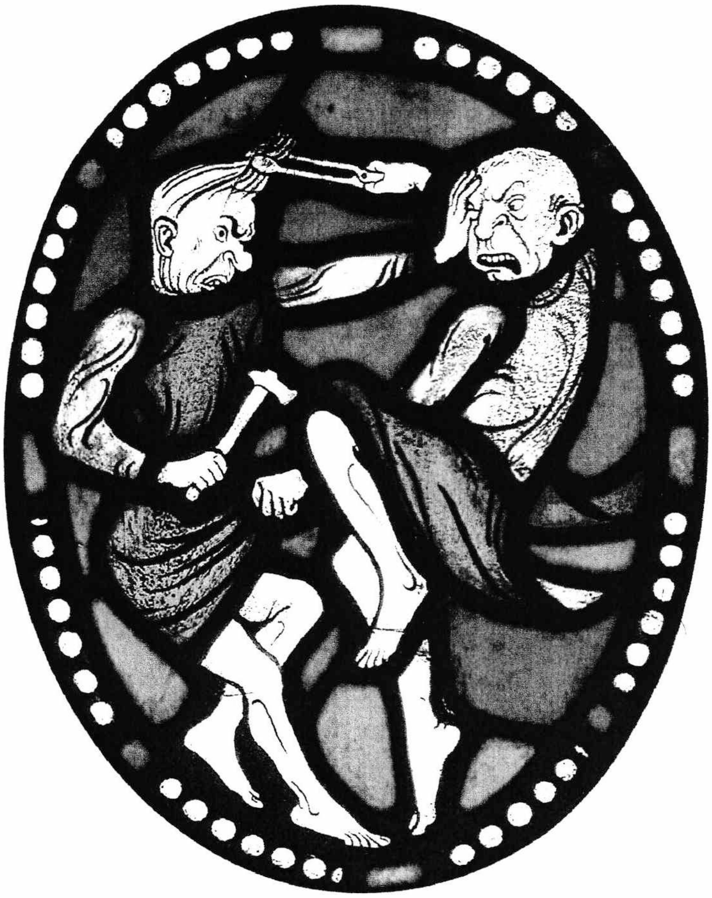




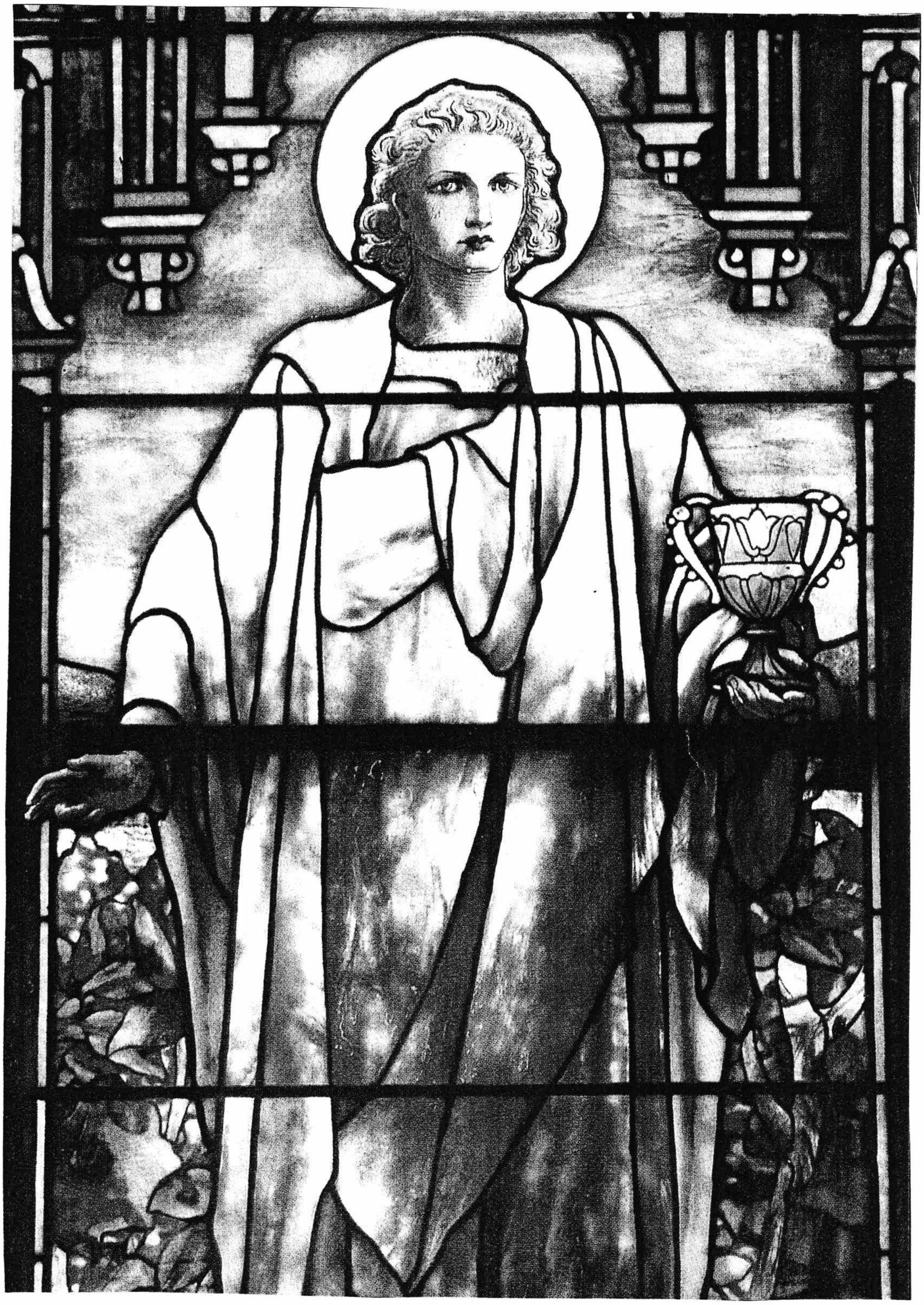
53. Karl Parsons. *St Colomba*, 1913.



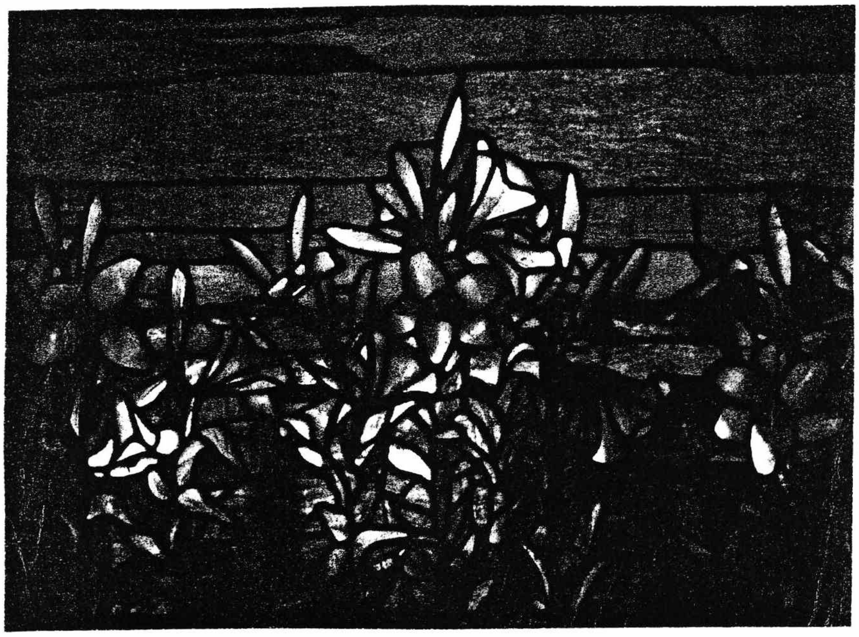
54. Karl Parsons. *Hammer and Tongs,* c.1920.



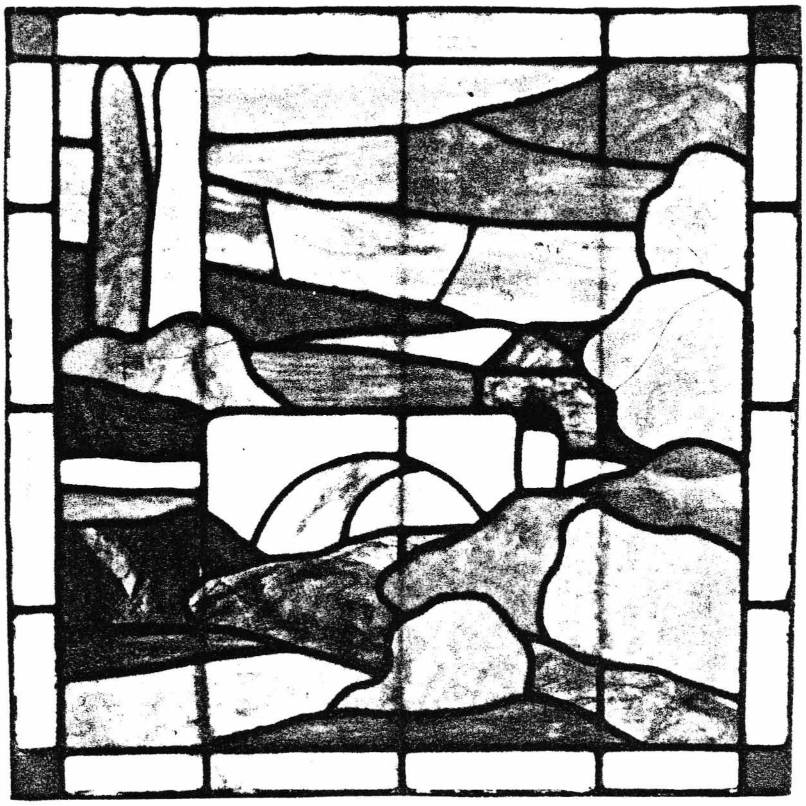
55. Louis Comfort Tiffany. *Memorial* window. Old Blandford Church, Peterborough, Virginia, c.1865.



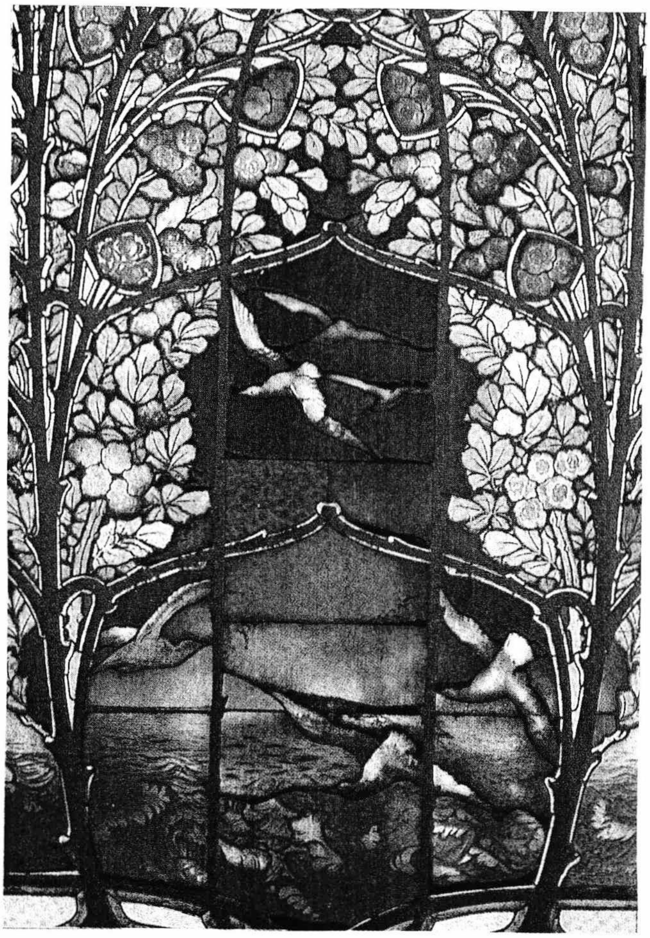
56. Louis Comfort Tiffany. *Lilies,* c.1900.



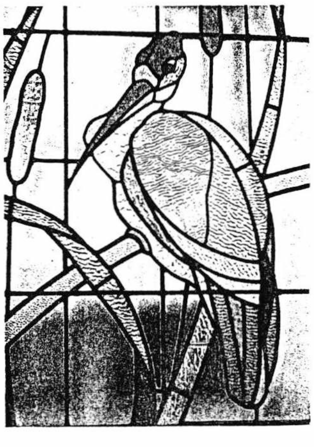
57. Louis Comfort Tiffany. *Landscape,* c.early 20th century.

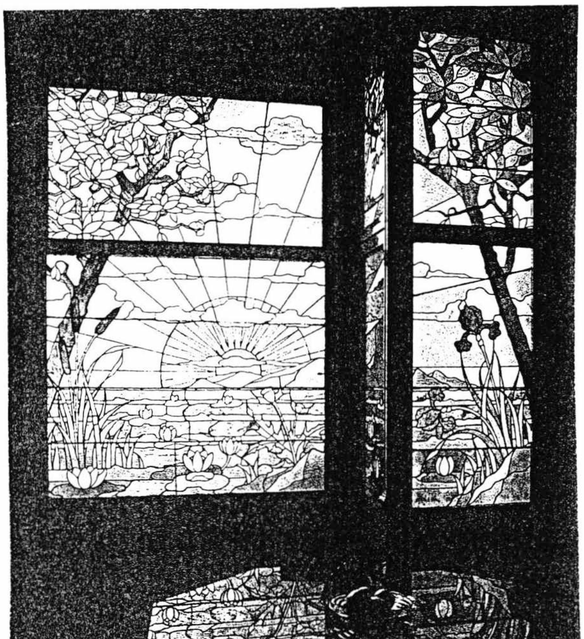


58. Jaques Gruber. Entrance Hall window, Medical School, Nancy, c.1899.

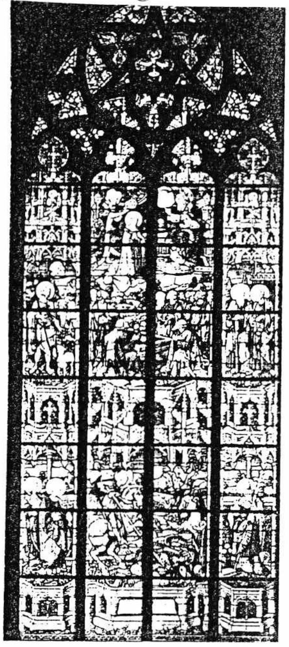


59. Domestic Art Nouveau stained glass in Belgium, c.1900.

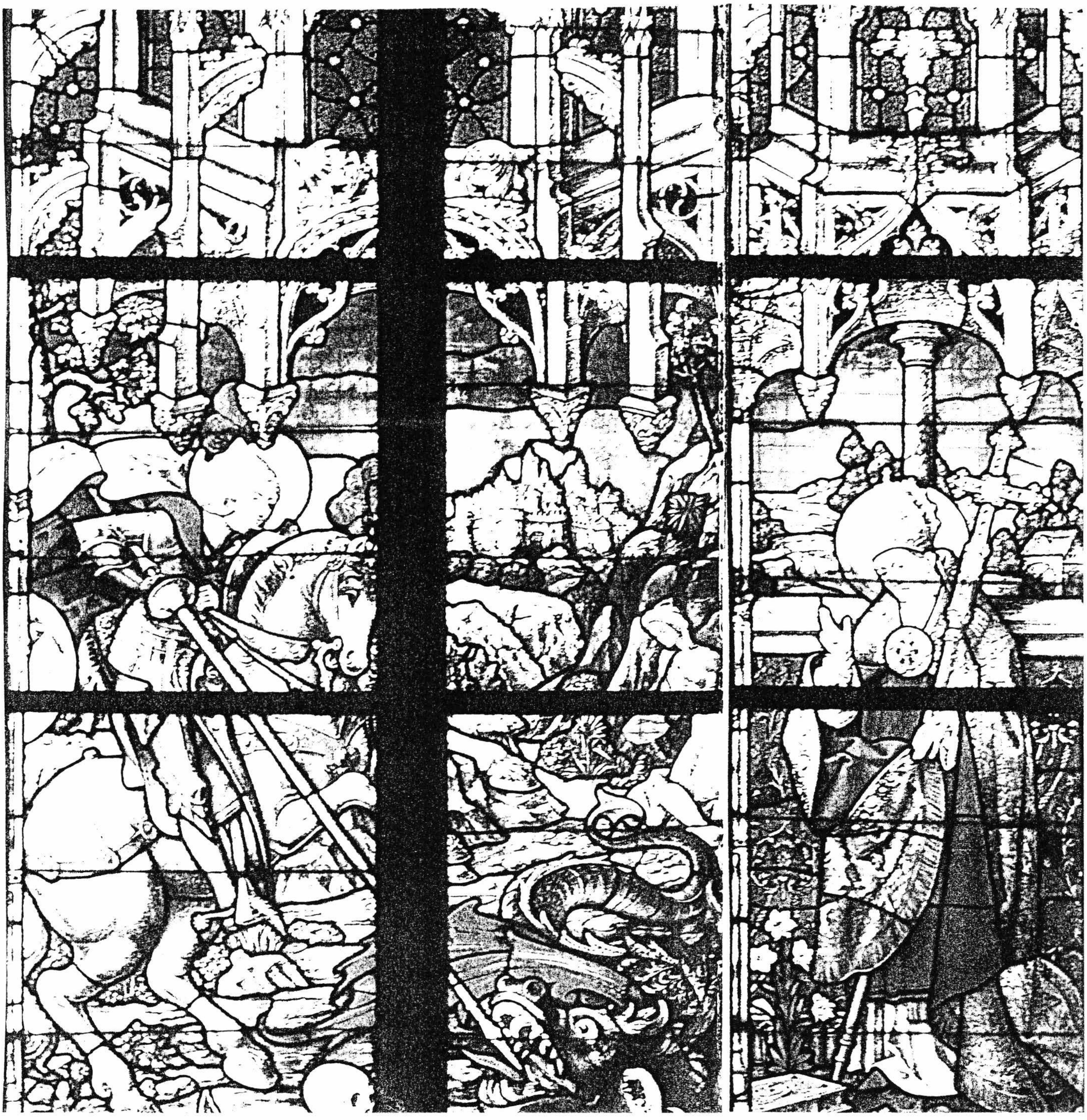




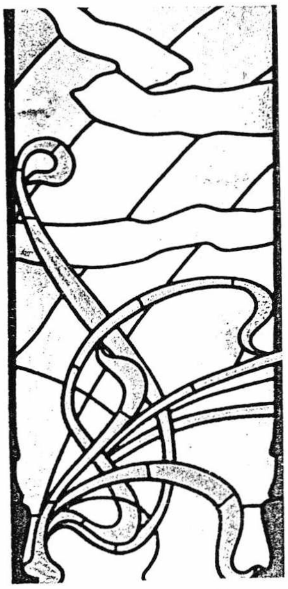
60. Atelier G. Ladon. *St George and the Dragon*. St Boniface Church, Ixelles.



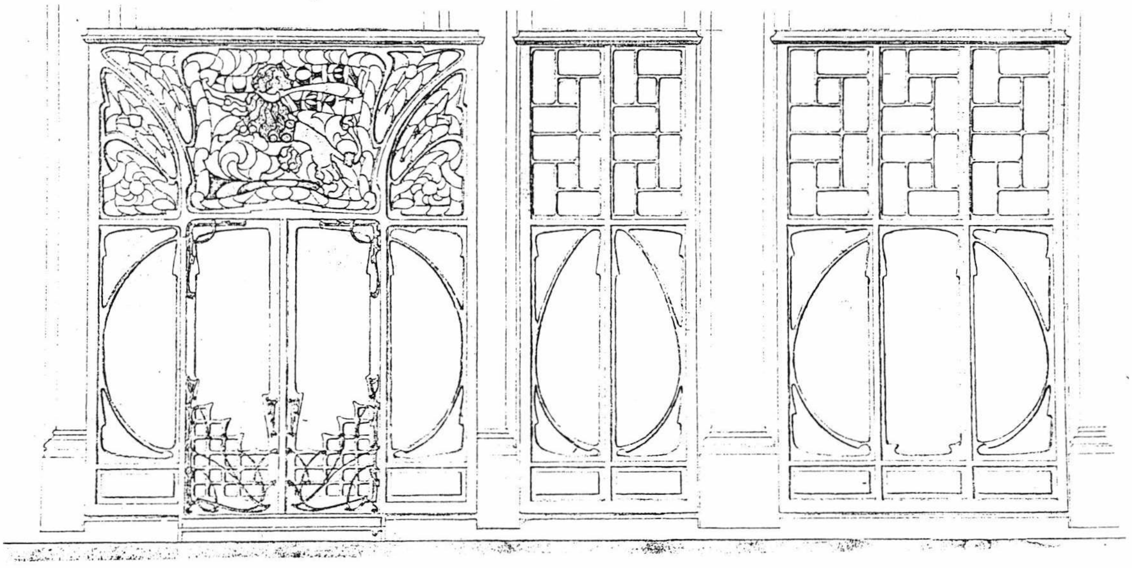
61. Atelier G. Ladon. *St George and the Dragon* (detail).



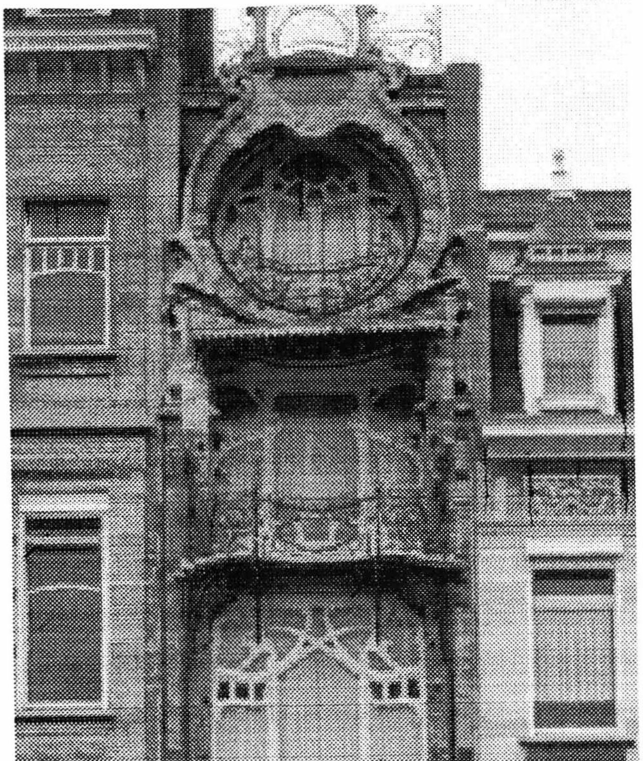
62. Victor Horta. D'entresol de l' hotel Tassel, Brussels, 1893.



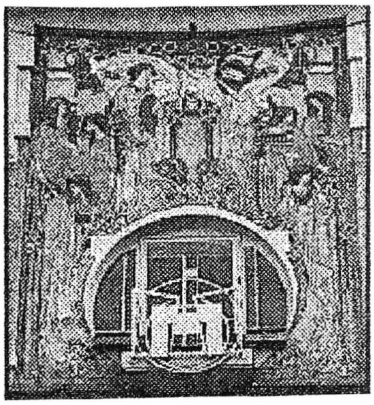
63. Paul Hankar/Raphael Evaldre. Façade window, Chein Vert Restaurant, c.1898.



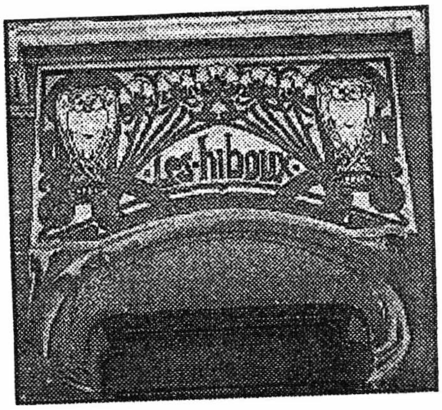
64. Victor Horta's House, Brussels, 1898.



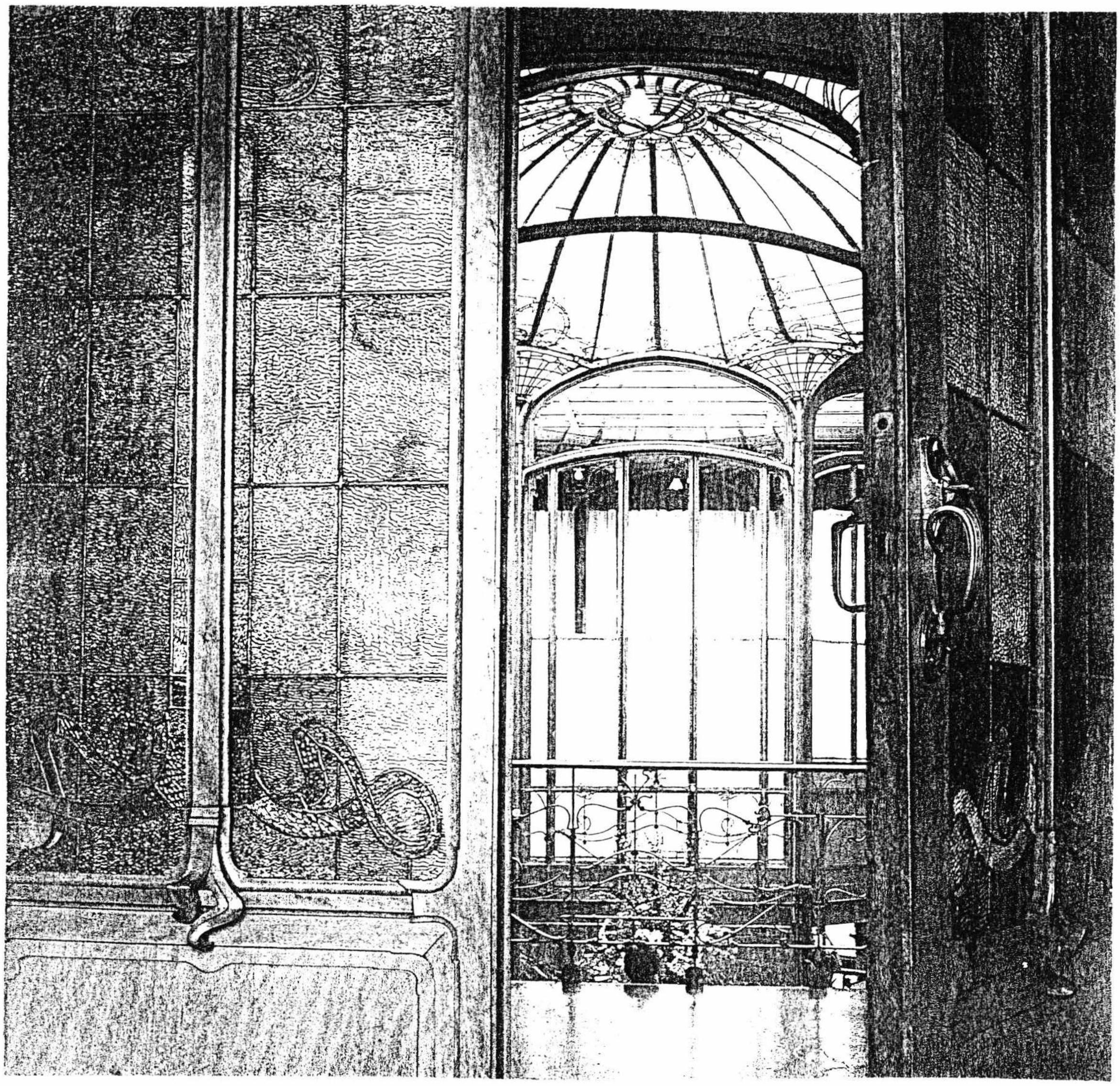
65. Cauchie House, and St Gilles, Etterbeck, c.1905.



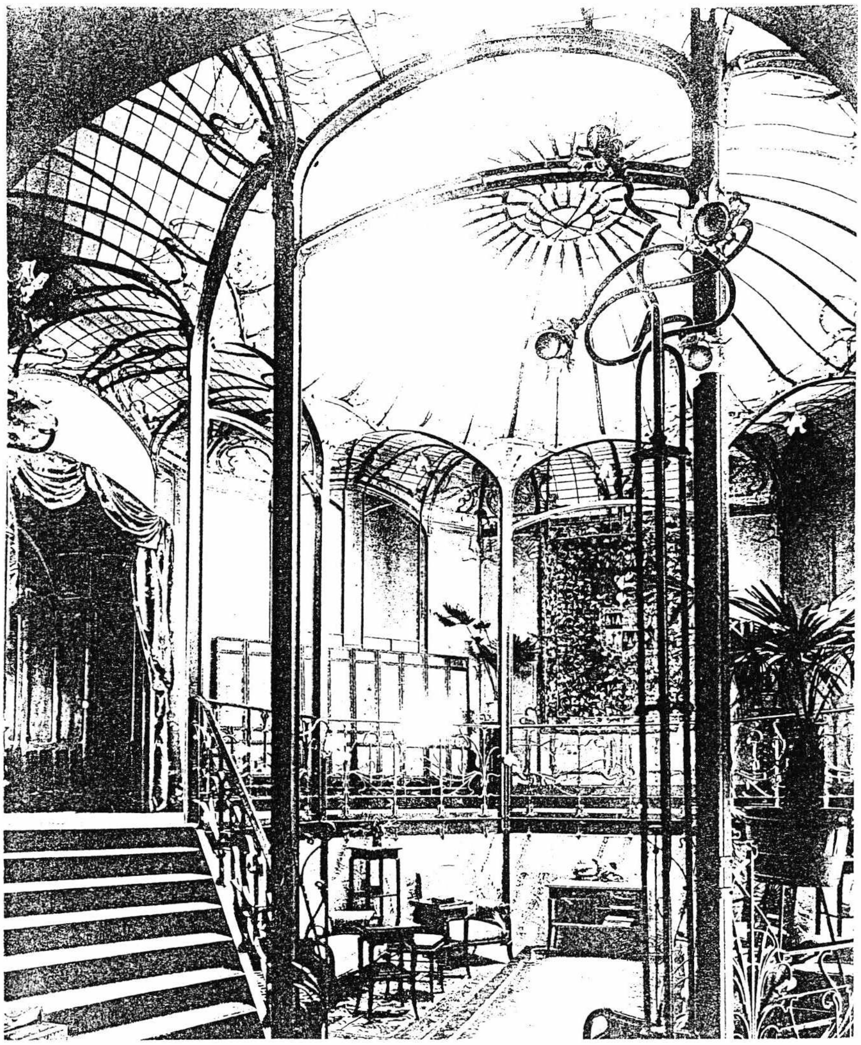
Cauchie House, and St Gilles, Etterbeck, c.1905. Sgraffito.



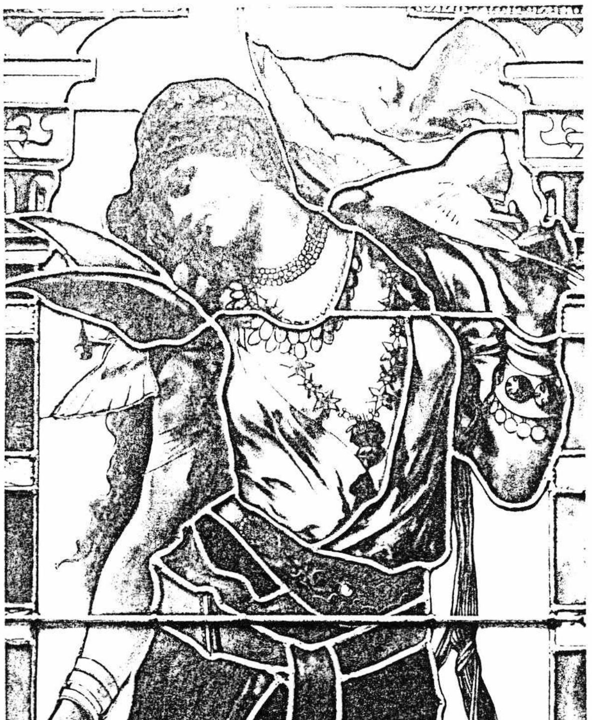
66. Victor Horta. Door panels, the Horta House, Brussels. 1898.



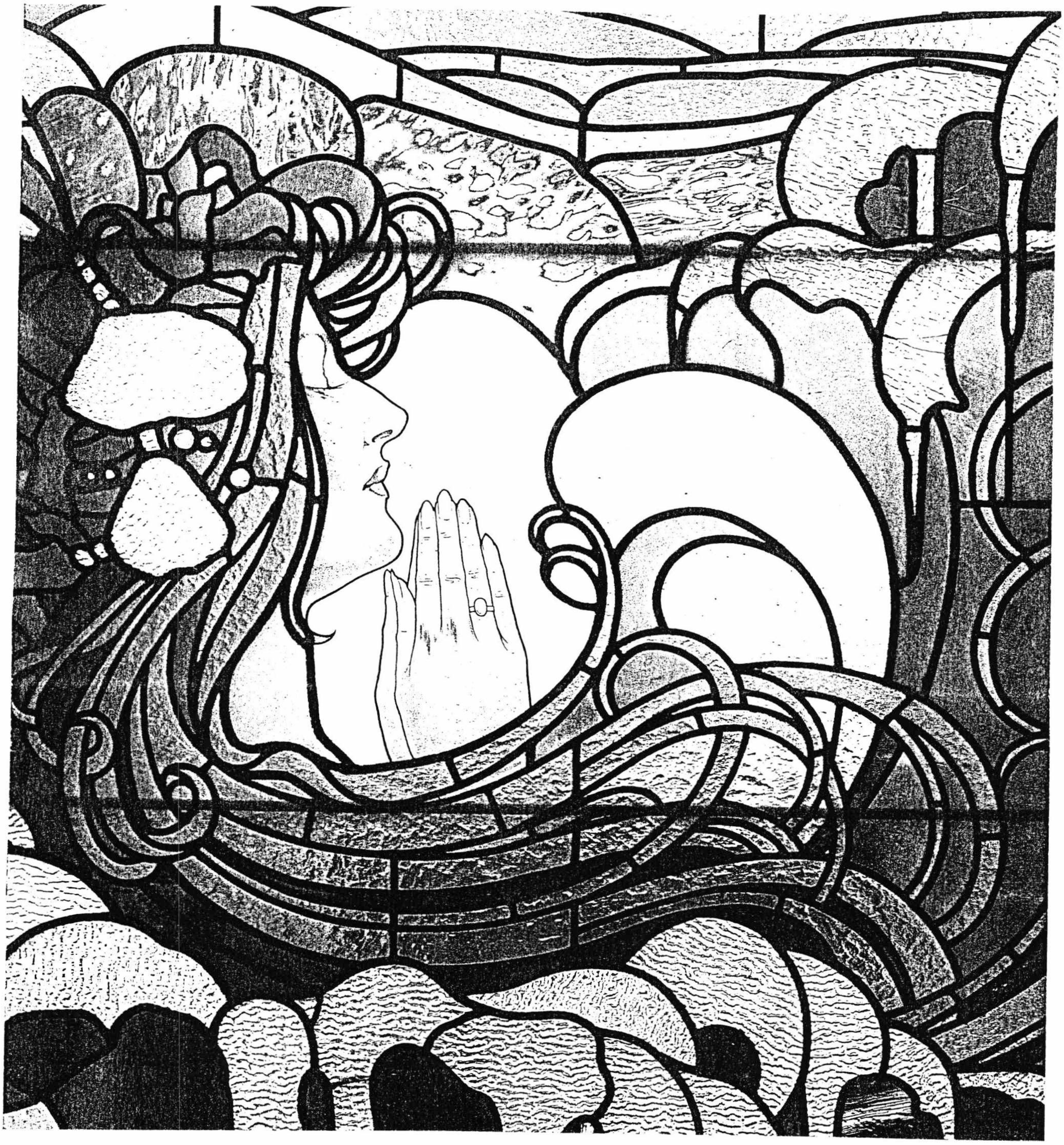
67. Victor Horta. Hotel Van Eetvelde, Brussels, 1895-7. Glass skylight



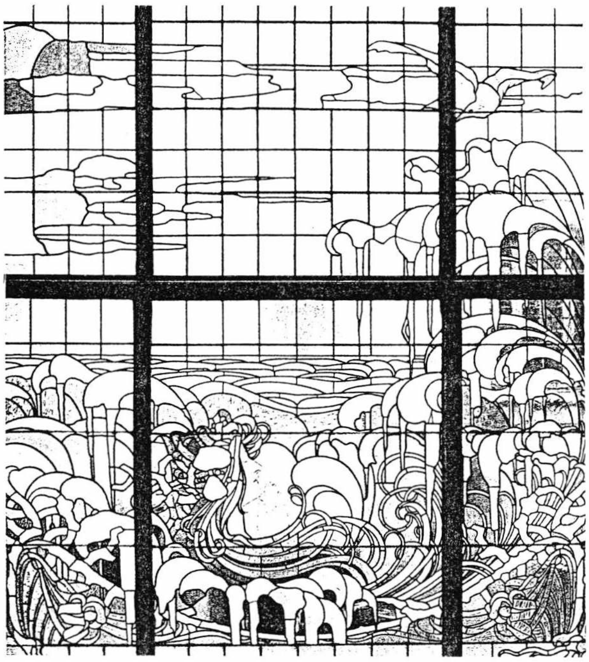
68. Raphel Evaldre. *Odalisque.* Hotel de Mâitre, Brussels, c.1897. Stained glass.



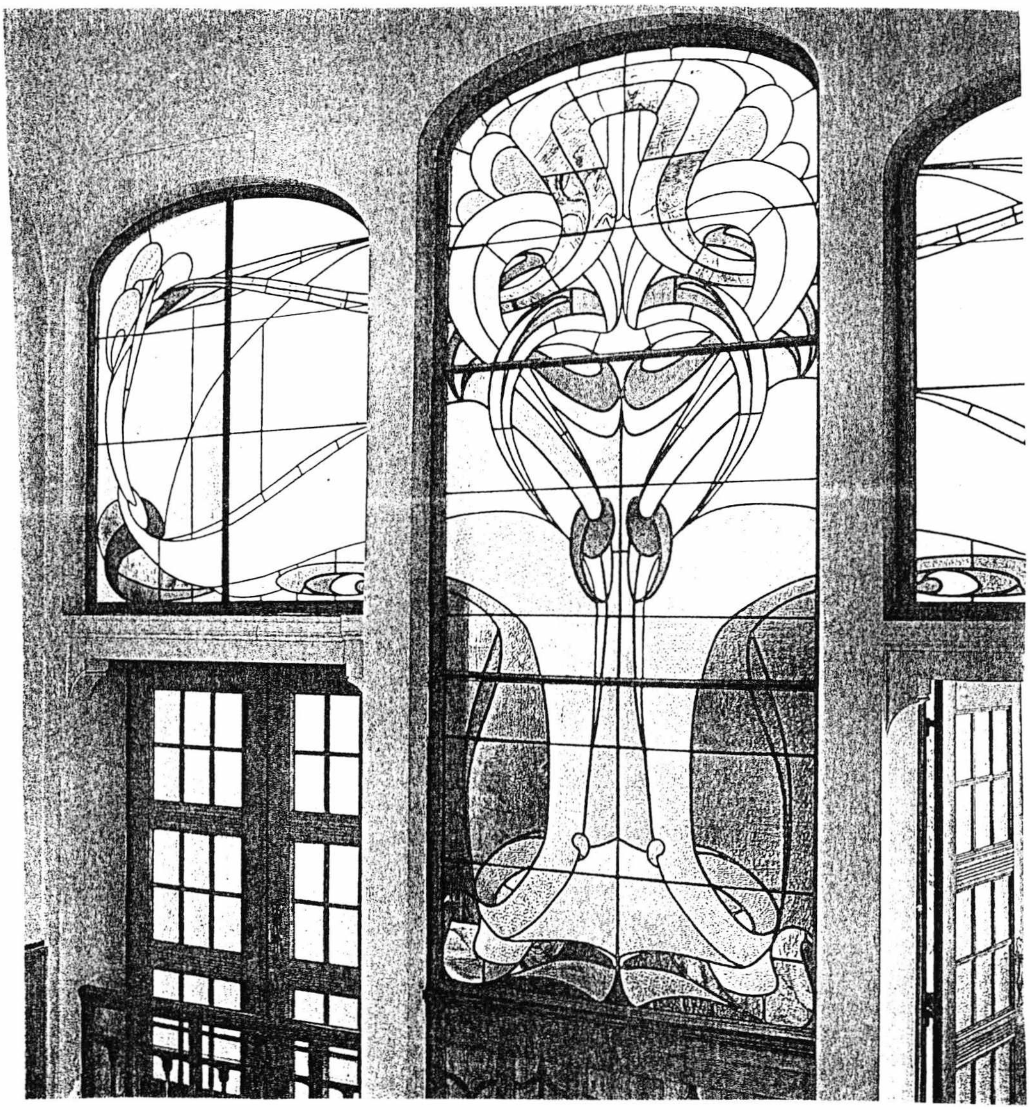
69. Raphel Evaldre. Detail *Odalisque*. Hotel Saintenoy, Ixelles, c.1890's.



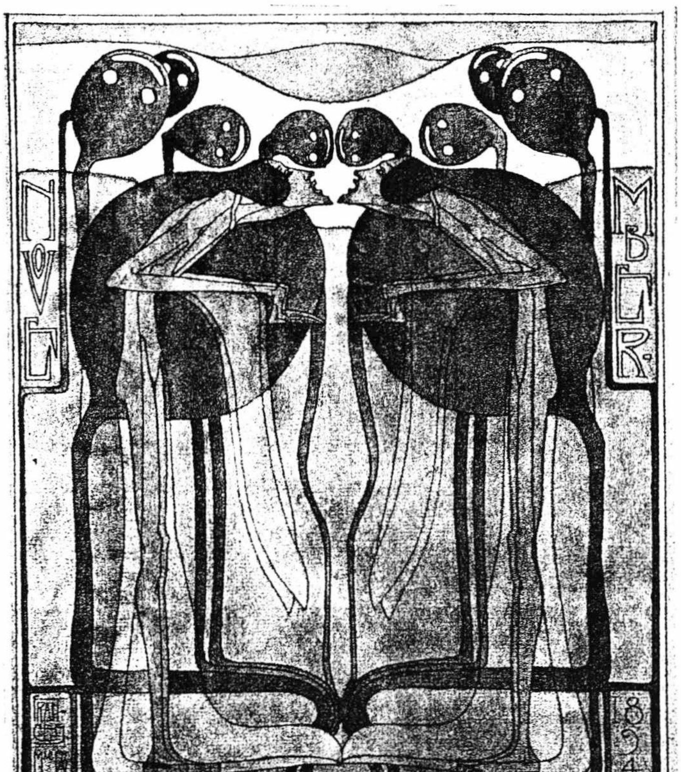
70. Raphel Evaldre. *Odalisque* window, Hotel Saintenoy, Ixelles, Brussels.



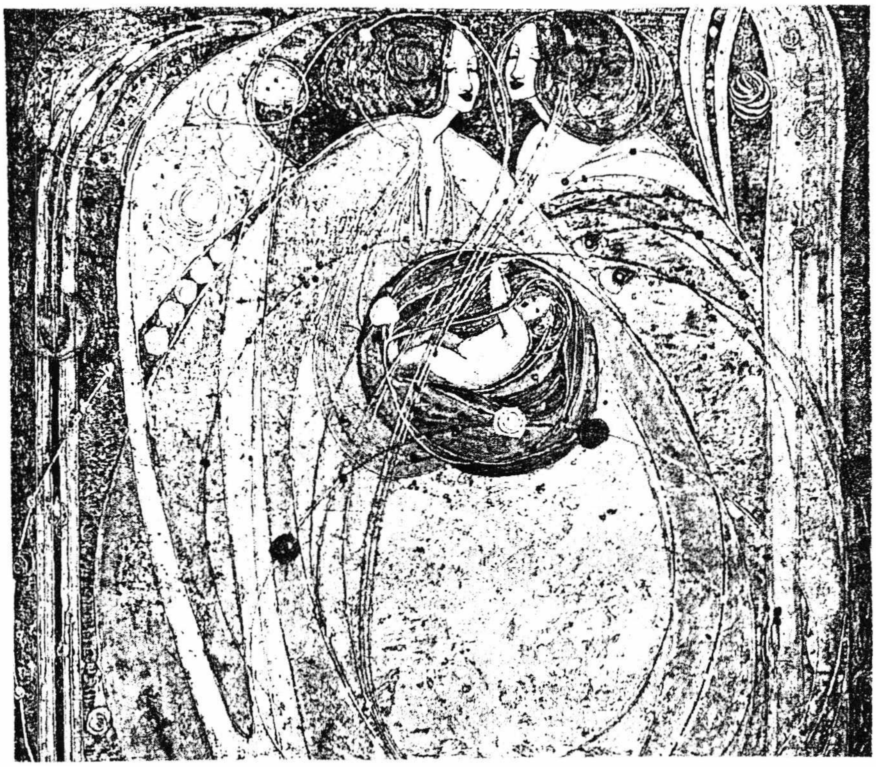
71. Henry Van de Velde. Art Nouveau window, Hotel Otlet, Brussels, 1899.



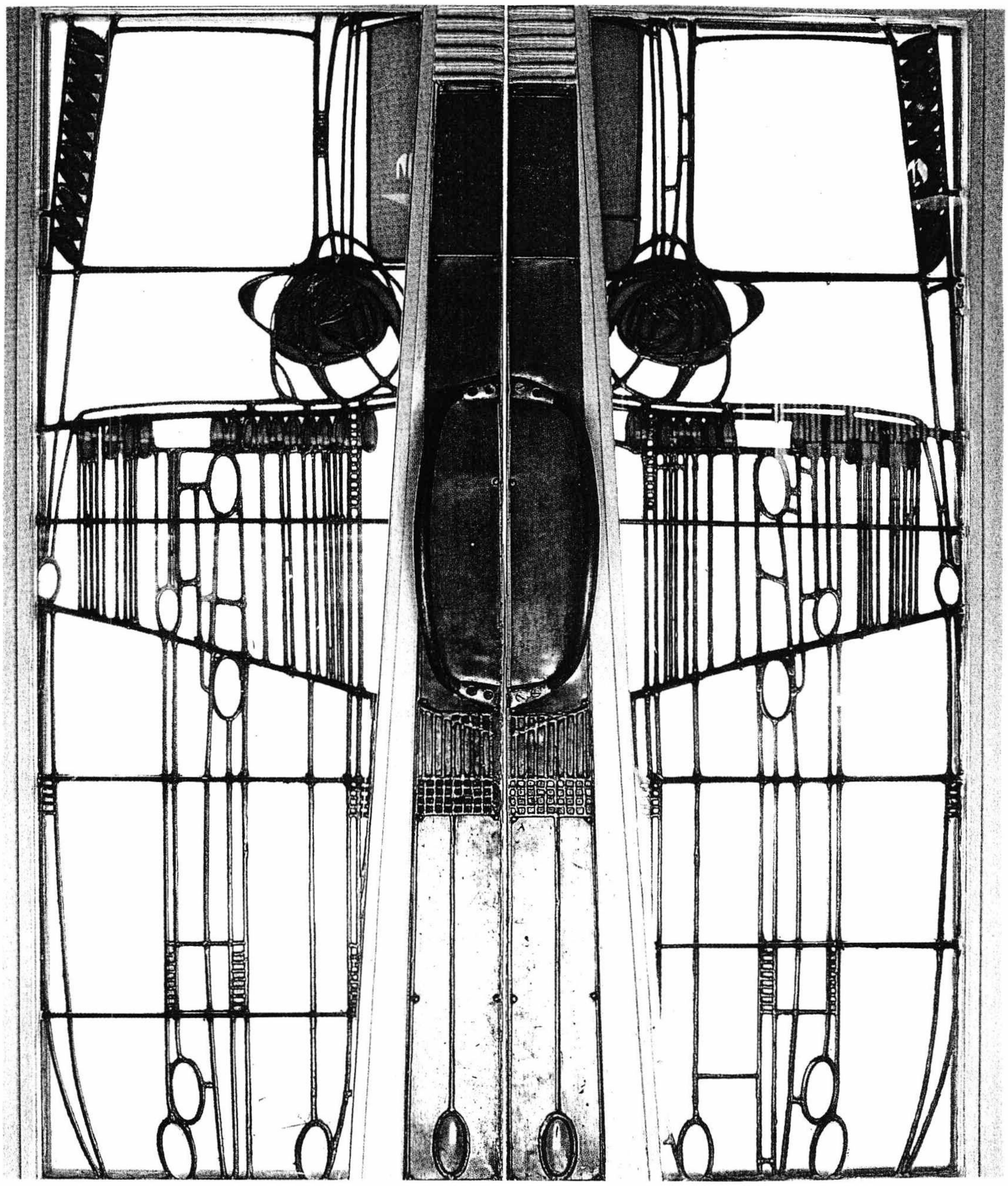
72. Frances Macdonald. *A Pond*, 1894.


