QUINQUENNIAL INSPECTION REPORT

OF

ST. MARY, BLACKHILLS ROAD, HORDEN, SR8 4LJ

DIOCESE OF DURHAM, ARCHDEACONRY OF SUNDERLAND, DEANERY OF EASINGTON

INSPECTION OF CHURCHES MEASURE 2018 (AS AMENDED 2019)

CARE OF CHURCHES & ECCLESIASTICAL JURISDICTION MEASURE 1999

DURHAM DIOCESESAN SCHEME FOR THE INSPECTION OF CHURCHES 2021

DATE October 2025

David Beaumont BA (Hons) Grad Dip, RIBA, AABC

BBA Beaumont Brown Architects LLP

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REPORT ON THE 2025 QUINQUENNIAL INSPECTION

1.0 INTRODUCTION

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Date of inspection and weather conditions: Tuesday 29th April 2025. Dry and bright.

Date of report: October 2025

Report prepared by: David S Beaumont RIBA AABC

2.0 LOCATION AND SITE

Address: St, Mary's, Blackhill Road, Horden, County Durham, SR8 4LJ

Location: The church is about half a mile from the sea within the former colliery village (once the largest pit in the county and also undersea).

It has housing to three sides and an open frontage to the south. The site is modest and the church covers half of it. The renovated Parish Hall forms the greater part of the north boundary.

National Grid Reference: NZ442411

3.0 CHURCH AND LISTING DESCRIPTION

Description:

Built in 1913. Artificial stone outer with dressings in brick inner face providing a striking contrast. Solid floors and open timber roof structure. Westmoreland slate pitched roof coverings and mineral felt to flat roofs.

Listing Description:

NZ 44 SW HORDEN BLACKHILLS ROAD (North side)

2/22 Church of St. Mary the Virgin

Grade II

Parish church. 1913 by J.D. Potts and Son. Textured concrete blocks and graduated green slate roof.

Cruciform plan: aisleless nave with western narthex and flanking vestries; north and south transepts with crossing tower; chancel with south chapel and north organ chamber and vestry. Gothic style with lancets and Geometrical-tracery windows. Tall chamfered plinth; tall stepped buttresses with gablets divide recessed bays with eaves corbel tables.

5-bay nave has paired lancets; west end has single-storey narthex with 3 lancets, canted corners with pointed-arched doorways and gabled projecting vestries with paired 2-light windows; gabled twin bellcote.

2-bay transepts have clasping buttresses and paired 3-light windows with vesica above in gabled north and south faces; pointed- arched doorways to western returns.

Broad square crossing tower has 3 lancets to each face and buttressed bay divisions; pyramidal roof has slightly-swept corbelled eaves. 2-bay chancel has taller apsidal east end with buttressed bays, each with a single lancet, except for blank centre bay; elaborate Lombard frieze at eaves.

2-bay south chapel has paired lancets and a 2-light plate-tracery window to east return. 2-storey organ chamber has chimney on east gable and lower square vestry to east.

Roofs, of moderate pitch, have large shaped kneelers and coped gable parapets.

Interior has walls of red engineering brick with stone dressings; crossing tower supported on low, moulded pointed arches; large octagonal stone pulpit and font flanking west end of chancel; west end of each transept has glazed internal porch; panelled, slightly-pointed wagon roofs with exposed tie beams.

Listing NGR: NZ4421441110

Undated image held within the church. Note rush seats, not pews, suspended lamps, now replaced and the markings on the tower arch that are evident today.

Entry in 'Pevsner'- The Buildings of England, County Durham, 2021 by Martin Roberts

St MARY 1911-13 by Joseph Potts and Son of Sunderland and Newcastle. Known in the county as the 'Pitman's Cathedral'. Walls of textured concrete blocks (as elsewhere in the village),

Westmorland slate roof. Cruciform plan: aisleless nave with W narthex and flanking vestries; transepts with crossing tower; apsidal chancel and S chapel and N organ chamber and vestry. Lancet and geometrical windows. Interior of red brick with stone dressings. REREDOS, Lady Chapel. Angel by *Ralph Hedley*, formerly part of a lectern. – STAINED GLASS in the apse. Made by the local firm of *John Christopher Richardson*, but were they the designers?

Does Martin actually mean that it's the boundary walls that are the same as the church (which they are) or that really there are other examples of this cast stone in Horden?

4.0 PREVIOUS INSPECTIONS

This is the author's third inspection.

5.0 SCOPE OF REPORT

This report is made from a visual inspection from ground level. The inside of the boiler house was inspected. Belfry was not inspected. Drainage was inspected from ground level only. No testing of the drainage installation has been undertaken. The report is restricted to the general condition of the building and its defects.

6.0 REPORT SUMMARY

Executive Summary:

The PCC and incumbent are to be congratulated for keeping this important community church going. They are working hard to keep on top of repairs in the face of continuing lead theft and problematic fabric design.

The design of shape of the church and architectural details has created long term maintenance difficulties of great expense. Access to high features such as the apse and tower roof is very difficult. The south side of the church even more so as the ground falls away.

There are many roof features that invite leakage if not fully maintained and the PCC have increased their maintenance regimes and as a result are on top of most matters. There has been less incidence of lead theft in the last 5 years but disaster struck after this inspection when lead was stolen about the organ roof, causing water ingress and damage to the recently restored organ. Endeavours are now in place to replace the lead in lead alternative and reslate the organ roof.

Rainwater goods have constricted routes that are being managed and the nave parapet lead gutters do not comply with modern standards and remarkably, don't appear to leak. I think the linings are 'modern' and that the original linings were also lead and stolen in the past, hence the foot of the roof staining inside.

The external walls are made in a pioneering artificial stone construction. It has detailing defects to it and there is pointing missing, often in difficult to access locations, again, leading to water ingress and damage to decorations and finishes.

The PCC do attend to the rainwater and roofing repairs promptly and most of these repairs are complete. There are occasions (eg Tower) when works are not done so quickly when it is a long wait for a specialist steeplejack to come to do the work. And this is the major issue- affordable access to carry out any work at high level and so repair needs have to balance the cost of scaffold.

This is the time to understand how the building is constructed to know better how to go about stopping water ingress through the walls. Once that is done then a priority plan for the rest of the repairs can be put in place.

Fr Kyle has found historic plans but only a partial set- mostly wall elevations and foundation plans. They go someway in understanding the construction. The next step is opening up works.

It may well be that there is a major restoration project in 10-15 years that encompasses the recovering of all of the high level roofs, replacing 'leadwork', repairs to the tower glazing and repointing of masonry, creation of access into tower roof attic, improved access externally for maintenance.

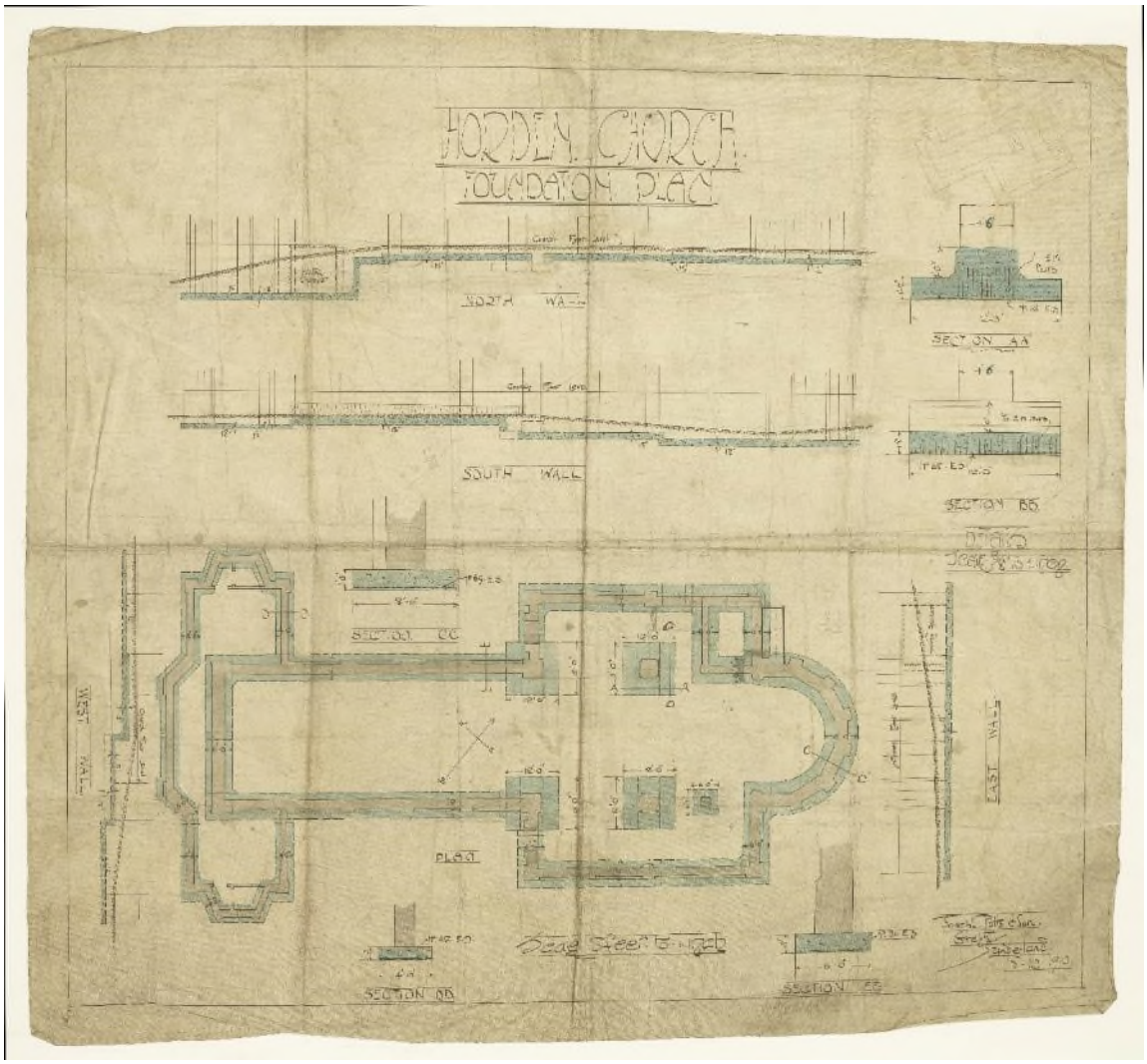
The flat roof to the sacristy, requires a longer term solution to pigeons, waterproofing and drainage. The bell installation has made access very difficult.

