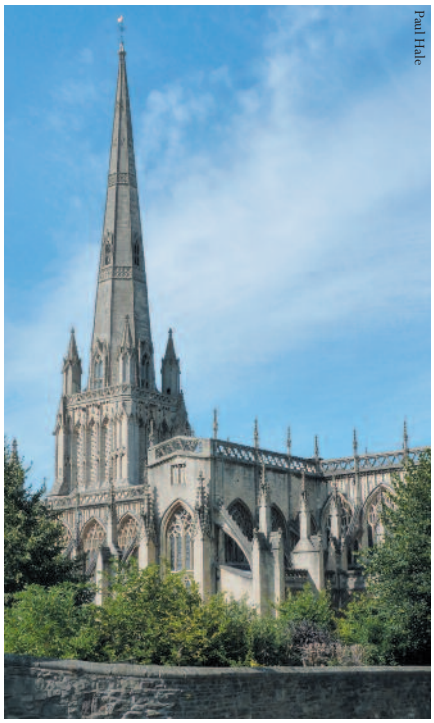
Perfection Preserved

The Harrison & Harrison organ in the church of St Mary, Redcliffe, Bristol – Paul Hale

There are few Harrison & Harrison organs so famed as that in St Mary, Redcliffe, a spacious 15th century Perpendicular parish church on an outcrop of red sandstone on the opposite side of the river from the heart of medieval Bristol, whose gracefully soaring 292ft spire never fails to impress. St Mary's was aptly described by Queen Elizabeth I as 'the fairest, goodliest and most famous parish church in England'.

Of the earlier organs we have no space to write in detail. Two ranks purportedly remain from a large three-manual organ built at the west end with a lavish and lofty case by John Harris and John Byfield in 1726. This organ was rebuilt in 1829 by John Smith of Bristol (who claimed to have invented the octave coupler); then rebuilt either side of the chancel (where most of the present organ stands) in 1867 by W.G. Vowles of Bristol. It was worn out by 1909, so Ralph Morgan (organist from 1906) became determined to achieve a complete rebuild on up-to-date lines. By 1909 Harrison & Harrison were confidently applying a house style that they had established for 4-manual organs – Whitehaven (1904), Durham (1905), Birmingham (St Martin, 1906), Carlisle (1907), Ely and the West London Synagogue (1908) – through the influence of the tonal ideas of Lt Col. George Dixon of St Bees. Harrison & Harrison were therefore the company selected by Morgan; with typical single-mindedness they determined to build a new organ using only such old ranks as would not compromise their tonal ideals.

In the event, the unusual siting of the organ gave rise to a novel layout and an innovative specification. Because there was not room for the whole organ within the arcades of the chancel, the Swell Organ and Pedal 32/16 Trombone rank were placed elsewhere – in a chamber formed outside the NW corner of the chancel's north aisle where it meets the North transept, speaking south and west (with two sets of shutters and two swell pedals) through the tracery of the original windows whose glass had to be removed. This was actually Binns' idea, adopted by Morgan and Harrisons when Binns was not given the contract (archived correspondence shows he was not amused). Because the Swell was thus more remote from the church choir than the departments just behind the singers, many of the accompanimental Swell stops were placed in the 'Echo & Solo' division; in exchange, most of the ranks normally found in a Harrison Solo were located in the Swell. If a diapason chorus or reed chorus is needed for accompaniment, it is indeed in the Swell; however, the softer stops – flutes and strings, small mixture and low-pressure reeds – are found on the top manual, in the 'Echo & Solo'. The only solo stops left on the top manual are the Oboe, the Clarinet (at 16ft pitch) and the huge Tuba; the string chorus, harmonic flute chorus and orchestral reeds are all on the Swell. The Redcliffe organ is as famous for this feature as for its imperial tone. Indeed some would say 'infamous', as many a visiting organist has been caught out by the registrational tricks required – tricks made all the harder by the absence, until recent times, of any general pistons or a capture system. Before leaving consideration of this organ's unusual features, it must be noted that it anticipated Henry Willis III's

