

INSPECTION AND REPAIR OF CHURCHES

Care of Churches Measure 1991

REPORT OF QUINQUENNIAL INSPECTION 5th August 2009

**CHURCH OF THE HOLY CROSS
RYTON
TYNE & WEAR**

ARCHDEACONRY of SUNDERLAND

Job No. M262

Inspected by Robin Dower MA, BArch, DipLD, RIBA, AABC

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1. Brief Description of the Building

At the back of this report is a key plan of the Church showing the principal spaces referred to in the text.

The Church consists of Nave with North and South Aisles, Chancel with North Transept largely occupied by the organ with Vestry and Choir Vestry between the North side of the Chancel and the East side of the North Transept. There is no South Transept. The Tower rises from within the West end of the Nave with massive piers either side of the Font. This unusual internal arrangement has the disadvantage that the piers rather restrict the sight-lines for the pews in the West bay of the Church.

A fine lead clad Spire with chevron panels rises tall above the surrounding trees of the churchyard and is a conspicuous landmark in this section of the Tyne Valley. A Porch to the South Aisle has an open outer arch and an inner draught Lobby within the Aisle.

The Church is Grade I Listed.

2. Previous Inspections

Previous inspections have been carried out by Mr. Peter Brown of Darbyshire Architects. This is my first inspection and report.

3. Recent Repairs

Minor items of maintenance have been noted by the Churchwardens:

- Fire extinguishers tested June 2008.
- Intruder alarm checked 2008.
- Portable Appliance tests done in March 2009.

Small projects of repair and minor alterations including the construction of the Nave platform at the Chancel Arch in 2007.

However the main repairs in the last quinquennium have been the roof repairs and masonry repairs carried out in 2009 by MGM Ltd and Wensley Roofing Ltd at a cost of £76500.00 together with repairs and re-leading of the windows in the South side of the Chancel and Nave and the West Tower window by Iona Art Glass at a cost of £21500.00. Grant was offered for this project by English Heritage at a level of £81000.00.

It is, of course, very disappointing to hear of the repeated theft of lead sheet from the parapet gutters. This report includes reference to the fact that at the time of inspection further damage had been recently done to the Porch and South Aisle roofs in this way.

4. The Survey

a) A thorough inspection of the structural condition and state of repair of the Church has been made mainly from the ground and using binoculars to inspect higher walls and roofs. It is emphasised that the inspection has not involved the opening up of

inaccessible parts of the structure such as roof voids. It cannot therefore be reported that these areas are free from defects.

b) The architect is not competent to test either the permanent electrical installation or the safety of the portable appliances. Nor is he competent to inspect the heating system.

c) The inspection was made in dry weather so that it was not possible to judge whether the rainwater goods, gullies or drains were water-tight and free flowing.

d) The report describes defects observed and is not a specification for the execution of works and should not be used as such, nor is it suitable for obtaining estimates.

5. Delivery of the Report

One copy of this report should be kept in a safe place along with the Church log-book and other documents for future reference. Two copies have been sent to the Diocesan Office and an e-mail copy to the Archdeacon.

6. Appraisal – Exterior

Appendix A attached to this report provides an unpolished transcription of notes made on site during my inspection. These form the basis of the following appraisal.

6.1 Roofs

At the time of this inspection very recent damage had again been done to parapet gutters to the Porch and South Aisle. The immediate response of the Church to place temporary weather protection to steer rainwater to the outlets has given satisfactory cover to allow time for the PCC to obtain approval and estimates for replacement in stainless steel and I understand that this work is now in hand. This, together with the work completed in 2009 to the Nave parapet gutters, Chancel South side parapet gutter and the parapet gutter to the North Aisle, means that a pretty comprehensive programme of recent repair to the roofs of the Church has been completed.

Two areas were noted with quite local defects in slatework: a slipped slate on the West slope of the Porch and slates to the right of the channel down the South Aisle roof from the West end of the Nave which are delaminated and chipped. These should be at least kept in mind for an opportunity to repair when next a roofer is on site. Another slate dislodged on the North slope of the Chancel roof in the section West of the North Transept (not visible from the ground).

