FORM 9 (Rule 7)

Section 9 of Care of Cathedrals Measure 2011
Publice Notice on application to the Cathedrals Fabric Commission

PUBLIC NOTICE

TAKE NOTICE that the Chapter of the Cathedral Church of:

The Cathedral and Metropolitical Church of St Peter in York

has on this date: 10th February 2026

applied to the Cathedrals Fabric Commission for approval of the following proposal:
complete as on Form 8

Stone repair and renewals to address deterioration of stonework in the South Quire Transept and the exo-skeletons to the Lady Chapel clerestory windows, with structural monitoring and associated temporary works. This application also includes insulation to the South Quire Transept; conservation works to the east triforium and the renewal of LED lighting.

Summary of the nature of work and its extent (and materials) [or in the case of an object, a short description of it and details of the proposal]

For clarity, the extent of this CCM application covers:

1. Stone repair and renewals to address deterioration of stonework in the South Quire Transept (SQT), primarily focussing on associated buttresses and windows s7 (St Cuthbert's Window), S6 and S7.
2. Stone repair and renewals to address deterioration of stonework in the exo-skeletons of Lady Chapel clerestory windows S3, 4 & 5.
3. Works to monitor structural movement risks in these areas, with structural analysis – which will recommend limited structural intervention as proposed by The Morton Partnership (TMP).
4. The associated access and temporary works (scaffolds; lifting and hoisting; temporary works and other propping to structure). As with previous applications, this CCM application asks for approval for the final design of scaffold and temporary works to be approved subject to a condition, developed and signed off by FAC if needed.

Whilst not falling within the primary scope of the project, the following matters are proposed for later inclusion, subject to confirmation of details, to be conditionally approved under this application:

1. Insulation of the South Quire Transept vault zone (currently the only uninsulated timber vaulting in the Minster) and redecoration of the vault internally.
2. Conservation of the significant and delicate capitals on the east side triforium in response to emerging salt damage.
3. Renewal of lighting to low-energy LED lights in the south quire transept, but otherwise on a like-for-like basis.

Plans, drawings, specifications or other documents

Copies of the plans, drawings, specification and other documents accompanying this application may be examined at the office of the Chapter of the Cathedral Church
Insert address and contact details

8-10 Minster Yard, York, YO1 7HH works@yorkminster.org, and on the website at: https://yorkminster.org/about-us/statutory-applications/

Between the hours of:	08.00 – 16.00
From this day:	10th February 2026
and until:	10th March 2026

REPRESENTATIONS

If you wish to make representations about the whole or any part of the proposal described in this Notice you should write to

The Secretary of the Cathedrals Fabric Commission:
c/o Cathedrals and Major Churches Officer
Church Buildings Division
Church House
Great Smith St
London
SW1P 3AZ
020 7898 1678
adrian.daffern@churchofengland.org

So that it reaches the Secretary not later than: *insert a date ending 28 days after the time of the commencement of the period for representations.*

10th March 2026

DIRECTIONS TO CHAPTER

1. This public notice (or a copy of it) must be displayed for a continuous period of 28 days in a prominent position inside and outside your cathedral where it is readily visible to the public.

2. A copy of this notice must be sent as follows:

(a) to the Fabric Advisory Committee of your Cathedral Church
(b) to Historic England (formerly English Heritage)
(c) to the national amenity societies as applicable (see list on Form 8)

and

(*only if the proposal is for works as described in section 2(1)(a) of the Measure*)
(d) to the local planning authority.

CAROE ARCHITECTURE

YORK MINSTER

York Minster Major Stone Project: South Quire Transept & S3-5

Design & Heritage Report for CCM Application

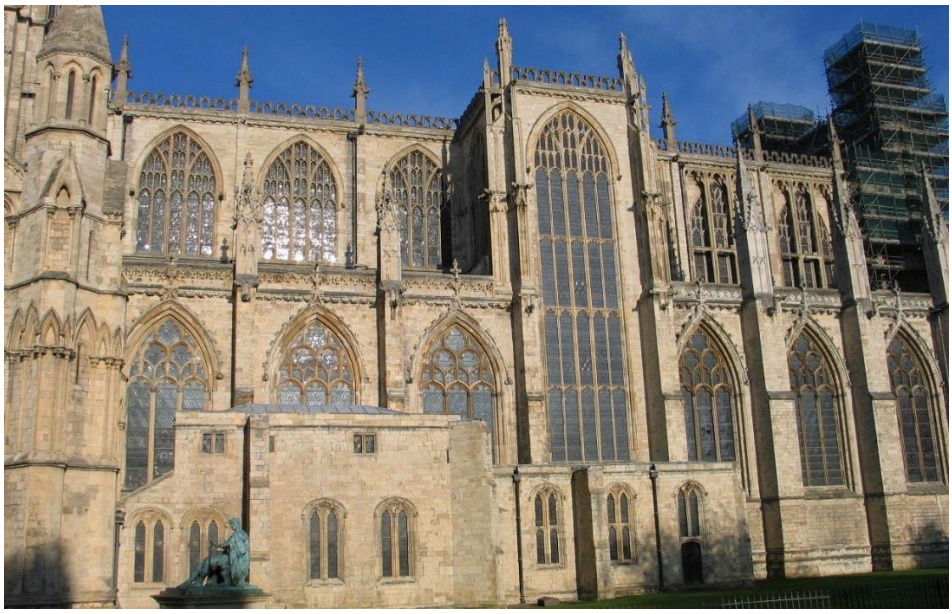
Revision A04 February 2026

Contents

Introduction

This paper has been prepared to accompany a CCM application made to the CFCE seeking consent for the conservation works and renewal of damaged and decaying stonework of the South Quire Transept (SQT), including that of St Cuthbert's window (s7 and the side windows S6 and S7– works area 2), as well as the exo-skeletons of the South Quire Clerestory Windows S3-5 in works area 5.

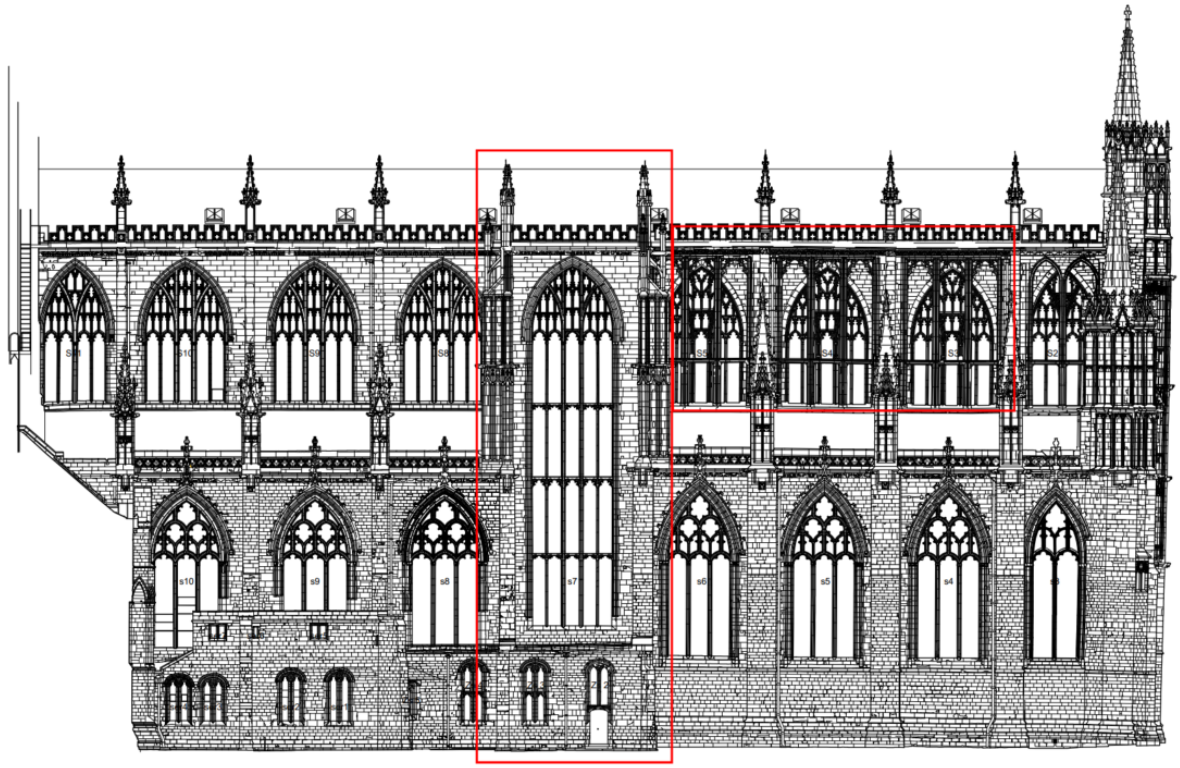
These works comprise the central phase of the major South Quire Aisle stone and stained glass windows conservation & protection programme that was first defined in 2015.



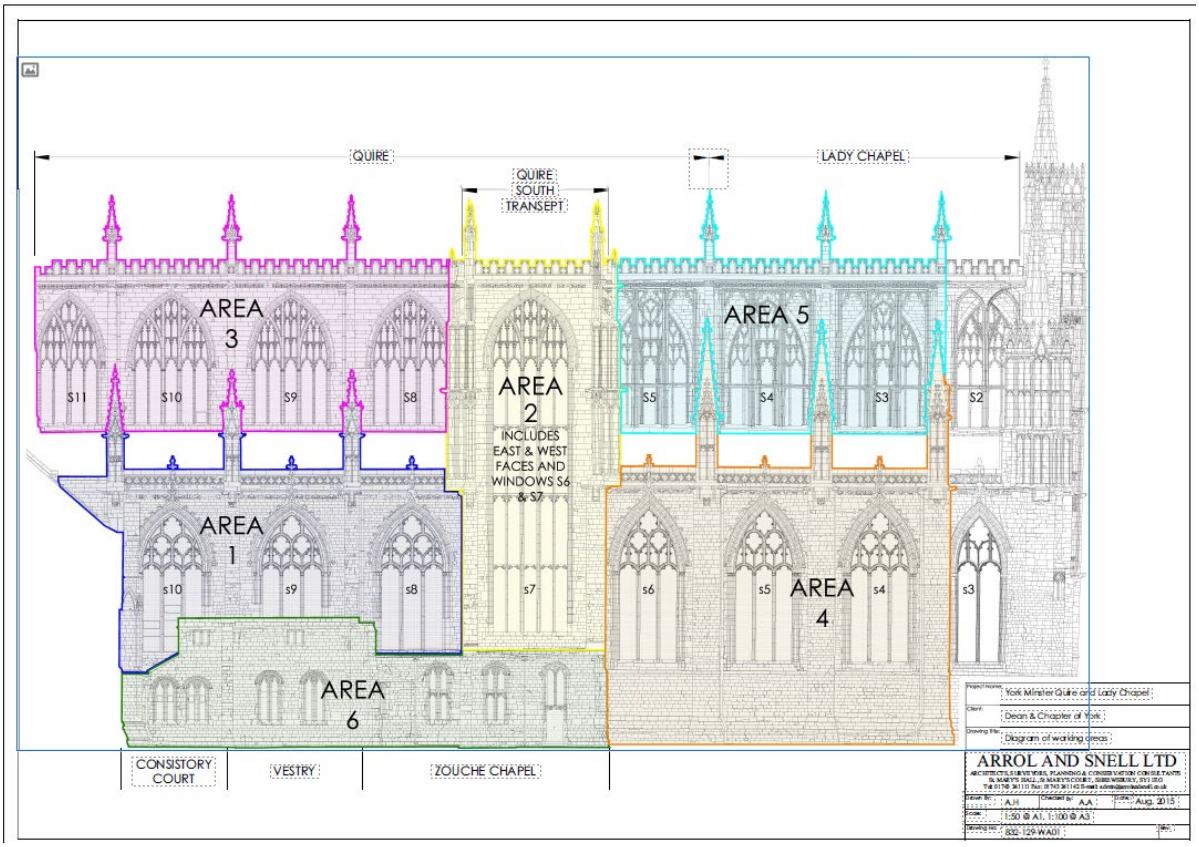
The South Quire Elevation in 2015 – which has been shrouded in scaffolding now to 10 years. Few members will recall the elevation without scaffolding.

Whilst the programming for these works is not anticipated to commence on the building until early-mid 2030s the application is being made now to allow the stoneyard to better forecast work and stone procurement, whilst also assisting the Minster Fund to prepare to meet the costs against a clearly defined scope and approach. The production of stone will commence in advance of the construction phase and therefore needs to be consented.

The conservation works to the glazing and the development of environmental protective glazing (EPG) of s7 are subject to the standing consent for glass authorised for a 10 year period by CFCE which was granted in 2019, subject to conditions. As currently envisaged, the works to the glass for s7 will be implemented to the authorised specification. However, it is noted that the work for reinstatement of the glass will likely fall outside the 10 year time limit of the 2019 CCM. Formalisation of the CCM for glass within the stonework programme (which is the focus of this new application) will need to be attended to in future years, subject to programme. The stained-glass panels are currently safely stored and have been taken out of the s7 window (and are subject to a fascinating and much-admired exhibition in the quire aisle). The glass has been conserved by the York Glazier's Trust in line with the methodologies and details granted under the standing consent. Windows S3-5 have been conserved and reinstated, they will be protected in situ during the exoskeleton phase of repair.



SQA elevation outlining the extents of the CCM for which approval is sought to Area 2 and Area 5, as per the working areas defined in 2015 by Andrew Arrol. Note that Area 2 includes the side-returns and windows S6 and S7 on the east and west faces of the transeptal bay.



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The following studies have been integral to the development of proposals and remain as continuing strands of investigation:

1. Structural review of the west SQT buttress which, whilst visible over the Zouch Chapel roof, does not extend to ground, to confirm whether there is need for additional support.
2. Continuing investigation and research into stone procurement to answer not only what stone will be used for the needs of this campaign – but also how this fits within the wider context of investigations into a secure supply of quality magnesian limestone and/or other suitable limestone for continuing repairs (Lepine Lavoux being the primary candidate).
3. High-level appraisal of roofing repairs, renewal and, at the same time, to answer the QIR concern about rainwater disposal capacity in this quadrant of the Minster.
4. Replastering and repair of the Zouche Chapel vaulting as a whole. Replastering is proposed to be agreed as a separate project and can only proceed after roofing is watertight. It is noted there may be some dependencies with other works. Note that we are regularly reporting to FAC (as per existing consent) on the monitoring of deterioration of the vault stonework and plaster, which is accessed on a six monthly basis and made safe.
5. Integration of technical research questions that CFCE have advised on as well as internal environmental questions including dust – read with appended TCA appraisal.

This report should be read alongside the other documents and drawings that form this application, included as appendices.

Scope and Status of the Report and Contributors

The preparation of this document has been led by the Surveyor and Caroe Architecture Ltd, with comprehensive contributions by The Morton Partnership and the Minster Stoneyard. The extent of necessary repair and the associated level of structural complexity, both in the permanent and temporary conditions of repair to the SQT and St Cuthbert's window, has guided the more formal establishment of a design team to work through the RIBA Stages with the Stoneyard. The project is currently at RIBA Stage 3 level.

Stone repair and renewal

The Master Mason and team, supported by the Surveyor, have worked through a condition review of the stonework. The necessary masonry repairs and renewals have been scheduled out, as required in St Cuthbert's Window, the Transeptal buttresses and the exo-skeletons of the Lady Chapel clerestory windows S3, 4 & 5. This inspection and scheduling process is largely complete although subject to some further refinement as part of the RIBA 4 proposals, with final judgements made as the stonework is dismantled.