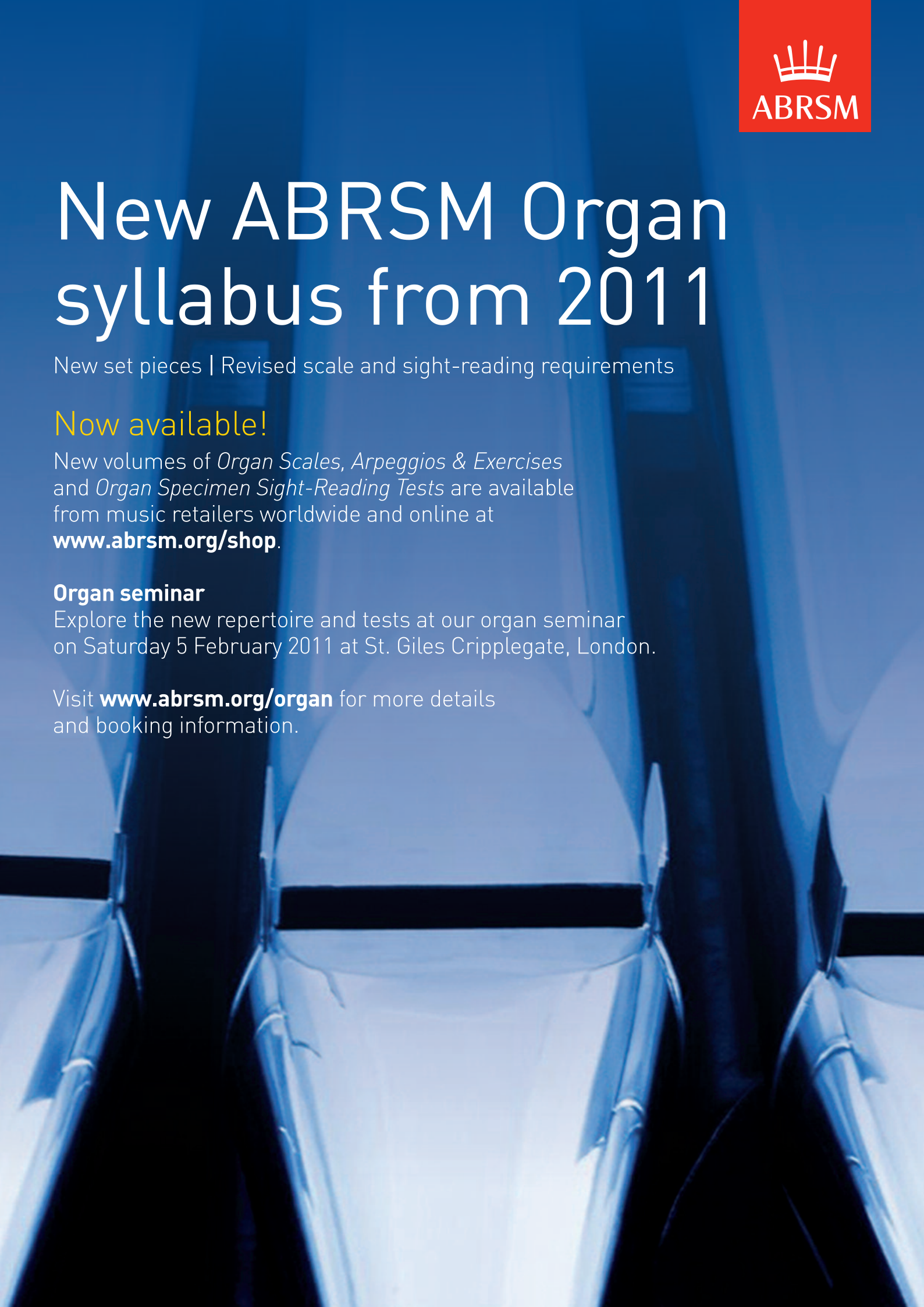


Paul Hale

St Mary, Redcliffe, from the south east

Liverpool Cathedral organ by a decade in enclosing a Pedal Trombone 32ft/16ft; at Redcliffe this rank is in the main Swell box; at Liverpool a section of the Pedal has its own swell box.

The quality of voicing, the variety of the tonal palette, the impeccable finishing, the reliable and comfortable console, and the huge volume range of this instrument (from hushed ***ppp*** to devastating ***fff***) made a tremendous impression in 1912, and they still do today. So many large Harrisons were successful rebuilds (often of Willis or Hill organs) that to build a completely new organ of such size in a parish church must have been a great moment for the firm; cementing its position as the new market-leader for those in the south who still thought instinctively of Willis. The Willis firm was never to regain its position as the pre-eminent



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builder of cathedral and concert-hall organs after H&H found their feet.