6.2 The Spire

If the 1915 Weathervane marks the date of the general leadwork of the Spire then this has proved a remarkable span of years, but there is no doubt now that the larger panels of the chevron lead sheet covering are severely stressed by weathering and thermal movement. Seen from the ground through binoculars the larger panels of the South side show failure through bellying and splitting a combination of being

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restrained at the edges while free to expand and contract across the central field: eventually the metal loses its elasticity and splits.

At the same time the scouring effect of rainwater will corrode the metal particularly where it is channelled down to the bottom corner of each panel and over the lip onto the panel below.

The signs of this failure can now be seen in panels on most of the facets of the Spire from the ground, but the true extent of the problem will need an inspection by a Steeplejack who can get up close and record his findings on video and still photographs for the benefit of those less nimble at heights.

So striking is the appearance of the Spire with the chevron panelling that it is not suggested that any alternative configuration should be introduced – simply replacement 'like for like'. At present, in any case, it cannot be certain how much will need repair but it is generally understood that the larger the panel of lead, the more stress it suffers, and in addition to the problem of thermal movement there is the considerable weight of the lead sheet hanging from its edges with little support from the timber sheathing of the Spire so close to vertical.

6.3 Lightning Protection

The current lightning protection to the Church relies on a single downtape at the North edge of the West facet of the Spire down the Tower to an earth rod. The PCC might wish to contact their insurers to see whether they still regard this as adequate, but quotations were obtained earlier in 2009 for the upgrading of the protection with the introduction of a secondary downtape and earthing and integral bonding to existing metal components of the Spire and Tower. Presumably the PCC is therefore already aware of the higher standards for protection that are currently recommended through BSEN62305.

6.4 Masonry

The Tower walls generally appear sound but the lead apron on the East face above the Nave is split and needs repair. Minor and scattered areas of defective pointing elsewhere have been noted in Appendix A:

- Porch West: parapet coping and behind downpipe.
- East Gable: spandrels between windows.
- Chancel North: above Vestry roof.
- Vestry parapet coping.
- North Transept Gable and West wall
- Access to Boiler Room: flank wall to steps.
- North Aisle: mainly low level.

The scattered nature of the work suggests a possible piecemeal approach to repointing but it is important nonetheless that this work is done to a consistent standard with approved and sympathetic materials and workmanship.

6.5 Openings

High level openings in the Tower are outside the normal reach of maintenance and the timber frames to glazing have had no nourishment or protection for many years. An opportunity for access to these from outside will occur when work to the Spire leadwork and the lightning protection is tackled.

At the same time anti-bird netting or mesh can be fitted to replace the tired and rusting wire netting in bell-chamber openings.

Windows at low level to the Church itself have recently been repaired, releaded and fitted with new protection.

6.6 Rainwater Disposal

The Church is generally fitted with cast-iron gutters and downpipes which are in good condition. The inspection was made in dry weather so it was not possible to tell whether all joints were watertight and all outlets free-flowing. The whole installation should be cleaned out annually after leaf-fall and whilst the system is being cleared the joints should be checked to ensure that they are tight and do not leak. Finally the gutters and downpipes and their brackets should be rubbed down every five to six years to remove loose flaking paint and the whole system redecorated.

At the time of inspection two of the hoppers at the top of cast-iron downpipes were missing (West end of Chancel South wall and North Aisle West end). I understood that these were set aside somewhere and would be refixed to protect the wall from saturation.

It is difficult to inspect ground level drainage and equally it is not easy to know how to ensure that gullies and drains are kept clear and free-flowing. An open channel along the North Aisle wall should simply be brushed out from time to time and the leaves cleared from the gullies. The soakaway system from the NE corner of the Choir Vestry is reported to be blocked and may need skilled labour to free or replace.

7. Appraisal – Interior

7.1 Tower

The Architect is not competent to judge the condition of the bells, their frame or their action. The set of eight bells for full-circle ringing looks in good shape, but perhaps the PCC should ask the Diocesan Bells Adviser to start a decennial inspection routine to pick up wear and tear on gudgeons and clappers, the most vulnerable parts of the assembly.