Investigations have sought to understand structural movement (historic and current) in this part of the Minster where there appear to be potential or real settlements in the structure. It is noted that the West buttress of the transeptal aisle is not carried to ground and is interrupted by the vaulting of the Zouche Chapel. The Morton Partnership (structural engineers) have recorded existing cracks and are developing proposals for monitoring before, during and after the works. These essential 'due-diligence' monitoring activities are defined in the accompanying report by The Morton Partnership.

It has been determined that additional metric survey information will be required to create a digital model for structural analysis of this part of the building. It is vital that due time and care is given to this additional survey work which will inform the temporary works requirements, sequencing and methods to ensure the stone renewals, which require substantial deconstruction of the buttresses, are undertaken safely.

Temporary Works

The existing scaffold was not designed for the specific purposes of this project and has been in place for over 13 years. Within this time adjustments have been made, components have deteriorated, and temporary works legislation has been updated.

An audit of the existing scaffold was undertaken and its condition recorded to evaluate whether it is feasible to use (in an augmented form) for the project or whether a new/redesigned scaffold will be required. It has now been concluded that the scaffold will need to be struck and a new scaffold constructed to satisfy the anticipated material handling and temporary support requirements for the repairs.

As noted above, there is a need to procure further metric data before detailed designs can be completed. It is intended that a statement of principles will accompany the consents submission, with detailed design to follow (conditioned if necessary). Scaffold design will be worked through to RIBA 4 to allow strategies for propping/temporary works to be met with certainty and working methods established.

Consultations

We have convened a number of pre-application consultations, initially with FAC and CFCE, on two occasions as the project has developed. More recently site visits and meetings were invited with all the regulators and consultees (FAC, HE, CFCE, SPAB, CoY etc.) to show firsthand the condition of the stonework and the need for intervention, and to discuss and agree approaches towards detailing, temporary works, stone selection etc.

Specifically regarding window s7 (St Cuthbert's window) we have evaluated and consulted upon two repair options which are presented in this report and shown on drawing YM4/3/2025/21. Following CFCE guidance especially, Option 2 is submitted for consent.

Further additional information recommended by consultees.

- 'As Existing' and 'As Proposed' windows sections were requested. These are included in the papers.
- The York Minster Stoneyard have also provided drawings showing the profiling discrepancies between the C15th and later C19th stonework, which have been included within the supporting documents.
- A Technical Note from Tobit Curteis has been included with the application, providing detailed discussion on the processes of deterioration and rate of change.
- The York Minster Stoneyard have compiled additional images, which have also been included within the supporting documents.

Methodology and Process

Stone Practice

All the works envisaged within this application are covered within the methodologies and principles which are defined in *Stone Practice*, which remains the Stoneyard's touch-stone for care, conservation and renewal practice, as adopted by Chapter in consultation with the statutory bodies. *Stone Practice* remains under review. As described in the last iteration (2023), we are now undertaking a further review of the 'flexible' technical appendix, which is not part of the core principles, which relates to use of the new technologies in the light of the learnings arising from 12 months use and application of our production processes. However this review does not affect the adopted Stone Practice principles, on which these works will depend.

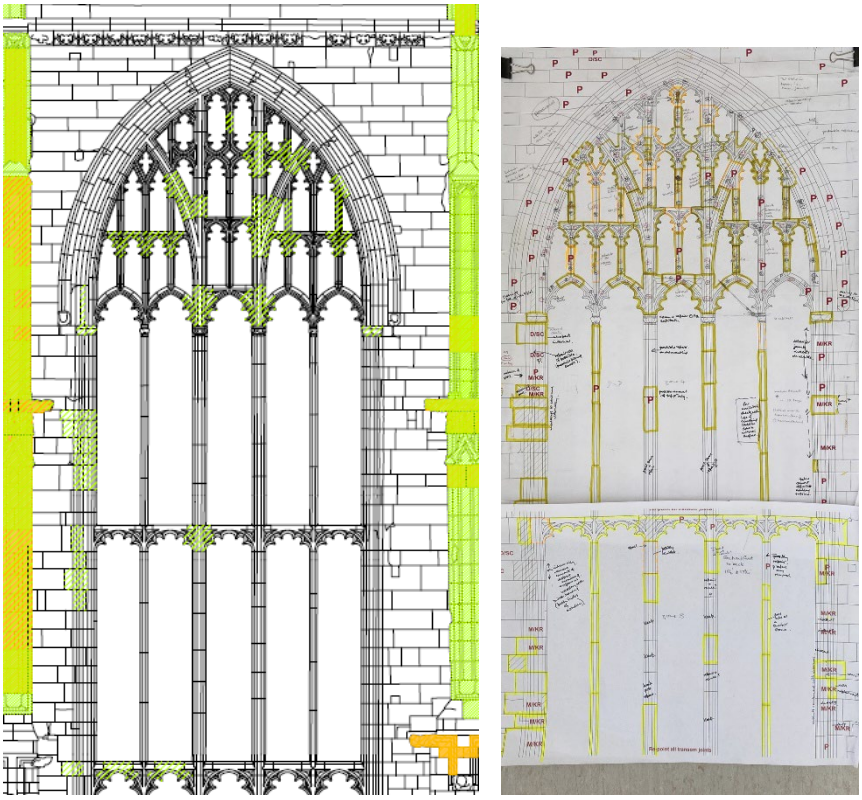
Statement of Need for CCM

The need for intervention and repair is dictated by the condition of the existing fabric, with the approach and repair proposals being governed by *Stone Practice*.

It is noted that the anticipated scope of stone repair and replacement, primarily in the tracery of s7, is now expected to be considerably greater in scope than was anticipated in 2015 due to the reasons explained below. A scheme of repair and scheduling was first disseminated in June 2018. Identification of stone types (and thus the history of repair) has remained largely as observed then with some points of interested and evidential details that Stuart Harrison is surveying carefully, as is custom and practice. However, there are significant additional requirements for stone replacement that will require substantial dismantling of the s7 tracery. FAC members may recall discussions dating back to June 2022 when a pre-meeting visit also allowed first hand review. A CFCE delegation also saw these decay in person issues subsequently and a letter of advice was circulated, including a request for further consideration of the decay mechanisms which have affected this highly exposed window tracery.

There are two main precedents at York Minster which underly the need now identified for a programme of renewal which will largely renew the tracery of the s7 window. Firstly, there is the fairly extensive renewal of the West window in the late 20thC which was found to be in poor condition and was almost completely renewed using Lepine stone for the mullions and traceries.

By way of contrast, whilst initially the expectation for the Great East Window (GEW) project was that the window stonework would need to be largely renewed, on closer inspection a more conservative approach of repair was adopted under Andrew Arroll. The GEW project deployed locally sourced stone replacement and conservation work using stone repair techniques, significantly reducing cost and time and retaining more of the inherited and historic materials and decorative details.



Approximate side by side comparison to same scale (NTS) from our initial 2024 findings: On Right, stones outlined in yellow were subsequently scheduled for replacement. Stones highlighted orange are provisionally scheduled. These orange stones would be templated for renewal and, once dismantled, the final decision on replacement would be made. The basis for this consultation and CCM application has now further developed based on new research and we are seeking an approval for even more extensive renewals of stonework.

As can be seen in the illustrations above only a limited number of stones for renewal in the upper tracery were identified in 2018. As has been ingeniously achieved on other windows, the expectation was that much of the tracery stonework could be retained in situ and temporarily supported whilst these stones were removed, re carved and re fixed.

Comparing this with the work in progress survey drawing on the right, it is immediately clear that there is considerably more replacement stone required. This partly comes from the opportunity to properly inspect all round, now that the glass has been removed and we have an internal inspection scaffolding. We made the somewhat unexpected discovery that the condition of the tracery stonework *internally* is markedly poorer than we typically encounter. There are a combination of decay mechanisms and weathering, both internally and externally, including fractures which run from inside to out, which could not be seen before the glass was removed, whilst large areas of the internal stone face had been coated in hard mortar repairs. Cracks have since been pointed and tell-tales added and monitored, and a continuing strand of investigation seeks to further understand the cause of accelerated decay seen on the internal stones. Stephen Parry of the British Geological Survey has been engaged to advise on stone testing, both in this respect and for validating suitable stone selection for repairs. Dr Parry has also given a preliminary view of the decay mechanisms which theorizes a cause for the relatively poor condition of the window tracery and stonework.

Our findings on the internal survey have been a key determinant in the increased scope of repairs: the following photographs are intended to give examples of the issues we are seeing, although the conditions really need to be seen in the flesh to fully justify the determination of the competence of any particular stone component for a 75-100 year return period.

Detailed explanation of the causes of decay and reasoning for why it is more extensive on the internal stonework, is given in the accompanying Technical Note by Tobit Curteis, 'York Minster, south quire transept, window s7: deterioration processes.'

As we have prepared this documentation a number of new salient factors have emerged which now form the basis for recommending a more extensive programme of stone renewal, more akin to the West window project.

- The master mason has discovered a mismatch in the section profile of stone inserted in the circa 1890's.
- There is a real dwindling availability of local indigenous magnesian limestone of adequate quality in the section sizes required, which now drives a need to look to other sources of stone
- Even without the quality and size issues, there is a major supply issue with sourcing stone to anything close to a reliable programme.

A range of other overlaying factors, seen together and in the round, have led the masonry team to the conclusion that the tracery of the window will mostly need to be renewed in French limestone to deliver the longevity required to frame the precious glass, within anything close to a realistic programme.

We must stress that this is an unusual example, shifting the expected approach of conservative repair (which is always our first choice) on this very specific occasion. This is due to the culmination of factors described above; historical judgements which have resulted in some of the issues we have inherited, along with extensive deterioration and the impact of climate change have led us to the position that we are in. We have an opportunity now, with greater data and understanding than those who undertook previous intervention, which we must act on now to pass on these highly significant masonry 'frames' to the historic glass and these stone structures for future generations.

Selection of photographs showing examples of defects in s7:

Deterioration of earlier magnesian limestone components with significant renewal in the 19th century. Note the profiling discrepancies between the two phases of work, and the application of hard cementitious mortars to infill spalled sections and blend the two together. This not only has a deleterious impact on the adjacent stone but creates a maintenance and safety issue as the mortar repair begins to detach.

Example of deterioration within internal stonework.

Damage to the stonework along the glass line and the very extensive cementitious 'repairs.'

Fractured, spalling and friable stonework internally, again creating a safety issue by presence of loose and detaching fragments.

Selection of photographs showing examples of defects in the exo-skeletons of S3-5:

Evidence of structural movement within the masonry due to rust jacking.

Cracked and spalling stones – note the enlarged bed joints which conceal rusting iron.

Preferential decay of softer units in the primary skeleton structure.

Heritage significance for CCM

Methodology of Assessing Significance

Significance is the concept that underpins current conservation philosophy and practice. The significance of heritage assets is defined in the National Planning Policy Framework (NPPF) as, 'The value of a heritage asset to this and future generations because of its heritage interest […] Significance derives not only from a heritage asset's physical presence but also from its setting.' As noted in the British Standard 7913 (2013) 'Guide to the Conservation of Historic Buildings', understanding the contribution of a particular historic building (or archaeological feature) to the wider historic environment allows significance to be taken into account when making decisions. The aim of conservation is to sensitively manage change to a place to ensure that its significance is not only protected but also revealed, reinforced and enhanced at every possible opportunity.

Categories of Significance

Our approach to assessing significance follows that set out in *Conservation Principles, Policy and Guidance* (paragraphs 30-60) published by Historic England in 2008. The following summary on significance is therefore based on consideration of evidential, historical, aesthetic and communal values, as outlined below.

EVIDENTIAL VALUE derives from the potential of the site to provide evidence of past human activity. The archaeological research and its potential capacity to respond to investigative analysis make a primary contribution to evidential value.

HISTORICAL VALUE derives from the way in which historical figures, events and aspects of life can be connected through a place to the present. This includes associative, illustrative and representational value, and encompasses among other things: rarity or survival, the extent of associated documentation, the ability to characterise a period and association with other monuments.

AESTHETIC VALUE derives from the way in which people draw sensory and intellectual stimulation from a place. This includes not only formal visual and aesthetic qualities arising from design for a particular purpose, the experiential encounter with these, but also more fortuitous relationships of visual elements arising from the development of the place through time, and aesthetic values associated with the actions of nature.

COMMUNAL VALUE is vital to the significance, at the heart of which are the many layered meanings that a place may hold in contemporary society. Commemorative and symbolic values are founded in collective memory and historic identity, and social value can also derive from the contemporary uses of a place.

Degrees of Significance

The degree of significance is outlined according to the following scale:

EXCEPTIONAL is used to define areas or aspects considered to be of international importance or value.

HIGH is used to define areas or aspects considered to be of national importance or value.

SOME is used to define areas or aspects considered to be of local importance or value or to have an element considered to be of potentially national interest.

NEUTRAL is used to define areas or aspects considered to be of neutral value (neither contributing to nor detracting from the heritage values).

DETRACTING is used to define areas or aspects considered to have a negative value or which are intrusive to the significance as a whole.

Overall Statement of Significance of the Minster

The following statement of significance is taken from the York Minster Conservation Management Plan (2020) p. 205. It highlights the importance of the Minster for its associations with early Christianity, its depth of archaeology, its enormous scale and the quality of its craftsmanship from each phase of Gothic architecture:

'York Minster is the principal place of Christian worship in York, Yorkshire, The essence of what makes the Minster significant is that it is a place to encounter God's love. This is embodied in its fabric which bears witness to the power of God's love through the ages and connects those who visit or work in the Minster in the present day to generations of the faithful who have built, cared for, worshipped in and beautified the church. The ongoing stewardship of the building is itself an expression of faith.

The Minster is the Metropolitical church of the Northern Province of the Church of England, the principal place of Christian worship in York and Yorkshire and a long-established centre of church administration. The apparent presence of a Bishop of York at the Council of Arles in 314AD and the re–foundation of the Minster in the 7th century are testament to the Minster's long history and status and a continuous Christian tradition spanning more than 1,300 years. Its profound spiritual and cultural value is therefore unquestionable. The present Minster, constructed after 1225, is also a deeply–rooted source of identity for its city and county, not least because it is a defining and unmistakable feature on the skyline of York and its environs. It is a spiritual focus for individuals and groups alike, providing a place to encounter God's love for its regular congregations, other congregations and Christian groups in the diocese, local people, visitors from further afield and organisations of all kinds including the armed forces. The Minster's clergy, staff, volunteers, musicians and friends enjoy a strong sense of community, and the warmth of their hospitality is often commended by visitors. There is a very strong musical tradition, which brings great pleasure to visitors and adds significantly to the atmosphere of the building and the experience of worship.

The Minster stands as a witness to the history of York: its monuments, outstanding archaeology and extensive Collections provide unique evidence of the city's past and development. The Collections include objects and documents which testify to local and national history: some, such as the Horn of Ulf and the York Gospels, are of particular antiquity and significance. The building itself has exceptional evidential and design value. Its sheer scale and the quality of its craftsmanship reflect the prosperity of the medieval city and the ambition of its patrons and archbishops, and position the Minster in the first rank of European great churches. More than that, its particular interest rests in the way it contributed to the distinctive evolution of the Gothic tradition in the north of England, and the way it illustrates how architectural concepts were transmitted across medieval Europe. The Chapter House and especially the Vestibule channel French ideas that were being introduced at court; these ideas were then developed in the nave and Quire in an increasingly idiosyncratic fashion.

The Minster's celebrated medieval stained glass is an integral part of its architectural design and essential to creating the special atmosphere of the building. By virtue of the remarkable extent of survival and its artistic and technical quality, it is unquestionably of international importance. The Minster and its glass and fittings were the creation of many designers and craftsmen of regional and national importance. Today the design and craft tradition is kept alive through the work of the Minster's stonemasons and conservators, and their skill and knowledge is one of the cathedral's greatest heritage values. Above all others, it is the architectural and artistic values of the Minster, and the achievements and skill of both past and present designers and craftsmen, which is most admired by visitors.