NOVE
MBER
1894
A POND

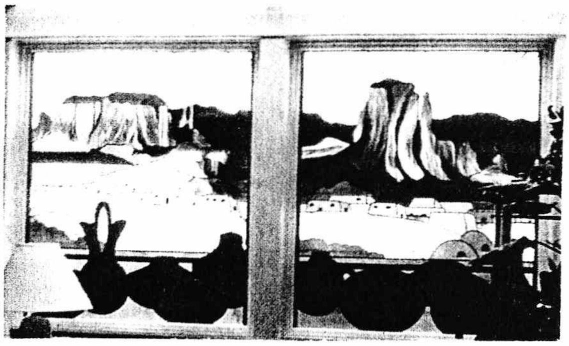
73. Margaret Macdonald. *Heart of the Rose,* 1901.



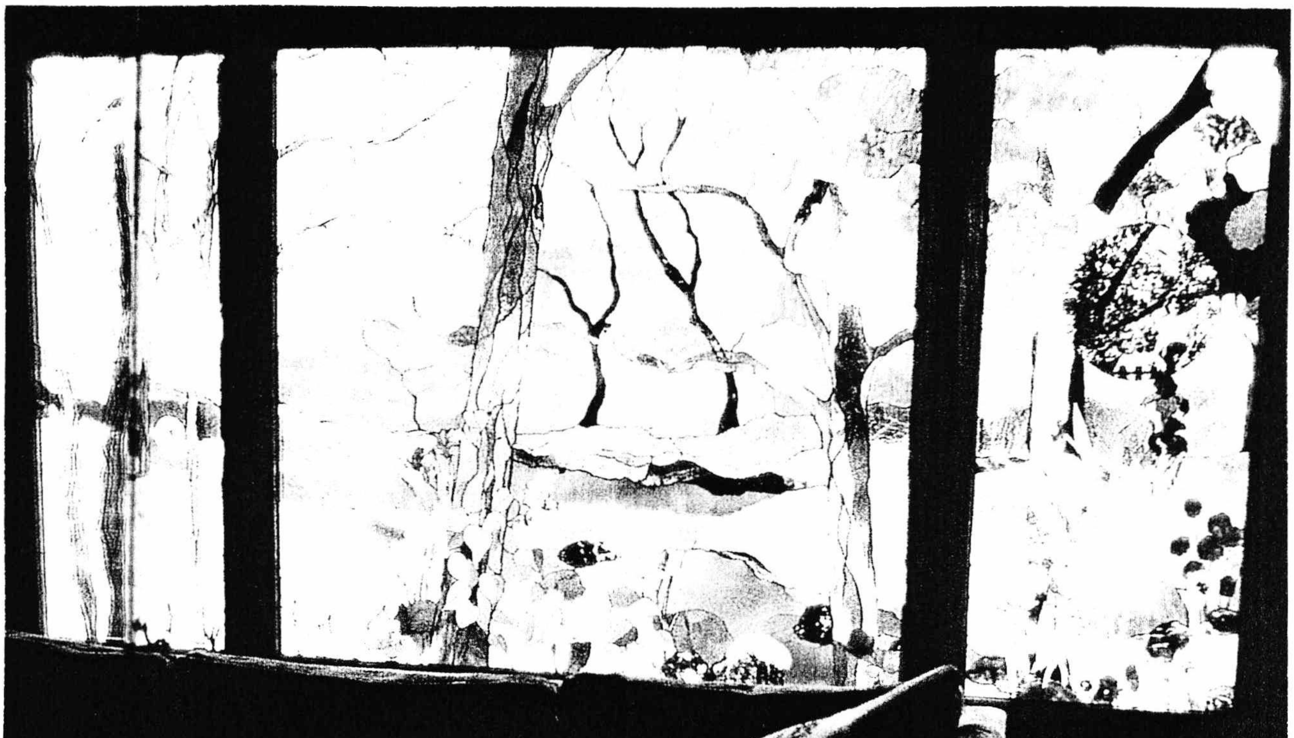
74. Charles Rennie Mackintosh. Salon de Luxe, Willow Tea Rooms, Glasgow.



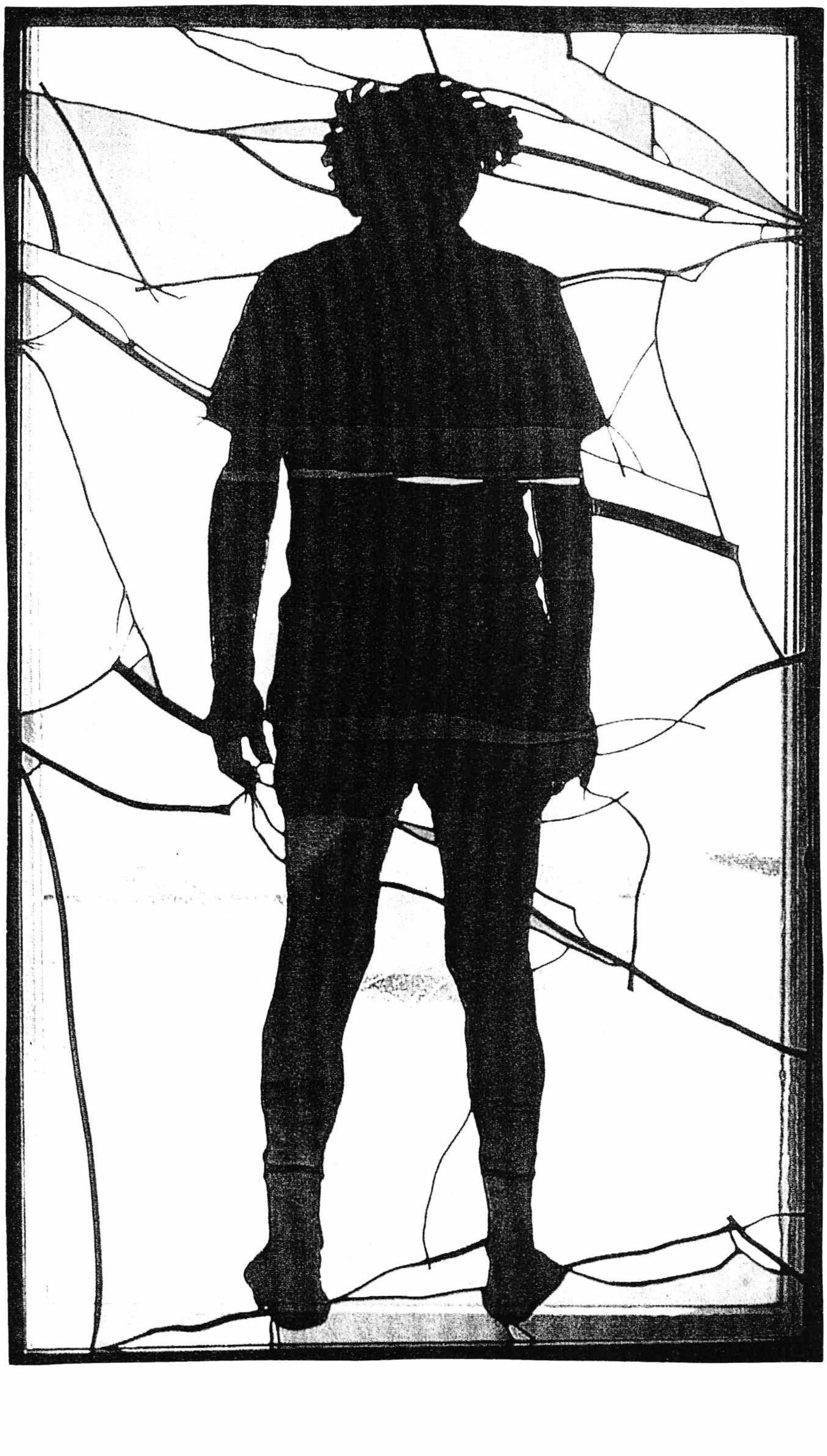
75. Creative Stained Glass Studio. Domestic glass panels, Colorado, c.1980's.



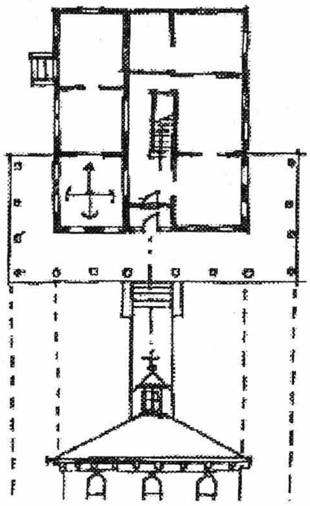
76. Stained Glass Design Studio. Domestic glass panels, Florida, c.1980's.

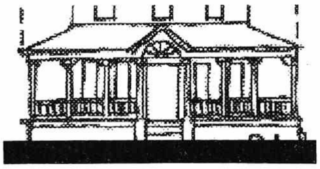


77. Narcissus Quagliata. *Dionysus,* 1997.

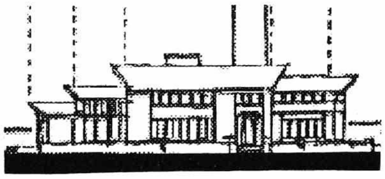


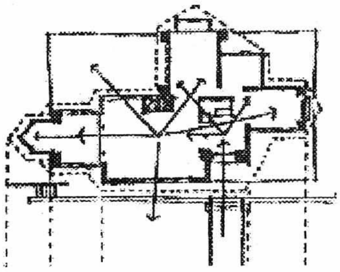
78. Comparison of architectural elevations for Victorian

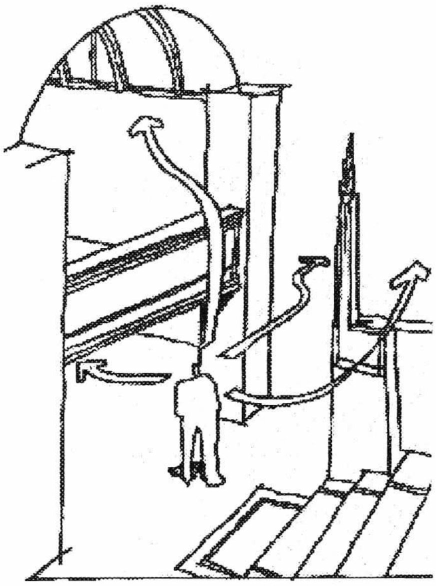




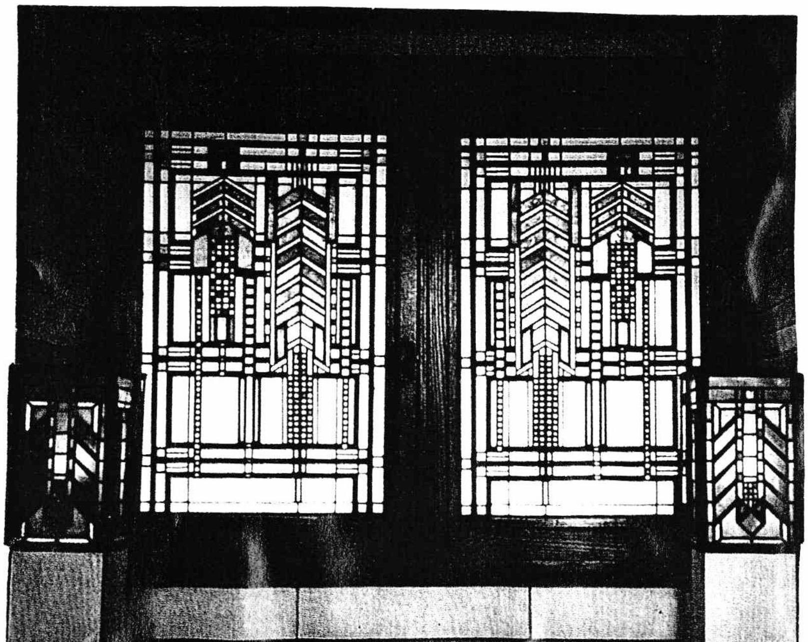
and Prairie Houses.



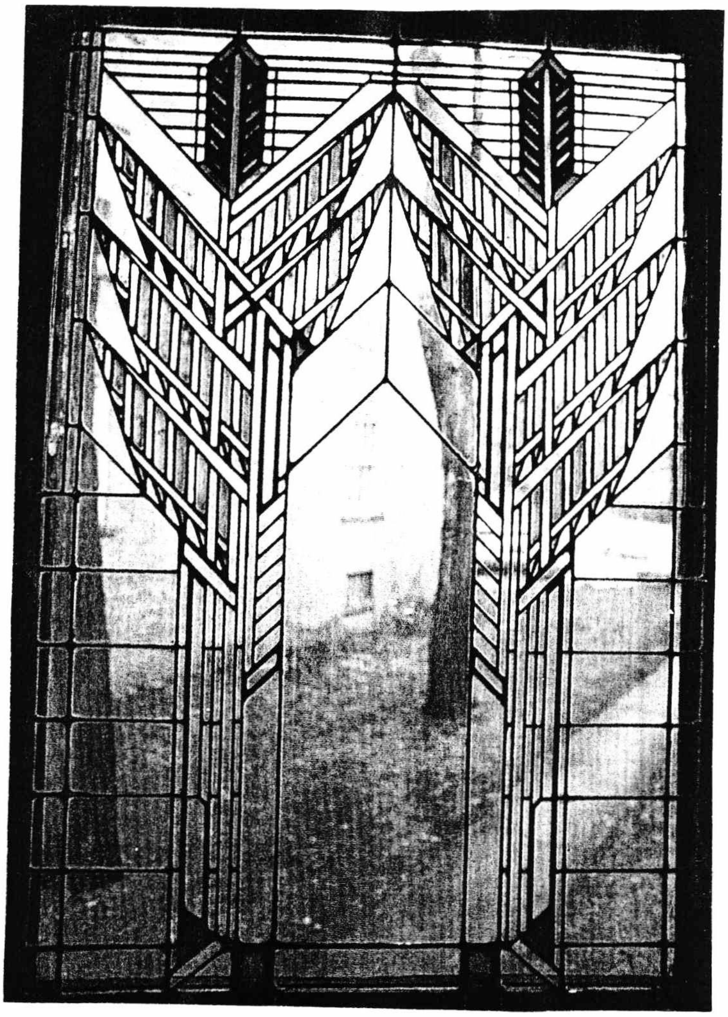




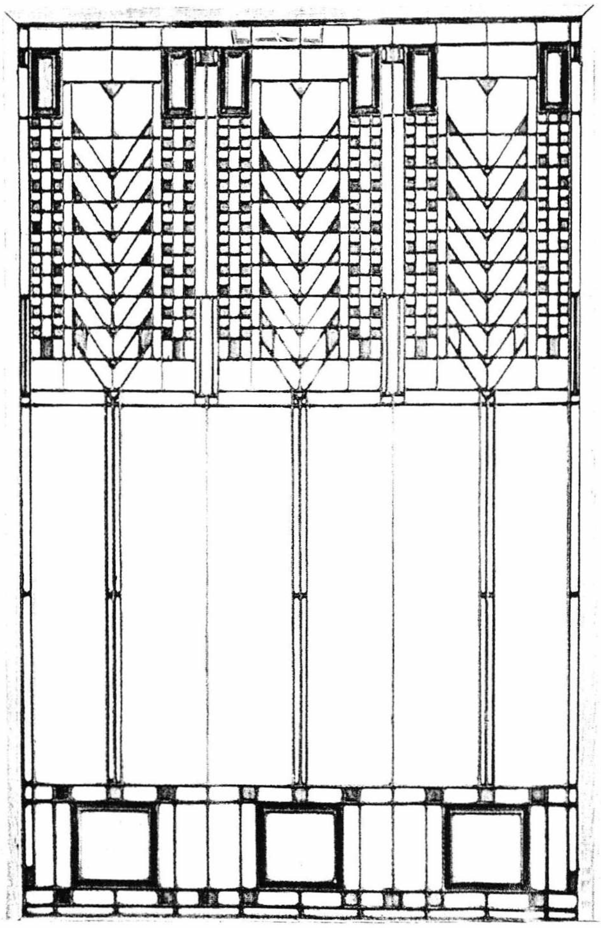
79. Frank Lloyd Wright. Entrance Hall windows, Susan Lawrence Dana House.



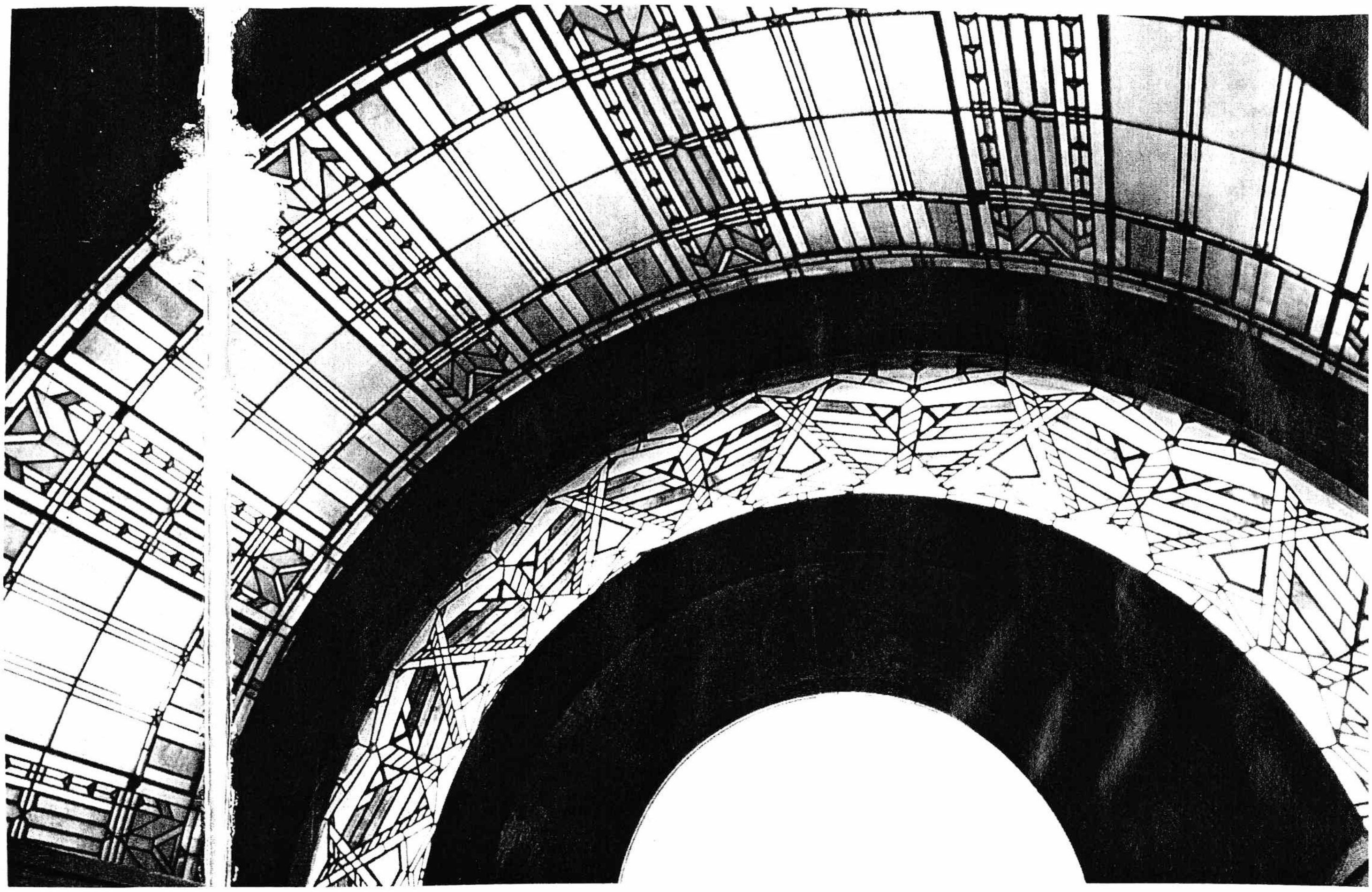
80. Frank Lloyd Wright. Dining room windows, Susan Lawrence Dana House.



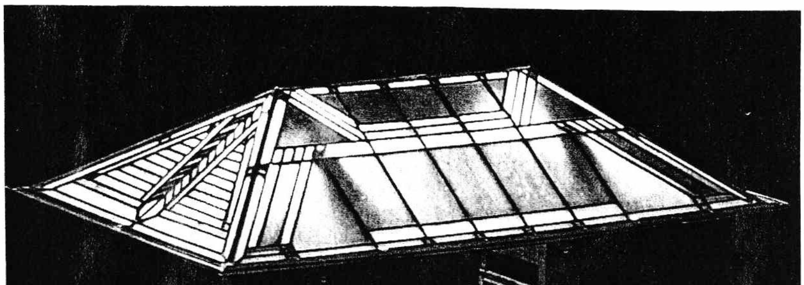
81. Frank Lloyd Wright. *Tree of Life* window. Darwin D Martin House, Buffalo.

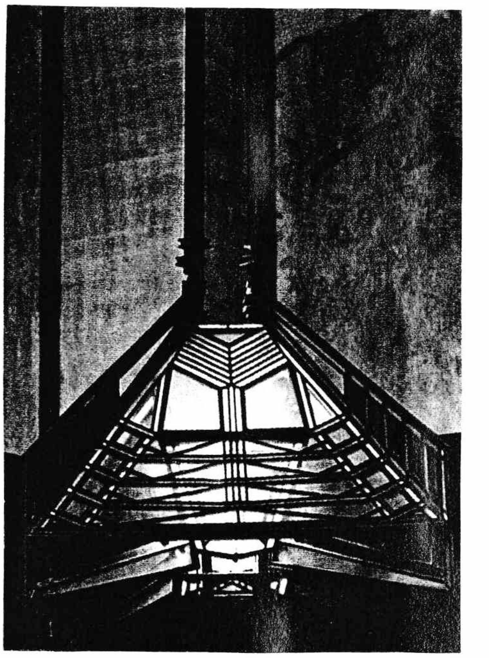


82. Frank Lloyd Wright. Entrance Hall skylight, Susan Lawrence Dana House.



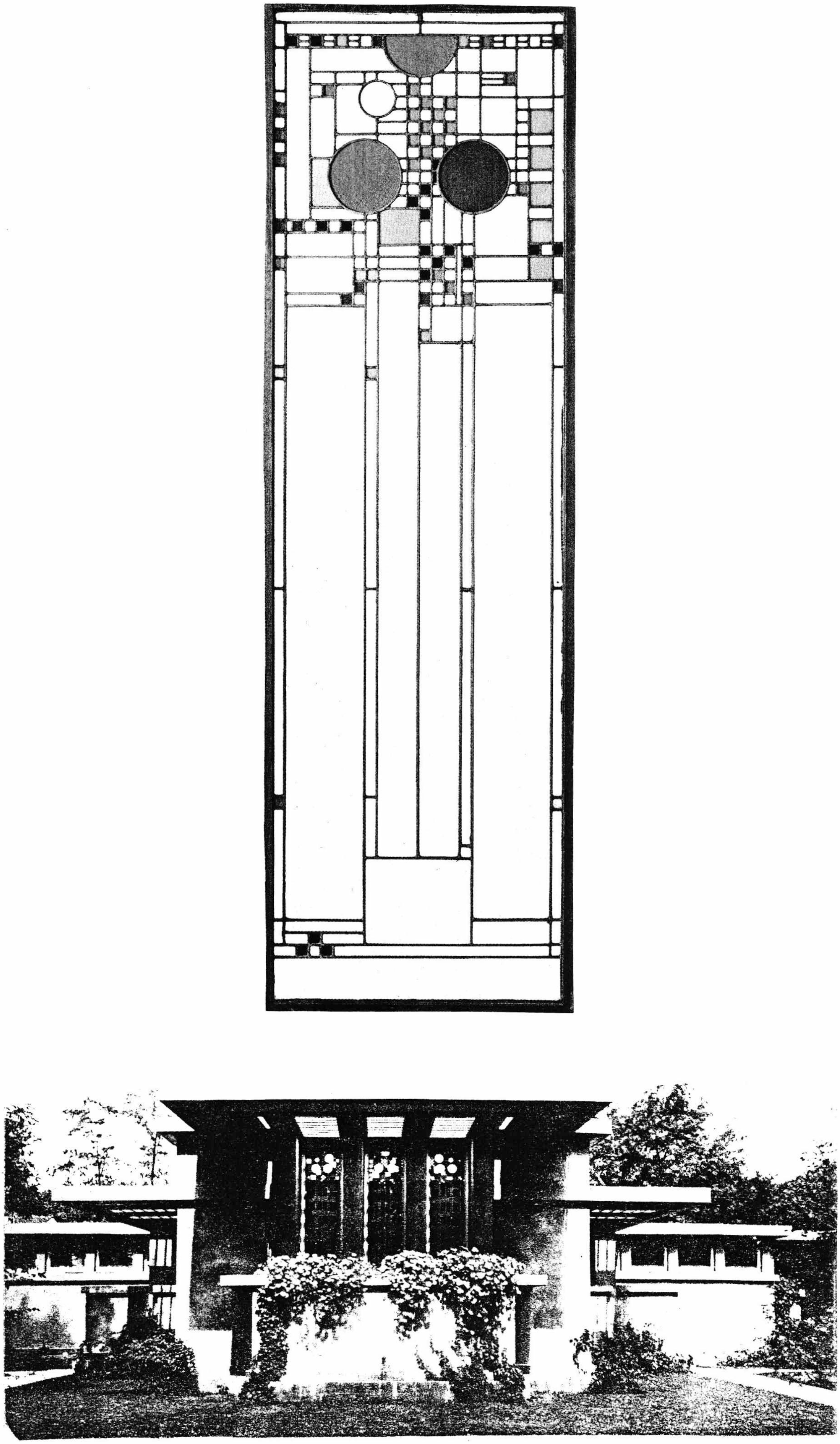
83. Frank Lloyd Wright. Table lamp.



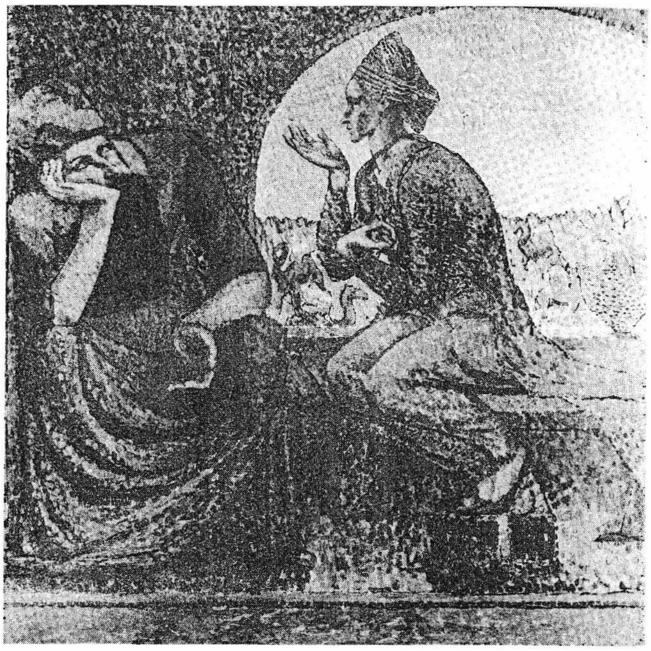


84. Frank Lloyd Wright. *Butterfly* hanging lamp.

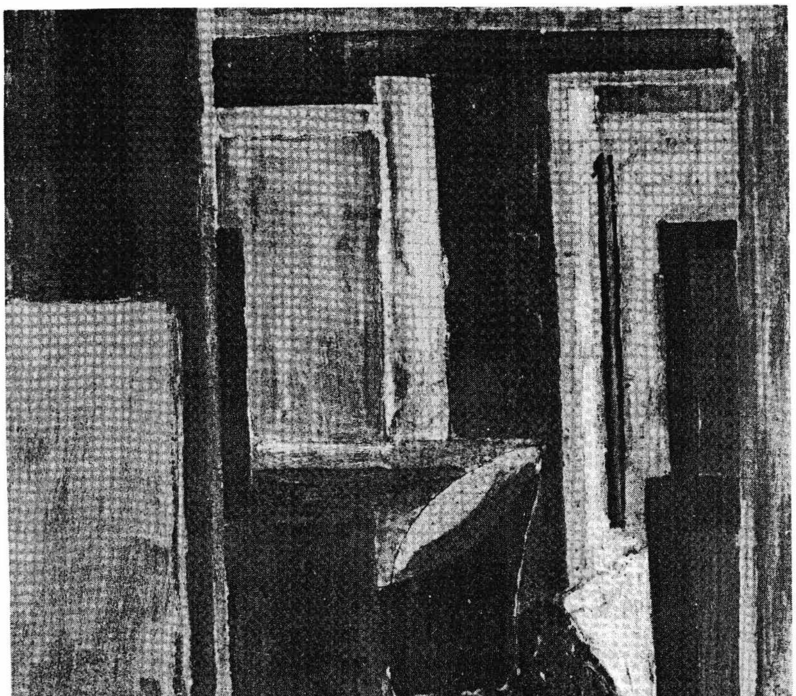
85. Frank Lloyd Wright. Avery Coonley Playhouse windows, Riverside, Illinois.



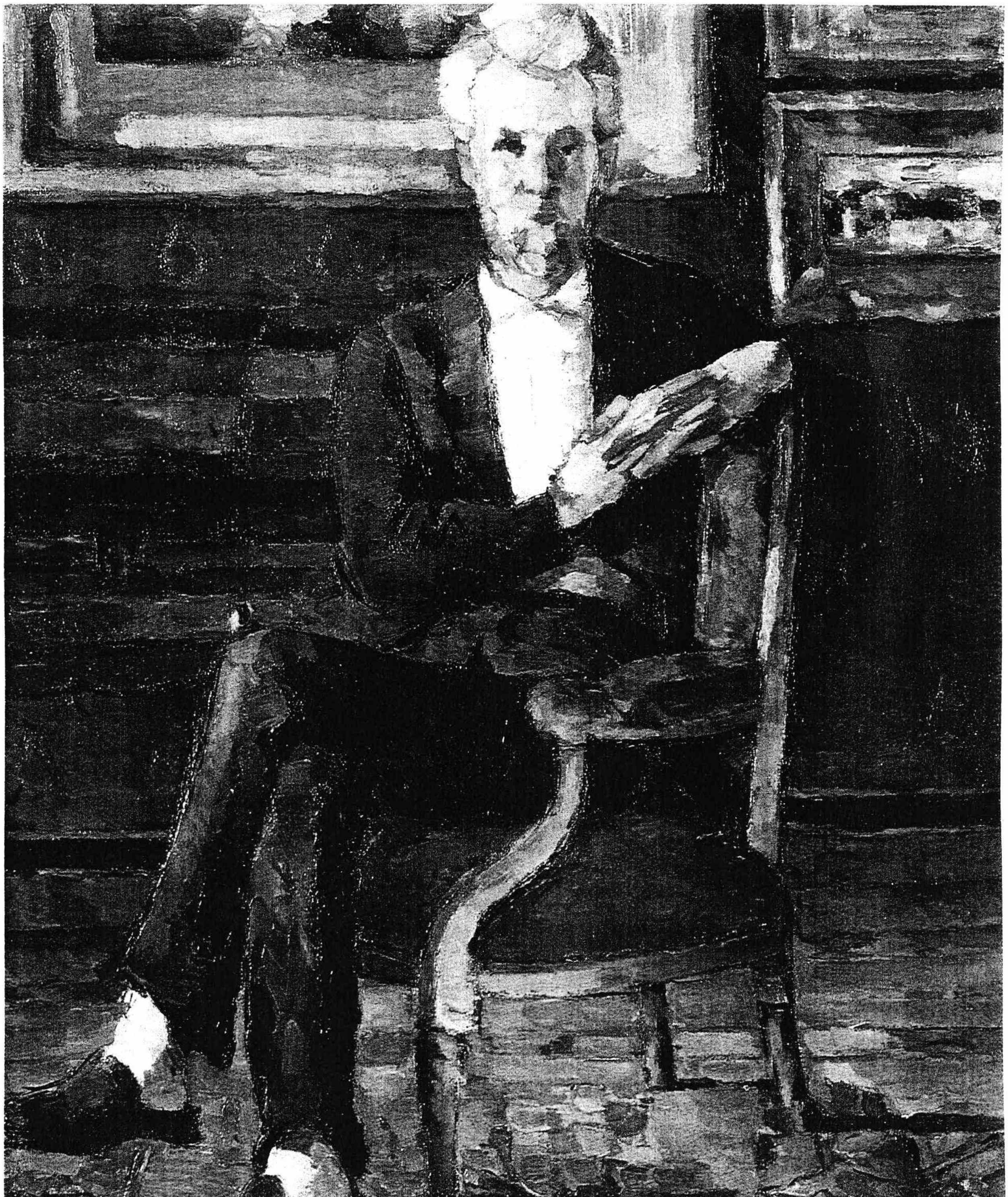
86. Duncan Grant. *Queen of Sheba,* 1913.



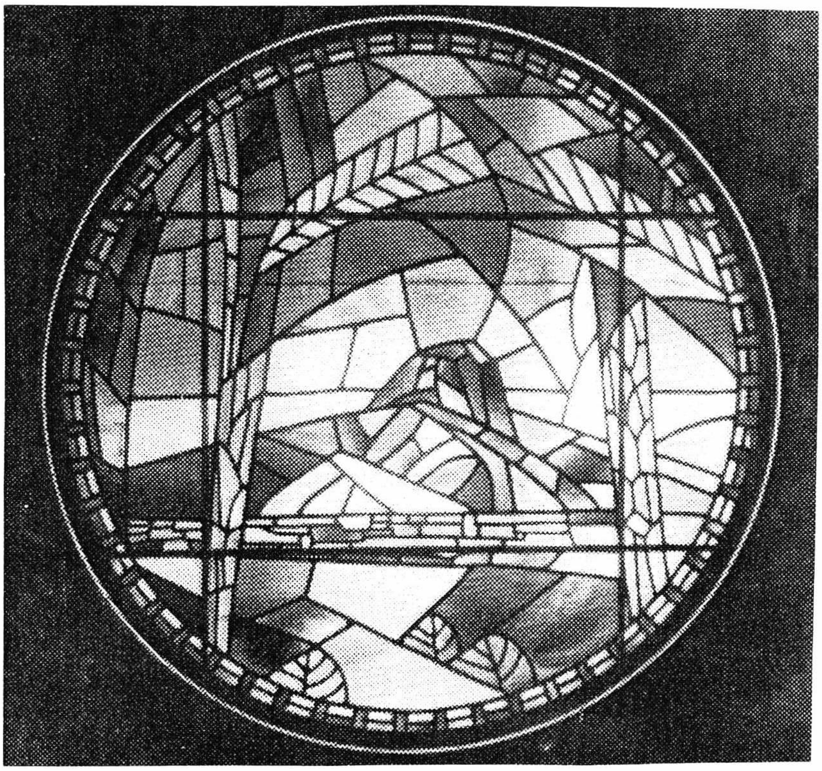
87. Duncan Grant. *Interior Gordon Square*, 1914.



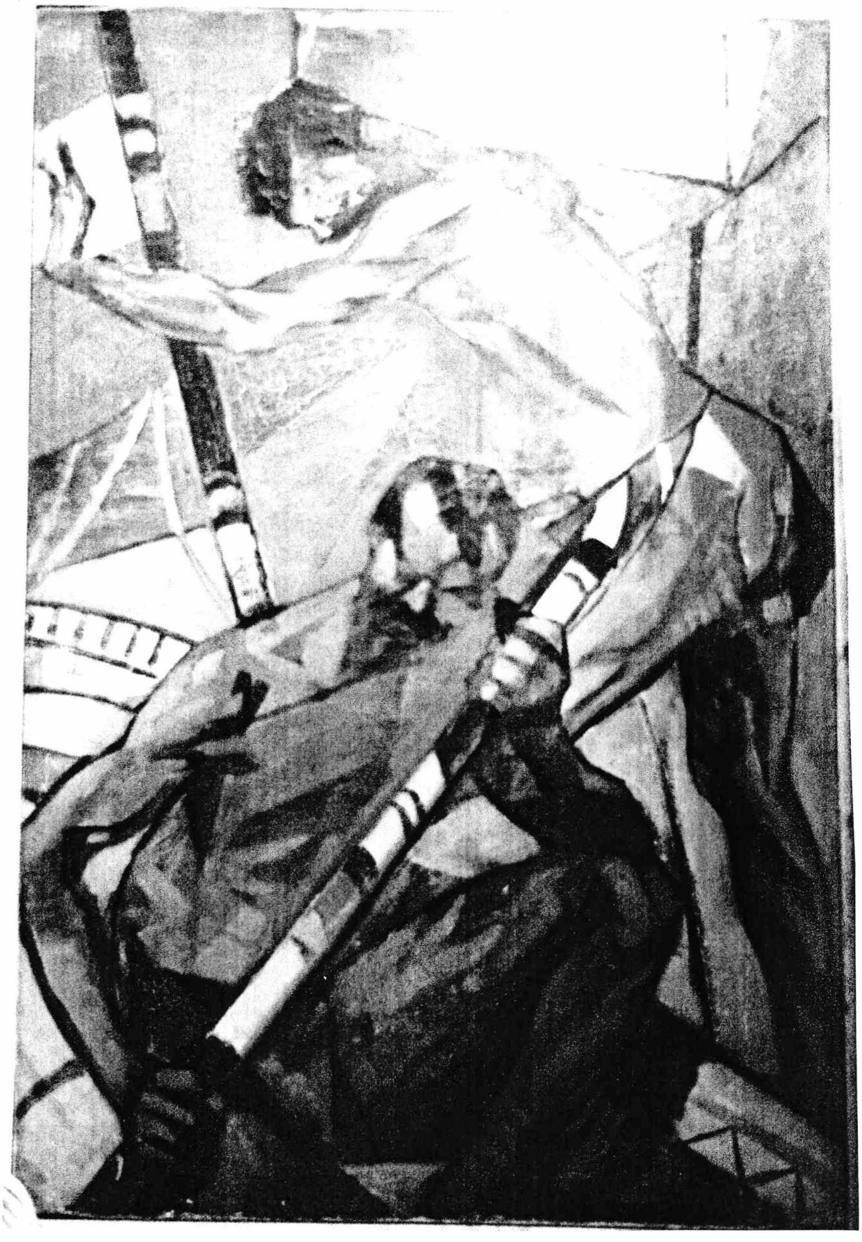
88. Paul Cézanne. *Portrait of Victor Choquet*, 1877.



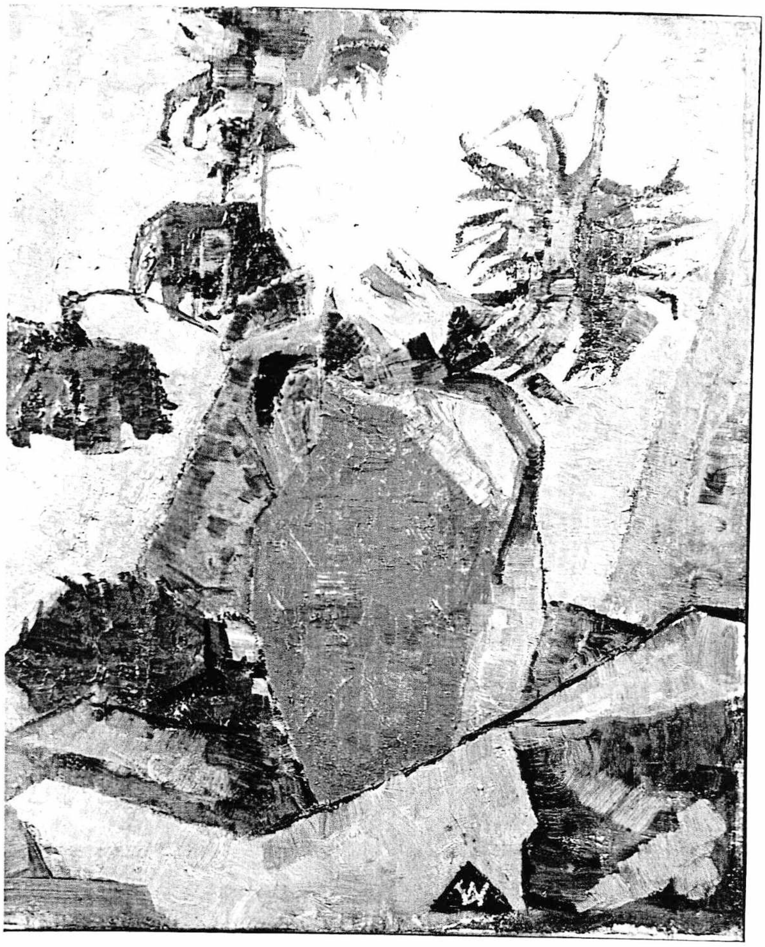
89. Roger Fry. Entrance Hall, Sir Ian Hamilton's house, London, 1914.



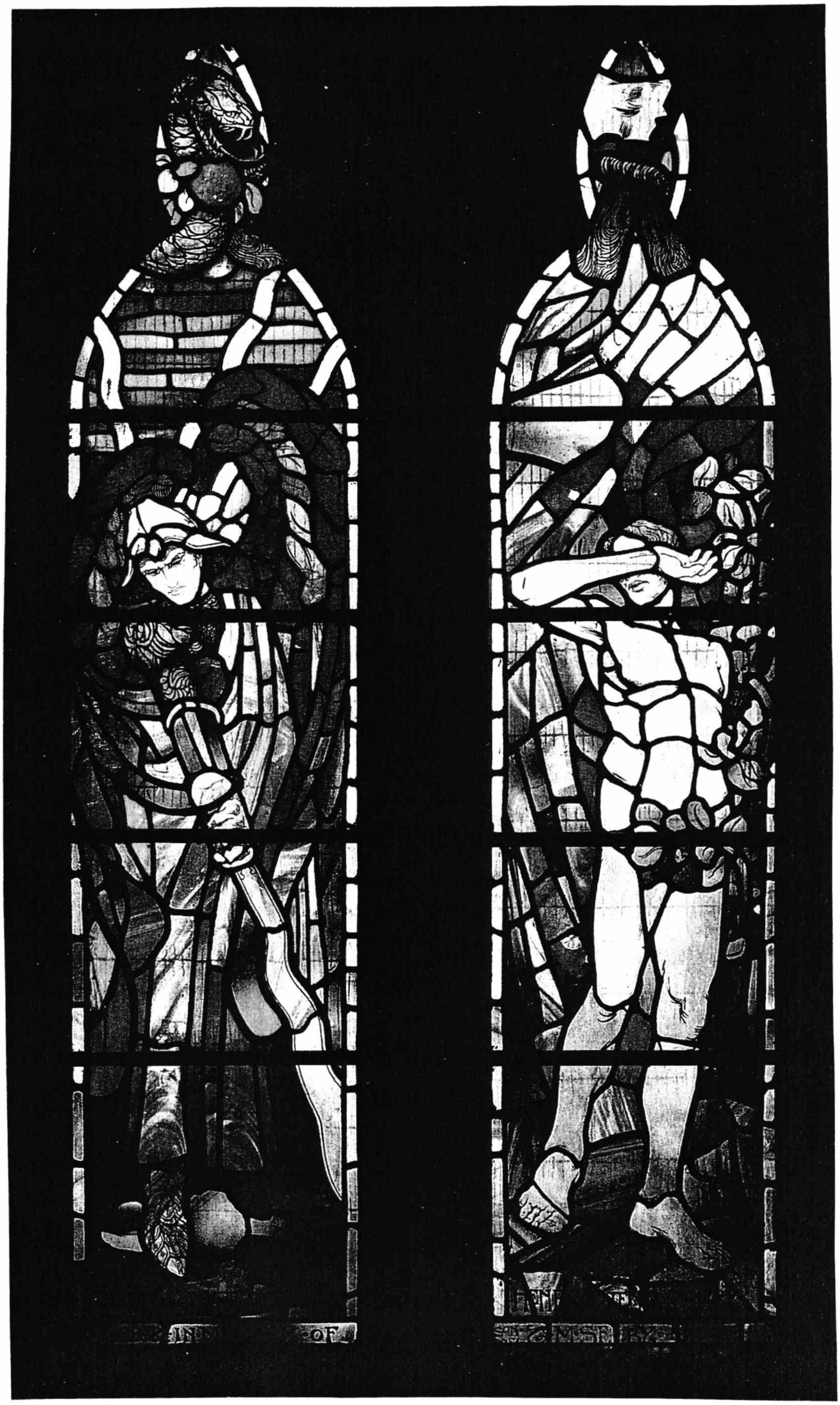
90. Alfred Wolmark. Photograph of *The Temple Builders*. Undated.



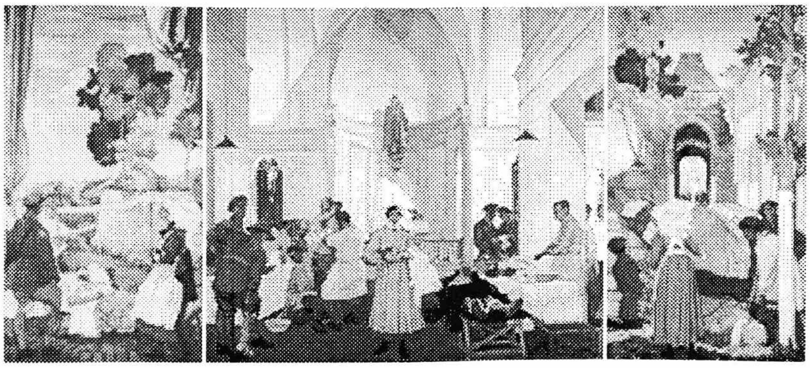
91. Alfred Wolmark. *Decorated Still Life*, c.1911.



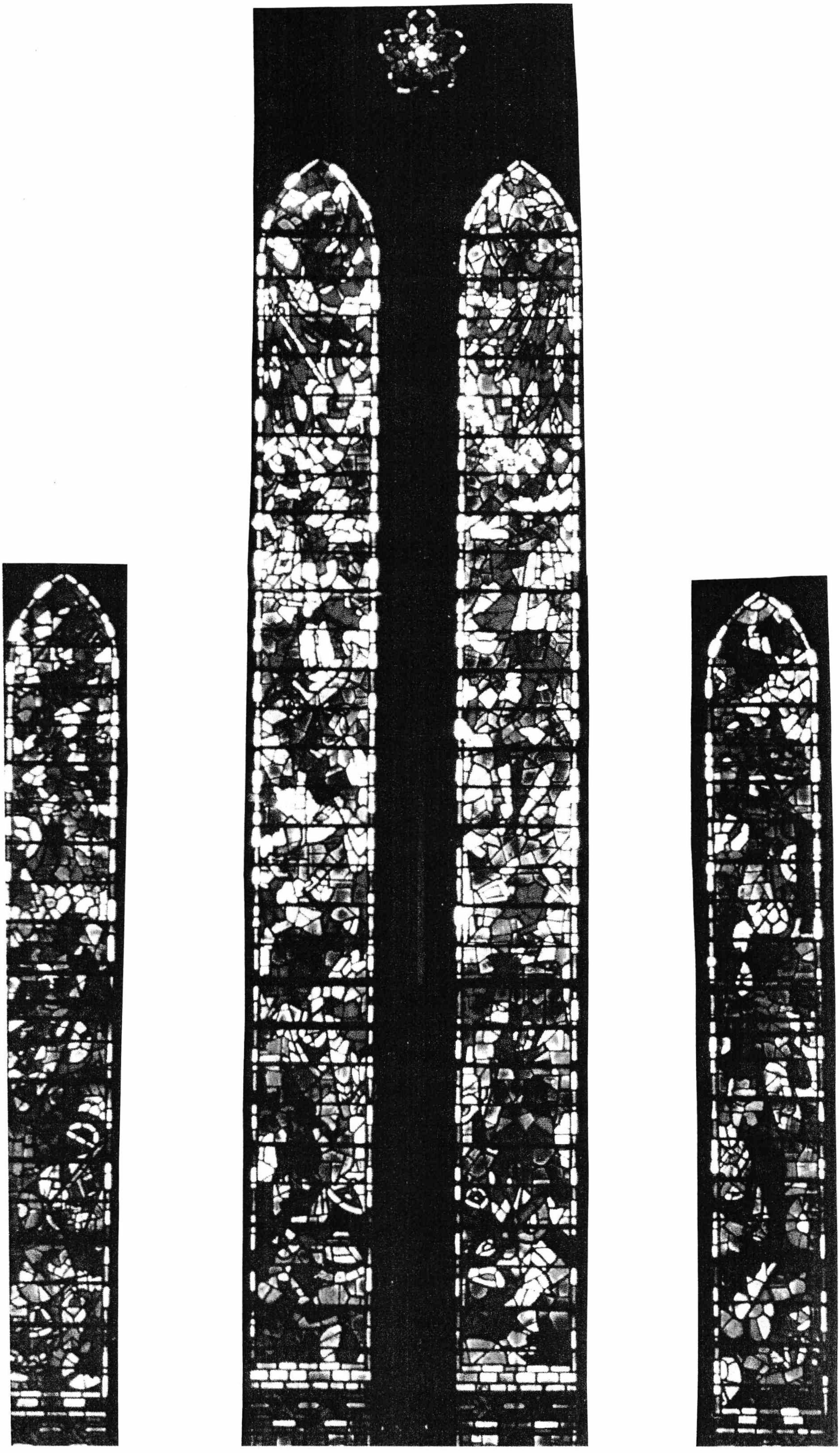
92. Gerald Moira. *Expulsion of Adam from the Garden of Eden.* North aisle window, St James Church, New Bradwell, Buckinghamshire, 1898.