In 1932 some restoration work was undertaken and new 'Discus' blowers installed; the console was turned to face East, a Pedal 4ft Superoctave Wood and Choir Corno di Bassetto (on a clamp) were added, and space was created for a 32ft extension of the 16ft Ophicleide. A fire in the Swell chamber in the early 1940s meant that in 1946 a considerable portion of the Swell (including all the 'orchestral' stops on a high-level soundboard) had to be replaced and many other pipes extensively repaired; perfect copies of ruined pipes were made, a very soft Viole Sourdine added on a separate chest being the only alteration. The 32ft Double Ophicleide was installed (a fine way to celebrate the end of the war). In 1974 the organ was cleaned and partially overhauled, gaining a Pedal diapason chorus 8, 4, IV, losing the Pedal 4ft Superoctave Wood and Swell Viole Sourdine (to make space for access in a very tight chamber); a Great Mixture V was added on a separate chest. Whilst the Pedal chorus was welcome, it was found that the new Great chorus Mixture failed to blend with the chorus, due to its pitch, voicing style and placement on an elevated chest. This was rectified to an extent in 1990 when the stop was reconfigured and rebalanced. Also in 1990 the console gained a more up-to-date piston system (with generals for the first time) and the blowers were replaced. In addition, the pedal octave flute 4ft was added.

During the 1990s it became clear to all concerned that despite new blowers the wind system was not behaving as it ought, and that more radical work to the organ's soundboards and remaining unrestored actions, leatherwork and pipework would additionally need to take place. William McVicker was called in as Consultant; his first task was to work out just what was wrong with the wind system. He has very generously written to me at length about this project, to quote in this article. Here is his explanation of the core problem with the organ – the wind system.

Console

Swell Cor Anglais

View of the Great and the console with the Swell behind

The problems were complex and tended only to reveal themselves after the instrument had been running for several hours. My first inspection found traces of mildew in some areas of the organ, whilst the Swell (on the North side) showed signs of dryness. In particular, there were reports of 'whimpers' from the Swell fluework, where air was finding its way into the pipes (for one reason or another) when it shouldn't. Some pallet leathers in that division had shrunk in the dry conditions, allowing irritating ciphers to develop, whilst the South side of the organ was clearly experiencing damp conditions. Some detective work was required.

The new [1990] blowers proved inadequate for the task, and their running speed was consequently increased in order to supply a greater volume of wind – although the problems this engendered only revealed themselves under certain circumstances. An unfortunate by-product of this was that the motors (now running faster than their optimum operating speed) warmed the air as it was delivered to the instrument.

When piecing together the jigsaw puzzle surrounding the organ's deteriorating condition, a valuable piece of information came to light. It was fine, I was told, first thing on Sunday mornings, but by lunchtime, when the instrument had been operating for several hours, there did not seem to be enough wind to supply the full organ. As a result, the instrument sounded on the verge of collapse, as the pitch of the pipes sagged when the blowers were under heavy demand.

In preparation for a second investigative visit, I asked the Verger to switch on the instrument several hours before I arrived. This time, things became clearer. The organ was desperately short of wind and I concluded that the blowers (delivering warm air) were causing the instrument's internal windways and components to dry out. Furthermore, this warmed air met with a 'chicane' in the system which disrupted the air flow and possibly warmed it still further. As the humidity levels decreased within the instrument over a period of several hours (whilst the blowers were running), the timbers must have begun to shrink, and so the air leakage probably increased – enough to deny an adequate supply for the full organ. Another effect was the shrinkage of some pallet leathers in the Swell (all of which is supplied with high-pressure wind) and so ciphers tended to emerge when the instrument had been running for a long time. The replacement of the blowers in 1990 had unfortunately tipped the balance. Once the instrument was switched off, the humidifier began its work, providing cool, moist air throughout the organ's internal windways. The effect was to provide much-needed moisture to replenish the timber wind trunks and soundboards, but in some areas it was working too hard, allowing a light mildew to form.