The Precinct's archaeology and architecture – not least the City Walls, the remains of the Archbishop's Palace and St William's College - are outstandingly important and contain unique evidence of the history and development of one of the country's most historically important urban centres since its creation by the Romans.'

The Minster is assessed to be of Exceptional Significance

Focussed Statement of Significance

Background: The Quire and Lady Chapel – An Archaeological and Historical Appraisal

The following is provided by Stuart Harrison, Cathedral Archaeologist:

The development of the Lady Chapel and the Choir is known from documentary evidence which is supported by the physical evidence in the fabric.

Archbishop Thoresby began work to replace the ageing 12th-century choir of archbishop Roger in 1361. This building had twin eastern towers arranged over an eastern transept that stood where the present eastern transept is now located. They had in fact replaced earlier eastern towers in the same area built by archbishop Thomas of Bayeux. This exhibits a process of continuity over three generations of the building.

Thoresby demolished all of Roger's choir standing to the east of his eastern transept and built the four bays of the new Lady Chapel back to that structure. A staggered jointing down the north eastern buttress face of the north east transept shows the junction between the two at the time. There was then a hiatus of around 20 years when the decision was taken to close down what was left of Roger's choir, demolish it and rebuild with a new choir.

The second phase of building on the new choir shows a revised and slimmed down design with slimmer buttresses and pinnacles. The external clerestory wall passage of the Lady Chapel was reversed to the inside of the building and the window tracery moved outwards to the outer plane of the wall. This meant that the new choir clerestory was inaccessible, a factor that seems linked to the incorporation of the eastern transept which interrupted the Lady Chapel wall passage that had been intended to continue- see below.

The fabric confirms this sequence but also adds more information. The clerestory wall passage in the Lady Chapel was placed externally, like in the nave and at its junction with the eastern transept continues to the west and the transept is simply but-jointed to the Lady Chapel clerestory. The passage goes a considerable distance into the wall and demonstrates that when it was first built

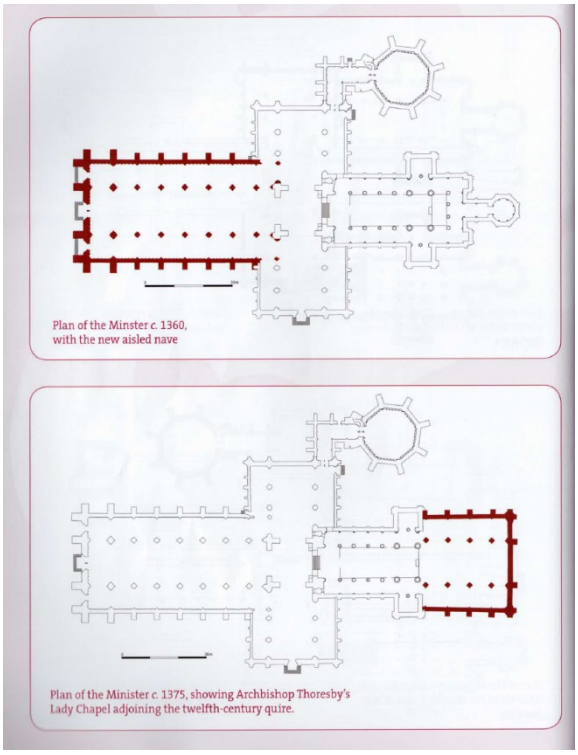
there doesn't seem to have been an intention to build an eastern transept. It was intended to continue westwards in the second phase.

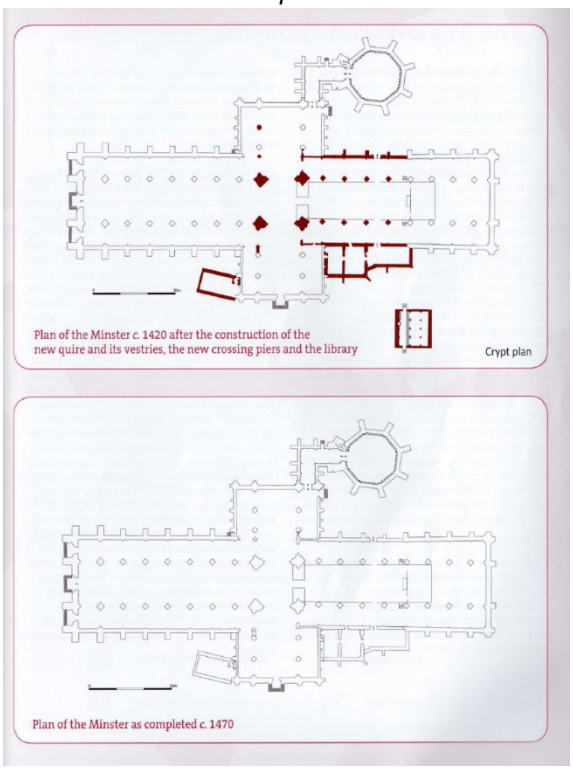
Other unusual characteristics are that the corner buttresses of the eastern transept are also straight jointed to the main walls throughout their height. In the junction of the eastern transept west wall with the choir clerestory there is a bonded corner but the corner stones are alternately L-shaped with a 30mm wide return to the west. It seems that the choir clerestory went up before the transept west wall and the builders left a toothed projection to build to. The alignment was slightly out so they recut the corner blocks to adjust that by 30mm a d ended up with the L-shaped corner blocks.

Internally there is evidence in the form of a sloping roofline mark in the triforium stage indicating the presence of a temporary roof for a while before the upper walls were fully raised and roofed.

At ground level the eastern transept bay can hardly be distinguished from the other regular aisle bays with no reinforcement to support the transept walls. This also suggests, like the clerestory passage, that initially there was no intention to erect the eastern transept as we now see it.

Pictorially this development was shown in plan sequences in our Architectural History booklet and also in the form of computer models with Thoresby's new Lady Chapel butting to Roger's choir transept and then that being replaced by the new choir and eastern transept.



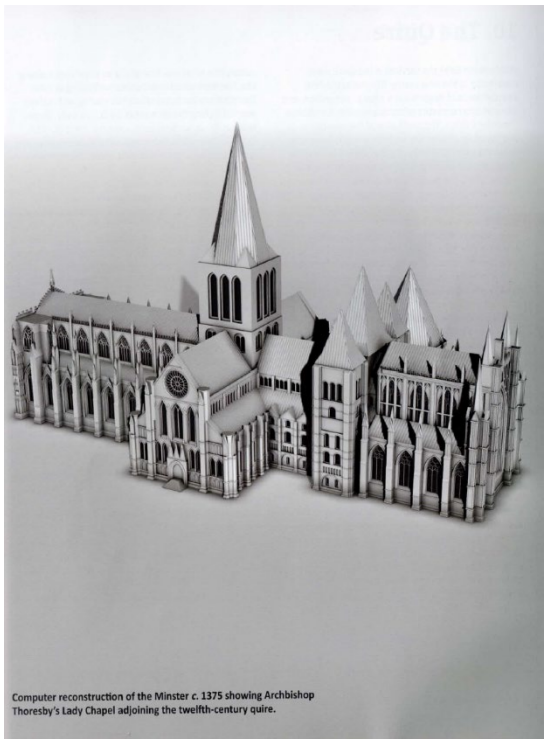


South Quire Transept

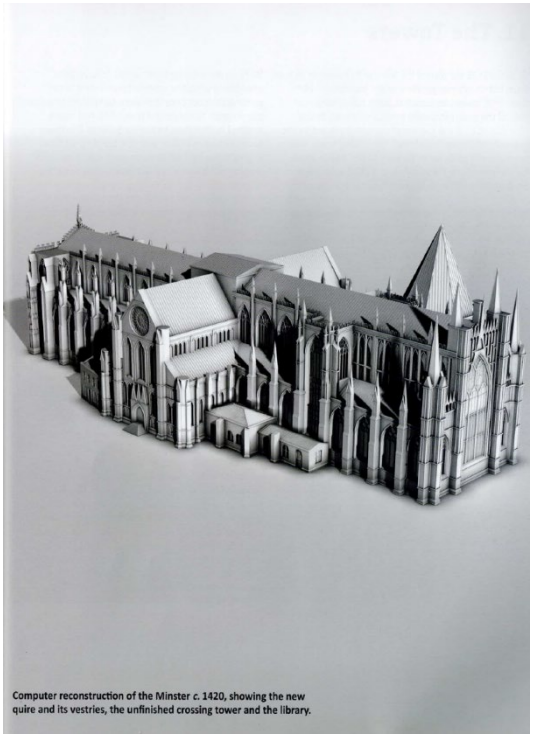
Description and History

The South Quire Transept formed part of the redevelopment of the Quire, which followed the earlier construction of the Lady Chapel to the east by Archbishop Thoreby. Harrison and Norton note that the reconstruction of the Quire was a '*concerted effort to complete Archbishop Thoresby's vision'* for the east range of the Minster.

Archbishop Thoresby had laid the foundation stone for the Lady Chapel in 1361. This new phase of the Minster was justified as an attempt to unify the architectural beauty of the Cathedral and to deliver a suitable place for daily Marian mass. Harrison and Norton posit that the intention was ultimately to rebuild the whole of the eastern end of the Cathedral, from the crossing onwards.[1] The reconstruction of the Quire would form a later part of this vision.



Computer reconstruction of the Minster c. 1375 showing Archbishop Thoresby's Lady Chapel adjoining the twelfth-century quire.



Computer reconstruction of the Minster c. 1420, showing the new quire and its vestries, the unfinished crossing tower and the library.

The South Quire Transept was constructed between 1394 and around 1404. As noted above, it is thought that the Transept was only fully raised to full height around 1430, having previously been built to the height of the aisle roof level.

Whilst Harrison notes the construction of the South Quire Transept may not have been envisaged when the Lady Chapel was being built (see above) there were precedents for 'transepts' to the Quire. Earlier phases of the Cathedral, dating from the twelfth century, included two 'transepts' to the eastern reaches (see figure above). The present fifteenth century Quire Transepts differ from those previous iterations in that they do not project from the Quire aisles. Still, they form a 'crossing' over the bay including the High altar, creating an architectural focus for the east end.

[1] Stuart Harrison and Christopher Norton, *York Minster An Illustrated Architectural History 627 – c. 1500* (Unpublished leaflet) p.40

The Gazetteer records the south façade of the South Quire Transept comprises *'Buttress at each side, stepping back and crowned by a narrow shaft that in turn steps back via flying buttresses and continues as a pinnacle above the parapet. The buttress forms a right-angled pair with that at the outer edge of the other sides of the transept. Upper stages of buttresses are treated with blind tracery and niches, in which respect they contrast with those on the N side of the Minster.'*

'Four-stage, five-light window begins slightly above the line of the base of the adjacent aisle windows. Lowest part of wall is behind 'Zouche' chapel. Tracery above reprises that of the clerestory; is replacement work of c.1820 (magnesian limestone).'

There are projected winged figures above the parapet, with a foliate cornice below dating to the 1820s. The Gazetteer notes that the headstops to the windows mouldings are eroded.

The South Quire Transept includes three windows: two flanking windows to its east and west façade at clerestory level, and one large window to its south façade that rises the entire height of the transept and is described above. One of the three great windows in the East End of York Minster, the window illustrates key scenes from the life of St Cuthbert. An Anglo-Saxon monk and Bishop of Lindisfarne, St Cuthbert was one of England's most celebrated religious figures during the medieval period. The window was donated by Bishop of Durham and former Dean of York, Thomas Langley.[2]

With regards to the east and west facades, the Gazetteer notes that *'In contrast to the Lady Chapel clerestory windows, the central pair of the tracery openings is given greater emphasis, with the vertical division to each side being afforded stronger treatment.'*[3]

The South Quire Transept has undergone several phases of repair and conservation since its fifteenth century construction. This included repair works in the eighteenth and nineteenth centuries, usually undertaken with poorer quality stone that weathered more quickly due to its porous nature. In the nineteenth and twentieth centuries, Ketton stone was also used which deepened the problem, due to its reaction with the original magnesian limestone.[4] The Gazetteer records that the tracery of the east and west facades was replaced with Clipsham during the twentieth century. The parapet has also been replaced. The St Cuthbert Window itself is also the subject of a major conservation project being undertaken by the York Glaziers Trust.

Present issues to the South Quire Transept are noted elsewhere in this report. However, the Gazetteer notes that, at the time of writing, there were severe issues with weathering and cracking to the flanking buttresses on the South Face.[5]

Significance

The CMP notes the significance of the east and west facades of the South Quire Transept as A (High Significance). The south façade, including St Cuthbert's window, is noted as A* (exceptional Significance). The Gazetteer assesses:

'The scale and ambition of the Quire transept windows is notable, comparing only with the east and west windows. The windows would have admitted plentiful light to illuminate the altar which, together with the Altar's elevated position, would have played an important role in demonstrating its

[2] https://stainedglass-navigator.yorkglazierstrust.org/window/st-cuthbert-window
[3] Gaz p. 41
[4] https://yorkminster.org/discover/conservation/the-st-cuthbert-window/
[5] Gaz pg. 42

significance. The greater amount of blind tracery to the buttressing on the SE Quire transept compared with the NE Quire transept confirms the more 'public' nature of this side of the Minster.'[6]

The significance of the South Quire Transept is multifaceted. The bay has evidential value derived form the numerous phases of repair and 'conservation' that are evident within its fabric and has the potential to yield further information from further evaluation.

The historical value of the bay is related to its inception and construction as part of the late fourteenth century redevelopment of the Quire. It is also intrinsically tied to Thoresby and the Lady Chapel. It illustrates the desires and values of those who constructed it, both to elevate and further sanctify the High altar by creating a crossing, and to hark back to the historic 'transepts' in this location. The repairs also hold historical value, illuminating conservation philosophy at the time of their undertaking. The window itself is also of exceptional historical value, both in terms of illustrating decorative commemorative practice of the time, and through its many associations.

The South Quire Transept is also of aesthetic value. The window itself is of exceptional aesthetic value, its scale, colour, and design both important as an element, and for the spatial qualities it imbues to the Minster interior. The overall form of the transept is an important, regulating architectural feature of the Catedral east of the crossing, a characteristic especially imbued by its height when compared to the South Quire Aisle and Lady Chapel. The verticality of the perpendicular design, echoed in the tracery and finials to the south transept, also contribute to this aesthetic value.

The South Quire Transept also contributes to the communal, and spiritual value of the Minster. It forms part of a crux centred around the High Altar, and thus makes some contribution to spiritual value. In being the location of the St Cuthbert window, s7 is also a focus of a particular aspect of spiritual value. Due to its importance, alongside the East Window the St Cuthbert window has also become one of the symbols of York itself and thus resonates with the collective memory of many who have visited the Minster. As a constituent part of the Minster, it also contributes more broadly to its multifaceted communal value: it forms an important backdrop of the lives of those who live, work, and travel through the Precinct. It thus makes a contribution to the collective memory and identity of those who live in and visit York.

The South Quire Transept is considered to be of Exceptional Significance, though includes deteriorating and detracting elements.

Clerestory: S3, S4 and S5 and Surrounding Area (part of the South elevation of the Lady Chapel)

Description and History

Bays S3-S5 form part of the clerestory of the Lady Chapel. The history of this is described in greater detail above. Constructed in the late fourteenth century, the bays are notable for the external stone screens. The CMP notes that '*Though perhaps inspired by the design of St Stephen's Chapel, Westminster, they do not, however, integrate particularly well with the rest of the architectural composition*.'[7] The external clerestory passage also speaks to the Rayonnant expression of Gothic architecture.