Structure:

The building is a masonry construction with solid floors and open trussed roofs. It is traditional in most of the senses of the word, apart from the external walling is in cast stone. All of the building was built at the same time. Has the tower got a steel frame? (I don't think so- I think it's all loadbearing masonry- e.g. the bases for the tower columns are 12' square and 1'8'' thick)

The church is built on a cut and fill site- the land slopes away to the south.

There is very little discernible movement inside the church the only evidence of structural movement is on the S side where the ground is falling away, at the S W vestry and the S E chapel, the vestry is the worst of the two where there is opening up of the jointing between the stonework, some of the stones themselves are cracked and there doesn't appear to be any other remedy other than to repoint them and then monitor possibly future cracking. There are open joints to the tower at the South East corner, adjoining the Lady Chapel where the arch has deflected slightly. There is no change to the joint gaps at this inspection so I think I can say that this is now historic and that ground movement is not active.



The historic foundation plan shows a 6'wide by 18'' thick reinforced concrete strip foundation under nave walls, suggesting that the building is well founded. But changes caused by global warming and ground water volumes may affect the building in the future.

Roofs:

Ridged roofs with green Westmoreland slates to diminishing courses with concrete half round ridges. Water tables at gables. Flat roof areas in mineral felt.

The tower has mitred slate hips and some have come away in the past.

Its recent repair history is:

Included here for those that follow to understand this building and to show others the amount of work needed to keep this building going.

2013 clean out the belfry roof and roof repairs to gutters and slating above the organ.

2014 The north west hip slating was repaired using scaffold and some rw goods and flashings amended. During the inspection we saw plenty of evidence of open joints to the tower masonry. The worst that could be reached had some pointing added- but the access was limited by scaffold. Some tower glass broken.

2016 Clean out of belfry roof, minor slating and flashing repairs at organ

2018 Architect visit to assess and marshall repair requirements. Quotations for tower repairs via scaffold found to be out of proportion. Alternative access sought.

2018 Autumn- Taylor Hastwell steeplejack hoping to attend to tower slate repairs. Promised a stonework report.

2020- Lead theft at both vestries: box outlets, valleys. Replaced in Masterform, lead alternative. Repairs to valleys and slating on men's and ladies' vestries, plus replacement downpipe in north east corner of ladies' vestry and roof timbers under south east corner of men's vestry.

2020- Further left theft discovered from earlier theft at bellcote, n nave abutment, n nave buttress pediments. Replace or redress flashings on north nave pediments, bell cote and west face of tower abutting nave on north side.

2020- Steeplejack comes to site for the tower repairs. Repaired the sw hip slating. Report after the repairs produced in September. The report noted missing or disrupted flashings (to be dealt with by Ferguson in late 2021 and remedial work to stonework (discussed in walls section below).

Since the last QI the roofs have received attention:

2020: Tower roof: replaced rotten sarking board and slipped slates, especially on SW hip; cleaned gutters; inspection and report-Taylor Hastwell

2021: Tower Roof: Replaced slipped slates, especially on south west hip; clearing of tower gutters by steeplejack.

2021 New pattern of biannual roof inspections and gutter and gully cleaning begun Continued 2022, 2023, 2024, 2025 with minor repairs on each visit.

2024 Pointing above organ around chimney and watertabling

2025- during inspection, see section 7.3 for list

Rainwater Goods:

The tower has traditional cast-iron half round gutters and original square downpipes. The tower pipes discharge awkwardly onto the nave and chancel roof and the suspicion is that they may be causing water ingress to the tower. The ne and se corner discharge has been modified to discharge more directly.

The gutters to the remainder of the church apart from the chancel parapet are lead lined stone projecting corbels (the apse is shallow box gutter- almost a tray and is a mixture of original lead and alternative (after the 2025 post theft repairs are done). The lead is continuous in the corbels and as there is no room for expansion and as they may be stolen, should be replaced in lead alternative.

The South side downpipes now appear to discharge adequately into their gulleys. And the discovery of historical drawings (though not the drainage plan) suggest that there may well be an underground drainage system to the highway, rather than soakaways. The Lady Chapel consistent blocking has gone away with regular maintenance. Gullies have had t heir grids reinstated. Vegetation is also regularly cleared form them.

Walls:

The solid wall construction is formed of a red engineering brick facing the interior and artificial stone outer. There is probably a cavity and the outer leaf rests on a bitumen damp proof layer. Historic drawings show thickness as 2’3’’ (685mm) The inner arches and apse features are also in cast stone.

The artificial stone appears cement based with aggregate. It is eroding but the areas are modest. The major issue is open joints which need to be filled.

The thickness of the wall units seems quite large- perhaps 200mm, but in instances there is little mortar in the joint- sometimes only a depth of say 50mm. And that is dropping out in cases and leaving a very big slot for water penetration. A quick look into some open joints shows that some stones have flat sides as they abut each other- as you would expect, But others might have rebated faces meaning only a slim part abuts and can be pointed. In both of these instances the joint was hardly filled with mortar and so is letting water into the core. I think the rebate is erosion- not purposeful.

There is a greater area of open joints due to erosion and movement at the sloping units at the tower, under the clerestory windows, where their cills are made of stacked sloping units and there is a major salting inside form water penetration.

Notes from the last QI kept for completeness:

There's a question mark over how corners are formed - with an adequate bond or butted together? It also seems that the major pointing failure is on the sloping units and it may be these that need more attention than the general walling.

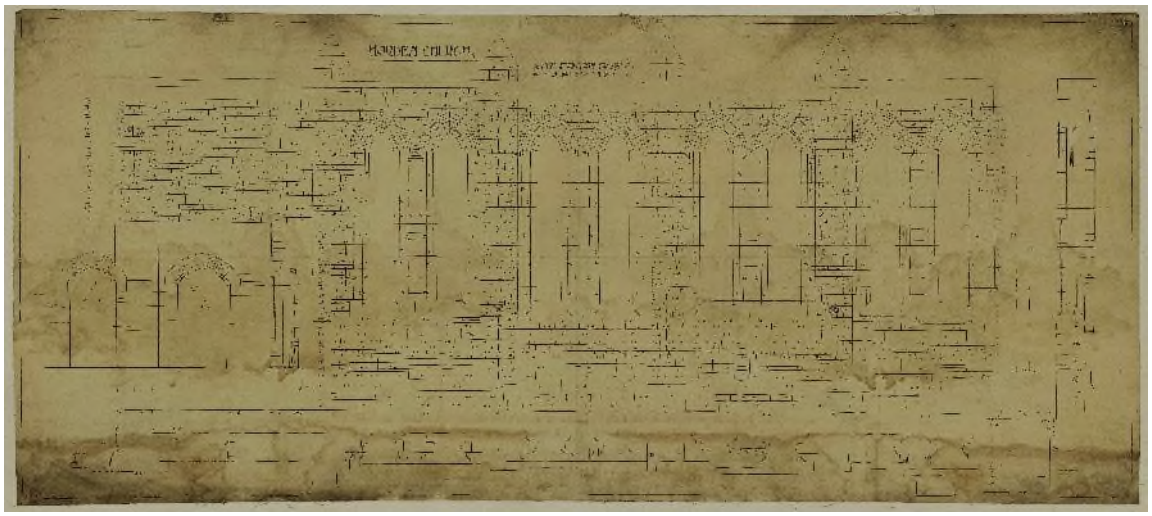
An investigation into the cast stone construction is to be undertaken to help inform future repairs. There will also be a need to understand how to repair eroding stones or whether they are replaced and if so, with what. So they need to be chemically analysed so that the composition of aggregate and binder is understood.

The windows and door jambs have cast stone dressings of multiple small units. It is likely that moisture is tracking right the way through them. Investigation of the wall construction at a window opening would also be worthwhile.

The undated image below shows that there is staining at the tower crossing on the nave arch, brickwork and cast stone. So it has been there for some time.

There are other churches in the region made of cast stone:

St Joseph, Millfield, Sunderland, 1906-7 and St Mary Magdalen, Harbour Walk, Seaham 1906-7. Roman Catholic. Built to identical designs by Thomas Axtell of Ryhope (they both feature Italian Romanesque basilicas). These were the first churches in the world to be constructed of pre-cast concrete blocks.



The Sunderland and Seaham churches were built with an experimental process developed by Thomas Axtell, a founder of the Concrete Institute (1908). The following is from a contemporary newspaper account:

> By reason of the class of material used in its erection, it marks a new departure in the construction of ecclesiastical edifices. Instead of stone or bricks being utilised in its construction the church is built of concrete blocks. This is an American system and its adoption in the present instance is due to Mr Thos. Axtell . . . The first cement block EVER MADE IN THE WORLD FOR A CHURCH was made on Friday, 4th May, 1906 by the Rev. Rogers and Joseph Kinleside and is placed about the chancel arch.

'The Historic Churches Committee has recently approved the use of a water repellent treatment called Funcosil FC Historic for Seaham as there's a problem with penetrating damp. Apparently, too much water was used in the concrete, resulting in a porous structure that allows water to pass through. '

Source; From Twitter discussions held between the author and the Committee-member of the Northern Architectural History Society & the Historic Churches Committee.

The Funcosil will probably not be a remedy. It is the lack of sound pointing that is the issue at St Mary.

The church has a rapid ventilation system. It looks like it has an inner skin of 100mm brick and then a cavity of 150mm then there is a further brick face creating a lined flue. One would expect high level air bricks but none can be seen. Perhaps its purpose is to allow air in at low level and use convection to let it rise in the nave and disperse through the glazing vents. The vents are rusted shut.

Inside:

The inside is in fair (it would be good but for the salting) decorative order and it has the benefit of some very attractive fixtures and fittings.

The principal concern is the water penetration of masonry causing efflorescence and water marking to decoration and finishes. With some water staining to ceiling boarding. Once the external repairs are done then an internal restoration of the finishes could be carried out.