This unsatisfactory situation shaped my advice to the parish and initially the solution seemed relatively straightforward: replace the blowers with equipment capable of delivering more wind, dig up the crypt floor [through which the 1932 earthenware wind trunks ran] in order to provide larger diameter wind-ducts in the floor, and ensure that, as far as possible, the system did not have unnecessary twists and turns to disturb the flow of air. The wind supply was too marginal for comfort – but could we be sure that replacing the blowers with ones capable of delivering a greater capacity would solve the problem?

The parish [also] faced a decision as to whether or not it should continue to have an expensive rolling programme of repairs to the instrument every decade, or face up to the reality that significant capital reinvestment was required – an approach intended to take the organ off the parish's maintenance agenda for the next fifty years or so. After much discussion, a complete overhaul and examination of the blowing provision was agreed by the parish, the contract was put out to tender and its original builder, Harrison & Harrison Ltd of Durham, was appointed.

Finding exactly where the buried wind trunks ran was a challenge. William continues:

Every available drawing of the church was consulted and, although Bryan Anderson and Andrew Kirk unearthed some fascinating documents, none seemed to give the information we were seeking. After much debate with the architects, soul-searching as to the probable route of the wind-ducts that were buried beneath the floor of the crypt, and, after a surgical-style videoscopy of the interior of the wind system undertaken by the organ builders, the necessary permission was obtained through the Bristol Diocesan Advisory Committee to undertake investigations under the church floor. The possibilities of encountering a mediaeval plague pit were jokingly discussed, but the possibility of unearthing human remains was considered

high. A qualified contractor was engaged to excavate the floor. Once the first pieces of concrete had been dislodged in the carefully cordoned-off area, the various interested parties peered beneath the raised flagstones to see what had been revealed. It turned out that there were no Mediaeval remains: during the 1930s tons of concrete had been poured in and around the organ's wind trunks which had consequently been well-and-truly 'set' in the floor of the Kitchen. There was no way this could be dug up and another solution was needed.

Every possible route for providing an enlarged or expanded wind supply was exhaustively examined. In the end it was accepted that the wind would have to be delivered through the existing ducts buried beneath the floor, and, because of the extent of the concrete, these could not be enlarged to carry a greater volume of air. The solution, suggested by Harrison & Harrison, was to provide additional blowers specifically for the Swell situated nearer to instrument, rather than rely on a single source of air from the blowing chamber outside the church. The new plant, which feeds the Swell Organ alone, is located above the Vergers' vestry on the north side of the church.

The new blowers were designed and made by BOB of Derby. With the wind sorted out, what else was there to do? As it turned out, a great deal, as William McVicker reports:

The south side of the organ (Choir, Solo and some Pedal stops) had reached a point where a major restoration was required; in some areas the original leatherwork from 1912 was still doing its job, although it was clear that it had reached the end of its useful life. Despite the fact that the instrument's mechanism was still functioning, it was in a state of decline and the pipework was in need of cleaning. One aim of the refurbishment work was to get the pipework of the 1974 Great Mixture – which had earned its place in the chorus – on to the main soundboard. This change has enabled it to blend more readily with the Edwardian fluework. After a good deal of debate it was decided to build a new soundboard for the Great flues (but fastidiously copying the actions) in order to incorporate the Mixture. The old one had suffered very badly from the stress of alternate humid and dry conditions – and this was true also of the Swell soundboards which had been replaced in the 1940s after the fire. Restoring the old material was, of course, the preferred route; but it had been badly compromised by the oscillating climate which had also adversely affected even relatively new leatherwork. The poor condition of the soundboards (plus the fact that those in the Swell were not original) was a deciding factor, as their long-term performance could not be guaranteed. As the Swell chamber was very crowded and some parts of the mechanism were difficult to reach, a bonus was that this division could be reordered to allow for easier access for tuning and maintenance.

Duncan Mathews (of Harrisons) was kind enough to supply me with a complete list of work undertaken. Here is a *précis*: Console – full overhaul retaining pneumatic stop-jamb machines and adding a stepper. All pipework cleaned and repaired. All reservoirs and concussions releathered. New Swell (with new layout) and Great soundboards, with a new Swell building-frame; remaining slider soundboards fitted with plywood tables and pallet-boards, with new slides; unit chests restored. Actions – new Swell action of original three-stage design; all other soundboard actions restored. Electric slider actions installed; electrical systems replaced with SSOS equipment and cabling.