[6] Gaz pg.
[7] CMP pg 75

The Gazetteer notes that these are a *'3 bay arcade/screen with cusped arches in front of light windows. Passage between screen and window. Screen likely to have been replaced 1820s (that on the N side certainly was at this time). Buttresses are plain and surmounted by crocketed pinnacles. Eastern buttress again wider, with a crocketed spire above. Buttresses and pinnacles replaced with Clipsham.'*[8]

The stonework to these windows also underwent similar repair and renewal form the eighteenth century onwards. Originally constructed of limestone ashlar, it includes later Clipsham replacements.

Significance

In the context of the significance of the south elevation of the Lady Chapel, the Gazetteer assesses that:

'The clerestory screen is the most noteworthy feature, with particular design value. Conceived perhaps as a response to the architecture of St Stephen's Chapel, Westminster, it finds few parallels.

The results have been described by Brown as 'relatively introverted' in their interpretation of the Perpendicular, and indeed their influence was limited. Nonetheless, Wilson has shown that the Lady Chapel formed an important influence on the design of the Bishop's Throne (and the tomb of Bishop Hatfield) at Durham Cathedral, dating from c.1372. It also shaped the form of the western Quire in the 1390s. As elsewhere in the Minster, the elevation reveals something of successive rebuilding and restoration campaigns, not least by Bodley at the turn of the twentieth century.'[9]

In terms of heritage values, these bays have a similar evidential value to the South Quire Transept derived from previous phases of repair. Moreover, further analysis also has potential to yield further information regarding the construction of the Lady Chapel.

As a constituent part of the Lady Chapel, the windows contribute to the overall historical value of the Minster by illustrating a phase of its fourteenth century development, designed to deliver Marian services. As noted by the CMP and Harrison and Norton, they also therefore allow a 'rare insight into medieval aesthetic thinking' and the aspirations of Thoresby in particular.

Individually, the aesthetic value of S3-S5 is derived from their gothic tracery, incorporating aspects of perpendicular gothic forms though retaining a similarity to the earlier nave. The external screens also contribute to their aesthetic uniqueness when compared to the wider Minster, however commentators differ on how aesthetically and architectural successful they are (see above). As part of the whole, S3-S5 contribute to the architectural composition and rhythm of the Lady Chapel, and eastern arm of the Minster as a whole.

As constituent parts of the Minster, these areas contribute to the spiritual value of those who worship there, in particular those who have a particular stance on Marian theology. This contributes to communal value.

S3-S5 are of Exceptional significance.

Archaeological record

All affected areas will be subject to archaeological recording in line with Stone Practice policies.

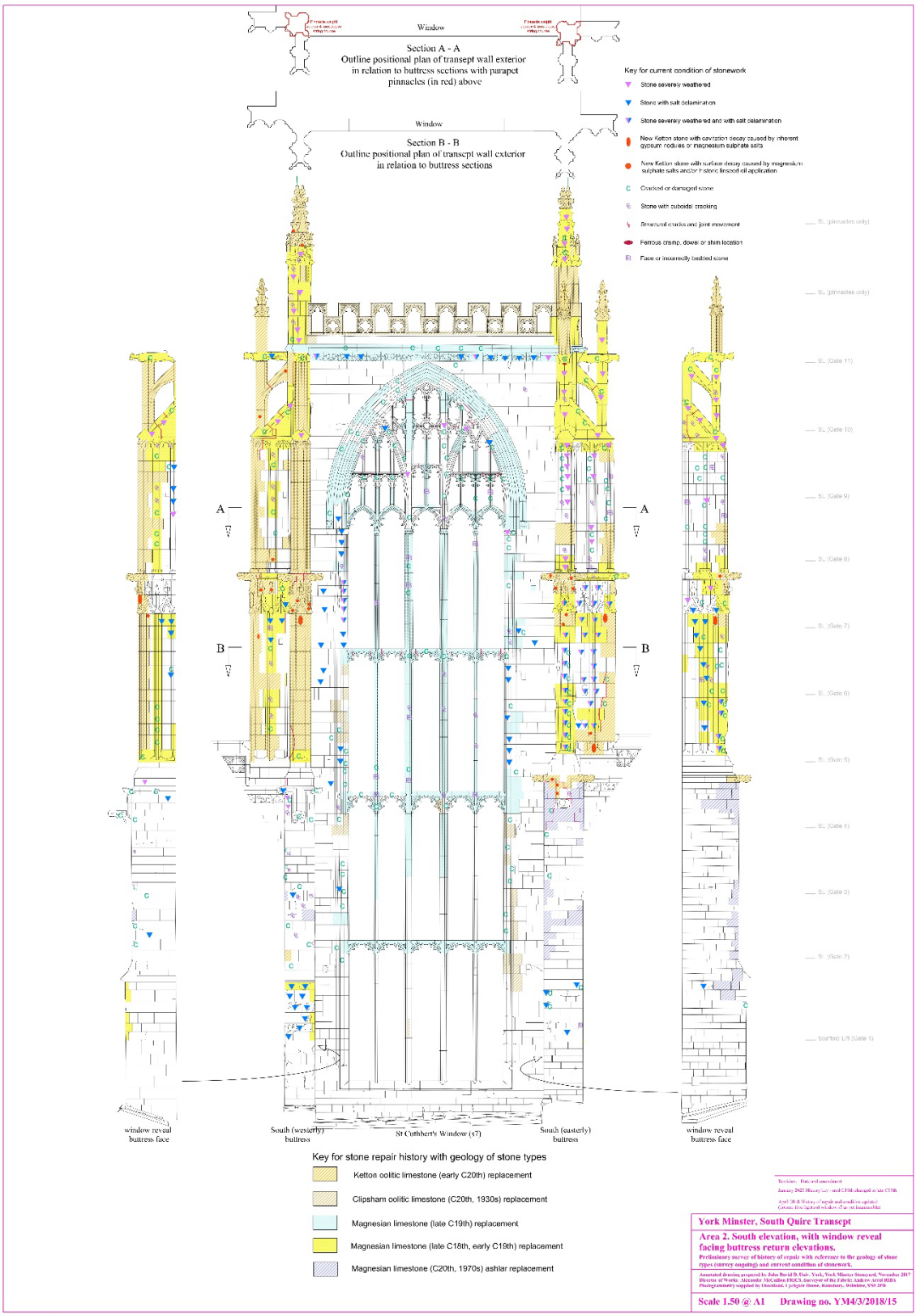
[8] Gazetter pg. 38
[9] Gaz pg 39

Phasing of stone renewal

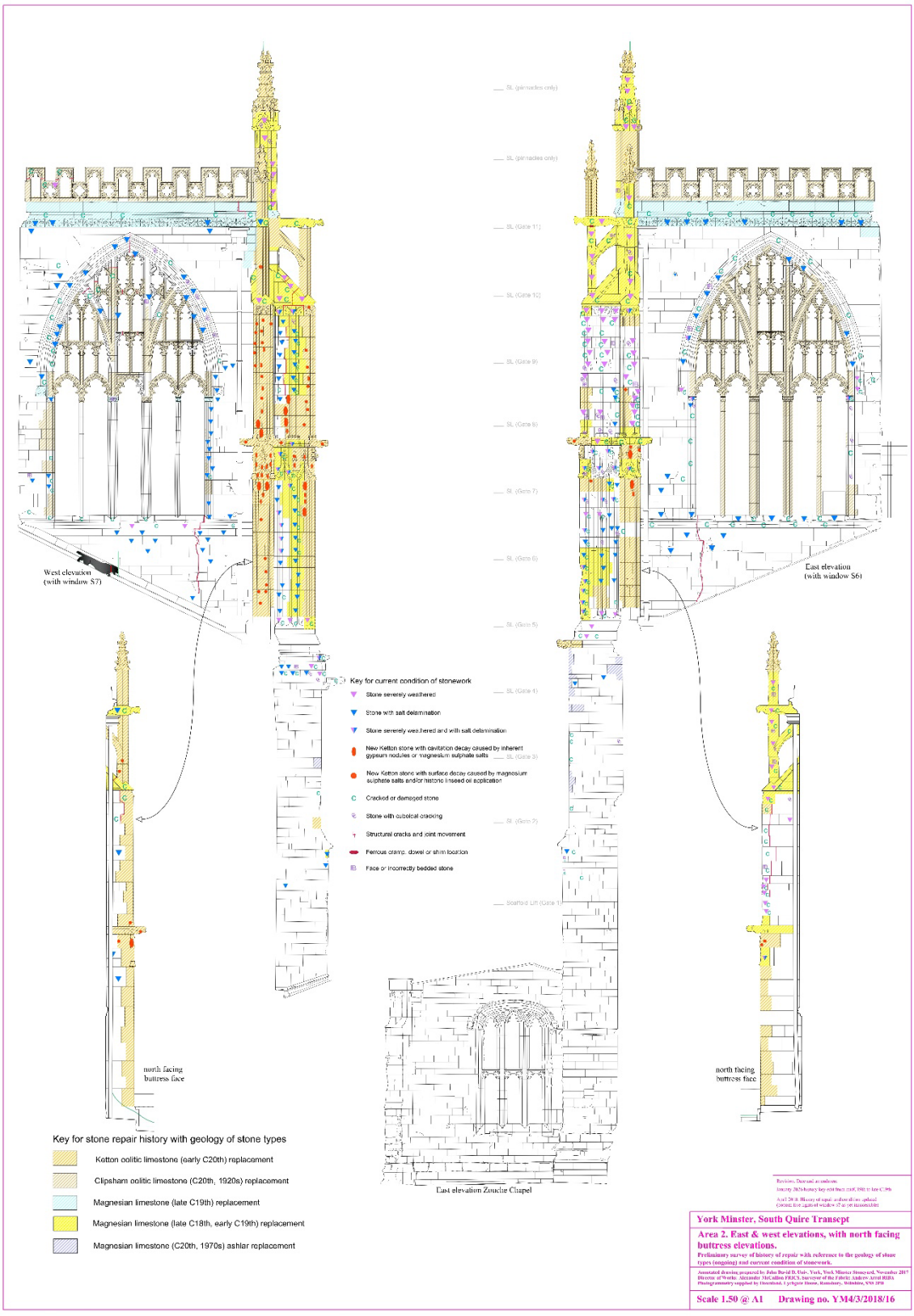
The expected phasing is described in the outline methodology in the structural section of this report.

Stone materials record as existing

The following record drawings have been prepared by the Stoneyard in line with the agreed Stone Practice.



Area 2 (SQT), South Elevation with window reveal facing buttress return elevations: History of repair with reference to geology of stone types and current condition of stonework (Work in Progress)



Area 2 (SQT), West and East Elevations with north facing buttress elevations: History of repair with reference to geology of stone types and current condition of stonework.

Design matters:

Structural matters:

The following provides a concise summary of structural considerations, intended to be read with the detailed accompanying report by The Morton Partnership.

Brief description of existing structure

The historical evidence suggests that there may once have been no intention of building the south quire transept. The passage between the inner and outer skins of the lady chapel wall on the eastern side of the transept goes a considerable distance into the wall of the transept, ostensibly intended to continue westwards. At ground level the eastern transept bay can hardly be distinguished from the other regular aisle bays with no reinforcement to support the transept walls and, perhaps most significantly, the south western buttress lands directly upon the masonry vault to the Zouche chapel.

The walls of the SQT form a three-sided tower-like structure, butting up to rather than structurally tying and bonding into the fabric of the aisle. There are large window apertures in each of the three sides. There are no intermediate floors to tie the structure together. Instead this is provided by through glazing bars, the bridge on the south side, and the roof. The corner buttresses are also straight jointed to the main walls throughout their higher stages, indicating that there is not significant contiguous structure, at least in the external facing.

Structural condition and general understanding of behaviour

A building such as the Minster is always going to experience structural fluctuations due to thermal movements, as well as the known below ground hydrology changes. The lack of bonding is not good practice however the levels movement can be considered relatively minor with settlement cracks in the east and west walls indicating about an inch (25mm) of movement over 600 years.

Movement is also evident in the tracery on all elevations although this is to be expected; the tracery is more sensitive as it does not have a large masonry panel to redistribute load, it simply concentrates weight onto the mullions. The arched construction above will have been in place for some time prior to the formation of the tracery and therefore the masonry that makes up the tracery would have been of lesser structural significance at the start, but loads can develop in these elements that were not originally intended.

Based upon the observations of the Zouche vaulting in 2021 and the understanding of position of the transepts western buttress, this is considered the most vulnerable area of the tower's construction. With load to be released from above due to the need for stone replacement and repair, the structure may redistribute its load. Therefore ongoing monitoring and temporary support provisions will be considered.

Structural implications of the proposals

Whilst no additional permanent loading will be applied as a result of the works, the effects of carrying out the repairs i.e. the substantial deconstruction and rebuilding of structural elements needs to be fully understood and controlled. An Finite Element Analysis (FIA) model which required further 3D modelling will be required, to establish the full effects of the masonry removal on the

buttresses against imposed lateral forces. This will further inform both temporary support measures as well as the methodology of the works.

Proposed monitoring and temporary works

A baseline record of the transept structure and evidence of previous movement has established by logging and pointing cracks to act as tell tales. The proposed method of monitoring is to install new demec measuring points to specific cracks and implement regular inspection, with escalation to electronic monitoring if significant reopening or new cracking is discovered.

Following this approach, the decision has now been taken to install electronic monitoring to the large settlement cracks in the east and west elevations of the SQT, where a small amount of movement has been observed since their last repointing in 2022. This will also enable better understanding of general levels of movement in the transept generally before the works taking place. Monitoring will then be continued throughout the works.

Generally, it is intended that localised support measures will be incorporated during smaller scale replacement works with the methods and sequencing of the work being used as far as possible to reduce the need for substantial temporary support.

Further modelling and opening-up investigations are required to inform the extent of temporary support across the south elevation and St Cuthbert's window itself. At lower level the installation of a steel framed support system beneath the Zouche vault is anticipated, well-spread onto the (protected) flagstone floor.

Outline methodology of works

The above assessments contribute to the following outline proposal for sequencing of the repairs, although subject to change based on factors such as monitoring of the structure, opening-up investigations, stone repair practicalities and FEA analysis:

Phase 1 – Southeastern Buttress – Allow to dismantle corner pinnacles, buttress tops, flyers and grotesques up until solid buttress shafts. Then dismantle and rebuild the projecting buttresses one at a time. buttress. Through this process stonework courses to be left to enable tying in between the buttresses, as well as tying into the adjacent elevations. The buttress tops, flyers and pinnacles can then be rebuilt above. Piecemeal external stone face replacements to the buttress can then take place at lower levels to the buttress.

Phase 2 – Southwestern Buttress – This is to follow the same process as phase 1.

Phase 3 – South Elevation – Repair works to start with the voussoirs and surrounds to the window arch then into tracery and piecemeal façade repairs. Therefore, ensuring arch support is sound and working effectively prior to making alterations and repairs to the tracery.

Phases 4 & 5 – East and West Elevations – Repair works in accordance with method described for the south elevation.

It can be noted that due to the extent of stone repair and the utilisation of a relatively soft and flexible traditional material that there may well be further articulation and settling down of the

structure. As such it would be recommended that the glazing to each elevation be refitted following on from repair stage 5 so there is limited chance of damage to the new external protective glass.

Stone scheduling and renewal – approach and principles

As written into the stone policy, conservative repair is always our first aim, with the premise to intervene as little as is possible but as much as is necessary for the long-term conservation of the building and its fabric.

