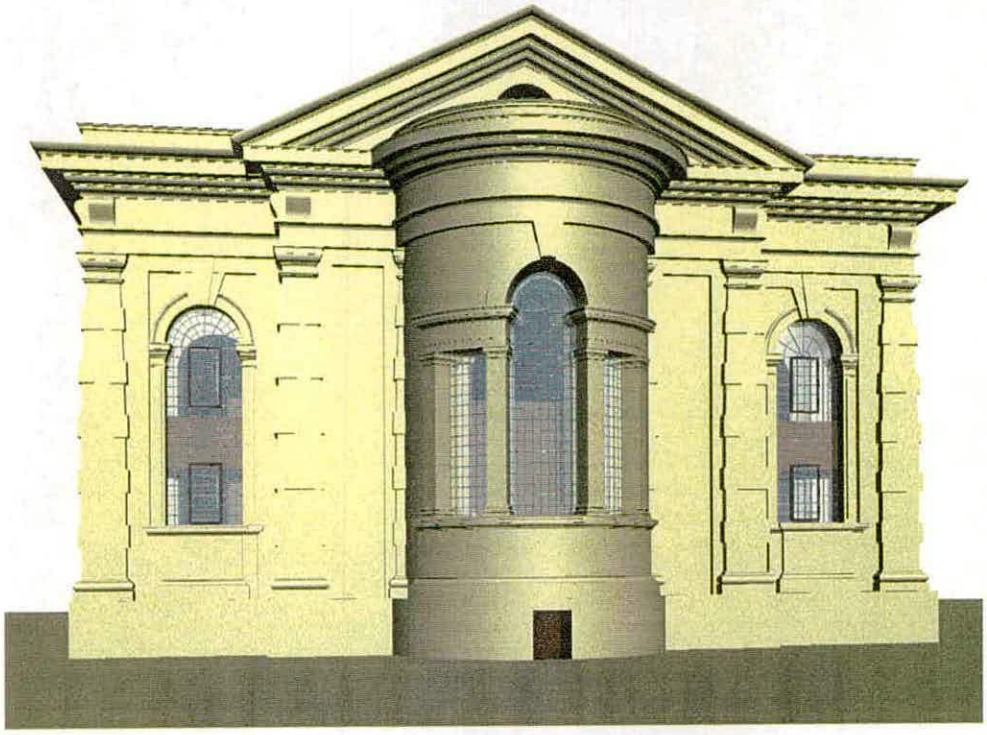
St PAUL'S CHURCH DEPTFORD LEWISHAM

Glazing and window ferramenta



Richard Lea

Historical Analysis & Research Team

Reports and Papers 72

2002

ENGLISH HERITAGE

Produced and Published by English Heritage
23 Savile Row, London W1S 2ET

020 7973 3000
http://www.english-heritage.org.uk

Origin of Research Request	Tracey Jane Craig, Historic Buildings Architect, English Heritage, London Region
Date of Request	April 2002
Site Visit:	May 2002
Date of Report	June 2002
File Number	LEW 16

The Historical Analysis & Research Team is part of the central Conservation Group of English Heritage, based at Savile Row in London

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1. Introduction

In May 2000, while the church was undergoing conservation, a fire in the chancel partially destroyed the east window of 1913 by James Powell. The damage was so severe that the presumption in favour of a like-for-like repair was called into question, Fig. 13.[1] In addition, subsequent investigations within the fire damaged interior revealed, beneath many later layers of paint, the extensive remains of a *trompe l'oeil* paint scheme, the painting of which by Henry Turner is documented as taking place in 1724.[2] The discovery of the survival of an unusually complete paint scheme from this period, in conjunction with Ian Bristow's programme of paint sampling of the interior, has made the restoration of the original scheme highly desirable.

This option, however, detracts from the desirability of repairing a twentieth-century stained glass window, which, when viewed within a restored scheme of the early eighteenth-century, would appear anachronistic. The project manager for the restoration of the church, Roy Tindle, acting on behalf of the parish, has therefore sought advice from English Heritage on the form of the original glazing in the chancel and its subsequent development.

In this report, the assessment of the evidence for the original glazing and window ferramenta in the chancel includes a study of the other windows in the church. For the most part, these appear to be original and conform to a standard pattern, although the present glass and lead cames appear to date from the nineteenth century.

Access to the windows for study is currently restricted by various security measures. The visually intrusive wire mesh security grilles, designed to prevent unlawful access, also hinder observation, Fig. 11, and the east window is currently boarded with plywood. Because of the problems of access, the dimensions included in this report are approximate, especially for the east window. Naturally, there is variation in the section of wrought iron and accurate measurement is now made difficult by successive layers of paint and corrosion. The dimensions cited here are therefore for interpretation only and should not be used for the specification of repair without checks on site.

The drawings in this report are in the form of 3-D reconstruction to illustrate more clearly the constructional detailing and appearance of the windows at various stages in their development, free of later accretions. They illustrate three main phases, the original glazing from 1717, the Collins window of 1813 and the Powell window of 1913, which probably followed a renewal of the glazing throughout the church towards the end of the nineteenth century.

This report is the third in the English Heritage Historical Analysis and Research series of Reports and Papers dealing with St Paul, Deptford, since the fire of May 2000. HA&RT has been involved in the commissioning of paint research to expose the original Henry Turner scheme in the chancel area. The two earlier reports outline the documentary evidence for the interior schemes and the glazing of the east window[3] and suggest a sequence for the development of the chancel.[4]

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1 The architects for the project are Thomas Ford and Partners, see Thomas Ford 1999 for the project outline

2 The scheme was known of before the fire, Hughes 1998, investigated after the fire, Burbidge 2000a, b, c, and exposed, Ireland 2001

3 Barson 2001

4 Lea 2001

2. The Documentary Evidence for the Windows

Some of the original accounts for the building of the church are preserved in the Lambeth Palace Archive. They include contracts from 1716 for Thomas Cummins to glaze the church and Henry Turner to paint, among other things, the ironwork in the windows. Although some of these documents have already been transcribed in this report series[5], because the references are so pertinent to the development of the windows in detail and their interpretation is difficult, they are reproduced and discussed in this report.

10th December 1716, contracts/proposal, Ms 2703, f. 39 — H Turner, painter
The humble proposal of H Turner for doing the painter's work at the new church at Deptford. I will three times prime and once paint of a fair colour the wood works at eight pence per yard square. The Ironworks at one shilling per yard square.

10th December 1716, contracts/proposal, Ms 2703, f. 40 —Thomas Cummins glazier
1. *Crown glass in lead 9½" to the ounce, the squares to be 10½" by 8½"*[6]
2. *New Castle glass ditto at 7 pence per foot*

17th December 1716, contract, Ms 2749/4 — Thomas Cummins glazier
Thomas Cummins to glaze new church at Deptford in Crown glass set in lead

1717, Ms 2697, f. 95 —Thomas Cummins, glazier
2015 ft Crown glass set in lead of 9½" to the ounce at one shilling per foot as per contract...£100.15.6
Casements pin'd in, each being about 5' high and 2'4" wide...£102.2.6

1717, Ms 2697, f. 95 —Edward Strong and Edward Tuffnall, masons[7]
More to Edward Strong and Edward Tuffnall, Masons, ...in cutting a grove in the cornice at the East End Windows for the glaziers to set the glass in

1717, Ms 2697, f. 96 —Henry Turner, painter
291 yds of painting work upon the iron windows and straps to the roof timbers, done with good oyles and colours at per yd per contract

1717, Ms 2719 —Thos Cummins, glazier
2015 ft of Crown glass set in strong lead being cutt into large squares at one shilling per foot[8]*....£100.15.7*
For 27 casements pin'd in being 5' high and 2'4" wide at 12 shillings each ...total £102.2.7

1717, Ms 2719 —Henry Turner, painter
291 yds of painting on iron windows ...£14.11.0

Later documents refer to the glazing of the basement windows and repairs by William Toms.

1724, Ms 2719 —William Toms, glazier
Glazing work, including 'green glass in windows in vaults.'

1730, Ms 2701, ff. 275-291 —William Toms, glazier

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5 Barson 2001, 26-27

6 The present panes measure almost exactly 10½" by 5½". This appears to be a nineteenth-century scheme, see below.

7 Ian Bristow kindly brought my attention to this entry.

8 In Barson 2001, 27, this was transcribed as '12 pounds per foot', although the original appears to have been difficult to read. The reference cited above, Ms 2697, however, makes it clear that it was to be charged at 'one shilling per foot'.

Glass repairs by William Toms, glazier
Crown glass 6 large and 4 small

It is worth noting here the methods by which the works were costed, how they were noted in the accounts, and how these details correspond with the church as built. In some places, the omission of the word 'square' in the original accounts causes confusion.

The glazing, that is the glass and the lead cames combined, but not the ironwork, was costed at one shilling per square foot. The glass was specified as Crown and the panes were to be cut to rectangles measuring 10½" by 8½". The gauge of the lead cames was specified by length per unit weight, in this case 9½" per ounce. For each of the standard windows on the principal floor of the church, the rectangular part of the window, that is the part below the round head, measures 15'11" by 7'2". Eighteen rows and ten columns of the specified panes would therefore fill each opening, allowing a vertical margin of 2" and an excess horizontal margin of 1". These dimensions allows for a glazing scheme which fits the surviving ferramenta. The existing glazing appears to date from the nineteenth century.

The figure of 2015 square feet appears to account for the total glazed area of the principal windows, being made up, from present observations, as follows: 12 standard round headed windows, measuring *c* 19.5'x 7' making *c* 150 sq. feet each, or 1800 sq. ft in total, and one Venetian window at *c* 215 sq. feet. This figure probably includes the round windows, three in the west elevation and one in each of the north and south elevations, which make a total of *c* 200 sq. feet, because the glazing of the 27 casements was costed separately. Each casement being 5' by 2'4" making 11.5 sq. feet, the total area of the casemented glazing is *c* 310 sq. feet.

The price of £102.2.6 quoted for the casements must also include the cost of the elaborate wrought iron, and not just the glazing of the casements. The glazed area for each casement, as noted above, is *c* 11.5 sq. feet, which, if glazed at the standard rate of one shilling per sq. foot, is close to the 12 shillings quoted per unit. The total, therefore, for glazing the 27 casements would be £16.4s. The cost of the wrought iron for 27 casements, appears therefore to have been £85 18s 6d, or £3 3s 6d each. It would therefore appear that Thomas Cummins subcontracted the production of the wrought iron for the casements.

The painting of the ironwork was priced at one shilling per square yard. Turner estimated the total surface area of iron presented by the windows to be 291 square yards. It is possible to compare this estimate with the ironwork as it survives today. The calculations for the standard window ferramenta, the east window ferramenta, and the casements are appended to this report at Appendix 1. The results can be assimilated as follows. The total surface area of the ferramenta for each of the standard windows is *c* 12.9 square yards, which for twelve windows makes *c* 154 square yards. The corresponding figure for the ferramenta of the east window is *c* 13.78 square yards. Each of the 27 casements presented *c* 4.88 square yards for painting, making a total of *c* 132 square yards. The combined total of *c* 300 square yards is close to the figure quoted by Turner.

The earliest views of the church all show the same plain glazing with the casements much as they appear today, Fig. 1 to Fig. 4. The view by Thomas Allin is not dated, but since WH Toms, who died about 1750 was the engraver, it cannot be later than that date.[9] Unfortunately, the detail drawing of the windows is not precise enough to count the number of panes in each window. The watercolour of *c* 1800, however, shows the east end of the church, Fig. 2. It appears to be glazed in the same style as the other windows. This drawing is less accomplished in its handling of perspective and therefore has an air of naivety about it. Care should therefore be taken in interpreting this view but it is worth noting that the individual window panes appear larger they do today.

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9 Benezit 1999. Allin is known for this view and his *North West Prospect of St Anne, Limehouse, Stepney*, engraved by William Austin Thorpe (1721-1820). The similarity in style and layout suggests that the two views are broadly contemporary. The overlap in the life spans of the two engravers suggests the two views date from *c* 1750.