7.2 Interior of Church

Walls in the Church are largely painted direct to stone or, as at the East end of the South Aisle, to plaster. At present only the South wall of the Chancel has been freshly painted, that recently in connection with repairs to windows and the gutter and masonry. Elsewhere paint looks old, grubby and in some areas flaking off. This suggests unfortunately that the paint specification may not have been appropriate, perhaps a

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vinyl emulsion which is not readily vapour-permeable or that the preparation of the wall left an old limewash beneath the new paint film with poor adhesion. Both the preparation and the choice of new paint are important constituents of successful decoration. For the record, the South Chancel paint was Farrow and Ball Casein Distemper – Lime White No. 1.

7.3 Interior of Vestries

Damp damage to plasterwork on the East wall of the Choir Vestry and on both faces of the wall between the two vestries has led to some areas being removed and further areas loose which should be removed. Upon removal of all loose plaster a better opportunity is offered to inspect underlying timber straps and plates to ensure that they are sound and free of fungal attack. Local making good in hair-strengthened lime plaster, which is tolerant of damp is a skilled job and similar observations about decoration apply here as to the interior of the Church (see 7.2). The Parquet floors of the Vestries are worn, tired and in some areas loose, perhaps affected by damp. If the Vestries are to be upgraded some work would be desirable both for safety and appearance to secure floor blocks.

7.4 Services

7.4.1 Heating

Recommended annual inspection and servicing under a maintenance contract to ensure that the boiler works at design level of efficiency.

7.4.2 Electrical Installation

Recommended inspection and testing by a competent electrical engineer on a three or five year cycle and a certificate of compliance issued. The engineer should also test all portable appliances.

8. Priorities for Action

a) Urgent Work

- (i) Reinstatement of 2 No. hoppers to downpipes if not already done.
- (ii) Clearance of all gutters, outlets and downpipes and the ground level drainage system to ensure free-flow in all parts of the rainwater disposal system.

b) Two Year Timescale

- (i) Set in motion a Steeplejack inspection of the lead chevron panelling to the Spire to produce a report on its condition so that proposals can be developed for repair. The work on the Spire which should include the upgrading of the lightning protection and minor work to openings in the Tower will probably be eligible for English Heritage Repair Grant and would therefore be worth bringing together as a package at one time. It would be good to complete this work within the quinquennium.
- (ii) A programme of minor masonry repairs could be set up with an agreed specification and approved samples of materials and workmanship in order to deal with outstanding pointing within the quinquennium.

c) Five Year Target

- (i) Completion of work on Spire and Tower.
- (ii) Completion of work on masonry repairs.
- (iii) Internal repairs to plaster and other finishes in the Vestries.
- (iv) Internal preparation and redecoration of Church. This might be influenced by progress on the re-ordering of the West end of the Church.

d) Regular Maintenance

- (i) Rainwater disposal system (see 8 a(ii)).
- (ii) Inspection and testing of services (see 7.4).

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Appendix A: Notes transcribed from inspection

EXTERIOR

1. Spire

Octagonal lead covered timber structure rising from square tower.
1915 weathervane and ordinals below cross. Inspected through glasses from ground, but would benefit from steeplejack inspection which could include video recording and still photographs.

South facet

A number of the larger chevron panels at the base appear to be split with thermal movement. This face is the most exposed to direct hot sun and appears to bow outward in the centre of panels while the edges are restrained.

South East facet (down to point of broach)

Bowing in larger panels above broach. The staining below the point of each panel is caused by the focussed water run-off.

East facet

A little bowing above the small lucarne.

North East facet

A little bowing at the same level.

North facet

A little bowing at the same level.

North West facet

Some bowing: one panel, third up from right hand edge, split in lead.

West facet

One panel showing stress bow and potential split.

South West facet

Some rippling in panels and the cover lap of one panel has been lifted.

The drainage from the spire is simply a cornice lead covered drip.

Lightning protection relies on a single downtape at the North arris of the West facet apparently well fixed, though current British Standard suggests need for upgrading with a second downtape to earth and circumferential bonding.