The Master Mason and team, supported by the Surveyor have been working through a condition review of the stonework and are scheduling out the necessary masonry repairs and renewal, as required in St Cuthbert's Window, the Transeptal buttresses and the exo-skeletons of south quire clerestory windows S3, 4 & 5. This process is largely complete although subject to some further refinement as part of the RIBA 4 proposals. As noted in the preceding sections, the extent of renewal is greater than previously anticipated, with the internal conditions and previously hidden defects on the glass line leaving the window in a parlous state.

The stoneyard have commenced with initial setting out tasks that have highlighted profiling discrepancies and inconsistencies with the 1880s phase of stone renewals. This change in stone section profile (adding 'fatter' stones) required a blending-in 'work around' to fit the stones together. What is now clear is that this adaptation historically involved the application of hard and incompatible mortar flaunchings to 'blend' the fatter profiles in.

We can now see that the material used for the flaunchings has a deleterious impact on the adjacent stone. Some of the mortar is also detaching which leaves us with a safety risk, unaddressed. If we were to replace all these flanchings in more compatible mortars the concern would rightly be that they will not stand the test of time and weather exposure. The consensus in approach to be put forward for consenting, is that this issue will need to be corrected by renewals to reinstate the correct profiling.

Commensurate intervention is required to ensure the long-term conservation of the south quire transept and exoskeletons of S3-5. This includes a need to address historical mistakes which are having a direct impact and on the longevity of the wider fabric.

Stuart Harrison as cathedral archaeologist is in the process of recording the affected areas.

Stone selection – supply and longevity

Because this CCM application is seeking approval to use an alternative, non-indigenous stone for this major programme of repair, we are reporting here on the current state of our research enquiries and present understanding of the stone supply issues.

The Minster's main supply and source of magnesian limestone has been from the Highmoor quarry of Tadcaster for many years. However, we are now faced with a fundamental risk of the long-term security of stone supply – both from the Highmoor quarry and for magnesian limestone in general - which haunts the Stoneyard practice.

The situation is that currently we only have two viable sources of indigenous Magnesian Limestone stone, those being:

- the Highmore Tadcaster quarry - which has limited supplies of relatively high-quality stone and which cannot currently supply the bed heights for our needs. Supply and quarrying activity is also slightly erratic in the way the quarry supplies and is managed.
- The alternative source is the Cadeby quarry near Doncaster, which we are now testing. Based on a number of recent purchases and test pieces, Cadeby has not been found to be an adequate alternative source for quality. Some of the stone has been accepted and used in repair work, but we are returning more than 50% of what has been selected for our use. We are also inquiring more deeply into the working relationship and management of the quarry.

Without good durable stone which exists in section sizes and bed heights to meet the Minster's construction purposes and which has a service life in excess of 100 years the conduct of repair and conservation is in some jeopardy. The sense of this stone supply-risk fluctuates over time and is written into the fabric of the Minster over years, with past campaigns drawing on alternative stone sources from time to time and era-to-era. Some of these choices were subject to 'fads and fashions' and may have been choices less driven by knowledge and technical criteria, than more pragmatic temporal concerns. Very evidently some choices were more successful than others, as time and decay attests. The introduction of Ketton has been a very expensive problem indeed. Cost and/or availability may have been factors in the use of Ketton. We rather suspect, however, that the true explanation lies in the status of the Minster and the fact that Ketton was in vogue during Victorian times (being fuelled by the 'propaganda' that was effectively delivered by trade journals and word of mouth amongst the 'enlightened elites' of conservation at the time).

The later use of Clipsham (also favoured for a time and used for repairs in buildings and Cities far from Rutland/Lincolnshire) has been less problematic, perhaps, but has arguably impacted on the heritage significance and appearance of the Minster. Sometimes these stone choices therefore has real consequences for the heritage significance of the Minster that are problematic. At the time of writing this risk *ie the reliable quantity and quality of dimension-stone supply* is perceived as the highest level for a generation. The quality of the Highmoor stone we are receiving is (mostly) not in doubt, but we are often unable to secure stones of size and bed-height for our requirements – and in addition there is a high degree of supply uncertainty.

Throughout this project development phase, it has remained an active line of inquiry as to whether the renewal of the tracery for the s7 (St Cuthbert's) window could be in magnesian limestone or not. The outcome of that technical evaluation has to now report that the renewal of the tracery will need to be undertaken in Lepine/Lavoux limestone. The reasoning is concisely summarised as follows:

1. Durability and consistency
2. Availability in volume and the required sizes
3. Qualities and quality including carving capability

FAC, CFCE and other consultees will also be minded that we were granted CCM approval for the combined use of the Highmore and Cadeby stone with Lepine in the S10 pinnacle, wherein we are quite clearly and expressly seeking permission for introduction of new stone from different sources in the same element. We were acknowledging that there is visual difference. We now have the opportunity to evaluate completed repairs that incorporate the combination of both stones, to inform decisions for the SQT.

We also have significant precedent in use of Lepine for the repair of window stonework, as seen in the renewals of the West Window (mullions and tracery) with further use for carved elements such as the statue of Queen Elizabeth II on the west front, and that of St Peter over the east window. Recent experience of the currently proposed Lepine confirms the similarity between the stone used for St Peter that has weathered-in well, and the Lavoux Fin Lepine which is being quarried at present. Anecdotal review by the carver of St Peter notes that whilst it is perhaps slightly courser, the finish will be good on this scale of carving and a better colour match to the Tadcaster. The Stoneyard's own experience has been good, with consistent workability, with good bed heights and reliable supply. The issue of stone quality remains of paramount importance. Testing - to which the Minster are committed under Stone Practice – is now commissioned as the basis of reasonable due-diligence within the bounds and limitations of the science of testing for quality and durability, recognising that no testing regime can really predict performance 100years hence. The stoneyard commits under Stone Practice to commission consistent and comparable testing of stone samples when sources of stone are to be procured from alternative quarries and/or when changes of seams within familiar quarries indicate a potential change in the characteristics of stone in our supply chain. It is noted, however, that there has not been a programme of stone testing which can give a 'relative baseline'. It is arguable as to whether testing of historic stone sources would be particularly enlightening – but one can test for some risk factors.[10]

Dr Stephen Parry, Building Stone Specialist from the British Geological Survey has been engaged to advise on the suitable assessment and testing processes. The Stoneyard will also take an active part, working with quarry managers in maintaining quality control and reference samples of stone (both at the quarry and in the Stoneyard). Arising from any particular stone repair campaign, in this case the south quire transept, there will always be a need to commission further site-specific sampling, trialling, and analysis alongside confirmation of available bed heights and feasible stone sizes.

[10] As an aside, the Surveyor has been chasing the authors of the Getty/Historic England funded research programme on Magnesian Limestones. For reasons not understood this important research has yet to be published.


Left: Photograph showing completed pinnacle repairs incorporating a mixture of Cadeby and Highmoor stones. Right: Photograph showing precedent use of Lepine

Stone deterioration – context and wider issues:

Whilst our current core focus is validating the supply of new stone and the project-specific task of understanding why the tracery of s7 has decayed so badly on the inner face, (which was unusual and unexpected), this research should not be without context or reference to other research questions.

To list a number of current themes by way of illustration:

1. Based on close observation of decay of magnesian limestone (and with reference to the Historic England stone research programme) we need to keep up to date with understandings around salts and decay processes – not least to inform our approaches and materials we are using for conservative repair and innovations in the use of nano-lime to name one technique that we are interested in.
2. We also need to continue to be curious about the chemical/mechanical relationship between magnesian limestones and Ketton. These stones trigger salts and decay processes in each other.
3. We have also noted that the Ketton also seems to display radical decay of the same nature when there is no magnesian limestone in the vicinity. There are inherent decay mechanisms within Ketton stone but a likely explanation for this decay behaviour particularly in York may be that the replacement stone was bedded in mortars developed from burning magnesian limestone for mortars.

4. In part this is an issue to attend to so that we are 'getting the story right' (because the damaging interrelationship between Ketton and Mag Lime is oft spoken of) but also we should be interested in this scientific question as it should inform our wider understandings around the longevity and performance of materials in this place.
5. We also do not lose sight of the need to keep up to date with research on mortars – in themselves and in context with their relationship to the stones we are using. The masons are constantly exploring mortar types and we have active tests underway.

Finally, we have a separate research programme underway to seek to describe and explain the relationships between hydrology, salts in stone, environment and collections risks (primarily in the undercroft). There has been some recent and novel research emerging around the behaviour of salts in sculptures., highlighting the need for input from and benefits of our research endeavours with university-based academics.

Mortars and plasters

Appropriate mortar selection is critical to the longevity of the fabric following repairs. Variances in binder type (NHL/air lime) and processing (hot lime/hydrated/putty) will have a bearing on the site methods, workability, strength and of course, H&S.

Nigel Copsey has reported on the existing mortars, identifying lime rich, air limes. For technical compatibility with the existing materials the intention is to match the repair mortars as closely as possible to the existing, and avoid some of the risk factors associated with overly hydraulic mortars.

The strength of hot-mixed mortars is less researched than that of commercial NHLs and with the amount of stone renewal anticipated in the SQT it is essential that this is understood. In particular, this includes the early life strength of the repair mortar which will govern how quickly rebuilding work can safely take place. This approach is consistent with the policy commitments in Stone Practice, to continue to actively research, test, prove and evidence specification choices WRT mortars.

Clach Conservation Engineering Ltd (c/o David Wiggins) have been engaged for lime mortar assessment and testing in conjunction with Sheffield Hallam University (SHU). This will include calculation-based appraisal of the early life state of the masonry composite (stiffened, but uncarbonated) followed by physical testing of samples at SHU.

There is a secondary aim and concern, aligned to the SQA programme, which is to re-visit the conservation and repair works to the Great East Window (GEW) and to exemplify our understanding of how those specification choices have fared. The suggestion is that, once we have undertaken the tests described above, we can then revert back to some sampling and visual examination of the GEW programme – which we intend would be instructed within a package of steeplejack works in forthcoming inspections.

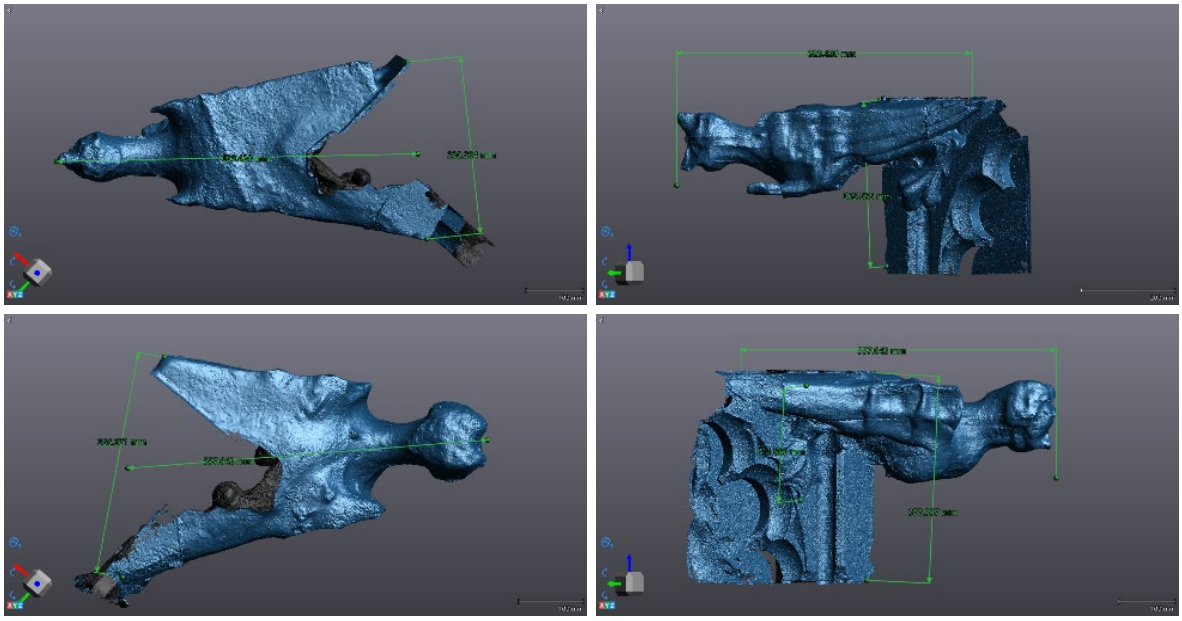
Other relevant matters for this CCM.

Design philosophy for replacement grotesques

The adopted Stone Practice Policy (2024 revision) did much to document, if not actually refresh, the generations-long carving and creative traditions of the Stoneyard, which were also placed into the broader context of the Centre of Excellence and the technologies now available.

The stoneyard have carved and now fixed some wonderful new grotesques to the pinnacles of S8 and 9 - great works of art on each, which also allowed the briefing process for new carvings to be agreed, tested and confirmed. This process sits within the Stone Practice methodology and essentially rests as a collaboration between the carvers and Surveyor.

- All the carvings have a sense of storytelling; nothing too theatrical, but with interest and relevance.
- There is clear observation from the Minster and related subjects and precedents.
- Tonal contrast, form and aspect is being worked into the proposals: enhanced '*by undercutting to achieve maximum contrast between light and shade*' [as the policy encourages].
- The carvings will relate to each other and to the viewer on the ground, with the designs attending to silhouette, scale and pierced work in their conception.
- The team are making good judgements about how to use the technology now at their disposal to support their traditional craft approach.



These scans give a nice insight into the value and usefulness of our ever-advancing digital scanning capabilities and techniques.

Risks and issues identified:

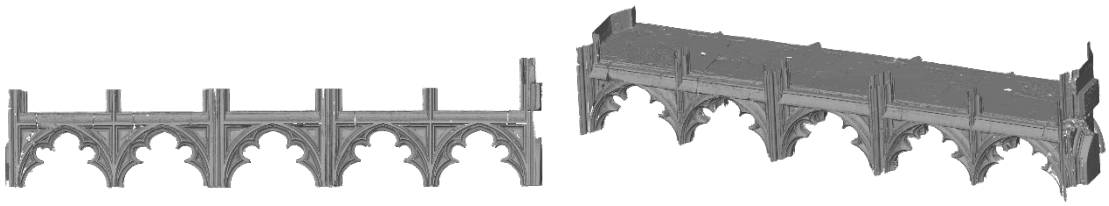
The Bridge

The central bridge of s7 is a complex horizontal spanning structure with internal screening, beautiful vaulting and decorative detail, with interlocking stones.

Collage of the bridge structure looking upwards.

There are fractures to the outer tracery stones: two need replacing. There is also a range of conservative repair required. We are studying the assumed construction sequence to better understand how renewal of these locked-in stones would be undertaken. Our concern is to hold this stonework in situ whilst there are still components that will need to be replaced below. There is structural tying to be reinstated across this spanning structure which appears to be parting company with the supporting walls and their buttresses. At the present time, our premise is that the bridge structure is held in situ: even whilst there are stone renewals to major structural supports beneath it externally. The internal structural screen stones are mostly in good repair, except for the structural break at the reveals. Temporary propping will be incorporated as required to facilitate replacement of these components and a number of the external mullions.

One of the interesting aspects we are setting ourselves is to benchmark the approach against the adoption of the Centre of Excellence techniques and training - particularly in relation to survey techniques and how we record. We are now exploring how we can use that scanning capability to document the structural problems; temporary works and also the conservation of the bridge stonework itself.



The s7 window bridge in 3D scan, onto which we can document repairs and archaeological detail.

Repair and replastering of Zouche vaults

The behaviour of the stone and plaster of the Zouche chapel vault have been under close observation for the last two and a half years with evidence of deterioration of the stone ribs and web-plaster during this period. There are concerns about what we are finding.

There are two primary conservation issues and risks.

- One is to monitor what may be active structural movement and to provide record data for structural considerations in the major stone project to s7 above.