93. Gerald Moira. Three panel painting, Canadian Stationary Hospital, Dollens, 1913.

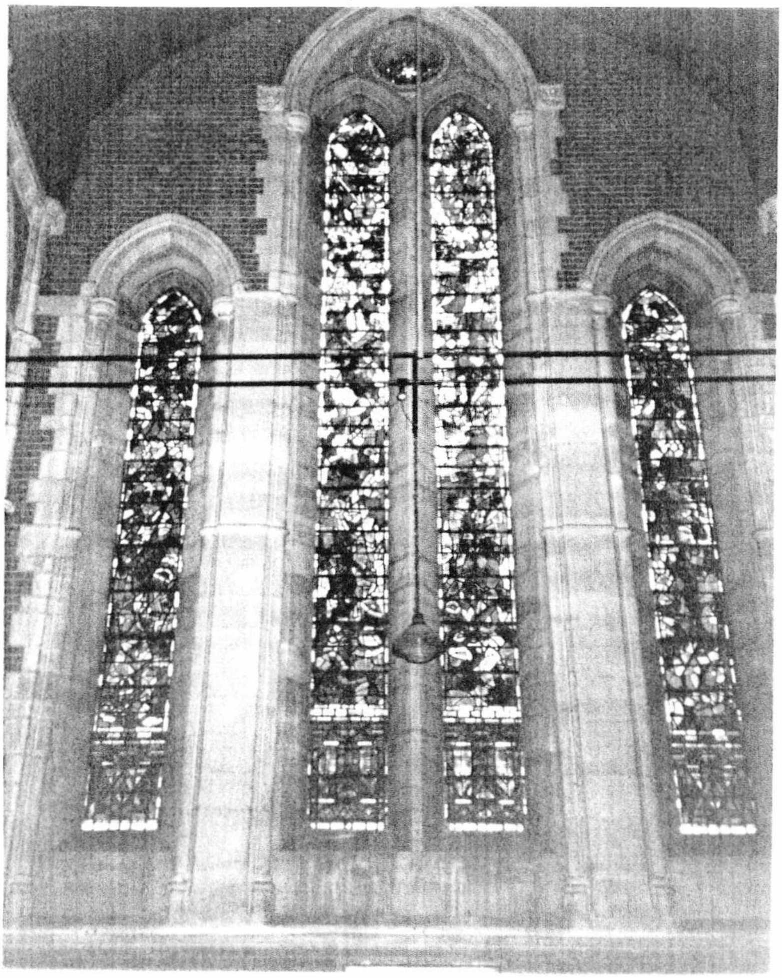


94. Alfred Wolmark. Photograph of the West window, St Mary's Church, Slough.

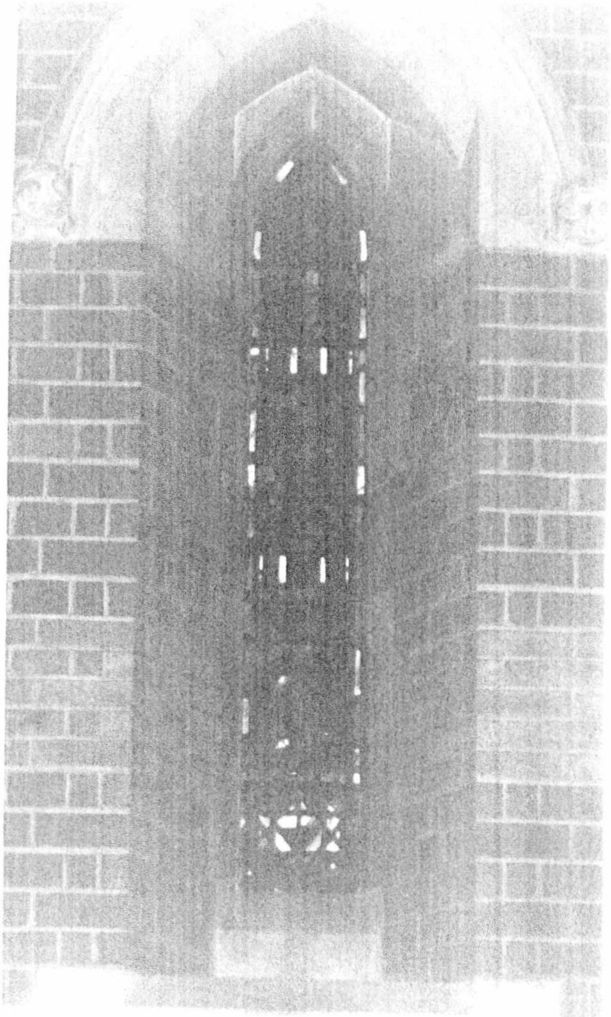


95. Alfred Wolmark.

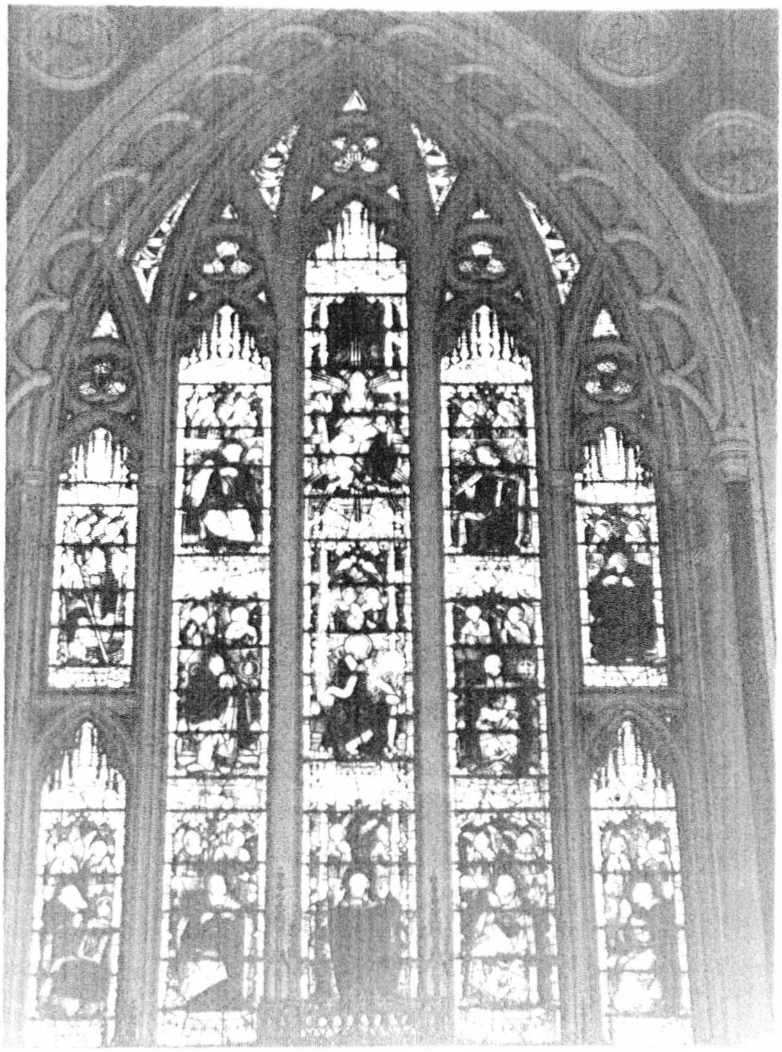
West window, St Mary's Church Slough.



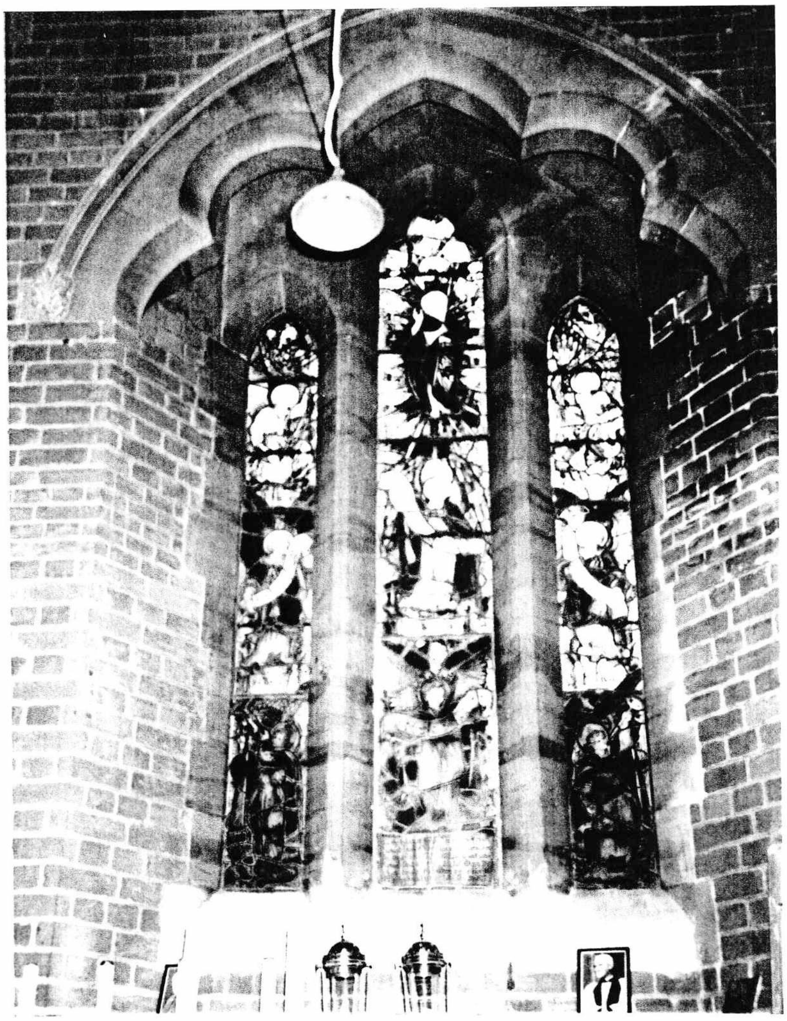
96. Alfred Wolmark.



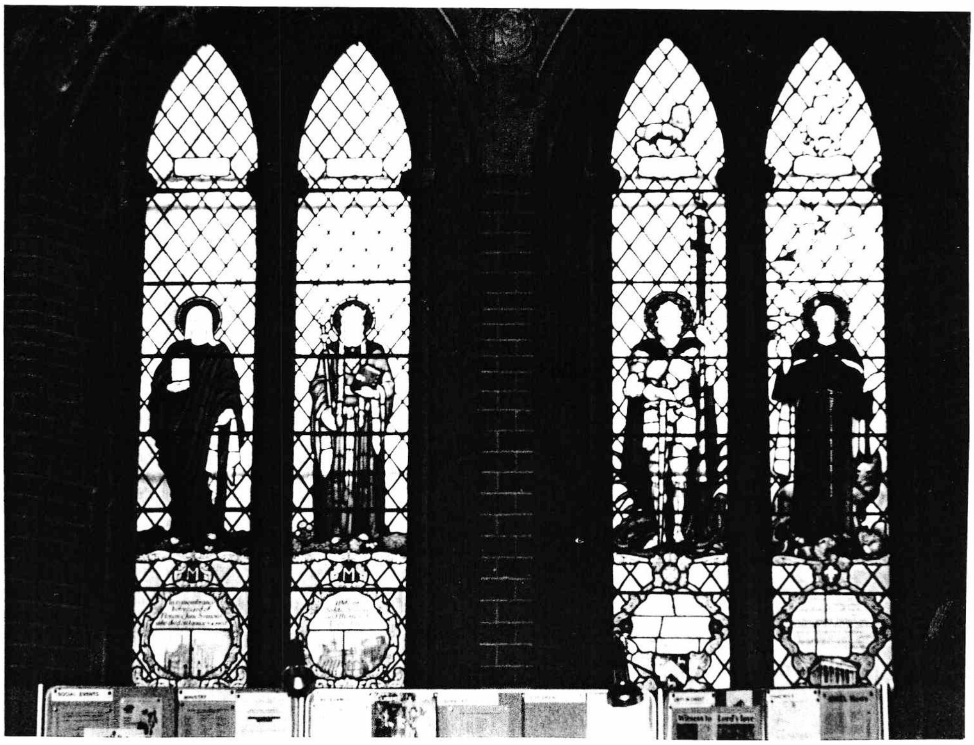
97. Charles Eamer Kempe. Photograph of the East window, St Mary's, Church.



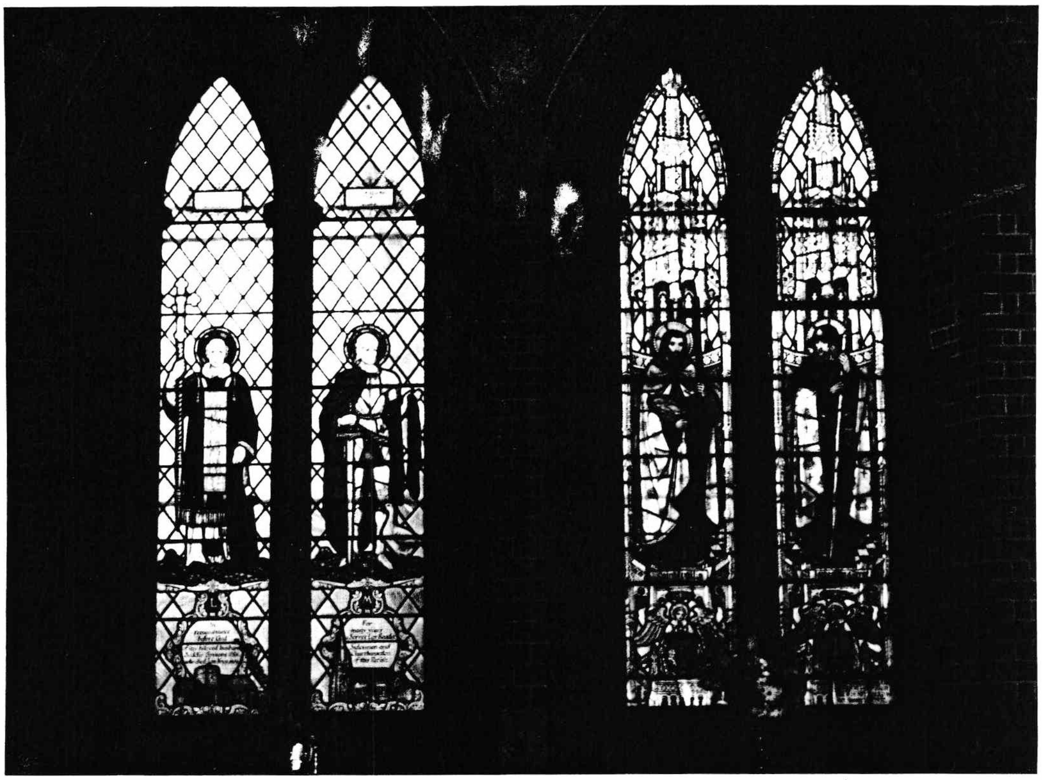
98. Charles Kempe and Co. Photograph of Chancel window, St Mary's Church.



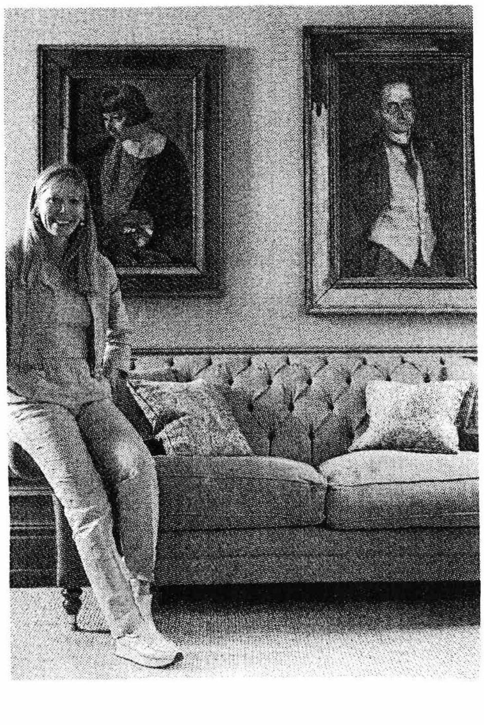
99. M.F.Pawle and G.E.R. Smith. Photograph of North aisle windows, St Mary's Church, Slough, c.1945.



100. J.E.Nuttgens, 1938 and G.E.R. Smith. Photograph of North aisle windows, St Mary's Church, Slough

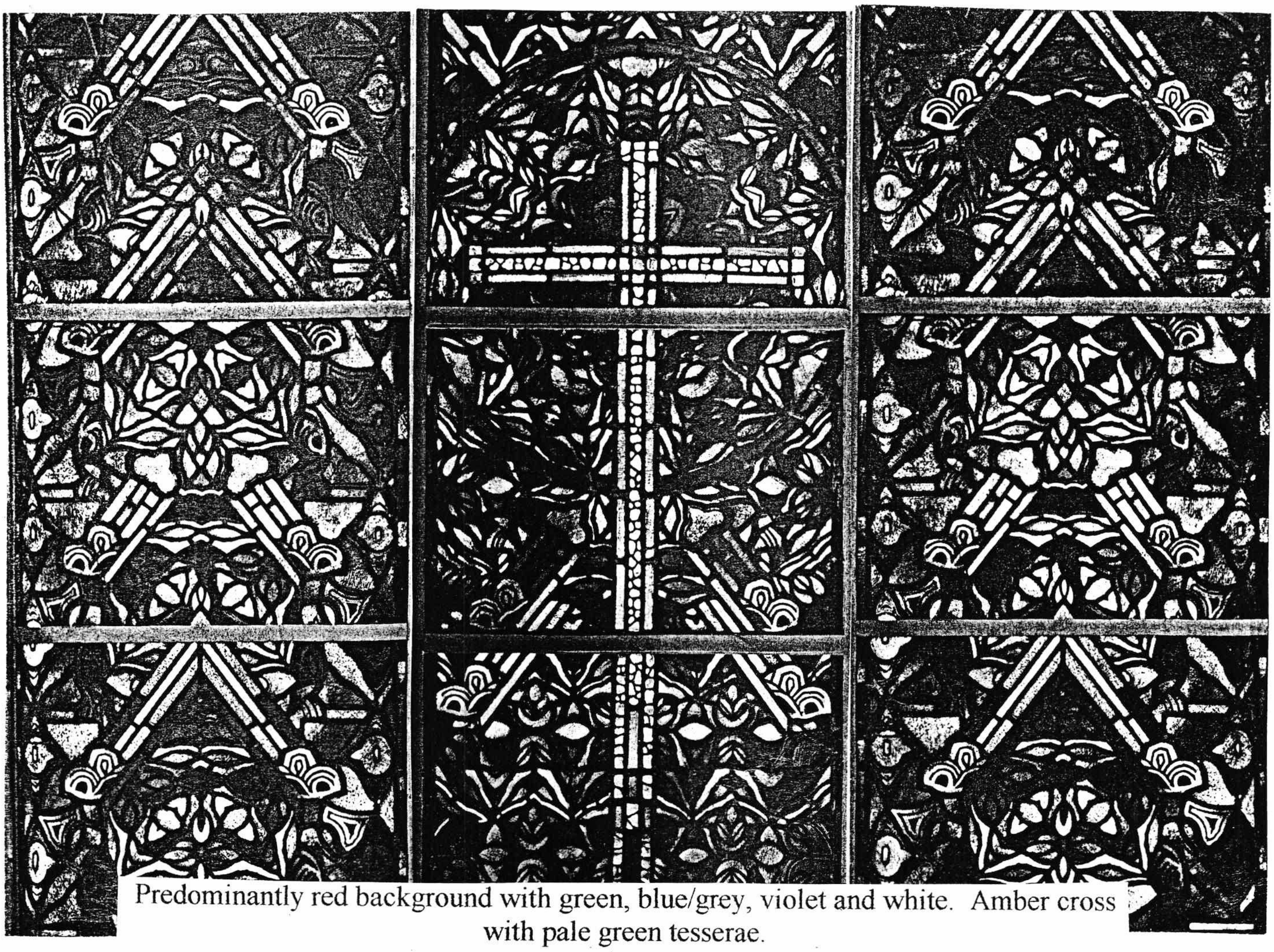


101. Alfred Wolmark. Photograph of *Woman with a lustre bowl* and *Portrait of the Artist's brother Adolphe.* c.1920's.



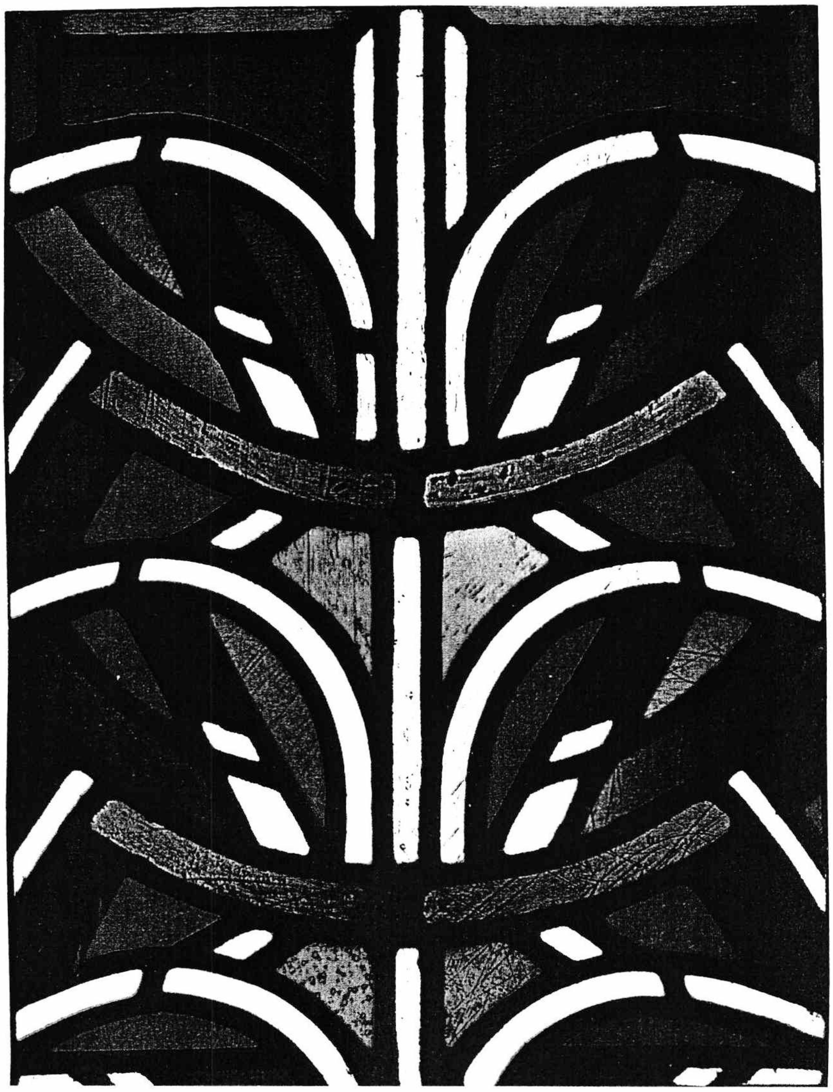
Wolmark designed and constructed the frames for both portraits

102. Johan Thorn Prikker. Three windows, Gesellenhaus, Neuss am Rhein, 1912.



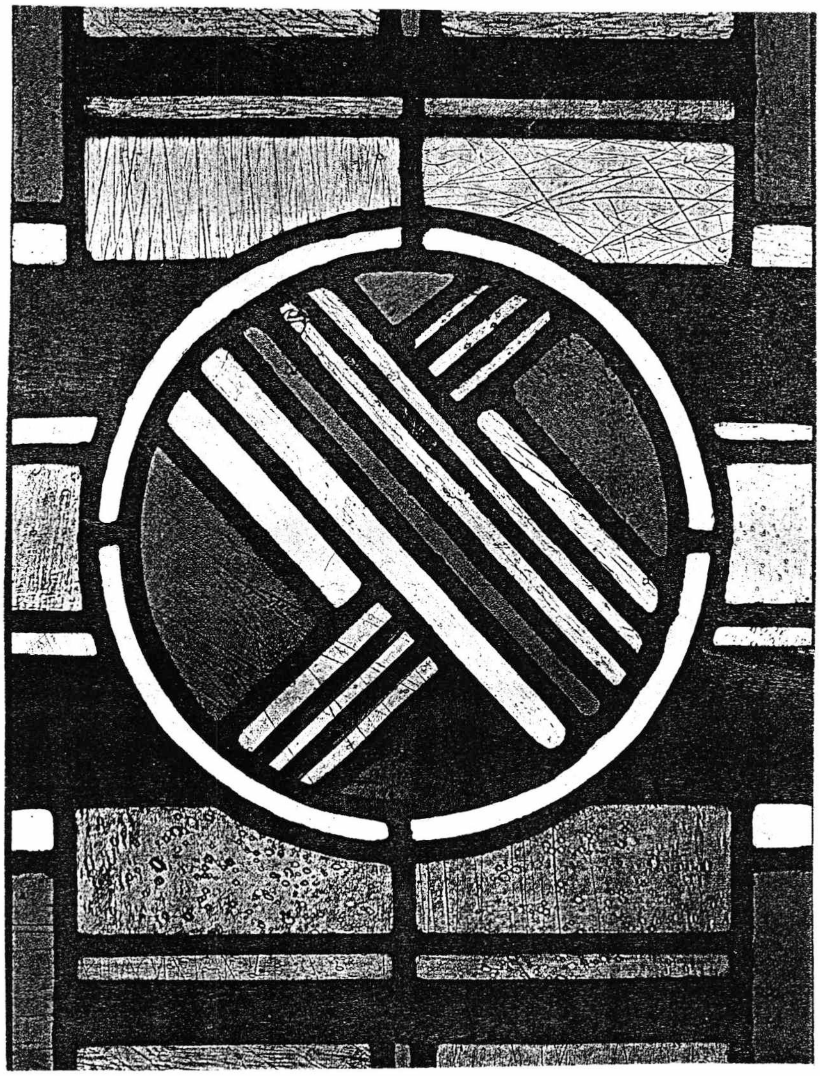
Predominantly red background with green, blue/grey, violet and white. Amber cross with pale green tesserae.

103. Johan Thorn Prikker. *Angeschnittene Kriesformen*, 1928.

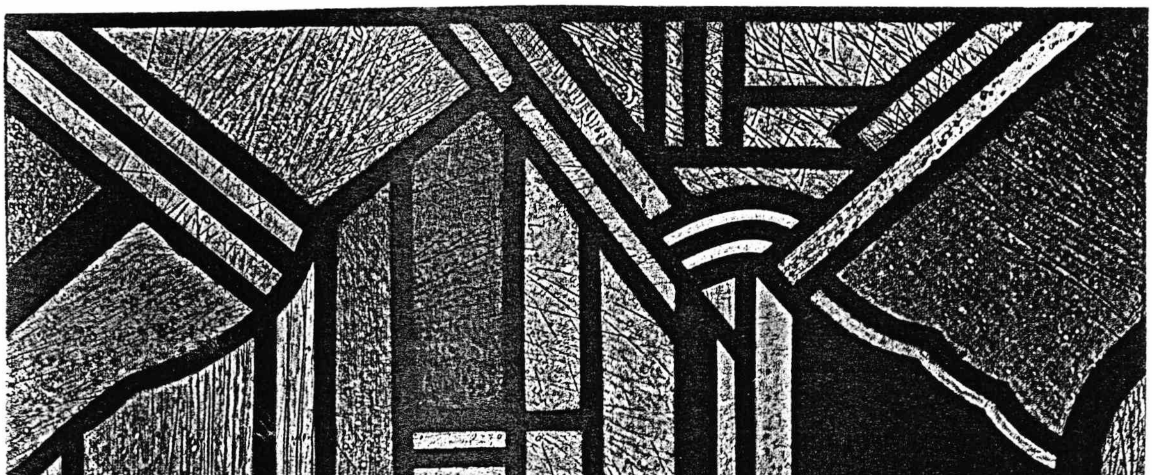


104. Johan Thorn Prikker. *Kreis mit Diagonalen*, 1928.

Red and blue on blue/grey and white

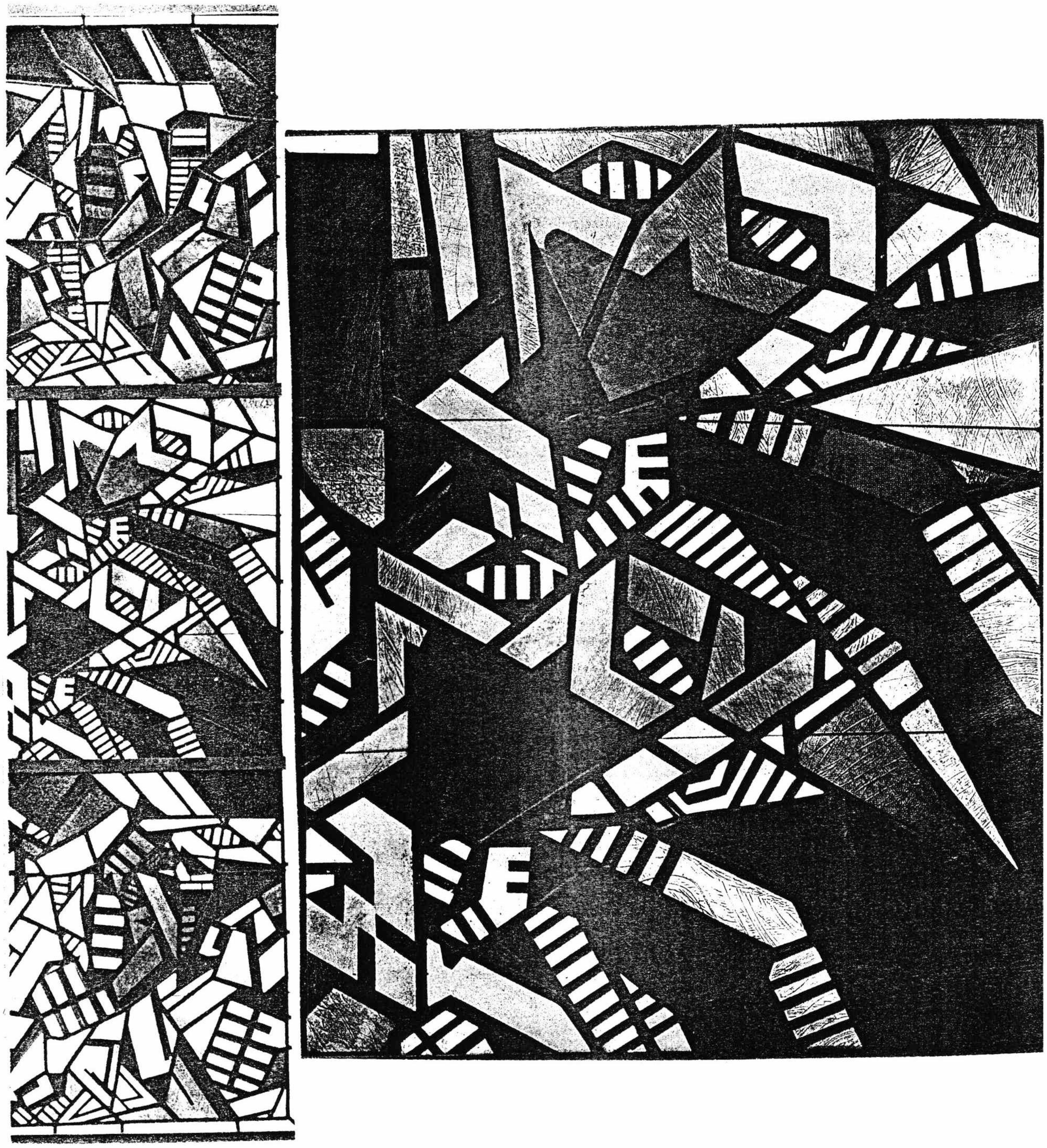


105. Johan Thorn Prikker. *Ornamentfenster Blau*, c.1923.

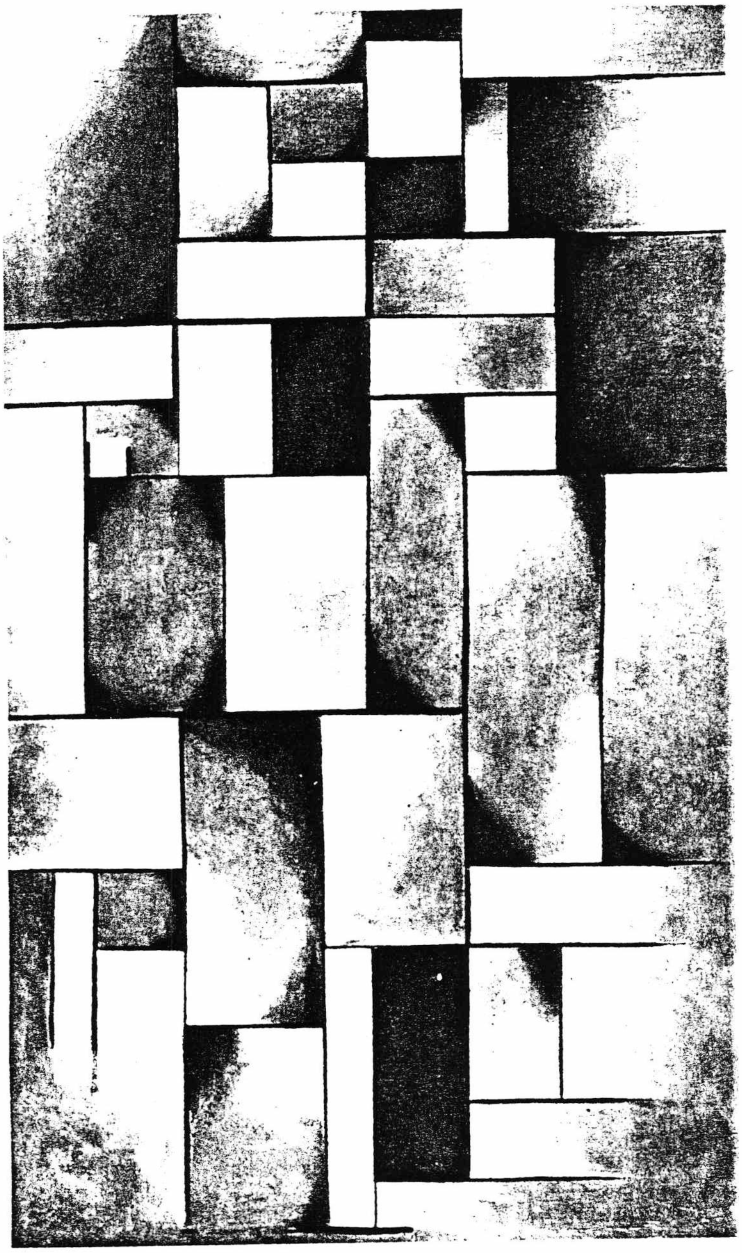


Thorn Prikker explores texture with royal blue, olives greens, dark browns, blue/grey and white glass set in strong geometric leadlines.

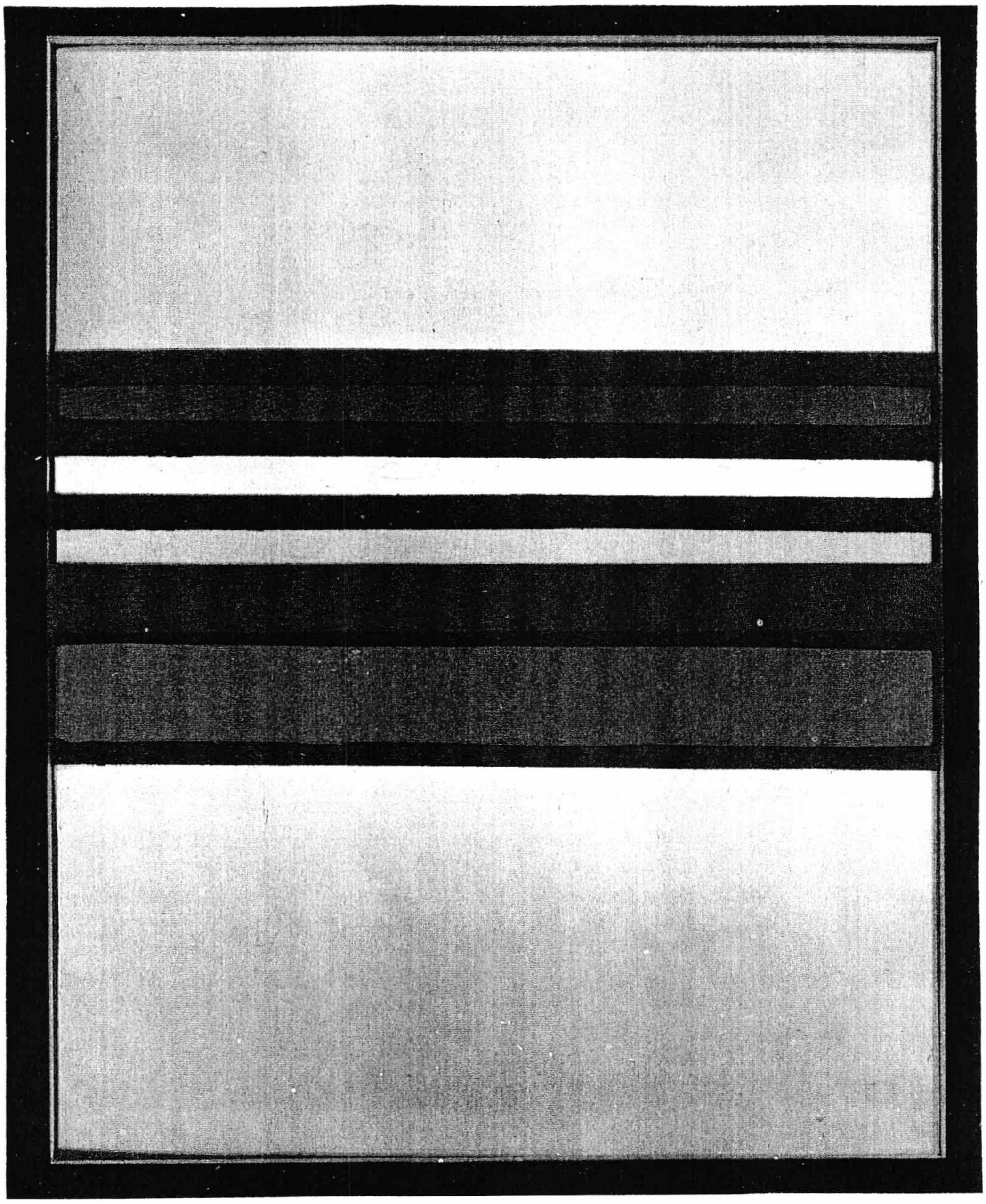
106. Johan Thorn Prikker. *Essener Fenster,* c.1925.



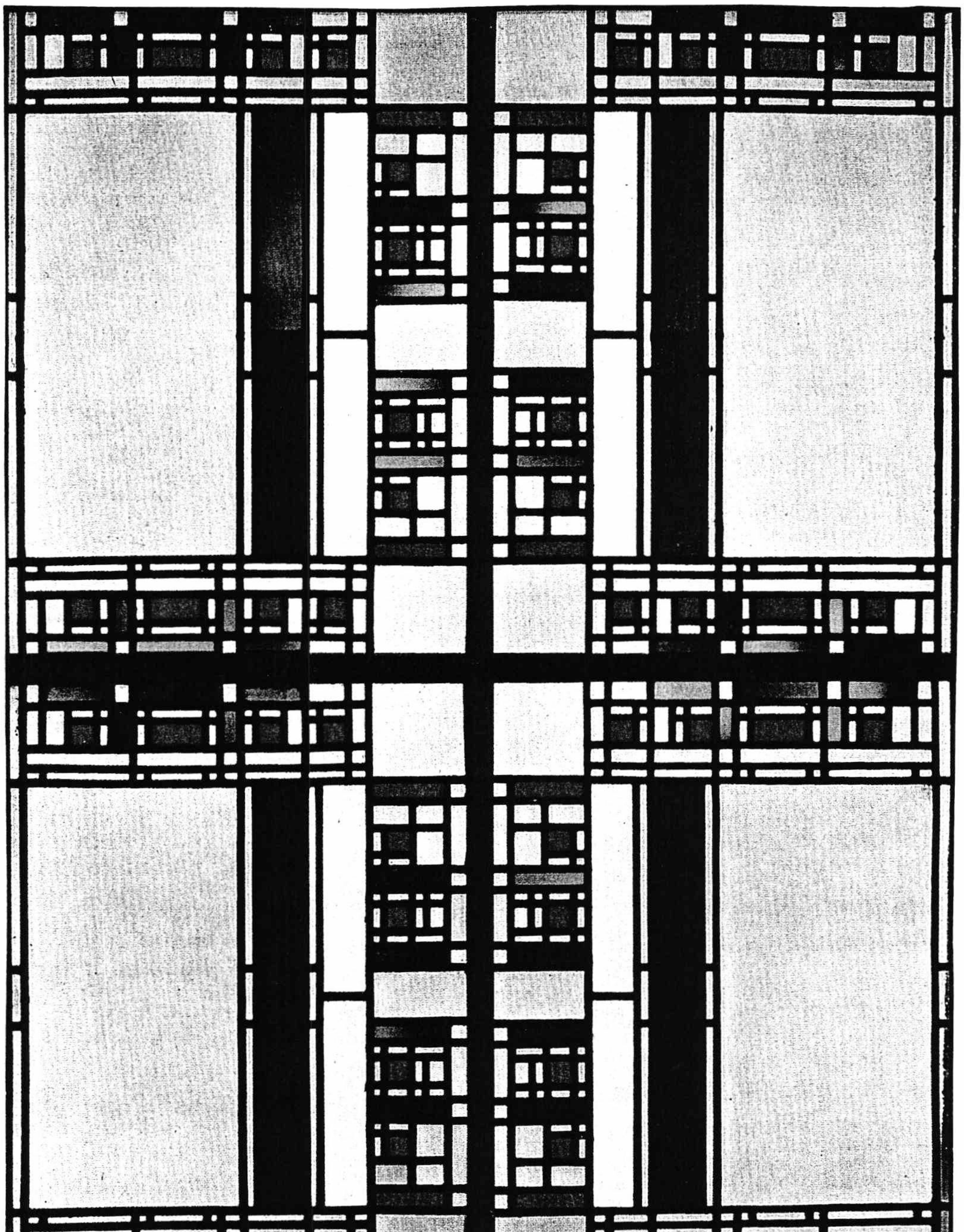
107. Theo van Doesburg. *Ragtime,* c.1918.



108. Johan Thorn Prikker. *Orange,* 1931.

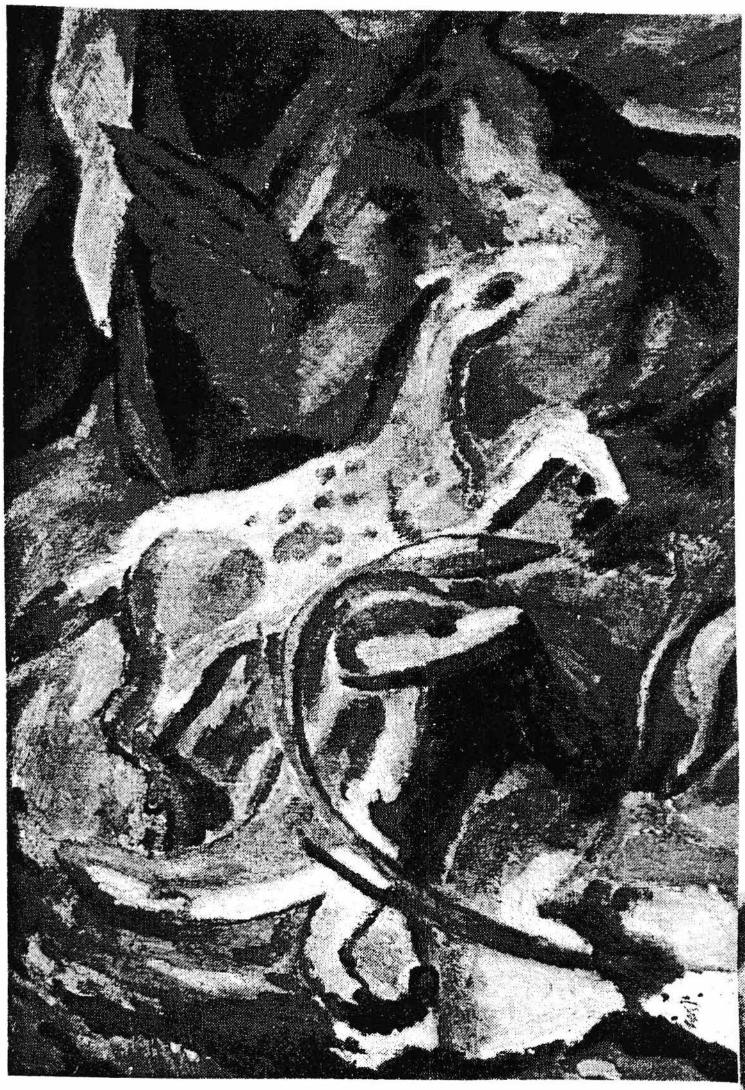


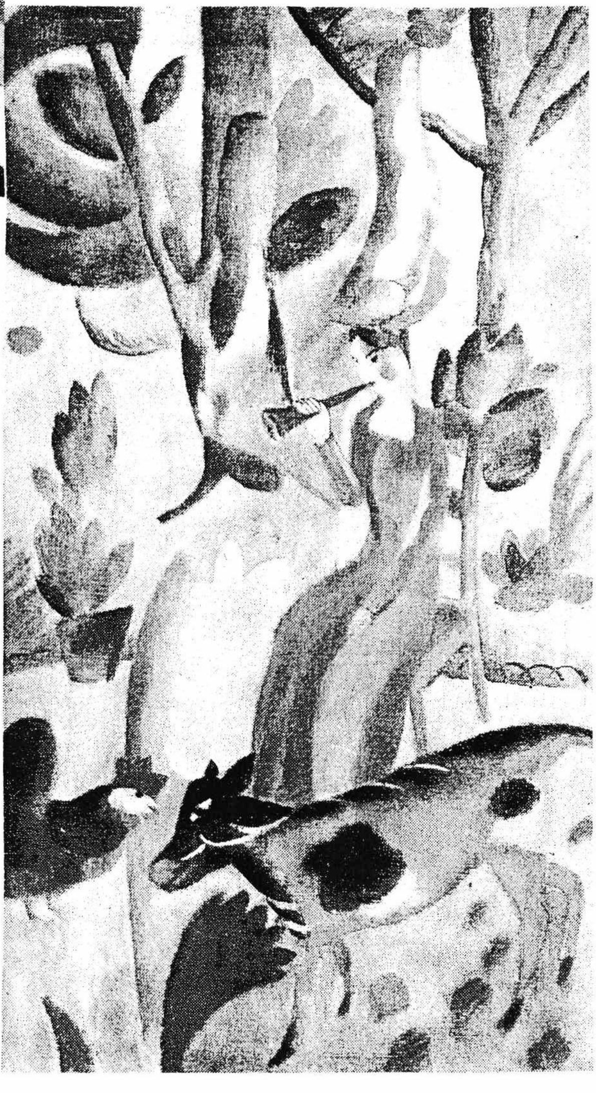
109. Johan Thorn Prikker. *Viertilliges géometrisches Kreuz*, 1931-32.



