



The spire of St John the Divine

ST JOHN THE DIVINE, KENNINGTON; THE SPIRE

Giles Quarme describes the restoration of one of Street's greatest works

ST JOHN THE DIVINE, Kennington, is one of the most significant Victorian "Tractarian" churches in South London and has been described by Sir John Betjeman as "The most magnificent church in South London ... the Cathedral of South London". St John was designed by George Edmund Street (1824 to 1881), one of the greatest Victorian Gothic architects and described in a recent biography as "The creative and intellectual leader of High Victorianism". Street's best known building is perhaps the Law Courts on The Strand in London, although he was primarily a church architect designing ecclesiastical buildings in England and abroad. His example and philosophy had a seminal effect on the Arts and Crafts movement. Both William Morris and Philip Webb worked in his architects office before going their different ways.

St John the Divine is a large redbrick church in the "geometric" style and is considered to be Street's late classical masterpiece. Built in 1874, with a salmon-red, specially shaped bricks, St John sweeps geometrically and magnificently upward from its tower and broach spire. That spire, well over 200ft tall was completed in

1888 from Street's original drawings, by his son.

St John suffered heavy bombing damage during the Second World War and was internally gutted by firebombs. It was rebuilt and restored in the 1950s by H S Goodhart-Rendel, who was also responsible for the design and construction of the adjoining nunnery, which has since been converted into the vicarage.

Sir Edward Heath, one of the patrons of the restoration, in one of his first governmental appointments, was influential in helping arrange for the production of enough of the "St John Red" bricks to repair the nave of the church. Unfortunately there was very little money left over to carry out any repairs to the tower and spire. The majestic height of the spire, which makes it so visible to all the surrounding area as a "beacon of hope" in a part of London suffering from the worst effects of inner-city deprivation, is unfortunately also the cause of its own misfortune. Being so high the spire is exposed to the full erosive force of wind, and acid rain that weathered the stone ashlars and carvings so badly. The erosion, in places, has been so severe that it has necessitated the removal of badly weathered stone carvings to prevent their falling on people below.

The spire, unlike other tall spires such as Salisbury Cathedral (see feature pg 29) with its wonder-

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but internal medieval timber framework, had no internal support whatsoever. The spire rose up unsupported, from the brick tower below on a gradually reducing perimeter of stone-work drawings, was assumed to be approximately 200mm at its narrowest. Holding down this delicate structure was a solid apex of eight courses of Portland Stone with a wrought iron weather-vane, some 4.2m long, extending through the masonry, and connected to the outer walls in a 'spider-web' of iron rods.

Initially, the major difficulty in restoring the spire was how to extract individual decayed stones from the spire without seriously impairing its structural stability. Or, to put it in more practical terms, how do you remove a small piece out of the shell of an egg without breaking it all? Another major difficulty facing any architect responsible for the maintenance of the spire was the lack of access both internally and externally. The general effects of the erosion and decay of the stone were clearly obvious from the ground. However, how to assess the exact condition of the stonework in order to produce an accurate estimate of cost and the extent of repair could only be achieved by close personal inspection. This was financially out of the question as it would involve the erection of highly expensive temporary scaffolding. (The cost of the scaffolding during the actual building programme eventually amounted up to approximately 20% of the total cost of the project.)

The architect then responsible for the church, Mr Roy Rushton, took the only sensible option available to him and employed the services of archaeologists to help him. He was ably assisted by Noel Cracknell, the quantity surveyor, with his trusty pair of binoculars. The repair work was put out to tender in 1967 at the height of the then building boom.

Negotiations took place with English Heritage who generously agreed to a 15% grant because of the spire's special importance as a Grade I listed building and because of the location of the church in one of the poorest parishes in Central London. After a year of struggling to raise the balance, English Heritage agreed to raise the grant to 70%. In the meantime, building costs had risen, the contractor who had submitted the lowest tender had retired and was replaced by the second lowest with a revised

not using cement for the masonry of the spire - even in small quantities. I had originally hoped to carry out the work in spring and summer which would have been the traditional time for it. Being an art historian I was at two large medieval manuscript shows, partially constructed with thick walls in poor lime attack. Medieval bricks stepped all work from the top of the windows left England and their return; they did not have the benefit of the advice of modern masonry.

The problem was resolved by me by the fortunate choice of a main contractor, Kettle and Keel, the distinguished East Angles conservation firm who were currently working on Westminster Abbey and, faced with the same problem, suggested that I should consider using hydraulic lime.