2. Tower

South elevation

Clock face pale blue with gilded numerals and hands all looking a bit tired. Bell chamber opening just below clock has rusty mesh grille bird-guard with one area breaking through. Lower window in plate glass fixed direct into stone appears sound. Although the masonry appears sound, 4 No. iron tie-plates in pairs either side of window appear rusty.

East elevation

Masonry appears sound. Timber to bell-chamber opening's louvered frame appears dry and split: needs fresh treatment. Lead cover to offset plinth course above Nave roof made up in pieces is old and split North of Nave roof ridge and its fixings are torn.

North elevation

Slate louvers appear sound. Window below this is plate glass in frame which will need fresh treatment; the lower panel polycarbonate.

West elevation

Masonry generally sound. Slate louvers in bell-chamber opening with lead lined cill. Polycarbonate in window below this: frame head may be loose. Main West window into Nave recently repaired by Iona Art Glass.

3. Roofs

Porch West slope

Slate with lead lined parapet gutter – covered in bituminous felt? The lead lined outlet has no leaf-guard. 1 No. slipped slate, soakers and mortar fillets at verges sound. Back of parapet wall at South end has open joint behind tabling and along West parapet.

Porch East slope

Slates sound. Flashings both ends have been stolen leaving upstand soakers exposed, partly protected by tabling at South end but open against face of South Aisle wall at North end. Bituminous covered gutter lining and outlet filled with debris from theft.

South Aisle

Parapet gutter lining and flashings stolen not long before inspection. Westmorland slates very stained at West end under Tower with run off from lead spire covering. Slates to right of the West channel from the Nave roof chipped and delaminated locally at top of slope. Flashings at top of roof slope are protected by projecting moulded course in Nave wall. Verge fillet at West end has open top edge against tabling, at East end verge fillet loose.

Back of Porch gable over South Aisle parapet gutter, loose mortar in joints and sanded stone from weathering.

Nave South slope

Generally sound – seen both from South Aisle and from Belfry.

Chancel South

All sound as left by recent repair contract with Wensley Roofing and MGM Ltd. Lead lined parapet gutter falling to 2 No. outlets.

Chancel North (seen from Vestry roof)

Graded Westmorland slates in sound condition draining to bitumen lined parapet gutter but lead lined valleys between this and Organ Loft roof. West of the Organ Loft one slate swung on one nail close to secret gutter against Nave wall.

Vestry roof

Bituminous felt covered surface appears not to have the usual finish coat and looks rather vulnerable though sound enough for now.

Organ Loft

Graded Westmorland slates in good condition: open perpend joints across North Verge tabling. Lead lined box gutter to West.

North Aisle

A slope of fine character either small Westmorland slates in graded courses or Scotch slates.

Nave North Slope (seen from Belfry)

Seems generally sound.

4. Walls

South Aisle South elevation West of Porch

Cast-iron downpipe with 1826 hopper. Metal wire window guard crudely fixed to timber grounds in window reveal. Left hand jamb – spalled stone near bottom.

Porch West

Cast-iron downpipe and hopper in corner. Open joints in parapet coping and in coursed rubble behind downpipe and at base of wall.

Porch South

Some repairs included in recent contract, but sundial over arch is delaminating and the gnomon is rusting.

Porch East

Cast-iron downpipe and hopper. Glazing in window plate glass fixed direct to stone: the white compound cracking and dried.

South Aisle East of Porch

Cast-iron downpipe and 1826 hopper. Recent masonry and window repairs.

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South Aisle East elevation

Recent masonry repairs – generally sound.

Chancel South elevation

2 No. cast-iron downpipes, but the corner one has no hopper so the lead chute is about 250mm above the 75mm pipe and liable to spill inaccurately over it and down wall. Recent masonry and window repairs. Iron gate to Priests door rusty and needs burning off, de-rusting and full new paint system. The door itself, iron strap hinges and handles also need preparation and paint and the timber to refresh with stain treatment. Does water run in at the threshold? There seems to be no weather bar. Open joint at base of South East corner buttress.