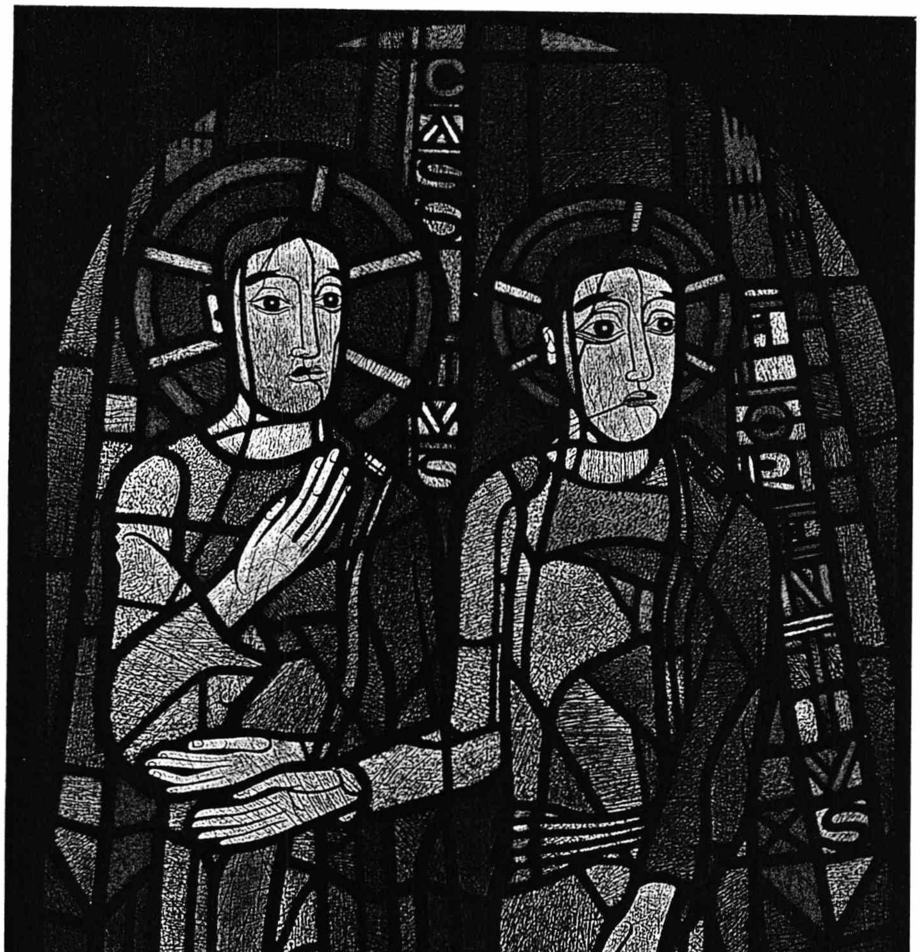
110. Heinrich Campendonk. *Leaping Horse,* 1911. Oil on canvas.

111. Heinrich Campendonk. *Girl Playing a Shawm*, 1914. Oil on canvas.

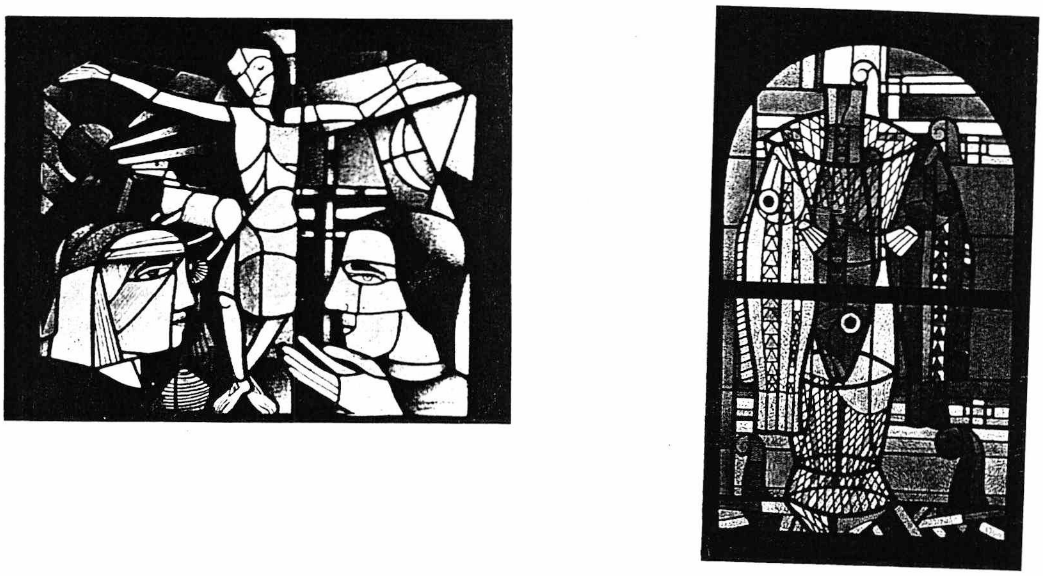




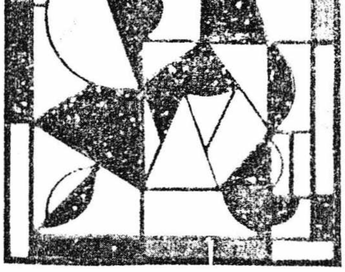
112. Heinrich Campendonk. *Cassius and Florentius*. Crypt window, Bonner Münster, 1929.

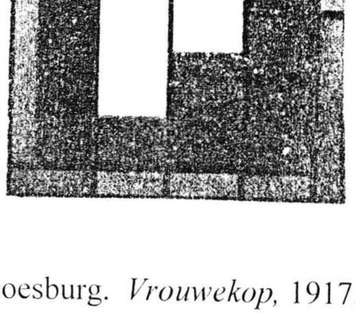


113. Heinrich Campendonk. *Kreuzigung* and *Taufsymboles*. Cloister windows. Marienthal and the Church of Maria Grün, Hamburg-Blankenese, c.1935-36.



114. Theo van Doesburg. *Dans I,* 1917.

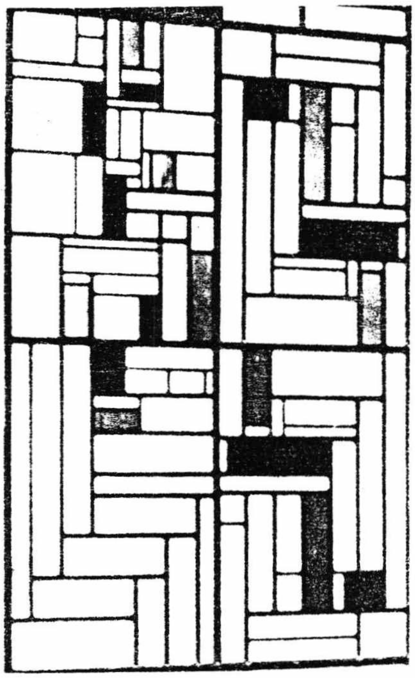


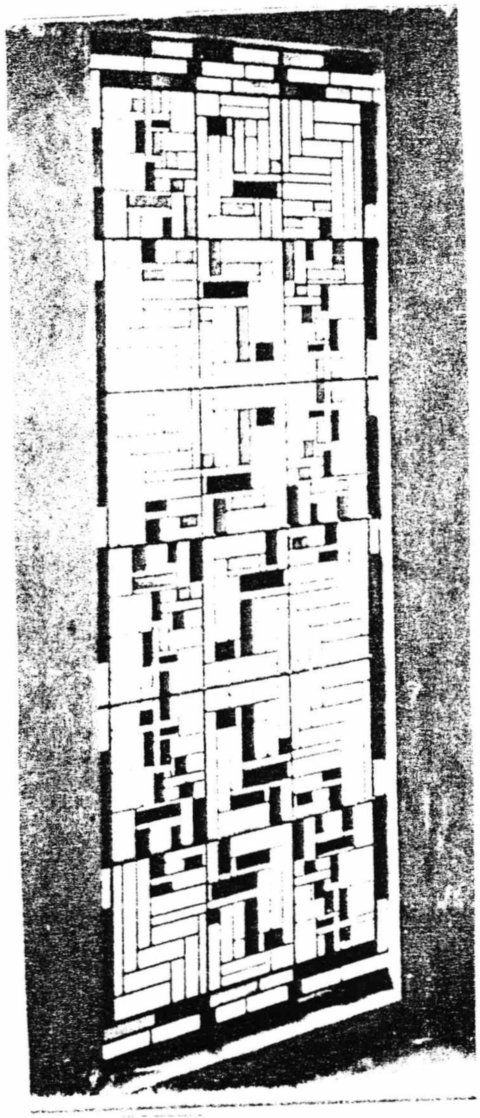


115. Theo van Doesburg. *Vrouwekop,* 1917.

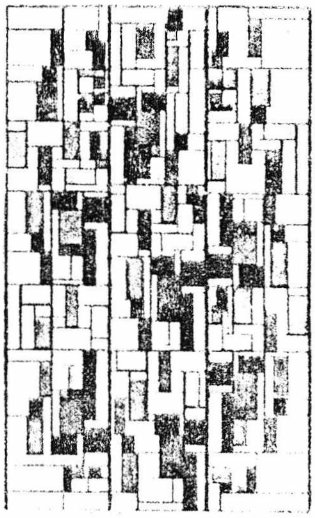
116. Theo van Doesburg. *Composition II.* Staircase window, Katwijk aan Zee.

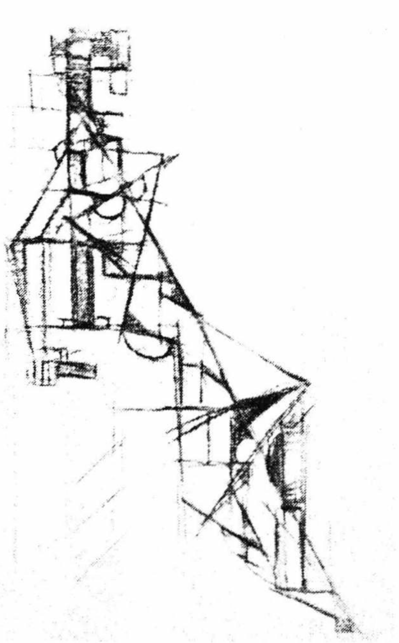
Detail





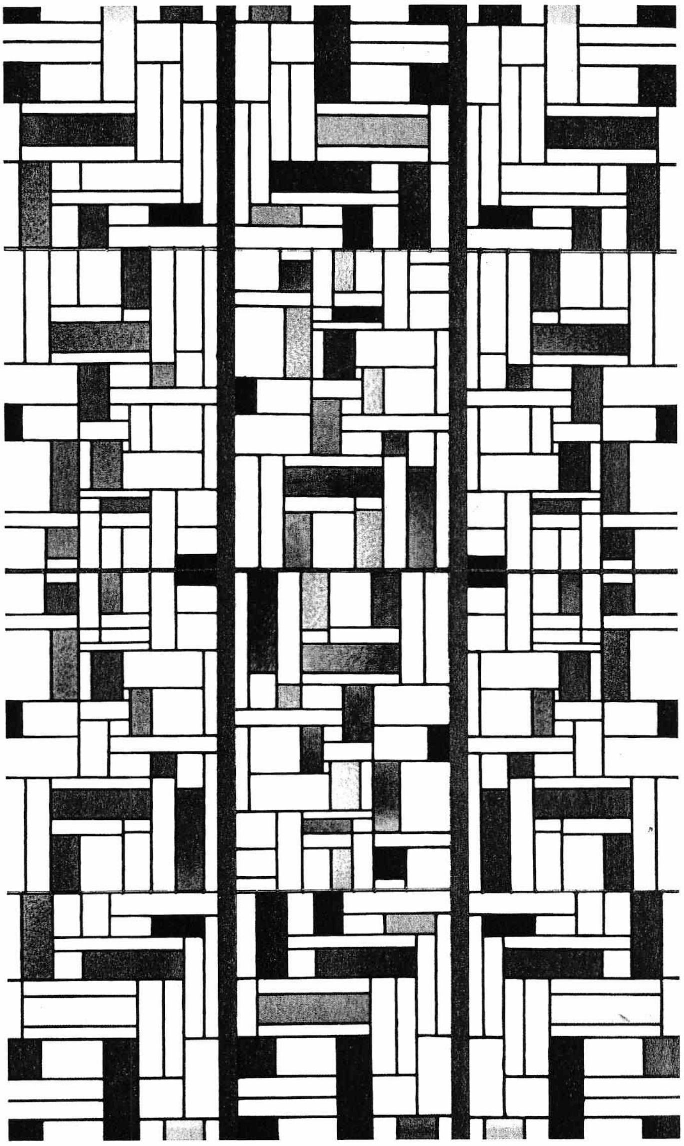
117. Theo van Doesburg. *Composition III.* Domestic window



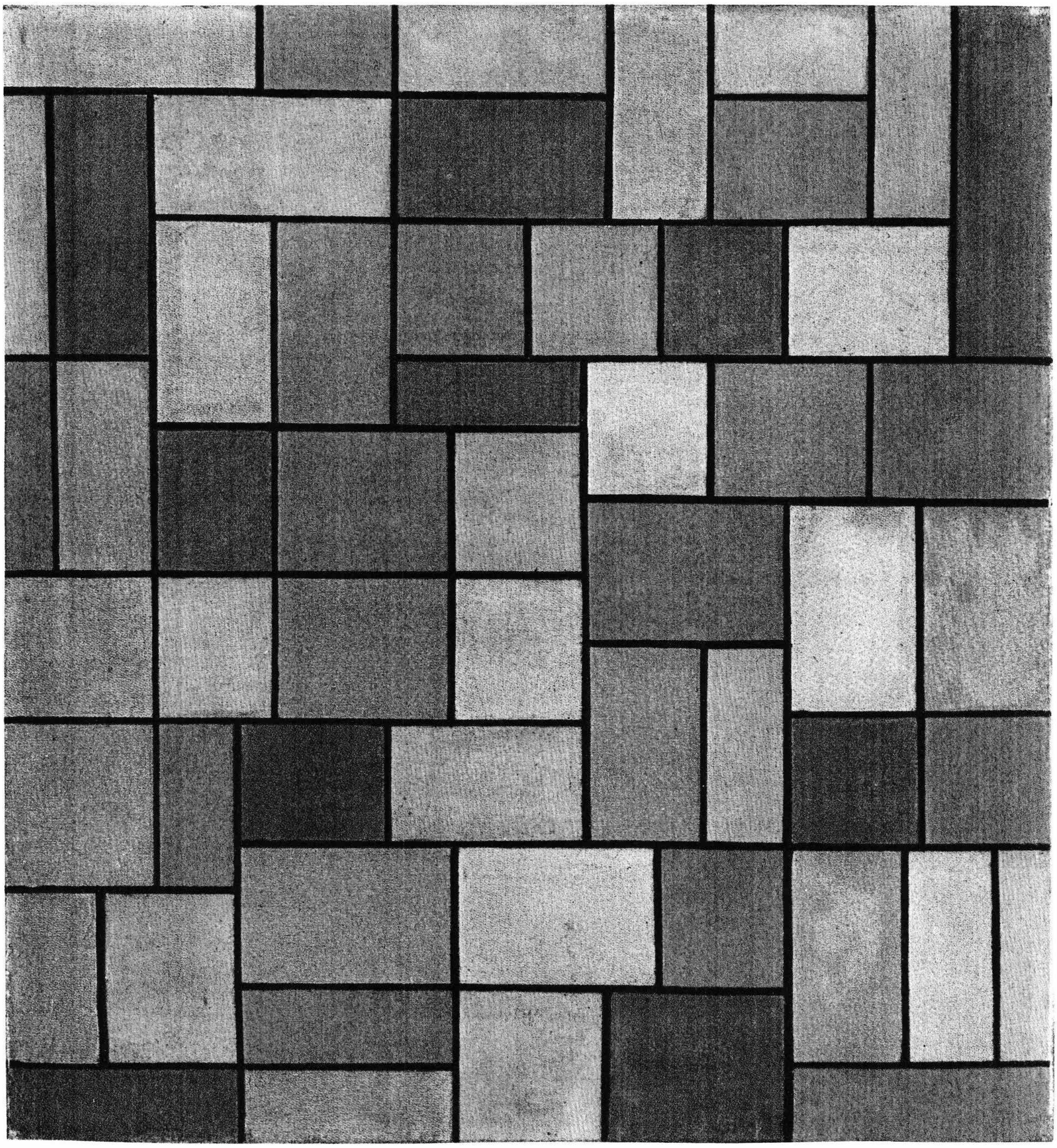


118. Theo van Doesburg. *Study of a seated nude*

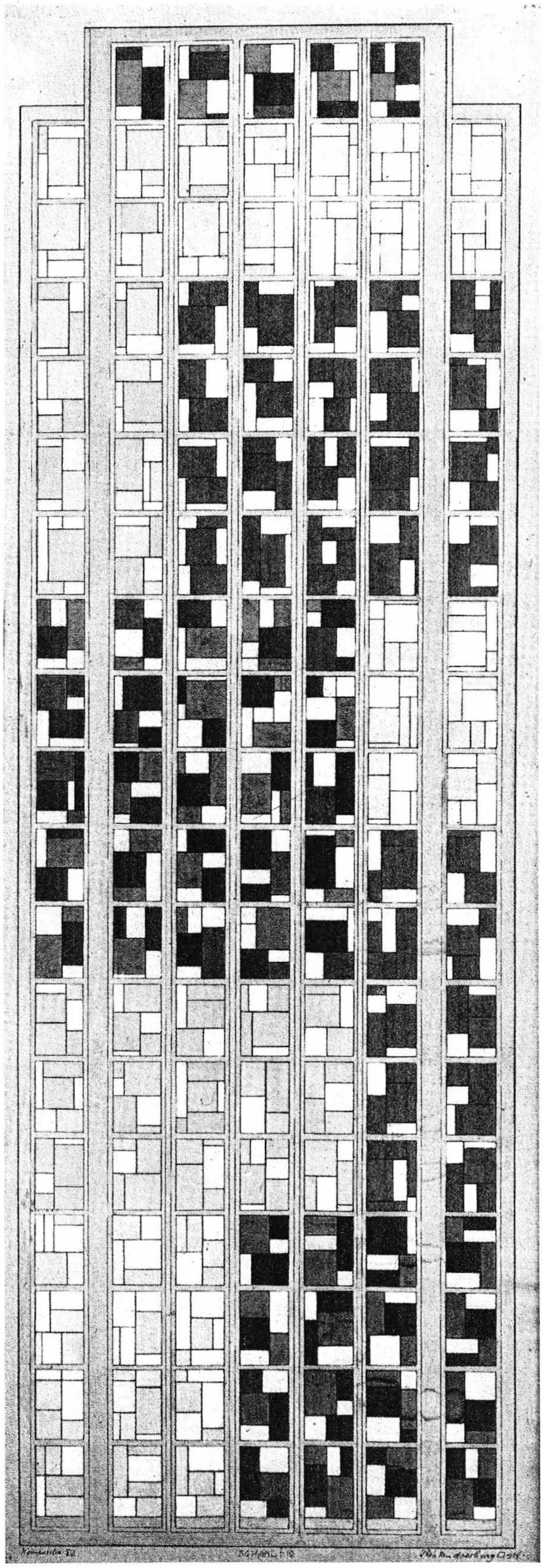
119. Theo van Doesburg. *Composition IV.* Staircase window, De Lange Town House, Rotterdam, 1917.



120. Theo van Doesburg. *Composition in Discords*, 1918.

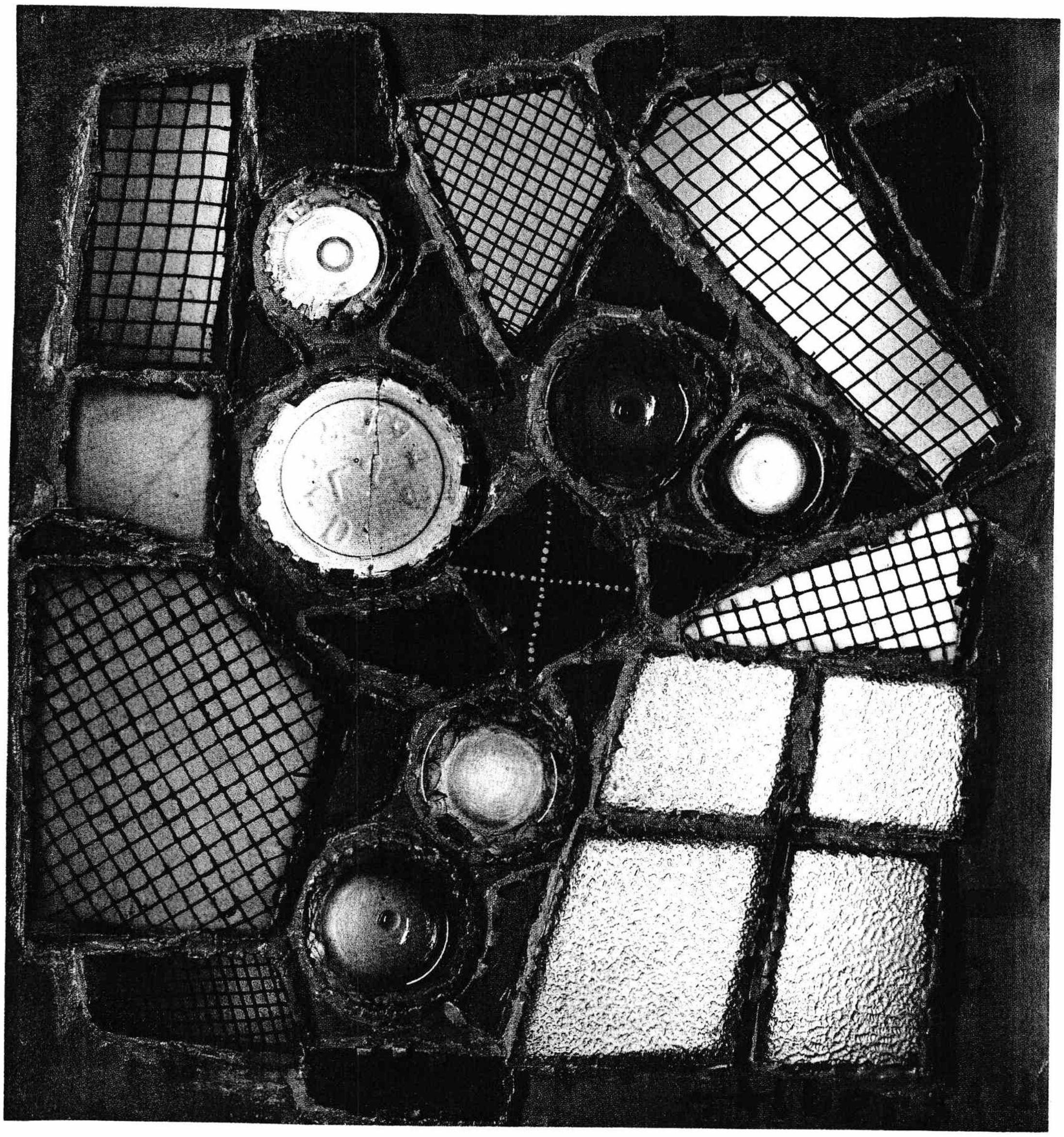


121. Theo van Doesburg. *Counter Composition XIII,* 1924.

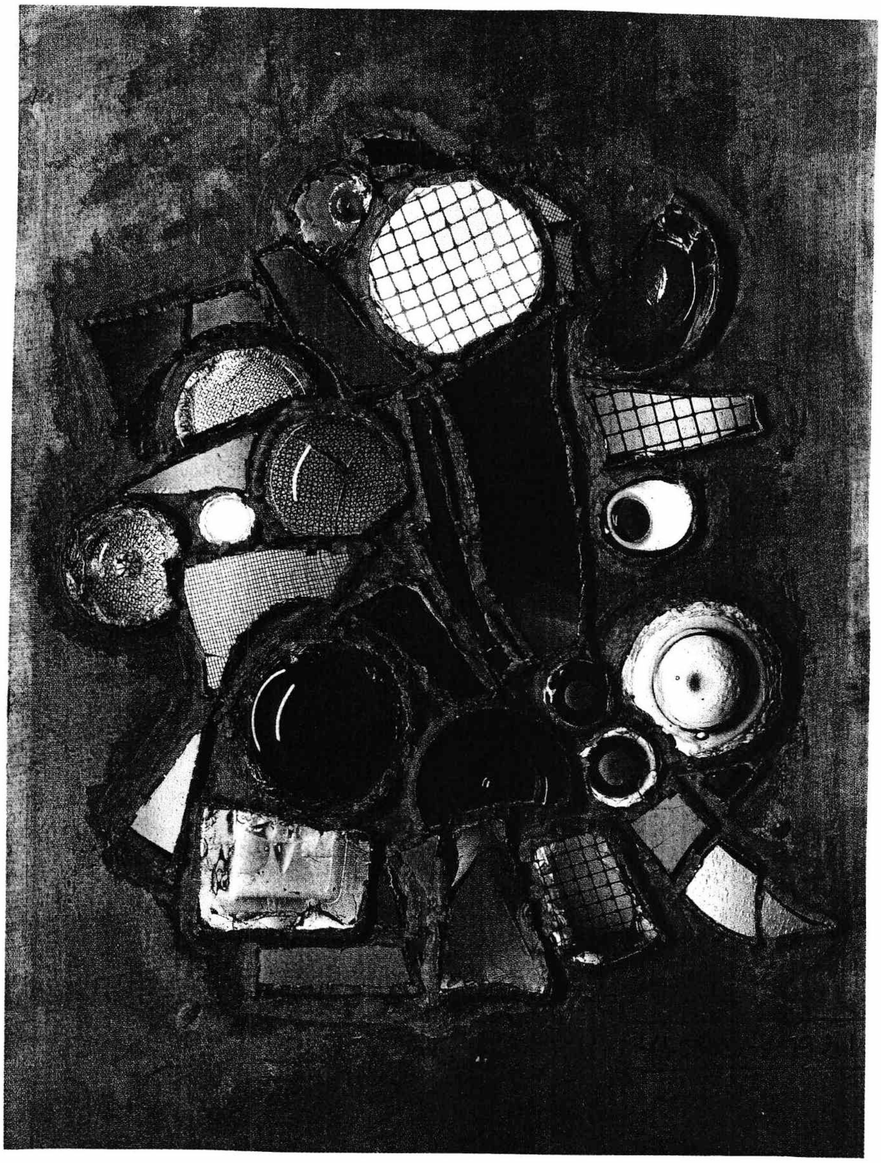


Komposition XIII
Theo van Doesburg 1924

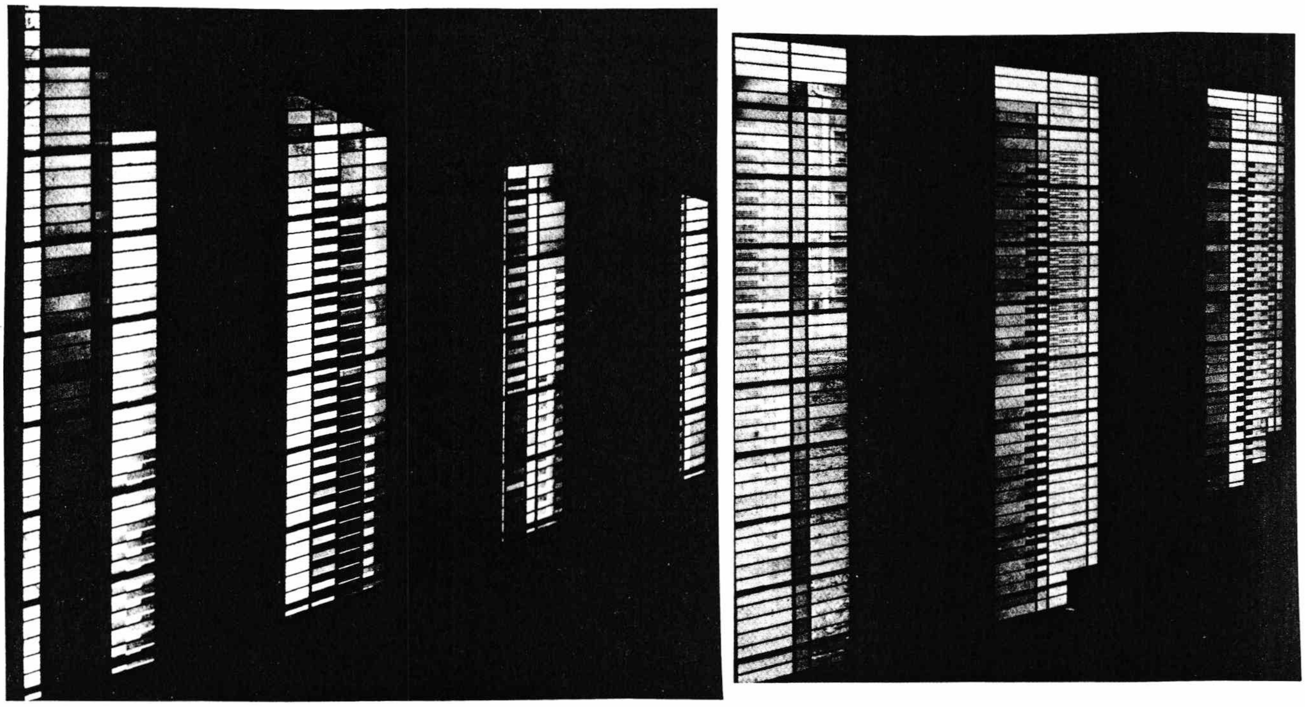
122. Josef Albers. *Rhenish Legend,* 1921.



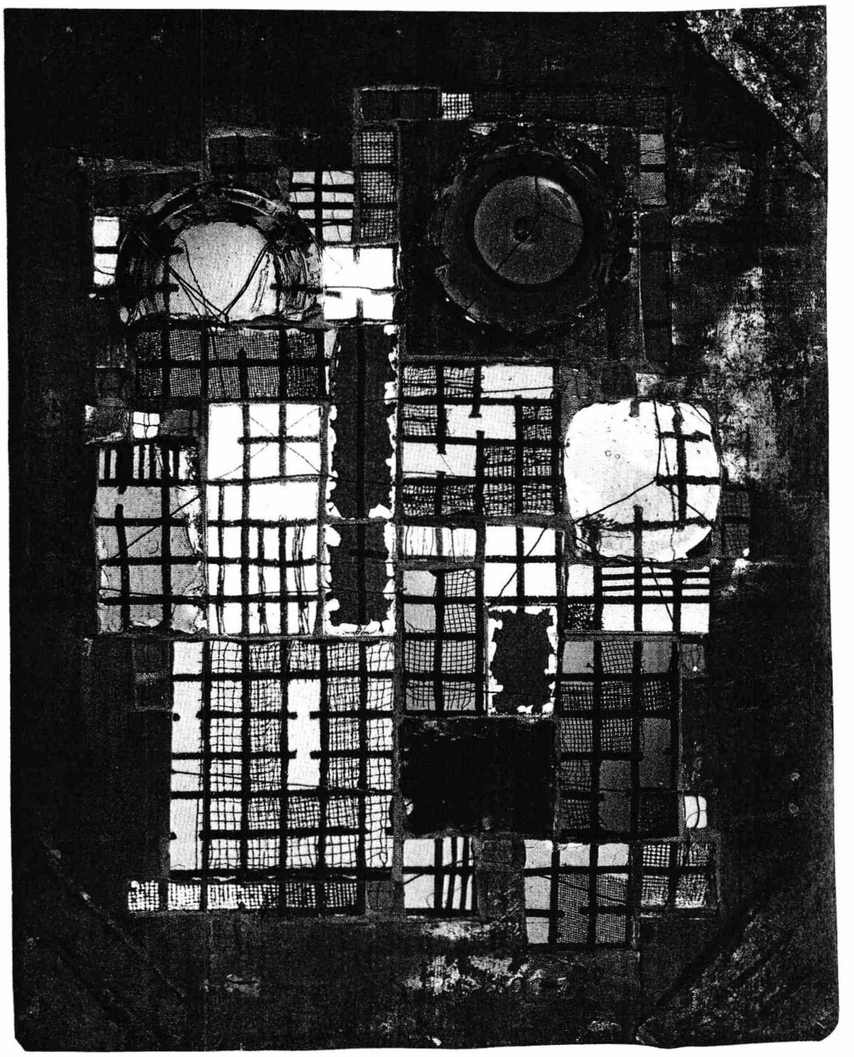
123. Josef Albers. *Figure,* 1921.



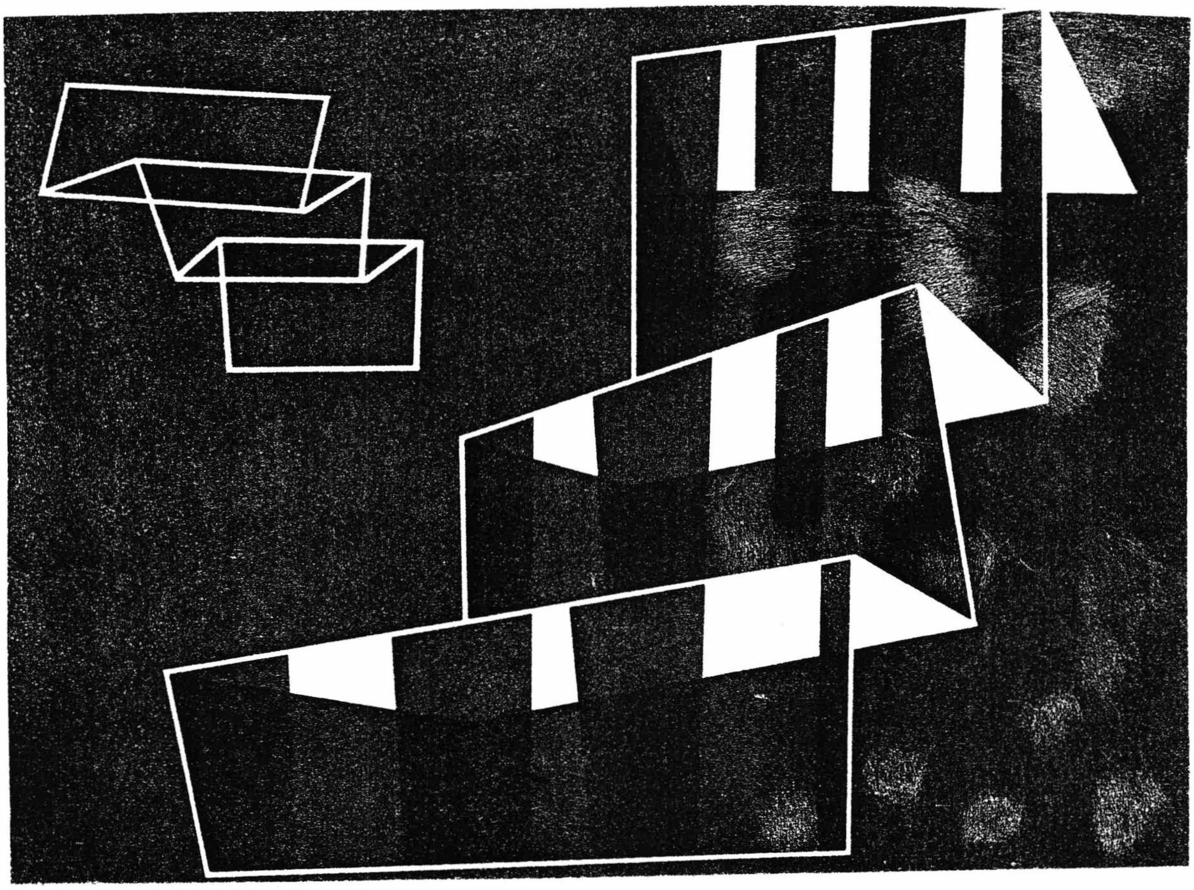
124. Josef Albers. Stair Hall, Grassi Museum, Leipzig, 1923-4.



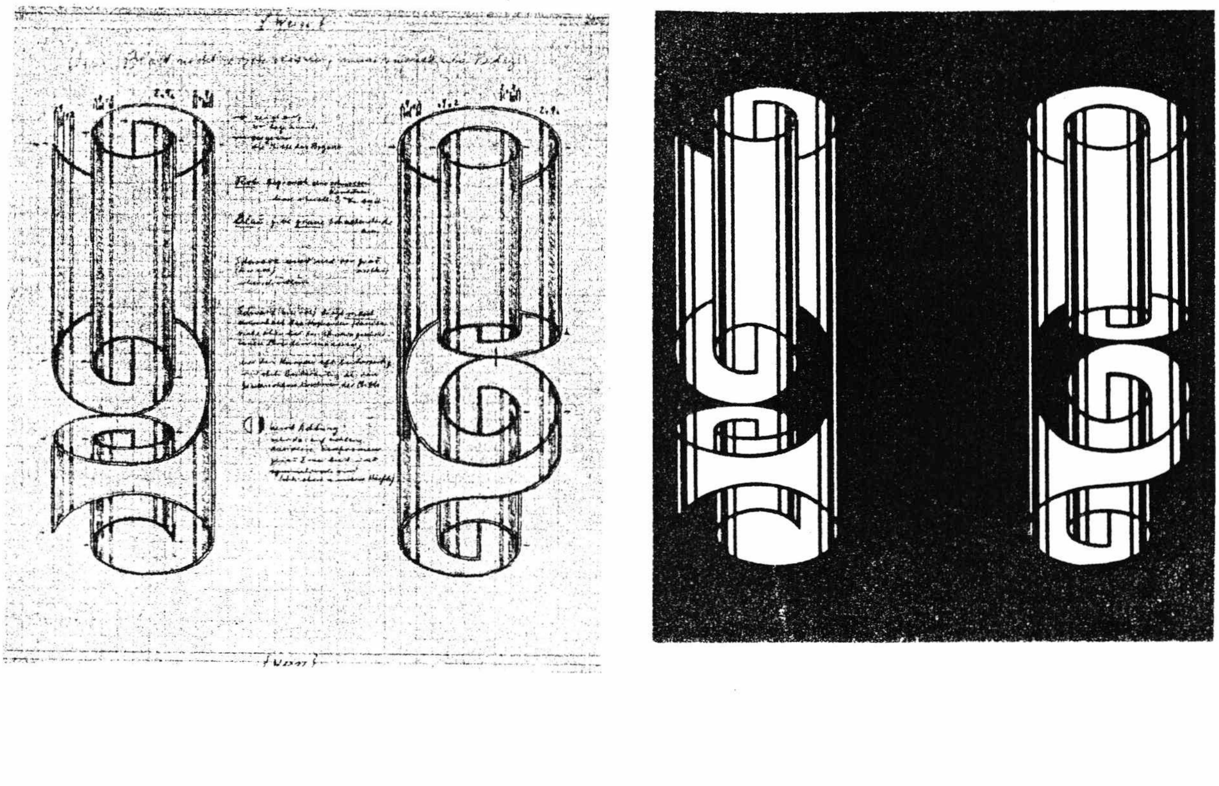
125. Josef Albers. *Glass Assemblage,* 1921.



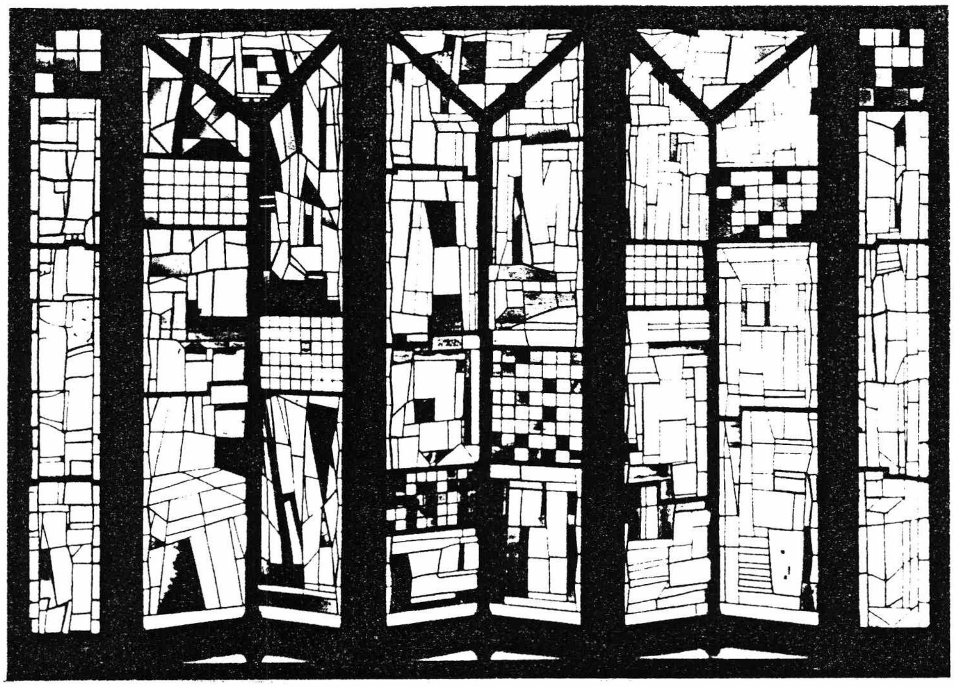
126. Josef Albers. *Stufen,* 1931.



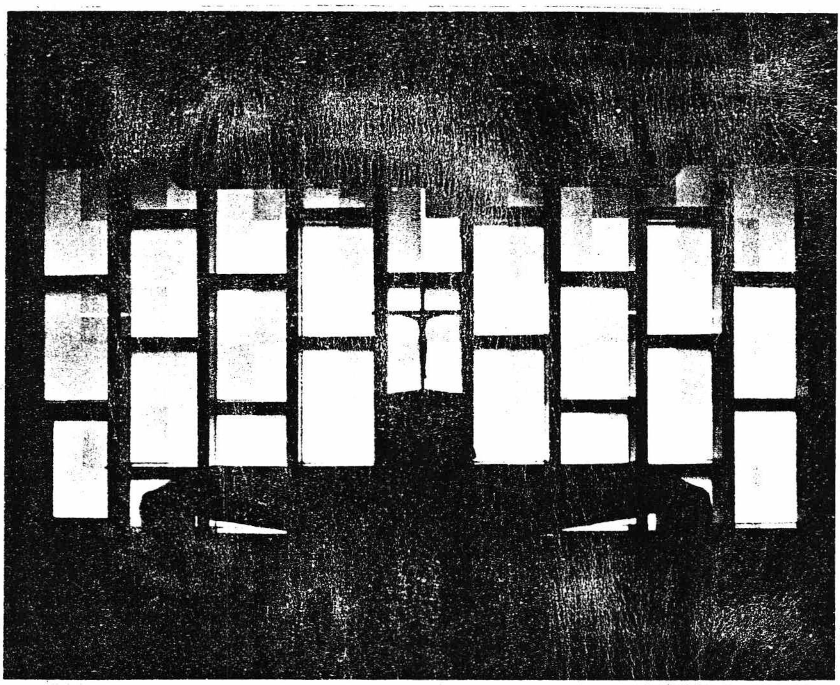
127. Josef Albers. *Rolled Wrongly,* 1931.



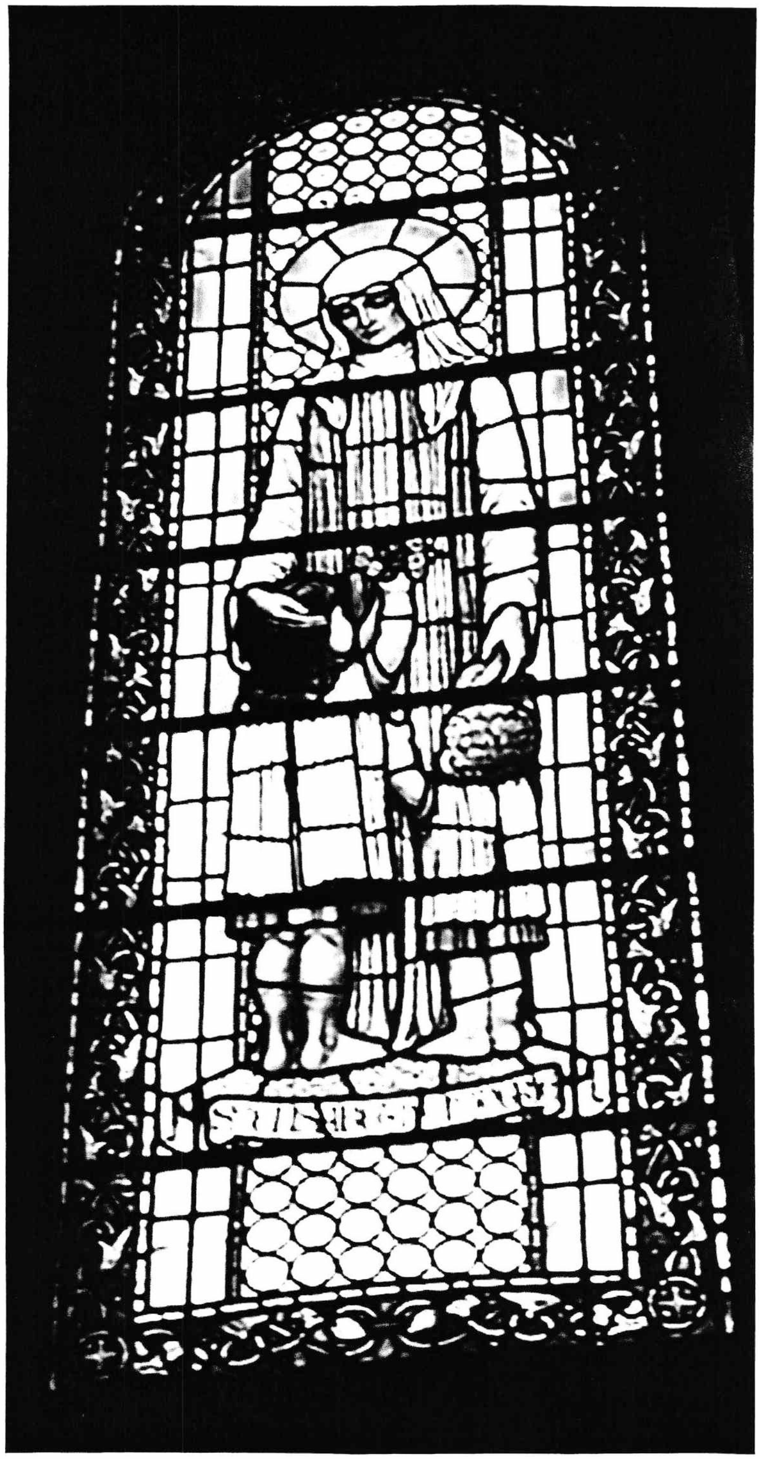
128. Josef Albers. Sommerfeld window, Berlin, 1922.



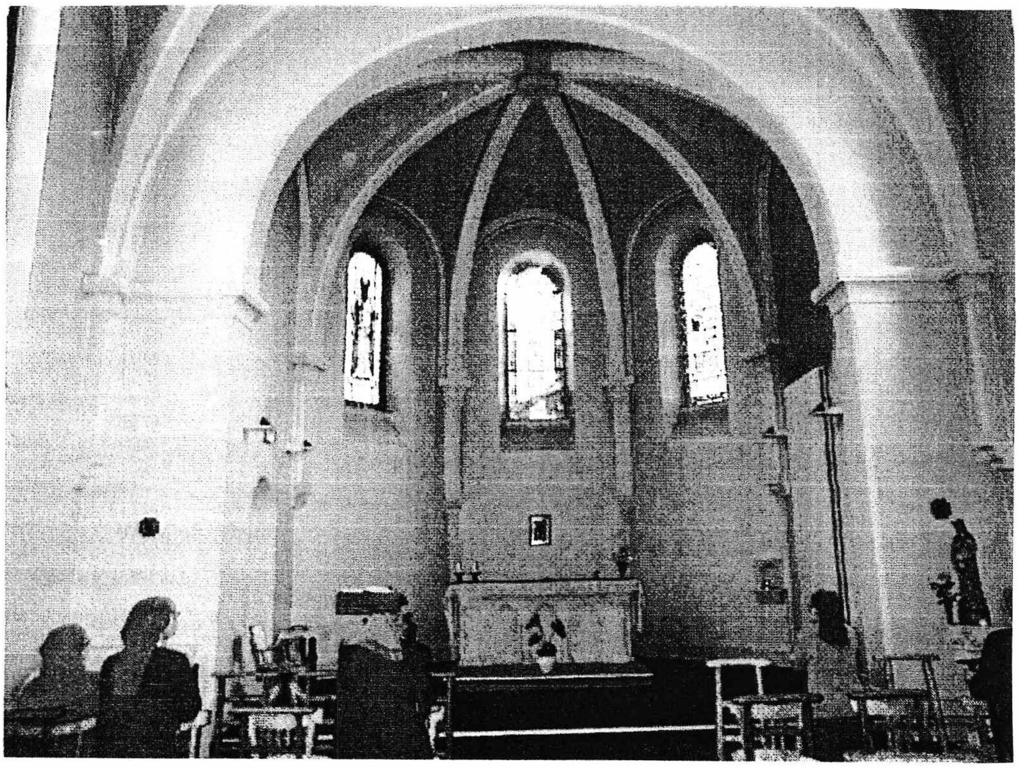
129. Josef Albers. *White Cross* window, Minnesota, 1955.