Hydraulic lime was the preferred building material throughout most of the 19th Century and the beginning of the 20th Century until its replacement with Portland cement. Particularly significant for me was its use on the 15th and 16th Century glasshouses because of its hydraulic stability and low maintenance. Hydraulic lime, though occasionally used as the constituent in place of lime putty in cement/lime mortars, has not recently been reintroduced into England. After research and discussions with various authorities it was decided that it was the best and only option available to us should we wish to build through the masonry. Green lime cost at the time £100 a ton, but it did not afford us to work during the period. So far the decision has proved to be justified and the use of hydraulic lime by other architects has been growing at a rapid rate.

The restoration work commenced with the removal of the spire. The top eight courses, some 2.8m high of old Portland Stone was taken down to be replaced with new Portland Whitbed stone. The removal of the spire showed that the masonry below had both weathered badly and structurally fractured to such a degree that the masonry had to be removed and new masonry erected on site at the end of August 1993, with the erection of the access scaffolding indicated on Stone's original drawings. The complexity of the scaffolding resulted in the building work not commencing until the beginning of October. With a 12 month construction period it was obvious that winter working would be inevitable.

From the start I had decided on the need to employ a professional fund-raiser to kick-start the spire appeal. Malvina Fund-raising were chosen after interview and a balance of the money was beyond the resources of the parish and the project was put on hold. At the end of October 1989 Roy Rushton retired and I was asked to replace him. The following two years were spent by Lyke, the church warden and myself in raising additional funds to pay for the restoration. Our fund-raising attempts were not particularly successful and were being made against the bleak background of the gathering recession. Nevertheless we decided to go out to tender again with the hope that the cost would be not much higher than previously quoted. When the tenders were returned our worst figure was better out. The daunting figure of £216,000 had reduced to an awesome figure of £78,000. Negotiations were recommenced with English Heritage who, after a lengthy re-assessment, again generously offered a new grant of 70% to cover the increased figure.

At the beginning of 1992 it was

agreed to a maximum of 2100 per square m. was adopted. The low pressure employed managed to clean most but not all of the pollution on the brick face. The total removal of the pollution could not be achieved without abrading the surface of the brickwork as the red brick employed by Street was extremely 'soft' and did not have the strength of a typical London stock brick.

Large areas of brick-work on the tower had spalled. The damage was principally due to water saturation and subsequent frost damage rather than atmospheric pollution. In addition there were a number of structural cracks penetrating through the full thickness of the tower walls. They had originally been caused by subsidence and further exacerbated by Second World War fire bombs. The tower had not been properly tied into the nave of the church when it had been constructed a number of years after the completion of the rest of the church. The structural cracks were cut out by removing the adjacent damaged brickwork and new bricks were bonded in using a combination of chemical fixings and grout. With the damaged areas of mottled brickwork the on-site bricklayers and masons had to cut and rub the new bricks to match the existing profiles and mouldings.

Other repair items involved the repair of the leaded lights to the lancet windows and the restoration of their metal armatures, refurbishment of the timber ladders to the ringing chamber and the in situ repainting and re-glazing of the clock-face. The successful completion of the project was celebrated by a Thanksgiving Service on 14th November 1994 which was attended by The Bishop of Kingston and all those involved in the project. The enterprise could not have been achieved without the generous support of English Heritage, the special skill and expertise of the contractor and the selfless dedication and generosity of the Restoration Committee, congregation and all the benefactors.

By using deceptively thin bricks an optical illusion of a taller tower is achieved. The benefit derived from this 'architectural ruse' was slightly counterbalanced by the need to have approximately 3000 special new bricks made to carry out the repairs. The Suffolk firm, Bulmer Brick Company, cut out samples and supplied the new bricks, which not only had to match in size, but also in colour. The initial sample panels carried out to decide on which chime ring system to adopt revealed that the tower was not constructed of dark red bricks as previously envisaged, but of a bright red, smoked salmon coloured brick. The contrast between the newly cleaned tower and the old, dirty nave is quite striking.

Various different methods of cleaning the brickwork were tested, such as water, water and hydrofluoric acid and a number of abrasive techniques to see which would be the most effective and least deleterious to the face of the brickwork. The technique eventually adopted was the jet system which had been recently introduced from Germany. The technique involved the use of a high pressure water jet directed at the brickwork from a distance of 10m. The jet was controlled by a remote control device and the water was collected in a tank below the tower. The jet was used to clean the brickwork in a number of stages, starting with a low pressure jet to remove the surface dirt and then a high pressure jet to clean the brickwork. The jet was used to clean the brickwork in a number of stages, starting with a low pressure jet to remove the surface dirt and then a high pressure jet to clean the brickwork.

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The clock tower - cleaning away the pollution which had given it a dark red appearance revealed the bright red, smoked salmon coloured brick.

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