There are a couple of areas where the herringbone raised flooring is a still a bit loose and they are being picked off as an when, the yellow carpet is ok with some threadbare edges. Slight loose floorboard as you come towards the chapel outboard of the chancel arch. And there is there is a crack to the floor, left of the altar of the Lady Chapel.

The heating system has shown its age by leaking underground at the chancel during the quinquennium. It has been repaired. The boiler is old and thoughts should be turning to planning for a new system. There will be an opportunity here to consider the current seating arrangement and if there is an opportunity for reordering to create flexibility.

Net Zero

The major issue facing all churches is the cost of running heating, power and lighting. The church has a gas fired heating system. The boiler is now getting close to end of life and the PCC should begin to examine what their future heating plans might be. CO^2 savings can be had with more efficient gas boilers but the renewable alternatives should be examined. Guidance is provided in the appendix.

There are two years' worth of Co2 figures at the rear of the report showing that the church does have a large footprint, which is not surprising considering its large volume, and uninsulated fabric.

7.0 CONDITION AND RECOMMENDATIONS

The following items are the observations made during the inspection. Below the item is a recommendation for work with a letter identifying its priority.

In section 8 the same priority items are re ordered into their priority categories.

A- Work requiring urgent attention, B- Within 1 year, C- Within 2 years, D- Within 5 Years, E- A possible improvement or item to note, M- Routine Maintenance or monitor/watching brief

7.1 SERVICES

The log book was up to date and recorded the work done, including routine testing. A summary was provided at the inspection.

- **Water:** The mains water supply comes from the back lane. It comes to an external stop-cock on the path just outside the north-west corner of men's choir vestry. There it branches. One branch enters the men's vestry WC; another branch travels under the narthex floor to the women's vestry WC; a third branch heads east, remaining under the path external to the building and then internally under the north transept to feed the sacristy.

  Recommendation: None.

- **Foul drainage:** There is most likely a foul drainage system underground to the highway.

  Recommendation: None.

- **Surface water drainage:** It is assumed that there is a piped underground system, there are sufficient manholes to suggest this, though none have been lifted. In 2019 the N E corner associated with the basement drainage pipes were cleared. All gullys cleared in 2021

  Recommendation: None.

C **Lightning conductor:** There is a terminal on the tower roof and this connects to a ridge conductor on the nave roof. There is a tape on the N side from the chimney stack and another at the N transept. Both are protected at low level with metal casings though these were tampered with in 2020 and repaired. The last formal test was in 2022.

Recommendation: Carry out five yearly test and recommendations of the test report.

- **Electricity:** The supply is overhead and enters at the N E above the sacristy. The distribution board is located next to the organ with a further panel with fuses in the female choir vestry. External connection failed and repaired. Last tested in 2022 and found to be satisfactory

Recommendation: None.

- **Lighting:** The lamps to the fittings were replaced in 2016 with LED throughout. 5 lamps replaced 2021/24 as the fittings are poor.

Recommendation: None.

A **Intruder Alarm:** Located in the female choir vestry.

Recommendation: tested in June 2021 and 2025 test due now. tested.

- **Sound system**: Comprises lapel, lectern, pulpits and handheld microphone, eight speakers. There is a hearing loop. Checked by Tony Atkinson in 2025 and ok

Recommendation: None.

B **PAT**: Last tested in March 2024.

Recommendation: Annual test due.

B **Heating:** Gas fired Potterton Derwent HE installed in approximately 1998. A new pump installed at the same time.

The distribution is in four inch pipework to radiators in the chancel and nave which are understood to be in fair condition. The previously reported leak revealed itself within the chancel

floor in 2023. The pipe was repaired and new valve added to split the pipework into north hand south zones so they can be more easily drained in the future.

There are thoughts to have a replacement heating system in the future.

Header tank is in the room over the sacristy and its overflow pipe was extended in 2022.

There was a new gas supply in 2001 and the meter is in the Parish Hall.

The system is checked annually and its last test was 2024.

Recommendation: Test heating

- **Gas meter**: Is located within the Parish Hall. And passed it's inspection on the day of the inspection in 2025.

Recommendation: None.

E **Bells:** There is a ring of eight Carillon bells, these were restored c. 1996. The Carillion is rung in the sacristy. The bells are on the outside of the building underneath a c2000 pitched roof underneath a covering with timber louvred sides. In June 1989 the bells were overhauled and returned. Lead stolen in 2011 and now lead alternative covered.

The creation of the pitched roof and enclosure has choked the space and pigeons have been getting in, these were removed and netting provided c. 2016. The space was not inspected during this inspection by me, but the roofer's carrying out repairs at the time of the inspection advise that the pigeon activity was reduced. The netting was only ever a temporary solution and this is a long term problem in trying to achieve an effective remedy to exclude them.

Recommendation: formulate a long term plan to exclude pigeons and allow free drainage

A **Organ:** Pipe organ to the N side of the chancel, two manuals with blue painted organ case and silver pipes. Grade II on The National Pipe Organ Register. Harrison and Harrison describe it as installed on May 2, 1913. It was built as a 'sister instrument' of the organ in the Church of St Hild and St Helen, Dawdon.

2019 visit and report by the DAC Organ Advisor Mr. Richard Hird recommends a complete overhaul. Harrison and Harrison have quoted 80k for the overhaul in their March 2020 report and quotation. The overhaul was carried out in April- Sept 2024 for 171k. Asbestos removed from blower, completer restoration, new casework, new lighting. In June 2025 lead theft in the roof above it caused water penetration to the organ.

At the inspection we advised again that the organ should be within a waterproof tent to protect it. A temporary tent has been installed after the June theft. It needs to be made more permanent ahead of the repairs/ re roofing work. The organ roof slates are bedded on lime mortar and it will be dusty when repairs are made. And there is the danger of falling debris.

Recommendation: Upgrade organ tent. Carry out repairs when funds are available.

- **Rainwater goods:** There is now a formal biannual inspection in place. Downpipes painted in 2023.

  Recommendation: none

7.2 GENERAL

- **Churchyard:** There is no churchyard associated with the church as it sits on a small plot. The grounds have never been used for burials and these contain shrubs and trees. Since the last QI the grounds have been better maintained with regular grass cutting and gardening.

  Recommendation: None.

- **Trees:** There has been further thinning out of trees and shrubs to the site since the last QI.

  Recommendation: None.

- **Access for the Disabled:** The PCC has a resolution in place which addresses the requirements of the Discrimination Against Disabled Act.

  Recommendation: None.

- **Wheelchair access:** There is a ramp from the highway to the porch where there is a step which is managed by a temporary metal ramp. From then on it is level through to the chancel steps.

  Buggies tend to be placed in the W porch.

  Recommendation: None.

B **Fire matters:** The PCC should carry out or arrange a Fire Risk Assessment in accordance with latest Regulatory Reform (Fire) Order 2006 (details available via the DAC, the local Fire Officer and/or the internet).

Fire extinguishers noted:

Female Vestry – 6ltr water

Male Vestry – 6ltr water

Nave West end – 9ltr water

Basement – 6kg powder

Organ 2kg Co2. It is a wall fixed item that is loose on the floor and needs fixing into position.

All tested in July 24.

Recommendation: fix up the organ extinguisher

- **H & S policy:** The PCC carry out an annual review of the policy.

  Recommendation: None.

- **Insurance:** The church is insured by Ecclesiastical.

  Recommendation: None.

- **Asbestos:** has been removed from the organ blower in March 2024 and found and removed from the chapel underfloor pipework in Jan 2024. The PCC have created an asbestos register.

  Recommendation: none

- **Bats:** None reported. **Recommendation:** None.

7.3 WORK SINCE LAST INSPECTION

2020

Tower roof: replaced rotten sarking board and slipped slates, especially on SW hip; cleaned gutters; inspection and report- Taylor Hastwell- see appendix for report.

2021

New pattern of biannual roof inspections and gutter cleaning begun and continued 2022, 2023, 2024, 2025 with minor repairs on each visit.

lead repairs at abutment of chancel and tower

2021-25 five light fittings replaced in nave and chancel

2022

All external doors repainted

Men's vestry ceiling redecorated; old carpet lifted; floor restored

External mains connection renewed by Northern Powergrid

New heating header tank and longer overflow pipe to avoid dripping onto sacristy east wall

2023

External rainwater goods painted

Leak in heating pipework under chapel floor: floor lifted; asbestos removed; three sections of 4" pipe replaced; valve installed in boiler room allowing partial isolation; reinstate flooring

2024

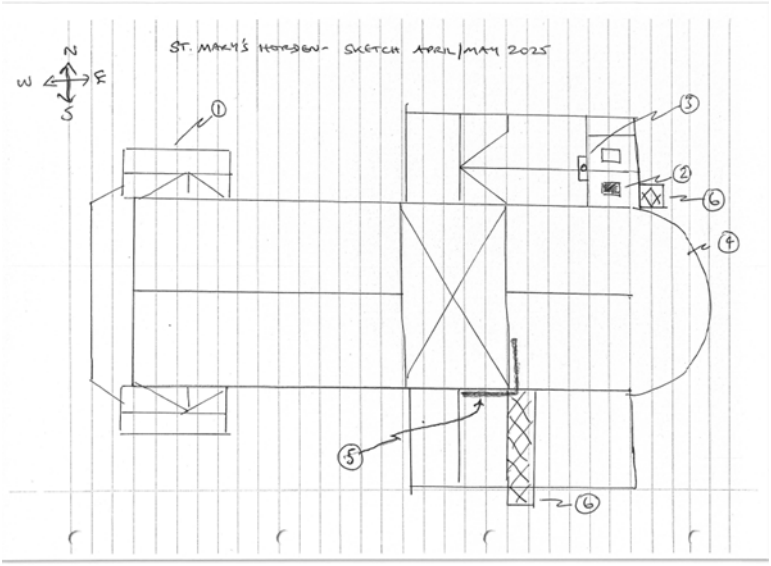
Pointing above organ around chimney and watertabling.

New polycarbonate x 4; clips and screws x 25; lead repairs x 15; cleaning. By Barry Swinburn

Removed asbestos from blower; complete organ restoration; new casework; new lighting.