East Gable

Masonry repairs at high level but some open joints appear to have been missed in the spandrels between the windows.

Chancel North elevation (continuing above Vestry)

An area of poor pointing above Vestry roof with open joints where un-keyed mortar has fallen out: more to come.

Vestry East elevation

Some loss of detail to window hood moulding, but not structurally significant.

Vestry North

Open joints across the parapet coping.

Vestry West

Open joints across the parapet coping.

Organ Loft, North elevation

Gabled wall with high level louvered vent. Open joints in masonry at high level below and across the tabling: some loose mortar.

Access to Boiler Room

Parapet wall loose stones in outer face West and open joints down flank of steps.

Organ Loft, West elevation

Loose mortar and open joints at low level.

North Aisle, North wall

Open joints below 1st window and to right and at low level by downpipe. Small Yew sapling in one joint. Open joints and loose mortar below 2nd window. Fresh growth of ivy to clear. Blocked North doorway patchy loose render. Downpipe at West end has no hopper so lead chute is about 250mm above 75mm downpipe (as Chancel South). Long channel in concrete at base of wall to clean out with gully at West end.

North Aisle, West end

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Window framed in timber. A mixture of glazing with five pieces of clear glass in front of remaining diamond quarries.

Nave West elevation

Masonry and window repairs recently completed.

South Aisle West elevation

Masonry sound, the parapet tabling rather chipped window framed in timber which needs refreshment.

INTERIOR

5. Tower

Bell Chamber, Spire and Tower

Full ringing set of 8 bells including clock mechanism and automatic weight rewind. White washed stone wall. Windows, polycarbonate in timber frames some cracks from stone impact but still sound.

Signs of wood boring insect attack in timbers of Bell Chamber floor seem to indicate old rather than current activity.

Bell frame is recent or at least 20th Century and appears sound but the condition of the bells and their action is not within inspecting Architect's competence to judge.

6. Church from Ground Floor

General

The decoration of the Nave and Chancel (with the exception of the South wall of the Chancel recently repainted) is tired and in places flaking off, notably both faces of the Chancel Arch at the North side.

North Aisle

North wall leans out slightly with arch at East Tower pier perhaps thrusting outward, though no sign of current movement. Painted stonework above dark stained wainscot about 1350mm high.

Aisle arcade one bay West of Tower, three bays East slight outward lean. Panelled, boarded ceiling. No lighting. The arch to the Organ Loft at East end of Aisle has been damaged to voussoirs near North springing.

Nave

Roof East of Tower three bays kingpost trusses with braced centre line beam supporting barrel rafter structure. Pendant chandelier lighting each with eight lamps.

South Aisle

South wall leans out with arch at East Tower pier thrusting outward. A little easing crack at head of second window from East.

East end wall of South Aisle plastered and painted, the rest painted direct to stone. Old damp stains at the East Tower arch.

Chancel

Barrel vault timber roof structure, one or two boards stained with wet at each end – probably old penetration.

North Transept/Organ Loft

A huge organ case occupies most of the North Transept with timber lining everywhere.

Choir Vestry

Flaking paint above lockers; plaster loose on East wall, partly removed at North end by door. Damp damage to timber wall plate. Cracked glass in window consisting of square quarries.

Cracking in plaster to South wall backing the Vestry fireplace.

Tired parquet flooring.

Vestry/Vicars Office

Plaster loose at jamb of door to Choir Vestry and cracked above door. Tired parquet floor.

Fireplace dated 1886.

7. Other matters advised by Churchwarden on Churchyard

- Soakaway drain from Choir Vestry door is blocked. It may not have the capacity to clear all the water from the Vestry roofs.
- Lights for drive have failed, electrician to check supply cable and fittings.
- Main gate to drive: pivot to right leaf is damaged and needs refitting.
- Sections of the Churchyard boundary wall have collapsed.



General view of South side of Church and Spire



South and South-East facets of Spire. The bellying of some of the larger panels can be seen. Many of these are also split.



Spalled window jamb: South Aisle, West of Porch



Open joints in wall of Chancel above Vestry roof