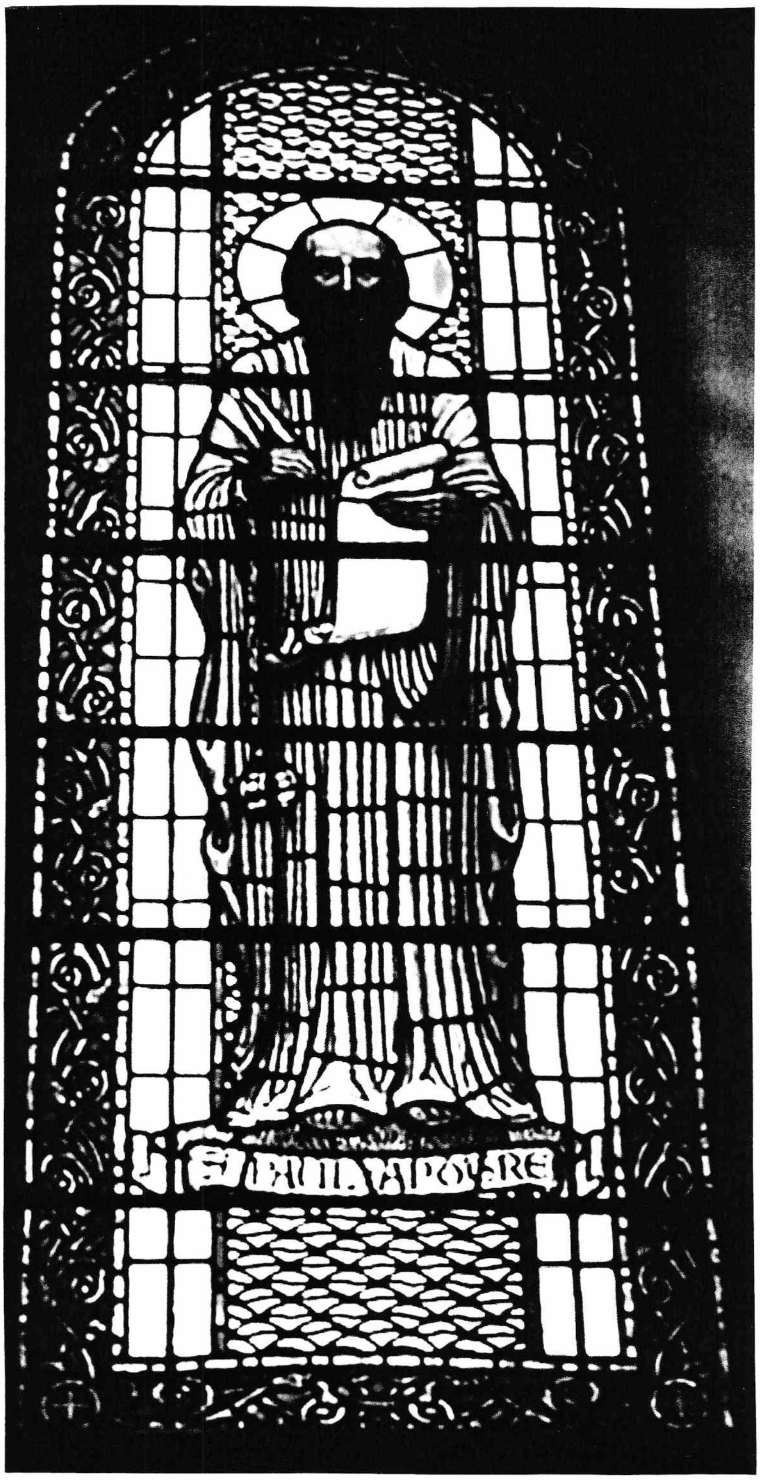
130. John Trinick. Photograph of *St Elizabeth*. East window, Maison Ste Elizabeth Orphelinat, Chartres, 1930.



131. John Trinick. Photograph of East windows, Maison Ste Elizabeth.

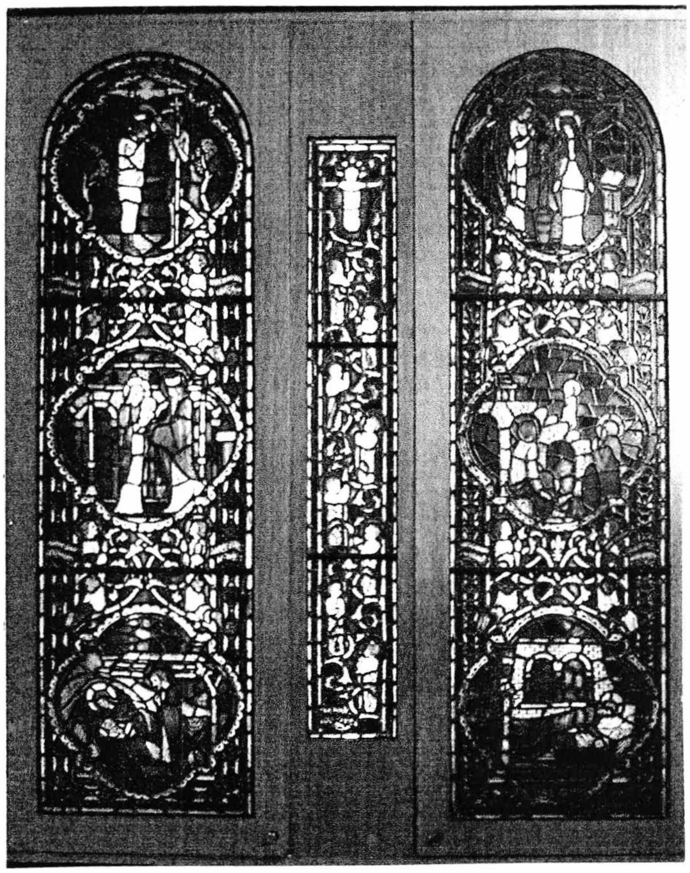


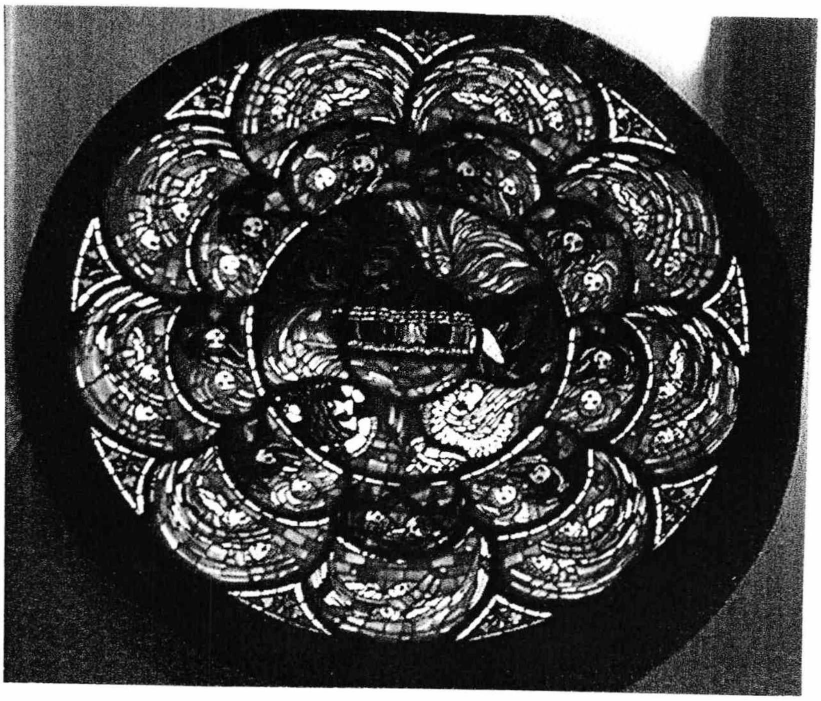
132. John Trinick. Photograph of *St Paul*. Maison Ste Elizabeth.


ST PAUL APOTRE

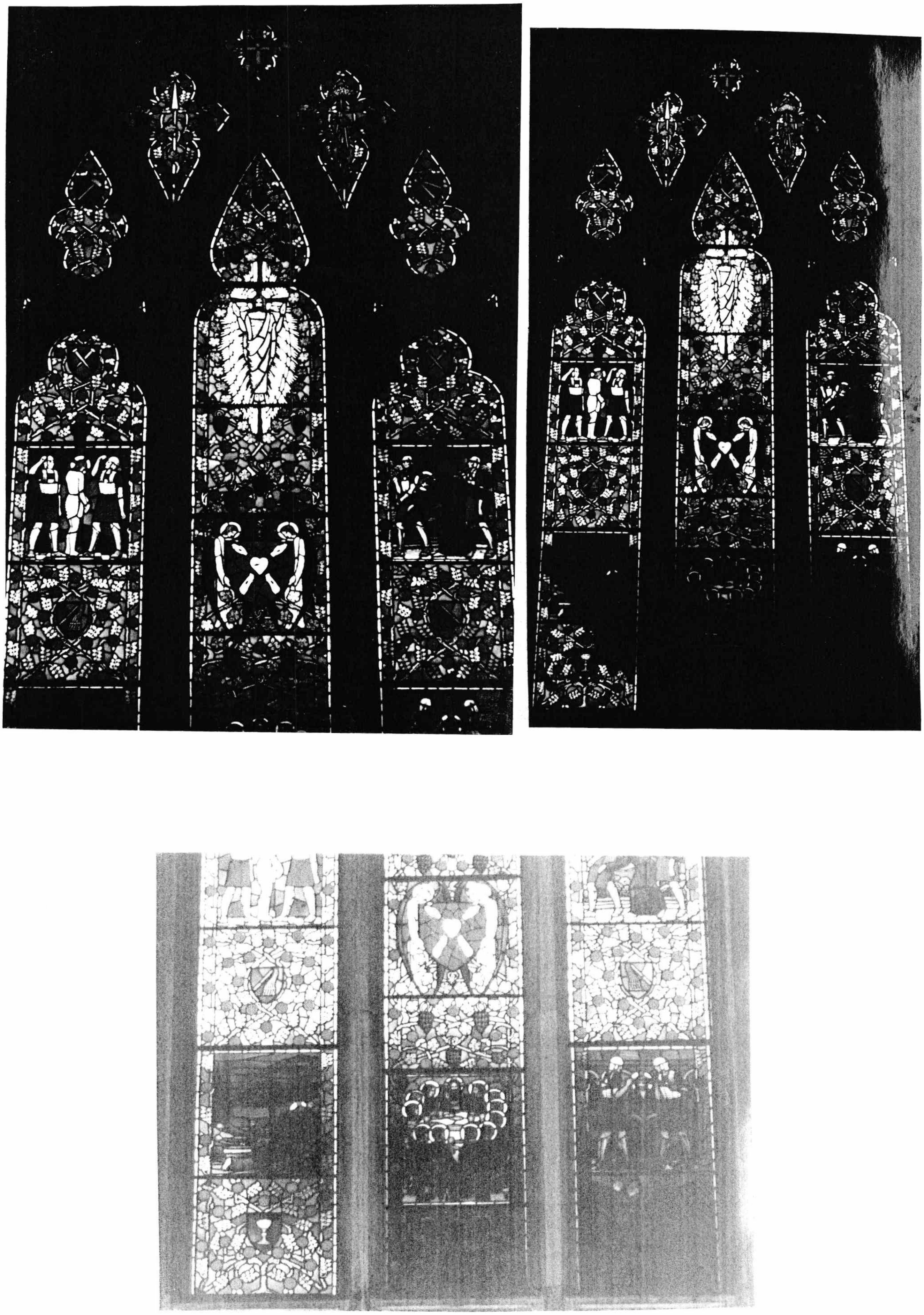
St Paul, patron saint of the congregation
Maison Ste Elizabeth

133. John Trinick. Baptistery and Rose windows, St Lawrence Church, Feltham.

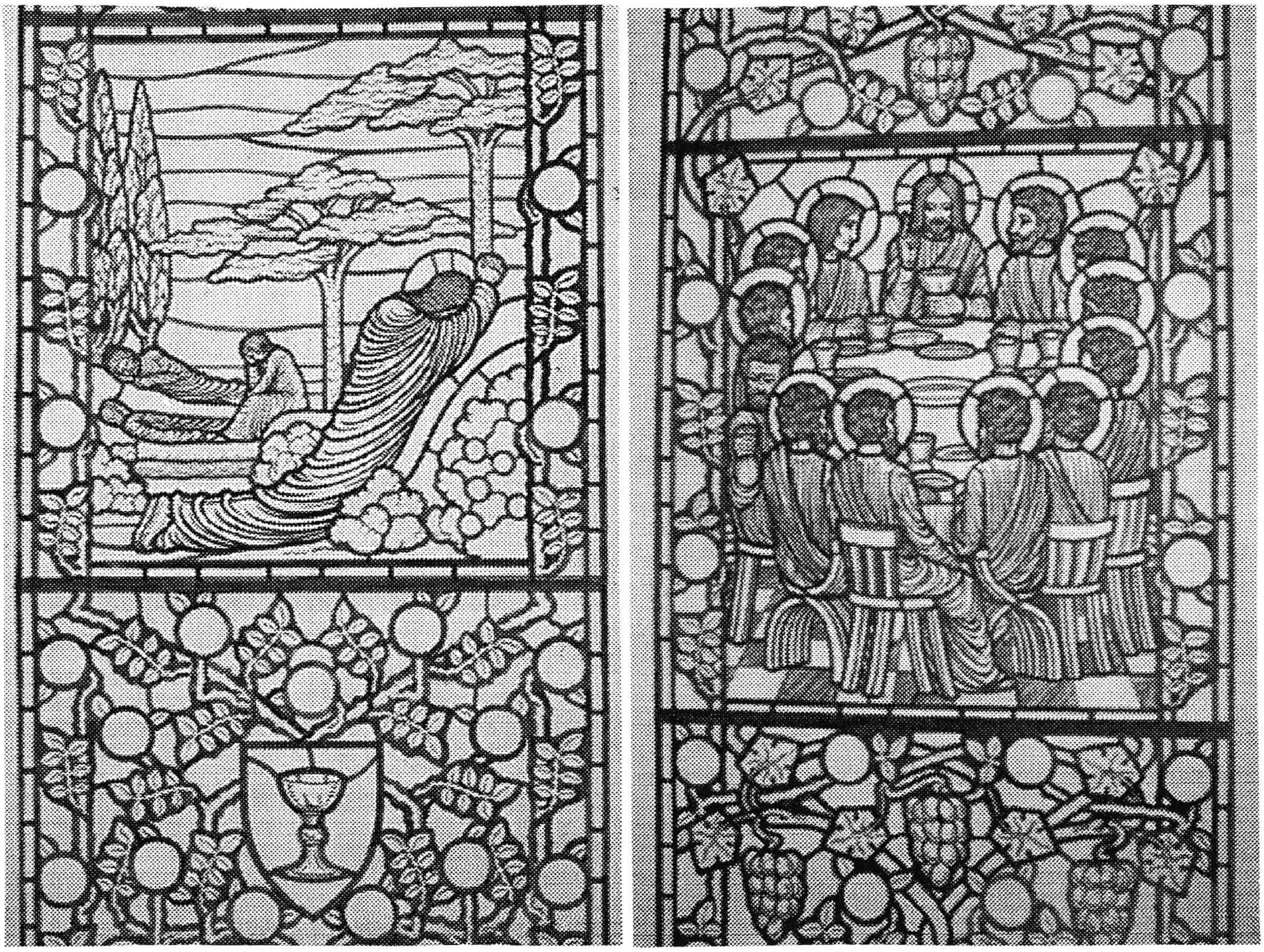




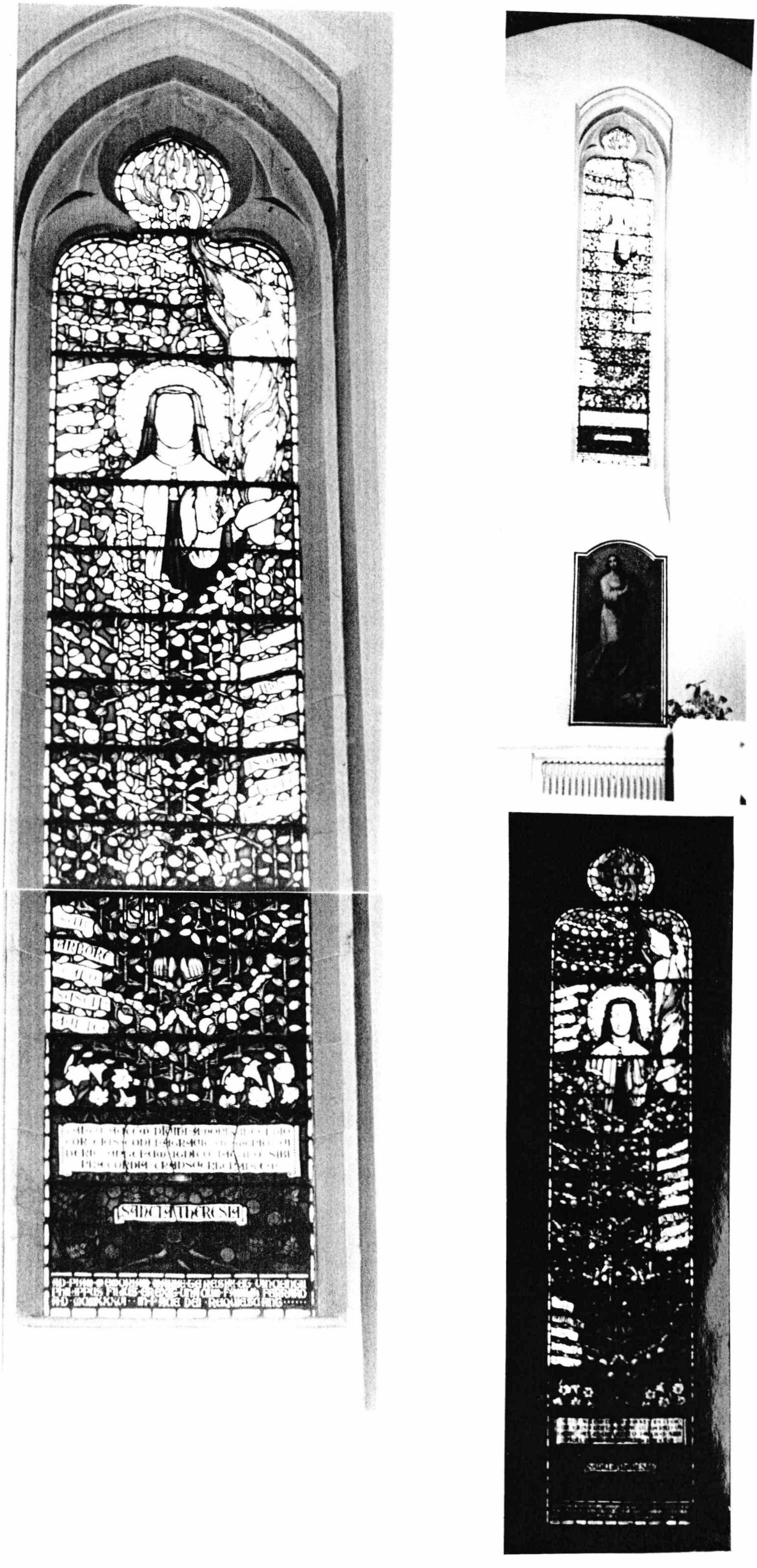
134. John Trinick. Photograph of the East window, St Austin and St Gregory, Margate.



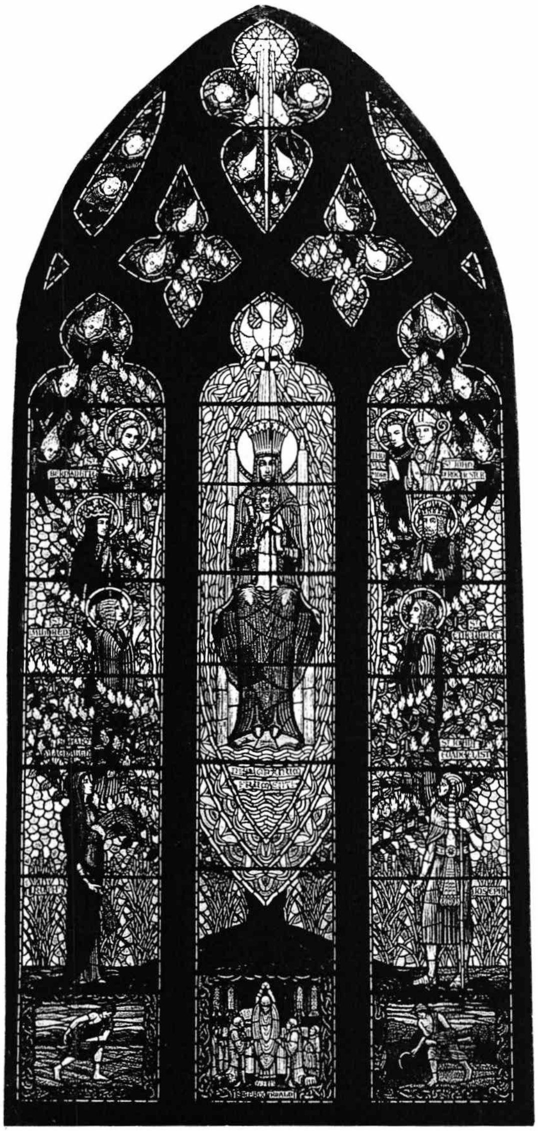
135. John Trinick. *Garden of Gethsemane* and *The Last Supper*. East window, St Austin and St Gregory, Margate, Kent, 1935. Cartoon.



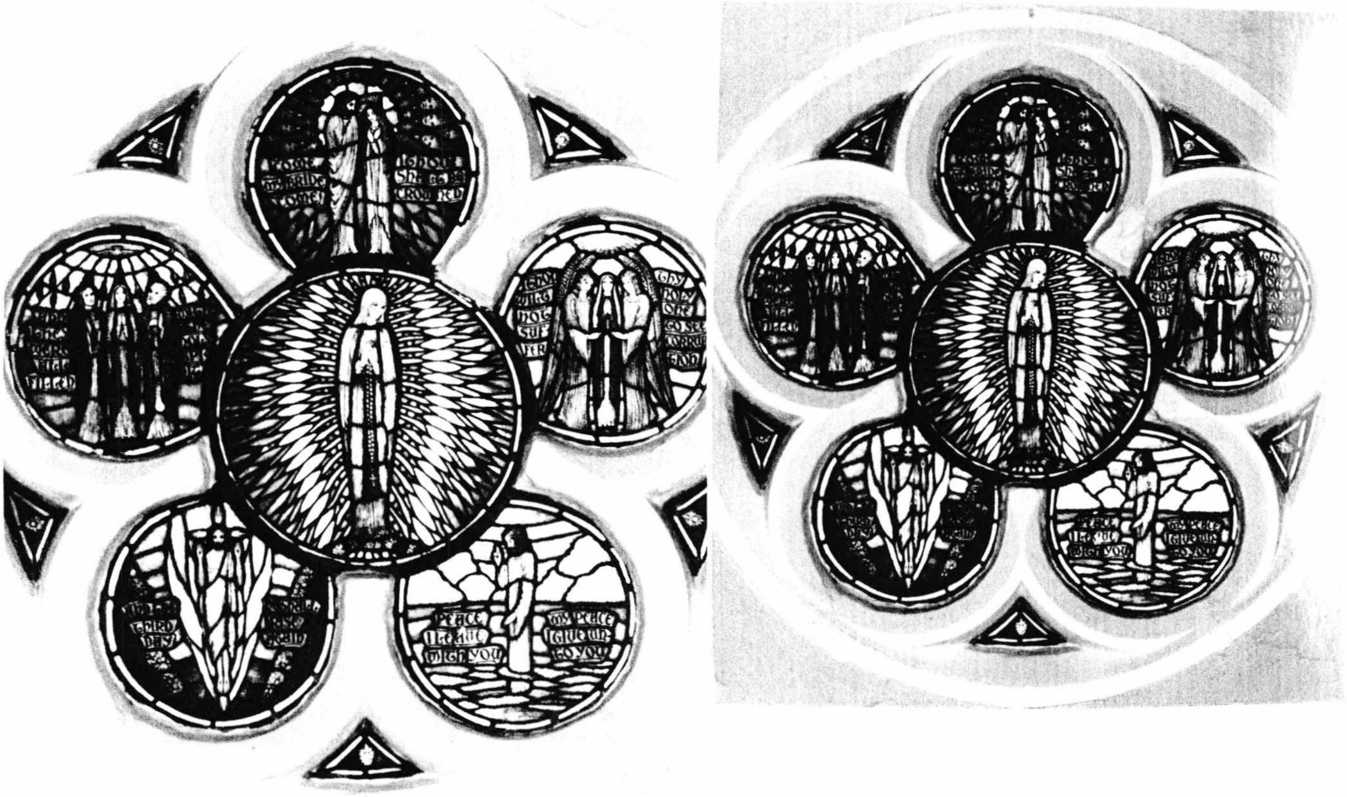
136. John Trinick. Photograph of *St Teresa of Avila.* South transept, Our Lady of Dolours, Hendon, London, 1936.


SANCTA THERESIA

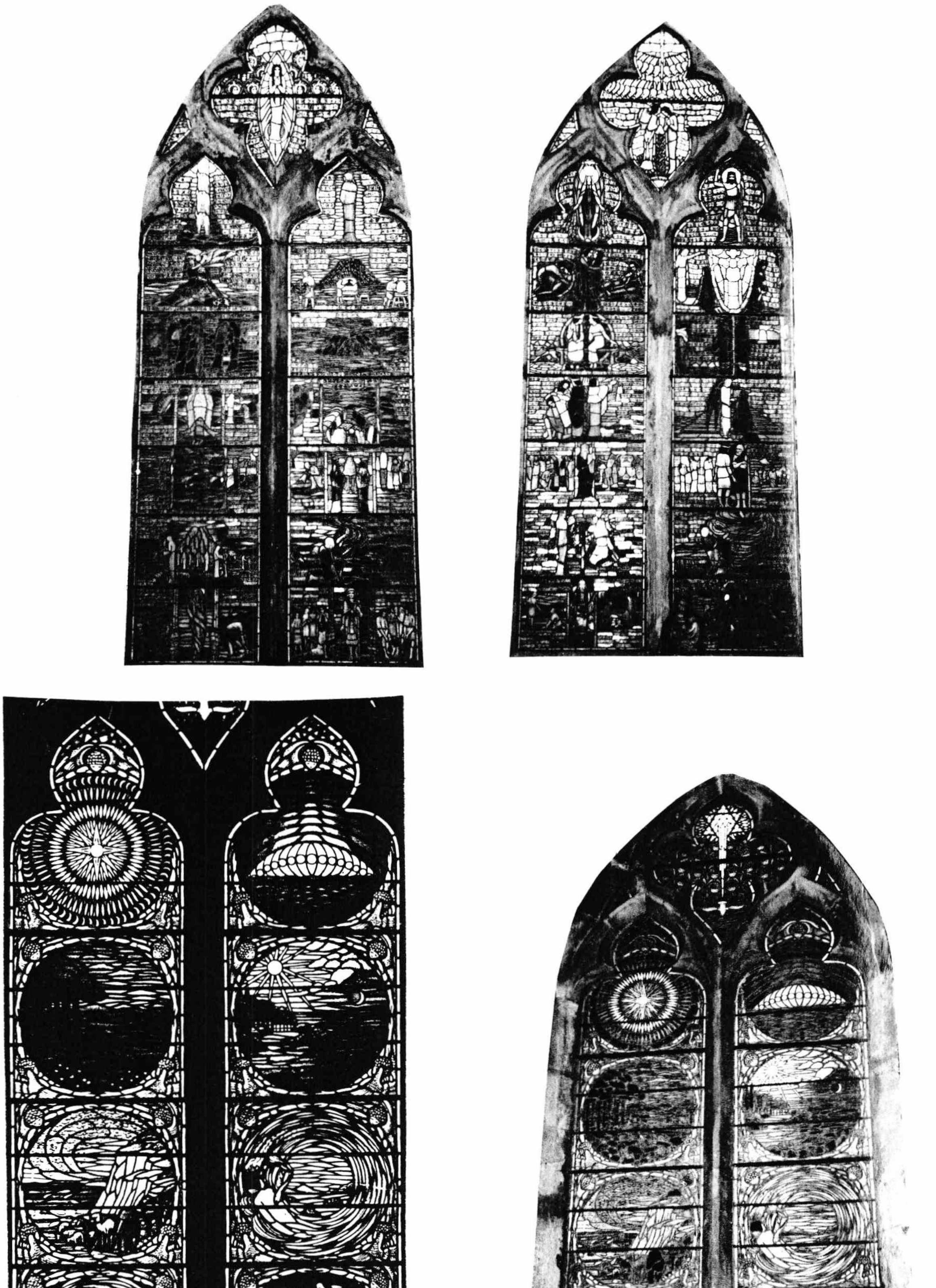
137. John Trinick. East window, Salmestone Grange, Margate, Kent, 1938.



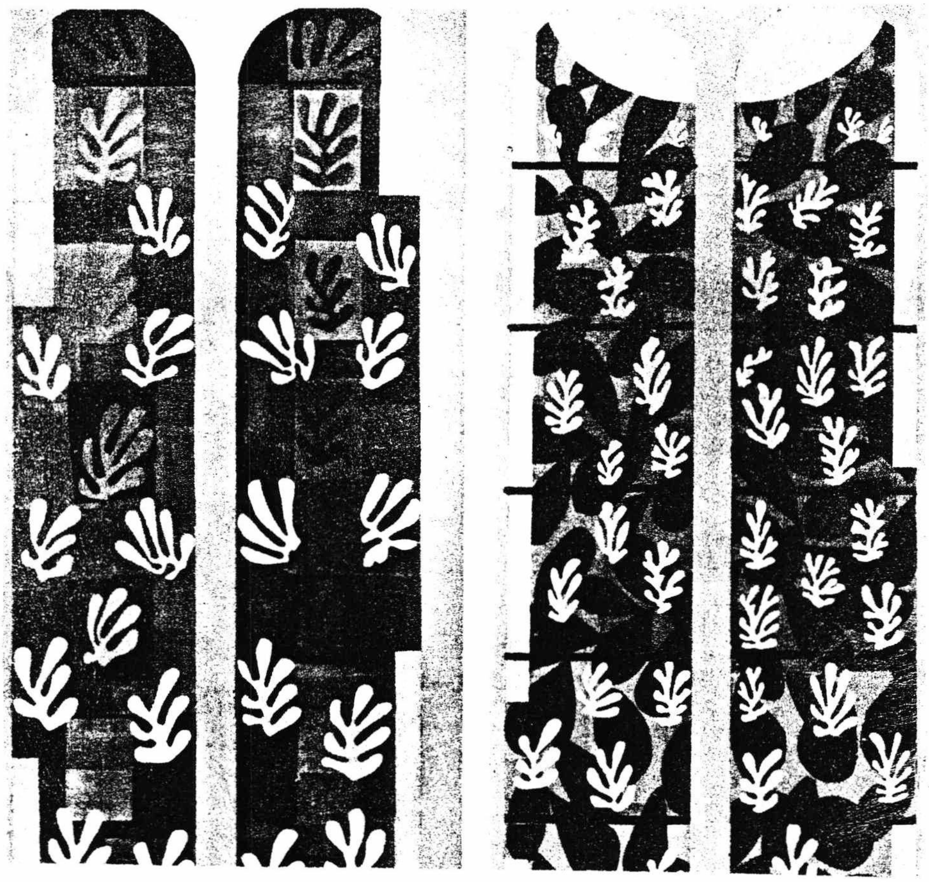
138. John Trinick. Photograph of Rose window, St Paul's Church, Dover, Kent.



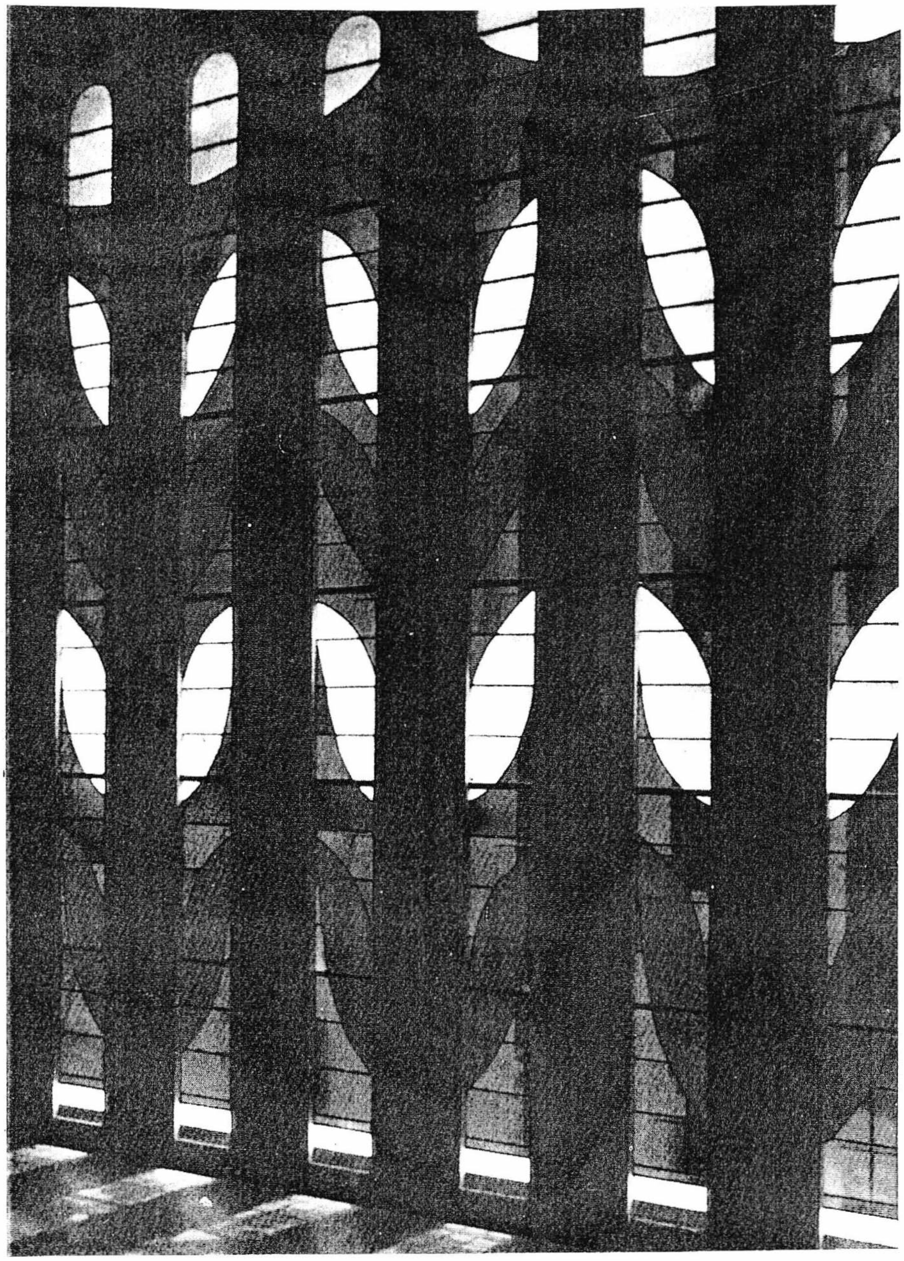
139. John Trinick. Photograph of *Creation,* West windows, Salmestone Grange, Margate.



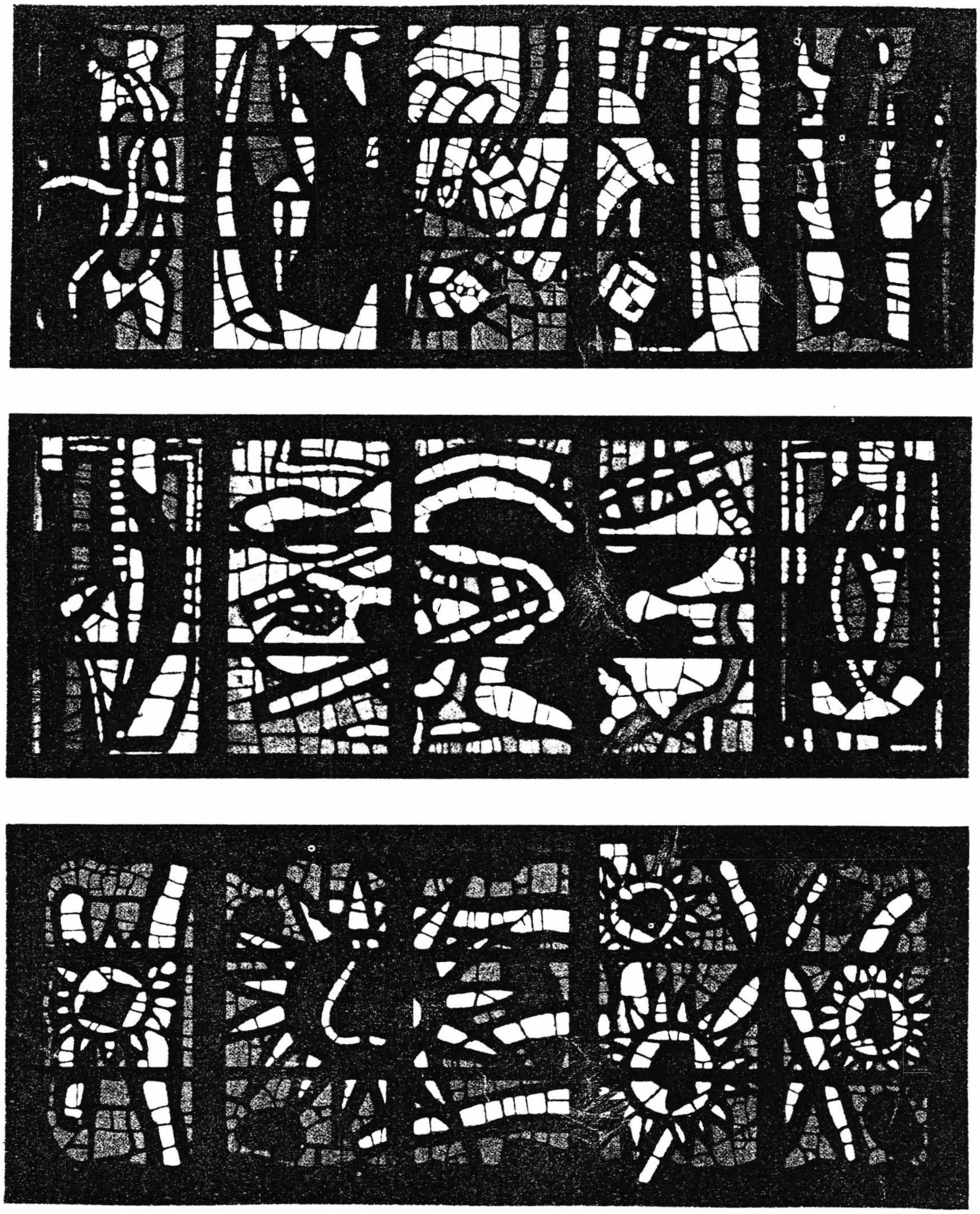
140. Henri Matisse. Study for Chapel windows, Saint-Marie du Rosaire, Vence, 1950.



141. Henri Matisse. Main Hall window, Saint-Marie du Rosaire, Vence, 1951.

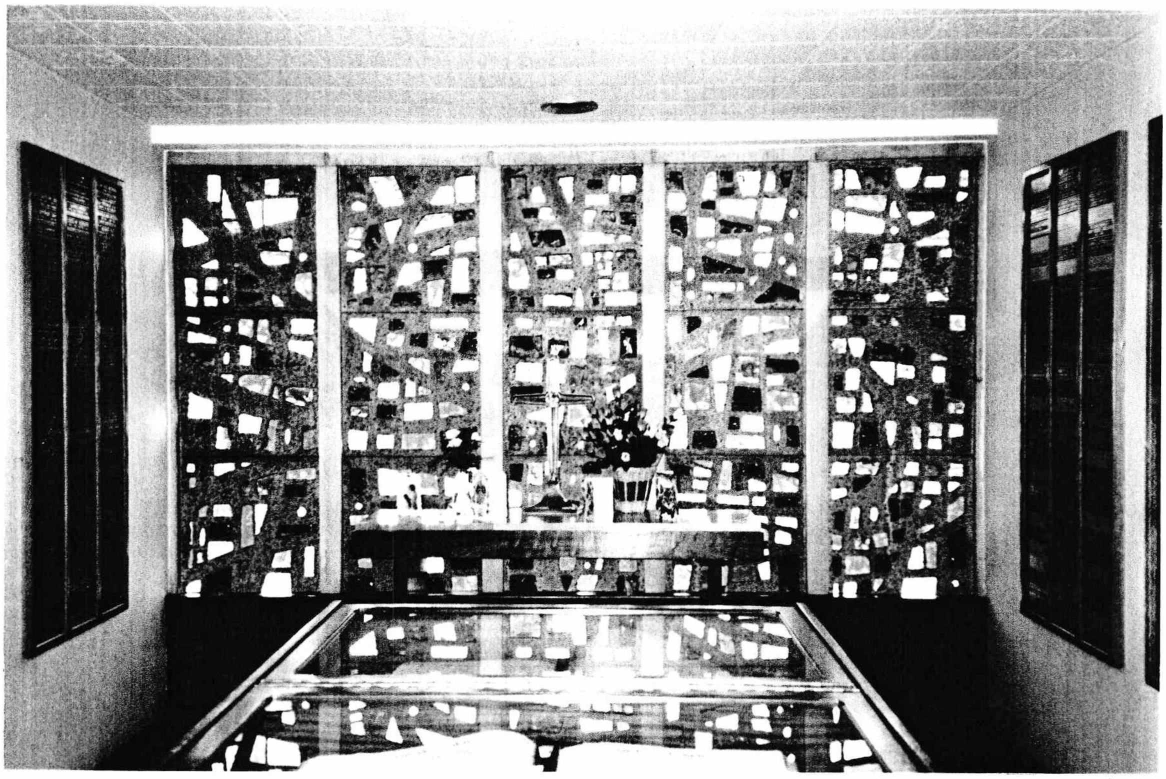


142. Fernand Leger. Audincourt, 1950. Dalle de verre.

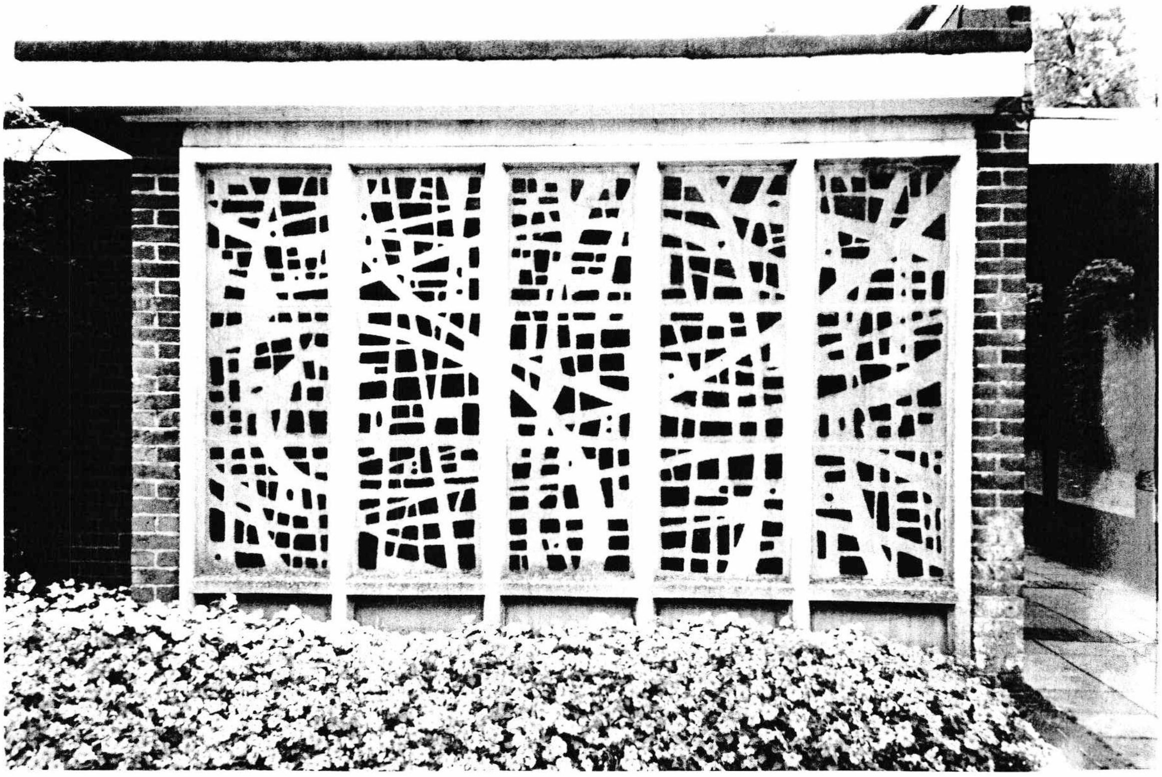


143. Photograph of Thanet Crematorium Chapel, Margate, Kent, c.late 1950's.

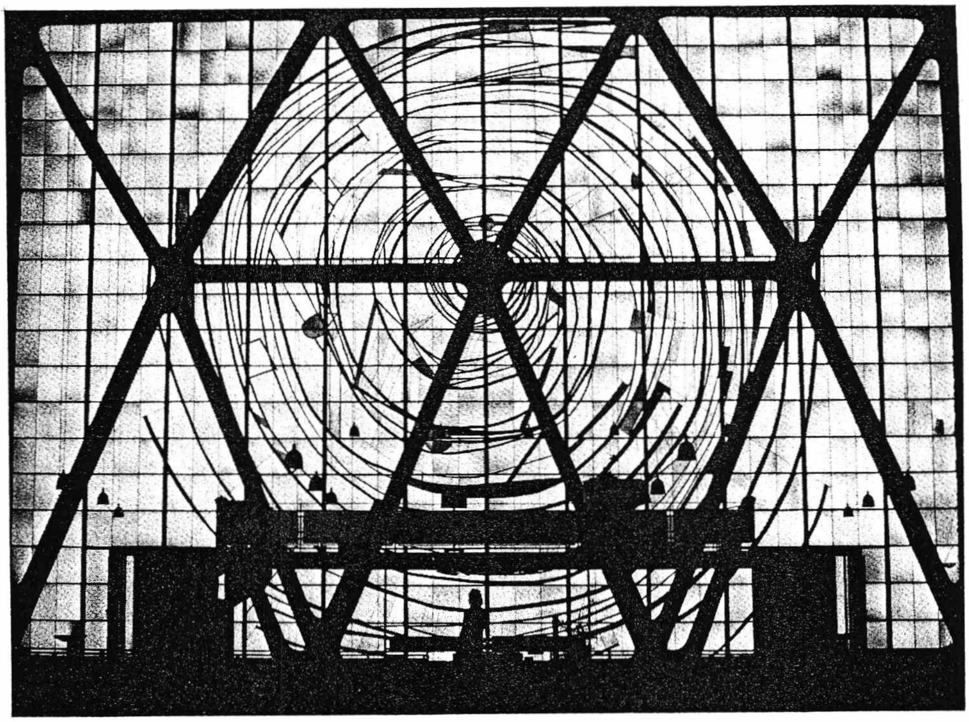
Interior



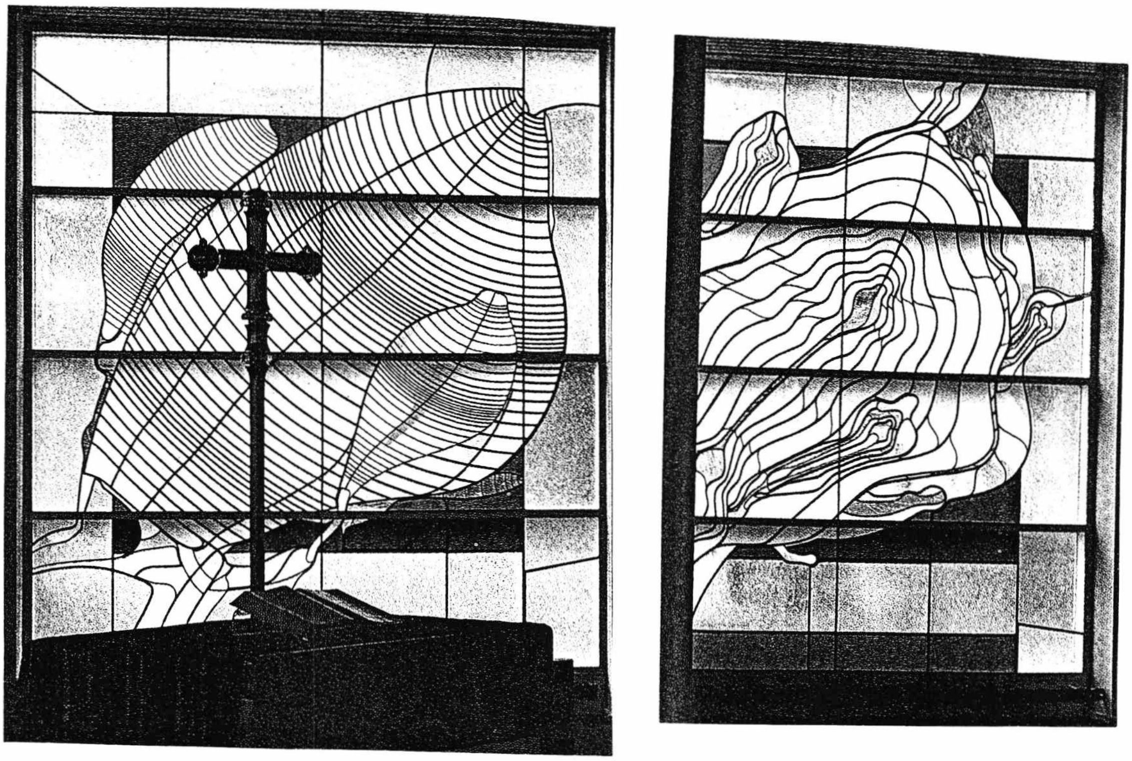
Exterior



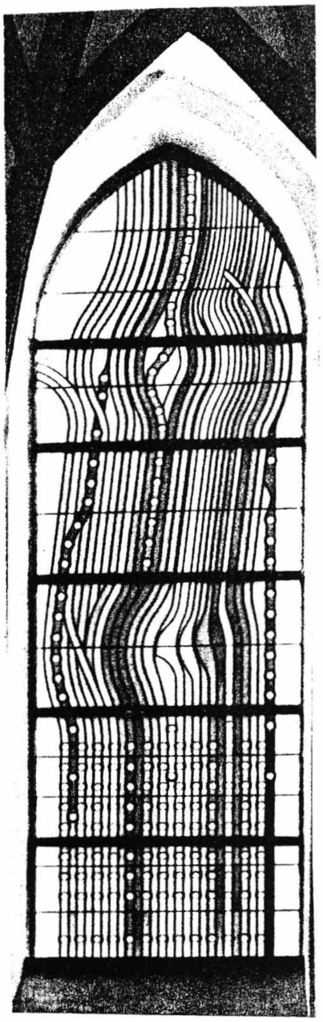
144. George Meistermann. *The Bottrop Spiral,* Bottrop Church, Bottrop, 1959.