2025

Roof repairs carried out during the Quinquennial inspection:

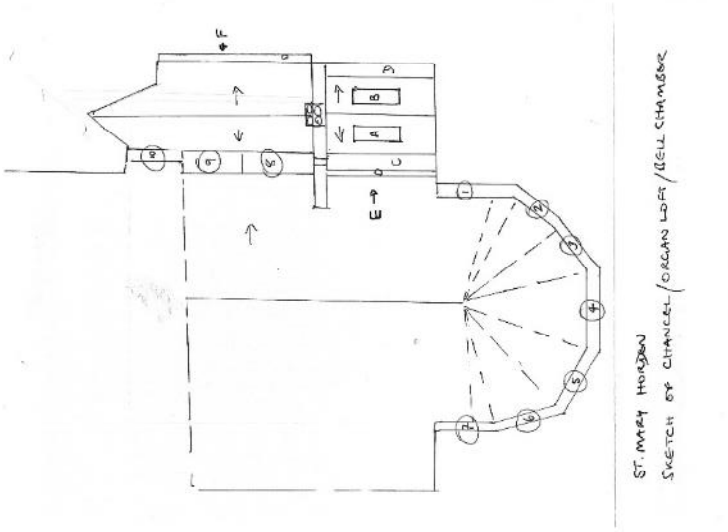


The sketch plan indicates where the main items of work were carried out at St Mary's, notated as follows -

Item 1 - redressing of Masterform.
Item 2 - replacement of flat roof over boiler house, south side
Item 3 - new chimney pot and cowl
Item 4 - patch repair to lead gutter.
Item 5 - new lead flashing to south Transept, east face, and to the lower section of the south roof of the Chancel.
Items 6 - Positions of scaffolding access towers that were used.

Gutter cleaning was carried out in all accessible areas (ie not including the Tower), and slates were refixed where possible, particularly on the south Transept east face, and south-west Chancel. We attempted to get to where a slate is missing near the ridge on the south slope of the Nave, but decided that it was unsafe to do so without more access equipment.

After the inspection at the end of June there was lead theft and water ingress into the organ chamber. The scope of repairs is being developed with the agreement of loss adjusters as shown below:



Option 1.

- *A. Remedials after vandalism, using lead -*
- *New lead in areas 4, 5, 8, 9(in two bays).*
- *Refix flashings where possible, or renew if necessary, in bays 1, 3 to 9 inc, 10.*
- *New dormer cheek at west side of A.*
- *In-situ repair of gutter lining at E, as well as renewal of downpipe, and repair/replacement of flashing at east end.*
- *In addition, all necessary removal and refixing/replacement of slating to accommodate the above works.*
- *Provision of access scaffolding at the north east corner of the Church, as well as guardrail installation at the east of the Chancel.*

Option 2*.*
(B) Remedials after vandalism, all as (A) above but using an alternative material (eg DEKS Perform) instead of lead.

Option 3 *(C) An extra-over price for reslating the Organ Chamber roof at the same time as the remedial works described above, to an agreed specification.*

Option 4
In addition to the above, it would be possible to replace the lead in bay 2, where we identified and repaired a split in the lead during a previous visit, and where the underlaying timber boarding adjacent to the wall appears to be defective.

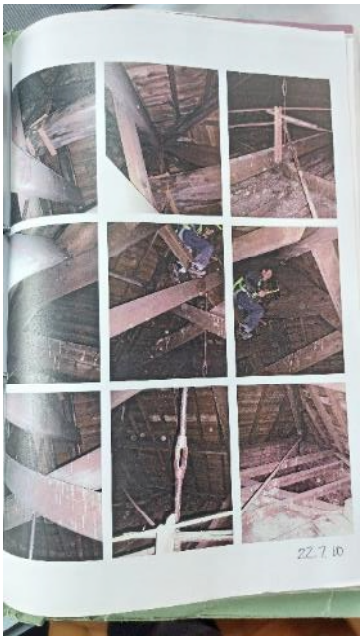
Above text in italics from David Ferguson

7.4 FABRIC INSPECTION

7.4.1 TOWER

TOWER INTERIOR

C



The ceiling has no change white marking within the centre square suggesting that there might be some previous water ingress there (it's not on the line of a hip).

The ceiling is inset and forms an octagon which is supported by spandrel corbels all in timber and these in turn are connected to arch shafts.

2020

Image from files when cross replaced

2025

In 2020 we noted, *'The upper part of the tower has a clerestory arrangement of three double lights. The e has a central three light with doubles either side. Their concrete surrounds have white patches.*

There is significant salting of the brickwork. There is a 'tide line' approximately twelve courses down on the E side. That is matched externally by the sloping clerestory cill units- suggesting that the sloping unit pointing has failed. And my guess is that the trapped water then goes into the corners and shows up on the columns. There's also water streaks that look to be from holes in the glass or cill.

Staining on the N side E corner, on the W side S corner and the S side E corner.

The arches are all sound, there is water staining at the springing points in all corners but less so in the N W corner, and down to the ground they are all ok.

Some quite big water staining of the chancel arch, it doesn't show on the others so there has been a big leak on the chancel arch and it looks to be both inboard and outboard of the arch so it could be

both from the windows on the inside and then the roof flashing missing on the outside, and the outside pointing missing on the clerestory cills…

There's no change in the brick staining from the last inspection. I think it's reached peak saturation. The fault has to be the open joints in the walling.

Access to the roof attic is available externally, it was inspected when the cross was replaced in 2010. And it would be wise to inspect again.

There's no ceiling hatch and when there is next scaffold inside one should be created. There is an external access at the east end, but this always requires scaffold to access.

Recommendation: create attic access, investigate wall construction, repoint exterior, repair glass, remove inside salts and staining

TOWER EXTERIOR

C

Open joints due to minor movement

Open joints

Hipped slated roof which has problems with its mitred hips occasionally and last repaired in 2020. It had its gold cross replaced 2010. The gold leaf is coming away.

Taylor Hastwell Steeplejacks in their report of 2020, attached at the rear of this report, identify: cracks to the walling at the east; south east buttress has movement and cracks, failed cast stone unit, flashing dislodged and missing, patch pointing required.

Structurally, it has some open joints through movement, and the suggestion that the window cills might not be firmly bedded.

There is obvious water penetration. Thought to be at the sloping cill units where pointing has failed.

Recommendation: repair glass, repoint masonry, repair buttress back gutter drainage.

- **Bellcote:**

No obvious defect.

Recommendation: none

7.4.2 ROOF COVERINGS

B **Roof General:**

Original Westmoreland slating on all of the hipped roofs with mineral felt on the flat roof.

The tower is a hipped structure with cut hips and this has been repaired by Andrew Gibson in 2020 but there are still areas coming apart.

David Ferguson Comments from the 2025 inspection visit,

'In general terms, the condition of the roofs is fair, given their age. The slating generally seems to be fixed to lath laid directly over boards fixed to the top of rafters, with lime bedding. There is no underfelt present, except for in areas where it has been installed in a reslating exercise in the past, one such area being the lower section only of the south of the organ chamber roof.

Images by Ferguson after lead theft after QI

Missing lead gutter at apse

Damaged flashings

As we know from our maintenance visits, individual slates do slip from time to time, and we do come across some cracked examples, but the slates generally are still in fair condition, and their fixings still have some life left in them. The area that seems to be most susceptible to wind damage is the Tower roof, given its exposed position.

The lead in the cornice gutters is in a surprisingly reasonable state, given the lack of expansion provision compared to current standards.'

So we might assume that the slating is likely to last a few more decades yet but the tower roof will always present a repair burden until it's covering is changed to something more low maintenance.

The flashing to the roofs are predominantly in lead though there continues to be theft over the time and these have been generally replaced by Masterform lead alternative. There is one particularly troublesome area which is the back of the buttresses which project up on the nave on the N and S side which have now been attended to.

There is a round of flashing repairs (Those that are in the Taylor Hastwell report and other isolated items) were carried out by Ferguson in 2021. The apse parapet gutters need a look over as there is possibly some salting below on the outside.

After the inspection lead theft was carried out at the organ roof, causing water damage to the organ. The PCC are putting an action plan in place to improve the temporary organ protection of a polythene tent inside the chamber and to not only repair the lost lead in lead alternative, but tio also take the opportunity to renew the organ roof covering. We have looked at reconfiguring the roof to design out the box gutters but it's not viable. Or feasible.

Feguson's scope is-

'The two items of work that were considered for being carried out in the near future are the renewal of the small flat roof over the northern dormer above the bell chamber, and the slated roof over the Organ Chamber.

We have a price of £1,268.00 plus VAT to extend the existing scaffolding at the rear, to gain access to both of these roofs. The cost for renewing the roof boards of the dormer, and providing an EPDM covering as fixed on the south dormer, would be £1,070.00 plus VAT.

Missing lead gutter

Missing flashings

Damaged gutter

The reslating of the Organ Chamber roof would entail using the best of the existing slates, made out with matching slates from our stocks, fixed with copper nails to treated battens, Roofshield VPM and counterbattens laid over the existing roof boards. New lead would be provided to the cornice gutter at the north, and where flashings and soakers were not replaced in last year's works. Slating would be renewed up to the valley gutters over the north Transept, but the existing valley lead would be left in situ (unless you decide otherwise). The cost of this would be £10,915.00 plus VAT.'

Post inspection the decision is to renew leadwork in lead alternative.

See repairs since last inspection for proposed repairs.

Damaged downpipe

Recommendation: carry out roofing repairs and strengthen the organ tent protection.

7.4.3 RAINWATER GOODS

E **General:**

The condition of the rainwater system is still as it was reported in the last QI.

Since the last QI the downpipes have been painted, gullys cleaned and covers returned and all is much improved.

The nave lead gutter is remarkably holding up as it doesn't have expansion joints. It's lasted this long but they really should have them.

Recommendation: consider expansion joints to nave gutters or replacement in lead alternative

7.4.4 WALLS

WEST ELEVATION

- **Nave and Porch:**

Gable and windows appear ok, below that is the entrance porch. All ok.