3. The Original Ferramenta and Glazing System, 1716–1717

The Standard Window Openings

Thomas Archer's Deptford design has twelve large round headed windows on the principal storey, four in each of the long walls and two in each end wall, Fig. 8 to Fig. 10. Externally, the round arches spring from imposts set within a recessed panel within the wall face. Above each arch, there is a simple cyma-reversa architrave with a bold projecting keystone, Fig. 11.

Inside each window, the slight masonry rebate, in which the frame of iron glazing bars is set, is the depth of the frame itself. Immediately inside this frame, is a second rebate of *c* 70mm, Fig. 12.

The East Window Openings

The east wall of the apse is pierced by a Venetian window; a round-headed light flanked by two smaller rectangular lights, Fig. 13. Because the window forms the backdrop to the altar, it is elaborated with more architectural detail than the standard windows in the aisles, Fig. 7. The reveal of each light is treated as a square Tuscan column with a base and capital, although the column shafts are straight with no entasis. The thickness of the wall requires that there are two sets of columns, one on the outside and one on the inside. The two sets are visibly articulated in the reveals, Fig. 14 and Fig. 15. The fully developed Tuscan entablature above the columns is divided in two by the central round headed light. Internally, it appears there was a change of design, when the entablature was extended in timber along the curving apse wall above additional pilasters to meet the three-quarter columns set on the returns at the entry to the apse, all in timber. The additional timber was added in 1722 before Henry Turner was commissioned to paint the interior in 1724.[10]

The Standard Window Ferramenta

The bulk of the ironwork in each of the standard windows appears to be original although some iron straps and security bars were added later. The grid for each window consists of wrought iron bars within an enclosing frame, Fig. 16. The enclosing frame, made from a rectangular section and measuring *c* 75 by 20mm (3 x ¾"), is set within the masonry rebate so that its inner face is flush with the external reveal. It is secured with iron pins driven into the masonry. The use of the frame suggests that the ferramenta for each window was installed as a pre-assembled unit, despite the problems for handling posed by its weight.

Each iron grid is constructed of rectangular section bars set flush with the exterior face of the enclosing frame. The horizontal bars are of two sizes, *c* 22, and 33mm square sections. Every third bar is the larger section. The vertical spacing between the bars is *c* 266mm (10½"), which matches the dimension for the panes of glass specified in the contract and documentation for the glazier Thomas Cummins in 1716 and 1717. The vertical bars are also of two sizes, *c* 75 x 17mm (3 x ⅝") and *c* 22mm (⅞") square. The four larger verticals, at *c* 420mm (16½") intervals, are continued as hoops in the upper part of each window. The spacing between the verticals allows for two columns of panes 8½" wide. The radial bars in the head of the window are of the same section as the larger verticals. The lesser verticals, which have the same section as the smaller horizontals, are set within the same plane as the horizontals. They are not continued up into the head of the window, and their placing between the larger verticals appears to be determined by the need to support the casements. In this sense, the design of the ferramenta confirms that the casements were integral to the original design, although they are applied outside the glazing of the main part of the window. Some of the joints between the bars have opened up, showing that the larger sections are generally cut around the smaller bars.

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10 Lea 2001, 9 and Barson 2001, 26 and 28

The East Window Ferramenta

The original ferramenta in the east window survives *in-situ* although it is now located outside the present glazing, Fig. 14. It is set just inside the outer set of pilasters. Unlike the ferramenta in the standard windows, the original ironwork in each of the three lights that make up the east window, with the exception of the head of the centre light, was installed without enclosing frames, Fig. 17. Instead, the horizontals are set in rectangular sockets cut into the masonry window reveals, Fig. 14. Thus, although the head was probably pre-fabricated, the rest was probably assembled *in-situ*.

Unlike the standard window ferramenta, the horizontal bars are of uniform section. In all three lights, the bars are bent to conform to the curve of the apse wall. The vertical spacing between the bars is very nearly the same as that for the standard windows, although here it is determined by a desire to produce uniform intervals within the overall height. This results in discontinuity between the alignment of the bars between the centre and the two side lights within the Venetian window. Similarly, the vertical spacing is not exactly that of the standard windows.

All three lights are narrower than the standard windows and, whereas in the centre, two verticals are employed, in the outer lights there are only singles. The centre light is divided in three by two vertical bars, rectangular in section measuring 75 x 12mm (3 x ½") at intervals of 595mm (23½"). The verticals in the centre light form a hoop in the head of the window. The radial bars in the head of the centre light are of the smaller section.

The head of the centre window was probably prefabricated, within its frame, and installed from the exterior: the splay of the masonry arch above this window makes this possible. However, the installation of a complete frame into the narrow rebate between the inner and outer pilasters clearly was not possible. The ferramenta in the east window must therefore be a mixture of pre-assembled work and assembly *in-situ*.

The Standard Window Casements

Each of the standard round headed windows has two wrought iron casements that ventilate the church at both principal and gallery floor levels, Fig. 11 and Fig. 12. Each casement is a discrete piece of wrought work attached with iron pins to the outside face of the main ferramenta. The jams of the casements are aligned with the lesser verticals in the ferramenta as described above. The horizontal bars and the centre pair of verticals of the ferramenta continue uninterrupted behind the casements, Fig. 18. Because the glazing of the main part of the window passes behind the casements, they appear to be a design alteration, Fig. 20 and Fig. 25, but the lesser vertical bars in the ferramenta suggest that this is not the case.

The wrought iron of each casement consists of two frames connected by three hinges. The larger outer frame attached to the ferramenta is of rectangular section, 80 x 15 mm (3½ x ⅝). Attached to the top of this frame is a flat section designed to throw the rain off the top of the casement, Fig. 25. The hinges are supported by shaped brackets. The inner frame, forming the opening part of the casement, is a similar rectangular frame although the side fitted with the catches is wider and decorated with arabesques. The catches that secure the casements are extraordinary pieces of workmanship, Fig. 19. The mechanism is a double lever spring balanced system that holds the window closed with two catches. Operation of the lower of the two levers opens both catches.

It would appear from the documents, cited above, relating to Thomas Cummins' work at St Paul in 1717, that he supplied both the glazing and the wrought iron for the casements, although he probably sub-contracted the latter. At more than £100, they constitute a significant fraction of the total building costs. Perhaps it was budgetary reasons that dictated that they should be designed in a way that allowed them to be considered an optional extra.

The Glazing of the Standard Windows

None of the original glass or lead appears to survive from the original glazing but there is no reason to suppose that the church was not glazed according to the accounts relating to Thomas Cummins's work of 1717, Fig. 20. The present, nineteenth-century glazing system employed in the standard windows differs from that supplied by Thomas Cummins in 1717 only in the width of the individual panes. Otherwise, when the glazing was replaced, it appears, it was on a like for like basis. The present glazing is attached, in the usual way, by wires through the lead wound around the ferramenta.

The Glazing of the East Window

None of the original glazing survives in the east window, although the view of 1700, Fig. 2, indicates that its general appearance matched that of the standard side windows. It probably survived until the Collins window of St Paul was installed in 1813. Traces of the original glazing survive in the form of a rebate cut into the reveals around the capitals either side of the centre light, Fig. 21. This is the groove or rebate noted in the accounts as having been cut into the cornice in the east window by the masons Edward Strong and Edward Tuffnall in 1717. The width of the centre window allows for nine panes, each measuring 8½" in width. The width of each of the side windows allows for six columns of panes, Fig. 22.

The Standard Window Security Bars

Iron spikes were installed in the lower parts of the standard windows, as a security measure, Fig. 23. They do not appear to be integral to the original ferramenta and, in the case of the windows in the west wall, are attached to the joinery of the staircase, Fig. 24.

The General Appearance of the Original Glazing

Apart from the width of the individual window panes and the addition of the modern security grilles, the appearance of the standard windows has altered little since they were first installed, Fig. 25. The general design of the glazing allowed uncoloured light to illuminate the interior. That at the east end was probably designed to match the standard windows in general appearance, Fig. 26, although the detailing of the ferramenta and the glazing was necessarily different from that of the standard windows. Despite the differences in size and shape of the window openings, the overall impression would have been one of uniformity, Fig. 27. The view of 1800, Fig. 2, therefore appears to be accurate in this sense. The specification for Crown glass indicates that quality and translucency were important priorities. The chancel area would therefore have been well lit in this phase.

4. The East Window by William Collins, 1813

In 1813, the rector Dr Charles Burney presented the church with a window to be installed in the east end. The theme, perhaps not surprisingly, was St Paul and it was painted in enamel on thin Kelp glass by William Collins (1788–1847).[11] It appears in the views by Scharf and Cox, Fig. 3 and Fig. 4, although it no longer remains *in-situ*. Now, only the central portion, the figure of St Paul, remains in the church, set in the window between the gallery and the north-west stair tower, Fig. 28.

It is composed of rectangular panes that conform to a pattern conventionally applied to sash windows and therefore appears to have been designed to match the windows from the gallery into the corner towers. The glazing bars, however, are metal. Originally, when first installed, the window was probably set within a timber frame in the east window.

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[11] Barson 2001, 7 and Benezit 1999

Both of the historic views clearly show the window set close to the inner face of the apsidal wall but neither show the original ferramenta which remained *in-situ*, *c* 600mm (2') to the east. It seems therefore that the window was set almost within the same plane as the later window of 1913. Although no physical traces have yet been observed of its fixing within the window opening, they may appear if the later window is removed.

Its position close to the inner face of the wall is probably due to a desire that as much as possible of the window should be visible from within the church. The converging jambs would have obscured the margins of the original window. Although this would not have been a significant consideration for a plain east window, for a figurative composition, another set of priorities applies.

It is possible that, when the Collins window was first installed, the original plain glazing was left *in-situ*. If this is the case, then the bottom six bars of the original ferramenta in the central section of the east window may have been removed at this date to provide access both for the installation and maintenance of the Collins window. Alternatively, the original glazing may have been removed at this date. This may possibly only be resolved by the discovery of an early view or photograph of the east end of the church. In the reconstruction figure for this phase reproduced here, the original ferramenta is shown without its original glazing, Fig. 29.

5. The Glazing of the Church in the Nineteenth Century

By the end of the nineteenth century, the original glazing in the standard windows had been replaced. In the new glazing system, the individual panes were narrower than the original, measuring 5½" instead of 8½" in width, Fig. 30. This scheme survives today. Exactly when the original scheme was replaced is not documented, but the smaller panes appear in the earliest photograph of St Paul, taken by Bedford Lemere in 1897, Fig. 5. The same system is shown in T Bee's survey drawings of 1904, Fig. 6. It seems the Collins east window was left intact at this time.

6. The East Window by James Powell and Sons, 1913

In 1913, the Collins painted glass east window was removed from the east window and replaced by a stained glass window supplied by James Powell & Sons, Fig. 7.[12] This was a fully leaded window supported on a framework very close to the inner face of the apsidal wall, Fig. 31 and Fig. 32. Like the Collins window before it, the figurative content required good site-lines from within the church. Externally, however, it was set a long way from the outer wall face and the window openings would have appeared cavernous, Fig. 33. The inner set of columns, originally designed to be seen from inside the church only, now formed part of the exterior elevation. The original ferramenta, which remained *in-situ*, would have offered a degree of security. The removal of the centre sections of six of the lower horizontal bars may have occurred when either this or the Collins window was installed.

7. Recent Repairs and Security Grilles

Wire mesh security grilles were attached to the exterior of the all the windows in the 1980s or 1990s. Although they provide a measure of security, their main purpose is to protect the window glass from stone throwing. Unfortunately, they make the building look dull and dilapidated. The casements were removed, restored, and refitted in 2000.