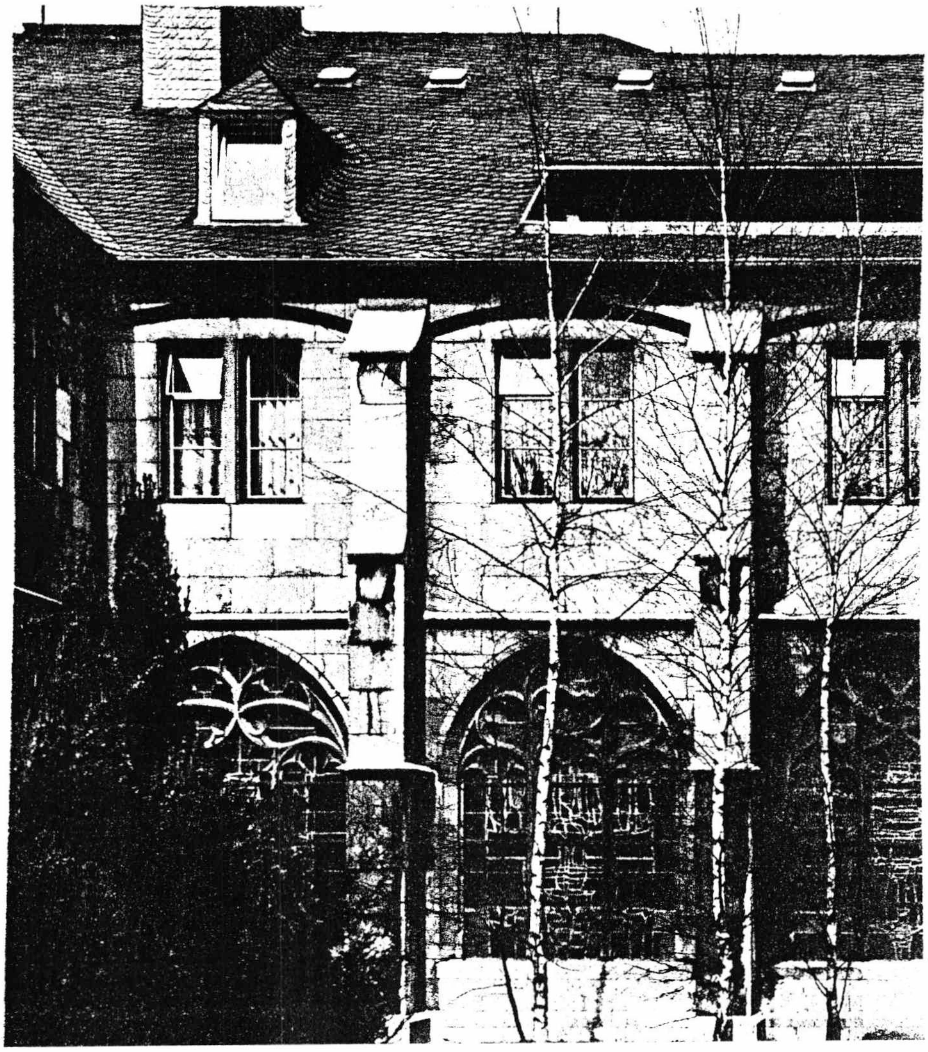
145. George Meistermann. Chapel of St Antonius Hospital, Eschweiler, 1976.



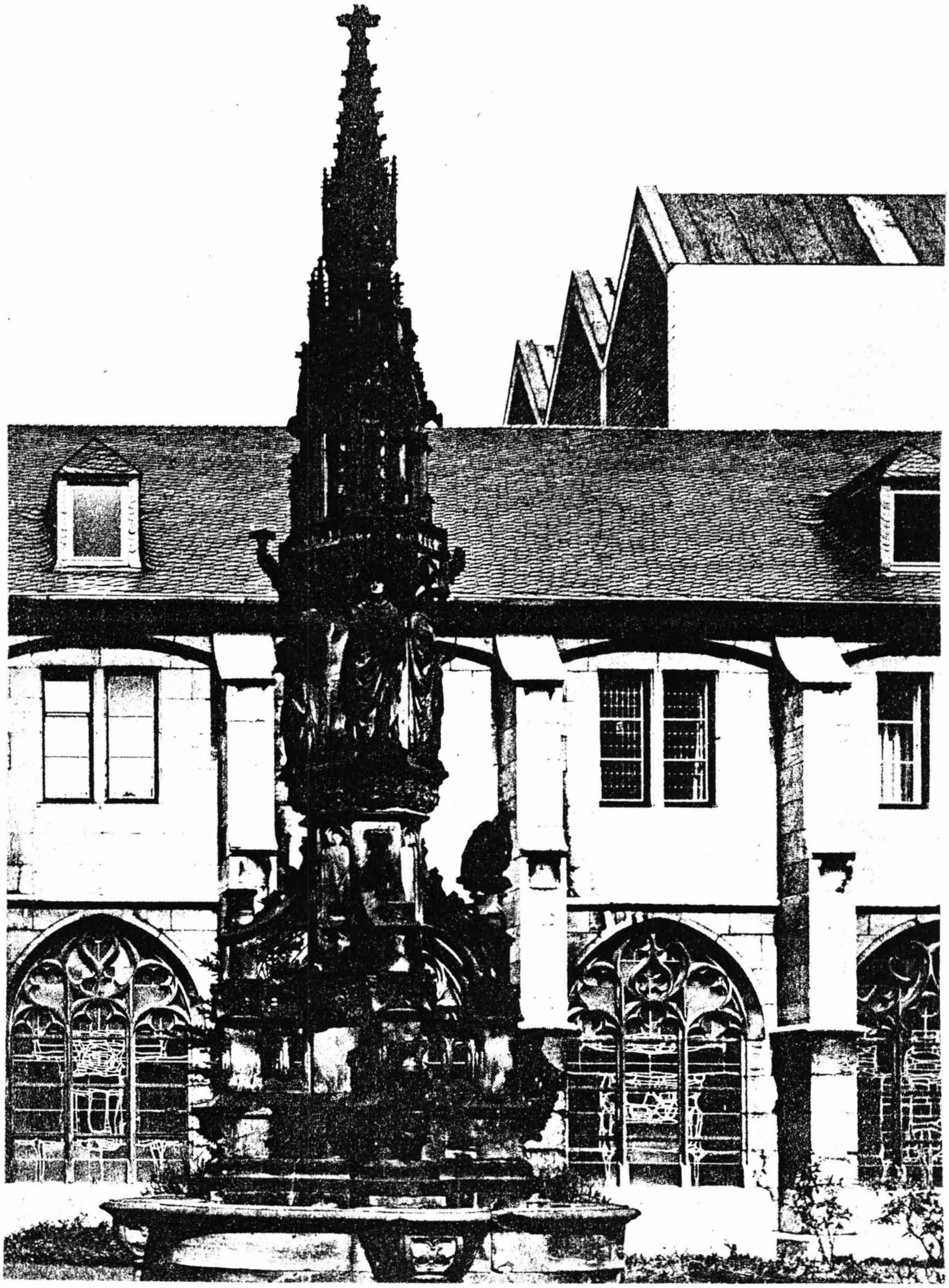
146. Ludwig Schaffrath. St Peter's Church, Immemdof, 1974.



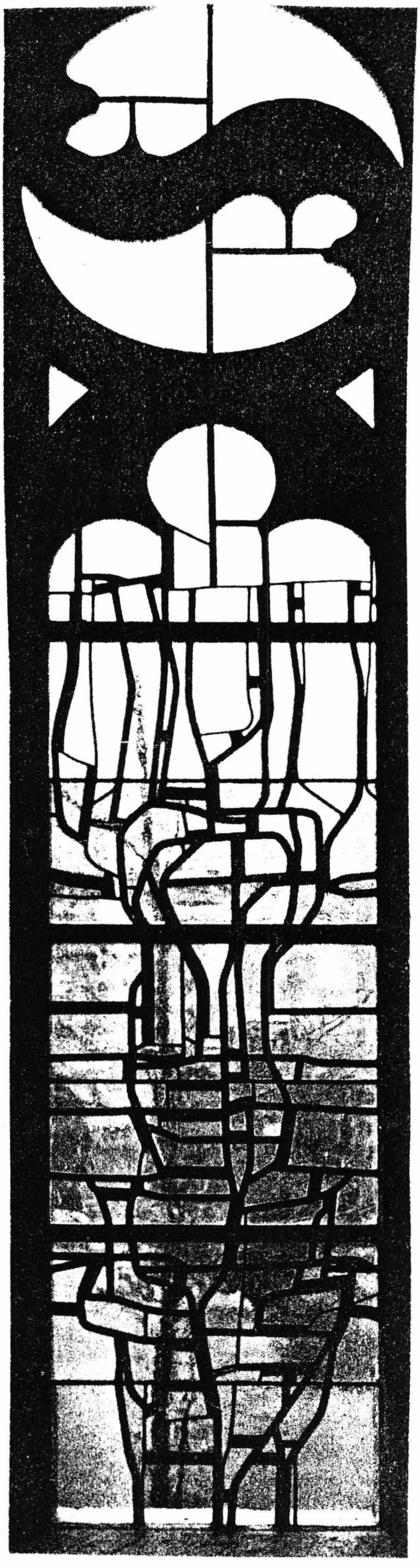
147. Ludwig Schaffrath. Aachen Cathedral Cloisters, Aachen, 1962-65.

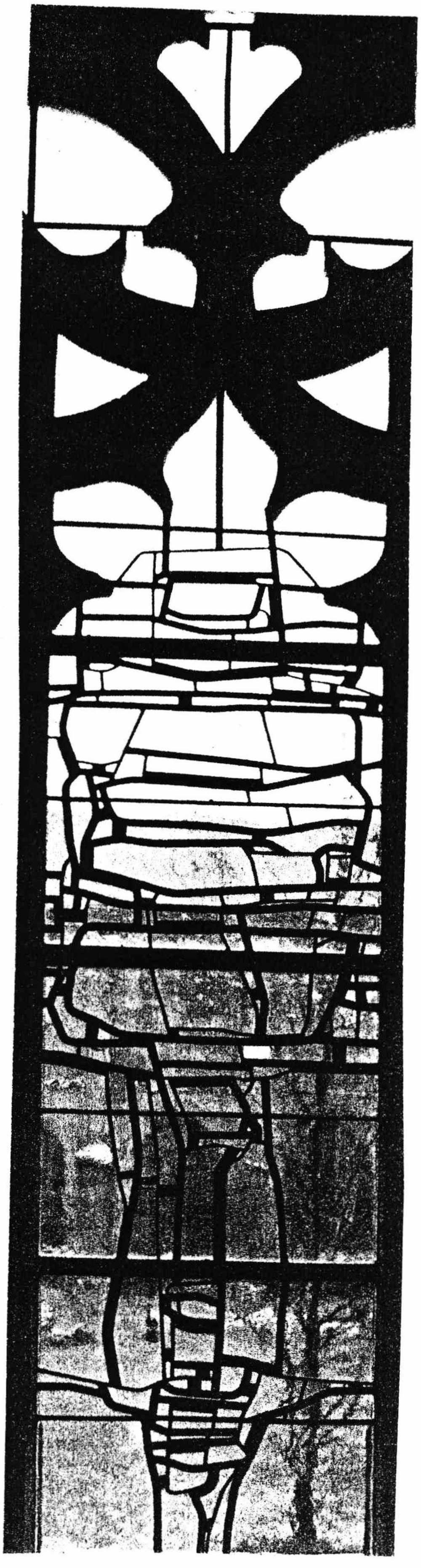


148. Ludwig Schaffrath. Aachen Cathedral Cloisters, Aachen, 1962-65.



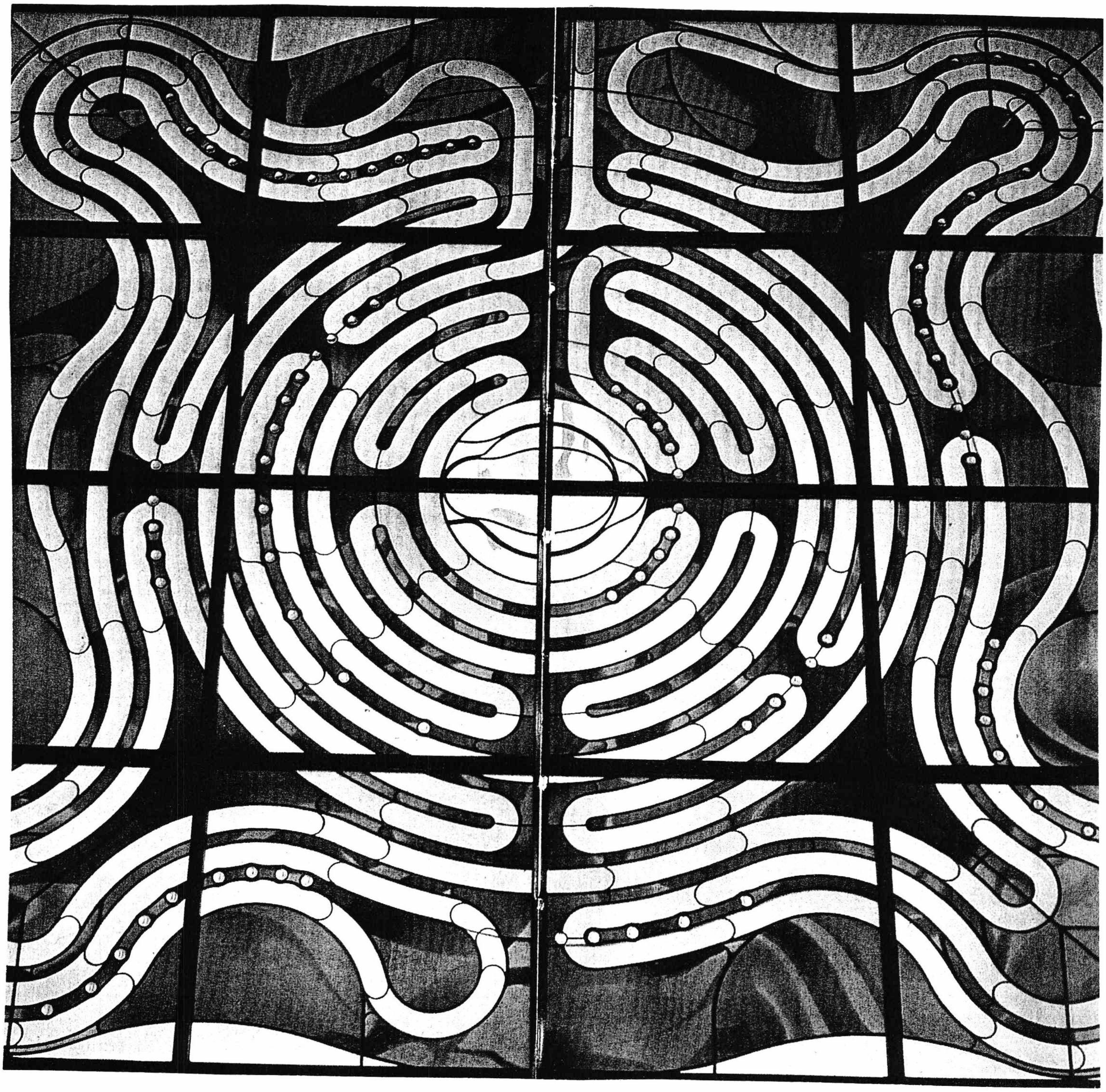
149. Ludwig Schaffrath. Aachen Cathedral Cloisters



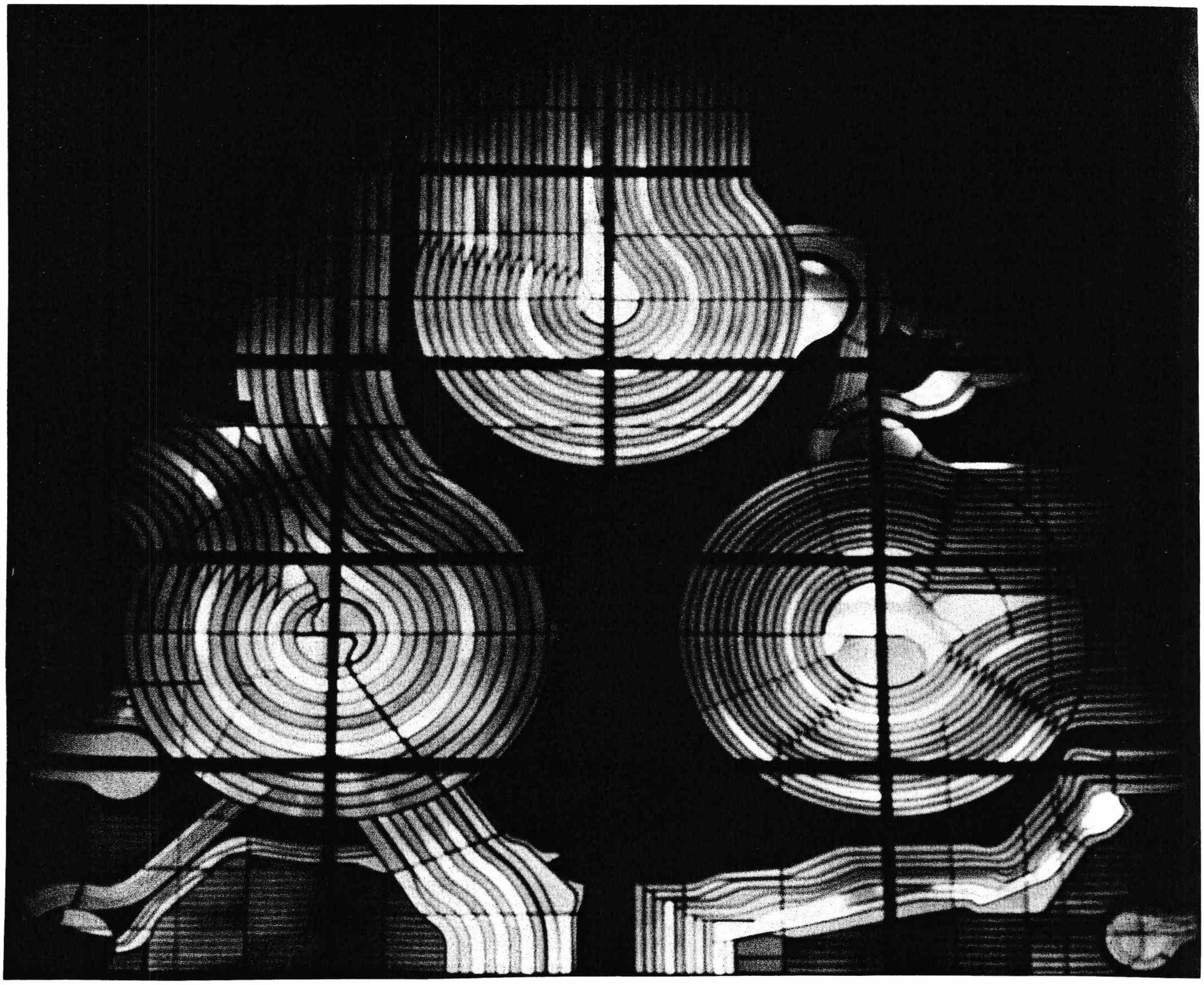


150. Ludwig Schaffrath. Aachen Cathedral Cloisters

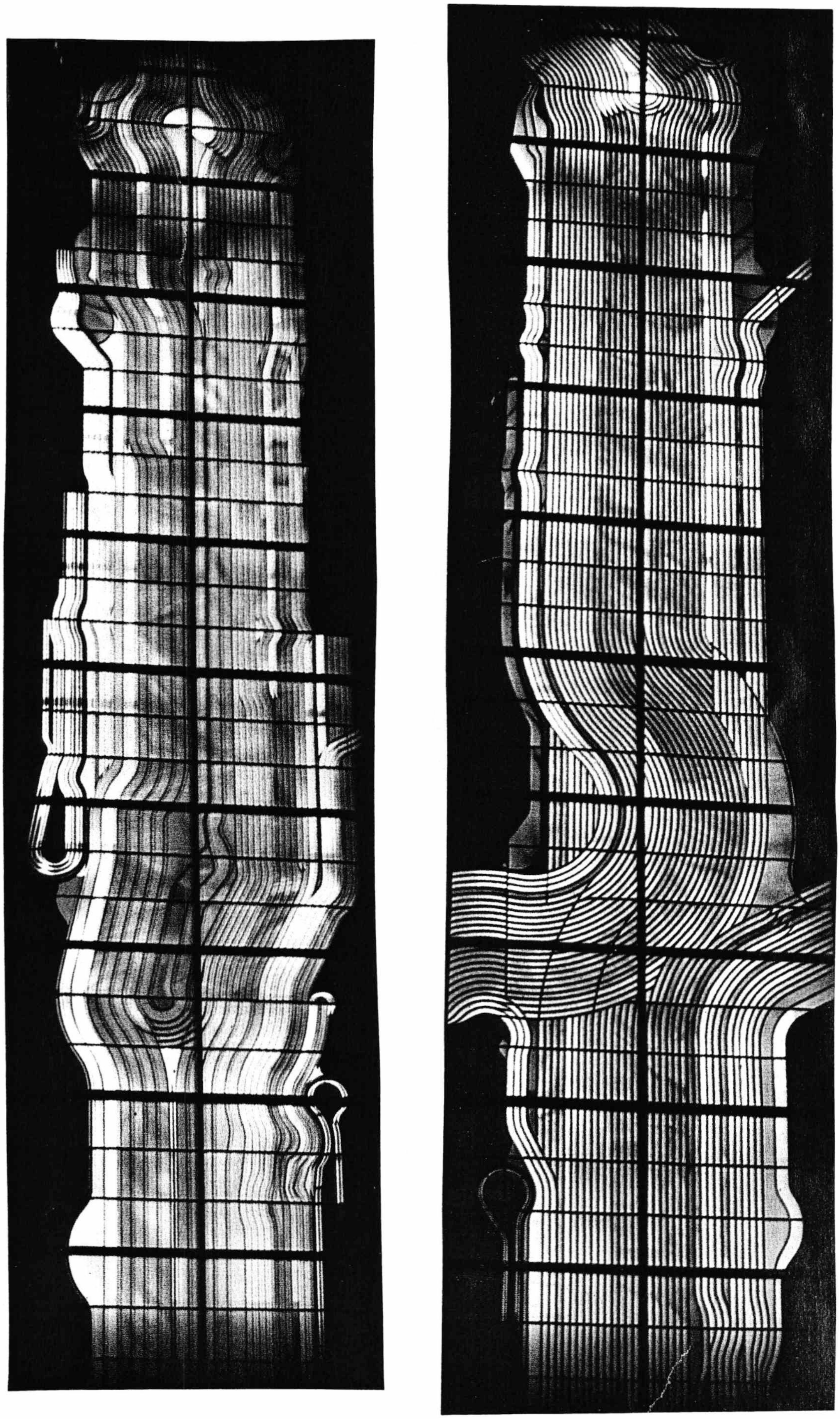
151. Ludwig Schaffrath. *Labyrinth window.* St Joseph's Church, Aachen, 1975.



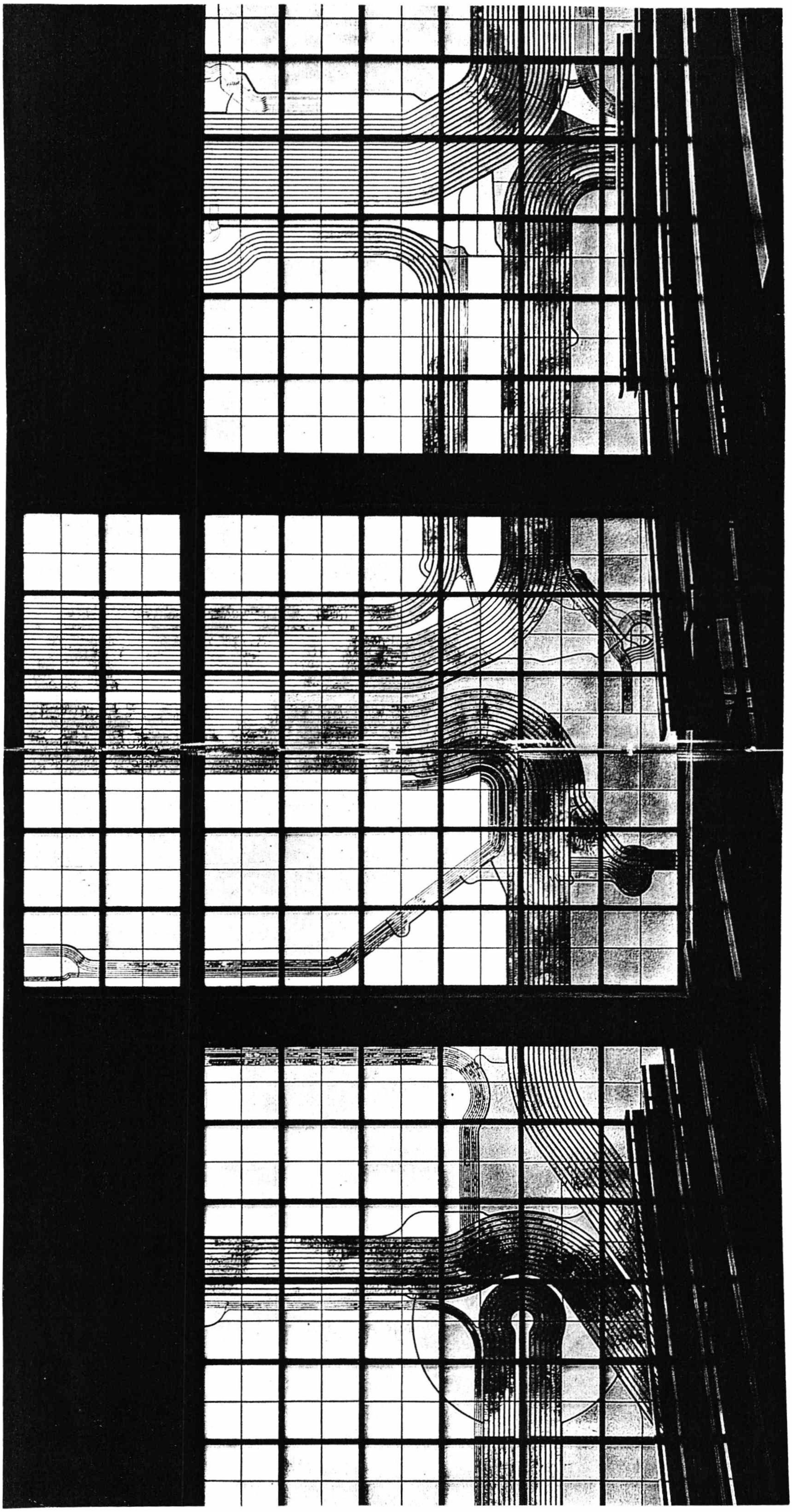
152. Ludwig Schaffrath. North transept, St Joseph's Church, Aachen, 1975.



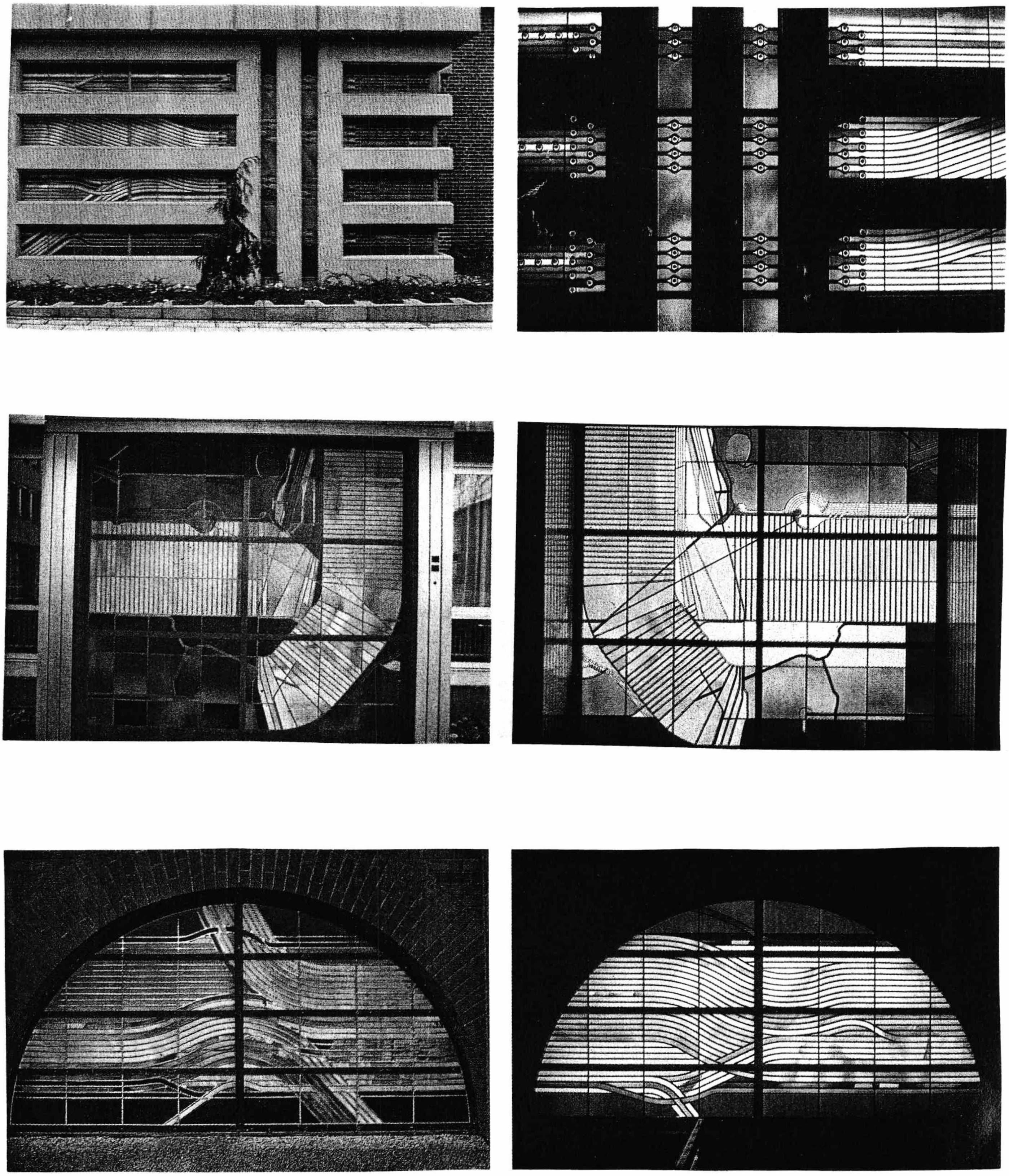
153. Ludwig Schaffrath. Nave windows, St Joseph's Church, Aachen, 1971-17.



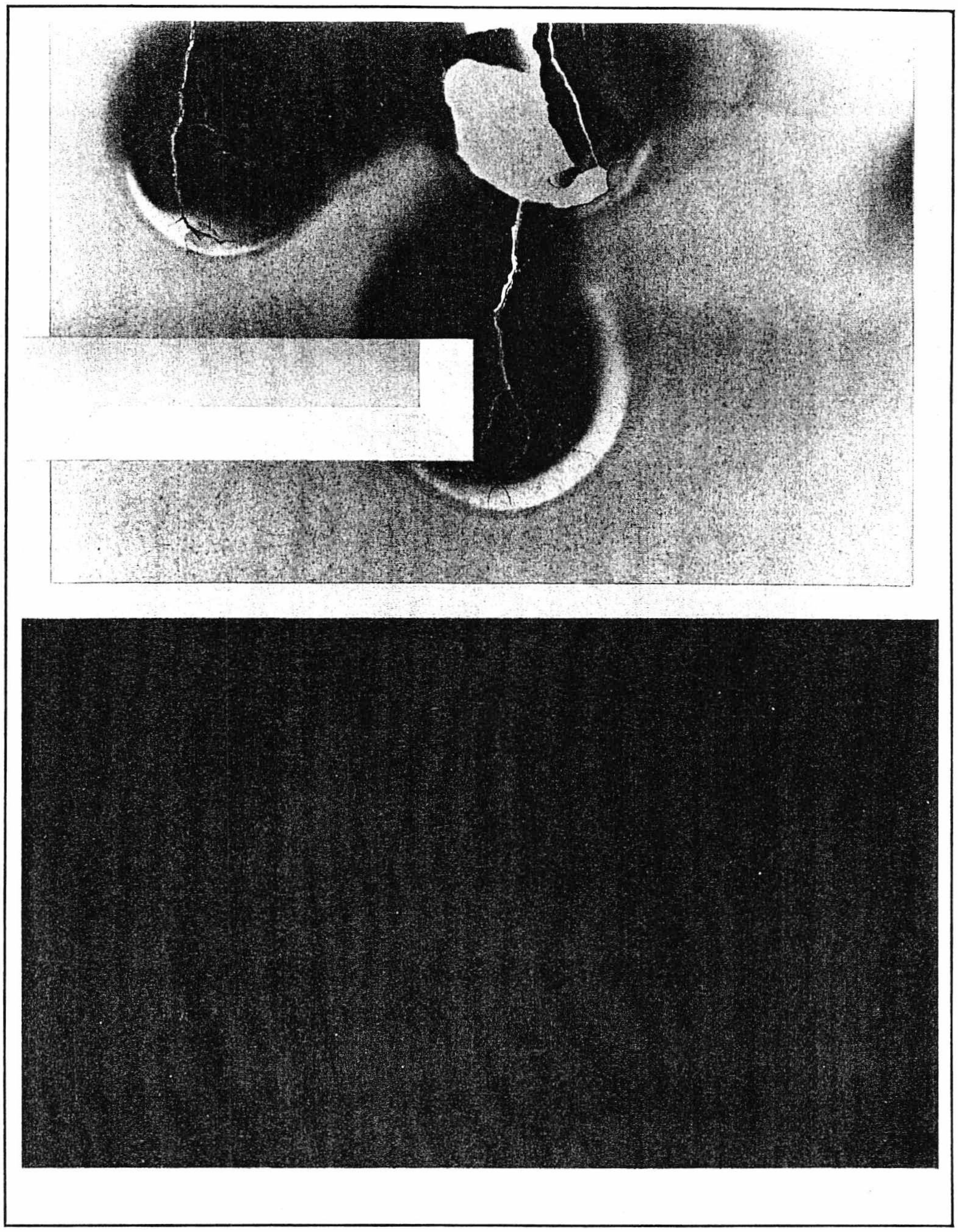
154. Ludwig Schaffrath. St Marien Church, Bad Zwischenahn, 1970.



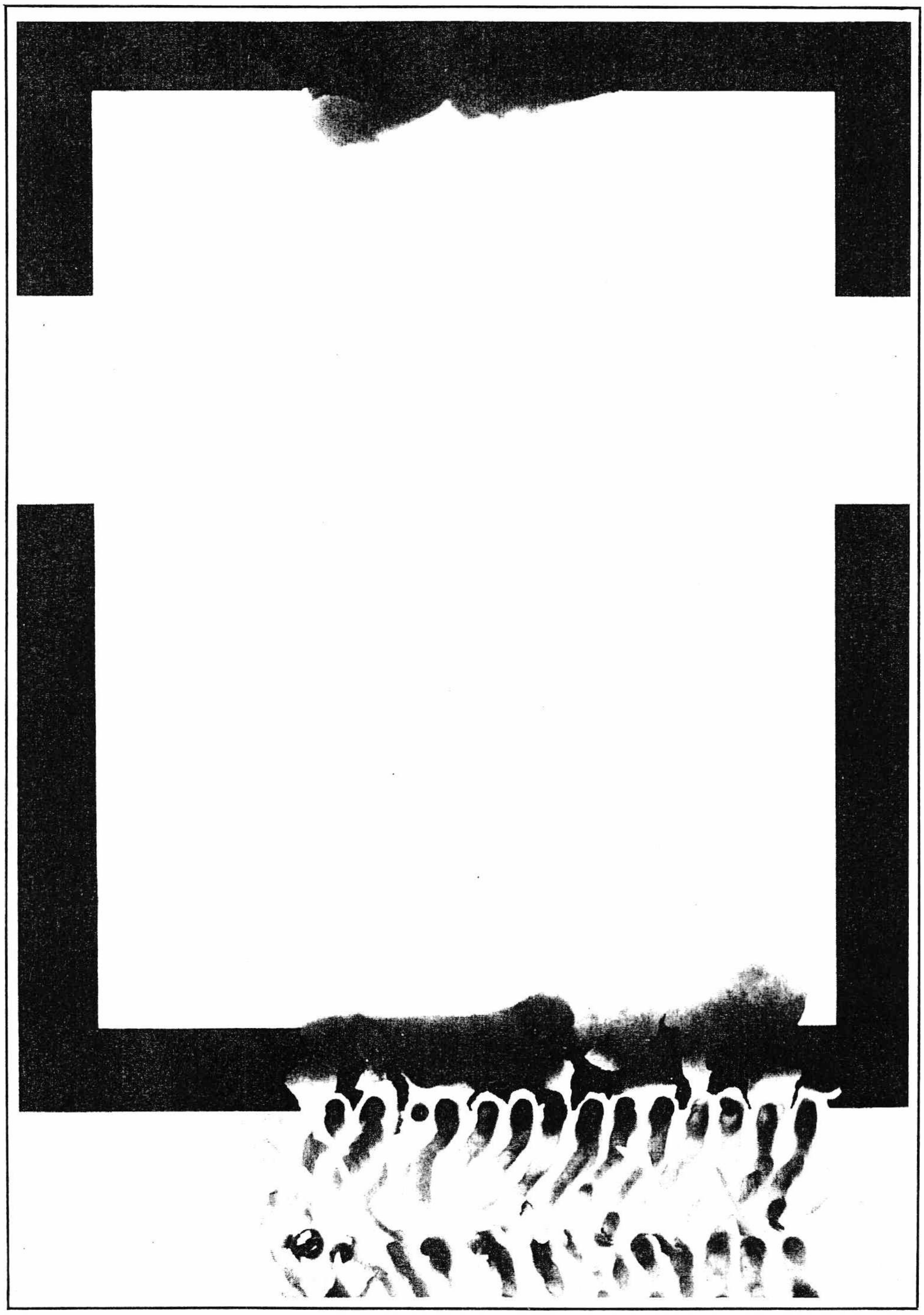
155. Ludwig Schaffrath. St Antonius Church, Hagen-Kabel; St Thekla, Merkstein; St Antonius Hospital Chapel, Hagen-Kabel, c.early 1970's.



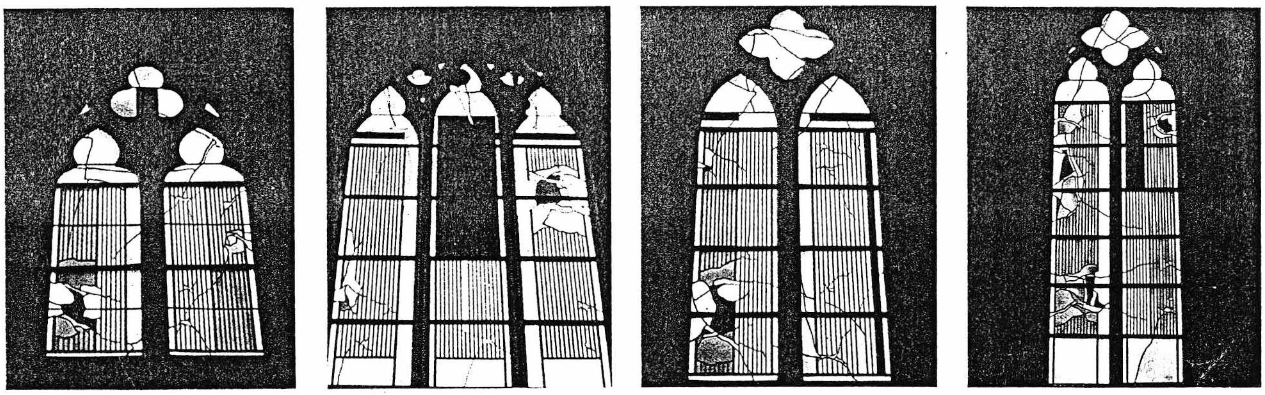
156. Johannes Schreiter. Brandt collage, Meerwein Collection, Mainz, 1972.



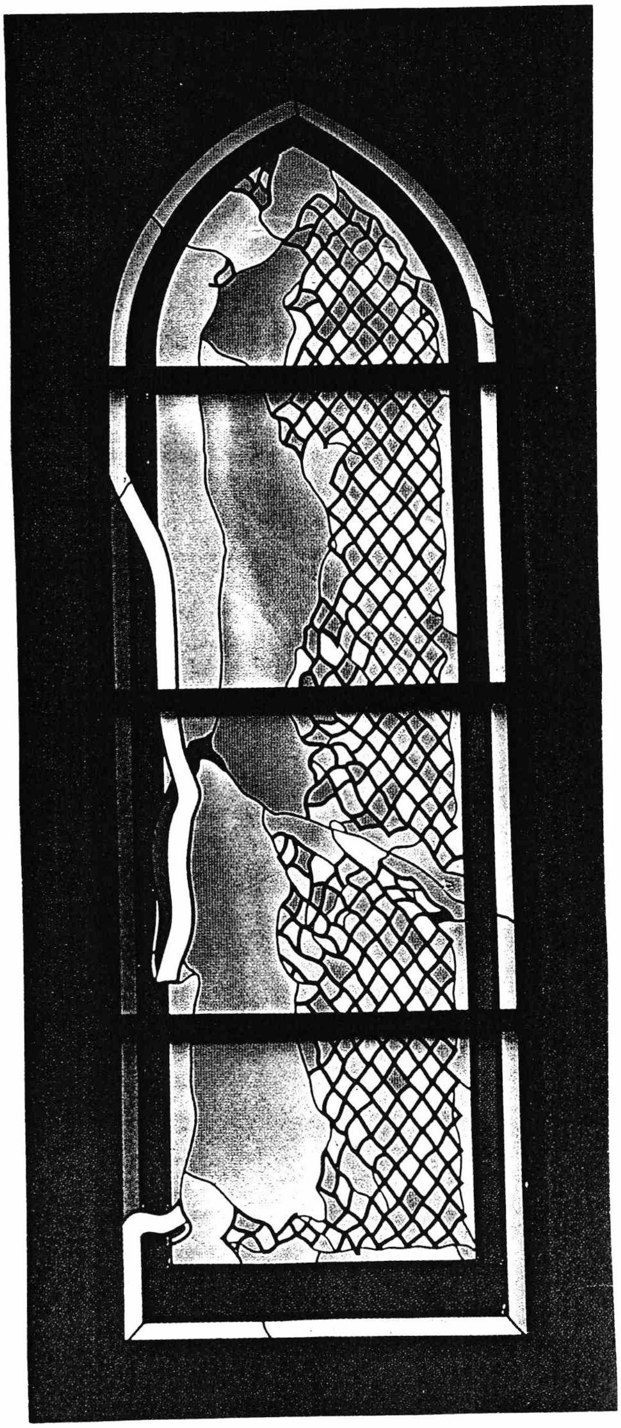
157. Johannes Schreiter. *Waiting for Godot.* Brandt collage, City Collection, Darmstadt, 1966.



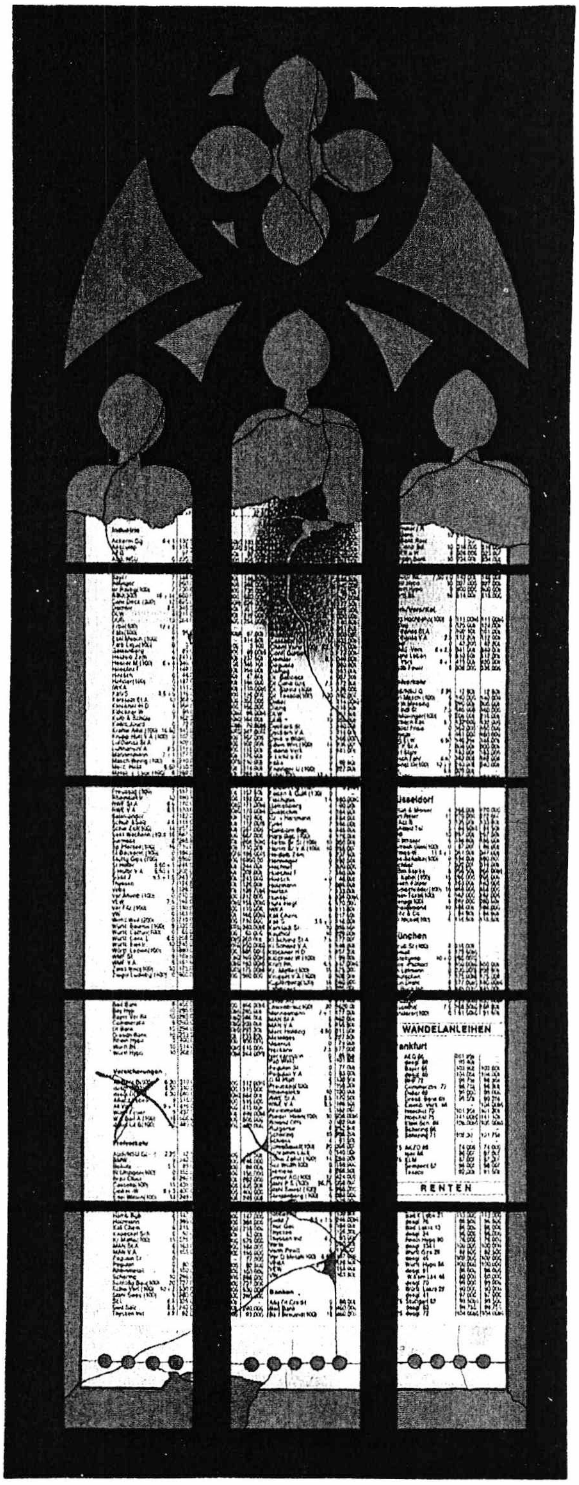
158. Johannes Schreiter. St Marienkirche, Dortmund, c.1969-72.