Recommendation: none

C **Female Vestry:**

No change to open joints reported in last QI:

Cracking underneath the window looks the same as the last QI. Stone still missing just by the flat roof. The most extreme S W corner is cracking like before. The biggest problem is pointing missing on the bottom plinth sloping face. Here the sloping face doesn't have the rebate that we have seen over in the Lady Chapel. So they are different shapes.

This shape comment is wrong. They are all the same- it was thought that the Chapel had rebated edges but that was found at this inspection to be erosion.

On the inner, outside corner there is further cracking showing on the plinth course just below the corner clasp buttress.

Recommendation: repoint open joints and plinth

NORTH ELEVATION

B **Apse:**

The same as the QI. We know there is some efflorescence showing on S side at high level so there might be a problem here with the parapet gutters. They are undergoing repair after lead theft.

Recommendation: repair apse gutters

E **Vestry Corner:**

Basement boiler house (see separate entry below). Air vent now replaced. But needs further protection against intruders. Header tank overflow pipe extended so it doesn't drip on the walling now. Polycarbonate renewed. A little bit of open jointing on south side of mid-level louvre (probably not noticed last time- I don't think it's new)

Recommendation: revisit belfry enclosure to improve drainage and provide bird exclusion, replace guarding

- **Organ Chamber:**

The organ has a blanked window opening and the plaster is cracking on it but not really needing attention yet. There is an old bit of cracking just to the left of the downpipe linking the louvre window and the ground floor window at the Sacristy.

Recommendation: none

C **North Transept:**

Water table joints look a bit open on the E side, bit of an open joint above the vesica window but the condition looks much as before, polycarbonate has been replaced. Door has been repainted

Recommendation: repoint water table (ask Ferguson to look over when carrying out roof repairs)

- **Nave**:

The gutter here over sails with corbels so what created the (historic) staining inside on the eaves woodwork? It must have leaked back into the wall head. See comment about box gutter in rainwater goods section.

Recommendation: none

- **North Vestry:**

Has undergone repairs and is ok

Recommendation: none

SOUTH ELEVATION

- Nave:

The S side of the nave looks generally ok, polycarbonate is clean on this side.

Recommendation: none

- **South Transept:**

Same design as the N with no obvious defects. Door redecorated.

Recommendation: none

C **Lady Chapel:**

You can see here easily that wherever there is a sloping surface the pointing is coming out.

Recommendation: repoint plinth

7.4.5 EXTERNALS

- **General:** The boundary walling is made in the same cast stone as the building.

The paths have been swept up at the foot of the nave on the N and S side and the gulleys cleared out. Some paving is uneven.

The south transept entrance steps are managed better and the whole south side shrubbery is under better control. The north area is grass leading to the Hall

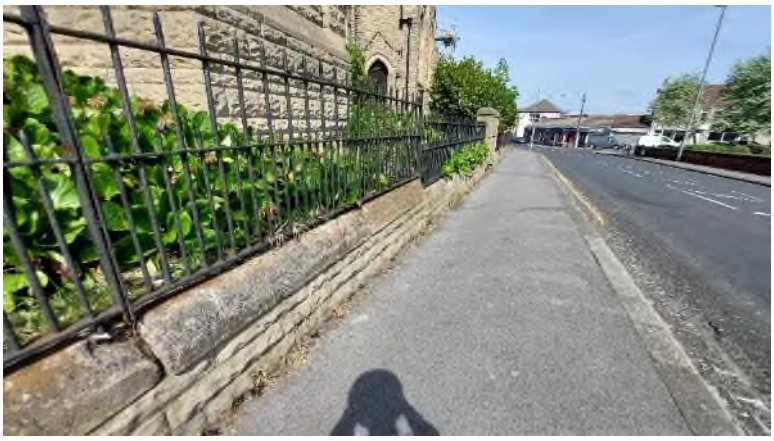
Recommendation: none

D **East Boundary:**

Rusty railings on the low cast stone walls. Further up is a masonry wall that has a crack induced by the tree within the church grounds.in fair condition.

Recommendation: review impact of tree on boundary wall.

D **South Boundary:**



Low retaining wall (same cast stone as church) with metal railings rusting in places and the decoration is breaking down and some of the fixings are rusting and breaking the stonework. The top course is being pushed out.

The gate piers are buckling a bit and the gate has lost its keep, the hinges are also breaking the pier masonry slightly.

Recommendation: restore railings and repair wall

- **West Boundary:**

This is formed of modern metal fencing. Looks ok. Same as on the partial north side.

Recommendation: none

- **North Boundary:**

Metal fencing, ok. Part Hall and rendered wall. All ok.

Recommendation: none

7.4.6 INTERIOR

C **Nave:**

- **Ceiling –** open rafter roof, boarding is in good condition, some water marking at eaves at tower and west gable ends Clear finish has darkened with age.

Up at the eaves the major damp item in the nave is at the further most truss on the N W side which is historic.

- **Walls –** Walls are fair faced engineering brick and look severe compared to the lighter 'stone' colour of the outside.
- There are salts to them. Damp showing at low level particularly to the South side (oddly, as it is higher out of the ground on the south).
- The window reveals are in cast stone and dark with pollution, also has water staining and should be cleaned

in the future. There is some need for repair but this is a low priority.

- The church walls have a bitumen damp proof course which is being compressed and droplets of bitumen are exuding from the joint. It is unknown if this continues the full width of the wall.
- **Floor –** The floors are generally concrete, with carpet to circulation spaces and woodblock floor under pews. The woodblock is loose and lifting in limited places but is being repaired as and when.
- **Fixtures and Fittings –** Oak pews in reasonable condition on raised pew platforms.

Two Memorial boards at rear on the S side recording previous vicars and churchwardens.

Recommendation: repair woodblock flooring

D **Transepts:**

- **Ceiling -** The Transepts and Lady Chapel ceilings have exposed rafters and purlins with boarding and these appear to be in good condition.
- **Walls –** Same as the nave. Salts at the window reveals
- **Floors –** Same as the nave.
- **Doors –** The external doors to the transepts are no longer used for general access. They are within lobbies that are used for storage and can no longer function as exits. They have been forced in the past by intruders and are now heavily guarded. They are draughty and could do with draught sealing.

- **Windows –** The transept windows are in coloured glass and were restored in the last 15 years. Glass is protected externally by new polycarbonate, some marking.
- **Fixtures and Fittings –** There is a large stone font supported on a cluster of Frosterley marble shafts. Three steps up to copper lined font bowl. Separate wooden metal cover.

Recommendation: improve draught stripping of doors.

- **Chancel:**

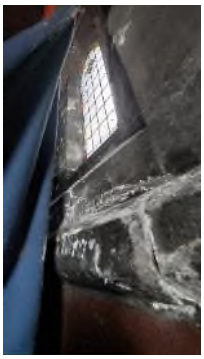
- **Ceiling –** Boarded and there is a void over that hasn't been inspected since 1993. The 1995 QI identifies periodic leakages through this roof up to a time when the roof was recovered and that there were no reports of leakage since then. But there are some salts outside at high level so the parapet gutters need checking.
- **Walls –** Same as the nave. Arcade arches are ok. The cast stone elements have been treated with a wax finish and there is more water staining to them at this inspection.
- High level of salts on the N E corner reveal still and there is also one area which has loss of facing.

- **Floor –** The chancel flooring is part woodblock and grey stone slabs with Frosterley inserts and carpeted.

- **Fixtures and Fittings –** High altar with reredos, two sets of altar rails, large ? artificial stone/concrete pulpit with stone base and Frosterley marble dressings.

Recommendation: none

D **Lady Chapel:**

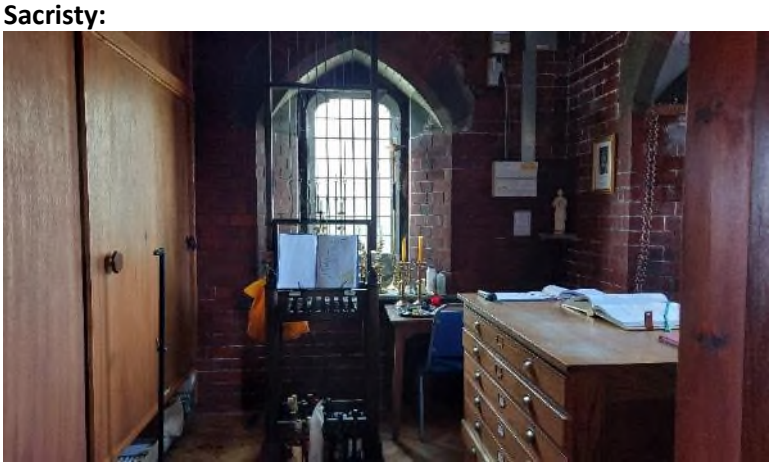


- **Ceiling –** exposed rafters and purlins with boarding and these appear to be in good condition.
- **Walls –** Same as the nave. Vet attractive painted metal parclose screen and gate. Good condition. Salting same as chancel to window masonry (behind curtain- rather dusty).
- **Floor –** herringbone wood block and carpet. Uneven towards altar.

- **Fixtures and Fittings –** Metal decorative screen separating the chancel. Two stained oak baluster altar rails. Pews in good condition.

Recommendation: repair floor, brush down window behind curtain

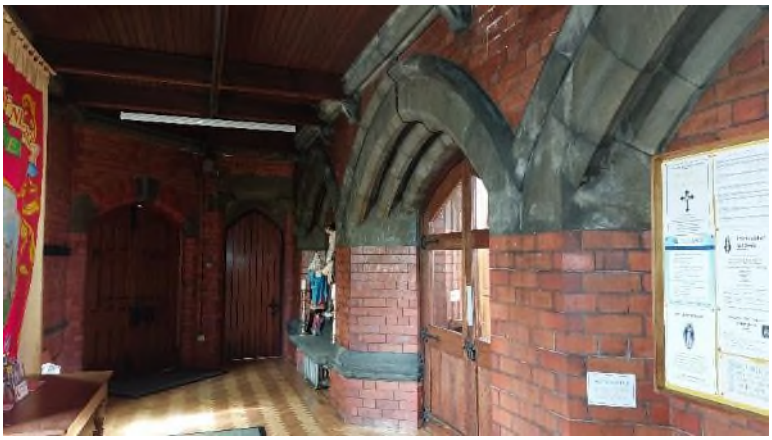
- **Sacristy:**



- **Ceiling –** Timber boarded**,** ok
- **Walls –** Same as the nave.
- **Floor –**in good condition.
- **Fixtures and Fittings –** Contains built-in cupboards and vestment chests, wash basin with cold water supply, safe, amplifier and controls.