Paul Hale

Great Pedal mixture and 32ft Open Wood

Organist Andrew Kirk has been at the centre of this programme of conservative but comprehensive restoration and mechanical improvement. His views are these:

I am delighted with the restoration undertaken by Harrison & Harrison over the past 18 months. The team, ably led by John Oliver, has worked very hard, with excellent attention to detail. Much of the work between dismantling the organ in January 2009 and the return of the organ to site in February 2010 was undertaken in the Durham workshops, which I was fortunate to be able to visit when the new soundboards were under construction.

The total cost of the project was £800,000. The Appeal has been successful thanks to the very hard working committee who managed to secure much of the funds needed before the credit crunch hit. We were also fortunate in having half the funds promised before the Appeal began through the generosity of two charities closely connected with the work of St Mary Redcliffe church. One anonymous donor wrote a cheque for £100,000. There has been an imaginative

St Mary's Church, Redcliffe, Bristol, specification

The Harrison & Harrison organ (1912/2010)

GREAT ORGAN	
Gross Geigen	16
Bordun	16
Large Open Diapason	8
Small Open Diapason	8
Stopped Diapason	8
Hohl Flöte	8
Geigen	8
Octave	4
Wald Flöte	4
Octave Quint	2⅔
Super Octave	2
Mixture 12.15.19.22.26	V
Harmonics 17.19.b21.22	IV
Contra Tromba	16
Tromba	8
Octave Tromba	4
Choir to Great	
Swell to Great	
Solo to Great	
Reeds on Choir	

SWELL ORGAN	
Open Diapason	8
Harmonic Flute	8
Principal	4
Concert Flute	4
Fifteenth	2
Mixture 12.19.22.26.29	V
Double Trumpet	16
Trumpet	8
Horn	8
Clarion	4
Orchestral stops:	
Contra Viola	16
Viole d'Orchestre	8
Viole Céleste (to F)	8
Viole Octaviante	4
Cor Anglais (73 pipes)	16
Orchestral Hautboy	8
Vox Humana	8
Tremulant (orchestral stops)	
Octave	
Sub Octave	
Unison Off	
Solo to Swell	

CHOIR ORGAN	
Contra Dulciana	16
Open Diapason	8
Claribel Flute	8
Viola da Gamba	8
Dulciana	8
Salicet	4
Flauto Traverso	4
Gemshorn	2
Corno di Bassetto	8
Swell to Choir	
Solo to Choir	

ECHO AND SOLO ORGAN	
Lieblich Bordun	16
Lieblich Gedeckt	8
Salicional	8
Vox Angelica (tenor c)	8
Lieblich Flöte	4
Flageolet	2
Dulciana Mixture 15.19.22	III
Double Clarinet (73 pipes)	16
Oboe	8
Tremulant	
Tuba (unenclosed)	8
Octave	
Sub Octave	
Unison Off	

PEDAL ORGAN	
Double Open Wood (ext. 16ft, bass 5 acoustic)	32
Open Wood	16
Open Diapason	16
Geigen (from Great)	16
Dulciana (from Choir)	16
Violone (from Swell)	16
Sub Bass (from Great Bordun)	16
Octave Wood (ext. Open Wood)	8
Principal	8
Flute (ext. Sub Bass)	8
Fifteenth (ext. Principal)	4
Octave Flute (ext. Sub Bass)	4
Mixture 19.22.26.29	IV
Double Ophicleide (ext. 16ft)	32
Double Trombone (ext. 16ft)	32
Ophicleide	16
Trombone (enclosed with Swell)	16
Clarinet (from Solo)	16
Posaune (ext. 16ft Oph.)	8
Choir to Pedal	
Great to Pedal	
Swell to Pedal	
Solo to Pedal	

Accessories

Eight general pistons and general cancel

Eight foot pistons and cancel to the Pedal Organ

Eight pistons to the Choir Organ

Eight pistons to the Great Organ

Fourteen pistons to the Swell Organ (six for the 'orchestral' stops)