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12 Barson 2000, 1-10

8. Fire Damage to the East Window, May 2000

The heart of the fire in May 2000 appears to have been centred on the altar: those parts of the east window nearest to it suffered the most. The lower part of the centre window was totally destroyed. The upper two thirds remains *in-situ* but is severely buckled, Fig. 34. The two side windows remain intact. Any repair would, however, require complete removal of the centre window and replacement of all the lead.

Appendix

Estimates of the Paintable Surface Area Presented by the Window Ferramenta

The total surface area presented by the ferramenta of each standard window based on present observations, in square metres. Refer to Fig. 16 for the composition of each frame.

		Length of each unit	Section Thickness	Section Depth	Surface area of each unit	Number of units	Total Surface Area
Enclosing frame[13]	Vertical	4.85	0.02	0.07	0.4365	2	0.873
	Horizontal	2.18	0.02	0.075	0.2071	2	0.4142
	Hoop	3.43	0.02	0.075	0.3259	1	0.3259
Horizontal bars	Narrow section	2.18	0.022	0.022	0.1918	12	2.3016
	Thick section	2.18	0.033	0.033	0.2878	6	1.7268
Vertical bars	Narrow section	4.85	0.033	0.033	0.6402	2	1.2804
	Thick section	4.85	0.017	0.075	0.8924	4	3.5696
2 hoops expressed as one	Thick section	2.7	0.017	0.075	0.4968	1	0.4968
Radial bars	Thick section	1.09	0.017	0.075	0.2006	5	1.003
Total							11.9913

Or, c 12.89 square yards for each standard window.

The total surface area presented by the east window ferramenta based on present observations, in square metres. Refer to Fig. 17 for the composition of this frame.

		Length of each unit	Section Thickness	Section Depth	Surface area of each unit	Number of units	Total Surface Area
Centre light rectangular part	Horizontal bars, thin	1.79	0.024	0.024	0.1718	18	3.0924
	Horizontal bars, thick	1.79	0.017	0.075	0.3294	2	0.6588
	Vertical bars	4.97	0.012	0.075	0.9145	2	1.829
Centre light arched head	Radial bars	0.85	0.024	0.024	0.0816	9	0.7344
	2 hoops, expressed as one	3.56	0.012	0.075	0.6194	1	0.6194
Side windows	Horizontal bars thin	1.25	0.024	0.024	0.1200	30	3.6
	Horizontal bars thick	1.25	0.017	0.075	0.2300	4	0.92
	Vertical bars	3.92	0.012	0.075	0.6821	2	1.3642
Total							12.8182

Or, *c* 13.78 square yards

[13] It is assumed the frame was painted *in-situ*, hence the concealed parts are not included

The total surface area presented by each casement in a standard window based on present observations, in square metres. Refer to Fig. 19 for the composition of this frame.

		Length of each unit	Section Thickness	Section Depth	Surface area of each unit	Number of units	Total Surface Area
Outer frame	Vertical	1.5	0.015	0.080	0.285	2	0.57
	Horizontal	0.72	0.015	0.080	0.137	2	0.274
Inner frame	Vertical	1.42	0.015	0.04	0.156	2	0.312
	Horizontal	0.58	0.015	0.04	0.064	2	0.128
Hood		0.58	0.015	0.1	0.133	3	0.399
Hinges					0.1	3	0.3
Catches, etc					0.1	1	0.1
Total							2.083

Or, *c* 4.88 square yards

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Acknowledgements

This report draws heavily on the work of my colleague Susie Barson, see Barson 2001. Tracy Jane Craig, English Heritage Historic Buildings Architect, has made valuable comments on the interpretation of the fabric evidence. Jill Channer of English Heritage and Ian Bristow, Architect, Historic Buildings and Interiors Consultant have also commented on the text. Their assistance is gratefully acknowledged.

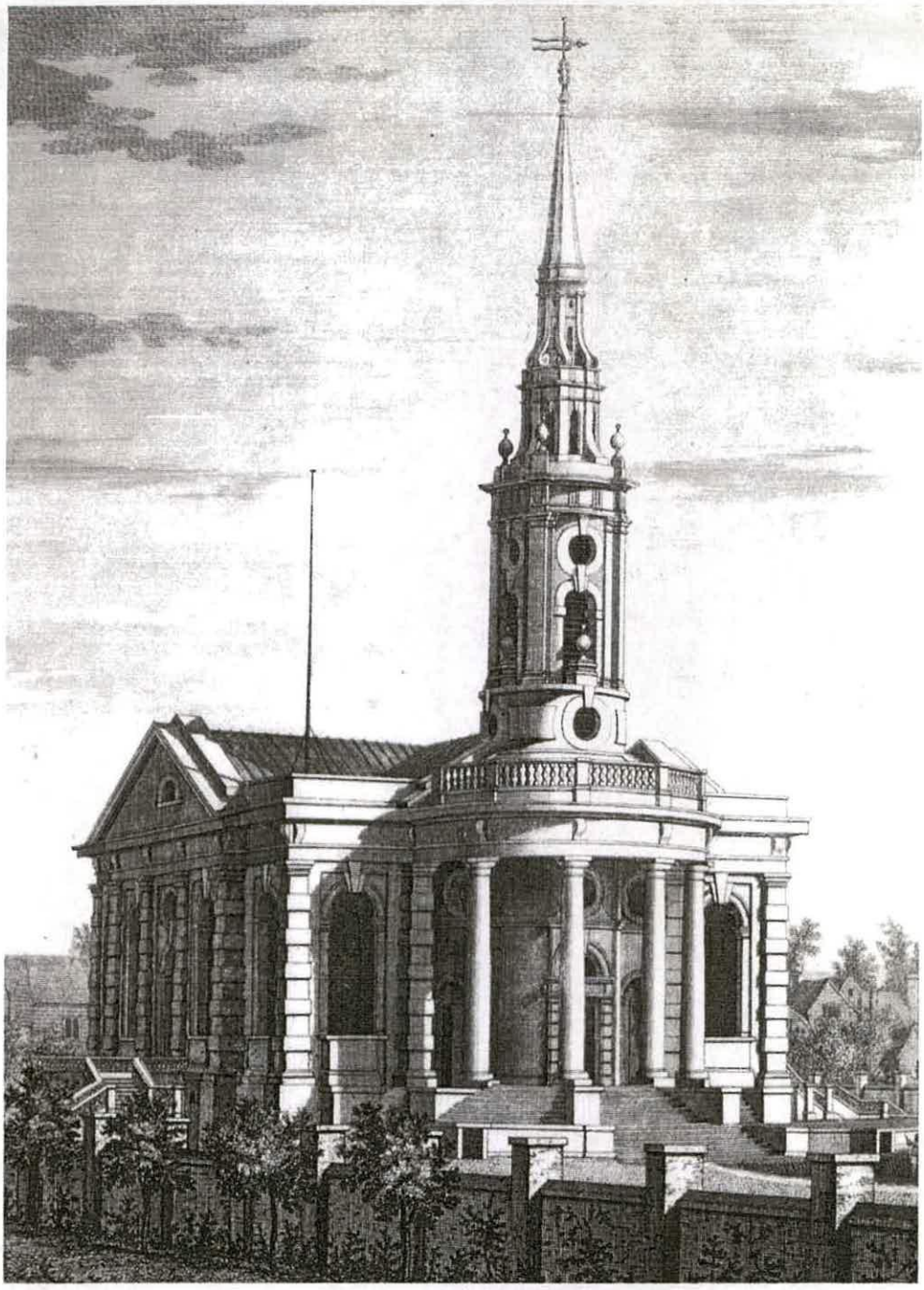

Fig. 1, a detail from Thomas Allin's *North West Prospect of St Paul's Deptford,* undated but probably *c* 1750 (photograph Courtauld Institute of Art).

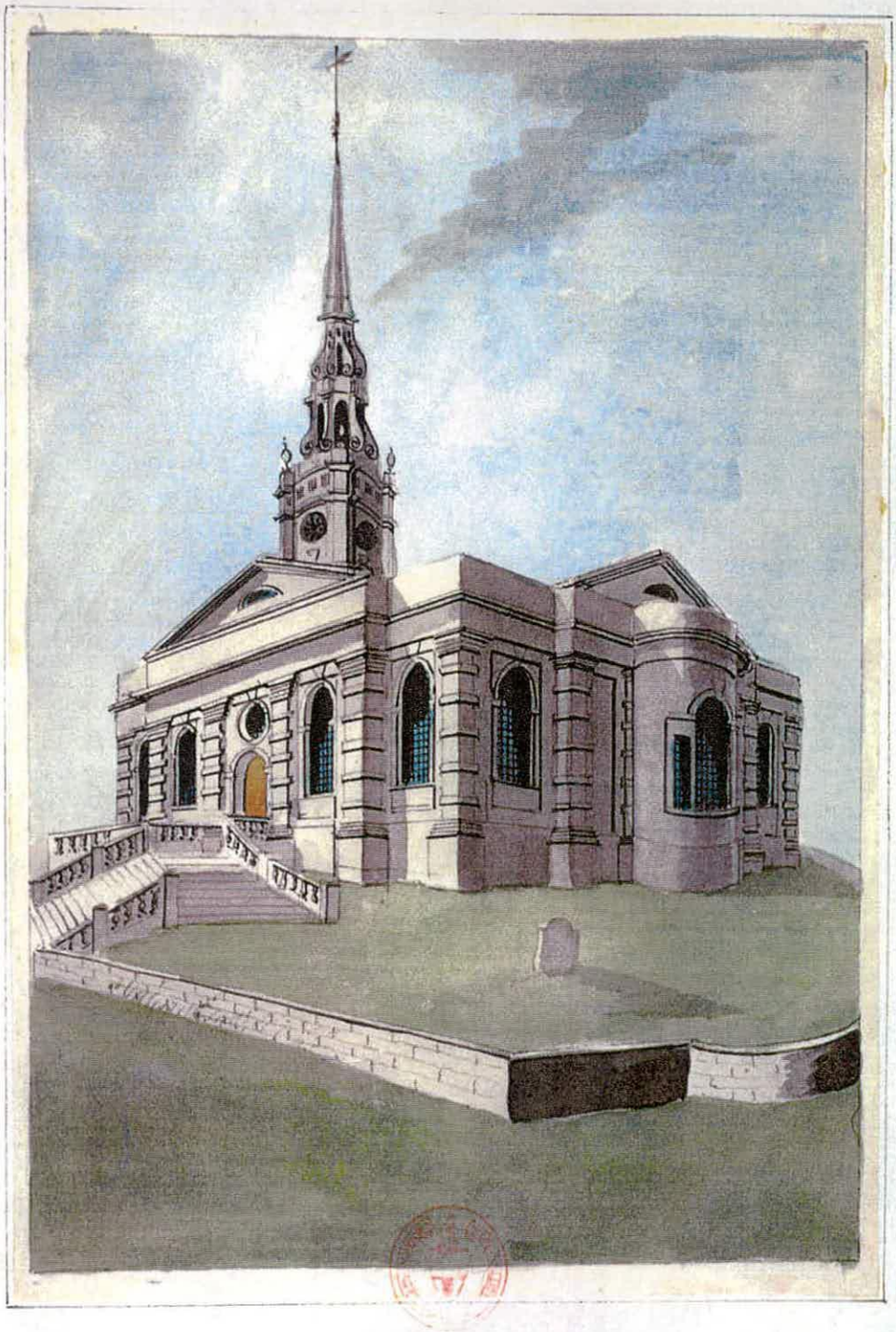

Fig. 2, *St Paul's Church, Deptford*, watercolour, dated 1800, artist unknown (Corporation of London).

