Opus Sectile: Art from Recycled Scrap

Dennis Hadley

The term opus sectile, Latin for cut work, appears to have been coined in 1877 by the architect, designer and scholar T. G. Jackson to describe a reredos panel at Evercreech, Somerset, that was made to his design by James Powell & Sons of the Whitefriars glassworks, London, from opaque vitreous sheets with an eggshell surface; it has also been applied to the material itself. Subsequently decorative work in cut stone dating from classical times, and modern panels made from ceramic, have also been called opus sectile. This latter usage will not be mentioned further in this paper.

The west wall decoration of 1890 in All Saints Church (Fig. 1), Reading, was

Figure 1

designed for Powell & Sons by the freelance artist George Parlby. The earlier term opaque stained glass describes well this type of work, in which the material is cut, painted and then fired at a temperature high enough to fix the pigment but not melt the substrate. Unlike windows, where the individual pieces of glass are separated by lead calmes, here they fit closely together and are cemented to a bed of slate. Frequently mosaic tesserae are employed to create the background and borders.

In comparison consider the Salviati mosaic decoration at Caius College, Cambridge, which dates from the early 1870s. All details, including facial features, are built up from individual tesserae; a time-consuming process for skilled craftsmen. In an 1865 pamphlet, Antonio Salviati emphasised that he was able to produce high quality mosaic at a cost of between £2 and £3 a square foot because of the low wages paid to his Venetian workmen. The success of Salviati mosaic caused James Powell & Sons to attempt something similar, but only a handful of examples were produced because of the cost involved: a square foot of mosaic took almost 100 man-hours to fabricate, with charges for labour alone approaching £3 in the most favourable cases. Something cheaper was needed, and after a long and tortuous gestation and several changes of name opus sectile provided the solution.

There is no information in the Powell archives about the manufacturing process, so the development of opus sectile has to be deduced from entries in the Order and Cash books. There is no index entry for opus sectile in Harry Powell's posthumously published *Glassmaking in England* 1923, but under the heading Glass Mosaics, is this statement which is inaccurate as to date:

> '…from about 1870 attempts were made to produce a satisfactory palette of coloured opaque glass for wall decorations and pavements'

but of crucial importance is the later comment that

> 'An economical desire to prevent waste led to the development of the craft of mosaic. It had been the custom to scrap as useless all fragments of flint glass contaminated with clay, but experiment proved that this waste glass, if ground to a fine powder and baked, yielded a solid durable material with an eggshell surface suitable for wall tiles and mosaic.'

The nearest to a technical description appears to be that given by A. L. Duthie in *Decorated Glass Processes* (1908):

> 'Opus sectile, [which] may be described as standing half way between tile painting and stained glass [is an] opaque glass of a peculiar nature in which the ingredients appear to be only half vitrified. Slabs are about a quarter of an inch thick, the bulk of the slab being coarse in quality and grey in colour, and bearing on its surface a thin coating of a finer quality in a variety of colours. The texture of the surface is somewhat similar to that of a large coarse egg-shell. The ingredients are sifted into moulds in powdered form and fired in a kiln from which they emerge in slab form. They are painted in enamel colours and fired at a somewhat lower temperature than ordinary glass.'

Pressing sheets of glass in a mould was not a surprising development for the Powell firm, for in the 1830s they supplied ornamental glassware pressed in moulds and by 1845 had developed pressed glass quarries: small squares or lozenges of patterned glass, which could be leaded together to make inexpensive windows for churches.

Slabs of compacted opaque glass appear to have been invented and initially produced by George Rees, probably one of several members of a family employed at the Whitefriars glassworks. James Forsyth, a north London craftsman working for the architect William Nesfield, bought in August 1863 a quantity of mosaic glass that had been cut from small squares. The Order noted 'Rees charges for these squares two shilling each' giving a price in excess of eight shillings a square foot. Further small orders from Forsyth give no information about his use of this material, but the process must have involved painting and firing, for as late as October 1865 we read: 'James Forsyth called. Mosaics burnt again. Wants to know what he is to do. Give him an answer this week. Ask AP [Arthur Powell]'. Unfortunately the reply has not survived.