159. Johannes Schreiter. North apse window, St Laurentius, Niederkalbach bei Fulda, 1977.



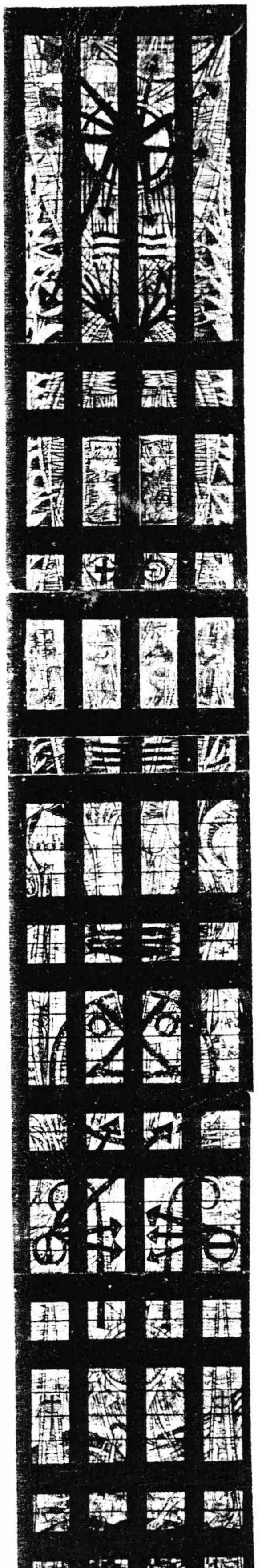
160. Johannes Schreiter. *Heidelberg Series*. Heidelberg, 1977.


WANDELANLEIHEN
RENTEN

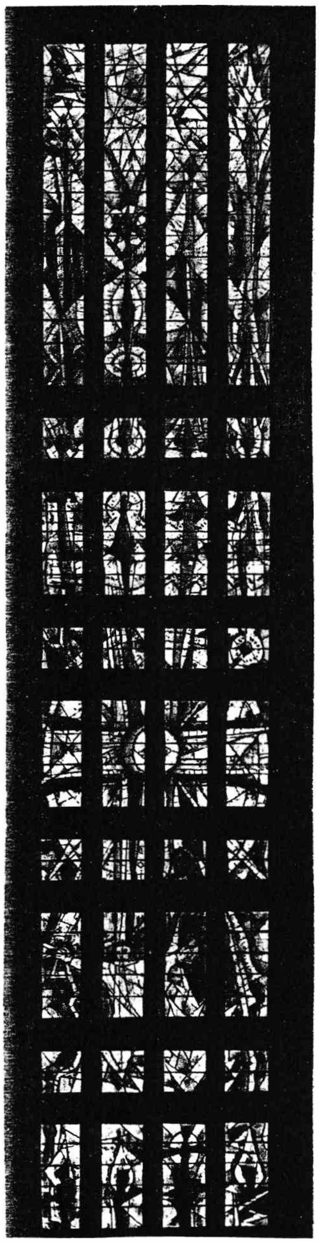
One of the series of textural designs. Laced with unprecedented ironic content, this window includes a section of recent stock market ratings.

161. Lawrence Lee, Keith New and Geoffrey Clarke. Nave windows, Coventry Cathedral, Coventry, West Midlands, c.1950's.

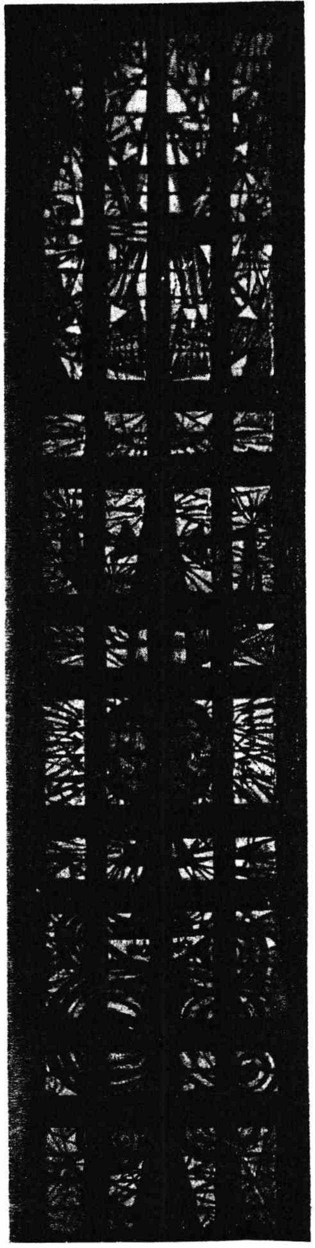
Keith New, green window
'Man' side

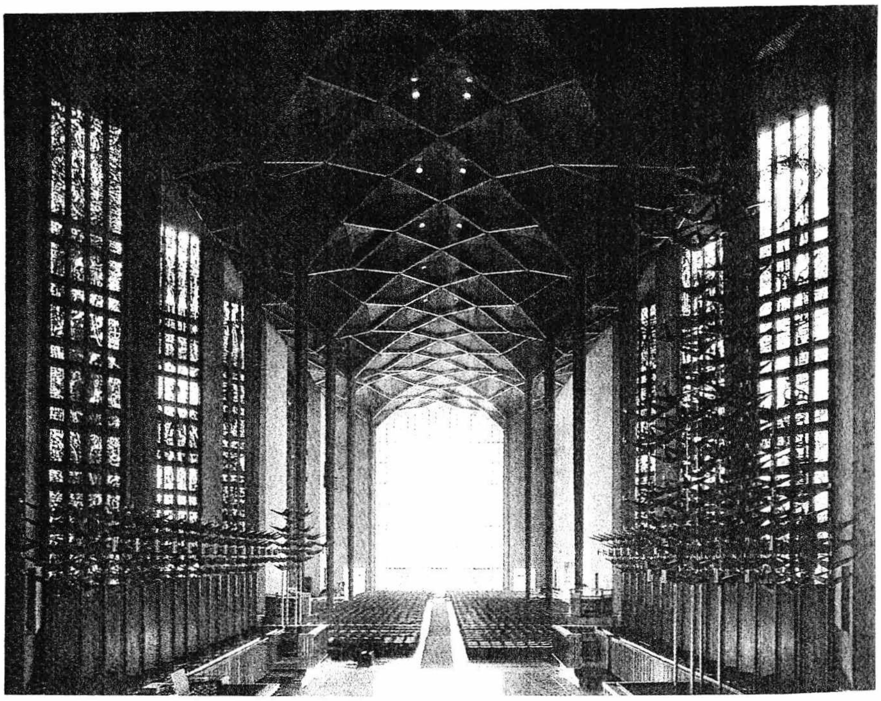


Lawrence Lee, red window
'Man' side

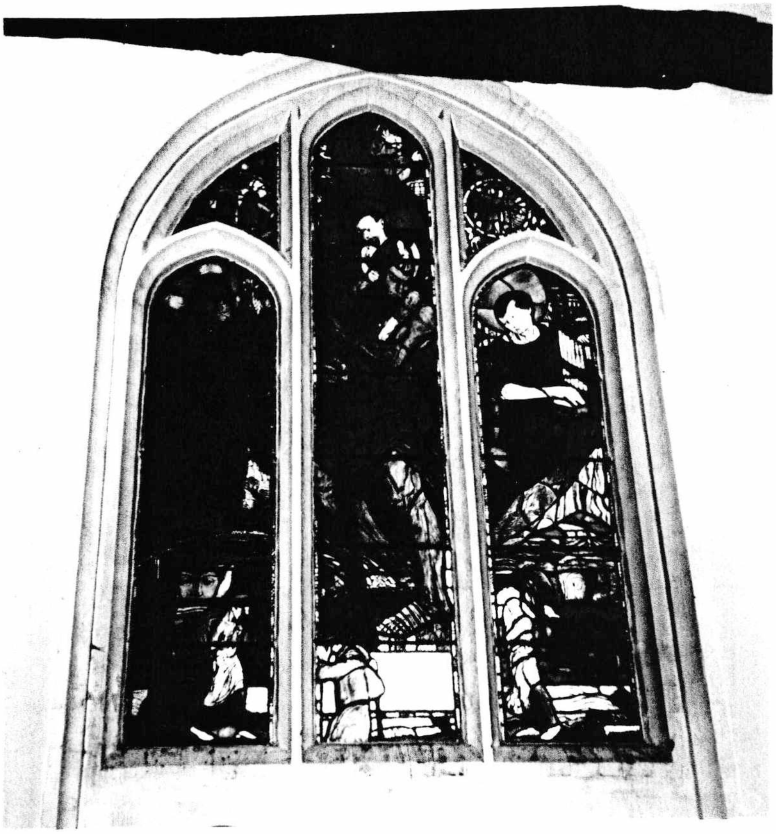


Geoffrey Clarke, purple window
'God' side

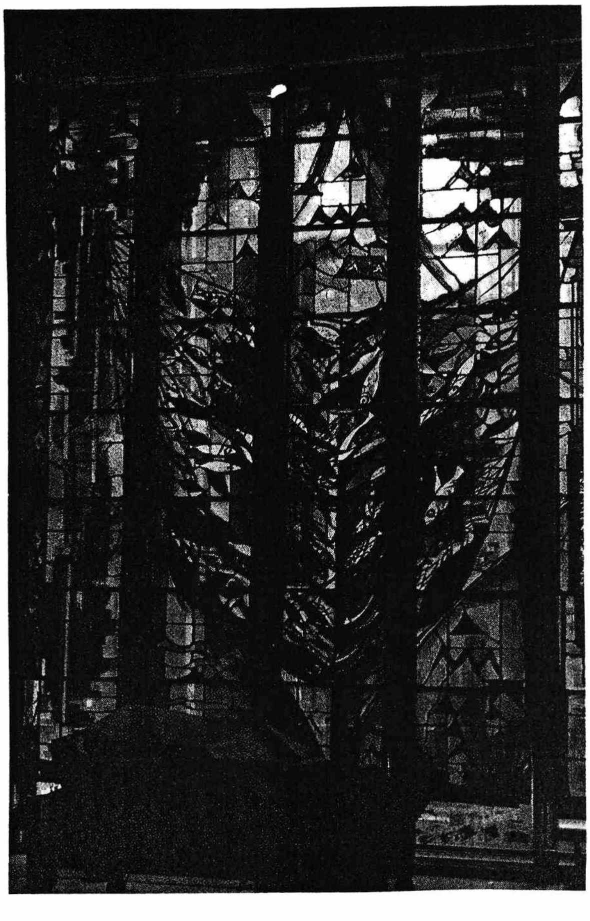




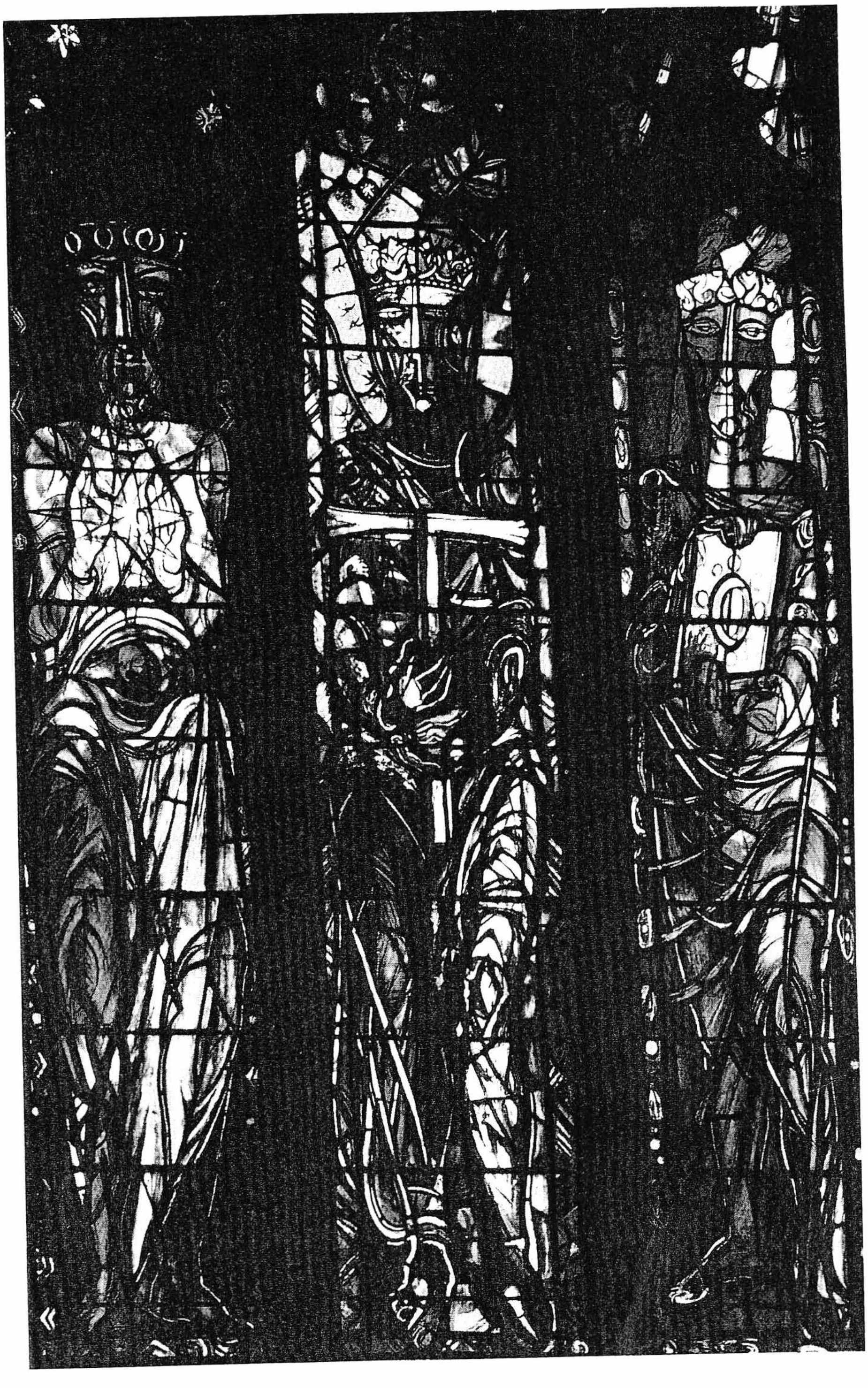
162. Wilhelmina Geddes. *St Christopher*. Laleham Church, Staines, Middlesex, 1926.



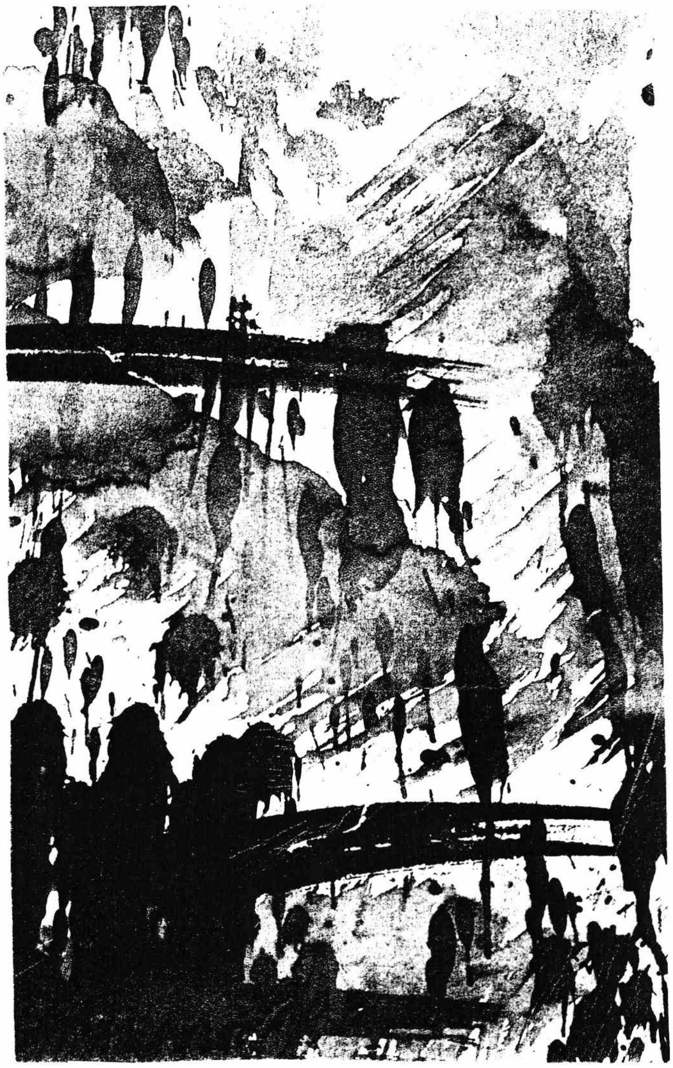
163. John Piper. Nave window, Eton College Chapel, Windsor, Berkshire, 1958.



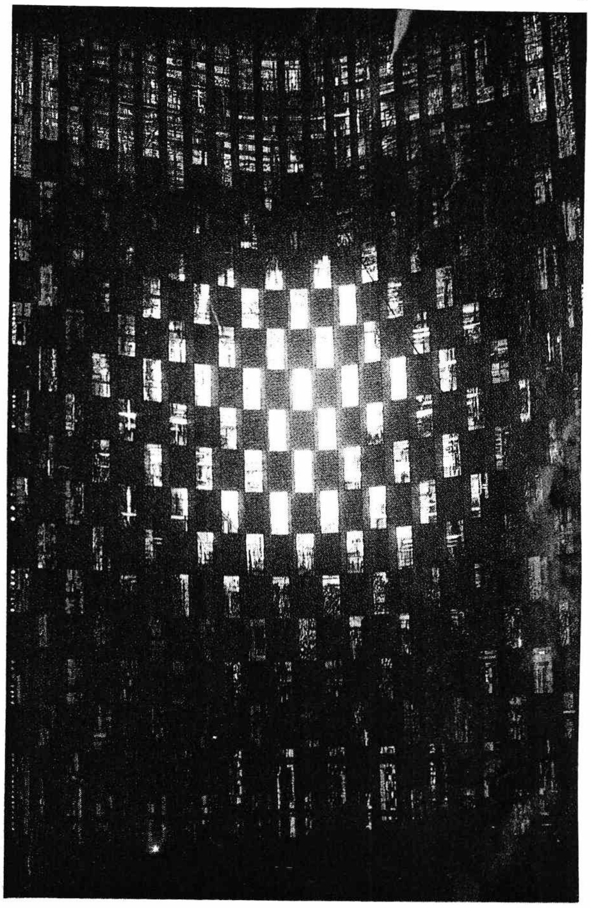
164. John Piper. *The Way, the Truth and the Light.* Oundle School Chapel, Oundle, Northants, 1953.



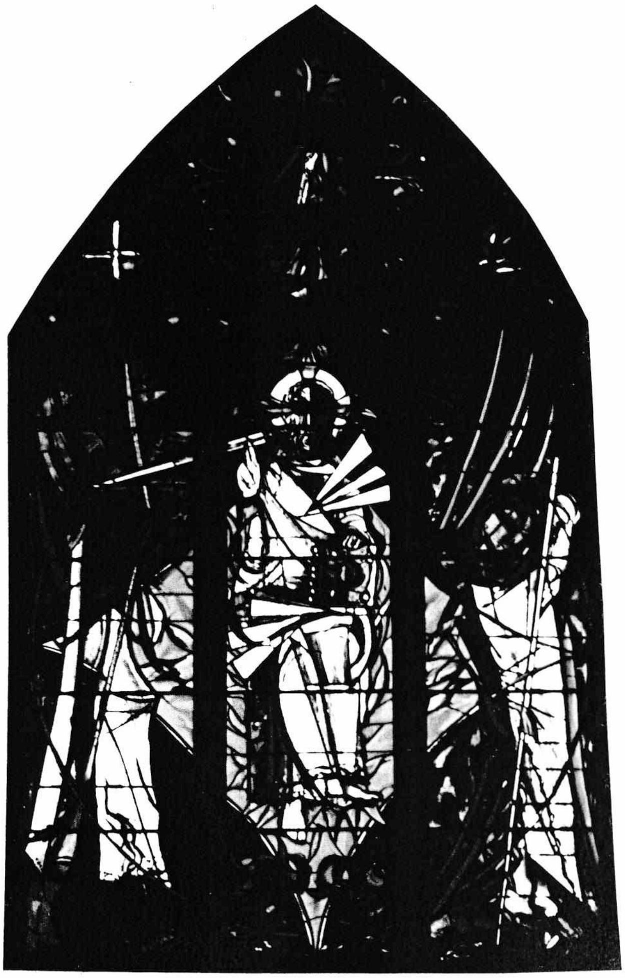
165. John Piper. Baptistery window, Coventry Cathedral c.mid 1950's. Cartoon.



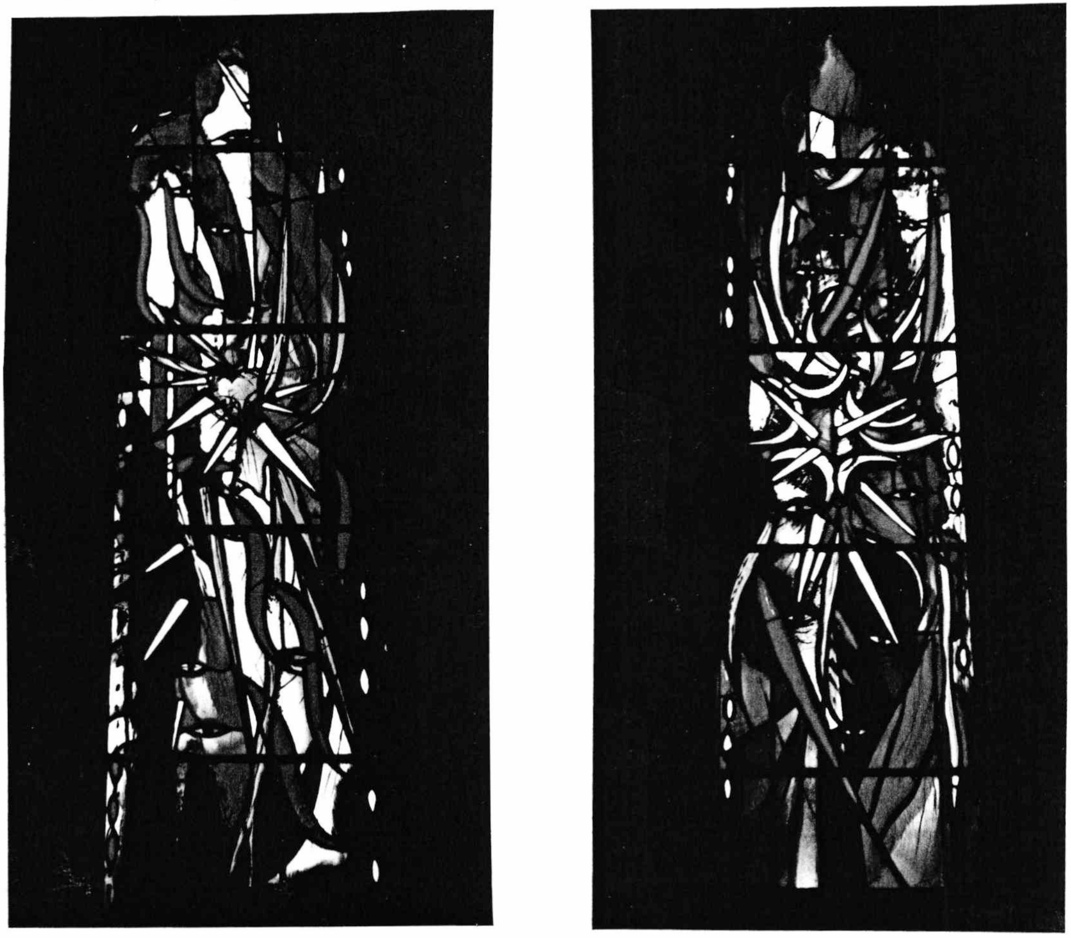
166. John Piper. Baptistery window, Coventr



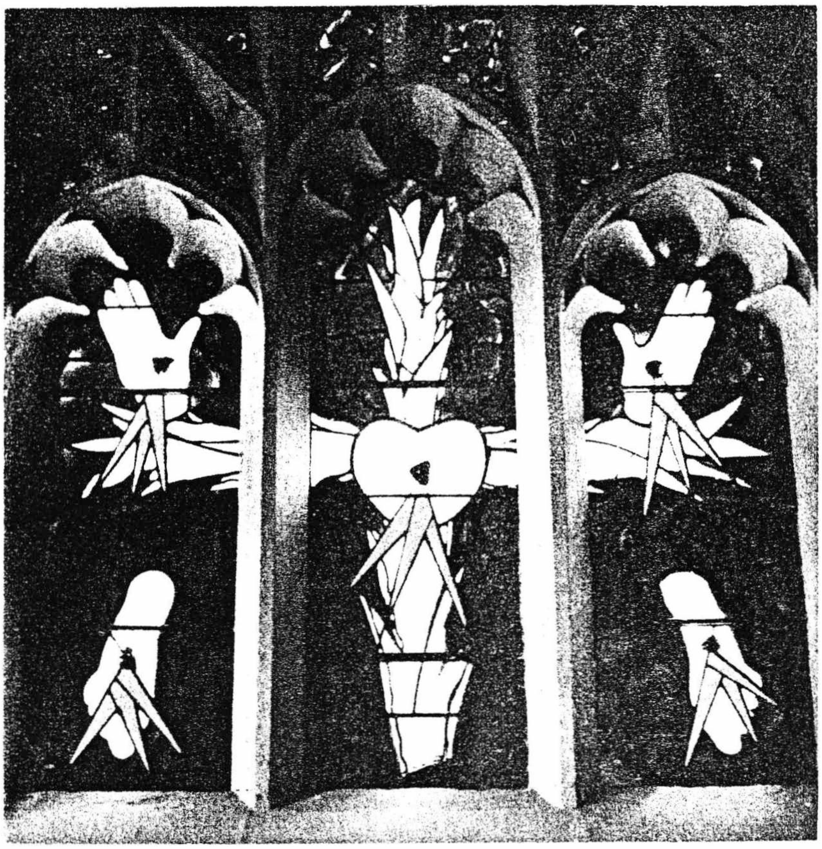
167. Patrick Reyntiens. Photograph of *Christ in Majesty*. East window, St Michael's and All Angels, Marden, Kent, 1962.



168. Patrick Reyntiens. Photograph of Sanctuary windows, St Michael's and All Angels, Marden, Kent, 1962.

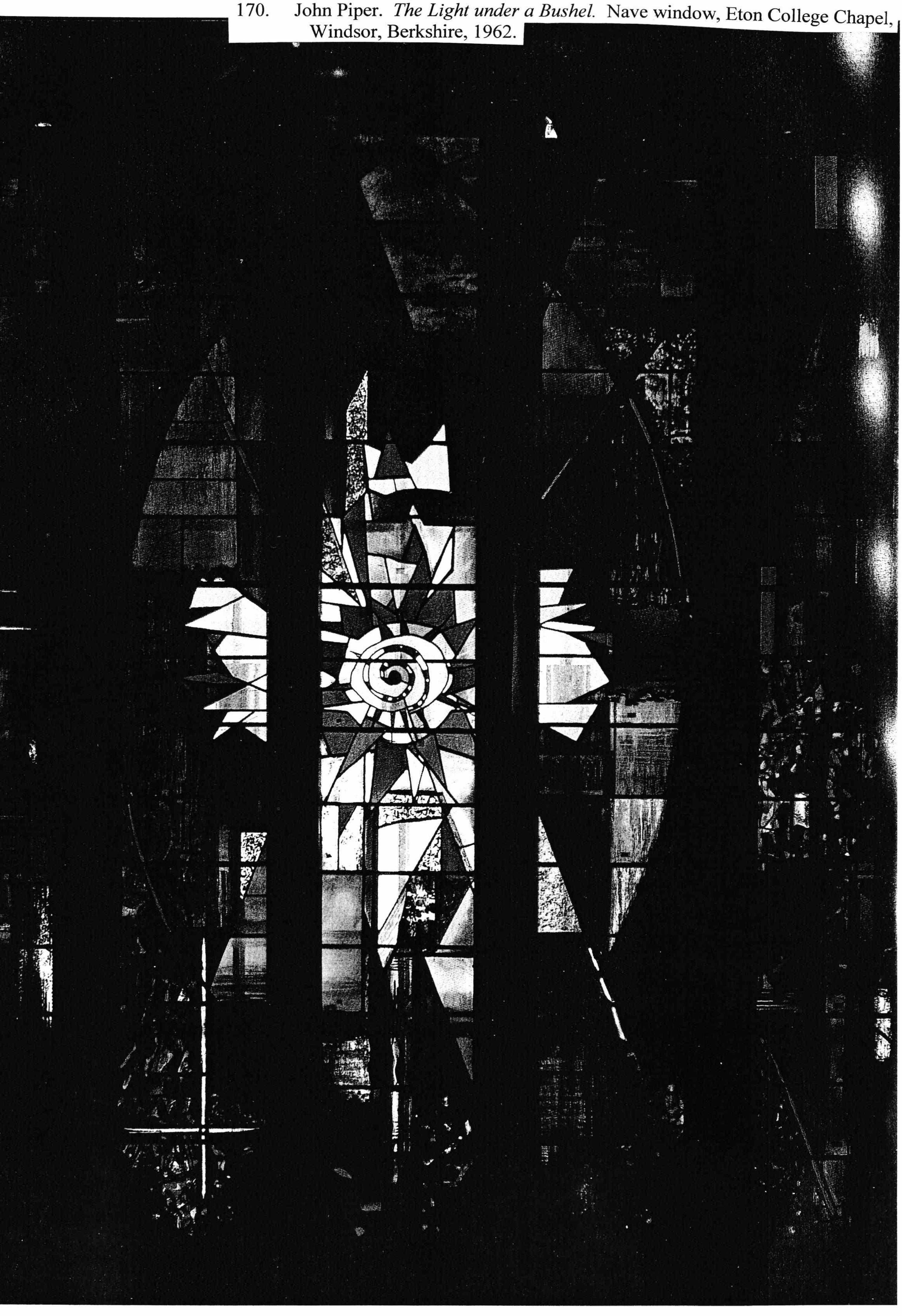


169. John Piper. All Saints Church, Misterton, Leicestershire, 1966.

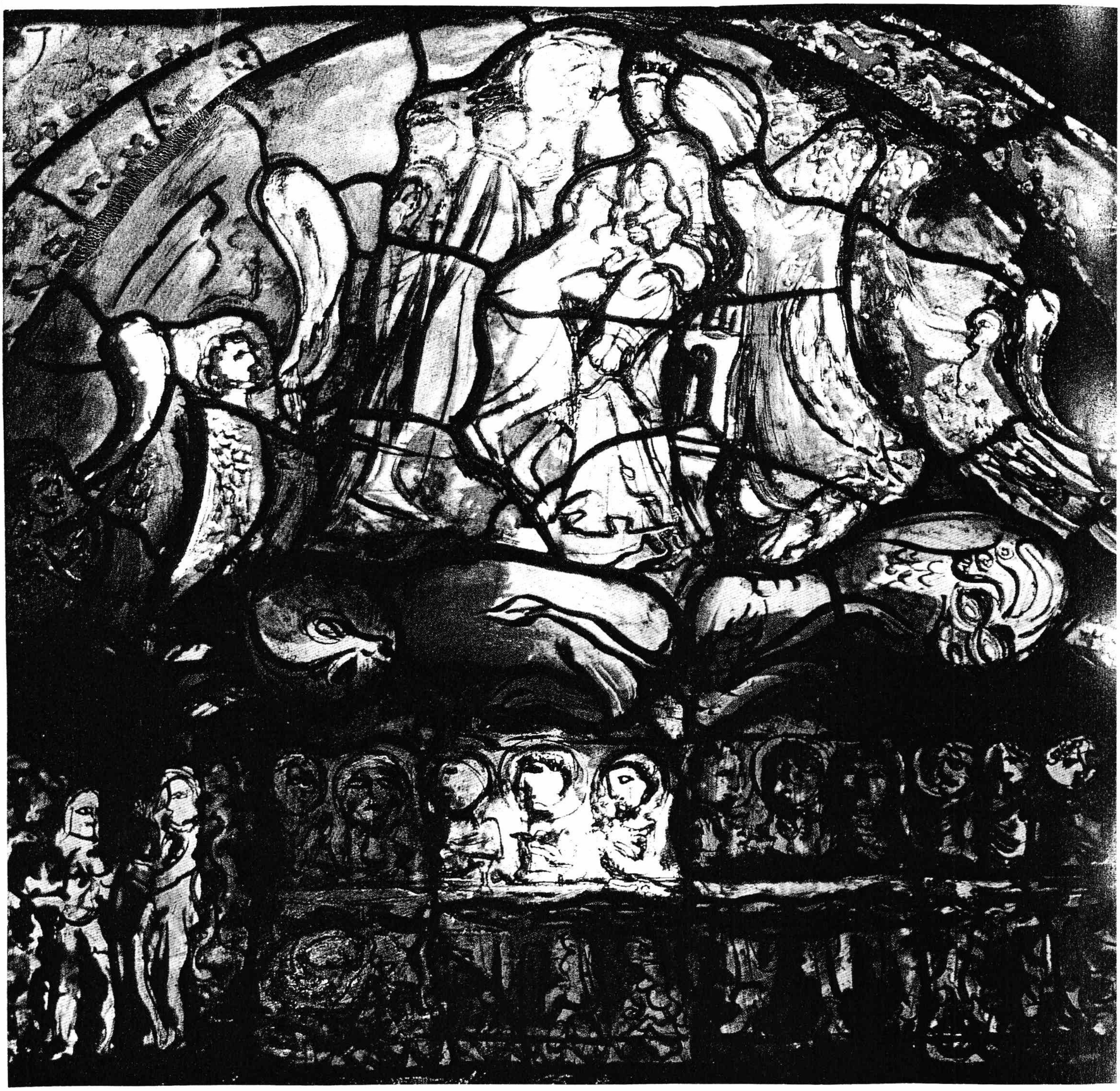


This window in All Saints Church is constructed entirely in primary colours: emerald green, white, red and blue

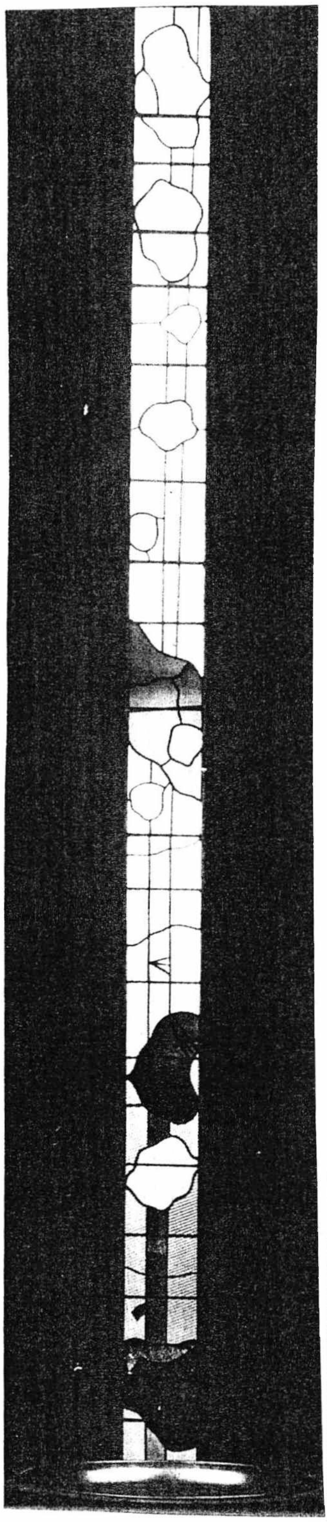
170. John Piper. *The Light under a Bushel.* Nave window, Eton College Chapel, Windsor, Berkshire, 1962.

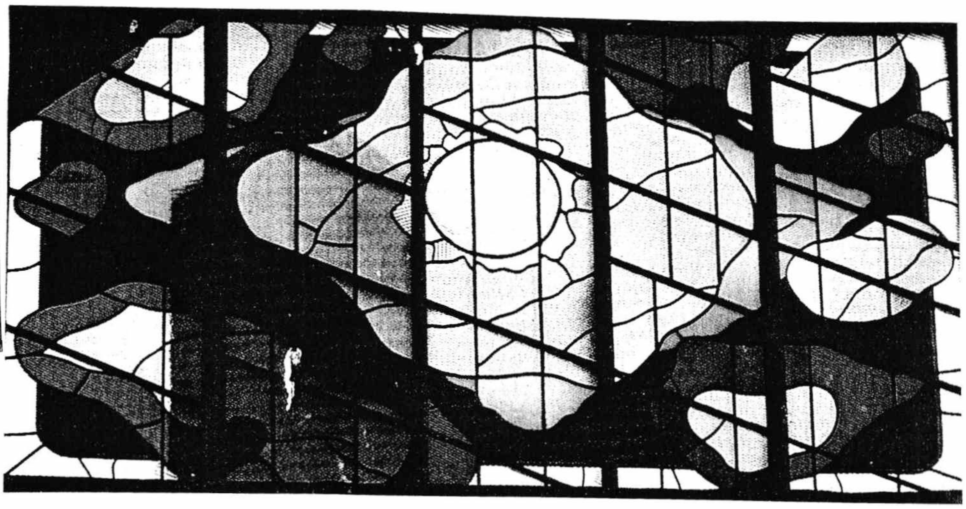


171. John Piper. *The Journey of the Magi.* Robinson College, Cambridge, c.1980's.



172. Patrick Reyntiens. Baptistery window, St Margaret's Church, Twickenham 1968-9.

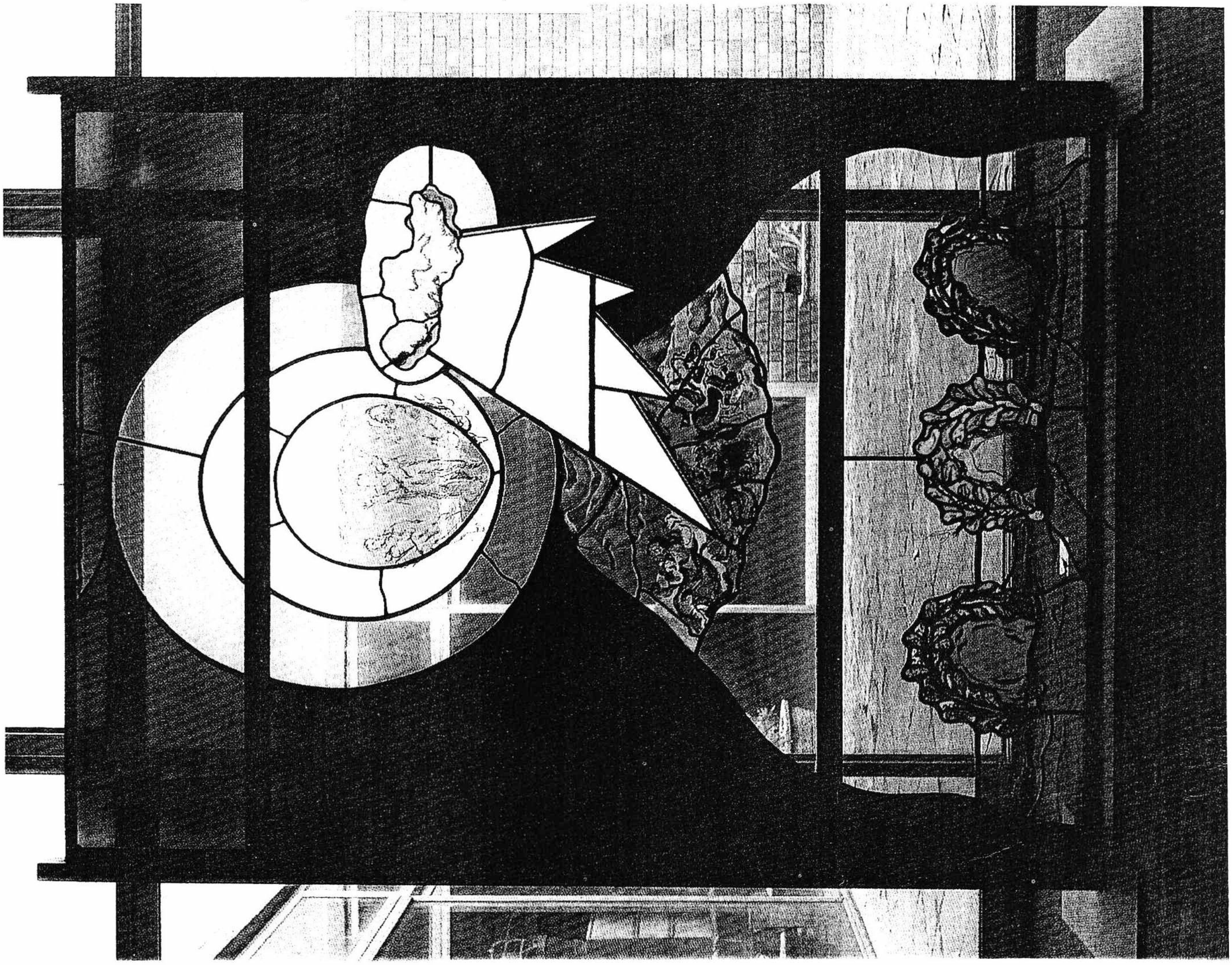




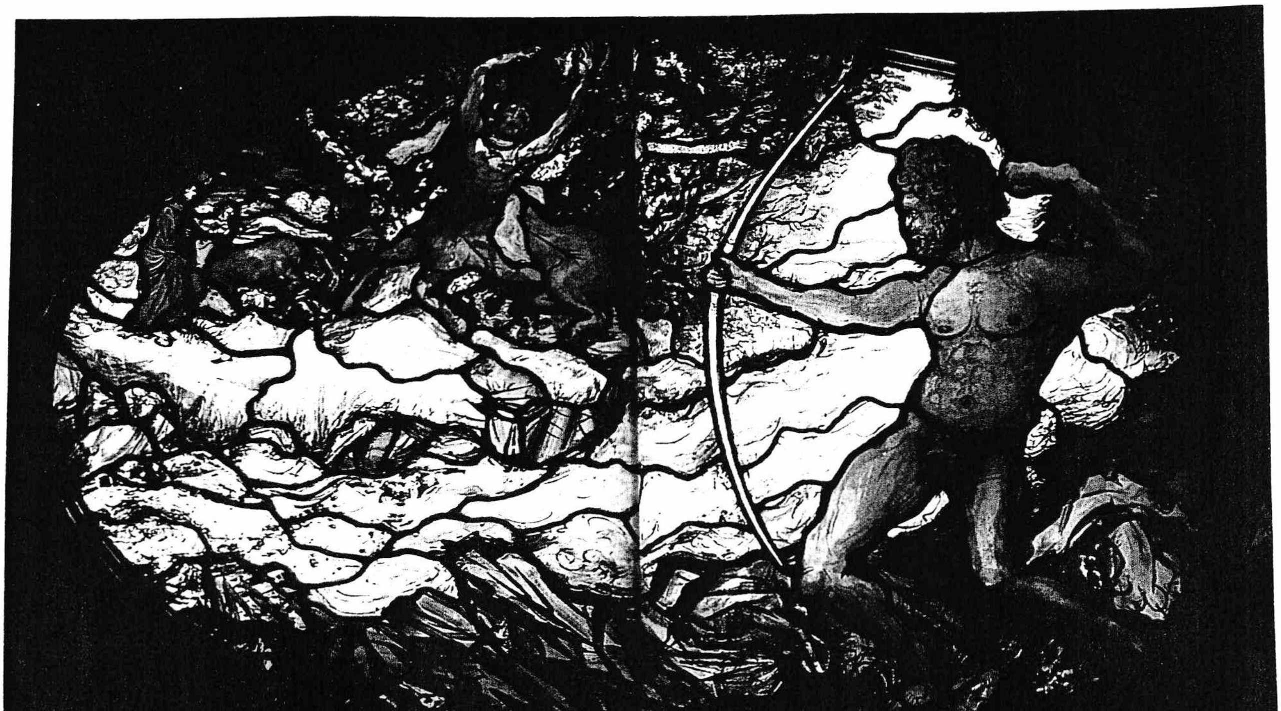
173. Patrick Reyntiens. East window, St Margaret's Church, Twickenham, 1968-9.

The East window, set high over the alter in the modern church of St Margaret's, symbolises Christ dispelling the darkness. The rather unfortunate 'fried egg' in the centre represents the light of Christ forcing back the clouds: a theme favoured by Reyntiens.

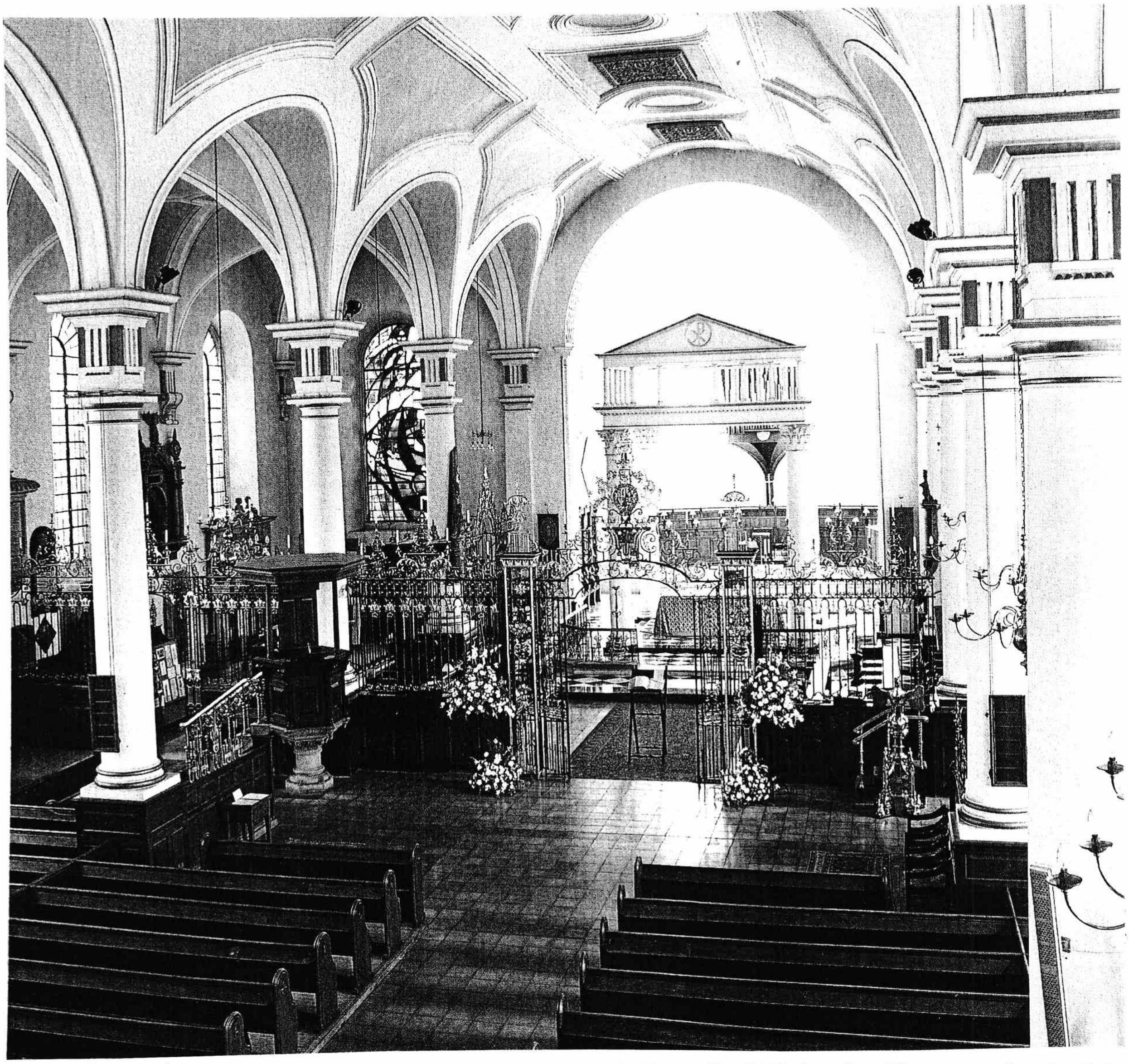
174. Patrick Reyntiens. *Transfiguration.* One of three Library windows, Cowley Road Secondary School, Oxford, 1976.



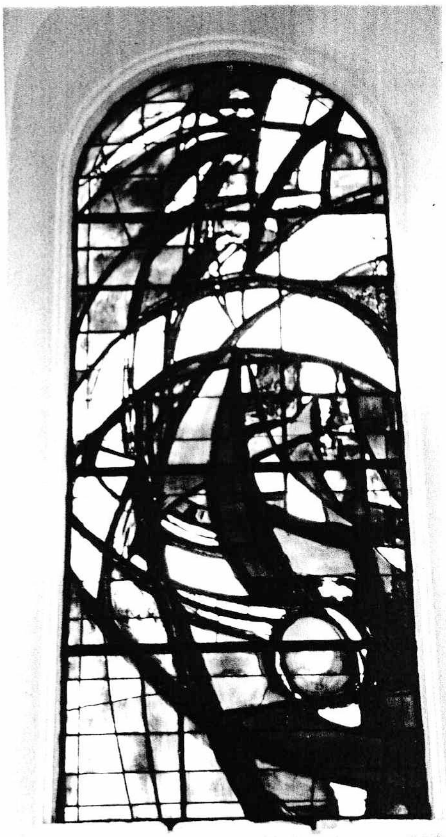
175. Patrick Reyntiens. *Ulysses*, 1992.