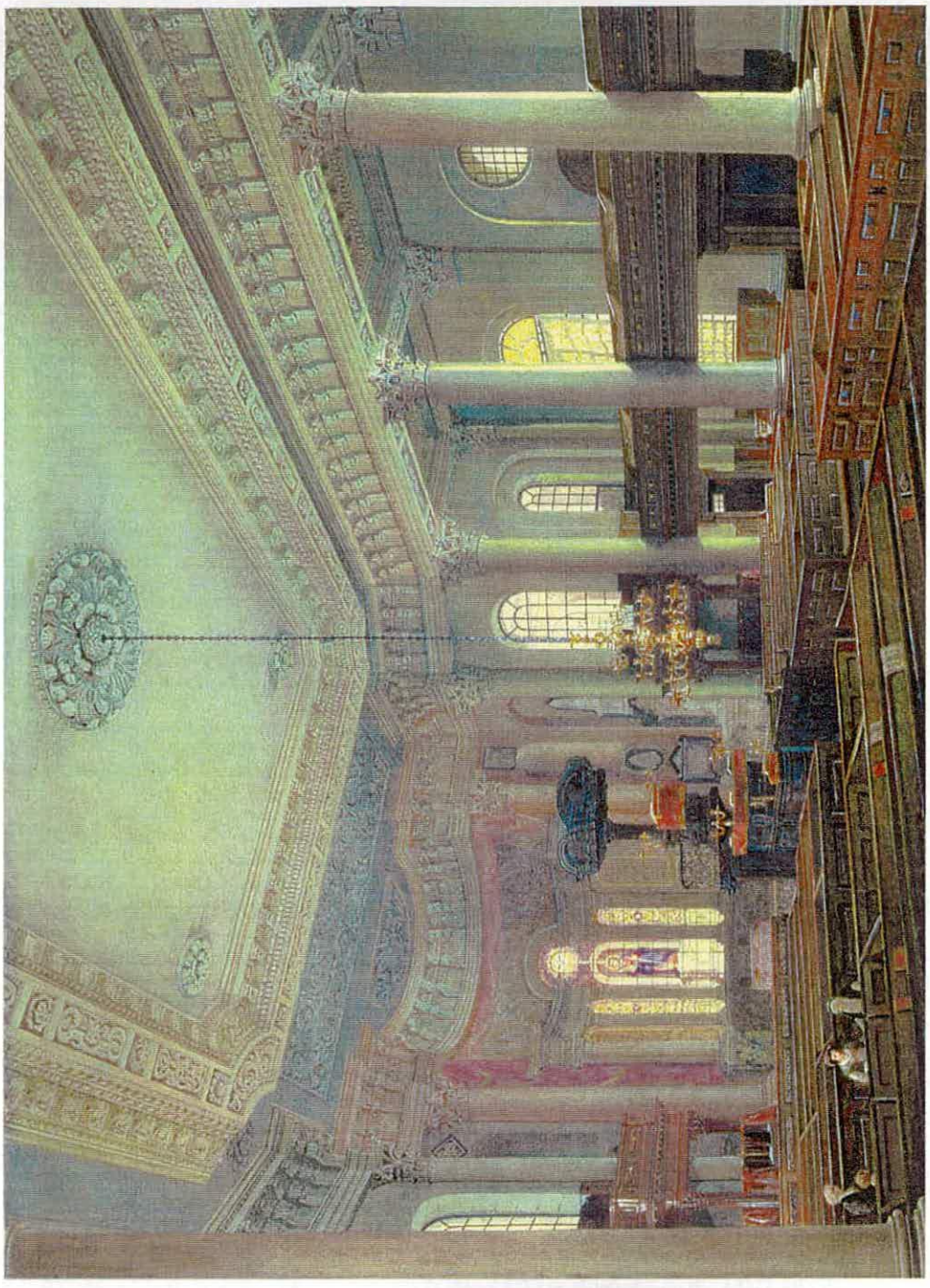

Fig. 3, George Scharf, Sr. (1788-1860) *St Paul's, Deptford,* c 1830-40, watercolour with bodycolour, 377x 505 mm (Yale Center for British Art, New Haven, Connecticut). Scharf did not arrive in London until 1816.

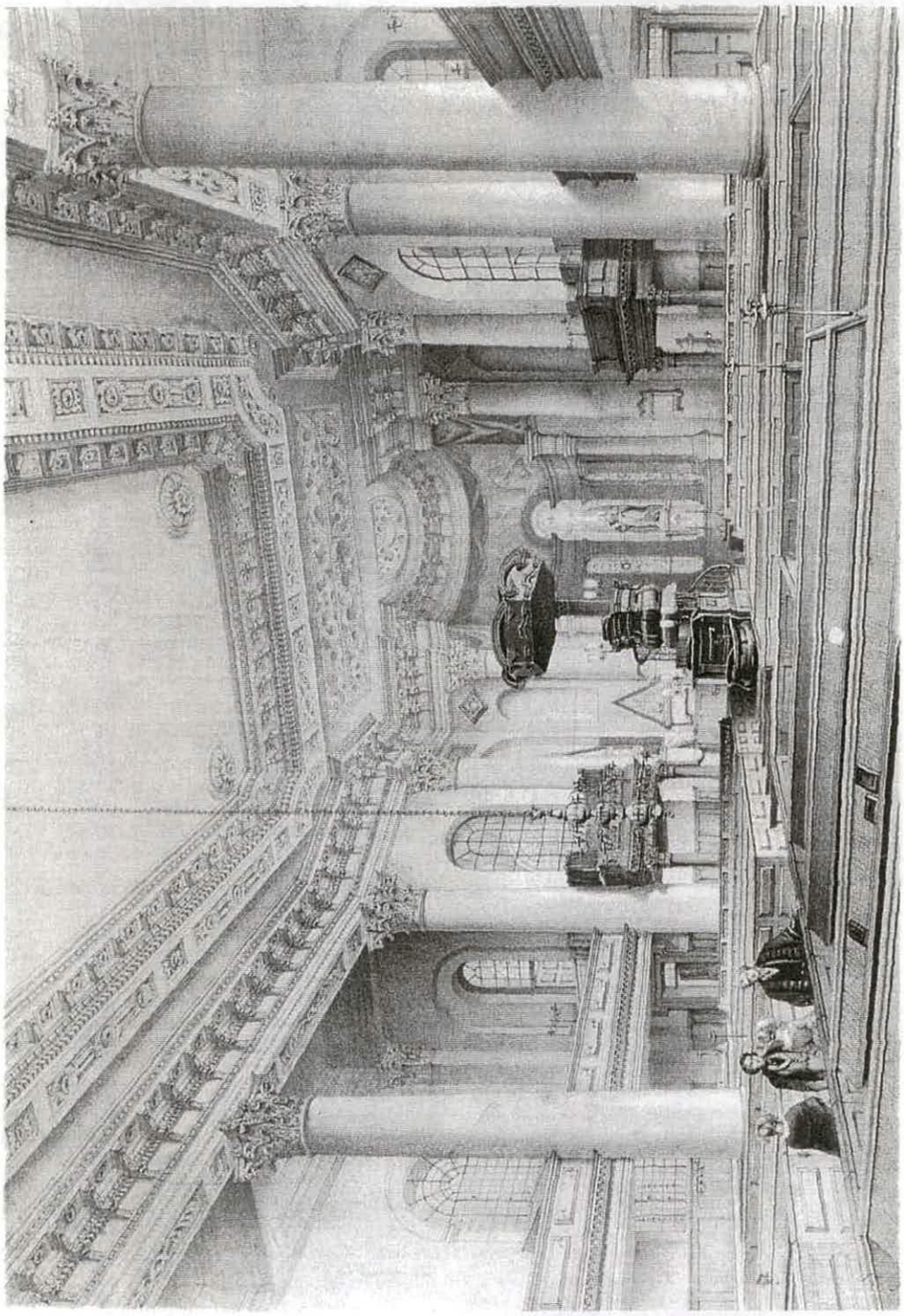

Fig. 4, *A Sketch of the Interior of St Paul's Church, Deptford, Kent*, a lithograph by RK Thomas from a drawing by JW Cox, now in the possession of the church, 1841.

Fig. 5, St Paul Deptford, the west front, a detail from a photograph by Bedford Lemere, 1897 (NMR).

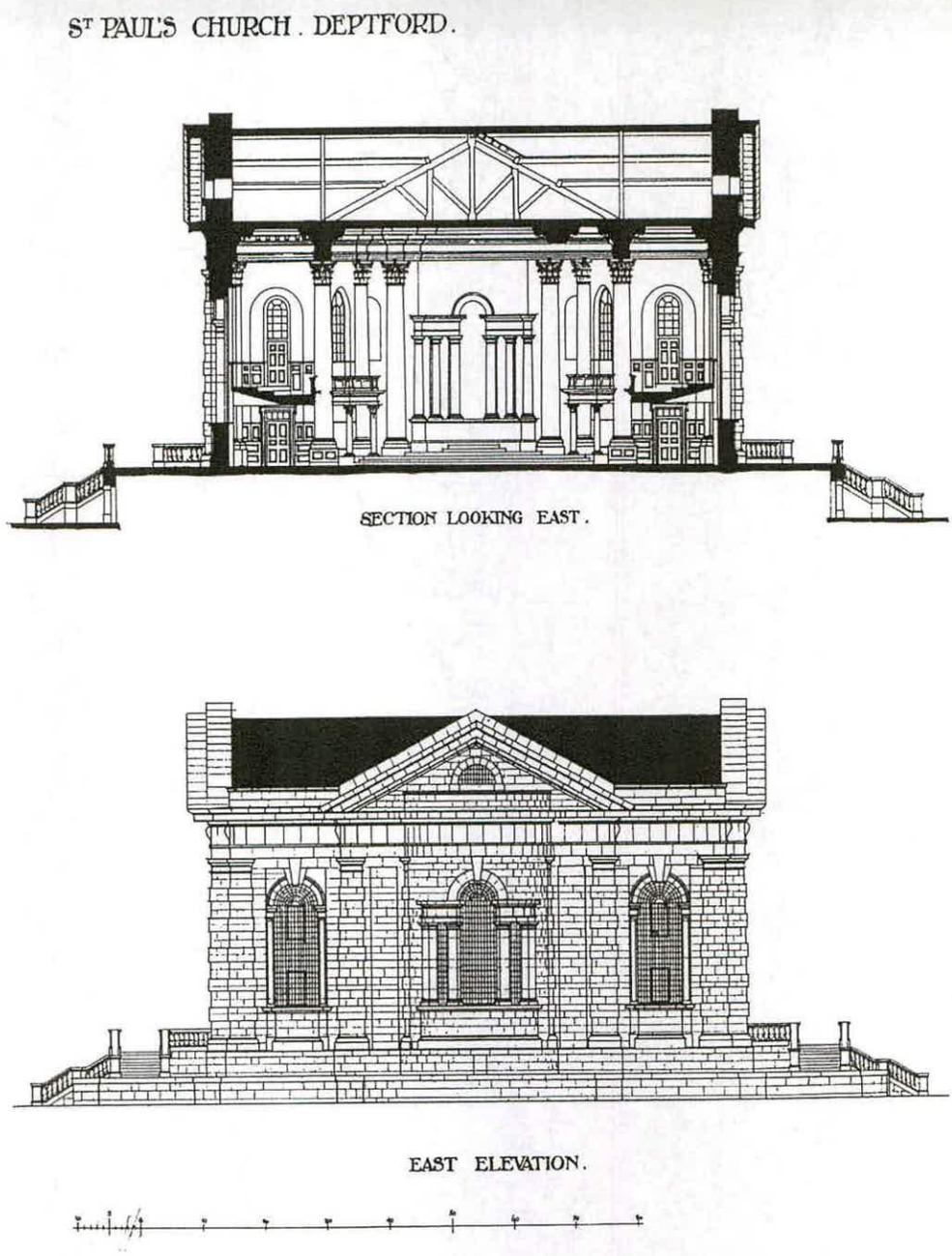

Fig. 6, St Paul, Deptford, section through the east end and elevation of the east end by T. Bee, 1905 (taken from the *Architectural Association Sketchbook*, **9**, 1905)

Fig. 7, the chancel photographed before the fire of May 2000 (photograph supplied by Roy Tindle).