- The second is to recognize that there is clearly current (or past) active water ingress in and around this central area of vaulted chapel, which is driving loss of stone and plaster.

Our key priority is to make sure that the chapel is safe for occupation and that harmful debris cannot fall and cause harm. Hence, the strategy we have adopted is a programme of monitored and managed 'removal for safety'. The stoneyard is erecting a scaffold every six months from which the vaults can be inspected and to make the surfaces and ribs safe.

By way of record, we have done our homework in terms of assessing the heritage significance of the plaster finishes; and we have undertaken good recording, which gives us 'building archaeology' data on the as-found condition. We have a well-documented baseline for understanding rates of decay.

We know and recognise that it will be a good number of years yet before we can fully remedy the consequences of potential water ingress and undertake repair or reroofing of the chapel, due to the major scaffolding above which stands on the roof and within the guttering. We cannot immediately take steps to make this area fully watertight.

Whilst it runs contrary to our instincts, we therefore are accepting that we will see rates of change and decay in stonework and plaster of the vault that would be, in other circumstance, a concern. Our approach is that it is proper and rational to accept that there is little we can do about the suspected root cause of the decay problem for now, except use our best conservative principles to track where we are at.

Re-roofing Zouche chapel (and potential for future PV...)

Overview of Zouche chapel roofs (from 2015 before scaffolds were erected) illustrating some of the form and complexity of the roofing configuration including the through-gutter which runs through both of the major buttresses.

Following the issues of deterioration in the Zouche vaults noted in the preceding section and concern about the rainwater disposal capacity of the southeast range recorded in the QIR, an initial high-level review of rainwater disposal across the southeast range has been undertaken.

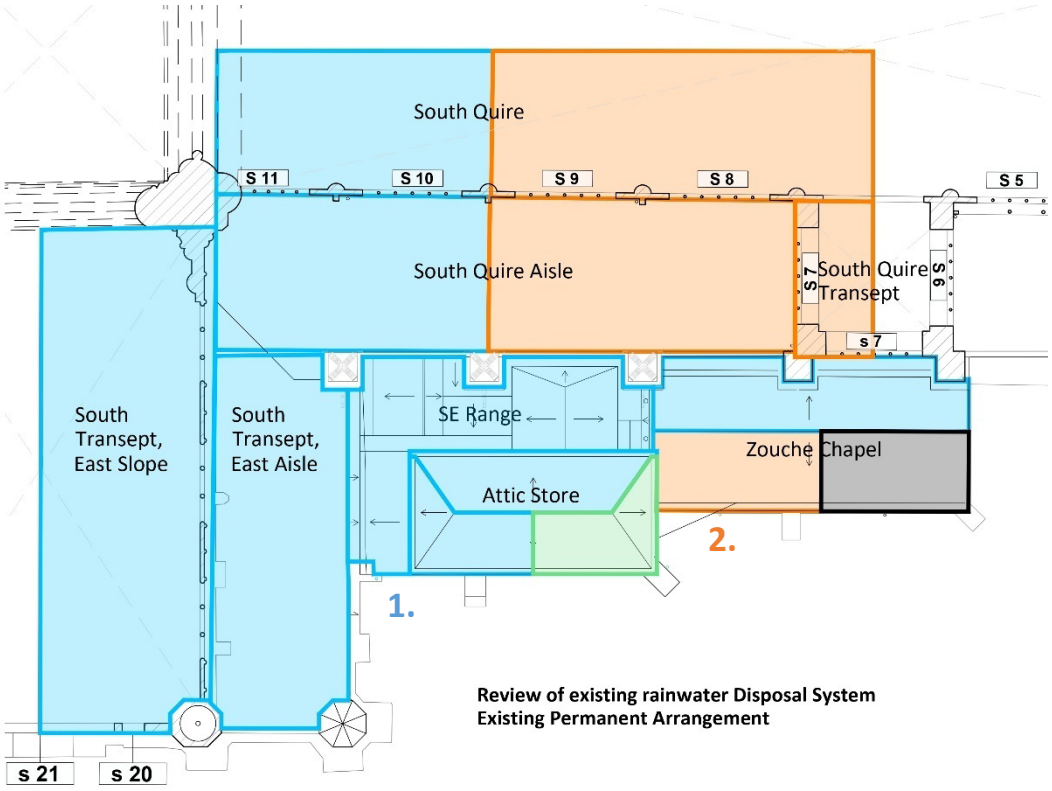
Renewal of the roof coverings and redesign of the rainwater disposal routes and pipework is not within the scope of this CCM, but we felt it important to demonstrate that we were thinking about future phases of work and noting the dependencies.

Whilst further metric survey information would be required for more accurate evaluation, there are clearly areas where high water discharge loads converge, increasing the risk of water ingress and the potential for subsequent damage in some of the most sensitive operational areas in the Minster. There are no access hatches into the voids of these roofs over the vaults of the spaces below.

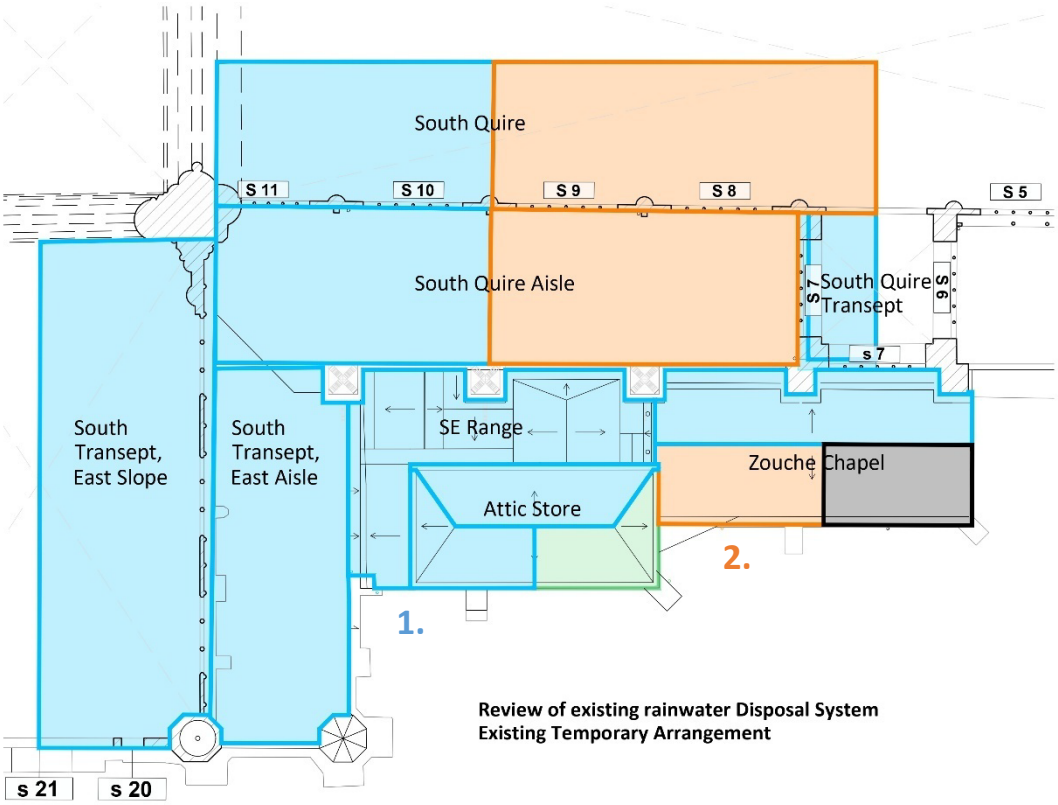
The diagrams below are colour coded to show areas where run-off combines as it moves through the rainwater disposal system.

All of the roof areas identified in blue are directed through a single downpipe to ground. Based on the survey information available, it is approximated that the effective roof area channelled to this downpipe is in the region of 1100m2, providing a potential discharge of 31l/s in a 1 in 1 year event, or up to 74l/s for a 1 in 50-year event (budgeting a 40% increase for climate change).

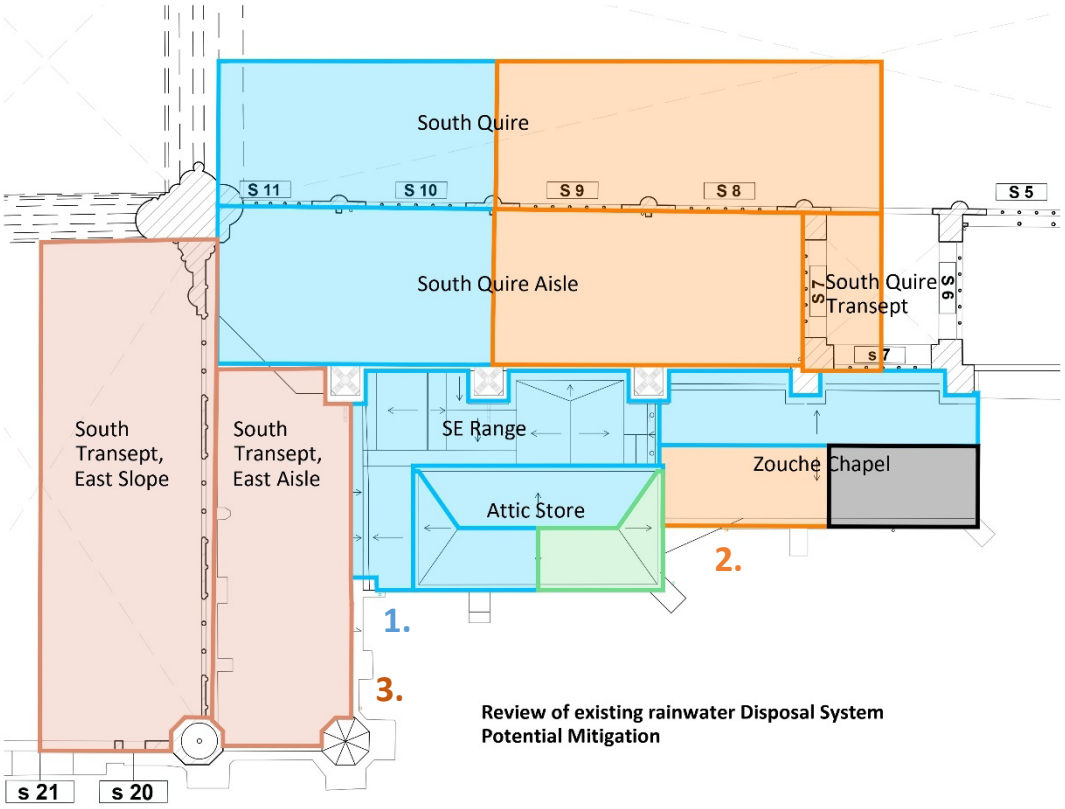
Water discharged from areas marked in orange creates a similar issue over the Zouche chapel roof where the permanent arrangement is for water to be transferred via a chute to the south slope of the Zouche chapel roof, where the parapet gutter is at risk of overcharging.



At present a temporary arrangement is in place, whereby water is transferred from the west slope of the South Quire Transept roof along a rather unsatisfactory horizontal connection to the west end of the Quire Aisle roof (avoiding the eastern sump and downpipe to the Zouche roof). The effect of this is a further increase in the loading on the existing downpipe (1) as shown below.



At 130mm ext dia. the existing downpipes (1 & 2) appear to be undersized to cope with the expected volumes of water. Ideally, additional downpipes would be devised to share the load although given the layout of abutting structures, opportunities are limited. One potential means of mitigation would appear to be the introduction of a new downpipe to the South Transept, East Aisle. With reconfiguration of the associated gutter falls. This could allow for water collected on the South Transept East Roof and East Aisle roof to be separated and taken straight to ground, as shown in the diagram below.

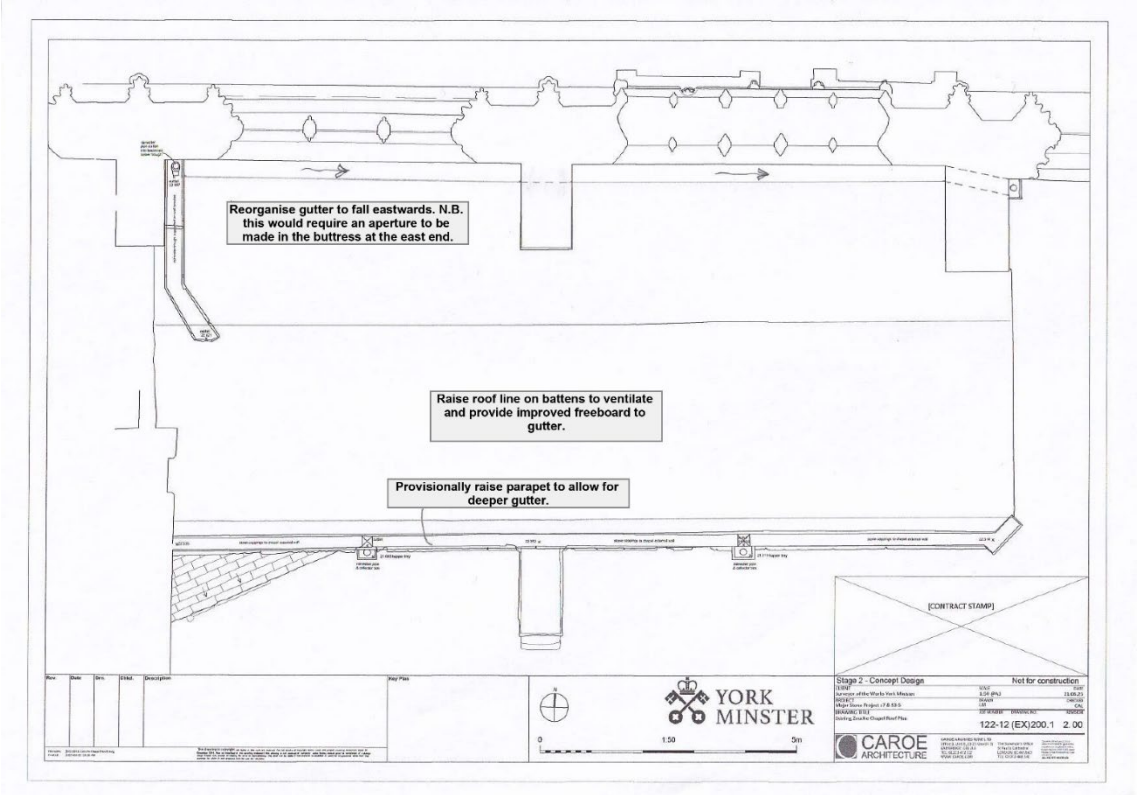


Whilst not fully alleviating the capacity issues of the system, this proposal would relieve DP 1 of rainwater discharging from an effective catchment area of approx 544m2 and therefore c. 11l/s for a 1 in 1 year event, or 26l/s for a 1 in 50-year event.