Eight pistons to the Echo & Solo Organ

Reversible pistons: all unison couplers; 32ft and 16ft Ophicleides

Reversible foot pistons: Great to Pedal, Solo to Great, 16ft Open Wood

Single-acting pistons: Doubles Off; Great Reeds on Choir; Tromba on Choir

Combination couplers: Gt & Pedal Combinations coupled; Generals on foot pistons

Eight divisional and 256 general piston memories

Stepper, operating general pistons in sequence, with thumb and foot +/– pistons

Balanced expression pedals to the Swell Organ (aisle and transept)

Balanced expression pedal to the Echo & Solo Organ

organ restoration display in the church and a mini-appeal through the selling of 'Pipe Angel' badges and T shirts which have proved popular with visitors to the church. Following on from the tradition at Leeds Town Hall (where in 1859 a banquet was held in the swell box of the new organ) though on a smaller scale, we held several candlelit parties in the empty stone swell chamber and our vergers made this a very attractive feature at our memorable evening service on Candlemas.

The Dedication Service will be on Sunday 21 November at 10.30am. The Preacher will be the Dean of Canterbury, Very Revd Robert Willis, and the music will be provided by our choir of boys and men. There will also be special music featuring our combined choirs at the 6.30pm Evensong. The choral tradition at St Mary Redcliffe is well known (see OR *Feb. 2008) and is one of the reasons the church decided to undertake such major work to the organ and to uphold the longstanding musical tradition of the church.*

On Saturday 27 November at 3pm, Thomas Trotter will give the opening concert which will feature works by Hollins, Whitlock, Bach, Widor, Reger and Wagner. Entry is by ticket only and there will be no tickets available on the door for this event, so please contact the church 0117 929 1487 if you would like to purchase tickets. Other events for which tickets are available include a concert by Andrew Kirk (organ) and Petronella Dittmer (violin) on Saturday 22 January 2011 at 3pm and a Celebrity Organ Concert by James Lancelot (Durham Cathedral) Saturday 19 February 2011 at 3pm. Please visit the church website for further details: www.stmaryredcliffe.co.uk

The regular Thursday lunchtime recitals (1.10–1.50pm) will recommence in January 2011. An important factor in the re-launch of the organ will be the encouragement of young organists and on Saturday 26 March there will be an RSCM Church Music Skills Organ Day led by Daniel Moult. On Saturday 7 May the RCO will host a 'Bring and Sing' event. At the time of writing we are planning events for spring 2012 when the organ will celebrate its centenary. It is an exciting time for this glorious church and its music.

When I visited Redcliffe on 2 September to see and hear the completed organ – an organ I knew pretty well, having given recitals on it over the years – I was frankly unprepared for the difference this full restoration has made. Because the wind

supply is now both completely silent and also gives each pipe its full complement, subtleties of tone (the upper harmonics of the old Great Stopped Diapason, for instance) can now be heard for the first time in years, as can the ravishing soft colours of the Echo & Solo division, and the evenness of regulation throughout the organ is second to none. The Great Diapason chorus is – for the first time in years – wonderfully cohesive, with two possible 'tops' to it: the quint Mixture or the Harmonics. The 1974 Mixture V now sounds as if it has always been there, its tone, speech and pitches all improved; remarkably, the Harmonics IV will work as the apex of the flue chorus as well as adding spice to the Trombas. The re-planned Swell layout ensures all ranks can be reached as well as heard; a unique effect is the difference in colour to the Violes made by opening either the transept shutters or the aisle shutters: one lifts the high frequencies, the other the low – together the *crescendo* is astounding. The new actions are fast, with perfect repetition, so the organ has gained a crispness of attack which it rather lacked before. This helps ensure that the sonorous Edwardian opulence is far from lazy in coming on to speech.

As all the early Harrisons mentioned at the start of this article have been redesigned (or, in the case of Whitehaven, lost when the church burned down), the Redcliffe organ remains the supreme example of the Edwardian Harrison & Harrison style. Huge congratulations are due to all concerned.

Let William McVicker have the last word:

> *[The Redcliffe organ] has imperial, arresting qualities but is also capable of great finesse, astonishing tenderness and quite exquisite beauty. It is simply a wonder that such an amazing variety of tone and sound qualities could be coaxed from hand-crafted tubes of metal and timber pipes. Harrison & Harrison is to be congratulated on restoring this instrument back to tip-top condition; the firm has done a first-class job.*