Fig. 8, St Paul, Deptford, the west front viewed from the west, June 2002.

Fig. 9, St Paul, Deptford, the south front viewed from the south-east, June 2002.

Fig. 10, St Paul, Deptford, the east front viewed from the north-east, June 2002.

Fig. 11, a standard window, east of the north door, June 2002.

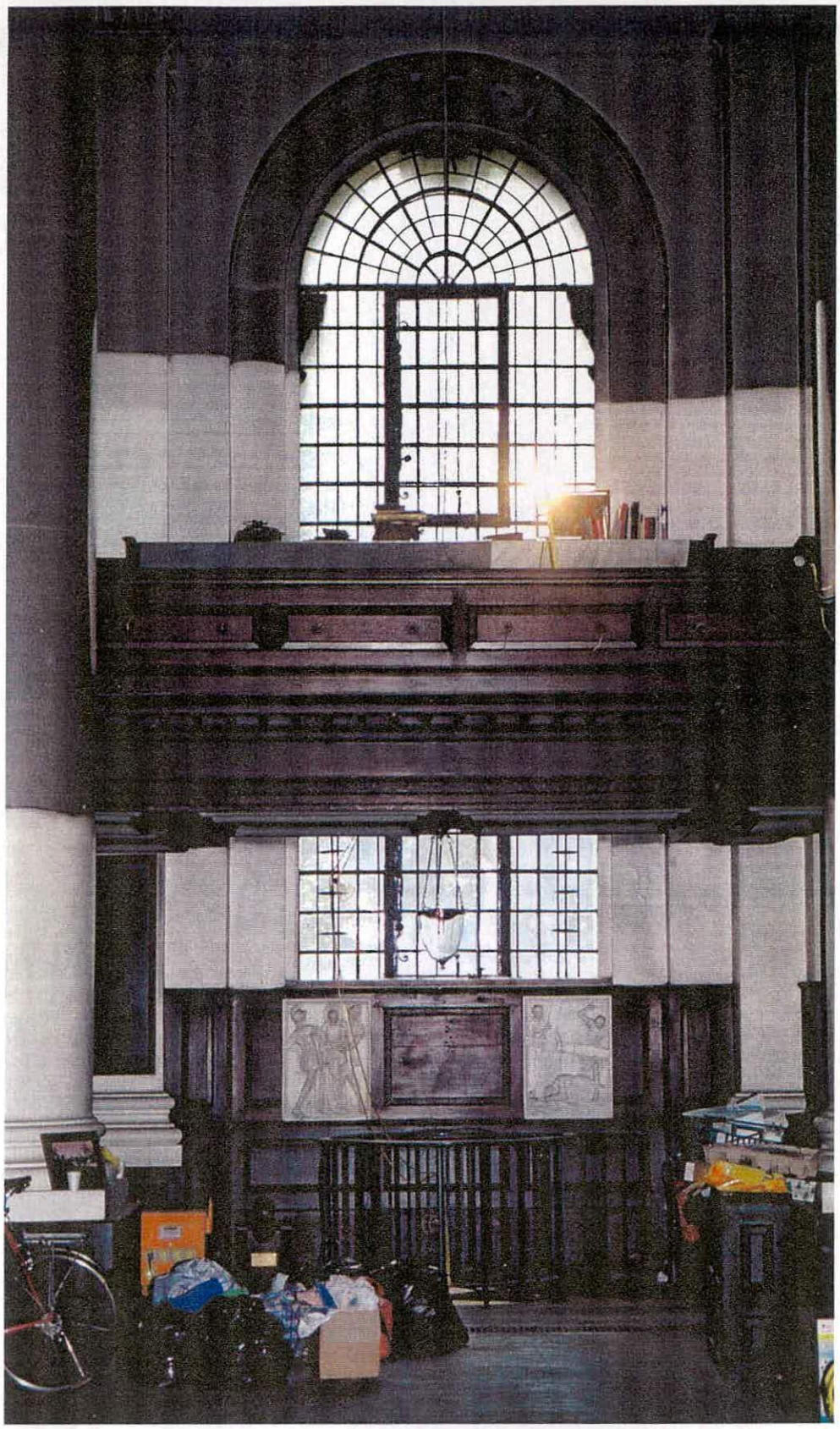

Fig. 12, one of the standard windows in the south wall. The bands of dark and light show where the smoke blackening caused by the fire of May 2002 has been partially removed by washing, June 2002.

Fig. 13, the east window as it appears after the fire, June 2002.

Fig. 14, a detail of the east window, showing the original ferramenta outside the plane of the later glazing and the rebate between the inner and outer columns, June 2002.

Fig. 15, the south jamb of the east window, showing how the original ferramenta is set in sockets cut into the masonry just behind the outer column, June 2002.

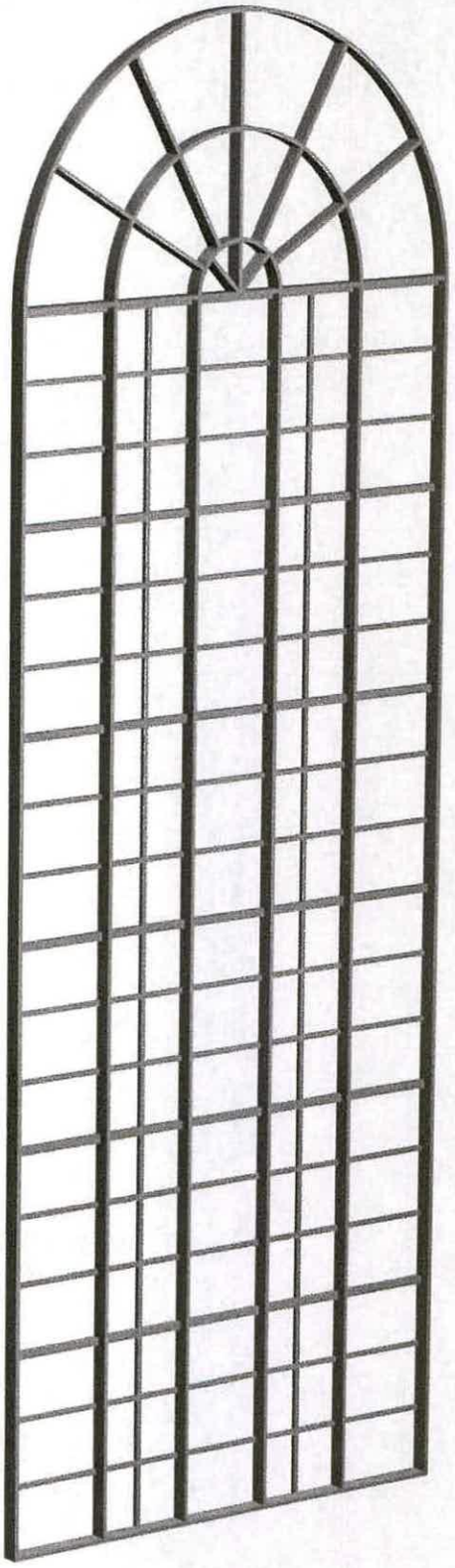

Fig. 16, a perspective reconstruction drawing, showing the framework of the standard window ferramenta, as it would appear stripped of glazing, casements, security bars and modern grilles.

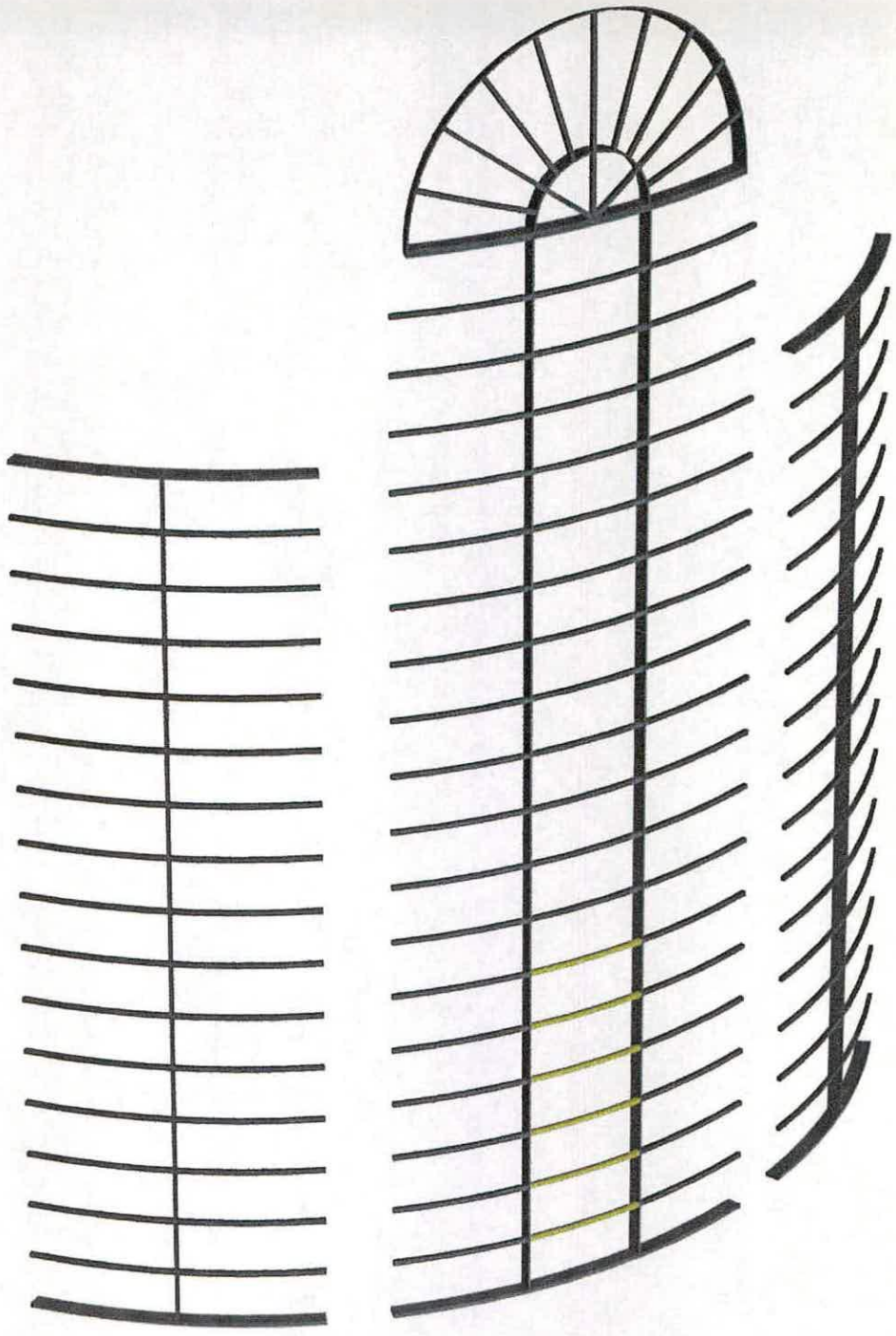

Fig. 17, a perspective reconstruction drawing of the original ferramenta in the east window. The yellow bars are reconstructed, the rest survives *in-situ*.

Fig. 18, a perspective reconstruction illustrating the relationship between the casements and the original ferramenta of a standard window.