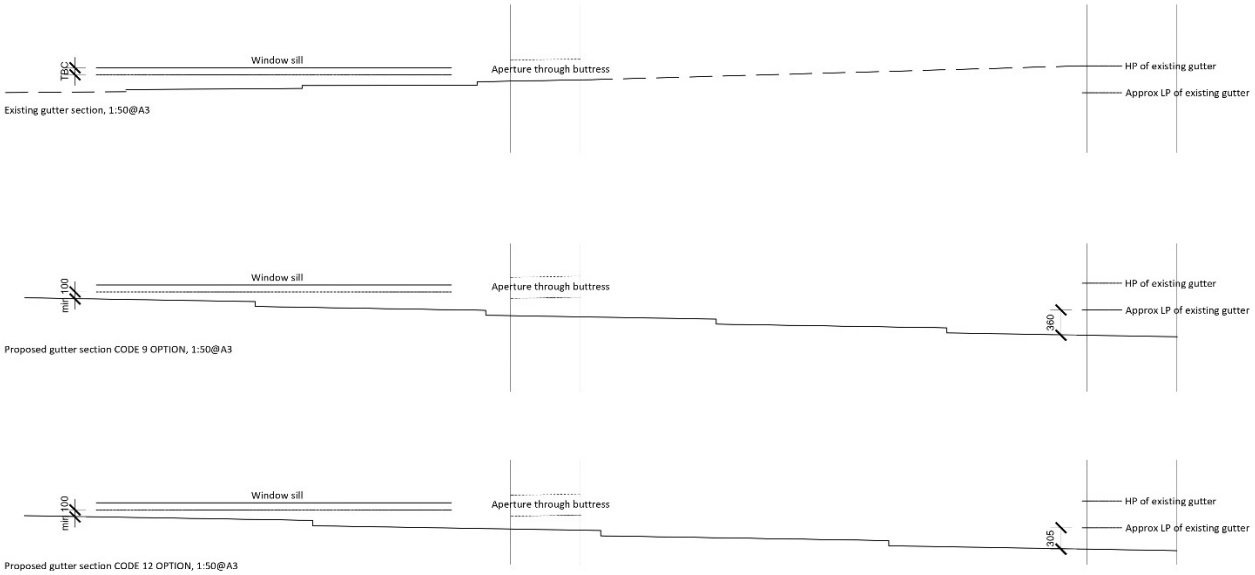
At a more localised scale, improvements that can be made to improve steps, falls, freeboards and therefore capacities of the leaded gutters. Whilst options to improve the current arrangement for discharge across the Zouche chapel roof is limited, there are a couple of improvements which could be considered. In conjunction with renewal of the roof covering, it would be suggested that the roof line is raised slightly, to allow for both ventilation of the lead and also allow increased downstands into the gutter. In conjunction, the parapet would ideally be raised discretely to mirror the increase in gutter height, and allow for improved steps and falls.

Reversing the fall of the Zouche north gutter would further reduce the effective area discharging to DP1 although opening-up investigations would be necessary to confirm feasibility, since it would require the east end to finish c. 360mm below the existing low point at the west end. It would also require the formation of a new aperture through the buttress since routing around the buttress is likely obstructed by the height of the vaults below.

The one advantage in this complex amalgamation of structures is that the roofscape is mostly hidden from view at ground level, giving opportunity to consider discrete integration of opportunities such as air source heat pumps behind the raised attic store, and/or careful installation of PV on these roofs.



Potential modifications to be considered with re-roofing to improve gutter capacities.



Studies into the layout of the north gutter to improve capacity, steps and falls, with limited overall depth available (restricted by sill heights and existing structure).

CCM proposals:

Stonework

The following drawings have been prepared by the Stoneyard in line with Stone Practice, showing the extent of anticipated masonry repairs.

Two repair options are presented for s7 (St Cuthbert's Window). The drawing sequence below shows how the scope in each case has been established through appraisal of previous repairs and current condition. Option 1 shows the minimum extent of renewal that is considered necessary to ensure reinstatement of tracery to a satisfactory state, leaving a small selection of stones from the late C19th repair campaigns, which could be judged viable for reuse. However, their reinstatement would require integration with the Lepine renewals, providing an inconsistency of stone types and potential risk to the longevity of the repaired window. Option two, which is the preferred option and the option proposed for approval, includes for limit further replacement to attend to this risk.

Final specifications for replacement stone and mortars will be in line with Stone Policy and finalised following the on-going testing and analysis strands described in the preceding sections. The mortar mix currently being used and proposed by the Stoneyard team (subject to conclusion of the above testing), comprises 1 part NHL 2: 1 part Nosterfield washed river sand sieved to 2.5mm: 2 parts Nosterfield washed river sand sieved to 1.5mm.

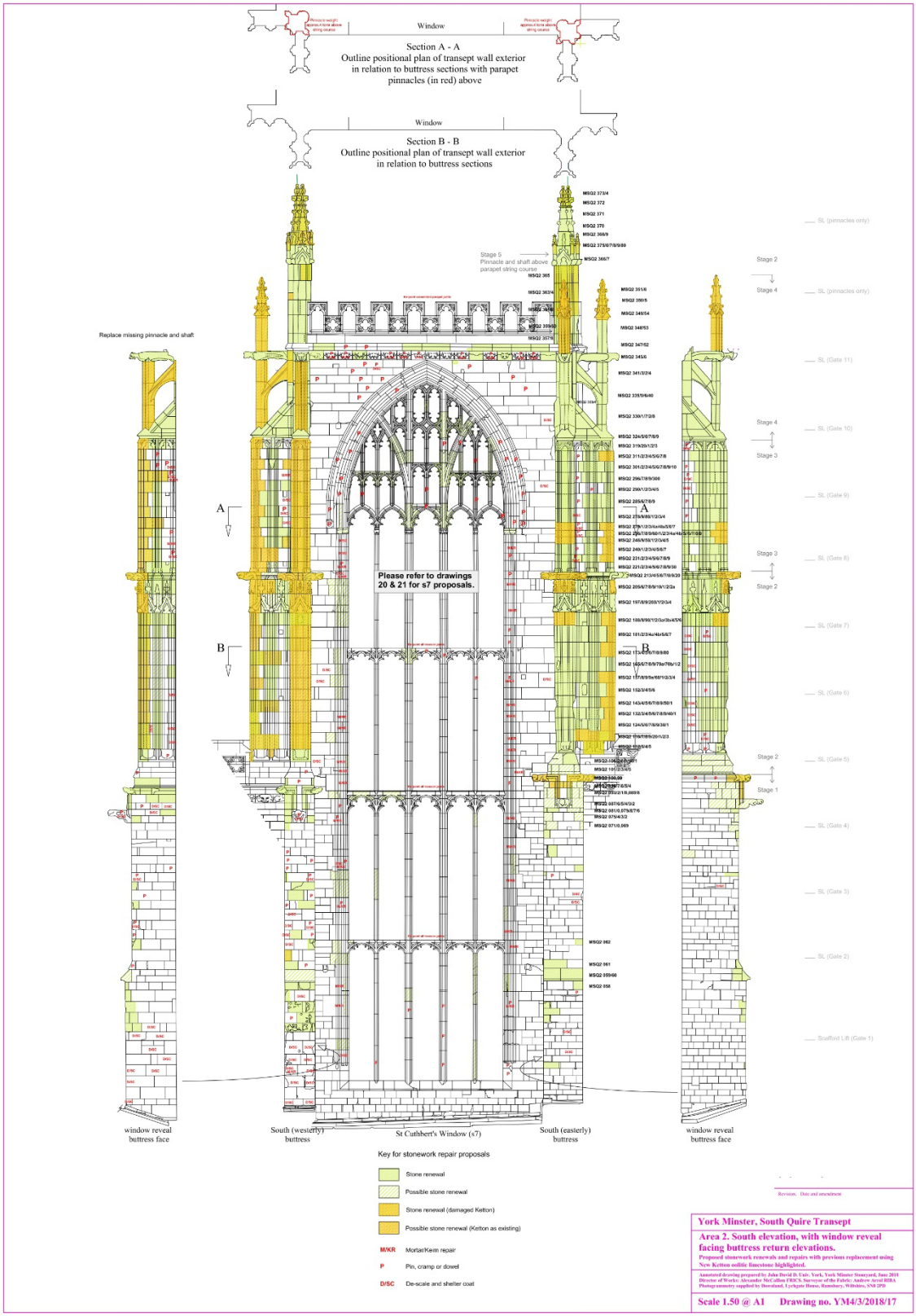
With the major rebuilding works to renew the decayed stonework of the buttresses it is considered that the existing construction can be improved, as explained the accompanying report by The Morton Partnership. Such items will include:

1. Tying in of stonework around the external corners of the buttresses and into the various elevation facades, to aid in redistributing weight back into the south quire aisle wall line and away from the Zouche chapel roof. Thus, strengthening the corbelled support hypothesis.

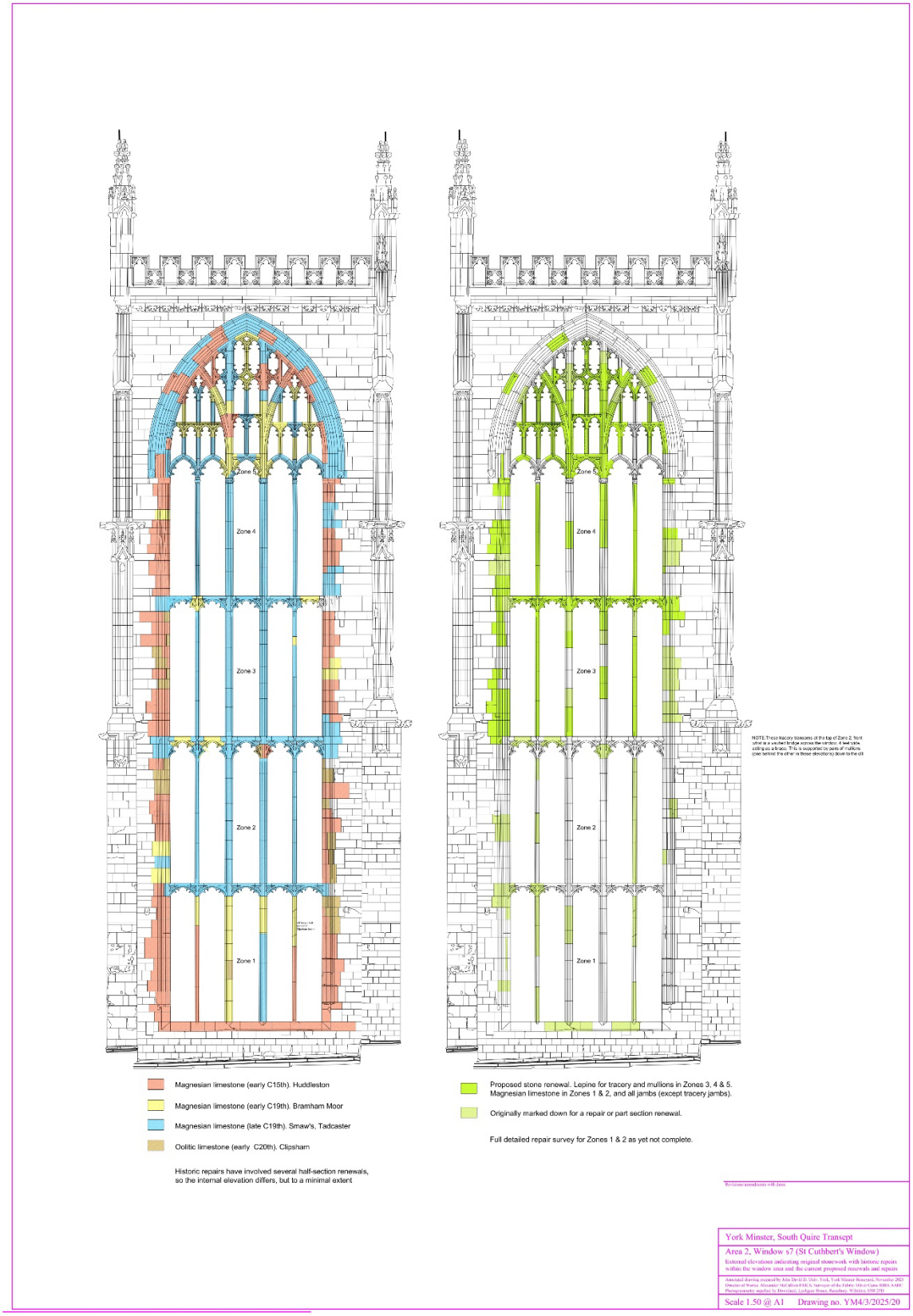
2. Subject to need (established through on-going monitoring) flexibly strengthening cracks in masonry walls by re-stitching across crack lines to ensure continuity in the structure, assisting in laterally restraining these elements of the building. With the monitoring approach upon the east and west crack lines we will be able to distinguish the behaviour of the structure and either implement such repair towards the end of the project or retain the current build-up.

3. Incorporation of stainless-steel dowels within the buttress pinnacles (similar approach taken elsewhere at the cathedral) cored and embedded downwards into the underlying stonework. This will provide improved lateral strength and contiguous behaviour to the masonry as it extends upwards.

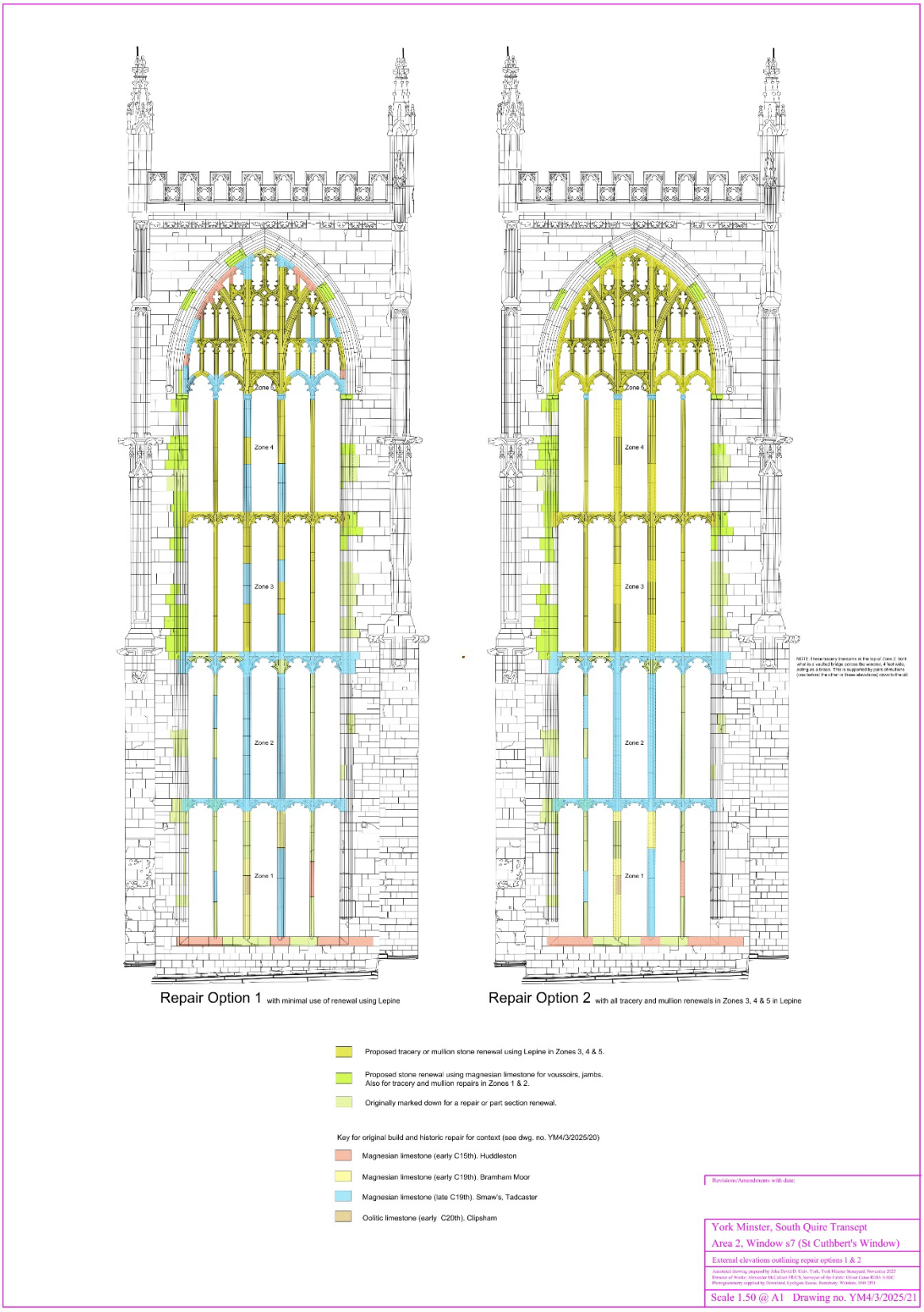
4. Elsewhere it is not anticipated that joints will be strengthened in this manner, however consideration will be brought to implementation of leaded joints to tracery or buttress joints that are sky facing and would benefit from a quick setting time and effective weatherproofed joint. Where used, the lead will be rebated 20-30mm from the stone face and the joint finished in lime mortar to the approved mix.