Recommendation: none

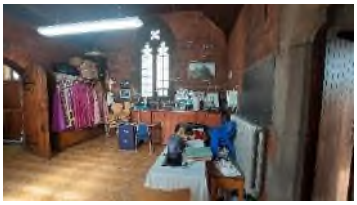
D **West Entrance Lobby:**



Floor has been sanded and clear finished. NUM Horden Lodge banner displayed at W.

Recommendation: none

E **Male and Female Vestries and WCs:**



Redecoration and refurbishment works are part way through. The Ladies Vestry has had its floor sanded and finished and there has been a tidy up. Previous water leaks have left their mark.

Recommendation: continue updating.

E **Boiler room:**

- **Ceiling -** Cracking to the concrete ceiling at steel beam mid span position, with some holes in it. But not troublesome.
- **Walls –** Painted brickwork, the paint is coming off.
- **Floor –** Concrete floor is ok.

- **General –**Improved vent window needs more work at the bottom edge as it has a gap that could be used to prise it off. Much tidier now but with old light fittings and flower stands to remove. The door frame looks rather worn- does it need replacing? The sacristy waste is plumber through the room to discharge onto the entrance area where it falls to the gully. Not ideal but will do for the present.

- **Recommendation:** tidy up, check door frame for firmness.

8.0 PRIORITIES

The following order of priority sets out the relative urgency of foreseeable repairs over the next 5 years. It is not a definitive programme of work and subject to funding, items further down the list could be brought forward if desired. They are priced individually but savings can be made by grouping the works and taking advantage of scaffold for other works. Scaffold costs are not included in the following costs.

There isn't an item for a whole church repoint- it really depends on what the research findings reveal. If one was wanted, then we suggest a budget figure of £60,000- 85,000. Scaffold could be a further £25,000 - 35,000. It could be broken into phases by doing the tower first.

Priority	Location and Scope	£
	A - URGENT	
A	**Organ:** Upgrade organ tent. Carry out repairs when funds are available.	**1,000**
A	**Intruder Alarm:** 2025 test due now.	**-**
	B- WITHIN 1 YEAR	
B	**Fire matters:** fix up the organ extinguisher	**-**
B	**PAT**: Annual test due.	**-**
B	**Heating:** Test heating	**-**
B	**Research:** open up areas of walling to establish construction method and details.	**2,500**
B	**Apse:** repair apse gutters	**Inc below**
B	**Roof General:** carry out roofing repairs due to lead theft (17k) and organ roof repairs (13k)	**30 – 35,000**
	C- WITHIN 2 YEARS	
C	**Lightning conductor:** Carry out five yearly test and recommendations of the test report.	**-**
C	**Tower Inside:** create attic access, investigate wall construction, repoint exterior, repair glass, remove inside salts and staining	**8,000**
C	**Tower outside:** repair glass, repoint masonry	**12,000-15,000**
C	**Female Vestry and Lady Chapel:** repoint open joints and plinth	**2,500**
C	**North Transept:** repoint water table (ask Ferguson to look over when carrying out roof repairs)	**750**
C	**Nave:** repair woodblock flooring	**750**
C	**Belfry:** revisit enclosure to improve drainage and provide bird exclusion, replace guarding	**3,500**

D- WITHIN 5 YEARS

D	**Heating:** Obtain quotations for a replacement heating system.	**C. 50-75,000**
D	**East Boundary:** review impact of tree on boundary wall.	**-**
D	**South Boundary:** restore railings and repair wall	**8,500**
D	**Transepts:** improve draught stripping of doors	**350**
D	**Lady Chapel:** repair floor, brush down window behind curtain	**250**

E- IMPROVEMENT/ NOTE

E	**Vestry /Bells:** formulate a long term plan to exclude pigeons and allow free drainage	**-**
E	**Organ:** Carry out repairs when funds are available.	**40,000**
E	**Rainwater goods:** consider expansion joints to nave gutters,or replace in lead alternative.	**2,500**
E	**Tower Crossing:** inspect void	**-**
E	**Male and Female Vestries and WCs:** continue updating	**Budget figure-7,500**
E	**Boiler room:** improve vent window sealing, tidy up, check door frame for firmness.	**600**

M- MAINTENANCE/ MONITOR

M	**Rainwater goods:** Put into place a formal inspection routine.	**500**

APPENDICES

Church Plan

Satellite Plan

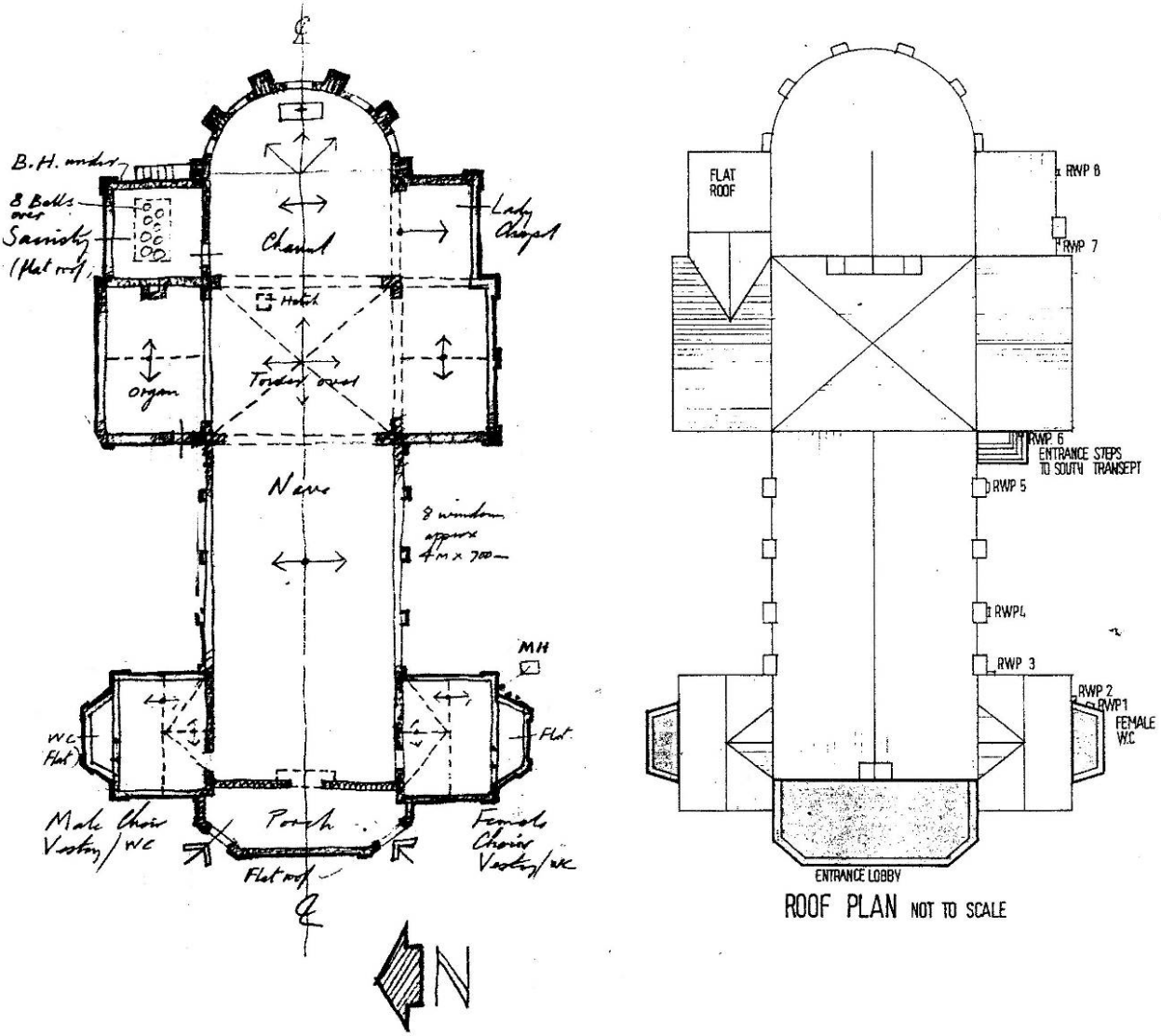
Taylor Hastwell Report

Explanatory Notes

Guide to Routine Maintenance & Inspection of Church Property

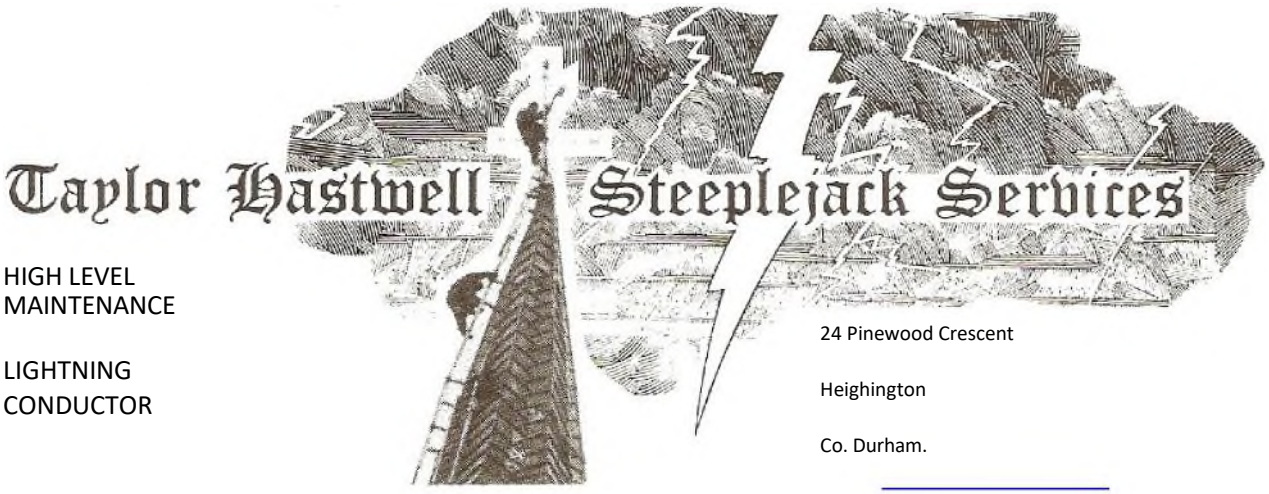
A Practical Path to 'Net Zero' Carbon for Our Churches
Energy Footprint Report

CHURCH PLAN



Plan from the previous inspector Jeremy Kendall RIB of HLB Architects.