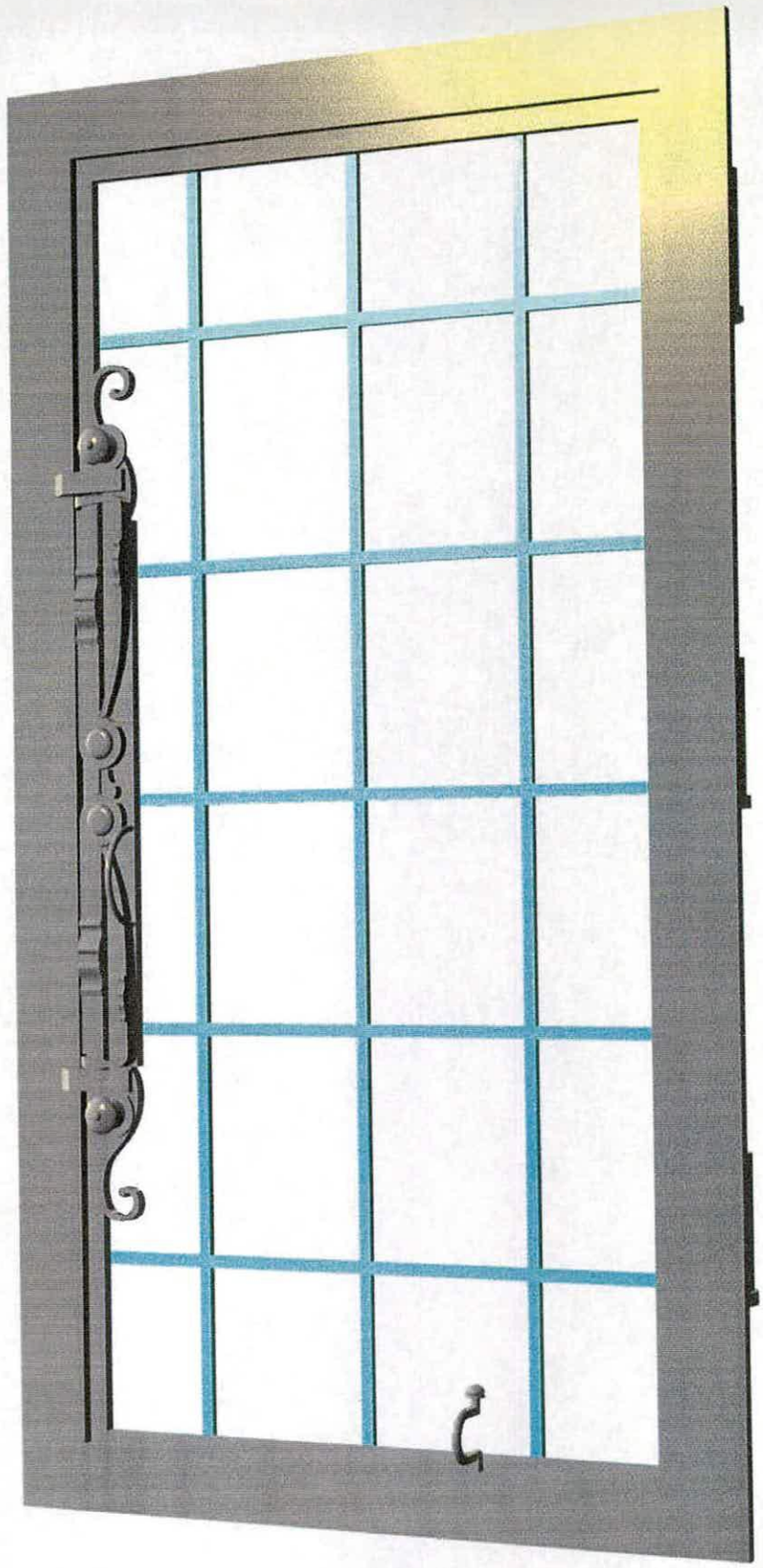

Fig. 19, a drawing illustrating the interior detailing of the casements for the standard windows.

Fig. 20, a reconstruction drawing of a standard window showing how the pattern of the glazing is designed to fit with the ferramenta

Fig. 21, a detail of the east window showing the mouldings of the cornice and capitals cut by a narrow rebate for the original glazing.

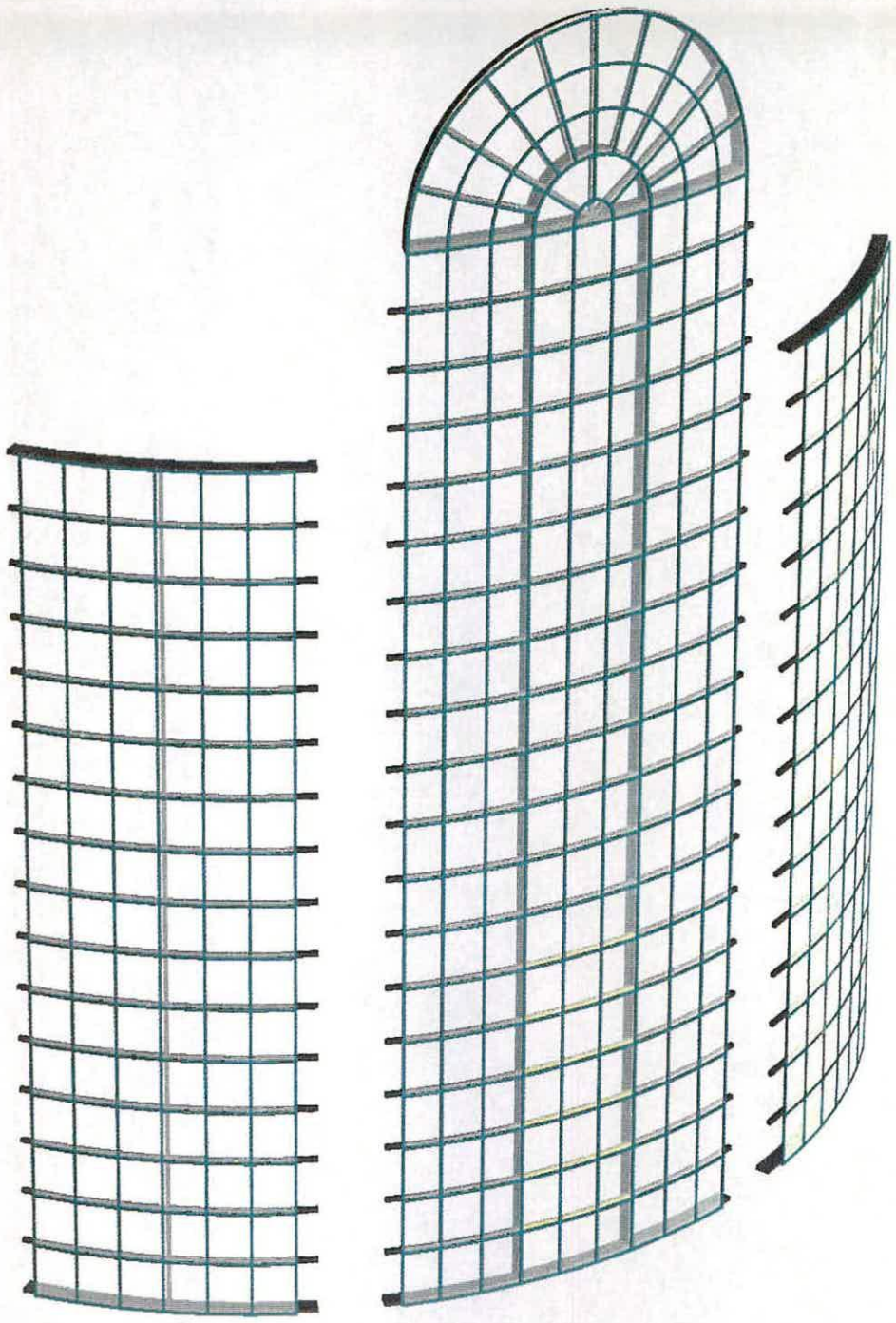

Fig. 22, a perspective reconstruction drawing of the east window showing how the glazing was probably made to fit the ferramenta. The bars missing from the centre light are reconstructed here in yellow.

Fig. 23, a reconstruction illustrating the ferramenta, casements and the security bars (highlighted in this diagram in blue) that appear to be a later addition, although the joints with the bottom rail are now generally concealed by render.

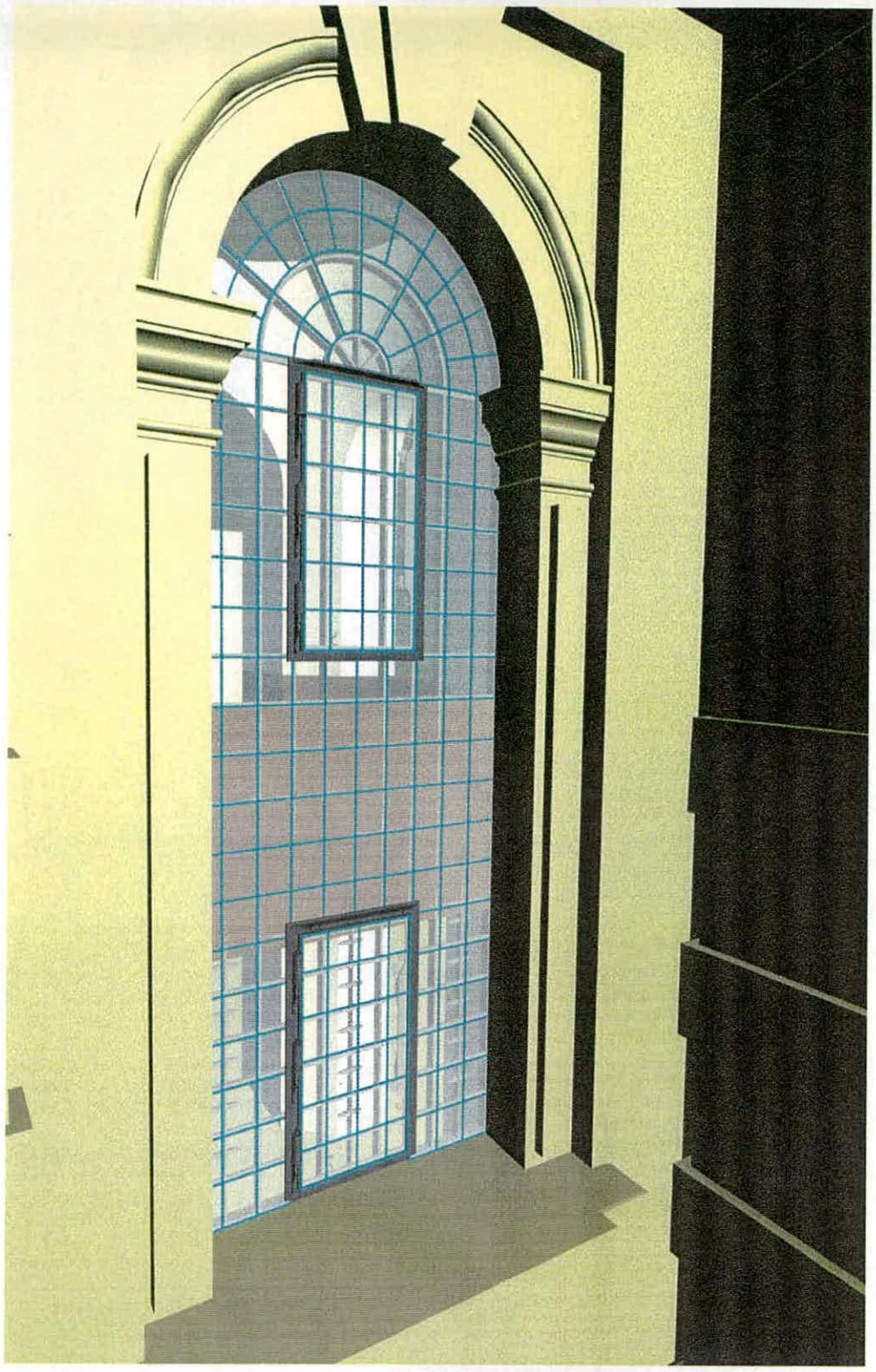

Fig. 25, a reconstruction of a standard window showing how the casements are fitted outside the original glazing.