By early 1864 Powells were selling Rees mosaic in sheet sizes up to 16 inches by 9 inches, available in several colours at only four shillings a square foot. The first mention of a figure made in this opaque glass occurred in May of that year, when the architect and stained glass designer Frederick Preedy paid £2-19s-0d for a 'Figure of Elias cut in rough mosaic glass for painting, 3ft 9in by 1ft 6in.' Preedy also purchased some 'opaque red' and 'Rees odd pieces', possibly to use as background. It is believed that Preedy's figure was intended for an exhibition at South Kensington later in 1864, but its subsequent history is unknown. Powell almost immediately copied this innovation, and by late May had in stock 'two figures of opaque glass: Head of Christ (Miss Shepherd painted) 2ft 3in by 1ft 9in [and] painted Angel (Kensington) 2ft 2in by 2ft 0in.' The angel was kept in the showroom for many years, but the head of Christ to which a five inch wide border had been added, was sold in March 1865 to William Gibbs of Tyntesfield, Somerset for £16-16s-0, a price of £2 per square foot. This panel survives in the private chapel at Tyntesfield, which is filled with Powell glass (Fig. 2). It appears crude by comparison with mature opus sectile,

Figure 2

using a restricted range of colours. The individual pieces of glass are slightly separated, possibly to emphasise the similarity to a stained glass window.

There were four small orders for 'painted opaque glass' in 1865, and an entry for the following January indicates the market envisaged for this type of work. The vicar of St Gabriel, Pimlico 'Called to see some mosaic work. Says he likes real mosaic best. Painted mosaic would do for him. Thirty shillings a square foot including figures and background.'

By the autumn of 1867 Powell & Sons were confident enough about the product quality of what they termed both Rees Mosaic Work and Rees Tiles to invite several architects to inspect a sample. T. G. Jackson thought it 'very good', and just over a year later he used the material in a reredos he designed for Slindon Church in Sussex. 'W. Butterfield thinks the material very nice and would like to see a larger piece. The colour should be divided with black', presumably in imitation of the leading in a stained glass window. William Nesfield, well aware of James Forsyth's problems, was less enthusiastic: 'thinks it quite in its infancy; may come to something very good. Colours must be made harmonious and better quality'. 'W. Burges fears that dirt will hang to the material and will not be easily removed', suggesting that an eggshell finish had not yet been achieved.

In March 1868 the firm issued a circular which read 'Dear Sir, We have on view at our glassworks a new material in glass for permanent wall decoration which is applicable for Memorial Inscriptions, Medallions & Pavements. We would be much obliged if you would call to see it.' A handbill of that period advertises 'Permanent painting on opaque glass for wall decoration. This glass to be used for Reredoses and the highest class of Fireplaces, Pavements, Mosaics and all kinds of Tablets. Diaper pattern from 5s per ft. Figure work from 25s per ft.' So, after five years of trial and error experimentation the stage was set for commercial production to begin.

Opus sectile was an early example of sintering, a technique developed scientifically in the mid-twentieth century to form articles from ceramic or refractory powders that do not melt. A mould is filled with powder, put under pressure and heated to a temperature high enough for individual atoms to diffuse down a pressure gradient in a way that will reduce the overall energy. Grain surfaces have a high energy, so atomic diffusion will reduce the total surface area by causing the

grains to cohere and bond strongly together. This type of diffusion occurs in the solid state over a very small range, and so it was possible for the surface layer of opus sectile to be coloured differently from the bulk, as the mixing zone would be very narrow.

Optimum processing conditions for sintering depend critically on temperature, pressure, grain size, the composition of the material and the presence of impurities, hence it is not surprising that Powell's product, where different types of scrap glass were combined with a range of pigments, was of variable quality. This variability probably accounts for several mentions of the product 'going bad', as inadequately fired pigment flaked off the surface, or 'being burnt' when firing resulted in discoloured pigment and surface melting. It would probably have been much simpler to add an opacifier to new glass.

Stock lists from around 1870 indicate that one-foot-square sheets of 'plain mosaic glass' with a nominal thickness of three-sixteenth of an inch could be purchased at £1 per dozen, and glass wall tiles were available in sizes up to 9 inches square, with the cheapest priced at 2s 3d per square foot. By comparison with the 8s per square foot charged by Rees in 1863 these prices suggest that the product must have been made in significant quantities.