The Parish Church of
Saint Mary Horden
Blackhills Rd
Eighth St



HIGH LEVEL
MAINTENANCE

LIGHTNING
CONDUCTOR

24 Pinewood Crescent

Heighington

Co. Durham.

DL5 6RP

~~Mr. A. Usher~~
~~St. Johns College,~~
~~3 S Bailey~~
~~Durham~~
~~DH1 3RJ~~

18th September 2020.

~~St Johns College.~~
~~Tower Report.~~

Further to our recent visit, I am pleased to forward the report and recommendations. Example photographs are included in the appendices of this report.

1. General

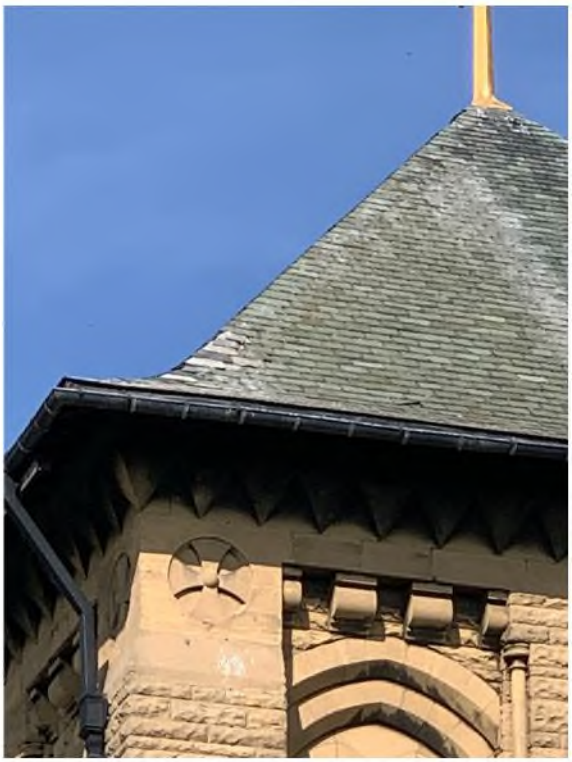
1.1 Open joints are evident throughout.
1.2 Some light cracking is evident to a number of concrete blocks.
1.3 Most mortar joints to lead flashings are cracked and beginning to fail.
1.4 A large section of lead has been stolen from the East face of tower at ridge height.
1.5 A large section of flashing has been stolen from the ease face of tower.
1.6 A large crack is evident to the East face of tower.
1.7 The South buttress to the East face of tower has several large cracks with some movement evident.
1.8 A concrete block is failing to the East face of tower.
1.9 A section of flashing to tower top valley has failed (valley was cleared of debris during inspection).

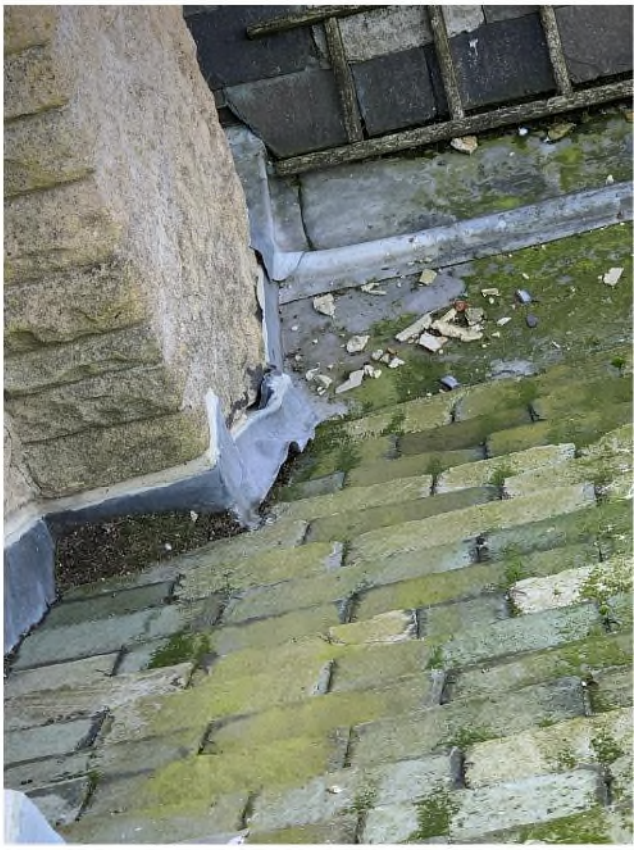
2. Recommendations
2.1 Patch point open joints as necessary.
2.2 Pin cracks to concrete blocks.
2.3 Cut out and repoint failing mortar joints to flashings.
2.4 Remove/replace, vandalized/stolen sections of lead.
2.5 Remove/replace, vandalized/stolen sections of lead flashing.
2.6 Fit Helibar to cracks in East face of tower.
2.7 Refit concrete block to East face.
2.4 Replace failed section of flashing to tower top valley.

Assuring you of my personal attention:

Yours faithfully,

A. P. Gibson.





EXPLANATORY NOTES

A Any electrical installation should be tested at least every quinquennium by a registered NICEIC electrician, and a resistance and earth continuity test should be obtained on all circuits. The engineer's test report should be kept with the church log book. This present report is based upon a visual inspection of the main switchboard and of certain sections of the wiring selected at random, without the use of instruments.

B Any lightning conductor should be tested every quinquennium in accordance with the current British Standard by a competent engineer, and the record of the test results and conditions should be kept with the church log book.

C A proper examination and test should be made of the heating apparatus by a qualified engineer, each summer before the heating season begins.

D A minimum of 2 water type fire extinguishers (sited adjacent to each exit) should be provided plus additional special extinguishers for the organ and boiler house, as detailed below.

Large churches will require more extinguishers. As a general rule of thumb, one water extinguisher should be provided for every 250 square metres of floor area.

Summary:

Location	**Type of Extinguisher**
General area	Water
Organ	CO^2
Boiler House	
Solid fuel boiler	Water
Gas fired boiler	Dry powder
Oil fired boiler	Foam (or dry powder if electricity supply to boiler room cannot easily be isolated)

All extinguishers should be inspected annually by a competent engineer to ensure they are in good working order.

Further advice can be obtained from the fire prevention officer of the local fire brigade and from your insurers.

E This is a summary report only, as it is required by the Inspection of Churches Measure; it is not a specification for the execution of the work and must not be used as such.

The professional advisor is willing to advise the PCC on implementing the recommendations and will if so requested prepare a specification, seek tenders and oversee the repairs.

F Although the measure requires the church to be inspected every 5 years, it should be realized that serious trouble may develop in between these surveys if minor defects are left unattended. Churchwardens are required by the Care of Churches and Ecclesiastical Jurisdiction Measure 1991 to make an annual inspection of the fabric and furnishings of the church, and to prepare a report for consideration by the meeting of the PCC before the Annual Parochial Church Meeting. This then must be presented with any amendments made by the PCC, to the Annual Parochial Church Meeting. **The PCC are strongly advised to enter into contract with a local builder for the cleaning out of gutters and downpipes twice a year.**

Further guidance on the inspection and the statutory responsibilities are contained in *How to Look After Your Church. The Churchwarden's Year* gives general guidance on routine inspections and housekeeping, and general guidance on cleaning is given in *Handle with Prayer*, both published for the CCC by Church House Publishing.

G The PCC are reminded that insurance cover should be index-linked, so that adequate cover is maintained against inflation of building costs. Contact should be made with the insurance company to ensure that insurance cover is adequate.

H The repairs recommended in the report will (with the exception of some minor maintenance items) are subject to the faculty jurisdiction.

I Woodwork or other parts of the building that are covered, unexposed or inaccessible have not been inspected. The adviser cannot therefore report that any such part of the building is free from defect.

This appendix is based on *A Guide for the Quinquennial Inspection of Churches, Diocese of Birmingham 1993.*

A GUIDE TO ROUTINE MAINTENANCE AND INSPECTION OF CHURCH PROPERTY

It is good practice for the PCC to appoint a fabric officer to take care of the routine maintenance of the church. This officer must report to the PCC and remain subject to its control and direction. The Care of Churches and Ecclesiastical Jurisdiction Measure 1991 requires the churchwardens to inspect the fabric of the church at least once a year, to produce a report on the fabric of the church and the articles belonging to it to the PCC, and to make that repot to the annual parochial church meeting on behalf of the PCC. The following list gives an indication of the time of year when certain jobs should be done. It is not exhaustive.

Spring, early summer	Whenever necessary inspect gutters and roofs from ground level and inside especially when it is raining.
	Clear snow from vulnerable areas.
	Clear concealed valley gutters.
	Make full inspection of the church for annual meeting.
	Check church inventory and update log book.
	Check bird-proofing to meshed openings.
	Sweep out any high level spaces. Check for bats and report any finds to English Nature.
	Cut any ivy starting to grow up walls and poison.
	Spray around the base of the walls to discourage weed growth.
	Check heating apparatus and clean flues.
Summer	Arrange for routine service of heating equipment.
	Check interior between second week of April and second week of June for active beetle infestation and report findings to the professional adviser.
	Check all ventilators in the floor and elsewhere and clean out as necessary.
	Spring clean the church.
	Cut any church grass.
	Cut ivy growth and spray (again).
	Recheck heating installation before autumn and test run.