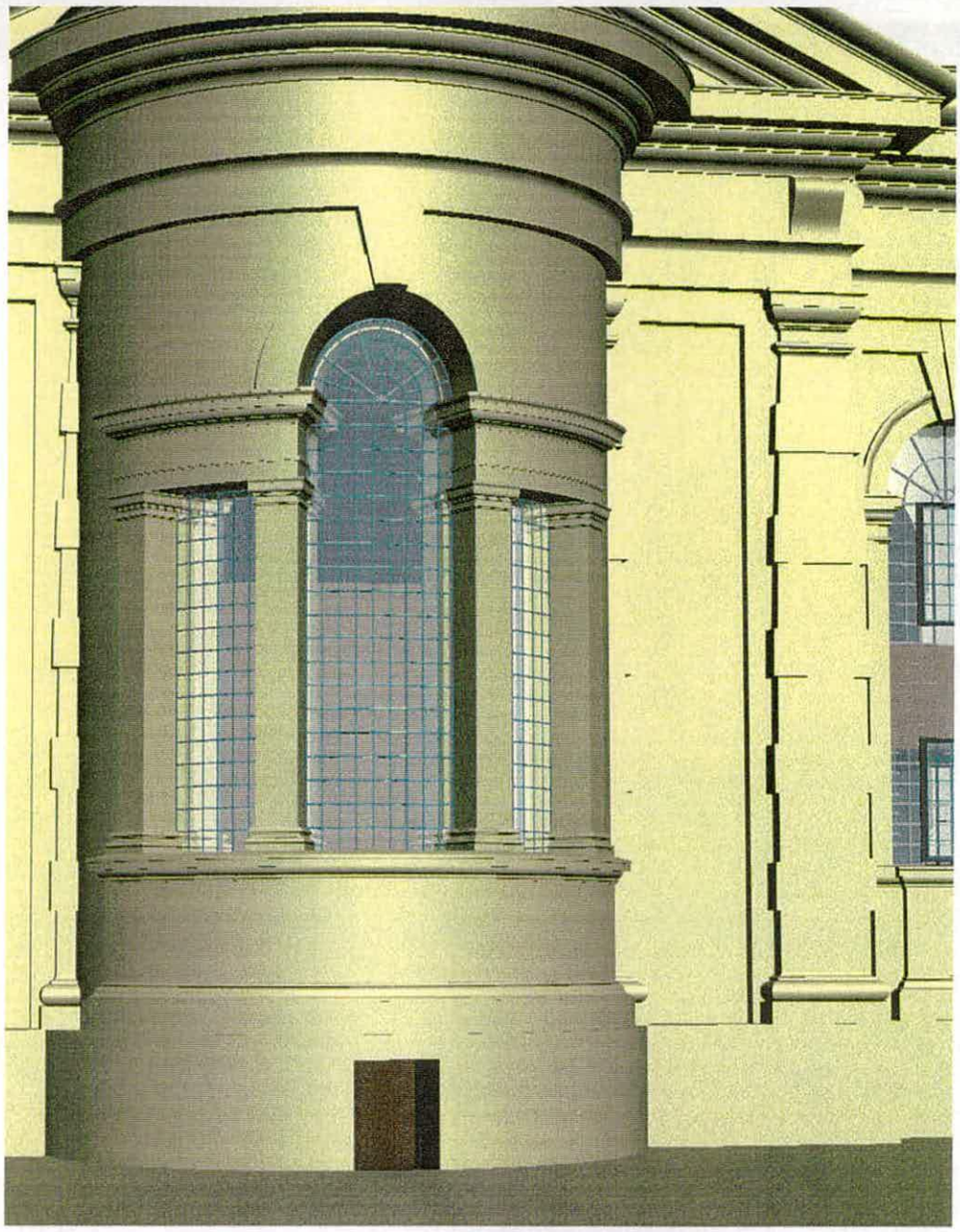

Fig. 26, a detail reconstruction of the east window, showing the glazing as it might have appeared when first built.

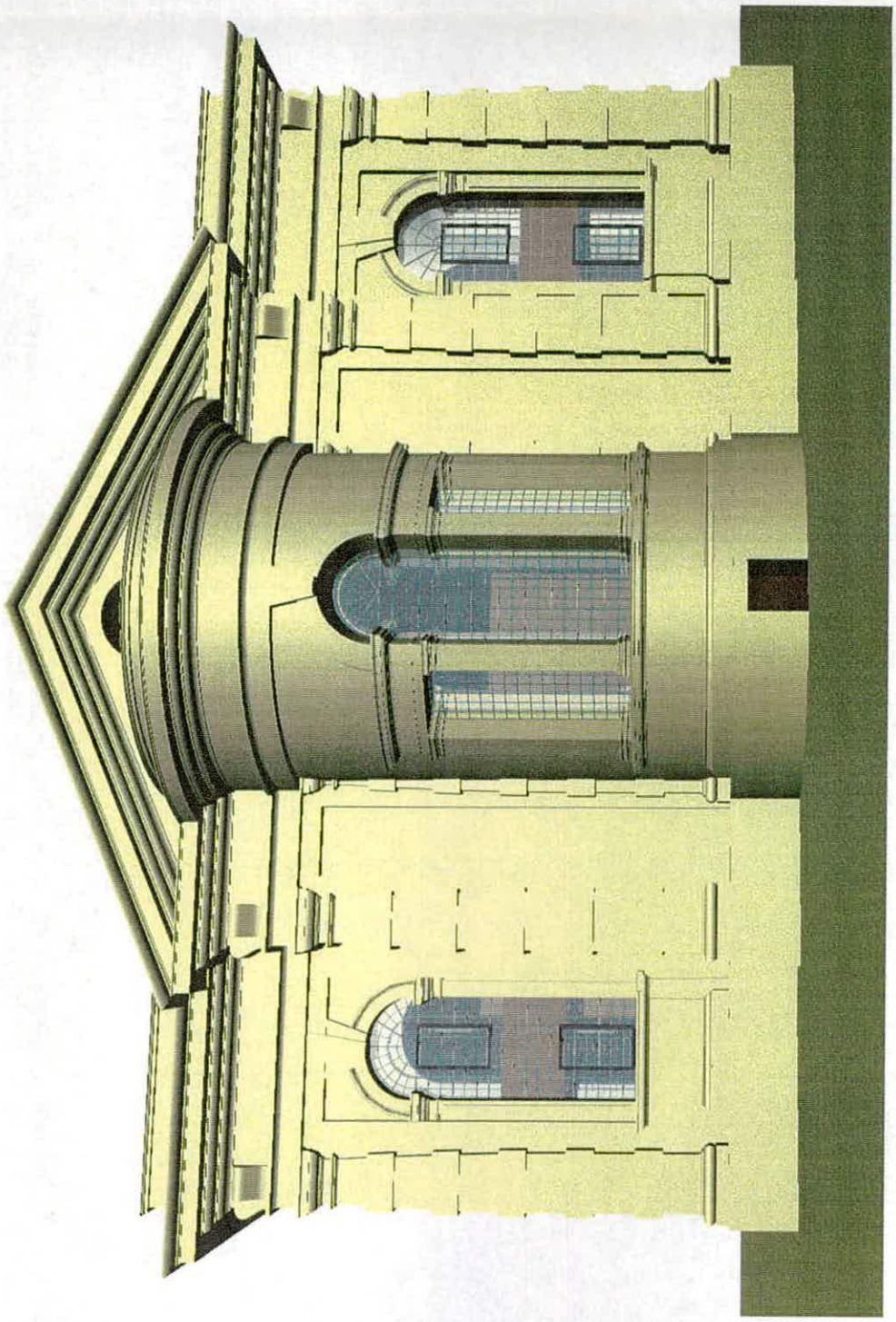

Fig. 27, a reconstruction of the original glazing in the east elevation, as it might have appeared *c* 1730.

Fig. 28, the centre portion of the east window of 1813 by William Collins, now installed in the window between the north-west stair tower and gallery.

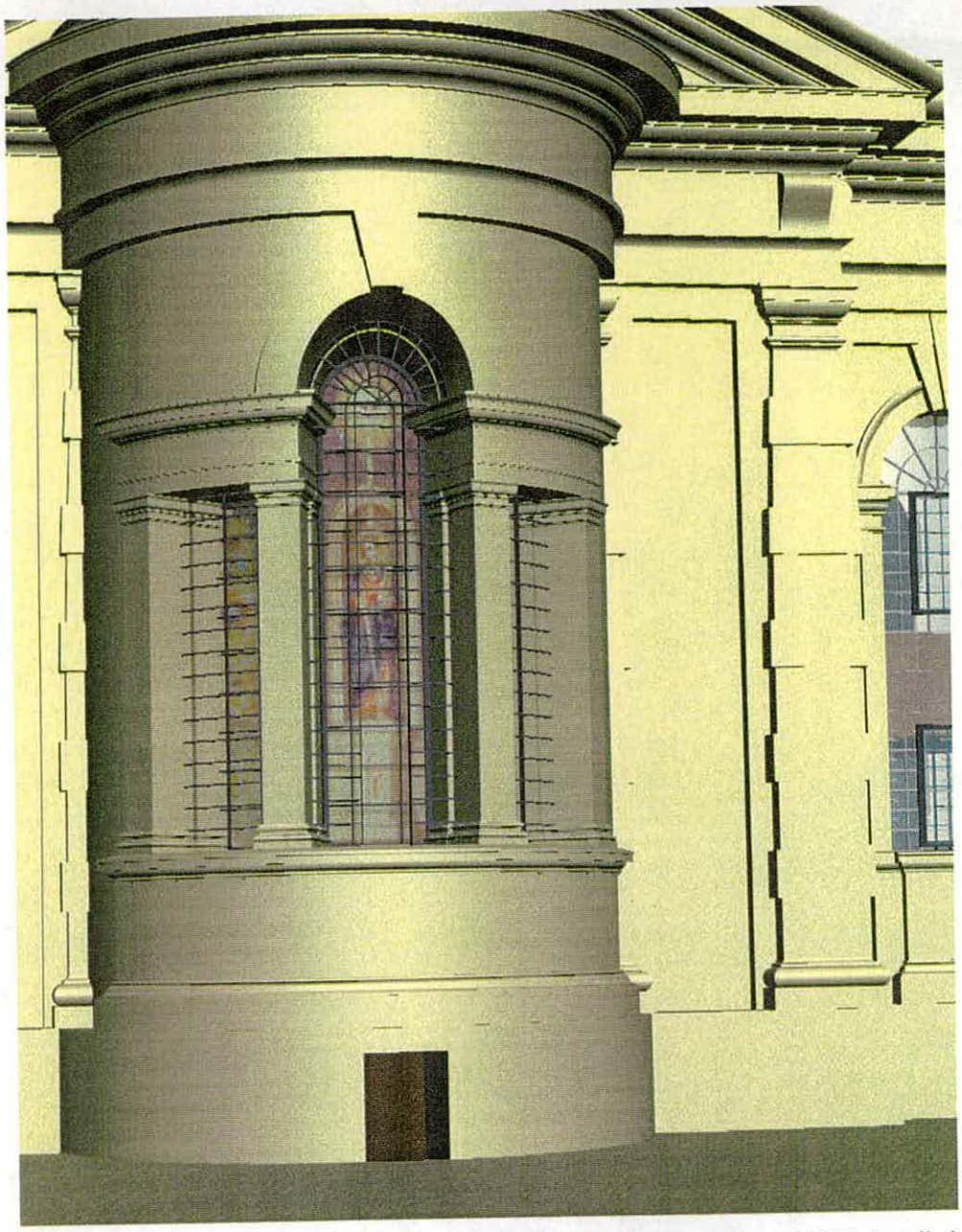

Fig. 29, a perspective reconstruction showing the Collins painted window of 1813, installed behind the original ferramenta, close to the face of the inner wall. This reconstruction makes use of the Collins window as recorded by Scharf in Fig. 3.