The first large figurative panel of opus sectile was a reredos depicting the Last Supper ordered by the vicar of Cheddington, Buckinghamshire, in August 1869 and delivered the following March (Fig. 3). The execution of this design, which was

Figure 3

repeated on several occasions for other churches, is an advance on the Tyntesfield panel, although the colour range is still rather restricted and the pieces of glass fit less neatly together than in later work. 1870 also saw the first export order, when a Crucifixion panel designed by Henry Holiday was taken home to Moscow by Count Bontowsky.

In 1872, at Thorpe Mandeville, Northamptonshire, opus sectile was first used to fill a blind window. The cartoon was by Harry Burrow, an incompetent but popular artist who died young. A more presentable example of the genre is the figure of Faith of 1913 which faces earlier figures of Hope and Charity in the chancel of the delightful hillside church of Stow, in south Shropshire (Fig. 4). This church also contains an opus sectile reredos flanked by Whitefriars glass tiles.

Figure 4

The earliest extensive decorative scheme, at Kelmarsh, Northamptonshire, comprises seven panels of apostles and saints designed by Henry Ellis Wooldridge in 1873. A later development of this type of work is the west wall decoration at All Saints, Reading, mentioned above. Orders increased steadily, so that by the end of the nineteenth century Powells were producing about twenty figurative panels a year, plus much ornamental work and many inscription tablets, at a price of £2 to £3 per square foot for figurative work, comparable with that of stained glass. The difference in cost compared with mosaic was due entirely to reduced labour charges: on average the fabrication of opus sectile involved 18 to 20 man-hours of work per square foot, at a typical cost of fifteen shillings, about a quarter of that for mosaic of the Salviati type. Panels of opus sectile varied in size from reredoses, such as those for the three altars at Old Malden (Fig. 5), Surrey, to small tablets such as the often-

Figure 5

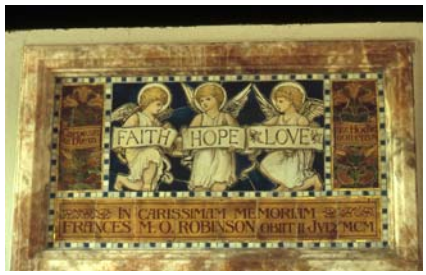

Figure 6

repeated pattern, found for instance at Woolton Hill in Hampshire (Fig. 6), which cost about £5.

Other major suppliers of stained glass who obtained orders for reredoses and related work usually contracted out the manufacture to Powell & Sons. Clayton

& Bell, for Hanley Swan, Worcestershire (1872) were soon followed by: Heaton, Butler & Bayne; Westlake; Wippel; and Hardman. When, in 1896, Powell made two large reredoses for USA on Hardman's behalf, one of Powell's fitters was despatched to America for three months to install the panels. Two years later, when Hardman ordered opus sectile for the now-demolished Notre Dame Convent, Blackburn, the Order Book noted that 'Our name not to appear on the packing case if possible'. This subterfuge did not deceive Mother Superior, who saved at least ten per cent by placing later orders directly with Powell.

The most notable example of craftsmen who made up their own designs in opus sectile, using material purchased from Whitefriars, was Henry Holiday, who between 1863 and 1890 had been the firm's preferred freelance designer. His masterpiece, designed in 1899, is the mosaic reredos set in opus sectile surrounds at St Chad, Kirkby, on the outskirts of Liverpool (Fig. 7). It also appears to contain

Figure 7

silvered and gilt glass and several types of textured glass. Holiday's foreman and one-time Powell glass painter William Glasby also made several opus sectile panels after he set up his own business about 1920.

The early years of the twentieth century brought commissions for several large schemes of opus sectile, often not completed, and the ending of the First World War resulted in a flood of orders for memorial tablets, often depicting St George in shining armour, such as Hungerford (Fig. 8), Berkshire and Loughton, Essex.

Figure 8

However, worsening economic conditions and changed tastes brought about a rapid decline in orders and within twenty years the craft was obsolete.

Much opus sectile was destroyed during the 1939-45 war and in the subsequent demolition of Victorian churches in inner city areas. Other schemes have been ripped out or covered up as a consequence of changes in liturgical practice, but in recent years, thanks largely to organisations such as the Victorian Society, the Tiles Society and NADFAS Church Recorders, interest in, and appreciation of, opus sectile has been growing, so there are good prospects for the survival of many remaining examples, including large-scale decorative schemes at St John the Evangelist, Warminster, and St Paul's Church, Clifton.

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