	Arrange for any external painting required.
Autumn	Check gutters, downpipes, gullies, roofs etc. after leaf fall.
	Rod out any drain runs to ensure water clears easily, especially under pavements.
	Inspect roofs with binoculars from ground level, counting number of slipped slates, etc. for repair.
	Clean rubbish from ventilation holes inside and out.
	Check heating installation, lagging to hot water pipes etc. and repair as necessary.
Winter	Check roof spaces and under floors for vermin and poison.
	Check under valley gutters after cold spells for signs of leaking roofs.
	Bleed radiators and undertake routine maintenance to heating systems.
	Check temperatures in different areas of the building to ensure even temperature throughout and note any discrepancies.
Annually	Arrange for servicing of fire extinguishers.
	Inspect abutting buildings to ensure there is no build-up of leaves or other debris against the walls.
	Check the condition of outside walls, windows, sash cords, steps and any other areas likely to be a hazard to people entering the building.
	Check the extent of any insurance cover and update as necessary.
Every 5 years	Arrange for testing of the electrical systems.
	Arrange for the testing of any lightning protection.

It is vital, especially with older people, to keep them warm and well ventilated at all times. The fabric officer should ensure that such ventilation is taking place, especially after services.

A PRACTICAL PATH TO 'NET ZERO' CARBON FOR OUR CHURCHES

Net Zero

How churches can reduce their energy.

On 12 February 2020 General Synod recognised that we are in a climate emergency and committed to an ambitious carbon reduction target of Net Zero by 2030. The culture is changing fast, both outside and within the Church; questions of sustainability should inform all our buildings-related decisions from now on, and this report highlights opportunities for action. See also the Practical Path to Net Zero Carbon (PPNZC) document below, and the Sustainability Countdown to 2030 section below.
The Church of England Research and Statistics Team has created an Energy Footprint Tool This will tell your church what your 'carbon footprint' is, based on the energy you use to heat and light your buildings, and is part of the Online Parish Returns System.
https://www.churchofengland.org/about/policy-and-thinking/our-views/environment-and-climate-change/about-our-environment/energy-footprint-tool The tool is available on the CofE online Parish Returns website https://parishreturns.churchofengland.org/login
You will need to input the data from the most recent year's electricity and gas/oil etc. bills, and the tool will then tell you the amount of carbon produced annually by heating and lighting your church building; it will also offer some helpful tips to reduce your carbon emissions. As you use the tool each year, you will be able to see how your church improves, as you take steps to cut your carbon footprint. Most dioceses now have a Diocesan Environmental Officer in post, who may be able to offer support, including on questions of ecology and biodiversity, and signpost you to further resources.

***Sustainability Countdown to 2030:** It will be for the PCC to set its priorities for sustainability improvements, and I would encourage you to use the Practical Path to Net Zero Carbon (PPNZC) appended to this Report to help set these.*
The following gives you a suggested timetable to address in the next five years, as we prepare for 2030 (references relate to the PPNZC):
[List follows, combining items from the report with non-condition items from the PPNZC, such as renewable electrical tariff.]

A practical path to "net zero carbon" for our churches

These recommendations aim to help churches reduce their energy use and associated carbon emissions. They are based on the findings of our church energy audit programme and input from of a range of professionals in the field.

NOTE: Many of the suggestions below require faculty; please seek input early on. If the church interior is of historic, artistic, architectural or artistic interest, seek professional & DAC advice first, before making changes; stabilising the environment for these interiors is important to minimise cycles of treatment, with their inherent carbon cost.

A. Where do we start?	These are actions that nearly all churches can benefit from, even low occupancy churches used only on a Sunday. They are relatively easy, with relatively fast pay back.

The building itself:

A1. Maintain the roof and gutters, to prevent damp entering the building and warm air escaping.
A2. Fix any broken window panes* and make sure opening windows shut tightly, to reduce heat loss.
A3. Insulate around heating pipes to direct heat where you want it; this may allow other sources of heat to be reduced in this area.
A4. If draughts from doors are problematic, draught-proof the gaps* or put up a door-curtain*.
A5. Consider using rugs/floor-coverings (with breathable backings) and cushions on/around the pews/chairs. **Heating and lighting:**
A6. Switch to 100% renewable electricity, for example through Parish Buying's energy basket, and "green" gas.

A7. Match heating settings better to usage, so you only run the heating when necessary*.
A8. If you have water-filled radiators, try turning-off the heating 15 minutes before the service ends; for most churches this allows the heating system to continue to radiate residual warmth*.
A9. If you have radiators, add a glycol based "anti-freeze" to your radiator system and review your frost setting.
A10. Replace lightbulbs with LEDs, where simple replacement is possible.
A11. Replace floodlights with new LED units.
A12. If you have internet connection, install a HIVE- or NEST-type heating controller, to better control heating.
A13. If your current appliances fail, then replace with A+++ appliances.

People and policies:

A14. Complete the Energy Footprint Tool each year, as part of your Parish Return, & communicate the results.
A15. Create an Energy Champion who monitors bills and encourages people to turn things off when not needed.
A16. Write an energy efficiency procurement policy; commit to renewable electricity & A+++ rated appliances.
A17. Consider moving PCC meetings elsewhere during cold months, rather than running the church heating. **Offset the rest:**
A18. For most low usage "Sunday" churches, once they have taken steps like these, their remaining non-renewable energy use will be very small. For the majority, all they need to do now to be "net zero" is offset the small remaining amount of energy through Climate Stewards or other reputable schemes.
A19. Also, think about your church grounds. Is there an area where you could let vegetation or a tree grow?

B. Where do we go next?

These are actions with a reasonably fast pay back for a church with medium energy usage, used a few times a week. Perhaps half of churches should consider them.
Most actions cost more than the ones above, and/or require more time and thought. Some require some specialist advice and/or installers. They are often good next steps for those churches with the time and resources to move on further towards 'net zero'.

The building itself:

B1. If you have an uninsulated, easy-to-access roof void, consult with your QI about insulating the loft*.
B2. If you have problematic draughts from your door, and a door curtain wouldn't work, consult with your QI about installing a glazed door within your porch, or even a draught-lobby*.
B3. Consider creating one or more smaller (separately heatable) spaces for smaller events.
B4. Consider fabric wall-hangings or panels, with an air gap behind, as a barrier between people and cold walls. **Heating and lighting:**
B5. Learn how your building heats/cools and the link to comfort, by using data loggers (with good guidance).
B6. Improve your heating zones and controls, so you only warm the areas you are using.
B7. Install TRVs on radiators in meeting rooms & offices, to allow you to control them individually.

B8. Consider under-pew electric heaters and/or infra-red radiant panel heaters*, which keep people warm without trying to heat the whole church space. Radiant panels are especially good for specific spaces like chapels and transepts, which you might want warm when you don't need the whole church to be warm.

B9. If you have radiators, install a magnetic sediment "sludge" filter to extend the life of the system.

B10. Consider thermal and/or motion sensors to automatically light the church when visitors come in, for security lights, and for kitchens and WCs.

B11. Install an energy-saving device such as Savawatt on your fridge or other commercial appliances.

B12. Get your energy supplier to install a smart meter, to better measure the energy you use.

People and policies:

B13. Vary service times with the seasons, so in winter you meet early afternoon when the building is warmer.

C. Getting to zero

These are bigger, more complex, projects, which only busy churches with high energy use are likely to consider. They could reduce energy use significantly, but require substantial work (which itself has a carbon cost) and have a longer payback. **They all require professional advice, including input from your DAC.**

The building itself:

C1. Draught-proof windows*.

C2. If you have an open tower void, insulate or draught-proof the tower ceiling *.

C3. Double-glaze or secondary-glaze suitable windows in well-used areas such offices, vestries and halls*.

C4. Internally insulate walls in well-used areas such offices, vestries and halls*.

C5. If you have pew platforms, consider insulating under the wooden platform with breathable materials*.

C6. Reinstate ceilings, and insulate above*.

Heating and lighting:

C7. Install a new LED lighting system, including all harder-to-reach lights, new fittings & controls.

C8. Install solar PV, if you have an appropriate roof and use sufficient daytime electricity in the summer.

D. "Only if...."

These are actions you would do at specific times (such as when reordering is happening) or in very specific circumstances. **Nearly all require professional advice, including input from your DAC.**

The building itself:

D1. If you are reroofing anyway, then insulate the roof, if appropriate for your roof*.

D2. If you have an uninsulated wall with a cavity (typically build 1940 onwards), then insulate the cavity.

D3. If the building is regularly used & suitable, such as a church hall, consider appropriate external insulation or render, appropriate for the age and nature of the building*.

Heating and lighting:

D4. If there's no alternative that does not run on fossil-fuels, then replace an old gas boiler or an oil boiler with a new efficient gas boiler.

D5. If yours is a well-used church which you want to keep warm throughout the week, then consider an air or ground source heat pump. Ground source heat pumps are more expensive and invasive to install than air source heat pumps, but run more efficiently once installed, depending on ground conditions.

D6. If you are doing a major reordering or lifting the floor anyway, and yours is a very regularly used church, then consider under-floor heating. This can work well in combination with a heat pump (above).

Church grounds:

D7. If you have car parking that is sufficiently used, EV charging points for electric cars can work out cost neutral or earn a small amount of income for the church. Note, they will increase the church's own energy use, but will support the uptake of electric cars. They could be good in combination with solar PV panels.

E. By exception

These actions are often mentioned in this context, but are generally not recommended, because of the risk of harm to the fabric, energy used, and/or the cost.

- Standard secondary glazing on the main, historic windows (this can be inefficient, expensive, & cause damage).
- Install solar thermal panels to generate hot water (hot water use is generally not high enough to justify it).
- Background space heating at all times unless needed for stabilisation of historic interiors (high energy use).

* If interiors are of historic, architectural or artistic interest, seek professional & DAC advice first.

 Queries: catherine.ross@churchofengland.org Cathedral & Church Buildings Division

ENERGY FOOTPRINT REPORT

Data provided by Martin Howard, Buildings for Mission Secretary, Diocese of Durham

2022
Church 12.5 Tonnes CO2e
Hall 8.49 Tonnes CO2e

2023
Church 8.74 Tonnes CO2e
Hall 4.24 Tonnes CO2e

The parish has not yet completed the data for 2024.