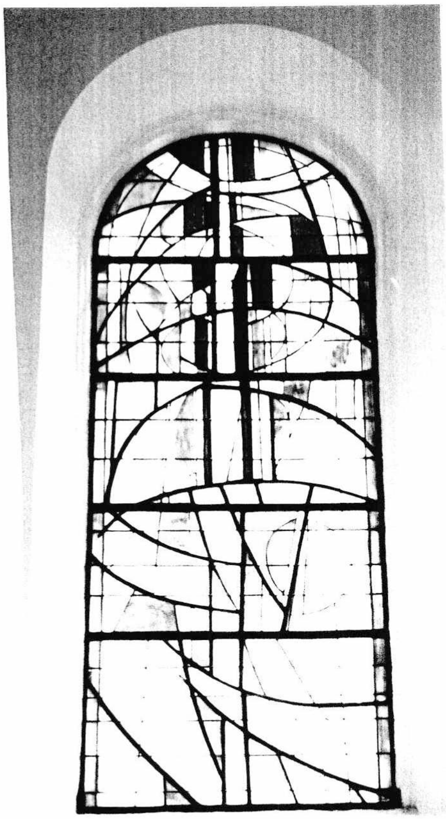
176. The interior of Derby Cathedral, Derby.



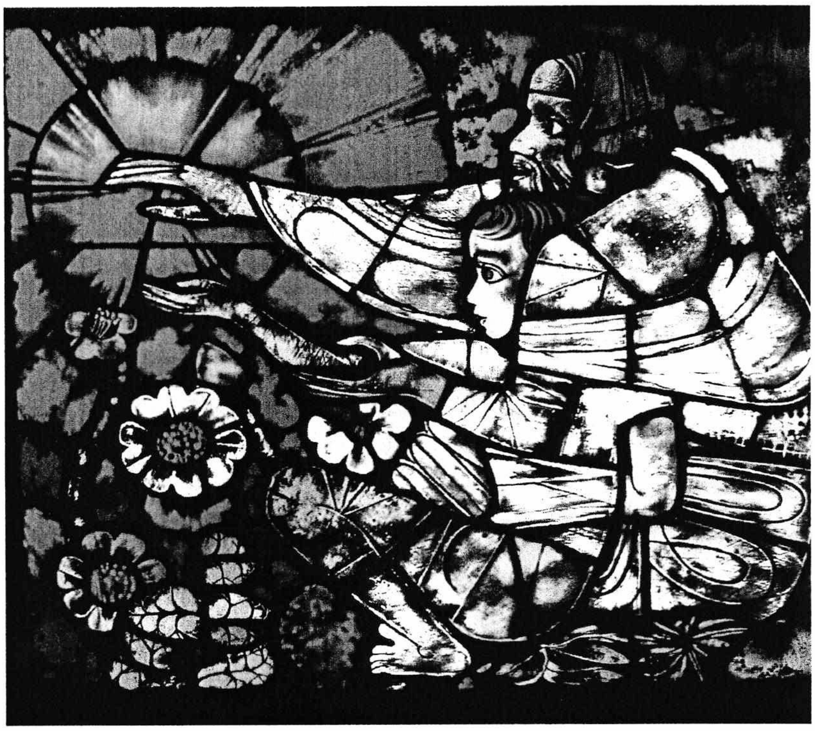
177. Ceri Richards. Photograph of *All Souls.* 1965.



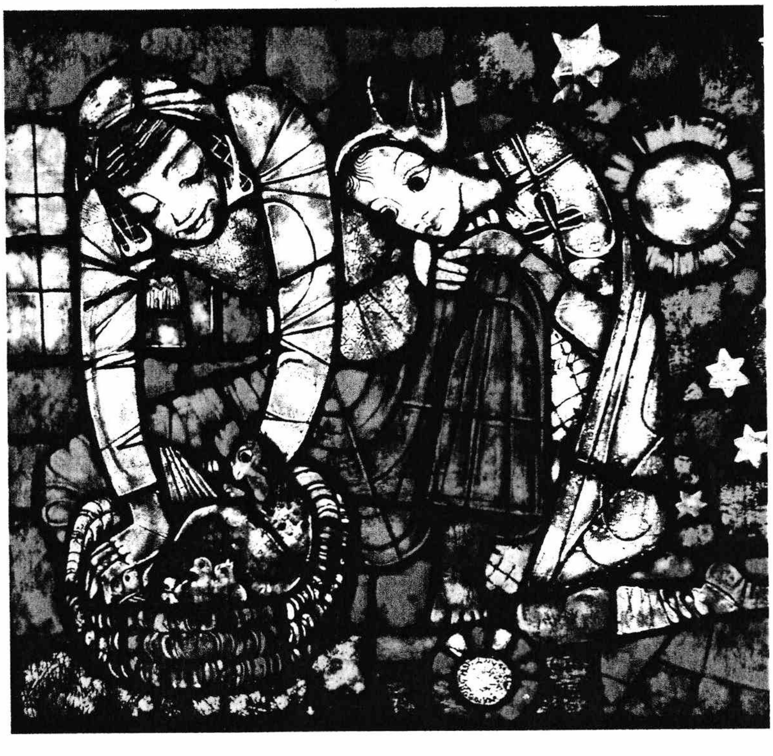
178. Ceri Richards. Photograph of *All Saints* 1965.



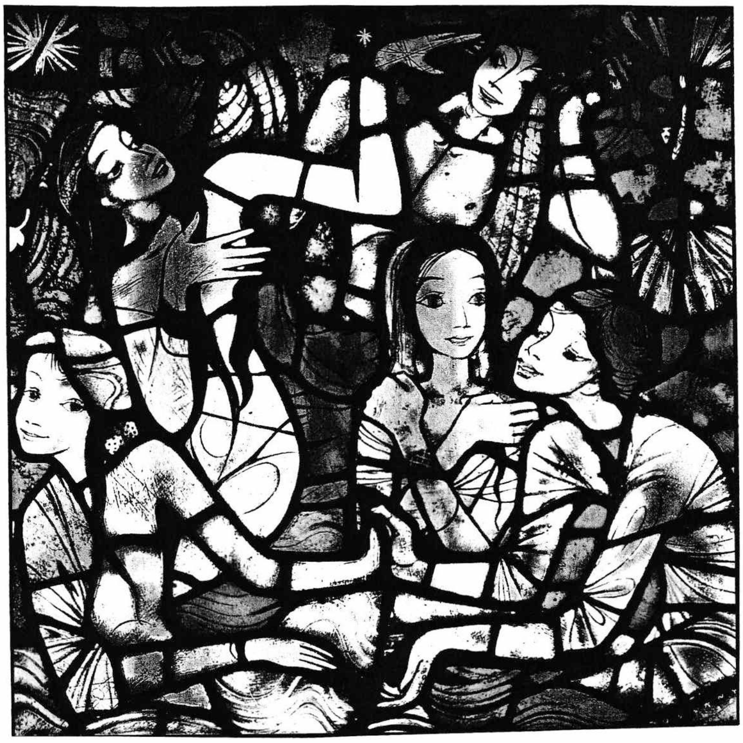
179. Ervin Bossanyi. *Morning.*



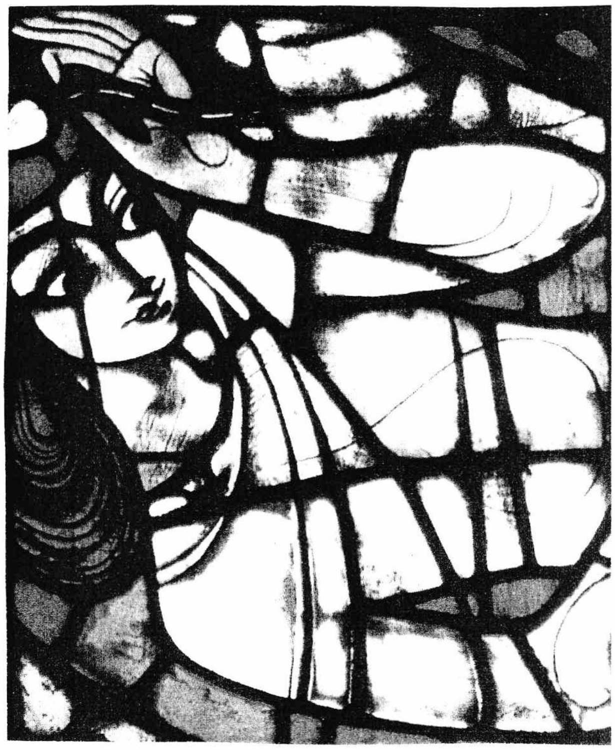
180. Ervin Bossanyi. *Evening.*



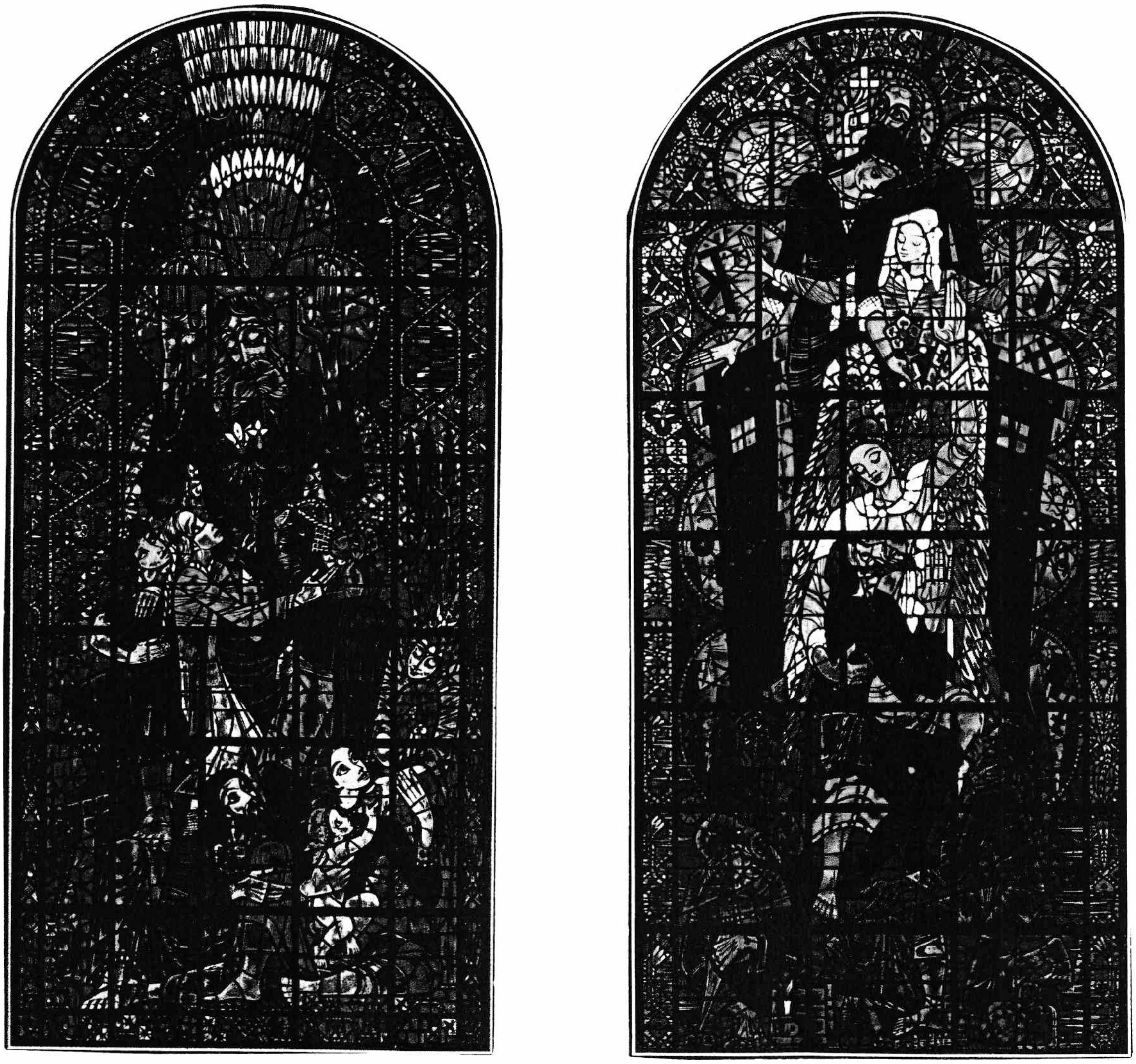
181. Ervin Bossanyi. *Water.*



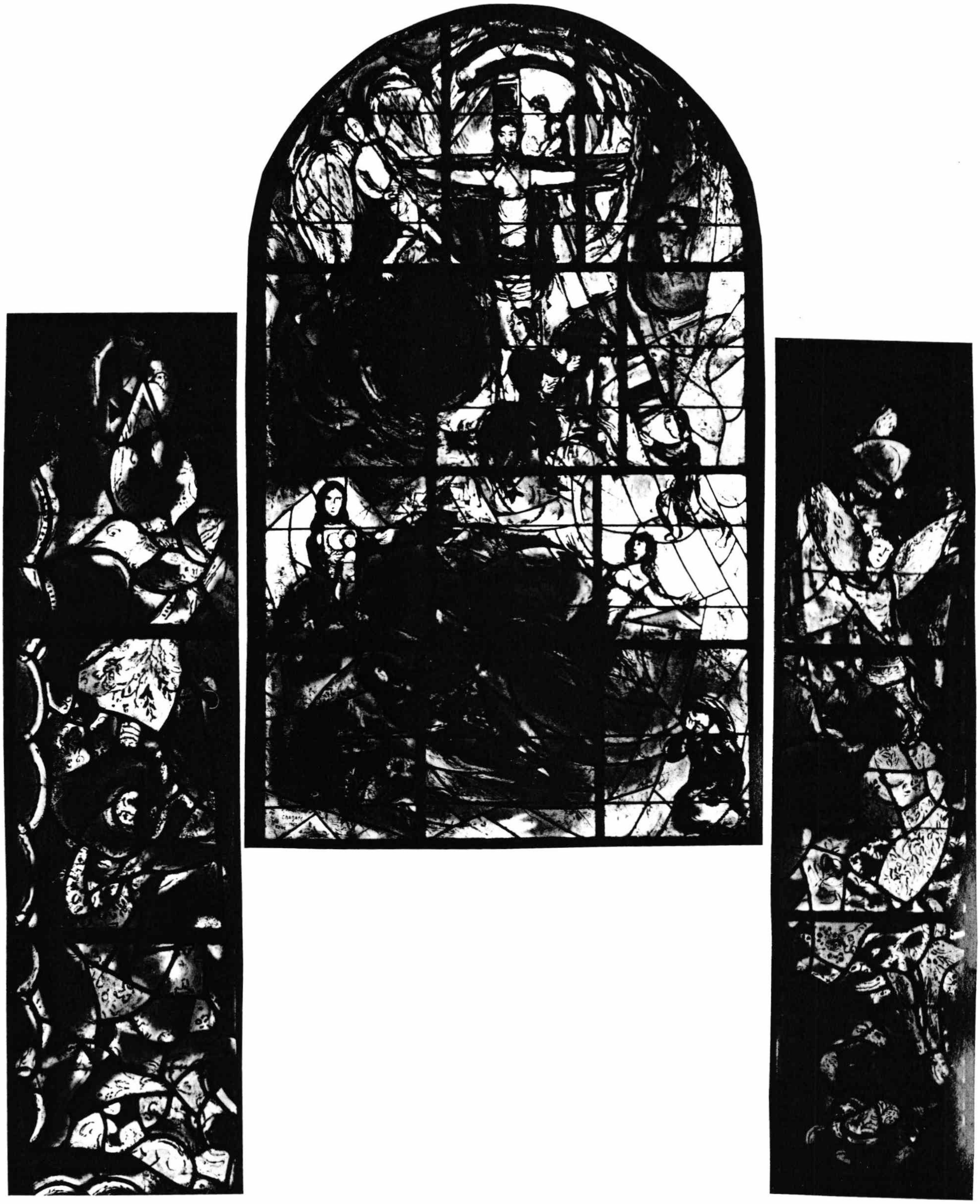
182. Ervin Bossanyi. Staircase window, Tate Galler



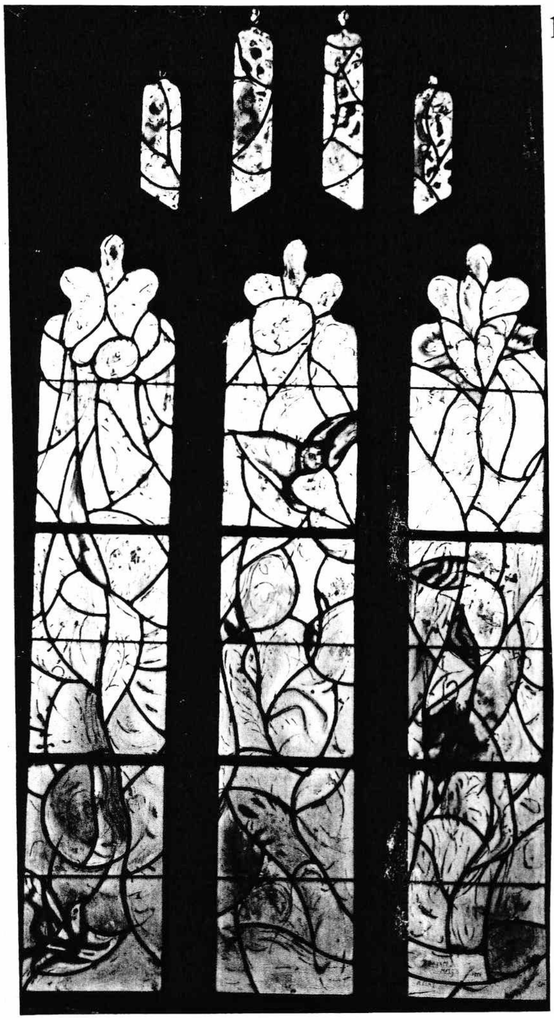
183. Ervin Bossanyi. *Peace & Salvation.* South transept, Canterbury Cathedral



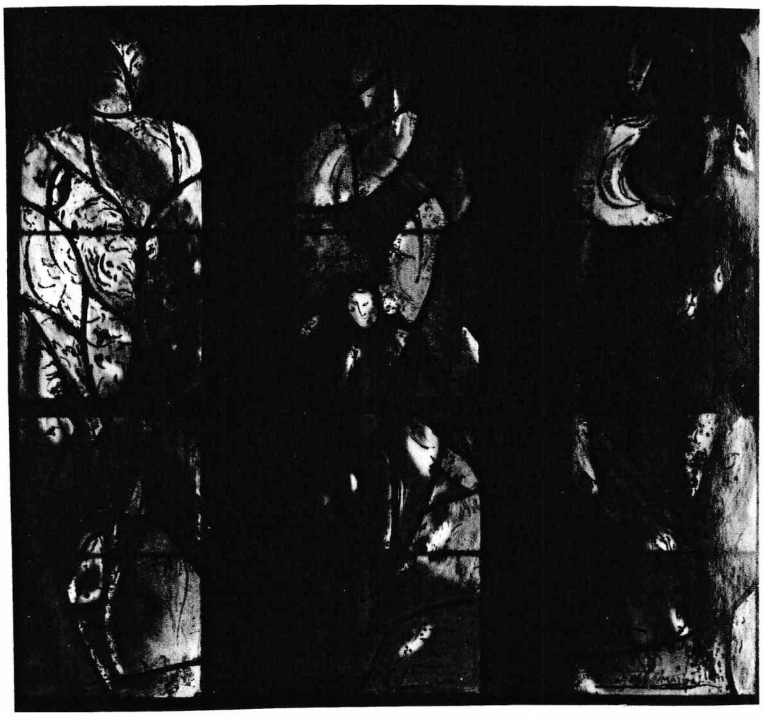
184. Marc Chagall. Photograph of Memorial & Chancel windows, All Saints Church, Tudeley, Kent, 1967.



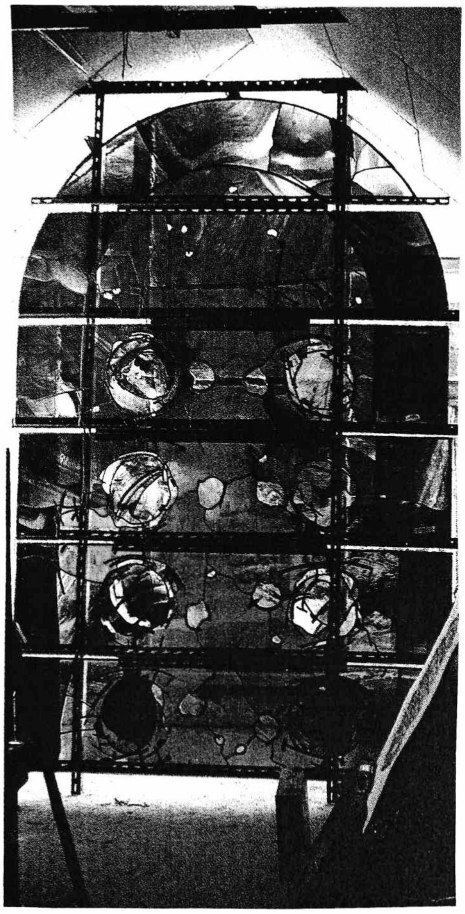
185. Marc Chagall. Photograph of South Aisle windows, All Saints Church, Tudeley, Kent, c.1969.



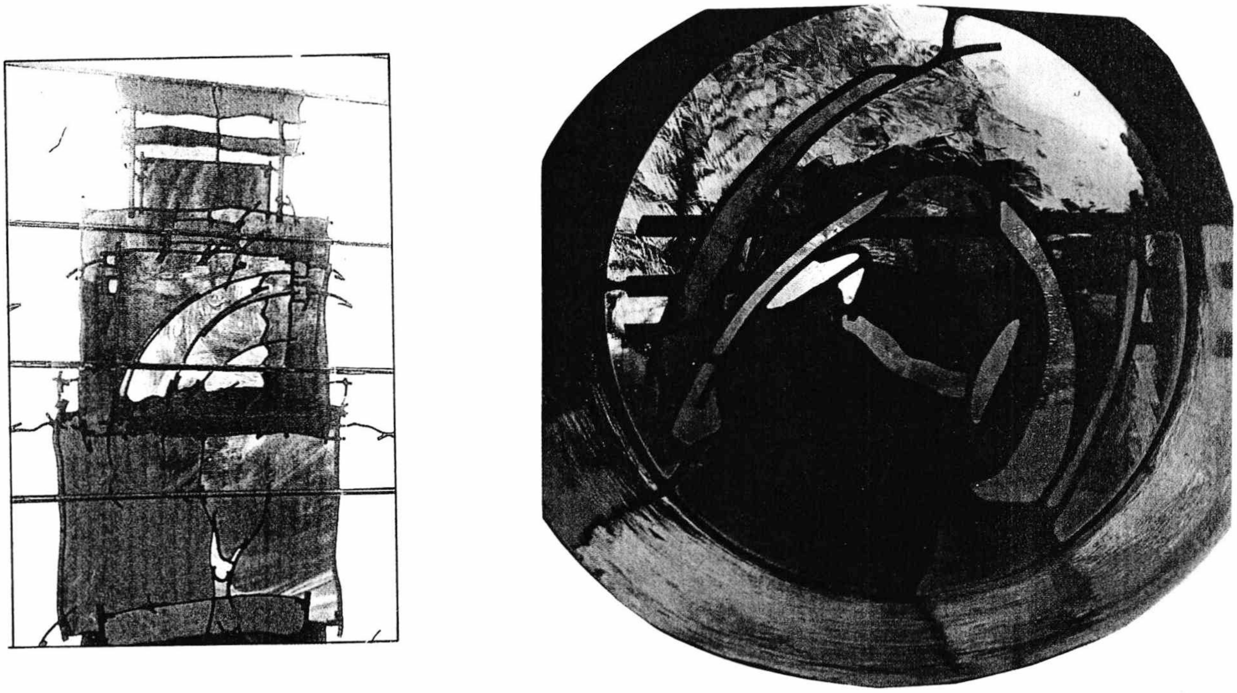
186. Marc Chagall. Photograph of North Aisle windows



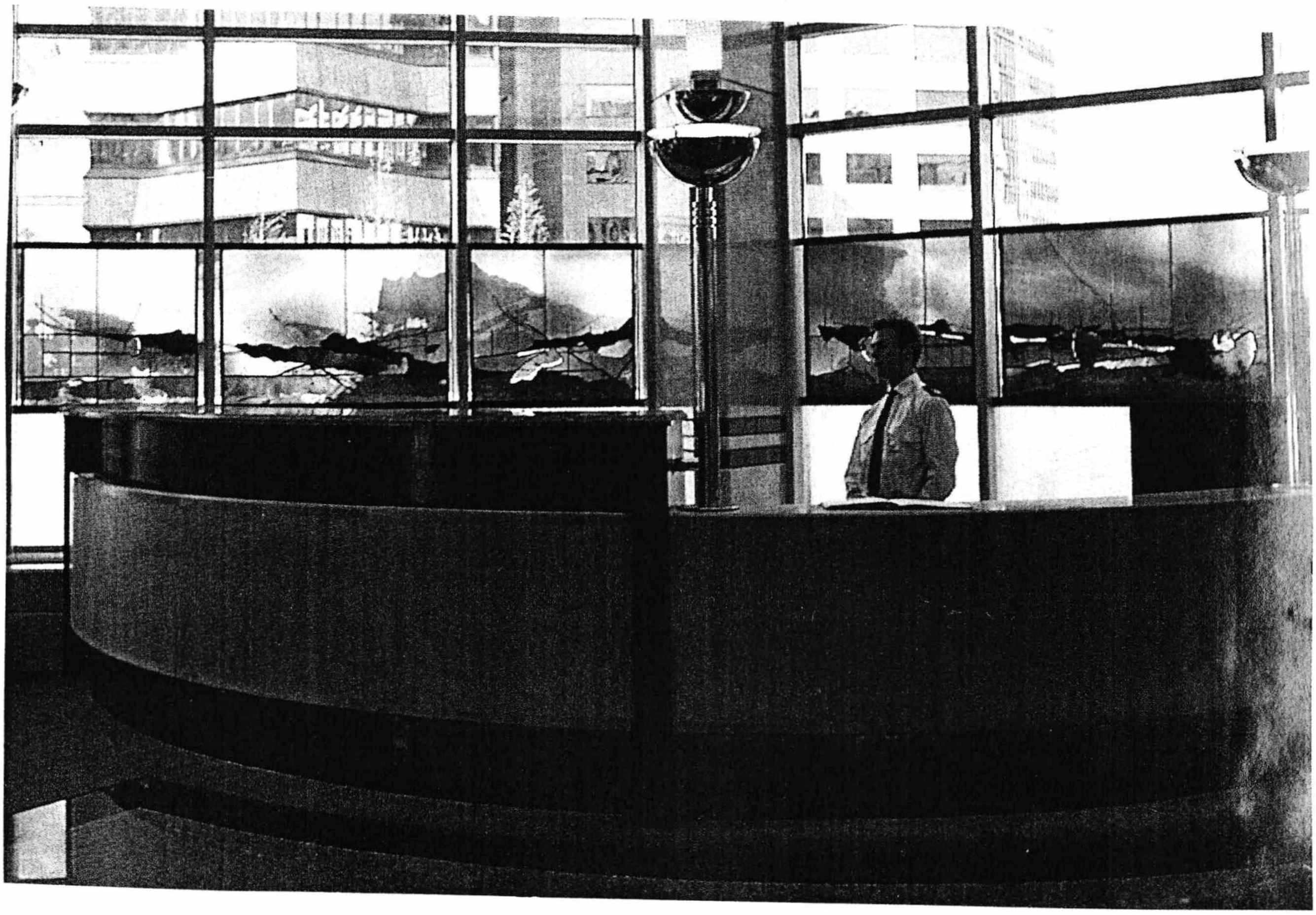
187. Mark Angus. *Daily Bread.* West of North Door, Durham Cathedral, Durham, 1994.



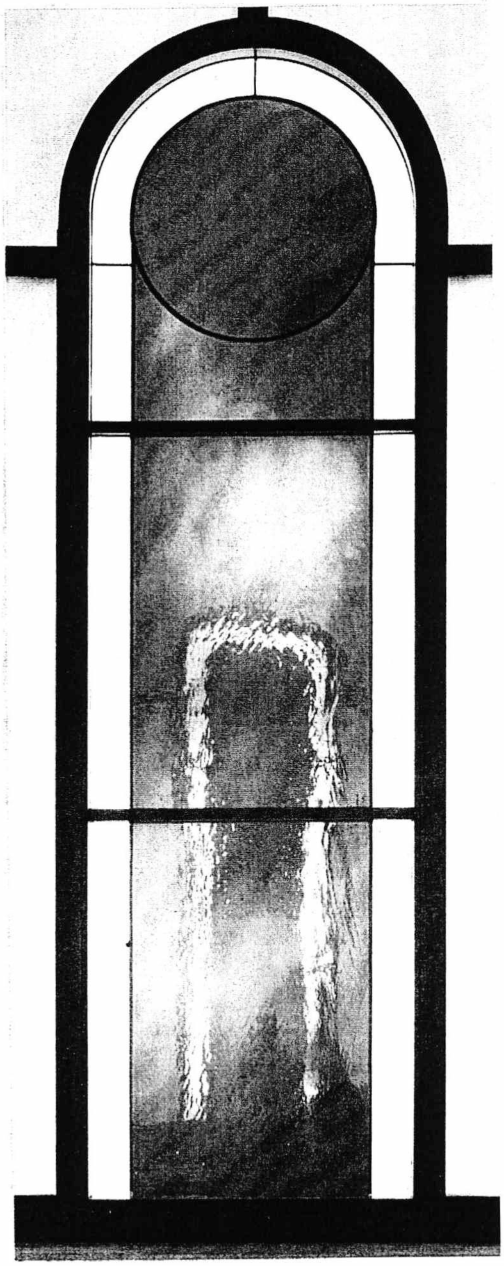
188. Mark Angus. Domestic glass panels, c.1980's.

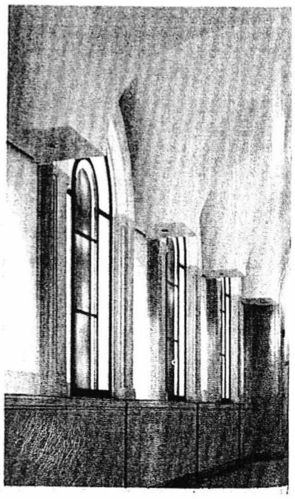


189. Graham Jones. Entrance Hall window. Colemore Gate, Birmingham, West Midlands, 1995.

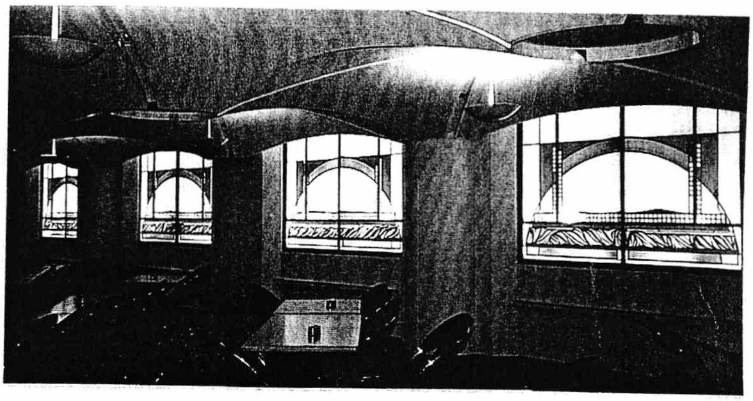


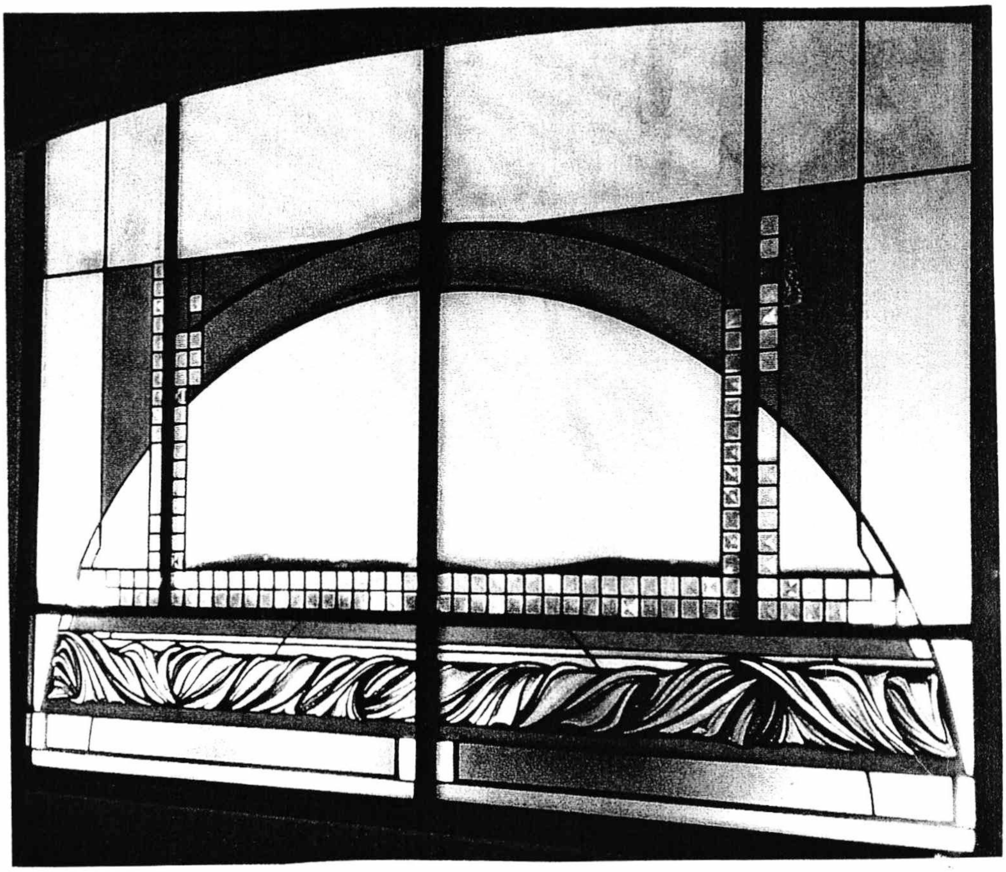
190. Graham Jones. Basement corridor, Shell-Mex Headquarters, London, 1987.



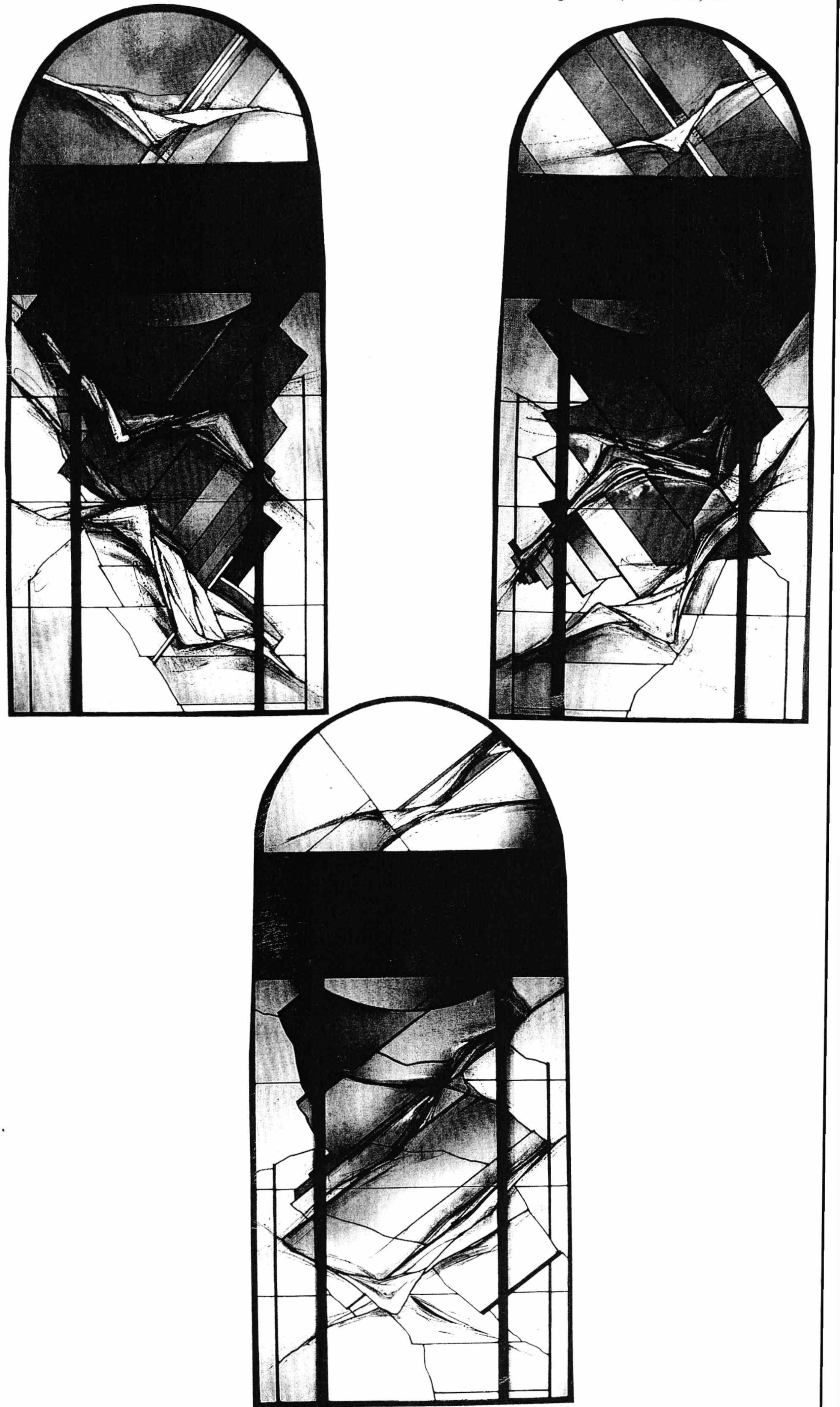


191. Graham Jones. Basement Restaurant, Shell-Mex Headquarters, London, 1987.



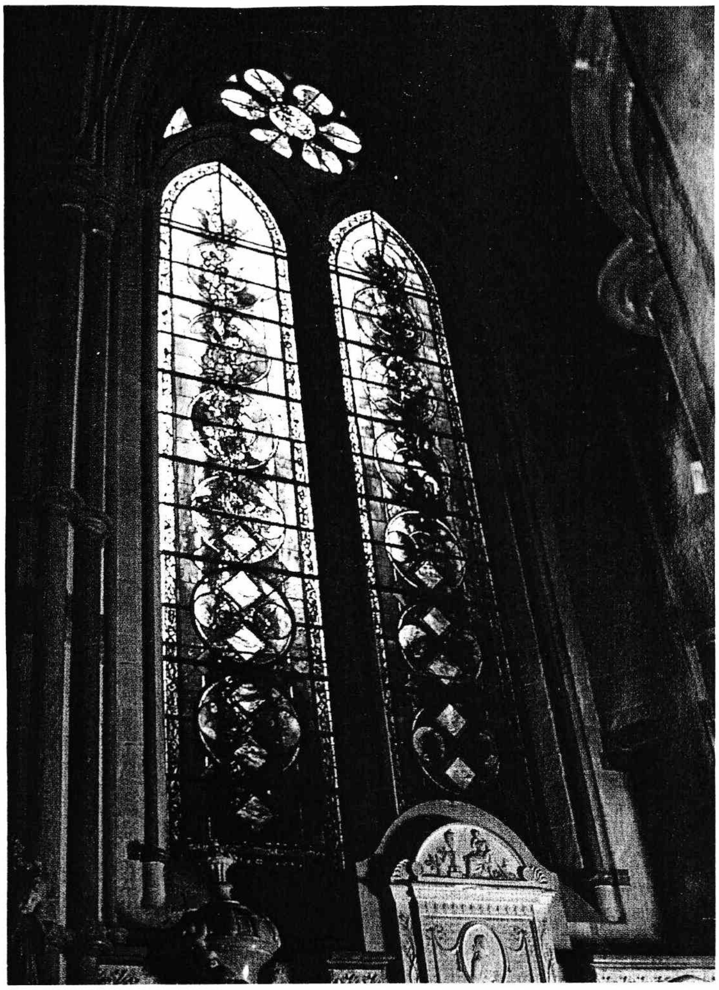


192. Graham Jones. Upper corridor, Shell-Mex Headquarters, London, 1989.

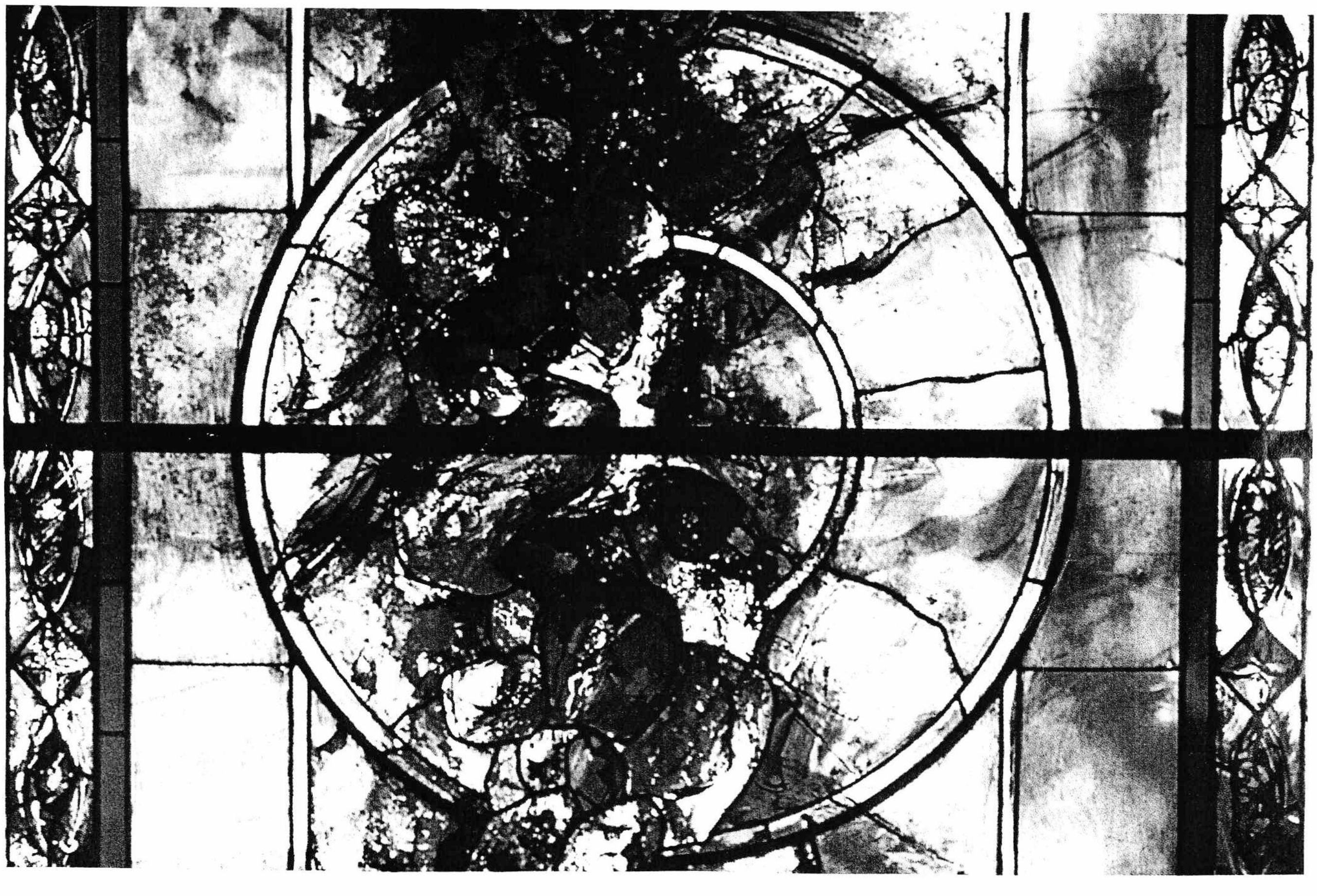


Three of a series of twelve windows

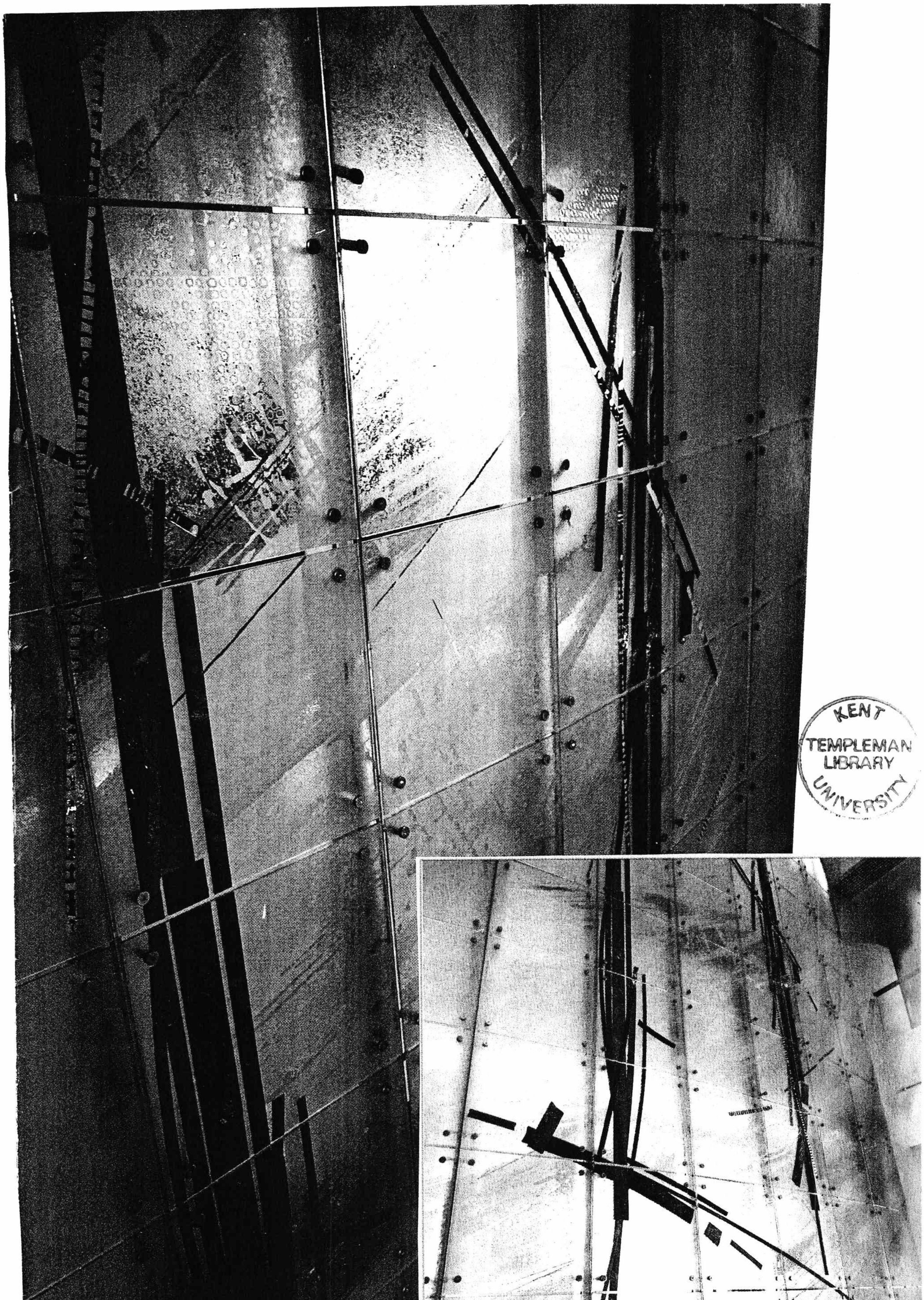
193. Graham Jones. Poet's Corner window, Westminster Abbey, London, 1992.



194. Graham Jones. Detail Poet's Corner window, Westminster Abbey



195. Graham Jones. Curved glass screen, SmithKline Beecham Building, Harlow, Essex, 1997.



KENT TEMPLEMAN LIBRARY UNIVERSITY

196. Graham Jones. Detail
30 x 23ft glass screen