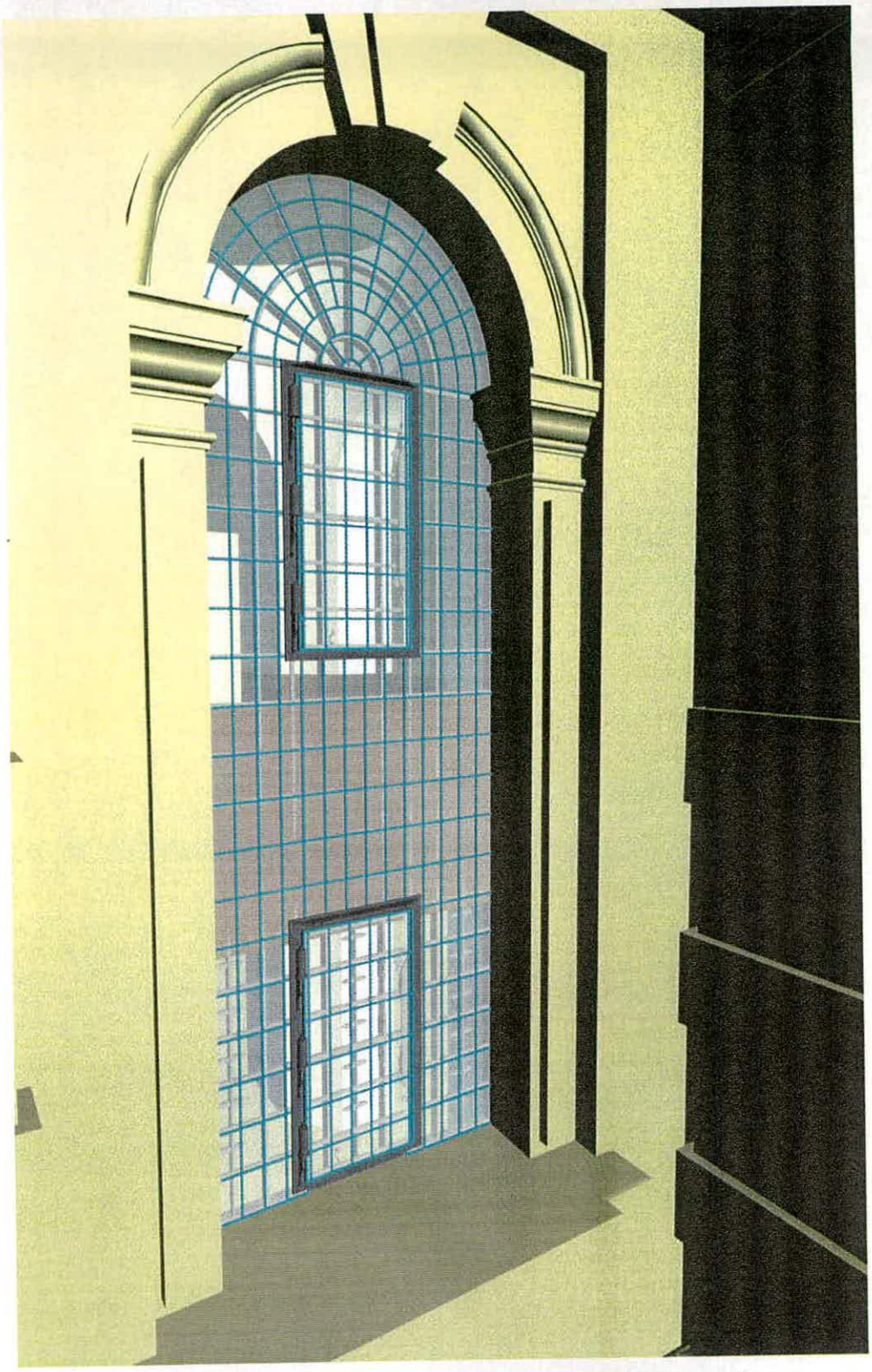

Fig. 30, a reconstruction of a standard window, showing how, in the nineteenth century, they were glazed with panes, 5½" wide, narrower than the original, which measured 8½" in width. Compare with Fig. 25.

Fig. 31, the southern light in the east window, the figure of St Gabriel, after the fire of May 2000. The heat lifted the paint on the adjacent wall surface but left the glazing intact.

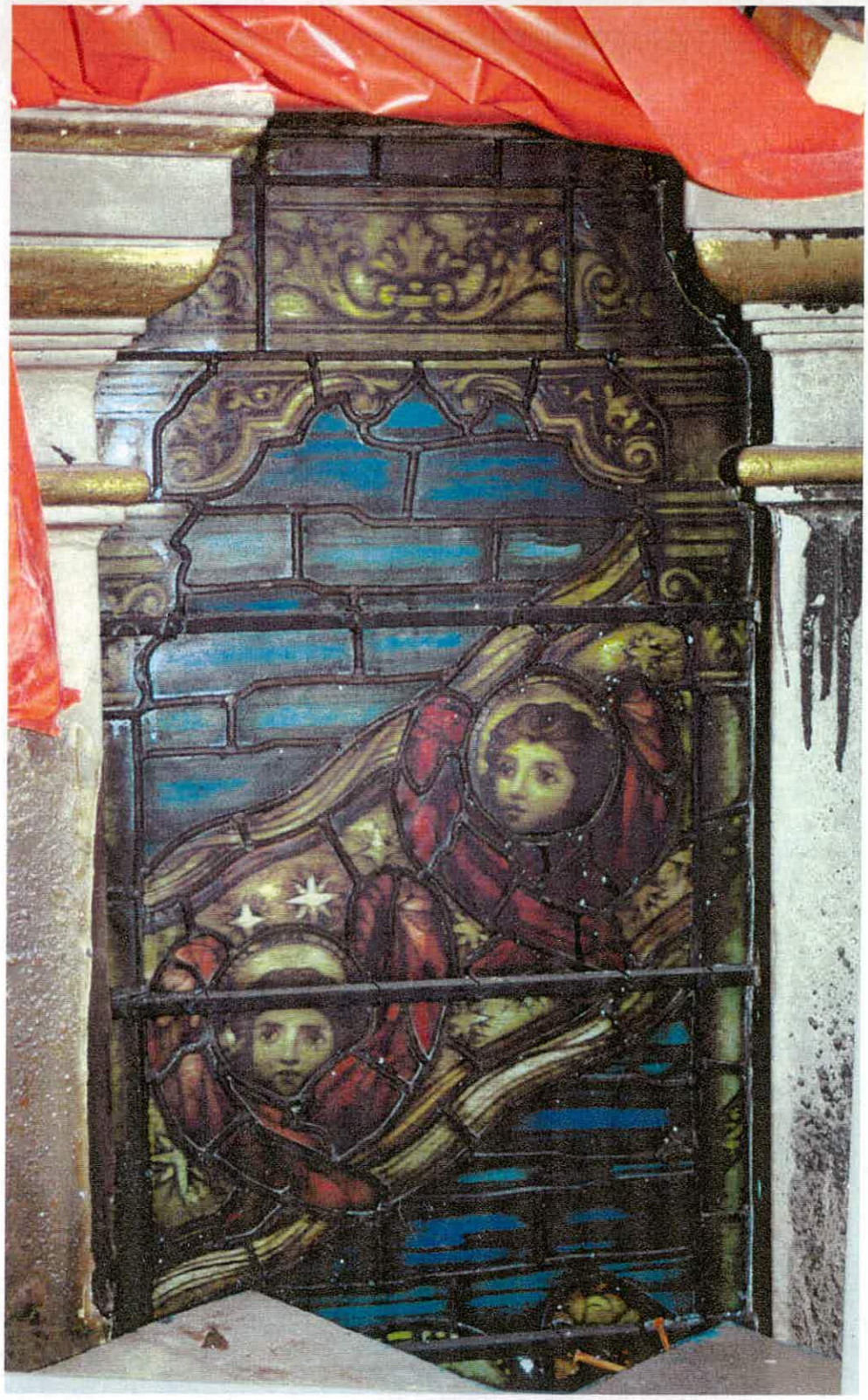

Fig. 32, a detail of the head of the southern light in the east window, with angel heads above the figure of St Gabriel.

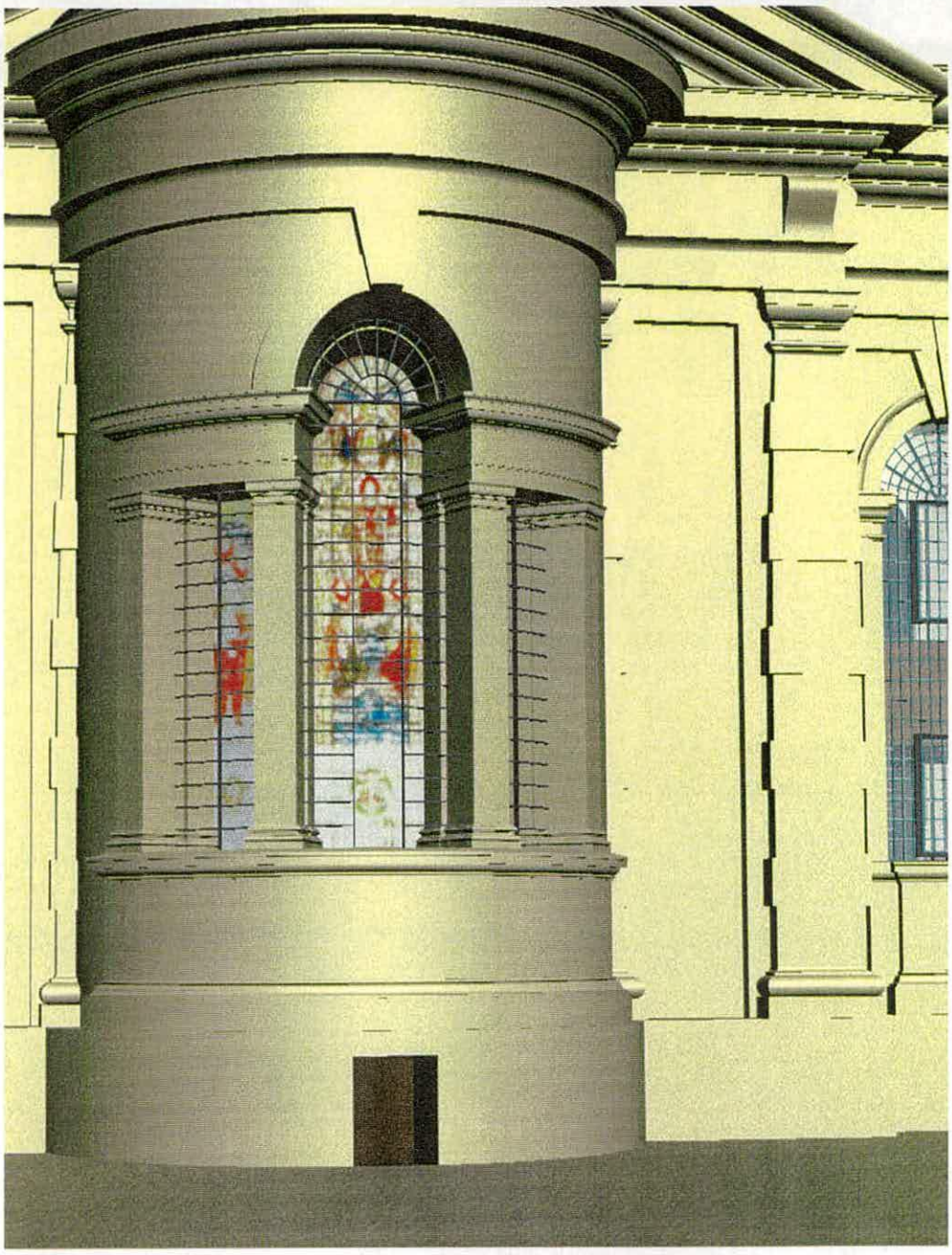

Fig. 33, a perspective reconstruction the Powell east window of 1913, installed behind the original ferramenta, close to the face of the inner wall.

Fig. 34, the space between the original ferramenta and the Powell glazing in the centre light in the east window, looking upwards, June 2002. The buckling of the lower part of the surviving Powell glass is apparent in the glazing detached from the wire ties visible at the left-hand edge of the photograph.