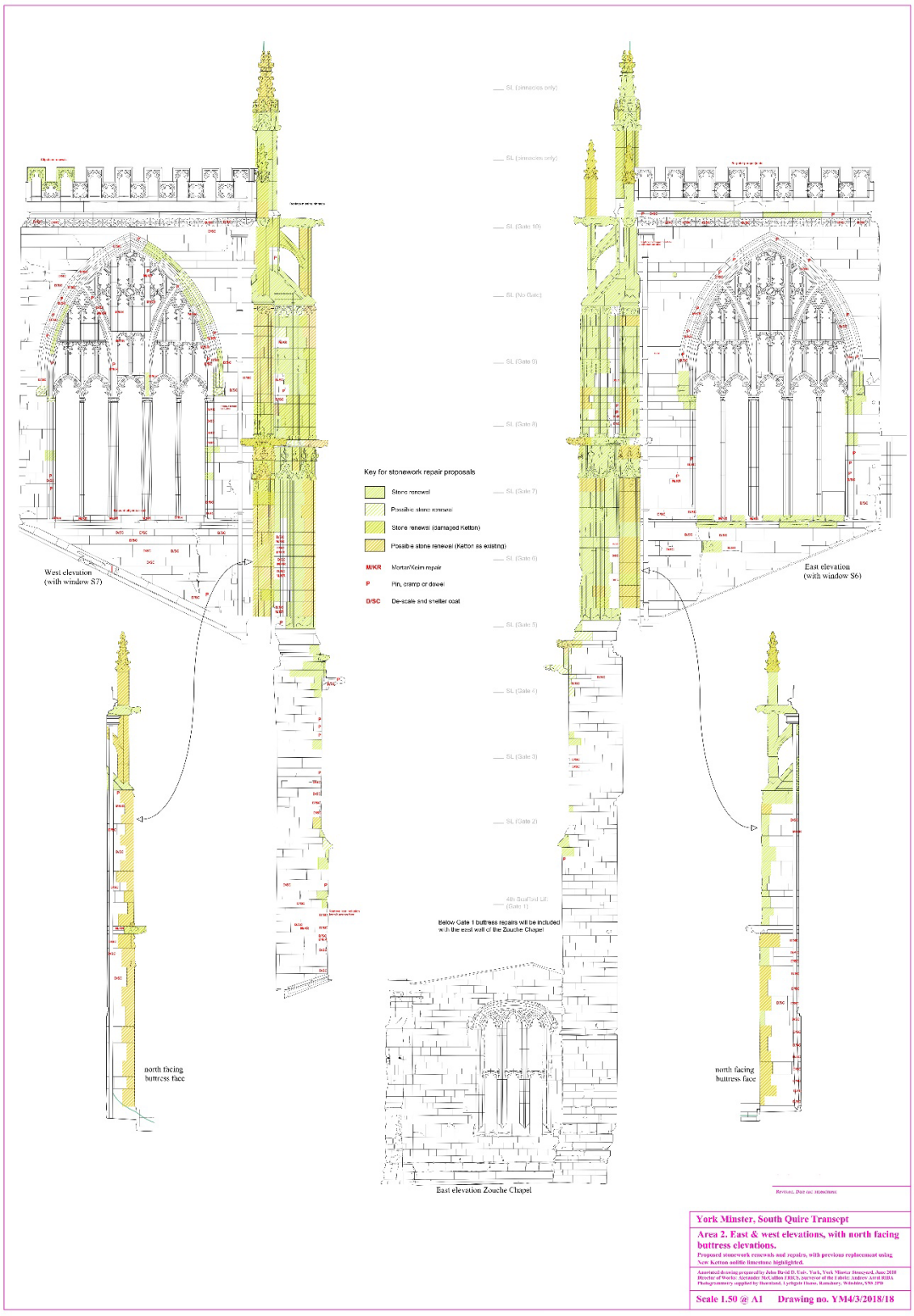
Area 2 (SQT), South Elevation with window reveal facing buttress return elevations: Proposed stonework renewals and repairs with previous repairs using new Ketton oolitic limestone highlighted.



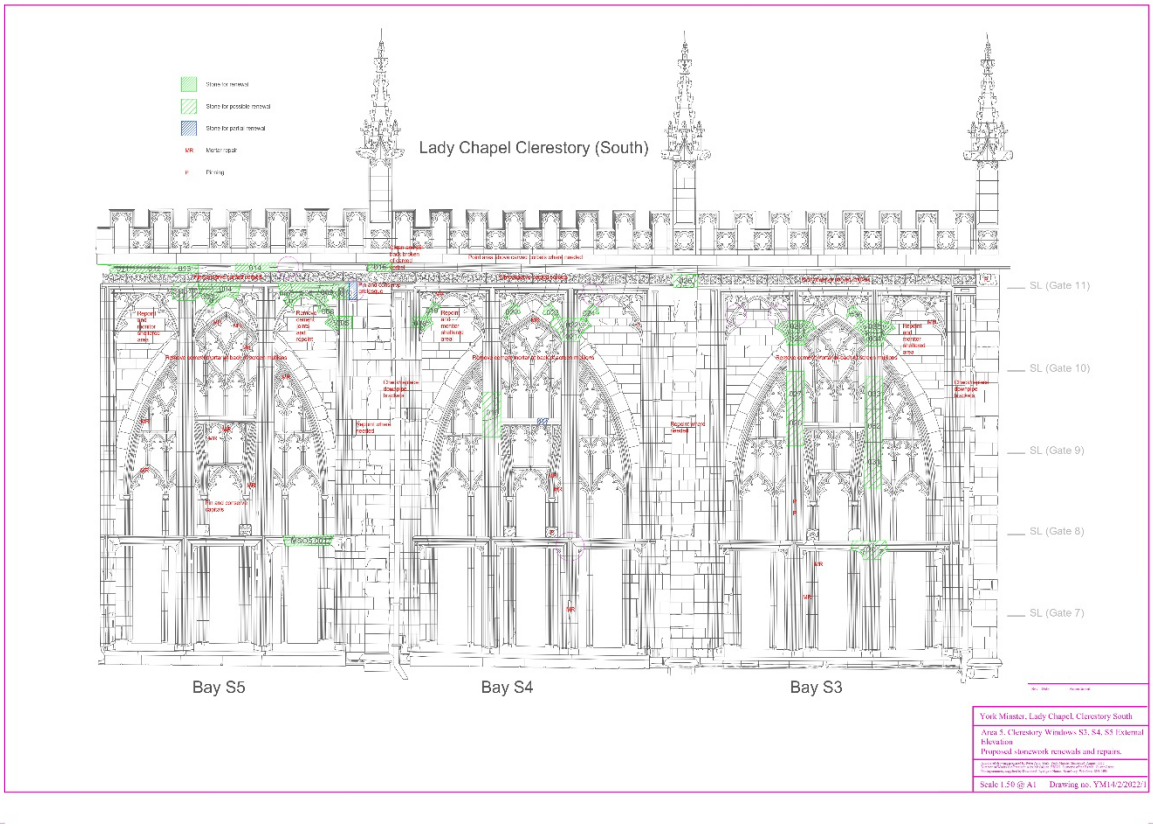
Area 2 (SQT), Window s7 (St Cuthbert's Window): External elevations indicating original stonework with historic repairs and stone types (left) and minimum extent of renewals suggested on the basis of condition (right).



Area 2 (SQT), Window s7 (St Cuthbert's Window): External elevations outlining repair options 1 (left) & 2 (right). ***Option 2 is proposed for consent.***



Area 2 (SQT), east & west elevations with north facing buttress elevations: Proposed stonework renewals and repairs with previous replacement using new Ketton oolitic limestone highlighted.



Area 5, Clerestory Windows S3, S4, S5 external elevation: Proposed stonework renewals and repairs to exoskeleton.

Summary and conclusions

Statement on heritage impact and justification

Our aim in this section of the submission will be to:

- *Identify the parts of the church, its setting and/or contents that would be impacted by the proposals.*
- *Set out significance of those parts related to the 'assessment of significance' section above*
- *Describe the impact of the proposal on these parts and the building and/or setting.*
- *Explain how any impacts can be mitigated.*

We have aimed to offer 'proportionate' level of assessment, based on the significance of this precious building and the stonework affected.

Methodology for Evaluation of Impacts

The potential impact of the proposed development on heritage values and significance is set out in this section. It is organised by elements of the proposals, assessing the impact of each in relation to the relevant heritage assets summarising impacts to each. The scale against which impacts are judged is defined below.

Positive heritage impacts are here considered to be multi-faceted. Not all positive heritage impact is simply heritage enhancement; some works are important preservation works. As noted within Para. 020 of the heritage section of Planning Practice Guidance, heritage benefit is defined as:

- *sustaining or enhancing the significance of a heritage asset and the contribution of its setting*
- *reducing or removing risks to a heritage asset*
- *securing the optimum viable use of a heritage asset in support of its long-term conservation*

Discussion: impacts and justification

As noted above, this CCM application is for 'Option 2'. In the words of the CFCE, this provides 'both performance and longevity.'[11]

In describing and discussing heritage impacts for this CCM application, it is suggested that we work from the inside out. The most crucial aspect of this entire program of work is the conservation of the magnificent stained glass window, which will be reset within an environmentally protected glazing system. The EPG methods and details are well tested in the Minster and will sustain the exceptional significance of the historic glass.

In an overarching sense, the conservation of the glass is a major positive benefit for the long term sustainability and protection of the priceless heritage of the John Thornton window, although an environmentally protected window does not come without some change. It might still be argued in some quarters that the loss of direct appreciation of the glass and its lead armatures as seen from the outside is harmful in a minor manner. However, the very well tested effect of the external leading of the protective glass retains the overall character of the historic window, that is then represented on the inside where it is best appreciated, hung invisibly in new ventilated bronze armatures.

[11] Adrian Daffern, Pre-Application Letter: *York Minster, South Quire Window*, (12 November 2025), p. 2.

The proposed work to stone is essential to facilitate the important conservation works to sustain the significance of the glass and deliver heritage benefit. The proposed stone programme is required to reinstate a stable, safe and technically accurate framing of the glass. In and of itself, the major program of renewal of stone, including the proposed replacement of magnesian limestone components, which could potentially be reinstated, might be seen as detrimental to the materiality and significance of aspects of the window as a whole. Taken with the benefits and needs of the glass programme, one starts to sense that the real impact is more tempered, balanced, and necessary.

We suggest that reinstating a stable, safe, secure and accurate stonework frame for the glass is a prerequisite for the suitable long term, sustainable display and preservation of the historic glass.

Unarguably, however, extensive replacement of stonework, and in addition, the proposal to replace stones that are potentially still viable and reusable, is an unusual situation. This does represent a degree of harm. There will be some impact to evidential value, to be mitigated by really thorough recording.

There will also be some aesthetic change in the external appearance of the stone surrounds to the window – from the outset and perhaps as the stonework weathers over the years ahead. And it is recognised that there will be some loss of the progression of change and history of repair of this window, indicative of aspects of the historical and evidential value of the Minster. There have been at least three, if not possibly four programs of stone conservation and renewal over 200 years. Whilst the lower part of the window will still display and represent these phases of repair, the upper part of the s7 window tracery will be renewed. Some of that loss and evidence can be offset by really thorough recording - and good interpretation and analysis of those recordings - leaving a good legacy for our successors. The recording will take place both before, during and after stone renewal programme.

The change to appearance also has the potential to affect aesthetic value. As noted above, the visual change will subside as the affected areas of new and repaired stone weather. Visual change in the external appearance of the Minster has precedent as repair campaigns have progressed around the structure, which has been renewed over the centuries. However, the proposals will also deliver positive changes to aspects of aesthetic value, replacing and reinstating the detail of carving and architectural detail that has been lost through weathering.

We then also need to turn to not just the aesthetic change from a magnesian limestone to a French limestone, but also to what this represents in terms of authenticity, with the founding context of indigenous stone. Here perhaps the most straightforward position is simply to acknowledge that there is some harm in changing from an magnesian limestone and introducing Lepine. Characterizing that harm really precisely is less straightforward. Taking it for what it is, we can then start to address whether or not that harm is rational and justified overall. Therefore taken in the round with the glass conservation, it is clearly a net positive for protection and sustainability of highly significant heritage overall to undertake this program of repair and conservation. But within that overall picture, there is also some acknowledged negative or detriment to the historical significance of the stone surrounds, though this is broadly in line with the history of repair and rejuvenation of fabric across the history of the Minster; potentially there is some aesthetic impact (both positive and negative); there is also some loss of evidential significance of the s7 window.

Crucially these changes are justified. The proposals are required to ensure the integrity of the affected areas, as outlined above. In the long-term, the proposals will sustain the contribution of

these areas, especially the highly significant glass, to the overall, multi-faceted significance of the Minster.

One can perhaps address justification through a series of questions:

Q: is it necessary to undertake a major stone repair program to frame the historic window?

A: where the stone demonstrably in a state of really serious decay, the answer is clearly yes, to preserve the important contribution this part of the Minster makes to its significance.

Q: Given that this window tracery has been subject to multiple phases of repair, conservation and renewal, certainly in the last 200 years, is there a realistic and technically robust method of undertaking further conservative repairs, which could preserve some of the evidence of past repairs?

A: the answer is, in effect, a partial yes. The renewal of the upper tracery of this window will remove some of that history of repair. However, in addition to the records we keep and interpret, we will still have the remaining evidence in the lower part of the window, which will survive and continue to tell its story to those who can get close. The proposals also represent a learning process, allowing us to document, learn from, and evolve, the historic iterations of repair to the SQT. Our process is influenced by new data and greater understanding. This has necessitated a different approach to conservative repair than taken elsewhere at the Minster, specific to this location and situation. It has also involved a very detailed look at the stonework, necessary to make such decisions.

Q: Is it possible in any realistic time scale to undertake a further repair program using 'authentic' magnesian limestone?

A: Our thesis is that that is no longer a tenable prospect, no. For the many reasons we have set out in this paper, Chapter currently has no feasible a chance of achieving a core necessary aim which must be getting the conserved glass back into its rightful place within the next 10 years, without changing stone type. This is essential for the long-term conservation of the Minster.

Q: an underlying question may also be, are we certain about all these aspects of our decision making leading to the conclusion to introduce Lepine limestone.

A: As set out in this report, a faithful answer should correctly be, no: we are not absolutely certain on all aspects, but we are showing our working in terms of how we have found ourselves in this position, and we are committed through our adopted Stone Practice and through good diligent inquiry to continuing an active scheme of engaged thinking around procurement and applied conservation, which is exemplified in the Centre of Excellence. We consider our approach is both pragmatic, and very well informed.

Conclusion

For these reasons, we recognise that there may be differences of view, nuance and interpretation of the circumstances of this project. In our predicament, we feel that there is a justified scheme for the repair and stone replacement works as proposed.

On that basis, we hope that a CCM consent can be granted, but recognizing there may well be suitable conditions with an approval. The project will be taking place over a number of years and should involve further scrutiny, much like the Standing Committee for Glass as was established. We hope that CFCE will devolve the FAC to continue to monitor this important program over the coming years.